FAIRFAX COUNTY
BOARD OF SUPERVISORS
March 9, 2021

AGENDA

2:00		Recognition of Tisha Deeghan
2:00		Report on General Assembly Activities
2:00		Matters Presented by Board Members
2:00		Items Presented by the County Executive
	ADMINISTRATIVE ITEMS	
1		Street into the Secondary System (Springfield District)
2		Authorization to Advertise a Public Hearing to Convey Board-Owned Property at 10033 Blake Lane to the Fairfax County Park Authority (Providence District)
3		Authorization to Advertise a Public Hearing on the Acquisition of Certain Land Rights Necessary for the Construction of Burke Road Realignment – Aplomado Drive to Parakeet Drive (Springfield District)
4		Authorization to Advertise a Public Hearing on the Acquisition of Certain Land Rights Necessary for the Construction of Mount Vernon Memorial Highway Trail from George Washington's Gristmill Entrance to Southwood Drive (Mount Vernon District)
5		Authorization to Advertise a Public Hearing to Consider an Ordinance to Amend and Readopt Section 67.1-10-2 of the Fairfax County Code Relating to Sewer Service Charges, Base Charges, Availability Charges, Fixture Unit Charges, Charges for Hauled Wastewater, and Clarification of the Intent Behind Base Charges Adjustments
6		Authorization for the Department of Neighborhood and Community Services to Apply for and Accept Grant Funding from the U.S. Department of Health and Human Services Associated with the Early Head Start Child Care Partnership and Expansion Grant
7		Authorization for the Department of Neighborhood and Community Services to Apply for and Accept Grant Funding from the U.S. Department of Health and Human Services for Funding Associated with the Head Start and Early Head Start Grant

FAIRFAX COUNTY
BOARD OF SUPERVISORS
March 9, 2021

ADMINISTRATIVE ITEMS (continued)

8 Authorization to Advertise Publication of the FY 2022 Budget and Required Tax Rates, the FY 2022 Effective Tax Rate Increase, and the Advertised Capital Improvement Program for Fiscal Years 2022-2026 (With Future Fiscal Years to 2031)

9 Approval of "$200 Additional Fine for Speeding" Signs as Part of the Residential Traffic Administration Program (Mount Vernon District)

10 Approval of Traffic Calming Measures as Part of the Residential Traffic Administration Program (Mount Vernon and Springfield Districts)

ACTION ITEMS

1 Approval of a Resolution to Extend the Cable Franchise Term of Verizon Virginia LLC

2 Approval of Bond Underwriter Pool

3 Proposed Revision to the Board Policy on the Use of Stormwater Funds for Stormwater System Improvements in the Right-of-Way

4 Approval of the Calendar Year 2021 Forest Pest Management Program

5 Approval of Supplemental Appropriation Resolution 21223 to Accept Grant Funding and Authorization to Execute Project Administration Agreements with the Virginia Department of Transportation for the Implementation of Transportation Alternatives Funded Projects (Mason, Providence and Springfield Districts)

6 Approval of the Disease Carrying Insects Program

7 Approval of Comments on Washington Metropolitan Area Transit Authority (WMATA's) Proposed FY2022 Operating and FY2022-2027 Capital Improvement Program

FAIRFAX COUNTY
BOARD OF SUPERVISORS
March 9, 2021

PUBLIC HEARINGS

3:30	Public Hearing on SE 2020-DR-014 (Modern Media Design, Corp.) (Dranesville District)
3:30	Public Hearing on RZ 2018-PR-013 (White Granite Associates LLC) (Providence District)
3:30	Public Hearing on RZ 2019-SU-020 and PCA 74-2-124 (EB Albemarle, LLC) (Sully District)
3:30	Public Hearing on RZ 2019-SU-003 and PCA 74-2-091 (Buchanan Partners, LLC) and Public Hearing on PCA 74-2-124 (EB Albemarle, LLC) (Sully District)
3:30	Public Hearing on SE 2020-SP-009 (HHP Holdings, LLC) (Springfield District)
4:00	Public Hearing on a Proposal to Vacate Portions of Saint Augustine Lane and Saint Augustine Court (Providence District)
4:00	Public Hearing to Lease County-Owned Properties for the Purpose of Installing Solar Facilities (Braddock, Dranesville, Hunter Mill, Lee, Mason, Mount Vernon, Providence, Springfield, and Sully Districts)
4:00	Public Hearing to Convey Board-Owned Property at the Franconia Governmental Center to the Fairfax County Redevelopment and Housing Authority (Lee District)
4:00	Public Hearing on a New and Modernized Zoning Ordinance to Replace the Current Zoning Ordinance
4:00	Closed Session

Board Agenda Item
March 9, 2021

2:00 p.m.

Recognition of Tisha Deeghan

Board Agenda Item
March 9, 2021

2:00 p.m.

Report on General Assembly Activities

ENCLOSED DOCUMENTS:
Documents available online at https://www.fairfaxcounty.gov/boardofsupervisors/, under "2021 Board Legislative Reports," by March 8, 2021.

PRESENTED BY:
Supervisor James R. Walkinshaw, Chairman, Board of Supervisors' Legislative Committee
Bryan J. Hill, County Executive

Board Agenda Item
March 9, 2021

2:00 p.m.

Matters Presented by Board Members

Board Agenda Item
March 9, 2021

2:00 p.m.

Items Presented by the County Executive

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 1

Street into the Secondary System (Springfield District)

ISSUE:
Board approval of street to be accepted into the State Secondary System.

RECOMMENDATION:
The County Executive recommends that the street listed below be added to the State Secondary System:

Subdivision	**District**	**Street**
Hampton Reserve	Springfield	Chrisanthe Court

TIMING:
Routine.

BACKGROUND:
Inspection has been made of this street, and it is recommended for acceptance into the State Secondary System.

FISCAL IMPACT:
None.

ENCLOSED DOCUMENTS:
Attachment 1 – Street Acceptance Form

STAFF:
Rachel Flynn, Deputy County Executive
William D. Hicks, P.E., Director, Land Development Services

Attachment 1 Print Form

Street Acceptance Form For Board Of Supervisors Resolution

FAIRFAX COUNTY BOARD OF SUPERVISORS
FAIRFAX, VA

Pursuant to the request to inspect certain streets in the subdivisions as described, the Virginia Department of Transportation has made inspections, and recommends that same be included in the secondary system.

VIRGINIA DEPARTMENT OF TRANSPORTATION
OFFICE OF LAND USE - FAIRFAX PERMITS

REQUEST TO THE PERMITS MANAGER, FOR INCLUSION OF CERTAIN SUBDIVISION STREETS INTO THE STATE OF VIRGINIA SECONDARY ROAD SYSTEM.

PLAN NUMBER: 0479-SD-002
SUBDIVISION PLAT NAME: Hampton Reserve
COUNTY MAGISTERIAL DISTRICT: Springfield

VDOT PERMITS MANAGER: **Houda A. Ali, PMP**
BY: Nadia Alphonse

FOR OFFICIAL USE ONLY
VDOT INSPECTION APPROVAL DATE: 01/07/2021

STREET NAME	LOCATION		LENGTH MILE
	FROM	TO	
Chrisanthe Court	CL Hampton Road, Route 647 - 1,048' SW CL Ox Road, Route 123	649' S to End of Cul-de-Sac	0.12
NOTES:		**TOTALS:**	0.12

5' Concrete Sidewalk on the West Side to be maintained by VDOT.

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 2

Authorization to Advertise a Public Hearing to Convey Board-Owned Property at 10033 Blake Lane to the Fairfax County Park Authority (Providence District)

ISSUE:
Authorization of the Board of Supervisors (BOS) to advertise a public hearing regarding the conveyance of Board-owned property located at 10033 Blake Lane to the Fairfax County Park Authority (Park Authority)

RECOMMENDATION:
The County Executive recommends that the BOS authorize a public hearing regarding the proposed conveyance of BOS-owned property to the Park Authority.

TIMING:
BOS action is requested on March 9, 2021, to provide sufficient time to advertise the proposed public hearing on April 13, 2021, at 3:00 p.m.

BACKGROUND:
The BOS is the owner of two parcels of land totaling approximately 10 acres and located at the intersection of Blake Lane and Bushman Drive, just north of the City of Fairfax, in Oakton. The two parcels, located at 10033 Blake Lane, Oakton, VA 22124 (Blake Lane) and identified as Tax Map Nos. 0472 01 0123 (Parcel 123) and 0472 17 B (Parcel B), were originally owned by the Fairfax County School Board (School Board) and were developed with park amenities by the Park Authority pursuant to an interim use agreement with the School Board. Recreational amenities at Blake Lane currently include two rectangular athletic fields, a dog park, a butterfly garden and an open play area.

The School Board originally transferred ownership of Blake Lane, along with other properties that were deemed surplus to future expansion requirements, to the BOS in 2006 in exchange for additional bond funding for school construction. However, in 2017, the School Board identified Blake Lane as one of several possible sites in the Oakton area for the development of a $35 million elementary school. On January 5, 2021, after reviewing data that indicated that the elementary schools around Blake Lane did not confront the capacity problems that were previously anticipated, the School Board designated the Dunn Loring Administration Center to be repurposed as

an elementary school, thereby eliminating the hurdle to the conveyance of Blake Lane to the Park Authority.

Of the two parcels, solely Parcel B was dedicated to the BOS expressly for open space or recreational purposes. Consequently, as real property that is not subject to any park or recreational use restrictions, only Parcel 123 is subject to the provisions of the existing Land Bank Agreement between the BOS and the Park Authority. The Land Bank serves as a mechanism to allow the Park Authority to convey land back to the BOS without the actual payment of fair market value compensation if the BOS determines that there is a public need for the Park Authority property. In this instance, in exchange for the conveyance of Parcel 123 to the Park Authority, the BOS will receive a credit in the Land Bank in an amount equivalent to the tax-assessed value of the parcel. The existing balance in the Land Bank operates as an accounting measure only and cannot be "cashed out" by either party to the agreement. More information on the Land Bank has been made available via the memorandum to the Board from the County Executive dated February 16, 2021.

Staff recommends that the conveyance of Blake Lane to the Park Authority be subject to the condition that the parcels must be used for public park purposes. The Park Authority will include Blake Lane in its inventory and maintain the parcels in accordance with the adopted Park Authority Maintenance Standards. Any initiatives to change the existing park uses and facilities at Blake Lane will be guided by the Park Authority's master planning process.

Staff further recommends that the conveyances be made subject to the County's reservation of the right to assign to public entities, public utilities, telecommunications or cable television providers the right to construct improvements on the property for the purpose of providing utilities and other public services. Staff also recommends that any public utilities located on the property that are owned and maintained by County agencies, such as sanitary sewers and stormwater management facilities and structures, continue to be owned and maintained by the County.

Virginia Code Ann. § 15.2-1800 requires a locality to hold a public hearing before it may dispose of any real property.

FISCAL IMPACT:
None

ENCLOSED DOCUMENTS:
Attachment 1 – Location Map

STAFF:
Joseph M. Mondoro, Chief Financial Officer
Rachel Flynn, Deputy County Executive
Sara Baldwin, Acting Executive Director, Fairfax County Park Authority
José A. Comayagua, Director, Facilities Management Department
Mike Lambert, Assistant Director, Facilities Management Department

ASSIGNED COUNSEL:
F. Hayden Codding, Assistant County Attorney

ATTACHMENT 1



Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 3

Authorization to Advertise a Public Hearing on the Acquisition of Certain Land Rights Necessary for the Construction of Burke Road Realignment – Aplomado Drive to Parakeet Drive (Springfield District)

ISSUE:
Board authorization to advertise a public hearing on the acquisition of certain land rights necessary for the construction of Project 2G40-087-003, Burke Road Realignment – Aplomado Drive to Parakeet Drive, in Fund 40010, County and Regional Transportation Projects.

RECOMMENDATION:
The County Executive recommends that the Board authorize advertisement of a public hearing for April 13, 2021, at 2:30 p.m.

TIMING:
Board action is requested on March 9, 2021, to provide sufficient time to advertise the proposed public hearing on the acquisition of certain land rights necessary to keep this project on schedule.

BACKGROUND:
This project consists of the realignment of Burke Road to eliminate the hazardous curve between Heritage Square Drive and Mill Cove Court and includes replacement of the existing storm drainage pipe at the stream crossing, improving both safety and sight distance, while minimizing roadway flooding. This project also includes the installation of ADA-compliant ramps, pedestrian sidewalk, asphalt trail, and a connection to the existing Liberty Bell Trail along the project length of Burke Road from Aplomado Drive to Parakeet Drive.

Land rights for these improvements are required on 13 properties, seven of which have been acquired by the Land Acquisition Division. The construction of this project requires the acquisition of street dedication, sight distance, storm drainage, Fairfax County Water Authority, Verizon, Virginia Electric and Power Company, and grading agreement and temporary construction easements.

Negotiations are in progress with the affected property owners; however, because resolution of these acquisitions is not imminent, it may be necessary for the Board to utilize quick-take eminent domain powers to commence construction of this project on schedule. These powers are conferred upon the Board by statute, namely, Va. Code Ann. Sections 15.2-1903 through 15.2-1905 (as amended). Pursuant to these provisions, a public hearing is required before property interests can be acquired in such an accelerated manner.

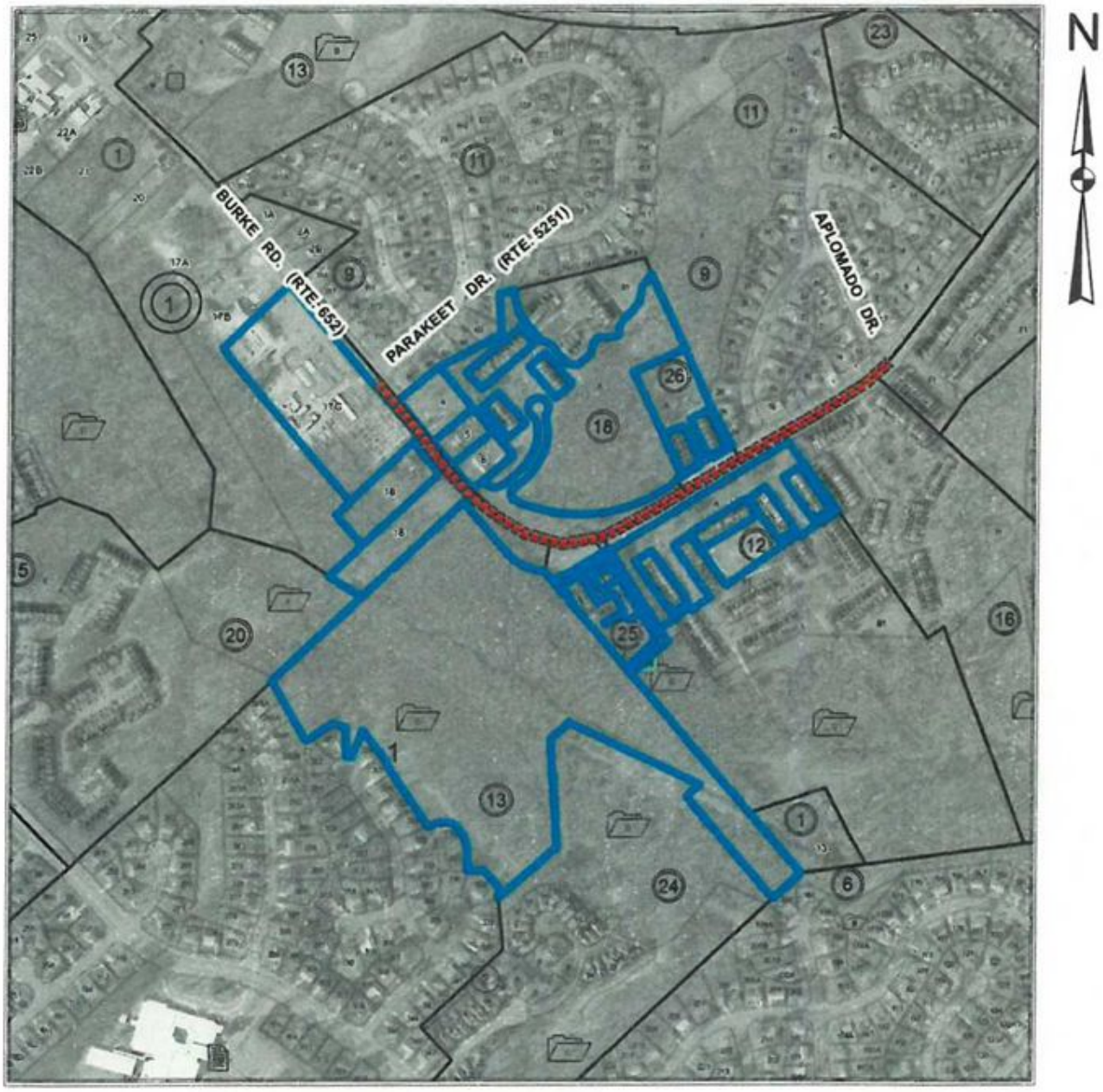
FISCAL IMPACT:
Funding is available in Project 2G40-087-000, Spot Program in Fund 40010, County and Regional Transportation Projects. This project is included in the Adopted FY 2021 – FY 2025 Capital Improvement Program (with future Fiscal Years to FY 2030) and is included in the Board's Transportation Priorities Plan adopted on January 28, 2014, and as amended on December 3, 2019. No additional funding is being requested from the Board.

ENCLOSED DOCUMENTS:
Attachment A - Project Location Map
Attachment B - Listing of Affected Properties

STAFF:
Rachel Flynn, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation
Randolph W. Bartlett, Director, Department of Public Works and Environmental Services (DPWES)
Ronald N. Kirkpatrick, Deputy Director, DPWES, Capital Facilities

ASSIGNED COUNSEL:
Pamela K. Pelto, Assistant County Attorney

Attachment A



BURKE RD REALIGNMENT
APLOMADO DR TO PARAKEET DR

Project: 2G40-087-003

Tax Map: 078-4 **Springfield District**

Affected Properties:

Proposed Improvements:

0 5 10 20 Miles



ATTACHMENT B

LISTING OF AFFECTED PROPERTIES
Project 2G40-087-003
Burke Road Realignment – Aplomado Drive to Parakeet Drive
(Springfield District)

PROPERTY OWNER(S)	TAX MAP NUMBER
1. Community Havens Inc. Address: 9332 Burke Road, Burke, VA 22015	078-4-01-0004
2. Darrell C. Marshall, Trustee Carol A. Marshall, Trustee Address: 9319 Burke Road, Burke, VA 22015	078-4-01-0016
3. Ronald A. DeAngelis Leta DeAngelis Address: 9401 Burke Road, Burke, VA 22015	078-4-01-0017-C
4. Darrell C. Marshall, Trustee Carol A. Marshall, Trustee Address: 9325 Burke Road, Burke, VA 22015	078-4-01-0018
5. Heritage Square North HOA Address: Common area at Burke Road @ Heritage Square Drive	078-4-18-0000-A
6. Meadow Brook Cove HOA, Inc. Address: Common area at Burke Road @ Meadow Brook Drive	078-4-26-0000-A

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 4

Authorization to Advertise a Public Hearing on the Acquisition of Certain Land Rights Necessary for the Construction of Mount Vernon Memorial Highway Trail from George Washington's Gristmill Entrance to Southwood Drive (Mount Vernon District)

ISSUE:
Board authorization to advertise a public hearing on the acquisition of certain land rights necessary for the construction of Project 2G40-088-026, Mount Vernon Memorial Highway Trail from George Washington's Gristmill entrance to Southwood Drive, Fund 40010, County and Regional Transportation Projects.

RECOMMENDATION:
The County Executive recommends that the Board authorize advertisement of a public hearing for April 13, 2021, at 2:30 p.m.

TIMING:
Board action is requested on March 9, 2021, to provide sufficient time to advertise the proposed public hearing on the acquisition of certain land rights necessary to keep this project on schedule.

BACKGROUND:
The Mount Vernon Memorial Highway Trail project is proposed to complete the missing segments within the Fairfax County portion of the Potomac Heritage National Scenic Trail. The project consists of the construction of approximately 6,200 linear feet of ten-foot-wide asphalt trail. The project is located adjacent to the north side of Mount Vernon Memorial Highway (Route 235) between George Washington's Gristmill entrance and Southwood Drive. The project also involves the construction of a new pedestrian bridge adjacent to the Mount Vernon Memorial Highway Bridge spanning Dogue Creek. A proposed storm sewer system will be installed to replace the existing roadside ditch and to minimize property impacts.

Land rights for these improvements are required on 13 properties, six of which have been acquired by the Land Acquisition Division. Four of the 13 properties are Fairfax County Park Authority and Fairfax County School Board. The construction of this project requires the acquisition of street dedication, storm drainage, retaining wall, trail, traffic signal equipment, and grading agreement and temporary construction

easements.

Negotiations are in progress with the affected property owners; however, because resolution of these acquisitions is not imminent, it may be necessary for the Board to utilize quick-take eminent domain powers to commence construction of this project on schedule. These powers are conferred upon the Board by statute, namely, Va. Code Ann. Sections 15.2-1903 through 15.2-1905 (as amended). Pursuant to these provisions, a public hearing is required before property interests can be acquired in such an accelerated manner.

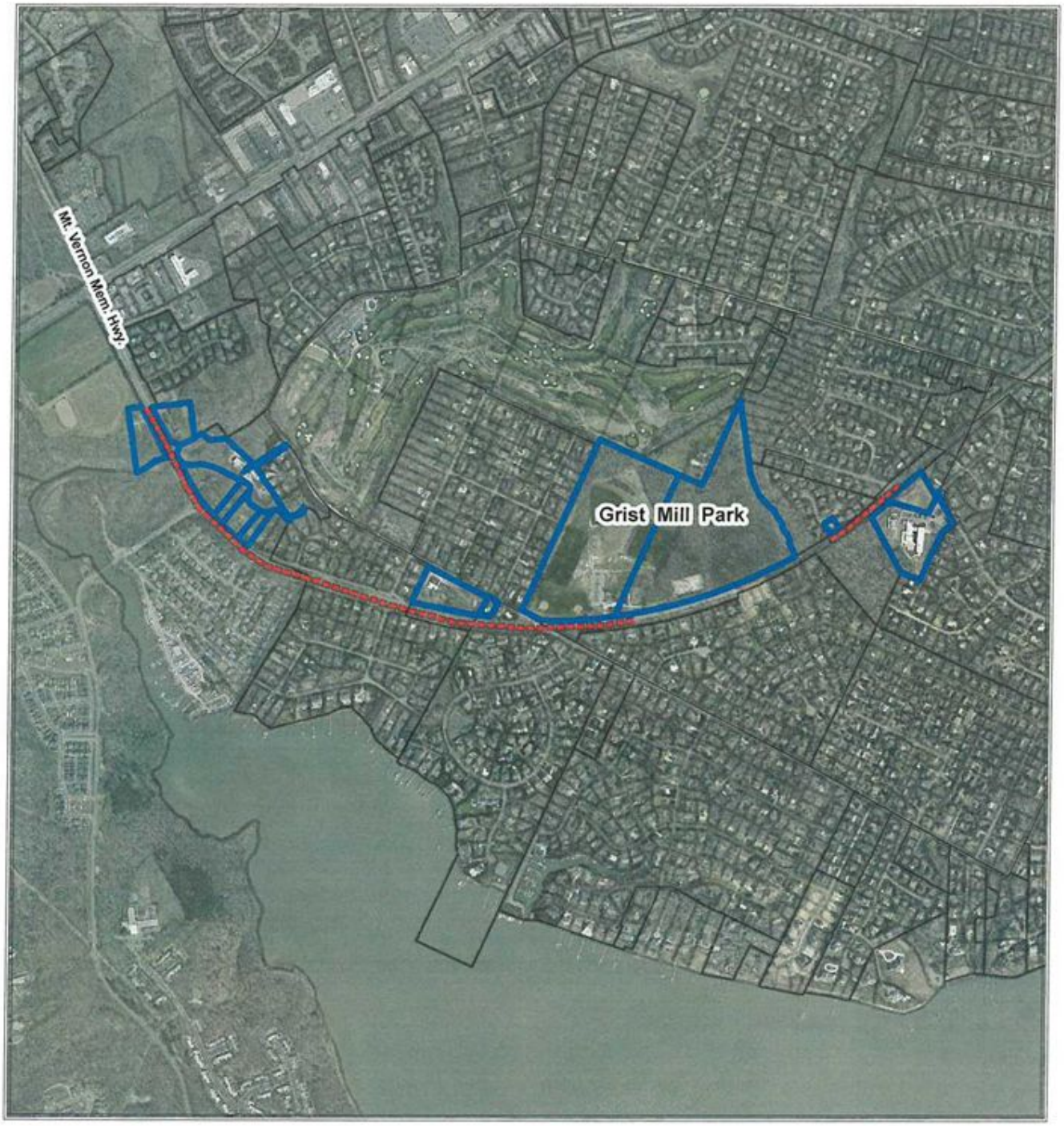
FISCAL IMPACT:
Funding is available in Project 2G40-088-000, County Six Year Plan Bike & Pedestrian Program, Fund 40010, County and Regional Transportation Projects. This project is included in the Adopted FY 2021 – FY 2025 Capital Improvement Program (with future Fiscal Years to FY 2030) and is part of the Board's Transportation Priorities Plan adopted on January 28, 2014, and as amended on December 3, 2019. No additional funding is being requested from the Board.

ENCLOSED DOCUMENTS:
Attachment A - Project Location Map
Attachment B - Listing of Affected Properties

STAFF:
Rachel Flynn, Deputy County Executive
Tom Biesiadny, Director, Department of Transportation
Randolph W. Bartlett, Director, Department of Public Works and Environmental Services (DPWES)
Ronald N. Kirkpatrick, Deputy Director, DPWES, Capital Facilities

ASSIGNED COUNSEL:
Pamela K. Pelto, Assistant County Attorney

ATTACHMENT A



N

Mount Vernon Memorial Hwy. Trail

Mount Vernon District

Tax Map: 109-2;110-1;110-3 **Project: 2G40-088-026**

Affected Properties:

Proposed Improvements:

0 0.15 0.3 0.6 Miles



ATTACHMENT B

LISTING OF AFFECTED PROPERTIES
Project 2G40-088-026
Mount Vernon Memorial Highway Trail from George Washington's Gristmill Entrance to Southwood Drive
(Mount Vernon District)

PROPERTY OWNER(S)	TAX MAP NUMBER
1. Deretta A. Poling Cathy M. Poling Address: 5500 Mount Vernon Memorial Highway, Alexandria VA 22309	109-2-01-0033
2. Mount Vernon Ladies Association of the Union Address: 5515 Mount Vernon Memorial Highway, Alexandria, VA 22309	109-2-01-0028
3. Trustees of The St. James' Episcopal Church Address: 5614 Old Mill Road, Alexandria, VA 22309	110-1-01-0004B

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 5

Authorization to Advertise a Public Hearing to Consider an Ordinance to Amend and Readopt Section 67.1-10-2 of the Fairfax County Code Relating to Sewer Service Charges, Base Charges, Availability Charges, Fixture Unit Charges, Charges for Hauled Wastewater, and Clarification of the Intent Behind Base Charges Adjustments

ISSUE:
Authorization to advertise a public hearing to consider an ordinance that proposes to amend and readopt Fairfax County Code Section 67.1-10-2, relating to sewer service charges, base charges, availability charges, fixture unit charges, charges for hauled wastewater, and clarifying the intent behind adjustment of sewer base charges:

1) re-affirming the sewer service charges for FY 2021, adjusting the sewer service charges for FY 2022 through FY 2025, and establishing the sewer service charges for FY 2026;
2) re-affirming the base charges for FY 2021, adjusting the base charges for FY 2022 through FY 2025, and establishing the base charges for FY 2026;
3) re-affirming the availability charges (including the fixture unit rate for nonresidential uses) for FY 2021, adjusting the availability charges for FY 2022 through FY 2025, and establishing the availability charges for FY 2026;
4) re-affirming the hauled wastewater charges for FY 2021, adjusting the hauled wastewater charges for FY 2022 through FY 2025, and establishing the hauled wastewater charges for FY 2026; and
5) clarifying the intent behind base charge adjustments for upsized commercial water meters.

Although the sewer charges in the sewer ordinance, Chapter 67.1, are multi-year, all sewer charges are reviewed, adjusted as necessary, and adopted annually to ensure sewer charges are accurately priced.

RECOMMENDATION:
The County Executive recommends that the Board authorize advertisement of a public hearing on April 13, 2021, at 3:00 p.m. to consider these ordinances.

Board Agenda Item
March 9, 2021

TIMING:
Board action is requested on March 9, 2021, to provide sufficient time to advertise the proposed public hearing for adoption of these ordinances on April 13, 2021, at 3:00 p.m.

BACKGROUND:
In January 2021, the Wastewater Management Program and its consultants, Raftelis Financial Consultants, Inc. (Raftelis), completed the annual "Revenue Sufficiency and Rate Analysis" (the Rate Study) for the sewer System. based upon the results of the Rate Study, changes are proposed to the previously approved rates for FY 2022 to FY 2025 and new rates are proposed for FY 2026.

The following proposed 5-year rate schedule will meet the Program's current and projected 5-year revenue requirements of approximately $1.5 billion by increasing both the base charge and sewer Service charge, which is the industry practice. This allows for recovering a portion of the Program's costs through the base charge and recovering the remaining required revenues through the sewer Service charge, based on the volume of water consumed. New or revised rates that were not advertised as part of last year's annual rate schedule review are shown in **bold**. Note that the proposed adjustments to base charges and sewer service charges for FY 2022 through FY 2025 are less than those presented to the Board during last year's budget process.

The Proposed base charge of $36.54 per quarterly bill will recover 22.3 percent of the costs in FY 2022. Industry practice is to recover 25 to 30 percent of the total costs through a base charge. In order to strive towards such recovery rate, a phased-in approach is being proposed, as shown in the table on the following page.

Board Agenda Item
March 9, 2021

BASE CHARGE SCHEDULE* Cost ($) per Quarterly Bill Proposed New Rates in **Bold**						
Type of Connection	Current Rate	**New Rate**				
	FY 2021	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**
Residential (3/4" meter)	$32.91	**$36.54**	**$41.03**	**$45.05**	**$49.48**	**$51.95**
All customers based on meter size						
3/4" and smaller, or no meter	$32.91	**$36.54**	**$41.03**	**$45.05**	**$49.48**	**$51.95**
1"	$82.28	**$91.35**	**$102.58**	**$112.63**	**$123.70**	**$129.88**
1 1/2"	$164.55	**$182.70**	**$205.15**	**$225.25**	**$247.40**	**$259.75**
2"	$263.28	**$292.32**	**$328.24**	**$360.40**	**$395.84**	**$415.60**
3"	$493.65	**$548.10**	**$615.45**	**$675.75**	**$742.20**	**$779.25**
4"	$822.75	**$913.50**	**$1,025.75**	**$1,126.25**	**$1,237.00**	**$1,298.75**
6"	$1,645.50	**$1,827.00**	**$2,051.50**	**$2,252.50**	**$2,474.00**	**$2,597.50**
8"	$2,632.80	**$2,923.20**	**$3,282.40**	**$3,604.00**	**$3,958.40**	**$4,156.00**
10" and larger	$3,784.65	**$4,202.10**	**$4,718.45**	**$5,180.75**	**$5,690.20**	**$5,974.25**

***Adjustment to the base charge for nonresidential customers who have sub-meters for irrigation and other water uses that do not enter the sewer system must be justified.**

SEWER SERVICE CHARGE SCHEDULE* Per 1,000 gallons of water consumption Proposed New Rates in **Bold**						
	Current Rate	**New Rate**				
	FY 2021	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**
sewer Service charge	$7.28	**$7.72**	**$8.18**	**$8.47**	**$8.76**	**$9.20**

*Proposed adjustments to base charges and sewer service charges for FY 2022 through FY 2025 are less than those presented to the Board during last year's budget process.

Board Agenda Item
March 9, 2021

PROPOSED AVAILABILITY CHARGE SCHEDULE

The County has completed reviewing the adequacy of the amount of the availability charge. based upon the results of this review, the availability charge is proposed to increase to $8,507 from $8,340, a 2.0 percent increase, for a single-family residence in FY 2022 and 1 percent increases from FY 2023 to FY 2026. The availability charge is a one-time charge, which is paid at the time of connection to the sewer system. The revised, five-year rate schedule for the availability charges is as follows:

AVAILABILITY CHARGE SCHEDULE Proposed New Rates in **Bold**						
Type of Connection	Current Rate	**New Rate**				
	FY 2021	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**
Single Family Detached	$8,340	**$8,507**	**$8,592**	**$8,678**	**$8,765**	**$8,853**
Lodging House, Hotel, Inn or Tourist Cabin	$8,340	**$8,507**	**$8,592**	**$8,678**	**$8,765**	**$8,853**
Townhouse	$6,672	**$6,806**	**$6,874**	**$6,942**	**$7,012**	**$7,082**
Apartment	$6,672	**$6,806**	**$6,874**	**$6,942**	**$7,012**	**$7,082**
Mobile Home	$6,672	**$6,806**	**$6,874**	**$6,942**	**$7,012**	**$7,082**
Any other residential dwelling unit	$6,672	**$6,806**	**$6,874**	**$6,942**	**$7,012**	**$7,082**
Hotels, Motels, or Dormitory rental unit	$2,085	**$2,127**	**$2,148**	**$2,170**	**$2,191**	**$2,213**

availability charges for all non-residential uses will be computed as the number of fixture units (including roughed-in fixture units) in accordance with Part I of the current Virginia Uniform Statewide Building Code, Section 101.2, Note 1, which incorporates by reference the 2012 International Plumbing Code (Chapter 7, Section 709), times the fixture unit rate with a minimum charge equivalent to one (1) single family detached dwelling per premises.

The revised, five-year rate schedule for the fixture unit charge for non-residential uses is as follows:

AVAILABILITY CHARGE SCHEDULE Cost ($) per Quarterly Bill Proposed New Rates in **Bold**						
	Current Rate	**New Rates**				
	FY 2021	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**
Nonresidential per fixture unit	$417	**$425**	**$430**	**$434**	**$438**	**$443**

The County's sewer service charges, base charges, and availability charges remain very competitive on a local basis. Below are average annual sewer service billings and availability charges per Single Family Residential Equivalent (SFRE) for Fairfax County compared to other regional jurisdictions, as of December 2020 (FY 2021). Average sewer service billings for the other regional jurisdictions have been developed by applying each jurisdiction's equivalent base charge and sewer service rate to appropriate SFRE water usage determined from Fairfax Water's average water usage for SFREs.

Comparison of Average Service charges and availability charges for SFREs as of December 2020 (FY 2021)
based on 18,000 gallons per quarter for all jurisdictions

Jurisdiction*	Average Annual sewer Service Billing	sewer availability Fees
DCWASA	**$1,239.23**	**----**
City of Alexandria	**$1,052**	**$8,859**
WSSC (improved)	**$841**	**$14,500**
Arlington County	**$669**	**$2,760**
Fairfax County	**$655**	**$8,340**
Prince William County	**$624**	**$10,800**
Loudoun Water	**$513**	**$8,541**

The table below outlines base charges by other regional utilities for comparison to Fairfax County's current base charge of $32.91 as of December 2020 (FY 2021).

Quarterly base charges for sewer Service for Residential Customers	
DC Water	$ 66.00
Prince William County Service Authority	$ 36.30
Loudoun Water	$ 35.81
Alexandria Renew Enterprises	$ 34.62
Fairfax County	**$ 32.91**
Washington Suburban Sanitation Commission	$ 28.50
Neighboring Utilities Average	**$ 40.25**

HAULED WASTEWATER CHARGES

The County's Septage Receiving Facility (SRF) was constructed to receive and treat septage from local onsite sewage disposal systems in accordance with Section 15.2-2123 of the Code of Virginia. In addition, the SRF receives landfill leachate, portable toilet waste, restaurant grease, and recycled carwash water. hauled wastewater charges were introduced in FY 2020 to recover a portion of the costs of operation, maintenance, and upcoming necessary improvements to the SRF. The proposed charges for FY 2022 are as follows:

(1) High-Strength Waste - $27 per 1,000 gallons of the hauler's truck capacity for septic tank and restaurant grease wastes.

(2) Low-Strength Waste - Low-Strength Waste - $7.72 per 1,000 gallons of the hauler's truck capacity for portable toilet, recycled carwash water, landfill leachate, or other such low strength waste. This rate is based on the proposed sewer Service charge for FY 2022 and will be modified as the sewer Service charge is adjusted in the future.

FISCAL IMPACT:
In FY 2022, assuming a water usage for a typical residential customer of 18,000 gallons/quarter (or 72,000 gallons/year), the annual sewer bill will be approximately $702 per year, which is an increase of 7 percent or $46.20 over the FY 2021 annual sewer bill. This is equal to an increase of $3.85 per month.

In FY 2022, revenue is projected to increase approximately $33.2 million over the FY 2021 Revised Budget Plan due to the proposed rate increase to sewer Service charge, base charge, availability Fee charge, and hauled Wastewater charge. Revenues from the collection of sewer service charges, base charges, availability charges, and hauled wastewater charges are recorded in Fund 69000, sewer Revenue.

Board Agenda Item
March 9, 2021

ENCLOSED DOCUMENTS:
Attachment I: The Proposed Amendment to Chapter 67.1 Article 10 (charges), Section 2 of the Code of the County of Fairfax (clean and redlined versions)
Attachments Ia, and Ib: Proposed Public Hearing Advertisements for charges for sewer Service, base, availability, Fixture Unit and hauled Wastewater

STAFF:
Rachel Flynn, Deputy County Executive
Randolph W. Bartlett, Director, Department of Public Works and Environmental Services (DPWES)
Eleanor Ku Codding, Deputy Director, DPWES, Stormwater and Wastewater Management Divisions
Shahram Mohsenin, Director, DPWES, Wastewater Planning and Monitoring Division

ASSIGNED COUNSEL:
Emily H. Smith, Assistant County Attorney

AN ORDINANCE AMENDING
ARTICLE 10 OF CHAPTER 67.1 OF THE FAIRFAX COUNTY CODE, RELATING TO CHARGES FOR THE AVAILABILITY OF, CONNECTION TO, AND/OR USE OF THE SEWERAGE FACILITIES OF THE COUNTY

AN ORDINANCE to amend the Fairfax County Code by amending and readopting Section 67.1-10-2, relating to charges for the availability of, connection to, and/or use of the sewerage facilities of the County.

Be it ordained by the Board of Supervisors of Fairfax County:

1. **That Section 67.1-10-2 of the Fairfax County Code is amended and readopted as follows:**

ARTICLE 10. - Charges

Section 67.1-10-2. – Availability, Connection, Lateral Spur, Service Charges, Base Charges, and Hauled Wastewater Charges.

(a) *Availability Charges:*

(1) *Residential uses:* The following schedule of availability charges for residential uses desiring to connect to the Facilities of the County is hereby established and imposed:

		Fiscal Year (July 1-June 30)					
	Customer Class	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
(A)	Single-Family Detached	$8,340	$8,507	$8,592	$8,678	$8,765	$8,853
(B)	Lodging House, Hotel, Inn or Tourist Cabin	8,340	8,507	8,592	8,678	8,765	8,853
(C)	Townhouse	6,672	6,806	6,874	6,942	7,012	7,082
(D)	Apartment	6,672	6,806	6,874	6,942	7,012	7,082
(E)	Mobile Home	6,672	6,806	6,874	6,942	7,012	7,082
(F)	Any other residential dwelling unit	6,672	6,806	6,874	6,942	7,012	7,082

(G)	Hotel, Motel, or Dormitory rental unit	2,085	2,127	2,148	2,170	2,191	2,213

(2) *Commercial and all other uses:* The following schedule of fixture unit rates for computing availability charges for all nonresidential uses is hereby established and imposed:

	Fiscal Year (July 1-June 30)					
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Fixture unit rate	$417	$425	$430	$434	$438	$443

The availability charge will be computed as the number of fixture units (including roughed-in fixture units) in accordance with Part I of the current Virginia Uniform Statewide Building Code (VUSBC), (as amended), Section 101.2, Note 1, which incorporates by reference the 2012 International Plumbing Code (Chapter 7, Section 709) ("VUSBC"), times the fixture unit rate with a minimum charge equivalent to one single-family detached dwelling per premises. For Significant Industrial Users with wastewater discharge permits authorizing discharge into the Integrated Sewer System and other industrial or commercial Users determined by the Director to have processes generating significant wastewater flows, the availability charge will be calculated on the basis of equivalent units. One equivalent unit is equal to 280 gallons per day and rated equal to one single-family detached dwelling unit. Therefore, the availability charge for Significant Industrial Users and other industrial or commercial Users determined by the Director to have processes generating significant flow will be equal to the current rate for a single-family detached dwelling unit times the number of equivalent units associated with the permitted flow. The number of equivalent units is equal to the permitted or projected flow in gallons per day divided by 280 gallons per day. Fixture unit counts, for Users having fixtures discharging continuously or semi-continuously to drainage system leading to the County sanitary sewer facilities, shall be increased by two fixture units for each gallon per minute of such continuous or semi-continuous discharge. The rate of such discharge shall be deemed to be that rate certified by the manufacturer of the fixture or other equipment, or such other rates as the Director shall determine.

(3) *Effective date:* The rate will change on July 1st of each new fiscal year. The rate applicable to each fiscal year is subject to annual review by the Board.

(b) *Connection Charges.*

(1) *Residential and community uses:* Except as otherwise provided herein, there is hereby established and imposed a connection charge of $152.50 per front foot of premises (with a minimum of $7,625 and a maximum of $15,250 for the connection of single-family detached and attached dwellings, churches, schools, fire stations, community centers, or other such similar community uses, to the Facilities of the County.

(2) *All other uses:* There is hereby established and imposed a connection charge of $152.50 per front foot of premises (with a minimum charge of $15,250) for the connection of all other uses to the Facilities of the County.

(3) The connection charges established and imposed above shall not apply to premises to be connected to the Facilities of the County if such Facilities of the County are constructed totally at private expense.

(4) For the purposes of Section 67.1-10-2(b), front foot of premises will be determined by measuring the frontage of the premises located on the street address side of the premises.

(c) *Lateral spur charges:* There is hereby established and imposed a lateral spur charge of $600.00 for the connection of all uses to a lateral spur, where such lateral spur has been installed by the County at the expense of Fairfax County.

(d) *Service charges:* There are hereby established and imposed the following sanitary sewer service charges:

	Sewer Service Charges — Fiscal Year (July 1 - June 30)					
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Sewer Service Charge, $/1,000 gallons	$7.28	$7.72	$8.18	$8.47	$8.76	$9.20

(e) *Base charges:* There are hereby established and imposed the following quarterly base charges in addition to the sewer service charge:

BASE CHARGE Cost ($) per Quarterly Bill						
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Residential Base Charge	$32.91	$36.54	$41.03	$45.05	$49.48	$51.95

Commercial: (meter size)						
¾" and smaller, or no meter	$32.91	$36.54	$41.03	$45.05	$49.48	$51.95
1"	$82.28	$91.35	$102.58	$112.63	$123.70	$129.88
1½"	$164.55	$182.70	$205.15	$225.25	$247.40	$259.75
2"	$263.28	$292.32	$328.24	$360.40	$395.84	$415.60
3"	$493.65	$548.10	$615.45	$675.75	$742.20	$779.25
4"	$822.75	$913.50	$1,025.75	$1,126.25	$1,237.00	$1,298.75
6"	$1,645.50	$1,827.00	$2,051.50	$2,252.50	$2,474.00	$2,597.50
8"	$2,632.80	$2,923.20	$3,282.40	$3,604.00	$3,958.40	$4,156.00
10" and larger	$3,784.65	$4,202.10	$4,718.45	$5,180.75	$5,690.20	$5,974.25

If requested, the Base Charge for nonresidential customers, who have irrigation systems and other water uses that do not enter the sewer system, will be adjusted. Calculations prepared by a Virginia licensed professional engineer must be provided to demonstrate what size of main water meter would be necessary for the building to accommodate only the water that enters the sewer system. The Base Charge will be adjusted based on the calculated meter size. In no case the Base Charge will be smaller than that for ¾" meter.

(1) *Effective date:* The Service charges and Base charges will change on July 1st of each new fiscal year. For metered accounts, the change is effective with meter readings beginning October 1st of each year. For unmetered accounts, the change is effective with billings beginning October 1st of each year.

(2) *Premises having a metered water supply:*

Category of Use	Service Charges
(A) Single-family detached and single-family attached dwellings such as townhouses, duplexes, multiplexes, semi-	For each 1,000 gallons of water, based on winter-quarter consumption or current quarterly consumption, as measured by the service line

detached, rowhouses, garden court and patio houses with a separate water service line meter.	meter, whichever is lower, a charge equal to the effective unit cost rate ($/1,000 gallons).
(B) All other uses.	For each 1,000 gallons of water as measured by the water service line, a charge equal to the effective unit cost rate ($/1,000 gallons).
(C) All users.	Base charge per billing as established in Section 67.1-10-2(e).

(D) The winter-quarter-maximum consumption is determined as follows:

(i) The quarterly-daily-average consumption of water is the consumption, measured by the water service line meter for the period between meter readings divided by the number of days elapsed between meter readings.

(ii) The quarterly consumption is 91.5 times the quarterly-daily-average consumption of water in leap years or 91.25 times the quarterly-daily-average consumption in non-leap years.

(iii) The winter-quarter-consumption is the quarterly consumption determined at the water service line meter reading scheduled between February 1 and April 30. The winter-quarter-consumption of each respective year shall be applicable to the four quarterly sewer billings rendered in conjunction with the regular meter reading scheduled after the next May.

(iv) All water delivered to the premises, as measured by the winter-quarter-consumption for single-family dwellings and townhouses or the meter of all other Users, shall be deemed to have been discharged to the Facilities of the County. However, any person may procure the installation of a second water service line meter. Such person may notify the Director of such installation, in which event the Director shall make such inspection or inspections as may be necessary to ascertain that no water delivered to the premises or only the water delivered through any such additional meter may enter the Facilities of the County. If the Director determines that water delivered through an additional meter may not enter the Facilities of the County, no charge hereunder shall be based upon such volume of water delivery. If the Director determines that only the water delivered through an additional meter may enter the Facilities of the County, only the water recorded on the additional meter shall be charged. In the alternative, any person may procure the installation of a sewage meter which shall be of a type and installed in a manner approved by the Director, who shall make periodic inspection to ensure accurate operation of said meter; in such event, the charge imposed hereunder shall be based upon the volume measured

by such meter. The cost of all inspections required by the foregoing provisions for elective metering, as determined by normal cost accounting methods, shall be an additional charge for sanitary sewer service to the premises on which such meter or meters are installed.

(E) For single-family premises as in (e)(2)(A) not able to register valid meter readings for the measurement of winter-quarter-consumption the following billing method shall apply:

(i) Premises not existing, unoccupied or occupied by a different household during the applicable winter quarter, or which due to unfavorable weather, meter failure or for any other reason of meter inaccuracy cannot register valid meter readings, shall not be considered to have a valid meter reading for the purpose of winter-quarter-consumption measurement.

(ii) Such premises may be billed on the basis of the average winter-quarter-consumption for similar dwelling units or the current quarterly consumption, as registered by water service line meter, or based on historical water usage. Accounts for single-family premises established by a builder for sewerage service during construction shall be considered a nonresidential use.

(3) Premises not having metered water supply or having both well water and public metered water supply:

(A) Single-family dwellings, as in (e)(2)(A). An amount equal to the average winter-quarter-consumption, during the applicable winter quarter, of similar dwelling units, times the effective unit cost rate ($/1,000 gallons). In the alternative, any such single-family residential customer may apply to the County, via the water supplier providing water service to the area in which the residential customer is located, for special billing rates, based on average per capita consumption of water in similar type units.

(B) All other uses: The charge shall be based upon the number of fixture units and load factor in accordance with the VUSBC, Table I and Table II Fixture Units and Load Factors for All Other Premises. There shall be an additional charge equal to the effective unit cost ($/1,000 gallons) for the volume discharged by fixtures discharging continuously or semi-continuously. Volume of continuous or semi-continuous discharge shall be deemed to be that used in determining availability charge.

(f) Hauled Wastewater Charges: There are hereby established and imposed the following Hauled Wastewater Charges:

(1) High-Strength Waste - $27 per 1,000 gallons of the hauler's truck capacity for septic tank and restaurant grease wastes.

(2) Low-Strength Waste – Based on prevailing Sewer Service Charge per 1,000 gallons of the hauler's truck capacity for portable toilet, landfill leachate, or any such low-strength wastewater. This rate will be adjusted as the Sewer Service Charge is adjusted from time to time.

154

155 *TABLE I. Table of Fixture Units*

Type of Fixture or Group of Fixtures	Drainage Fixture Unit Value (DFU)
Commercial automatic clothes washer (2" standpipe)	3
Bathroom group consisting of water closet, lavatory and bathtub or shower stall (Residential):	
Tank type closet	6
Bathtub (with or without overhead shower)	2
Combination sink-and-tray with food disposal unit	2
Combination sink-and-tray with 1½" trap	2
Dental unit or cuspidor	1
Dental lavatory	1
Drinking fountain	½
Dishwasher, domestic	2
Floor drains with 2" waste	2
Kitchen sink, domestic, with one 1½" waste	2
Kitchen sink, domestic, with food waste grinder and/or dishwasher	2
Lavatory with 1¼" waste	1
Laundry tray (1 or 2 compartments)	2

Shower stall	2
Sinks:	
Surgeon's	3
Flushing rim (with valve)	6
Service (trap standard)	3
Service (P trap)	2
Pot, scullery, etc.	4
Urinal, pedestal, syphon jet blowout	6
Urinal, wall lip	4
Urinal stall, washout	4
Urinal trough (each 6-ft. section)	2
Wash sink (circular or multiple) each set of faucets	2
Water closet, tank-operated	4
Water closet, valve-operated	6
Fixture drain or trap size:	
1¼ inches and smaller	1
1½ inches	2
2 inches	3
2½ inches	4
3 inches	5

4 inches	6

156

157

158 *TABLE II.*
159 *Fixture Units and Load Factors for All Other Premises*
160 *Quarterly Service Charges*
161 Fiscal Year (July 1 - June 30)

Fixture Units	Load Factor	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
20 or less	1.00	182.00	193.00	204.50	211.75	219.00	230.00
21 to 30	1.25	227.50	241.25	255.63	264.69	273.75	287.50
31 to 40	1.45	263.90	279.85	296.53	307.04	317.55	333.50
41 to 50	1.60	291.20	308.80	327.20	338.80	350.40	368.00
51 to 60	1.75	318.50	337.75	357.88	370.56	383.25	402.50
61 to 70	1.90	345.80	366.70	388.55	402.33	416.10	437.00
71 to 80	2.05	373.10	395.65	419.23	434.09	448.95	471.50
81 to 90	2.20	400.40	424.60	449.90	465.85	481.80	506.00
91 to 100	2.30	418.60	443.90	470.35	487.03	503.70	529.00
101 to 110	2.40	436.80	463.20	490.80	508.20	525.60	552.00
111 to 120	2.55	464.10	492.15	521.48	539.96	558.45	586.50
121 to 130	2.65	482.30	511.45	541.93	561.14	580.35	609.50
131 to 140	2.75	500.50	530.75	562.38	582.31	602.25	632.50

141 to 150	2.85	518.70	550.05	582.83	603.49	624.15	655.50
151 to 160	2.95	536.90	569.35	603.28	624.66	646.05	678.50
161 to 170	3.05	555.10	588.65	623.73	645.84	667.95	701.50
171 to 180	3.15	573.30	607.95	644.18	667.01	689.85	724.50
181 to 190	3.25	591.50	627.25	664.63	688.19	711.75	747.50
191 to 200	3.35	609.70	646.55	685.08	709.36	733.65	770.50
201 to 210	3.45	627.90	665.85	705.53	730.54	755.55	793.50
211 to 220	3.55	646.10	685.15	725.98	751.71	777.45	816.50
221 to 230	3.65	664.30	704.45	746.43	772.89	799.35	839.50
231 to 240	3.75	682.50	723.75	766.88	794.06	821.25	862.50
241 to 250	3.85	700.70	743.05	787.33	815.24	843.15	885.50
251 to 260	3.90	709.80	752.70	797.55	825.83	854.10	897.00
261 to 270	4.00	728.00	772.00	818.00	847.00	876.00	920.00
271 to 280	4.05	737.10	781.65	828.23	857.59	886.95	931.50
281 to 290	4.10	746.20	791.30	838.45	868.18	897.90	943.00
291 to 300	4.15	755.30	800.95	848.68	878.76	908.85	954.50
301 to 310	4.20	764.40	810.60	858.90	889.35	919.80	966.00
311 to 320	4.30	782.60	829.90	879.35	910.53	941.70	989.00
321 to 330	4.40	800.80	849.20	899.80	931.70	963.60	1,012.00
331 to 340	4.50	819.00	868.50	920.25	952.88	985.50	1,035.00

341 to 350	4.60	837.20	887.80	940.70	974.05	1,007.40	1,058.00
351 to 360	4.70	855.40	907.10	961.15	995.23	1,029.30	1,081.00
361 to 370	4.80	873.60	926.40	981.60	1,016.40	1,051.20	1,104.00
371 to 380	4.90	891.80	945.70	1,002.05	1,037.58	1,073.10	1,127.00
381 to 390	5.00	910.00	965.00	1,022.50	1,058.75	1,095.00	1,150.00
391 to 400	5.10	928.20	984.30	1,042.95	1,079.93	1,116.90	1,173.00
401 to 410	5.20	946.40	1,003.60	1,063.40	1,101.10	1,138.80	1,196.00
411 to 420	5.30	964.60	1,022.90	1,083.85	1,122.28	1,160.70	1,219.00
421 to 430	5.40	982.80	1,042.20	1,104.30	1,143.45	1,182.60	1,242.00
431 to 440	5.50	1,001.00	1,061.50	1,124.75	1,164.63	1,204.50	1,265.00
441 to 450	5.60	1,019.20	1,080.80	1,145.20	1,185.80	1,226.40	1,288.00
451 to 460	5.70	1,037.40	1,100.10	1,165.65	1,206.98	1,248.30	1,311.00
461 to 470	5.80	1,055.60	1,119.40	1,186.10	1,228.15	1,270.20	1,334.00
471 to 480	5.90	1,073.80	1,138.70	1,206.55	1,249.33	1,292.10	1,357.00
481 to 490	6.00	1,092.00	1,158.00	1,227.00	1,270.50	1,314.00	1,380.00
491 to 500	6.10	1,110.20	1,177.30	1,247.45	1,291.68	1,335.90	1,403.00
501 to 525	6.25	1,137.50	1,206.25	1,278.13	1,323.14	1,368.75	1,437.50
526 to 550	6.50	1,183.00	1,254.50	1,329.25	1,376.38	1,423.50	1,495.00
551 to 575	6.75	1,228.50	1,302.75	1,380.38	1,429.31	1,478.25	1,552.50
576 to 600	7.00	1,274.00	1,351.00	1,431.50	1,482.25	1,533.00	1,610.10

601 to 625	7.25	1,319.50	1,399.25	1,482.63	1,535.19	1,587.75	1,667.50
626 to 650	7.50	1,365.00	1,447.50	1,533.75	1,588.13	1,642.50	1,725.00
651 to 675	7.75	1,410.50	1,495.75	1,584.88	1,641.06	1,697.25	1,782.50
676 to 700	8.00	1,456.00	1,544.00	1,636.00	1,694.00	1,752.00	1,840.00
701 to 725	8.20	1,492.40	1,582.60	1,676.90	1,736.35	1,795.80	1,886.00
726 to 750	8.40	1,528.80	1,621.20	1,717.80	1,778.70	1,839.60	1,932.00
751 to 775	8.60	1,565.20	1,659.80	1,758.70	1,821.05	1,883.40	1,978.00
776 to 800	8.80	1,601.60	1,698.40	1,799.60	1,863.40	1,927.20	2,024.00
801 to 825	9.00	1,638.00	1,737.00	1,840.50	1,905.75	1,971.00	2,07.00
826 to 850	9.20	1,674.40	1,775.60	1,881.40	1,948.10	2,014.80	2,116.00
851 to 875	9.35	1,701.70	1,804.55	1,912.08	1,979.86	2.047.65	2,150.50
876 to 900	9.50	1,729.00	1,833.50	1,942.75	2,011.630	2,080.50	2,185.00
901 to 925	9.65	1,756.30	1,862.45	1,973.43	2,043.39	2,113.35	2,219.50
926 to 950	9.80	1,783.60	1,891.40	2,004.10	2,075.15	2,146.20	2,254.00
951 to 975	9.95	1,810.90	1,920.35	2,034.78	2,106.91	2,179.05	2,288.50
976 to 1,000	10.15	1,847.30	1,958.95	2,075.68	2,149.26	2,222.85	2,334.50
1,001 to 1,050	10.55	1,920.10	2,036.15	2,157.48	2,233.96	2,310.45	2,426.50
1,051 to 1,100	10.90	1,983.80	2,03.70	2,229.05	2,308.08	2,387.10	2,507.00
1,101 to 1,150	11.30	2,056.60	2,180.90	2,310.85	2,392.78	2,474.70	2,599.00
1,151 to 1,200	11.70	2,129.40	2,258.10	2,392.65	2,477.48	2,562.30	2,691.00

1,201 to 1,250	12.00	2,184.00	2,316.00	2,454.00	2,541.00	2,628.00	2,760.00
1,251 to 1,300	12.35	2,247.70	2,383.55	2,525.58	2,615.11	2,704.65	2,840.50
1,301 to 1,350	12.70	2,311.40	2,451.10	2,597.15	2,689.23	2,781.30	2,921.00
1,351 to 1,400	13.00	2,366.00	2,509.00	2,658.50	2,752.75	2,847.00	2,990.00
1,401 to 1,450	13.25	2,411.50	2,557.25	2,709.63	2,805.69	2,901.75	3,047.50
1,451 to 1,500	13.50	2,457.00	2,605.50	2,760.75	2,858.63	2,956.50	3,105.00
1,501 to 1,600	14.05	2,557.10	2,711.65	2,873.23	2,975.09	3,076.95	3,231.50
1,601 to 1,700	14.60	2,657.20	2,817.80	2,985.70	3,091.55	3,197.40	3,358.00
1,701 to 1,800	15.15	2,757.30	2,923.95	3,098.18	3,208.01	3,317.85	3,484.50
1,801 to 1,900	15.70	2,857.40	3,030.10	3,210.65	3,324.48	3,438.30	3,611.00
1,901 to 2,000	16.25	2,957.50	3,136.25	3,323.13	3,440.94	3,558.75	3,737.50
2,001 to 2,100	16.80	3,057.60	3,242.40	3,435.60	3,557.40	3,679.20	3,864.00
2,101 to 2,200	17.35	3,157.70	3,348.55	3,548.08	3,673.86	3,799.65	3,990.50
2,201 to 2,300	17.90	3,257.80	3,454.70	3,660.55	3,790.33	3,920.10	4,017.00
2,301 to 2,400	18.45	3,357.90	3,560.85	3,773.03	3,906.79	4,040.55	4,243.50
2,401 to 2,500	19.00	3,458.00	3,667.00	3,885.50	4,023.25	4,161.00	4,370.00
2,501 to 2,600	19.55	3,558.10	3,773.15	3,997.98	4,139.71	4,281.45	4,496.50
2,601 to 2,700	20.10	3,658.20	3,879.30	4,110.45	4,256.18	4,401.90	4,623.00
2,701 to 2,800	20.65	3,758.30	3,984.45	4,222.93	4,372.64	4,522.35	4,749.50
2,801 to 2,900	21.20	3,858.40	4,091.60	4,335.40	4,489.10	4,642.80	4,876.00

2,901 to 3,000	21.75	3,958.50	4,197.75	4,447.88	4,605.56	4,763.25	5,002.50
3,001 to 4,000	26.00	4,732.00	5,018.00	5,317.00	5,505.50	5,694.00	5,980.00
4,001 to 5,000	29.50	5,369.00	5,693.50	6,032.75	6,246.63	6,460.50	6,785.00
5,001 to 6,000	33.00	6,006.00	6,369.00	6,748.50	6,987.75	7,227.00	7,590.00
6,001 to 7,000	36.40	6,624.80	67,025.20	7,443.80	7,707.70	7,971.60	8,372.00
7,001 to 8,000	39.60	7,207.20	7,642.80	8,098.20	8,385.30	8,672.40	9,108.00
8,001 to 9,000	42.75	7,780.50	8,250.75	8,742.38	9,052.31	9,362.25	9,832.50
9,001 to 10,000	46.00	8,372.00	8,878.00	9,407.00	9,740.50	10,074.00	10,580.00
10,001 to 11,000	48.85	8,890.70	9,428.05	9,989.83	10,343.99	10,698.15	11,235.50
11,001 to 12,000	51.60	9,391.20	9,958.80	10,552.20	10,926.30	11,300.40	11,868.00
12,001 to 13,000	54.60	9,937.20	10,537.80	11,165.70	11,561.55	11,957.40	12,558.00
13,001 to 14,000	57.40	10,446.80	11,078.20	11,738.30	12,154.45	12,570.60	13,202.00
14,001 to 15,000	60.00	10,920.00	11,580.00	12,270.00	12,705.00	13,140.00	13,800.00

NOTES:

(1) Base charge is not included in rates above.

GIVEN under my hand this _____ day of _____, 2021

_____

Jill G. Cooper
Clerk for the Board of Supervisors

AN ORDINANCE AMENDING
ARTICLE 10 OF CHAPTER 67.1 OF THE FAIRFAX COUNTY CODE, RELATING TO CHARGES FOR THE AVAILABILITY OF, CONNECTION TO, AND/OR USE OF THE SEWERAGE FACILITIES OF THE COUNTY

AN ORDINANCE to amend the Fairfax County Code by amending and readopting Section 67.1-10-2, relating to charges for the availability of, connection to, and/or use of the sewerage facilities of the County.

Be it ordained by the Board of Supervisors of Fairfax County:

1. **That Section 67.1-10-2 of the Fairfax County Code is amended and readopted as follows:**

ARTICLE 10. - Charges

Section 67.1-10-2. – Availability, Connection, Lateral Spur, Service Charges, Base Charges, and Hauled Wastewater Charges.

(a) *Availability Charges:*

(1) *Residential uses:* The following schedule of availability charges for residential uses desiring to connect to the Facilities of the County is hereby established and imposed:

		Fiscal Year (July 1-June 30)					
	Customer Class	FY 2021~~0~~	FY 2022~~1~~	FY 2023~~2~~	FY 2024~~3~~	FY 2025~~4~~	FY 2026~~5~~
(A)	Single-Family Detached	$8,340	$8,507~~423~~	$8,592~~423~~	$8,678~~423~~	$8,765~~423~~	$8,853~~423~~
(B)	Lodging House, Hotel, Inn or Tourist Cabin	8,340	8,507~~423~~	8,592~~423~~	8,678~~423~~	8,765~~423~~	8,853~~423~~
(C)	Townhouse	6,672	6,806~~739~~	6,874~~739~~	6,942~~739~~	7,012~~6,739~~	7,082~~6,739~~
(D)	Apartment	6,672	6,806~~739~~	6,874~~739~~	6,942~~739~~	7,012~~6,739~~	7,082~~6,739~~
(E)	Mobile Home	6,672	6,806~~739~~	6,874~~739~~	6,942~~739~~	7,012~~6,739~~	7,082~~6,739~~

(F)	Any other residential dwelling unit	6,672	6,806~~739~~	6,874~~739~~	6,942~~739~~	7,012~~6,739~~	7,082~~6,739~~
(G)	Hotel, Motel, or Dormitory rental unit	2,085	2,127~~06~~	2,148~~06~~	2,170~~06~~	2,191~~06~~	2,213~~106~~

(2) *Commercial and all other uses:* The following schedule of fixture unit rates for computing availability charges for all nonresidential uses is hereby established and imposed:

	Fiscal Year (July 1-June 30)					
	FY 2021~~0~~	FY 2022~~1~~	FY 2023~~2~~	FY 2024~~3~~	FY 2025~~4~~	FY 2026~~5~~
Fixture unit rate	$417	$425~~1~~	$430~~21~~	$434~~21~~	$438~~21~~	$443~~21~~

The availability charge will be computed as the number of fixture units (including roughed-in fixture units) in accordance with Part I of the current Virginia Uniform Statewide Building Code (VUSBC), (as amended), Section 101.2, Note 1, which incorporates by reference the 2012 International Plumbing Code (Chapter 7, Section 709) ("VUSBC"), times the fixture unit rate with a minimum charge equivalent to one single-family detached dwelling per premises. For Significant Industrial Users with wastewater discharge permits authorizing discharge into the Integrated Sewer System and other industrial or commercial Users determined by the Director to have processes generating significant wastewater flows, the availability charge will be calculated on the basis of equivalent units. One equivalent unit is equal to 280 gallons per day and rated equal to one single-family detached dwelling unit. Therefore, the availability charge for Significant Industrial Users and other industrial or commercial Users determined by the Director to have processes generating significant flow will be equal to the current rate for a single-family detached dwelling unit times the number of equivalent units associated with the permitted flow. The number of equivalent units is equal to the permitted or projected flow in gallons per day divided by 280 gallons per day. Fixture unit counts, for Users having fixtures discharging continuously or semi-continuously to drainage system leading to the County sanitary sewer facilities, shall be increased by two fixture units for each gallon per minute of such continuous or semi-continuous discharge. The rate of such discharge shall be deemed to be that rate certified by the manufacturer of the fixture or other equipment, or such other rates as the Director shall determine.

(3) *Effective date:* The rate will change on July 1st of each new fiscal year. The rate applicable to each fiscal year is subject to annual review by the Board.

(b) *Connection Charges.*

(1) *Residential and community uses:* Except as otherwise provided herein, there is hereby established and imposed a connection charge of $152.50 per front foot of premises (with a minimum of $7,625 and a maximum of $15,250 for the connection of single-family detached and attached dwellings, churches, schools, fire stations, community centers, or other such similar community uses, to the Facilities of the County.

(2) *All other uses:* There is hereby established and imposed a connection charge of $152.50 per front foot of premises (with a minimum charge of $15,250) for the connection of all other uses to the Facilities of the County.

(3) The connection charges established and imposed above shall not apply to premises to be connected to the Facilities of the County if such Facilities of the County are constructed totally at private expense.

(4) For the purposes of Section 67.1-10-2(b), front foot of premises will be determined by measuring the frontage of the premises located on the street address side of the premises.

(c) *Lateral spur charges:* There is hereby established and imposed a lateral spur charge of $600.00 for the connection of all uses to a lateral spur, where such lateral spur has been installed by the County at the expense of Fairfax County.

(d) *Service charges:* There are hereby established and imposed the following sanitary sewer service charges:

	Sewer Service Charges — Fiscal Year (July 1 - June 30)					
	FY 2021~~0~~	FY 2022~~1~~	FY 2023~~2~~	FY 2024~~3~~	FY 2025~~4~~	FY 2026~~5~~
Sewer Service Charge, $/1,000 gallons	$7.28	$7.72~~56~~	$8.18~~7.94~~	$8.47~~20~~	$8.76~~48~~	$9.20~~8.90~~

(e) *Base charges:* There are hereby established and imposed the following quarterly base charges in addition to the sewer service charge:

BASE CHARGE Cost ($) per Quarterly Bill

	FY 2021~~0~~	FY 2022~~1~~	FY 2023~~2~~	FY 2024~~3~~	FY 2025~~4~~	FY 2026~~5~~
Residential Base Charge	$32.91	$36.54~~5.50~~	$41.03~~9.05~~	$45.05~~3.12~~	$49.48~~7.36~~	$51.95~~49.73~~
Commercial: (meter size)						
¾" and smaller, or no meter	$32.91	$36.54~~5.50~~	$41.03~~9.05~~	$45.05~~3.12~~	$49.48~~7.36~~	$51.95~~49.73~~
1"	$82.28	$91.35~~88.75~~	$102.58~~97.63~~	$112.63~~07.80~~	$123.70~~18.40~~	$129.88~~4.33~~
1½"	$164.55	$182.70~~77.50~~	$205.15~~195.25~~	$225.25~~15.60~~	$247.40~~36.80~~	$259.75~~48.65~~
2"	$263.28	$292.32~~84.00~~	$328.24~~12.40~~	$360.40~~44.96~~	$395.84~~78.88~~	$415.60~~397.84~~
3"	$493.65	$548.10~~32.50~~	$615.45~~585.75~~	$675.75~~46.80~~	$742.20~~10.40~~	$779.25~~45.95~~
4"	$822.75	$913.50~~887.50~~	$1,025.75~~976.25~~	$1,126.25~~078.00~~	$1,237~~184~~.00	$1,298.75~~43.25~~
6"	$1,645.50	$1,827~~775~~.00	$2,051.50~~1,952.50~~	$2,252.50~~156.00~~	$2,474~~368~~.00	$2,597.~~486~~.50
8"	$2,632.80	$2,923.20~~840.00~~	$3,282.40~~124.00~~	$3,604.00~~449.60~~	$3,958.40~~78.80~~	$4,156.00~~3,978.40~~
10" and larger	$3,784.65	$4,202.10~~082.50~~	$4,718.45~~490.75~~	$5,180.75~~4,958.80~~	$5,690.20~~446.40~~	$5,974.25~~718.95~~

70

If requested, the Base Charge for nonresidential customers, who have ~~sub-meters for~~ irrigation systems and other water uses that do not enter the sewer system, will be adjusted. Calculations prepared by a Virginia licensed professional engineer must be provided to demonstrate what size of main water meter would be necessary for the building to accommodate only the water that enters the sewer system. The Base Charge will be adjusted based on the calculated meter size. ~~based on their sub-meter size per above table.~~ In no case the Base Charge will be smaller than that for ¾" ~~and smaller~~ meter.

(1) *Effective date:* The Service charges and Base charges will change on July 1st of each new fiscal year. For metered accounts, the change is effective with meter readings beginning October 1st of each year. For unmetered accounts, the change is effective with billings beginning October 1st of each year.

(2) *Premises having a metered water supply:*

Category of Use	Service Charges
(A) Single-family detached and single-family attached dwellings such as townhouses, duplexes, multiplexes, semi-detached, rowhouses, garden court and patio houses with a separate water service line meter.	For each 1,000 gallons of water, based on winter-quarter consumption or current quarterly consumption, as measured by the service line meter, whichever is lower, a charge equal to the effective unit cost rate ($/1,000 gallons).
(B) All other uses.	For each 1,000 gallons of water as measured by the water service line, a charge equal to the effective unit cost rate ($/1,000 gallons).
(C) All users.	Base charge per billing as established in Section 67.1-10-2(e).

(D) The winter-quarter-maximum consumption is determined as follows:

(i) The quarterly-daily-average consumption of water is the consumption, measured by the water service line meter for the period between meter readings divided by the number of days elapsed between meter readings.

(ii) The quarterly consumption is 91.5 times the quarterly-daily-average consumption of water in leap years or 91.25 times the quarterly-daily-average consumption in non-leap years.

(iii) The winter-quarter-consumption is the quarterly consumption determined at the water service line meter reading scheduled between February 1 and April 30. The winter-quarter-consumption of each respective year shall be applicable to

the four quarterly sewer billings rendered in conjunction with the regular meter reading scheduled after the next May.

(iv) All water delivered to the premises, as measured by the winter-quarter-consumption for single-family dwellings and townhouses or the meter of all other Users, shall be deemed to have been discharged to the Facilities of the County. However, any person may procure the installation of a second water service line meter. Such person may notify the Director of such installation, in which event the Director shall make such inspection or inspections as may be necessary to ascertain that no water delivered to the premises or only the water delivered through any such additional meter may enter the Facilities of the County. If the Director determines that water delivered through an additional meter may not enter the Facilities of the County, no charge hereunder shall be based upon such volume of water delivery. If the Director determines that only the water delivered through an additional meter may enter the Facilities of the County, only the water recorded on the additional meter shall be charged. In the alternative, any person may procure the installation of a sewage meter which shall be of a type and installed in a manner approved by the Director, who shall make periodic inspection to ensure accurate operation of said meter; in such event, the charge imposed hereunder shall be based upon the volume measured by such meter. The cost of all inspections required by the foregoing provisions for elective metering, as determined by normal cost accounting methods, shall be an additional charge for sanitary sewer service to the premises on which such meter or meters are installed.

(E) For single-family premises as in (e)(2)(A) not able to register valid meter readings for the measurement of winter-quarter-consumption the following billing method shall apply:

(i) Premises not existing, unoccupied or occupied by a different household during the applicable winter quarter, or which due to unfavorable weather, meter failure or for any other reason of meter inaccuracy cannot register valid meter readings, shall not be considered to have a valid meter reading for the purpose of winter-quarter-consumption measurement.

(ii) Such premises may be billed on the basis of the average winter-quarter-consumption for similar dwelling units or the current quarterly consumption, as registered by water service line meter, or based on historical water usage. Accounts for single-family premises established by a builder for sewerage service during construction shall be considered a nonresidential use.

(3) Premises not having metered water supply or having both well water and public metered water supply:

(A) Single-family dwellings, as in (e)(2)(A). An amount equal to the average winter-quarter-consumption, during the applicable winter quarter, of similar dwelling units, times the effective unit cost rate ($/1,000 gallons). In the alternative, any such single-family residential customer may apply to the County, via the water supplier providing water service to the area in which the residential customer is located, for

special billing rates, based on average per capita consumption of water in similar type units.

(B) All other uses: The charge shall be based upon the number of fixture units and load factor in accordance with the VUSBC, Table I and Table II Fixture Units and Load Factors for All Other Premises. There shall be an additional charge equal to the effective unit cost ($/1,000 gallons) for the volume discharged by fixtures discharging continuously or semi-continuously. Volume of continuous or semi-continuous discharge shall be deemed to be that used in determining availability charge.

(f) Hauled Wastewater Charges: There are hereby established and imposed the following Hauled Wastewater Charges:

(1) High-Strength Waste - $27 per 1,000 gallons of the hauler's truck capacity for septic tank and restaurant grease wastes.

(2) Low-Strength Waste – Based on prevailing Sewer Service Charge per 1,000 gallons of the hauler's truck capacity for portable toilet, landfill leachate, or any such low-strength wastewater. This rate will be adjusted as the Sewer Service Charge is adjusted from time to time.

TABLE I. Table of Fixture Units

Type of Fixture or Group of Fixtures	Drainage Fixture Unit Value(DFU)
Commercial automatic clothes washer (2" standpipe)	3
Bathroom group consisting of water closet, lavatory and bathtub or shower stall (Residential):	
Tank type closet	6
Bathtub (with or without overhead shower)	2
Combination sink-and-tray with food disposal unit	2
Combination sink-and-tray with 1½" trap	2

Dental unit or cuspidor	1
Dental lavatory	1
Drinking fountain	½
Dishwasher, domestic	2
Floor drains with 2" waste	2
Kitchen sink, domestic, with one 1½" waste	2
Kitchen sink, domestic, with food waste grinder and/or dishwasher	2
Lavatory with 1¼" waste	1
Laundry tray (1 or 2 compartments)	2
Shower stall	2
Sinks:	
Surgeon's	3
Flushing rim (with valve)	6
Service (trap standard)	3
Service (P trap)	2
Pot, scullery, etc.	4
Urinal, pedestal, syphon jet blowout	6
Urinal, wall lip	4
Urinal stall, washout	4
Urinal trough (each 6-ft. section)	2

Wash sink (circular or multiple) each set of faucets	2
Water closet, tank-operated	4
Water closet, valve-operated	6
Fixture drain or trap size:	
1¼ inches and smaller	1
1½ inches	2
2 inches	3
2½ inches	4
3 inches	5
4 inches	6

TABLE II.
Fixture Units and Load Factors for All Other Premises
Quarterly Service Charges
Fiscal Year (July 1 - June 30)

Fixture Units	Load Factor	FY 2021~~0~~	FY 2022~~1~~	FY 2023~~2~~	FY 2024~~3~~	FY 2025~~4~~	FY 2026~~5~~
20 or less	1.00	182.00	193~~89~~.00	204~~198~~.50	211.75~~05.00~~	219~~2~~.00	230.00~~22.50~~
21 to 30	1.25	227.50	241~~36~~.25	255.63~~48.13~~	264.69~~56.25~~	273.75~~65.00~~	287.50~~78.13~~

31 to 40	1.45	263.90	279.854.05	296.5387.83	307.04297.25	317.5507.40	333.5022.63
41 to 50	1.60	291.20	308.802.40	327.2017.60	338.8028.00	350.4039.20	36856.00
51 to 60	1.75	318.50	3370.75	357.8847.38	370.5658.75	383.2571.00	402.50389.38
61 to 70	1.90	345.80	366.7059.10	388.5577.15	402.33389.50	416.1002.80	437.0022.75
71 to 80	2.05	373.10	395.6587.45	419.2306.93	434.0920.25	448.9534.60	471.5056.13
81 to 90	2.20	400.40	424.6015.80	449.9036.70	465.8551.00	481.8066.40	506.00489.50
91 to 100	2.30	418.60	443.9034.70	470.3556.55	487.0371.50	503.70487.60	529.0011.75
101 to 110	2.40	436.80	463.2053.60	490.8076.40	508.20492.00	525.6008.80	55234.00
111 to 120	2.55	464.10	492.1581.95	521.4806.18	539.9622.75	558.4540.60	586.5067.38
121 to 130	2.65	482.30	511.4500.85	541.9326.03	561.1443.25	580.3561.80	609.50589.63
131 to 140	2.75	500.50	53019.75	562.3845.88	582.3163.75	602.25583.00	632.5011.88

141 to 150	2.85	518.70	550.0538.65	582.8365.73	603.49584.25	624.1504.20	655.5034.13
151 to 160	2.95	536.90	569.3557.55	603.28585.58	624.6604.75	646.0525.40	678.5056.38
161 to 170	3.05	555.10	588.6576.45	623.7305.43	645.8425.25	667.9546.60	701.50678.63
171 to 180	3.15	573.30	607.95595.35	644.1825.28	667.0145.75	689.8567.80	724.5000.88
181 to 190	3.25	591.50	6274.25	664.6345.13	688.1966.25	711.75689.00	747.5023.13
191 to 200	3.35	609.70	646.5533.15	685.0864.98	709.36686.75	733.6510.20	770.5045.38
201 to 210	3.45	627.90	665.8552.05	705.53684.83	730.5407.25	755.5531.40	793.5067.63
211 to 220	3.55	646.10	685.1570.95	725.9804.68	751.7127.75	777.4552.60	816.50789.88
221 to 230	3.65	664.30	704.45689.85	746.4324.53	772.8948.25	799.3573.80	839.5012.13
231 to 240	3.75	682.50	72308.75	766.8844.38	794.0668.75	821.25795.00	862.5034.38

241 to 250	3.85	700.70	743.0527.65	787.3364.23	815.24789.25	843.1516.20	885.5056.63
251 to 260	3.90	709.80	752.7037.10	797.5574.15	825.83799.50	854.1026.80	897.0067.75
261 to 270	4.00	728.00	77256.00	818794.00	84720.00	87648.00	920890.00
271 to 280	4.05	737.10	781.6565.45	828.2303.93	857.5930.25	886.9558.60	931.5001.13
281 to 290	4.10	746.20	791.3074.90	838.4513.85	868.1840.50	897.9069.20	943.0012.25
291 to 300	4.15	755.30	800.95784.35	848.6823.78	878.7650.75	908.85879.80	954.5023.38
301 to 310	4.20	764.40	810.60793.80	858.9033.70	889.3561.00	919.80890.40	966.0034.50
311 to 320	4.30	782.60	829.9012.70	879.3553.55	910.53881.50	941.7011.60	989.0056.75
321 to 330	4.40	800.80	849.2031.60	899.8073.40	931.7002.00	963.6032.80	1,012979.00
331 to 340	4.50	819.00	868.5050.50	920.25893.25	952.8822.50	985.5054.00	1,035.0001.25

341 to 350	4.60	837.20	887.8069.40	940.7013.10	974.0543.00	1,007.40975.20	1,058.0023.50
351 to 360	4.70	855.40	907.10888.30	961.1532.95	995.2363.50	1,029.30996.40	1,081.0045.75
361 to 370	4.80	873.60	926.4007.20	981.6052.80	1,016.40984.00	1,051.2017.60	1,104068.00
371 to 380	4.90	891.80	945.7026.10	1,002.05972.65	1,037.5804.50	1,073.1038.80	1,127.00090.25
381 to 390	5.00	910.00	9645.00	1,022992.50	1,058.7525.00	1,09560.00	1,150.0012.50
391 to 400	5.10	928.20	984.3063.90	1,042.9512.35	1,079.9345.50	1,116.90081.20	1,173.0034.75
401 to 410	5.20	946.40	1,003.60982.80	1,063.4032.20	1,101.10066.00	1,138.8002.40	1,19657.00
411 to 420	5.30	964.60	1,022.9001.70	1,083.8552.05	1,122.28086.50	1,160.7023.60	1,219.00179.25
421 to 430	5.40	982.80	1,042.2020.60	1,104.30071.90	1,143.4507.00	1,182.6044.80	1,242.0001.50
431 to 440	5.50	1,001.00	1,06139.50	1,124091.75	1,164.6327.50	1,204.50166.00	1,265.0023.75

441 to 450	5.60	1,019.20	1,080.8058.40	1,145.2011.60	1,185.8048.00	1,226.40187.20	1,28846.00
451 to 460	5.70	1,037.40	1,100.10077.30	1,165.6531.45	1,206.98168.50	1,248.3008.40	1,311.00268.25
461 to 470	5.80	1,055.60	1,119.40096.20	1,186.1051.30	1,228.15189.00	1,270.2029.60	1,334.00290.50
471 to 480	5.90	1,073.80	1,138.7015.10	1,206.55171.15	1,249.3309.50	1,292.1050.80	1,357.0012.75
481 to 490	6.00	1,092.00	1,15834.00	1,227191.00	1,270.5030.00	1,314272.00	1,38035.00
491 to 500	6.10	1,110.20	1,177.3052.90	1,247.4510.85	1,291.6850.50	1,335.90293.20	1,403.00357.25
501 to 525	6.25	1,137.50	1,206181.25	1,278.1340.63	1,323.14281.25	1,368.7525.00	1,437.50390.63
526 to 550	6.50	1,183.00	1,25428.50	1,329290.25	1,376.3832.50	1,423.50378.00	1,495.0046.25
551 to 575	6.75	1,228.50	1,302275.75	1,380.3839.88	1,429.31383.75	1,478.2531.00	1,552.5001.88
576 to 600	7.00	1,274.00	1,35123.00	1,431389.50	1,482.2535.00	1,533484.00	1,610.10557.50

601 to 625	7.25	1,319.50	1,39970.25	1,482.6339.13	1,535.19486.25	1,587.7537.00	1,667.5013.13
626 to 650	7.50	1,365.00	1,44717.50	1,533488.75	1,588.1337.50	1,642.50590.00	1,725.00668.75
651 to 675	7.75	1,410.50	1,49564.75	1,584.8838.38	1,641.06588.75	1,697.2543.00	1,782.5024.38
676 to 700	8.00	1,456.00	1,54412.00	1,636588.00	1,69440.00	1,752696.00	1,840780.00
701 to 725	8.20	1,492.40	1,582.6049.80	1,676.9027.70	1,736.35681.00	1,795.8038.40	1,886.0024.50
726 to 750	8.40	1,528.80	1,621.20587.60	1,717.80667.40	1,778.7022.00	1,839.60780.80	1,932869.00
751 to 775	8.60	1,565.20	1,659.8025.40	1,758.7007.10	1,821.05763.00	1,883.4023.20	1,978.0013.50
776 to 800	8.80	1,601.60	1,698.4063.20	1,799.6046.80	1,863.4004.00	1,927.20865.60	2,0241,958.00
801 to 825	9.00	1,638.00	1,73701.00	1,840786.50	1,905.75845.00	1,97108.00	2,07.0002.50
826 to 850	9.20	1,674.40	1,775.6038.80	1,881.4026.20	1,948.10886.00	2,014.801,950.40	2,116047.00

851 to 875	9.35	1,701.70	1,804.55767.15	1,912.08855.98	1,979.8616.75	2.047.651,982.20	2,150.50080.38
876 to 900	9.50	1,729.00	1,833795.50	1,942885.75	2,011.631,947.50	2,080.5014.00	2,185.0013.75
901 to 925	9.65	1,756.30	1,862.4523.85	1,973.4315.53	2,043.391,978.25	2,113.35045.80	2,219.50147.13
926 to 950	9.80	1,783.60	1,891.4052.20	2,004.101,945.30	2,075.1509.00	2,146.2077.60	2,254.00180.50
951 to 975	9.95	1,810.90	1,920.35880.55	2,034.781,975.08	2,106.91039.75	2,179.0509.40	2,288.5013.88
976 to 1,000	10.15	1,847.30	1,958.9518.35	2,075.6814.78	2,149.26080.75	2,222.85151.80	2,334.50258.38
1,001 to 1,050	10.55	1,920.10	2,036.151,993.95	2,157.48094.18	2,233.96162.75	2,310.45236.60	2,426.50347.38
1,051 to 1,100	10.90	1,983.80	2,03.70060.10	2,229.05163.65	2,308.08234.50	2,387.1010.80	2,507.00425.25
1,101 to 1,150	11.30	2,056.60	2,180.9035.70	2,310.85243.05	2,392.7816.50	2,474.70395.60	2,599.0014.25

1,151 to 1,200	11.70	2,129.40	2,258.1011.30	2,392.6522.45	2,477.48398.50	2,562.30480.40	2,691.0003.25
1,201 to 1,250	12.00	2,184.00	2,316268.00	2,454382.00	2,541460.00	2,628544.00	2,76670.00
1,251 to 1,300	12.35	2,247.70	2,383.5534.15	2,525.58451.48	2,615.11531.75	2,704.65618.20	2,840.50747.88
1,301 to 1,350	12.70	2,311.40	2,451.1000.30	2,597.1520.95	2,689.2303.50	2,781.30692.40	2,921.00825.75
1,351 to 1,400	13.00	2,366.00	2,509457.00	2,6580.50	2,752.75665.00	2,847756.00	2,990.00892.50
1,401 to 1,450	13.25	2,411.50	2,55704.25	2,709.63630.13	2,805.69716.25	2,901.75809.00	3,047.502,948.13
1,451 to 1,500	13.50	2,457.00	2,605551.50	2,760679.75	2,858.63767.50	2,956.50862.00	3,105.00003.75
1,501 to 1,600	14.05	2,557.10	2,711.65655.45	2,873.23788.93	2,975.09880.25	3,076.952,978.60	3,231.50126.13

1,601 to 1,700	14.60	2,657.20	2,817.80~~759.40~~	2,985.70~~898.10~~	3,091.55~~2,993.00~~	3,197.40~~095.20~~	3,358.00~~248.50~~
1,701 to 1,800	15.15	2,757.30	2,923.95~~863.35~~	3,098.18~~07.28~~	3,208.01~~105.75~~	3,317.85~~211.80~~	3,484.50~~370.88~~
1,801 to 1,900	15.70	2,857.40	3,030.10~~2,967.30~~	3,210.65~~116.45~~	3,324.48~~218.50~~	3,438.30~~328.40~~	3,611.00~~493.25~~
1,901 to 2,000	16.25	2,957.50	3,136~~071~~.25	3,323.13~~225.63~~	3,440.94~~331.25~~	3,558.75~~445.00~~	3,737.50~~615.63~~
2,001 to 2,100	16.80	3,057.60	3,242.40~~175.20~~	3,435.60~~334.80~~	3,557.40~~444.00~~	3,679.20~~561.60~~	3,864~~738~~.00
2,101 to 2,200	17.35	3,157.70	3,348.55~~279.15~~	3,548.08~~443.98~~	3,673.86~~556.75~~	3,799.65~~678.20~~	3,990.50~~860.38~~
2,201 to 2,300	17.90	3,257.80	3,454.70~~383.10~~	3,660.55~~553.15~~	3,790.33~~669.50~~	3,920.10~~794.80~~	4,017.00~~3,982.75~~
2,301 to 2,400	18.45	3,357.90	3,560.85~~487.05~~	3,773.03~~662.33~~	3,906.79~~782.25~~	4,040.55~~3,911.40~~	4,243.50~~105.13~~

2,401 to 2,500	19.00	3,458.00	3,667591.00	3,885771.50	4,023.253,895.00	4,161028.00	4,370.00277.50
2,501 to 2,600	19.55	3,558.10	3,773.15694.95	3,997.98880.68	4,139.71007.75	4,281.45144.60	4,496.50349.88
2,601 to 2,700	20.10	3,658.20	3,879.30798.90	4,110.453,989.85	4,256.18120.50	4,401.90261.20	4,623.00472.25
2,701 to 2,800	20.65	3,758.30	3,984.4502.85	4,222.93099.03	4,372.64233.25	4,522.35377.80	4,749.50594.63
2,801 to 2,900	21.20	3,858.40	4,091.6006.80	4,335.40208.20	4,489.10346.00	4,642.80494.40	4,876717.00
2,901 to 3,000	21.75	3,958.50	4,19710.75	4,447.88317.38	4,605.56458.75	4,763.25611.00	5,002.504,839.38
3,001 to 4,000	26.00	4,732.00	5,0184,914.00	5,317161.00	5,505.50330.00	5,694512.00	5,980785.00
4,001 to 5,000	29.50	5,369.00	5,693575.50	6,0325,855.75	6,246.63047.50	6,460.50254.00	6,785.00563.75

5,001 to 6,000	33.00	6,006.00	6,369237.00	6,748550.50	6,987.75765.00	7,2276,996.00	7,590.00342.50
6,001 to 7,000	36.40	6,624.80	67,025.20,879.60	7,443.80225.40	7,707.70462.00	7,971.60716.80	8,372099.00
7,001 to 8,000	39.60	7,207.20	7,642.80484.40	8,098.207,860.60	8,385.30118.00	8,672.40395.20	9,1088,811.00
8,001 to 9,000	42.75	7,780.50	8,250.079.75	8,742.38485.88	9,052.318,763.75	9,362.25063.00	9,832.50511.88
9,001 to 10,000	46.00	8,372.00	8,878694.00	9,407131.00	9,740.50430.00	10,0749,752.00	10,580235.00
10,001 to 11,000	48.85	8,890.70	9,428.05232.65	9,989.83696.73	10,343.99014.25	10,698.1535 6.20	11,235.500,869.13
11,001 to 12,000	51.60	9,391.20	9,958.80752.40	10,552.2024 2.60	10,926.3057 8.00	11,300.400,939.20	11,868481.00
12,001 to 13,000	54.60	9,937.20	10,537.8031 9.40	11,165.700,838.10	11,561.5519 3.00	11,957.4057 5.20	12,558.0014 8.50

13,001 to 14,000	57.40	10,446.80	11,078.200~~,848.60~~	11,738.303~~93.90~~	12,154.451~~,767.00~~	12,570.601~~68.80~~	13,202.002~~,771.50~~
14,001 to 15,000	60.00	10,920.00	11,583~~4~~0.00	12,270~~1,910~~.00	12,705~~300~~.00	13,140~~2,720~~.00	13,803~~5~~0.00

NOTES:

(1) Base charge is not included in rates above.

GIVEN under my hand this _____ day of _____, 2021

_____
Jill G. Cooper
Clerk for the Board of Supervisors

FAIRFAX COUNTY NOTICE OF PROPOSED
SEWER SERVICE CHARGE & BASE CHARGE - RATE REVISIONS

NOTICE is hereby given that the Fairfax County Board of Supervisors will hold a **PUBLIC HEARING** on:

Tuesday
April 13, 2021
commencing at 3:00 p.m.

on the matter of an amendment to Chapter 67.1 of the Fairfax County Code (Sanitary Sewers and Sewage Disposal), Article 10 (Charges), Section 2. Public hearing before the Board of Supervisors of Fairfax County, Virginia, to be held electronically (due to the State of Emergency caused by the COVID-19 pandemic).

Pursuant to the authority of the Virginia Code, Title 15.2., Chapter 21 (including, without limitation, Sections 15.2-2111, 2119, and 2122), the Board of Supervisors of Fairfax County, Virginia, proposes to amend and readopt Section 67.1-10-2 of the Fairfax County Code by, among other things, changing all references to the unit cost of sewer service and the base charge as follows:

SEWER SERVICE CHARGE SCHEDULE
Per 1,000 gallons of water consumption

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Sewer Service Charge	$7.28	$7.72	$8.18	$8.47	$8.76	$9.20

BASE CHARGE SCHEDULE
Cost ($) per Quarterly Bill

Type of Connection						
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Residential (3/4" meter)	$32.91	$36.54	$41.03	$45.05	$49.48	$51.95
All customers based on meter size						
3/4" and smaller, or no meter	$32.91	$36.54	$41.03	$45.05	$49.48	$51.95
1"	$82.28	$91.35	$102.58	$112.63	$123.70	$129.88
1 1/2"	$164.55	$182.70	$205.15	$225.25	$247.40	$259.75
2"	$263.28	$292.32	$328.24	$360.40	$395.84	$415.60
3"	$493.65	$548.10	$615.45	$675.75	$742.20	$779.25
4"	$822.75	$913.50	$1,025.75	$1,126.25	$1,237.00	$1,298.75
6"	$1,645.50	$1,827.00	$2,051.50	$2,252.50	$2,474.00	$2,597.50
8"	$2,632.80	$2,923.20	$3,282.40	$3,604.00	$3,958.40	$4,156.00
10" and larger	$3,784.65	$4,202.10	$4,718.45	$5,180.75	$5,690.20	$5,974.25

The public hearings are available to view live on Channel 16 and stream live online at www.fairfaxcounty.gov/cableconsumer/channel-16/live-video-stream. Live audio of the meeting may be accessed at 703-324-7700. Those wishing to testify may do so via phone or pre-recorded YouTube video. Speakers wishing to testify via video must register by signing up online below or by calling the [Department of Clerk Services at 703-324-3151, TTY 711/Planning Commission Office at 703-324-2865, TTY 711] and must submit their video no later than 9 a.m. on the day prior to the hearing. Speakers wishing to testify via phone must sign up to testify no later than [12:00 p.m./3:00 p.m.] the day of the hearing to be placed on the Speakers List. Speakers not on the Speakers List may be heard by telephone after the registered speakers have testified. In addition, written testimony and other submissions will be received by mail at 12000 Government Center Parkway, Suite 552, Fairfax, 22035 or by email at [ClerktotheBOS@fairfaxcounty.gov/plancom@fairfaxcounty.gov]. More information on the ways to testify can be found at [https://www.fairfaxcounty.gov/clerkservices/ways-provide-public-hearing-testimony/ https://www.fairfaxcounty.gov/planningcommission/ways-to-provide-public-hearing-testimony.]

As required by law, copies of the full text of proposed ordinances, plans and amendments, as applicable, as well as other documents relating to the aforementioned subjects, are on file and available for review at the [Office of the Clerk for the Board of Supervisors and on the County's website at www.fairfaxcounty.gov/ZED Info/Other]. To make arrangements to view the documents, please contact [the Office of the Clerk for the Board of Supervisors at 703-324-3151/ZED Info/Other].



Fairfax County is committed to nondiscrimination on the basis of disability in all county programs, services and activities and supports the Americans with Disabilities Act by making reasonable accommodations for persons with disabilities. All televised government meetings are closed captioned. Reasonable accommodation is available upon 48 hours advance notice by calling [703-324-3151/703-324-2865] or TTY 711.

GIVEN under my hand this 9th day of March, 2021.

_____

Jill G. Cooper
Clerk to the Board of Supervisors

Ad Run Dates: March 26 and April 2, 2021

FAIRFAX COUNTY NOTICE OF PROPOSED
SEWER AVAILABILITY CHARGES, FIXTURE UNIT RATE AND HAULED WASTEWATER CHARGES - RATE REVISIONS

NOTICE is hereby given that the Fairfax County Board of Supervisors will hold a **PUBLIC HEARING** on:

Tuesday
April 13, 2021
commencing at 3:00 p.m.

on the matter of an amendment to Chapter 67.1 of the Fairfax County Code (Sanitary Sewers and Sewage Disposal), Article 10 (Charges), Section 2. Public hearing before the Board of Supervisors of Fairfax County, Virginia, to be held electronically (due to the State of Emergency caused by the COVID-19 pandemic).

Pursuant to the authority of the Virginia Code, Title 15.2., Chapter 21 (including, without limitation, Sections 15.2-2111, 2119, and 2122), the Board of Supervisors of Fairfax County, Virginia, proposes to amend Section 67.1-10-2 of the Fairfax County Code by, among other things, updating the availability charge schedule for residential, commercial, and all other users desiring to connect to the County sanitary sewer facilities, the fixture unit rate, and proposed hauled wastewater charge as follows:

AVAILABILITY CHARGE SCHEDULE						
Type of Connection						
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Single-Family	$8,340	$8,507	$8,592	$8,678	$8,765	$8,853
Lodging House, Hotel, Inn or Tourist Cabin	$8,340	$8,507	$8,592	$8,678	$8,765	$8,853
Townhouse	$6,672	$6,806	$6,874	$6,942	$7,012	$7,082
Apartment	$6,672	$6,806	$6,874	$6,942	$7,012	$7,082
Mobile Home	$6,672	$6,806	$6,874	$6,942	$7,012	$7,082
Any other residential dwelling unit	$6,672	$6,806	$6,874	$6,942	$7,012	$7,082
Hotels, Motels, or Dormitory rental unit	$2,085	$2,127	$2,148	$2,170	$2,191	$2,213

The availability charge for all nonresidential uses will be computed as the number of fixture units in accordance with the current Virginia Uniform Statewide Building Code times the fixture unit rate with a minimum charge equivalent to one (1) single-family detached dwelling per premises. The revised, five-year rate schedule for the fixture unit charge for nonresidential uses is as follows:

AVAILABILITY CHARGE SCHEDULE Cost ($) per Quarterly Bill						
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Nonresidential per fixture unit	$417	$425	$430	$434	$438	$443

HAULED WASTEWATER CHARGE

The hauled wastewater charge will be calculated based on the size of the wastewater hauler's truck volume capacity as follows:

1. High-strength Waste - $27 per 1,000 gallons for septic tank and restaurant grease waste
2. Low-strength Waste – Based on prevailing sewer service charge per 1,000 gallons for portable toilet, landfill leachate, or any such low-strength wastewater. The proposed sewer service charge for FY 2022 is $7.72 per 1,000 gallons

The public hearings are available to view live on Channel 16 and stream live online at www.fairfaxcounty.gov/cableconsumer/channel-16/live-video-stream. Live audio of the meeting may be accessed at 703-324-7700. Those wishing to testify may do so via phone or pre-recorded YouTube video. Speakers wishing to testify via video must register by signing up online below or by calling the [Department of Clerk Services at 703-324-3151, TTY 711/Planning Commission Office at 703-324-2865, TTY 711] and must submit their video no later than 9 a.m. on the day prior to the hearing. Speakers wishing to testify via phone must sign up to testify no later than [12:00 p.m./3:00 p.m.] the day of the hearing to be placed on the Speakers List. Speakers not on the Speakers List may be heard by telephone after the registered speakers have testified. In addition, written testimony and other submissions will be received by mail at 12000 Government Center Parkway, Suite 552, Fairfax, 22035 or by email at [ClerktotheBOS@fairfaxcounty.gov/plancom@fairfaxcounty.gov]. More information on the ways to testify can be found at [https://www.fairfaxcounty.gov/clerkservices/ways-provide-public-hearing-testimony/ https://www.fairfaxcounty.gov/planningcommission/ways-to-provide-public-hearing-testimony.]

As required by law, copies of the full text of proposed ordinances, plans and amendments, as applicable, as well as other documents relating to the aforementioned subjects, are on file and available for review at the [Office of the Clerk for the Board of Supervisors and on the County's website at www.fairfaxcounty.gov/ZED Info/Other]. To make arrangements to view the documents, please contact [the Office of the Clerk for the Board of Supervisors at 703-324-3151/ZED Info/Other].



Fairfax County is committed to nondiscrimination on the basis of disability in all county programs, services and activities and supports the Americans with Disabilities Act by making reasonable accommodations for persons with disabilities. All televised government meetings are closed captioned. Reasonable accommodation is available upon 48 hours advance notice by calling [703-324-3151/703-324-2865] or TTY 711.

GIVEN under my hand this 9th day of March, 2021.

_____

Jill G. Cooper
Clerk to the Board of Supervisors

Ad Run Dates: March 26 and April 2, 2021

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 6

Authorization for the Department of Neighborhood and Community Services to Apply for and Accept Grant Funding from the U.S. Department of Health and Human Services Associated with the Early Head Start Child Care Partnership and Expansion Grant

ISSUE:
Board of Supervisors authorization is requested for the Department of Neighborhood and Community Services to apply for and accept grant funding, if received, from the U.S. Department of Health and Human Services, in the amount of $1,088,550, including $194,402 in Local Cash Match. Funding will be used to provide services through the County's Early Head Start Child Care Partnership and Expansion programs. This funding will continue existing services being provided to 56 infants and toddlers and their families. The grant period is July 1, 2021 through June 30, 2022. The total required non-federal match will be met through $194,402 in Local Cash Match from the Federal-State Grant Fund and $29,135 from in-kind contributions.

While the Early Head Start Child Care Partnership and Expansion grant is included in the Adopted budget, the grantor has indicated that before funding is awarded, the Board of Supervisors must formally approve the application. If the actual award received is significantly different from the application amount, another item will be submitted to the Board requesting appropriation of grant funds. Otherwise, staff will process the award administratively as per Board policy. Board authorization is also requested for the Chairman of the Board of Supervisors, the County Executive and/or a designee appointed by the County Executive to enter into the grant agreement and any related agreements, including but not limited to Federal Subaward Agreements, on behalf of the County.

RECOMMENDATION:
The County Executive recommends that the Board of Supervisors authorize the Department of Neighborhood and Community Services to apply for and accept grant funding, if received, from the U.S. Department of Health and Human Services. Funding in the amount of $1,088,550, including $194,402 in Local Cash Match, will support the continuation of Early Head Start Child Care Partnership and Expansion services to 56 infants and toddlers and their families. This funding will support 11/11.0 FTE existing grant positions. No new grant positions are being requested with this funding. The County Executive also recommends the Board authorize the Chairman of the Board of Supervisors, the County Executive and/or a designee appointed by the County Executive to enter into the grant agreement and any related agreements, including but not limited to Federal Subaward Agreements, on behalf of the County.

Board Agenda Item
March 9, 2021

TIMING:
Board action is requested on March 9, 2021.

BACKGROUND:
The Department of Neighborhood and Community Services (NCS), Office for Children was awarded a five-year Early Head Start Child Care Partnership and Expansion grant in FY 2015 to serve 56 infants and toddlers and their families by establishing new partnerships with family child care providers and expanding the existing EHS center-based option at the Gum Springs Glen Early Head Start program. Funding of the original grant project expired June 30, 2019 and continuation funding was awarded for a five-year project period on July 1, 2019. This application is for continuation funding for the Early Head Start (EHS) Child Care Partnership and Expansion program. If awarded, this grant application will represent year three of a five-year project period.

This funding will continue existing services being provided to 56 infants and toddlers, and their families, by:

- Sustaining and/or establishing new partnerships with up to 15 regulated family child care providers located across the County in areas where there is greatest need for EHS services (40 children).
- Supporting the two expansion classrooms at the existing EHS center-based option at the Gum Springs Glen Early Head Start program (16 children).

FISCAL IMPACT:
Federal grant funding in the amount of $1,088,550, including $194,402 in Local Cash Match, is being requested to support the continuation of EHS services to 56 infants and toddlers and their families. The total required non-federal match will be met through $194,402 in Local Cash Match from the Federal-State Grant Fund and $29,135 from in-kind contributions. It should be noted that including in-kind contributions, total funding for this program is $1,117,685. This action does not increase the expenditure level of the Federal-State Grant Fund as funds are held in reserve for anticipated grant awards and the Local Cash Match of $194,402 is available from the Local Cash Match Reserve. This grant does allow the recovery of indirect costs; however, because this funding opportunity is highly competitive, the Department of Neighborhood and Community Services has elected to omit inclusion of indirect costs to maximize the proposal's competitive position.

CREATION OF NEW POSITIONS:
There are no new grant positions associated with this award. This funding is a continuation of the existing Early Head Start Child Care Partnership and Expansion

program; therefore, funding will continue to support 11/11.0 FTE positions. The County is under no obligation to continue these positions once grant funding expires.

ENCLOSED DOCUMENTS:
Attachment 1: Early Head Start Child Care Partnership and Expansion Summary of Grant Proposal
Attachment 2: Early Head Start Child Care Partnership and Expansion Letter of Funding Guidance dated January 4, 2021 regarding grant #03HP000205

STAFF:
Christopher A. Leonard, Deputy County Executive
Sarah Allen, Acting Director, NCS
Anne-Marie D. Twohie, Director, Office for Children, NCS

EARLY HEAD START CHILD CARE PARTNERSHIP AND EXPANSION GRANT

SUMMARY OF GRANT PROPOSAL

Grant Title:	Early Head Start Child Care Partnership and Expansion Grant
Funding Agency:	U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start
Applicant:	Department of Neighborhood and Community Services
Partners:	Community Family Child Care Providers
Purpose of Grant:	Early Head Start (EHS) is a national child development program that provides quality early childhood education and comprehensive family support services to income eligible families with children birth to three years of age and expectant parents. The purpose of this grant is to serve 56 infants and toddlers and their families through partnerships with family child care providers and the expansion of the existing EHS center-based option at the Gum Springs Glen Early Head Start program.
Funding Amount:	$1,088,550, including $194,402 in Local Cash Match. The total required non-federal match will be met through $194,402 in Local Cash Match from the Federal-State Grant Fund, and $29,135 from in-kind contributions. It should be noted that including the in-kind contributions, total funding for this program is $1,117,685.
Positions:	There are no new grant positions associated with this award; however, funding will support a total of 11/11.0 FTE existing grant positions.
Proposed Use of Funds:	Funding will support the continuation of quality early childhood education and comprehensive family support services. Funding will primarily support program operations, staffing, materials, and equipment. Funding will also support training and technical assistance for the purpose of improving quality and helping prepare children to succeed in school.
Target Population:	Children from birth to three years of age and their families and expectant parents who reside in areas of the County that have high poverty rates, large numbers of children on EHS/HS waiting lists, lack of affordable housing, limited transportation, and large populations of immigrant families.

Performance Measures: The success of the program will be based on full compliance with Head Start program performance standards.

Grant Period: The grant period is from July 1, 2021 to June 30, 2022. The grant is for year three continuation funding of the five-year grant.

ADMINISTRATION FOR CHILDREN & FAMILIES

Office of Head Start | 330 C St., SW, 4th Floor, Washington DC 20201 | eclkc.ohs.acf.hhs.gov

January 04, 2021

Grant No. 03HP000205

Dear Head Start Grantee:

A grant application must be completed for the upcoming budget period. The application for the Head Start grant is due April 1, 2021.

The following table reflects the annual funding and enrollment levels for Fiscal Year 2021.

Funding Type	Early Head Start
Program Operations	$874,972
Training and Technical Assistance	$19,176
Total Funding	**$894,148**

Program	Early Head Start
Federal Funded Enrollment	56

Period of Funding: 07/01/2021 - 06/30/2022

Application Submission Requirements

The application must be prepared and submitted in accordance with the *Head Start Grant Application Instructions with Guidance, Version 3 (Application Instructions)* for a continuation application. It must be submitted on behalf of the Authorizing Official registered in the HSES.

The *Application Instructions* are available on the home page of HSES. Please review the instructions carefully prior to preparing the application. Submission guidance can be found in the "Instructions" section of the HSES.

Incomplete applications will not be processed.

Please ensure the application contains all of the required information. For additional questions or guidance regarding the application instructions, please contact Latasha Shears, Head Start Program Specialist, at 215-861-4005 or latasha.shears@acf.hhs.gov or Jody Vaughn, Grants Management Specialist, at -- or Jody.Vaughn@acf.hhs.gov.

For technical assistance in submitting the application in HSES, contact the Help Desk at help@hsesinfo.org or 1-866-771-4737.

Funding is contingent upon the availability of federal funds and satisfactory performance under the terms and conditions of the current award, including the submission of all required financial and real property reports. ***Enrollment and funding levels are subject to change prior to or during the period of funding for failure to comply with the terms and conditions of the award, including the full enrollment initiative.***

Sincerely,

/Brenda Hewitt/

Brenda Hewitt
Regional Program Manager
Office of Head Start

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 7

Authorization for the Department of Neighborhood and Community Services to Apply for and Accept Grant Funding from the U.S. Department of Health and Human Services for Funding Associated with the Head Start and Early Head Start Grant

ISSUE:
Board of Supervisors authorization is requested for the Department of Neighborhood and Community Services to apply for and accept grant funding, if received, from the U.S. Department of Health and Human Services in the amount of $10,058,820, including $1,248,673 in Local Cash Match. Funding will be used to continue to provide services through the County's Head Start and Early Head Start programs. Funding will enable the County to serve 658 children and their families in a comprehensive, seamless birth-to-five Head Start and Early Head Start program. The grant period is July 1, 2021 through June 30, 2022. The total required non-federal match will be met through $1,248,673 in Local Cash Match from the Federal-State Grant Fund and $953,864 from in-kind contributions.

While the Head Start and Early Head Start grant is included in the Adopted budget, the grantor has indicated that before funding is awarded, the Board of Supervisors must formally approve the application. If the actual award received is significantly different from the application amount, another item will be submitted to the Board requesting appropriation of grant funds. Otherwise, staff will process the award administratively as per Board policy. Board authorization is also requested for the Chairman of the Board of Supervisors, the County Executive and/or a designee appointed by the County Executive to enter into the grant agreement and any related agreements, including but not limited to Federal Subaward Agreements, on behalf of the County.

RECOMMENDATION:
The County Executive recommends that the Board of Supervisors authorize the Department of Neighborhood and Community Services to apply for and accept grant funding, if received, from the U.S. Department of Health and Human Services. Funding in the amount of $10,058,820, including $1,248,673 Local Cash Match, will support the continuation of Head Start and Early Head Start services to 658 children and their families. This funding will continue to support 52/45.6 FTE existing grant positions. No new grant positions are being requested with this funding. The County Executive also recommends that the Board authorize the Chairman of the Board of Supervisors, the County Executive and/or a designee appointed by the County Executive to enter into the grant agreement and any related agreements, including but not limited to Federal Subaward Agreements, on behalf of the County.

Board Agenda Item
March 9, 2021

TIMING:
Board action is requested on March 9, 2021.

BACKGROUND:
Head Start and Early Head Start are national child and family development programs that provide quality early childhood education and comprehensive family support services to income eligible families with children birth to five years of age and expectant parents. The Department of Neighborhood and Community Services (NCS), Office for Children was awarded a five-year Head Start and Early Head Start grant in June 2016, with four annually appropriated renewals. Funding of the original grant project will expire June 30, 2021. If awarded, this grant will represent year one of a five-year project period.

Funding enables the County to serve 658 children and their families in a comprehensive, seamless birth-to-five Head Start and Early Head Start program. Services will continue to be provided by the Office for Children, Fairfax County Public Schools, and Higher Horizons Day Care Center, Inc., and includes a home-based option, center-based option and family child care option.

FISCAL IMPACT:
Federal grant funding in the amount of $10,058,820, including $1,248,673 in Local Cash Match, is being requested to support the continuation of Head Start and Early Head Start services to 658 children and their families. The total required non-federal match will be met through $1,248,673 in Local Cash Match from the Federal-State Grant Fund and $953,864 from in-kind contributions. It should be noted that including the in-kind contributions, total funding for this program is $11,012,684. This action does not increase the expenditure level of the Federal-State Grant Fund, as funds are held in reserve for anticipated grant awards and the Local Cash Match of $1,248,673 is available from the Local Cash Match Reserve. This grant does allow the recovery of indirect costs; however, because this funding opportunity is highly competitive, the Department of Neighborhood and Community Services has elected to omit inclusion of indirect costs to maximize the proposal's competitive position.

CREATION OF NEW POSITIONS:
There are no new grant positions associated with this award. This funding is a continuation of the existing Head Start and Early Head Start programs; therefore, funding will continue to support 32/24.4 FTE grant positions associated with Head Start services and 20/21.2 FTE grant positions associated with Early Head Start services, for a total of 52/45.6 FTE grant positions. The County is under no obligation to continue these positions once grant funding expires.

Board Agenda Item
March 9, 2021

ENCLOSED DOCUMENTS:
Attachment 1: Head Start/Early Head Start Summary of Grant Proposal
Attachment 2: Head Start and Early Head Start Letter of Funding Guidance dated January 4, 2021 regarding grant #03CH010411

STAFF:
Christopher A. Leonard, Deputy County Executive
Sarah Allen, Acting Director, NCS
Anne-Marie D. Twohie, Director, Office for Children, NCS

HEAD START/EARLY HEAD START GRANT

SUMMARY OF GRANT PROPOSAL

Grant Title:	Head Start and Early Head Start Grant
Funding Agency:	U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start
Applicant:	Department of Neighborhood and Community Services
Partners:	Fairfax County Public Schools, Higher Horizons Day Care, Inc., and Community Family Child Care Providers
Purpose of Grant:	Early Head Start and Head Start are national child development programs that provide quality early childhood education and comprehensive family support services to income eligible families with children birth to five years of age and expectant parents. The purpose of this grant is to serve 658 children and their families in a comprehensive, seamless birth-to-five Head Start and Early Head Start program. Children will be served in a home-based, center-based, or family child care option.
Funding Amount:	$10,058,820 including $1,248,673 in Local Cash Match. The total required non-federal match will be met through $1,248,673 in Local Cash Match from the Federal-State Grant Fund, and $953,864 from in-kind contributions. It should be noted that including the in-kind contributions, total funding for this program is $11,012,684.
Positions:	There are no new grant positions associated with this award; however, funding will continue to support a total of 52/45.6 FTE existing grant positions.
Proposed Use of Funds:	Funding will support the continuation of quality early childhood education and comprehensive family support services. Funding will primarily support program operations, staffing, materials, and equipment. Funding will also support training and technical assistance for the purpose of improving quality and helping prepare children to succeed in school.
Target Population:	Children from birth to five years of age and their families and expectant parents who reside in areas of the County that have high poverty rates, large numbers of children on Early Head Start/Head Start waiting lists,

	lack of affordable housing, limited transportation, and large populations of immigrant families.
Performance Measures:	The success of the program will be based on full compliance with Head Start program performance standards.
Grant Period:	The grant period is from July 1, 2021 through June 30, 2022. This baseline application is for a five-year project period. If awarded, this grant will represent year one of a five-year project period.

ADMINISTRATION FOR CHILDREN & FAMILIES

Office of Head Start | 330 C St., SW, 4th Floor, Washington DC 20201 | eclkc.ohs.acf.hhs.gov

January 04, 2021

Grant No. 03CH010411

Dear Head Start Grantee:

A grant application must be completed for the upcoming budget period. The application for the Head Start grant is due April 1, 2021.

The following table reflects the annual funding and enrollment levels for Fiscal Year 2021.

Funding Type	Head Start	Early Head Start
Program Operations	$4,788,468	$3,868,375
Training and Technical Assistance	$69,574	$83,730
Total Funding		**$8,810,147**

Program	Head Start	Early Head Start
Federal Funded Enrollment	434	224

Period of Funding: 07/01/2021 - 06/30/2022

Application Submission Requirements

The application must be prepared and submitted in accordance with the *Head Start Grant Application Instructions with Guidance, Version 3 (Application Instructions)* for a baseline application. It must be submitted on behalf of the Authorizing Official registered in the HSES.

The *Application Instructions* are available on the home page of HSES. Please review the instructions carefully prior to preparing the application. Submission guidance can be found in the "Instructions" section of the HSES.

Incomplete applications will not be processed.

Please ensure the application contains all of the required information. For additional questions or guidance regarding the application instructions, please contact Tamara Mattier, Head Start Program Specialist, at 215-861-4066 or Tamara.Mattier@acf.hhs.gov or Jody Vaughn, Grants Management Specialist, at -- or Jody.Vaughn@acf.hhs.gov.

For technical assistance in submitting the application in HSES, contact the Help Desk at help@hsesinfo.org or 1-866-771-4737.

Funding is contingent upon the availability of federal funds and satisfactory performance under the terms and conditions of the current award, including the submission of all required financial and real property reports. ***Enrollment and funding levels are subject to change prior to or during the period of funding for failure to comply with the terms and conditions of the award, including the full enrollment initiative.***

Sincerely,

/Brenda Hewitt/

Brenda Hewitt
Regional Program Manager
Office of Head Start

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 8

Authorization to Advertise Publication of the FY 2022 Budget and Required Tax Rates, the FY 2022 Effective Tax Rate Increase, and the Advertised Capital Improvement Program for Fiscal Years 2022-2026 (With Future Fiscal Years to 2031)

ISSUE:
Board authorization to advertise the FY 2022 County budget, Capital Improvement Program, and the tax rates that are proposed to support the FY 2022 budget. Advertising these rates will not prevent the Board from lowering any advertised tax rate, but higher tax rates could not be imposed without advertising such rates.

RECOMMENDATION:
The County Executive recommends that the Board authorize advertisement of a brief synopsis of the FY 2022 Budget and a real estate tax rate for FY 2022 of $1.15 per $100 of assessed value. The FY 2022 Advertised Budget Plan is balanced based on a Real Estate Tax rate of $1.14 per $100 of assessed value, which is a decrease of $0.01 from the current rate for FY 2021, and the attachments included for advertisement reflect the $1.14 rate. Advertising a real estate tax rate of $1.15 per $100 of assessed value gives the Board of Supervisors an additional revenue option to consider and provides flexibility during their deliberations on the FY 2022 budget. Advertising an increase in the rate does not prevent the Board from lowering any advertised tax rate, but a higher tax rate cannot be imposed without having advertised the higher rate.

Virginia Code Section 58.1-3321 requires that a separate public hearing be held on the effective tax rate if the reassessment of real property results in an increase of one percent or more in the total real property tax levied. The public hearing on the effective tax rate must be advertised at least thirty days before the date of the hearing. The total increase in assessed value of existing property is expected to be 2.02 percent. In FY 2022, the assessed value of residential real property is expected to increase by 4.25 percent and non-residential property is expected to decrease by 4.05 percent.

In addition, the County Executive recommends that the Board authorize advertisement of a public hearing on the FY 2022 – FY 2026 Advertised Capital Improvement Program (With Future Fiscal Years to 2031).

Please note that the draft tax resolution to be advertised includes the following recommendations regarding rates for FY 2022.

The following rate is recommended to increase:

- Refuse Collection Services assessment from $370 per household unit to $400 per household unit.

The following rates are recommended to be advertised with no change:

- Leaf Collection Districts at $0.012 per $100 assessed value.
- Reston Community Center at $0.047 per $100 assessed value.
- McLean Community Center at $0.023 per $100 assessed value.
- Burgundy Village Community Center at $0.020 per $100 assessed value.
- Commercial and Industrial Tax for Transportation at $0.125 per $100 assessed value.
- Special service district for pest infestations at $0.0010 per $100 assessed value.
- Rail to Dulles Phase I Transportation Improvement District Levy at $0.09 per $100 assessed value.
- Rail to Dulles Phase II Transportation Improvement District Levy at $0.20 per $100 assessed value.
- Reston Transportation Service District at $0.021 per $100 of assessed value.
- Route 28 Taxing District Levy at $0.17 per $100 assessed value.
- Tysons Transportation Service District at $0.05 per $100 assessed value.
- Stormwater Service District Levy at $0.0325 per $100 assessed value.
- EMS Transport Fee: (1) a service fee of $500 for Basic Life Support transport (BLS), (2) $650 for Advanced Life Support, level 1 transport (ALS1), (3) $800 for Advanced Life Support, level 2 transport (ALS2), and (4) $12.00 per mile for ground transport mileage.

Also included in the brief synopsis of the FY 2022 budget advertisement is information as it relates to the Personal Property Tax Relief Act (PPTRA) and the percentage of state “Car Tax” subsidy on qualifying personal property tax levy. On November 21, 2005, as part of Action Item 3, the Board of Supervisors adopted a resolution to

implement the state "Car Tax" changes found in the Executive Amendments to the 2004-2006 Biennial Budget, specifically state Budget Item 503(E) of the Central Appropriations Act, in accordance with the requirements set forth in Virginia Code Sections 58.1-3524(C)(2) and 58.1-3912(E), as amended by Chapter 1 of the Acts of Assembly (2004 Special Session 1) and as set forth in Item 503(E)(Personal Property Tax Relief Program) of Chapter 951 of the 2005 Acts of Assembly.

Beginning in tax year 2006, the state "Car Tax" subsidy on qualifying vehicles was "capped" to a statewide total of $950 million. Based on the final report from the state Auditor of Public Accounts, dated February 2006, Fairfax County's share of this $950 million was fixed at 22.2436 percent, or $211,313,944.16. The annual subsidy is frozen at this amount and is factored into the FY 2022 Advertised Budget Plan.

Consistent with the November 21, 2005, Board resolution, the state "Car Tax" funding will provide a 100 percent subsidy of the tax year 2021 levy for qualifying vehicles valued at $1,000 or less and a 100 percent subsidy of the tax year 2021 levy on the value up to $20,000 for vehicles leased by a qualified military service member and/or spouse. Furthermore, the state "Car Tax" funding is estimated to provide a 58.5 percent subsidy of the tax year 2021 levy for all other qualifying vehicles on the value up to $20,000.

A separate public hearing on the effective tax rate will be held on Tuesday, April 13, 2021, as required by Virginia Code Section 58.1-3321. In addition, public hearings on the FY 2022 budget, the advertised capital improvement plan (CIP) and proposed tax rates for tax year 2021 will be held on April 13-15, 2021.

Please note that a separate item recommending Board authorization to advertise public hearings for sewer rate revision notices is included in the March 9, 2021, Board package. The sewer rate revision notices authorize the increase in the Base Charge from $32.91 per quarter, totaling $131.64 per year, to $36.54 per quarter, totaling $146.16 per year. The Sewer Service Charge will increase from $7.28 per 1,000 gallons of water consumption to $7.72 per 1,000 gallons of water consumption. The Sewer Availability Fee will increase from $8,340 to $8,507 per new home being constructed. A separate public hearing on sewer rate revisions will be held on Tuesday, April 13, 2021.

TIMING:
Action must be taken on March 9, 2021, in order to provide adequate time to include the effective tax rate advertisement, if required, in the newspaper no later than March 12, 2021, to meet advertising legal requirements and ensure as broad a circulation as possible.

Board Agenda Item
March 9, 2021

BACKGROUND:
Virginia Code Section 15.2-2506 specifies the time frame within which the advertisements must be published. That section requires the publication of a brief synopsis of the budget at least seven days prior to the date set for public hearing.

Virginia Code Section 58.1-3321 also specifies advertisement requirements for an increase in the real estate tax levy for existing property based on an equalization increase greater than one percent. The assessed value of existing real estate is projected to increase 2.02 percent due to equalization, which exceeds the one-percent threshold for that statute. That section requires the publication of a notice in the paper at least thirty days prior to the date set for the public hearing and a separate public hearing is required to consider the effective tax increase.

Therefore, this item requests Board authorization to advertise the following items in accordance with the notification requirements listed above.

- A brief synopsis of the FY 2022 Budget, including information as it relates to the impact of the Personal Property Tax Relief Act (PPTRA) on the percentage of state "Car Tax" subsidy on qualifying personal property tax levy

- Proposed Tax Rates for tax year 2021

- The effective tax rate notice required by Virginia Code Section 58.1-3321

- Notice of public hearings on the FY 2022 – FY 2026 Advertised Capital Improvement Program (With Future Fiscal Years to 2031)

In order to meet these legal requirements and hold to the scheduled public hearing dates, the advertisements must be approved no later than March 9, 2021. This will permit the County to adhere to the following budget schedule:

- Public Hearing on the FY 2022 Effective Tax Rate – April 13, 2021. Please note the Public Hearing on the Effective Tax Rate is separate from the Public Hearings on the Budget. However, citizens may speak on the Effective Tax Rate during the Public Hearings on the FY 2022 Budget.

- Public Hearings on the FY 2022 Budget, the FY 2022 – FY 2026 Advertised Capital Improvement Program (With Future Fiscal Years to 2031) and proposed FY 2022 Tax Rates – April 13-15, 2021.

- Public Hearings on the *FY 2021 Third Quarter Review* – April 13-15, 2021.

- FY 2022 Budget Mark-up and Board Adoption of the *FY 2021 Third Quarter Review* – April 27, 2021.

- Board Adoption of Fiscal Plan, Tax Levies, and Appropriation Resolution – May 4, 2021.

- School transfer set (required by May 15 or 30 days after the State approves aid to schools).

In addition, it should be noted that during FY 2022 the allowable asset limits and income limits associated with the Real Estate Tax Relief Program for the Elderly and Disabled are maintained at the FY 2021 level. In FY 2022, the income limits of the Tax Relief program provide 100 percent exemption for elderly and disabled taxpayers with incomes up to $52,000; 50 percent exemption for eligible applicants with income between $52,001 and $62,000; and 25 percent exemption if income is between $62,001 and $72,000. The allowable asset limit in FY 2022 is $340,000 for all ranges of tax relief and that limit does not include the value of the residence of the applicant and one acre of land on which the residence is located. In addition, veterans who have a 100 percent permanent and total disability related to military service, or their surviving spouse, are eligible for full Real Estate Tax relief regardless of income and assets.

FISCAL IMPACT:
The FY 2022 Real Estate Tax rate of $1.14 per $100 of assessed value results in the revenue projections outlined in the FY 2022 Advertised Budget Plan. Each penny on the Real Estate Tax rate equates to $27,140,560 in General Fund revenue.

ENCLOSED DOCUMENTS:
Attachment I - Brief Synopsis of the FY 2022 Budget
Attachment II - Draft Resolution Adopting Fairfax County Tax Rates for FY 2022
Attachment III - Notice of a Proposed Tax Increase for FY 2022

STAFF:
Bryan J. Hill, County Executive
Joe Mondoro, Chief Financial Officer
Christina Jackson, Director, Department of Management and Budget
Philip Hagen, Deputy Director, Department of Management and Budget
Jaydeep Doshi, Director, Department of Tax Administration

ASSIGNED COUNSEL:
Patricia McCay, Senior Assistant County Attorney

COMMONWEALTH OF VIRGINIA
COUNTY OF FAIRFAX

In accordance with Virginia law, notice is hereby given that the Board of Supervisors of Fairfax County, Virginia, will meet in the Fairfax County Government Center, 12000 Government Center Parkway, Fairfax, Virginia on April 13 at 4:00 P.M. and April 14 and April 15 at 3:00 P.M. The meetings may be held electronically due to the State of Emergency caused by the COVID-19 pandemic. Please contact the Clerk for the Board of Supervisors at (703) 324-3151 or clerktothebos@fairfaxcounty.gov, or review on-line at https://www.fairfaxcounty.gov/boardofsupervisors/2021-board-meetings at least one week prior to the meetings for additional information on the status of the meetings. The meetings are available to view live on Channel 16 and stream live online at www.fairfaxcounty.gov/cableconsumer/channel-16/live-video-stream. Live audio of the meetings may be accessed via telephone as noted on the website.

The purpose of these meetings is to consider the adoption of an FY 2022 County Budget and to consider such tax rate changes as described therein. A brief synopsis of the FY 2022 Advertised Budget Plan is shown below. Citizens may appear and be heard for and against the following estimates of revenues, expenditures, transfers and surpluses as contained in the FY 2022 Advertised Budget Plan and proposed tax rate changes. Fiscal Year 2022 begins on July 1, 2021, and ends on June 30, 2022.

At the same time, the Board of Supervisors will hear public testimony regarding proposed adoption of the FY 2022 – FY 2026 Advertised Capital Improvement Program (With Future Fiscal Years to 2031).

All persons wishing to present their views on these subjects may sign up to be placed on the Speakers List at www.fairfaxcounty.gov/bosclerk/speakers-form or call the Office of the Clerk for the Board at 703-324-3151 and may appear and be heard via telephone or pre-recorded video. Deadlines by type of testimony are on the website. In addition, written testimony and other submissions will be received at 12000 Government Center Parkway, Suite 552, Fairfax, 22035 and clerktothebos@fairfaxcounty.gov. If the meetings are in person, phone and video testimony are encouraged but in-person attendance and testimony are also permitted at 12000 Government Center Parkway, Fairfax VA 22035.

Copies of the full text of proposed ordinances, plans and amendments, as applicable, as well as other documents relating to the aforementioned subjects, are on file and may be examined at the Office of the Clerk for the Board of Supervisors, Suite 552 of the Fairfax County Government Center, 12000 Government Center Parkway, Fairfax, Virginia.

Fairfax County supports the Americans with Disabilities Act by making reasonable accommodations for persons with disabilities. Open captioning will be provided in the Board Auditorium. For sign language interpreters or other accommodations, please call the Clerk's Office, 703-324-3151, TTY 711 (Virginia Relay Center) no later than 48 hours before the public hearing. Assistive listening devices will be available at the meeting.

Copies of the FY 2022 Advertised Budget Plan and the FY 2022 – FY 2026 Advertised Capital Improvement Program (With Future Fiscal Years to 2031) are available on the Internet at www.fairfaxcounty.gov/budget.

Fund	EXPENDITURES	TRANSFERS OUT	TOTAL EXPENDITURES & TRANSFERS OUT	TAX REQUIRED AMOUNT	FY 2022 Rate	FY 2021 RATE	FY 2020 RATE	OTHER RESOURCES STATE AID	FEDERAL AID	OTHER RECEIPTS	TRANSFERS IN	APPROPRIATED FROM/(ADDED TO) SURPLUS
GOVERNMENTAL FUNDS												
General Fund Group												
10001 General Fund [1]	$1,638,926,624	$2,849,500,560	$4,488,427,184	$3,479,623,265	1.140 a 4.57 b	1.150 a 4.57 b	1.150 a 4.57 b	$312,963,571 c	$40,879,247	$665,960,620	$9,000,481	($20,000,000)
10010 Revenue Stabilization	0	0	0	0				0	0	0	0	0
10015 Economic Opportunity Reserve	0	0	0	0				0	0	150,000	0	(150,000) d
10020 Consolidated Community Funding Pool	12,283,724	0	12,283,724	0				0	0	0	12,283,724	0
10030 Contributory Fund	14,493,160	0	14,493,160	0				0	0	0	14,492,449	711
10040 Information Technology	0	0	0	0				0	0	0	0	0
Total General Fund Group	**$1,665,703,508**	**$2,849,500,560**	**$4,515,204,068**	**$3,479,623,265**				**$312,963,571**	**$40,879,247**	**$666,110,620**	**$35,776,654**	**($20,149,289)**
Debt Service Funds												
20000 Consolidated Debt Service	$335,713,873	$0	$335,713,873	$0				$0	$2,300,000	$528,000	$332,885,873	$0
Capital Project Funds												
30000 Metro Operations and Construction	$82,670,850	$3,279,574	$85,950,424	$0				$0	$0	$42,000,000	$43,950,424	$0
30010 General Construction and Contributions	21,054,278	0	21,054,278	0				0	0	4,475,000	16,579,278	0
30015 Environmental and Energy Program	1,298,767	0	1,298,767	0				0	0	0	1,298,767	0
30020 Infrastructure Replacement and Upgrades	0	0	0	0				0	0	0	0	0
30030 Library Construction	0	0	0	0				0	0	0	0	0
30040 Contributed Roadway Improvement	0	181,732	181,732	0				0	0	181,732	0	0
30050 Transportation Improvements	0	0	0	0				0	0	0	0	0
30060 Pedestrian Walkway Improvements	800,000	0	800,000	0				0	0	0	800,000	0
30070 Public Safety Construction	0	0	0	0				0	0	0	0	0
30080 Commercial Revitalization Program	0	0	0	0				0	0	0	0	0
30090 Pro Rata Share Drainage Construction	0	0	0	0				0	0	0	0	0
30300 Affordable Housing Development and Investment	19,670,000	0	19,670,000	13,570,000 e				0	0	6,100,000	0	0
30310 Housing Assistance Program	0	0	0	0				0	0	0	0	0
30400 Park Authority Bond Construction	0	0	0	0				0	0	0	0	0
S31000 Public School Construction	203,976,143	0	203,976,143	0				0	0	181,451,000	22,553,227	(28,084)
Total Capital Project Funds	**$329,470,038**	**$3,461,306**	**$332,931,344**	**$13,570,000**				**$0**	**$0**	**$234,207,732**	**$85,181,696**	**($28,084)**
Special Revenue Funds												
40000 County Transit Systems	$137,930,629	$0	$137,930,629	$0				$47,480,424	$0	$6,044,452	$81,494,778	$2,910,975
40010 County and Regional Transportation Projects	65,943,105	37,400,000	103,343,105	62,026,632	0.125 f	0.125 f	0.125 f	41,316,473	0	0	0	0
40030 Cable Communications	10,316,971	10,473,069	20,790,040	0				0	0	19,237,413	0	1,552,627
40040 Fairfax-Falls Church Community Services Board	183,749,314	0	183,749,314	0				7,839,233	4,208,641	24,117,476	147,583,964	0
40045 Early Childhood Birth to 5	32,780,360	0	32,780,360	0				0	44,689	171,271	32,564,400	0
40050 Reston Community Center	8,600,359	0	8,600,359	8,930,260	0.047 g	0.047 g	0.047 g	0	0	544,896	0	(874,797)
40060 McLean Community Center	6,313,278	0	6,313,278	4,855,237	0.023 g	0.023 g	0.023 g	0	0	1,140,065	0	317,976
40070 Burgundy Village Community Center	46,596	0	46,596	38,081	0.020 h	0.020 h	0.020 h	0	0	46,138	0	(37,623)
40080 Integrated Pest Management Program	3,317,657	141,000	3,458,657	2,692,792	0.001 i	0.001 i	0.001 i	0	0	7,691	0	758,174
40090 E-911	53,174,477	0	53,174,477	0				3,396,251	0	47,734,938	0	2,043,288
40100 Stormwater Services	86,050,738	1,125,000	87,175,738	87,175,738	0.0325 j	0.0325 j	0.0325 j	0	0	0	0	0
40110 Dulles Rail Phase I Transportation Improvement District	14,466,350	0	14,466,350	15,295,113	0.09 k	0.09 k	0.11 k	0	0	0	0	(828,763)
40120 Dulles Rail Phase II Transportation Improvement District	500,000	0	500,000	20,375,303	0.20 l	0.20 l	0.20 l	0	0	0	0	(19,875,303)
40125 Metrorail Parking System Pledged Revenues	14,788,460	0	14,788,460	0				0	0	7,568,848	0	7,219,612
40130 Leaf Collection	2,611,491	54,000	2,665,491	0	0.012 m	0.012 m	0.012 m	0	0	2,367,104	0	298,387
40140 Refuse Collection and Recycling Operations	20,275,463	494,000	20,769,463	0	400 n	370 n	385 n	120,114	0	19,539,653	0	1,109,696
40150 Refuse Disposal	53,617,780	626,000	54,243,780	0	66 o	68 o	68 o	0	0	52,383,100 p	0	1,860,680
40170 I-95 Refuse Disposal	8,280,458	186,000	8,466,458	0	27.50 q	27.50 q	26.50 q	0	0	11,063,444	0	(2,596,986)
40180 Tysons Service District	0	0	0	8,607,631	0.05 r	0.05 r	0.05 r	0	0	0	0	(8,607,631)
40190 Reston Service District	0	0	0	2,397,229	0.021 s	0.021 s	0.021 s	0	0	0	0	(2,397,229)
40300 Housing Trust	3,667,191	0	3,667,191	0				0	0	3,667,191	0	0
40330 Elderly Housing Programs	2,433,259	0	2,433,259	0				0	508,820	0	1,885,995	38,444
40360 Homeowner and Business Loan Programs	0	0	0	0				0	0	0	0	0
50000 Federal/State Grants	118,138,075	0	118,138,075	0				46,214,053	61,478,676	6,012,692	4,432,654	0

ATTACHMENT I

Fund	EXPENDITURES	TRANSFERS OUT	TOTAL EXPENDITURES & TRANSFERS OUT	TAX REQUIRED AMOUNT	TAX REQUIRED FY 2022 Rate	TAX REQUIRED FY 2021 RATE	TAX REQUIRED FY 2020 RATE	OTHER RESOURCES STATE AID	OTHER RESOURCES FEDERAL AID	OTHER RESOURCES OTHER RECEIPTS	OTHER RESOURCES TRANSFERS IN	OTHER RESOURCES APPROPRIATED FROM/(ADDED TO) SURPLUS
Special Revenue Funds (Cont.)												
50800 Community Development Block Grant	5,960,799	0	5,960,799	0				0	5,960,799	0	0	0
50810 HOME Investment Partnerships Program	2,141,854	0	2,141,854	0				0	2,141,854	0	0	0
S10000 Public School Operating [2]	3,029,136,514	34,376,411	3,063,512,925	0				763,180,831	46,578,398	78,505,119	2,158,326,821	16,921,756
S40000 Public School Food and Nutrition Services	86,373,274	0	86,373,274	0				1,448,727	43,613,061	41,311,486	0	0
S43000 Public School Adult and Community Education	8,401,558	0	8,401,558	0				1,080,364	2,209,820	4,136,374	975,000	0
S50000 Public School Grants & Self Supporting Programs	82,091,763	0	82,091,763	0				9,033,816	37,587,315	9,233,051	22,660,545	3,577,036 **t**
Total Special Revenue Funds	**$4,041,107,773**	**$84,875,480**	**$4,125,983,253**	**$212,394,016**				**$921,110,286**	**$204,332,073**	**$334,832,402**	**$2,449,924,157**	**$3,390,319**
TOTAL GOVERNMENTAL FUNDS	**$6,371,995,192**	**$2,937,837,346**	**$9,309,832,538**	**$3,705,587,281**				**$1,234,073,857**	**$247,511,320**	**$1,235,678,754**	**$2,903,768,380**	**($16,787,054)**
PROPRIETARY FUNDS												
Internal Service Funds												
60000 County Insurance	$31,548,302	$0	$31,548,302	$0				$0	$0	$1,130,859	$24,291,320	$6,126,123
60010 Department of Vehicle Services	83,936,105	0	83,936,105	0				0	0	82,338,946	0	1,597,159
60020 Document Services Division	9,208,698	0	9,208,698	0				0	0	5,100,000	3,941,831	166,867
60030 Technology Infrastructure Services	47,688,293	0	47,688,293	0				0	0	43,432,182	4,714,102	(457,991)
60040 Health Benefits	176,514,488	0	176,514,488	0				0	0	165,167,622	0	11,346,866
S60000 Public School Insurance	19,177,238	0	19,177,238	0				0	0	17,271,339	0	1,905,899 **u**
S62000 Public School Health and Flexible Benefits	567,938,109	0	567,938,109	0				0	0	467,828,538	0	100,109,571 **v**
Total Internal Service Funds	**$936,011,233**	**$0**	**$936,011,233**	**$0**				**$0**	**$0**	**$782,269,486**	**$32,947,253**	**$120,794,494**
Enterprise Funds												
69000 Sewer Revenue	$0	$259,100,000	$259,100,000	$0	7.72 **w**	7.28 **w**	7.28 **w**	$0	$0	$255,144,500	$0	$3,955,500
					8,507 **x**	8,340 **x**	8,340 **x**					
					36.54 **y**	32.91 **y**	32.91 **y**					
69010 Sewer Operation and Maintenance	113,210,776	2,850,000	116,060,776	0				0	0	0	116,100,000	(39,224)
69020 Sewer Bond Parity Debt Service	32,106,606	0	32,106,606	0				0	0	0	32,000,000	106,606
69030 Sewer Bond Debt Reserve	0	0	0	0				0	0	0	0	0
69040 Sewer Bond Subordinate Debt Service	25,689,605	0	25,689,605	0				0	0	0	25,000,000	689,605
69300 Sewer Construction Improvements	86,000,000	0	86,000,000	0				0	0	0	86,000,000	0
69310 Sewer Bond Construction	0	0	0	0				0	0	0	0	0
Total Enterprise Funds	**$257,006,987**	**$261,950,000**	**$518,956,987**	**$0**				**$0**	**$0**	**$255,144,500**	**$259,100,000**	**$4,712,487**
TOTAL PROPRIETARY FUNDS	**$1,193,018,220**	**$261,950,000**	**$1,454,968,220**	**$0**				**$0**	**$0**	**$1,037,413,986**	**$292,047,253**	**$125,506,981**
FIDUCIARY FUNDS												
Custodial Funds												
70000 Route 28 Tax District	$11,826,948	$0	$11,826,948	$10,826,948	0.17 **z**	0.17 **z**	0.18 **z**	$0	$0	$1,000,000	$0	$0
70040 Mosaic District Community Development Authority	4,882,023	0	4,882,023	4,882,023				0	0	0	0	0
Total Custodial Funds	**$16,708,971**	**$0**	**$16,708,971**	**$15,708,971**				**$0**	**$0**	**$1,000,000**	**$0**	**$0**
Trust Funds												
73000 Employees' Retirement Trust	$426,440,635	$0	$426,440,635	$0				$0	$0	$596,915,393	$0	($170,474,758)
73010 Uniformed Employees Retirement Trust	142,607,615	0	142,607,615	0				0	0	219,108,528	0	(76,500,913)
73020 Police Retirement Trust	113,658,958	0	113,658,958	0				0	0	175,249,261	0	(61,590,303)
73030 OPEB Trust	13,604,592	0	13,604,592	0				0	200,000	2,033,974	5,000,000	6,370,618
S71000 Educational Employees' Retirement	229,223,973	0	229,223,973	0				0	0	438,492,614	0	(209,268,641)
S71100 Public School OPEB Trust	16,923,500	0	16,923,500	0				0	0	26,818,000	0	(9,894,500)
Total Trust Funds	**$942,459,273**	**$0**	**$942,459,273**	**$0**				**$0**	**$200,000**	**$1,458,617,770**	**$5,000,000**	**($521,358,497)**
TOTAL FIDUCIARY FUNDS	**$959,168,244**	**$0**	**$959,168,244**	**$15,708,971**				**$0**	**$200,000**	**$1,459,617,770**	**$5,000,000**	**($521,358,497)**
TOTAL ALL FUNDS	**$8,524,181,656**	**$3,199,787,346**	**$11,723,969,002**	**$3,721,296,252**				**$1,234,073,857**	**$247,711,320**	**$3,732,710,510**	**$3,200,815,633**	**($412,638,570)**

[1] Personal Property taxes of $211,313,944 that are reimbursed by the Commonwealth as a result of the Personal Property Tax Relief Act of 1998 are included in the Revenue from the Commonwealth category in accordance with guidelines from the State Auditor of Public Accounts.

[2] The proposed County General Fund transfer for school operations in FY 2022 totals $2,157,451,821, an increase of $14,129,610, or 0.7 percent, over the FY 2021 Adopted Budget Plan. The Fairfax County Public Schools Superintendent's Proposed Budget reflected a General Fund Transfer increase of $42,685,629, or 2.0 percent, over the FY 2021 Adopted Budget Plan. In their action on the Superintendent's Proposed Budget on February 18, 2021, the School Board revised the General Fund transfer request to $2,247,724,023, an increase of $104,401,812, or 4.9 percent, over the FY 2021 Adopted Budget Plan.

ATTACHMENT I

FOOTNOTES

OTHER REAL ESTATE & PERSONAL PROPERTY TAX RATES	Revenue Amount	Tax Required 2022 Rate	2021 Rate	2020 Rate
PUBLIC SERVICE CORPORATIONS				
Equalized **a**	$49,454,856	1.140	1.150	1.150
Vehicles **b**	301,234	4.57	4.57	4.57
OTHER				
Mining and Manufacturing Machinery and Tools (General Fund Revenue) **b**	1,316,669	4.57	4.57	4.57
Research and Development (General Fund Revenue) **b**	9,195	4.57	4.57	4.57
Antique Automobiles **b**	-	0.01	0.01	0.01
Mobile Homes **a**	168,863	1.140	1.150	1.150
Van Pools-Privately Owned Vans **b**	-	0.01	0.01	0.01
Motor Vehicles Owned by Members of a Volunteer Rescue Squad or Volunteer Fire Department **b**	-	0.01	0.01	0.01
Motor Vehicles Owned by Members of the Auxiliary Police **b**	-	0.01	0.01	0.01
Motor Vehicles Owned by Members of the Auxiliary Deputy Sheriff **b**	-	0.01	0.01	0.01
Homeowners Associations Furniture, office equipment and maintenance equipment **b**	-	0.01	0.01	0.01
Aircraft and Flight Simulators **b**	-	0.01	0.01	0.01
Motor Vehicles Specially Equipped to Provide Transportation to Physically Handicapped Individuals **b**	-	0.01	0.01	0.01
Boats **b**	-	0.01	0.01	0.01
Motor Vehicles Owned by Disabled Veterans **b**	-	0.01	0.01	0.01
Motor Vehicles Owned by Certain Qualifying Elderly and Disabled Individuals **b**	-	0.01	0.01	0.01
Special Service District for Pest Infestations **i**	2,692,792	0.001	0.001	0.001

a. Real Estate Tax Rate per $100 of assessed value. T**he FY 2022 Advertised Budget Plan proposes a tax rate of $1.140 per $100 of assessed value. The real estate tax bill for the typical residential homeowner would increase by $224 in FY 2022 with a real estate tax rate of $1.140 per $100 of assessed value. Advertising an increase in the rate does not prevent the Board from lowering any advertised tax rate, but a higher tax rate cannot be imposed without advertising the higher rate.**

b. Personal Property Tax Rate per $100 of assessed value (excluding household furnishings). Tax collections, as a percentage of total taxes levied, are estimated as follows:
   - 10001 General Fund - Real Estate, 99.50 percent; Personal Property, 97.6 percent
   - Sanitary District - Refuse Assessments, 100 percent.

c. Percentage of state "Car Tax" subsidy on qualifying personal property tax levy. On November 21, 2005, as part of Action Item 3, the Board of Supervisors adopted a resolution to implement the state "Car Tax" changes found in the Executive Amendments to the 2004-2006 Biennial Budget, specifically state Budget Item 503(E) of the Central Appropriations Act, in accordance with the requirements set forth in Virginia Code §§ 58.1-3524(C)(2) and 58.1-3912(E), as amended by Chapter 1 of the Acts of Assembly (2004 Special Session 1) and as set forth in Item 503(E)(Personal Property Tax Relief Program) of Chapter 951 of the 2005 Acts of Assembly.

   Beginning in tax year 2006, the state "Car Tax" subsidy on qualifying vehicles was "capped" to a statewide total of $950 million. Based on the final report from the state Auditor of Public Accounts, dated February 2006, Fairfax County's share of this $950 million was fixed at 22.2436%, or $211,313,944.16. The annual subsidy is frozen at this amount and is factored into the FY 2022 Advertised Budget Plan.

   Consistent with the November 21, 2005, Board resolution, the state "Car Tax" funding will provide a 100% subsidy of the tax year 2021 levy for qualifying vehicles valued at $1,000 or less and a 100% subsidy of the tax year 2021 levy on the value up to $20,000 for vehicles leased by a qualified military service member and/or spouse. Furthermore, the state "Car Tax" funding is estimated to provide a 58.5% subsidy of the tax year 2021 levy for all other qualifying vehicles on the value up to $20,000.

d. Fund 10015, Economic Opportunity Reserve, assumes carryover of the Total Available funding of $45,644,215 from FY 2021 to FY 2022.

e. Real Estate revenue reflected in Fund 30300, Affordable Housing Development and Investment, reflects the allocation of the approximate value of one-half penny on the real estate tax rate to this program.

f. Additional tax assessment per $100 of assessed value for commercial and industrial property in the County to support transportation.

g. Operating costs and debt service - Community Center. Tax Rate per $100 of assessed value.

h. Utilities and other operating costs - Community Center. Tax Rate per $100 of assessed value.

i. Additional special tax levy of real estate within Fairfax County, but exclusive of the Lake Barcroft Water Improvement District to control infestations of pests. Tax Rate per $100 of assessed value.

j. Additional special tax levy of real estate to support operating and construction requirements for the stormwater management program. Tax Rate per $100 of assessed value.

k. Additional tax assessment per $100 of assessed value for commercial and industrial property for the Phase I Dulles Rail Transportation Improvement District.

l. Additional tax assessment per $100 of assessed value for commercial and industrial property for the Phase II Dulles Rail Transportation Improvement District.

m. Leaf Collection rate per $100 of assessed value. (See districts listed below)

   Leaf Collection:

   Small District 2 Braddock
   Local District 1A11 Dranesville
   Local District 1A21 Dranesville
   Local District 1A22 Dranesville

Leaf Collection (continued):

Local District 1A61 Dranesville
Local District 1B1 Dranesville
Local District 1E Dranesville
Small District 3 Dranesville
Small District 7 Dranesville
Small District 8 Dranesville
Small District 10 Dranesville
Small District 12 Dranesville
Small District 15 Dranesville
Local District 1B Lee
Local District 1C Lee
Local District 1D Lee
Local District 1E Lee
Small District 1 Mason
Local District 1A Mason
Small District 2 Mason
Small District 4 Mason
Local District 7A Mason
Small District 9 Mason
Small District 10 Mason
Local District 1A Mount Vernon
Local District 1B Mount Vernon
Local District 1C Mount Vernon
Local District 1D Mount Vernon
Local District 1E Mount Vernon
Small District 1 Providence
Small District 2 Providence
Small District 4 Providence
Small District 6 Providence
Small District 7 Providence
Small District 8 Providence

n. Refuse Collection assessment - the base annual charge for refuse collection service to be added to the regular real estate tax bill. (See districts listed below)

Refuse Service:

Small District 2 Braddock
Small District 3 Braddock
Small District 2 Hunter Mill
Small District 3 Hunter Mill
Local District 5A Hunter Mill
Local District 1A1 Dranesville
Local District 1A2 Dranesville
Local District 1A3 Dranesville
Local District 1A4 Dranesville
Local District 1A5 Dranesville
Local District 1A6 Dranesville
Local District 1A8 Dranesville
Local District 1A9 Dranesville
Local District 1A11 Dranesville
Local District 1A12 Dranesville
Local District 1A21 Dranesville
Local District 1A22 Dranesville
Local District 1A61 Dranesville
Local District 1B Dranesville
Local District 1B1 Dranesville
Local District 1B2 Dranesville
Local District 1E Dranesville
Small District 3 Dranesville
Small District 4 Dranesville
Small District 6 Dranesville
Small District 7 Dranesville
Small District 8 Dranesville
Small District 9 Dranesville
Small District 10 Dranesville
Small District 11 Dranesville
Small District 12 Dranesville
Small District 13 Dranesville
Small District 14 Dranesville
Small District 15 Dranesville
Small District 1 Lee
Local District 1A Lee
Local District 1B Lee
Local District 1C Lee
Local District 1D Lee
Local District 1E Lee
Small District 2 Lee
Small District 3 Lee
Small District 4 Lee
Small District 1 Mason
Local District 1A Mason
Local District 1B Mason
Local District 1C Mason
Local District 1D Mason
Local District 1F Mason
Small District 2 Mason
Small District 3 Mason
Small District 4 Mason
Small District 5 Mason
Small District 6 Mason
Small District 7 Mason
Local District 7A Mason
Small District 8 Mason
Small District 9 Mason
Small District 10 Mason
Small District 11 Mason
Small District 1 Mount Vernon
Local District 1A Mount Vernon
Local District 1B Mount Vernon
Local District 1C Mount Vernon
Local District 1D Mount Vernon
Local District 1E Mount Vernon
Small District 2 Mount Vernon
Local District 2A Mount Vernon
Local District 2B Mount Vernon
Small District 1 Providence
Local District 1A Providence
Local District 1B Providence

Refuse Service (continued):

Small District 3 Providence
Small District 4 Providence
Small District 6 Providence
Small District 7 Providence
Small District 8 Providence
Small District 9 Providence
Small District 11 Providence
Small District 12 Providence
Small District 13 Providence
Small District 4 Springfield
Small District 6 Springfield

o. Per ton refuse disposal fee charged to County refuse collectors, other jurisdictions, and private haulers.

p. Includes revenues from user fees charged at the Recycling and Disposal Center. Information regarding the schedule of fees is available from the Department of Public Works and Environmental Services (DPWES) Solid Waste Management Program at 12000 Government Center Parkway, Suite 458, Fairfax, Virginia, 22035 or online at www.fairfaxcounty.gov/dpwes. Residents who use the Recycling and Disposal Center are charged for disposal of waste based on weight and category of waste. There are different fees for disposal of brush, yard waste, white goods, tires, and other materials.

q. Per ton ash disposal fee charged to the County and participating jurisdictions.

r. Additional tax assessment per $100 of assessed value for the Tysons Service District.

s. Additional tax assessment per $100 of assessed value for the Reston Service District.

t. Fund S50000, Public School Grants and Self-Supporting Programs, assumes carryover of Summer School Reserve of $3,962,299 and reflects the proposed Transfer Out from Fund S10000, Public School Operating, as shown in the School Board's Advertised Budget, which is currently ($385,263) more than the Transfer In to Fund S50000. Final adjustments will be reflected at the *FY 2021 Carryover Review*.

u. Fund S60000, Public School Insurance, assumes carryover of Allocated Reserve of $1,905,899 from FY 2021 to FY 2022.

v. Fund S62000, Public School Health and Flexible Benefits, assumes carryover of Premium Stabilization Reserve of $100,109,571 from FY 2021 to FY 2022.

w. Sewer service rate per 1,000 gallons of water.

x. Sewer availability fee for single family homes.

y. Sewer service per bill base charge.

z. Additional tax assessment per $100 of assessed value for road improvements to State Route 28.

DRAFT
Resolution Adopting Tax Rates for Fairfax County **ATTACHMENT II**
Fiscal Year 2022

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held in the Board Room in the Fairfax County Government Center at Fairfax, Virginia, on Tuesday, May 4, 2021, at which meeting a quorum was present and voting, the following resolution was adopted:

RESOLUTION ADOPTING TAX RATES
FOR FAIRFAX COUNTY

FISCAL YEAR 2022

BE IT RESOLVED that, pursuant to the provisions of Virginia Code § 58.1-3001, and after having first complied with the provisions of the Virginia Code §§ 15.2-2506 and 58.1-3321, the Board does hereby establish the tax levies for the fiscal budget year beginning July 1, 2021, and ending June 30, 2022, and calendar tax year beginning January 1, 2021 and ending December 31, 2021, as follows to wit:

COUNTY LEVIES

General provisions. The County property taxes are levied on each $100.00 of assessed valuation of real estate and tangible personal property, excluding household furnishings, and including machinery and tools of mining, manufacturing, radio or television broadcasting, dairy, dry cleaning or laundry firms, and all personal property of research and development firms, in the County, including such property within the incorporated towns that are within the County. Except as otherwise stated herein, all such taxes are imposed generally pursuant with Virginia law on all taxable property throughout the County, including the incorporated towns therein, and the revenues derived from such levies shall be appropriated by the Board of Supervisors in accordance with Virginia law.

Real Estate*

On each $100.00 of the assessed valuation of real estate and improvements on real estate in the County the tax rate shall be $1.140

*Tax will be levied and collected in two semi-annual tax billings.

Commercial and Industrial Real Estate Tax for Transportation*

On each $100.00 of assessed valuation of the taxable commercial and industrial real estate in the County the tax rate in support of transportation shall be an additional..... $0.125

*Tax will be levied and collected in two semi-annual tax billings.

Personal Property

On each $100.00 of assessed valuation of tangible personal property, including all property separately classified by Virginia Code § 58.1-3503, the tax rate shall be $4.57

Except for the following:

Mobile Homes

On each $100.00 of assessed valuation of mobile homes, as separately classified by Virginia Code § 58.1-3506(A)(10), the tax rate shall be. $1.140

Machinery and Tools

On each $100.00 of assessed valuation of machinery and tools, as separately classified by Virginia Code § 58.1-3507, the tax rate shall be $4.57

Research and Development

On each $100.00 of assessed valuation of tangible personal property used or employed in a research and development business, as separately classified by Virginia Code § 58.1-3506(A)(7), the tax rate shall be. $4.57

Certain Personal Property of Planned Residential Subdivisions

On each $100.00 of assessed valuation of furniture, office, and maintenance equipment, exclusive of motor vehicles, which are owned and used by an organization whose real property is assessed in accordance with Virginia Code § 58.1-3284.1 and which is used by that organization for the purpose of maintaining or using the open or common space within a residential development as classified by Virginia Code § 58.1-3506(A)(24), the tax rate shall be $0.01

Van Pools - Privately Owned Vans

On each $100.00 of assessed valuation of privately owned vans, as separately classified by Virginia Code § 58.1-3506(A)(13), the tax rate shall be $0.01

Privately owned vans means vans with a seating capacity of seven to fifteen persons used exclusively pursuant to a ridesharing agreement as defined in Virginia Code § 46.2-1400, and which have been certified as such by the Director of the Department of Tax Administration.

Motor Vehicles Owned by Members of a
Volunteer Rescue Squad or Volunteer Fire Department

On each $100.00 of assessed valuation of motor vehicles as separately classified by Virginia Code § 58.1-3506(A)(15), the tax rate shall be $0.01

Motor vehicles as classified by Virginia Code § 58.1-3506 (A) (15), shall be defined to mean one motor vehicle owned or leased by each member of a volunteer rescue squad or volunteer fire department which is regularly used by such members to respond to emergency calls and certified as such by the Chief or Head of the Volunteer Organization and the Department of Tax Administration.

Motor Vehicles Specially Equipped to Provide
Transportation for Physically Handicapped Individuals

On each $100.00 of assessed valuation of motor vehicles as separately classified by Virginia Code § 58.1-3506(A)(14), the tax rate shall be $0.01

Specially equipped means any vehicle which has been modified specifically for the purpose of transporting physically handicapped individuals and the vehicle is certified as such by the Director of the Department of Tax Administration.

Motor Vehicles Owned
By Certain Qualifying Elderly and Disabled Individuals

On each $100.00 of assessed valuation of certain motor vehicles as classified by Virginia Code § 58.1-3506.1, the tax rate shall be $0.01

Applies to one motor vehicle owned and used by certain elderly and disabled persons who qualify on the basis of income and net worth.

Motor Vehicles Owned
By Persons Who Have Been Appointed to Serve as Auxiliary Police Officers

On each $100.00 of assessed valuation of motor vehicles as classified by Virginia Code § 58.1-3506(A)(20), the tax rate shall be $0.01

Motor vehicles as classified by Virginia Code § 58.1-3506 (A) (20), shall be defined to mean one motor vehicle owned or leased by an Auxiliary Police Officer to respond to auxiliary police duties, subject to certification as required by the provisions of the authorizing statute.

Motor Vehicles Owned
By Persons Who Have Been Appointed to Serve as Auxiliary Deputy Sheriffs

On each $100.00 of assessed valuation of motor vehicles as classified by Virginia Code § 58.1-3506 (A)(32), the tax rate shall be $0.01

Motor vehicles as classified by Virginia Code § 58.1-3506 (A)(32), shall be defined to mean one motor vehicle owned or leased by an Auxiliary Deputy Sheriff to respond to auxiliary deputy sheriff duties, subject to certification as required by the provisions of the authorizing statute.

Aircraft and Flight Simulators

On each $100.00 of assessed valuation of aircraft and flight simulators, as classified by Virginia Code § 58.1-3506(A)(2), (3), (4) and (5) the tax rate shall be $0.01

Antique Motor Vehicles

On each $100.00 of assessed valuation of antique motor vehicles, as separately classified by Virginia Code § 58.1-3506(A)(6), the tax rate shall be $0.01

Antique motor vehicles or antique automobiles means every motor vehicle which was actually manufactured or designated by the manufacturer as a model manufactured in a calendar year not less than twenty-five years ago and is owned solely as a collector's item.

Boats

On each $100.00 of assessed valuation of boats and watercraft, as classified by Virginia Code § 58.1-3506(A)(1), (12), (28), (29), (35) and (36) the tax rate shall be $0.01

Motor Vehicles Owned By Qualified Disabled Veterans

On each $100.00 of assessed valuation of motor vehicles, as classified by Virginia Code § 58.1-3506(A)(19), the tax rate shall be $0.01

Motor vehicles as classified by Virginia Code § 58.1-3506(A)(19) shall be defined to mean one motor vehicle owned and regularly used by qualified disabled veterans, subject to certification as required by the provisions of the authorizing statute. Qualified disabled veteran shall be defined to mean a veteran who meets the disability definition in Virginia Code § 58.1-3506(A)(19) and is not eligible for a motor vehicle tax exemption authorized by state law.

SANITARY DISTRICT LEVIES*

Local District 1A Lee
(Burgundy Village Community Center)

On each $100.00 of assessed valuation of real estate within the boundary of Local District 1A Lee in the County, the tax rate shall be $0.020

Small District 1 Dranesville
(McLean Community Center)

On each $100.00 of assessed valuation of real estate within the boundary of Small District 1 Dranesville in the County, the tax rate shall be $0.023

Small District 5 Hunter Mill
(Reston Community Center)

On each $100.00 of assessed valuation of real estate within the boundary of Small District 5 Hunter Mill in the County, the tax rate shall be $0.047

*Tax will be levied and collected in two semi-annual tax billings.

Leaf Collection:

Small District 2 Braddock
Local District 1A11 Dranesville
Local District 1A21 Dranesville
Local District 1A22 Dranesville
Local District 1A61 Dranesville
Local District 1B1 Dranesville
Local District 1E Dranesville
Small District 3 Dranesville
Small District 7 Dranesville
Small District 8 Dranesville
Small District 10 Dranesville
Small District 12 Dranesville
Small District 15 Dranesville
Local District 1B Lee
Local District 1C Lee
Local District 1D Lee
Local District 1E Lee
Small District 1 Mason
Local District 1A Mason
Small District 2 Mason
Small District 4 Mason
Local District 7A Mason
Small District 9 Mason
Small District 10 Mason
Local District 1A Mount Vernon
Local District 1B Mount Vernon

Leaf Collection (continued):

Local District 1C Mount Vernon
Local District 1D Mount Vernon
Local District 1E Mount Vernon
Small District 1 Providence
Small District 2 Providence
Small District 4 Providence
Small District 6 Providence
Small District 7 Providence
Small District 8 Providence

On each $100.00 of assessed valuation of real estate within the boundaries of the above-enumerated Districts in the County, the tax rate shall be $0.012

On any real estate which is deleted from a sanitary district effective July 1, 2021, as a result of the contraction of such sanitary district, such real estate will be entitled to pro rata abatement from the amount of the annual charge hereby established for leaf collection.

On any real estate, which is added to a sanitary district effective July 1, 2021, as a result of either the creation or the enlargement of a sanitary district, such real estate will be charged a pro rata fee for the annual charge hereby established for leaf collection.

Refuse Service:

Small District 2 Braddock
Small District 3 Braddock
Small District 2 Hunter Mill
Small District 3 Hunter Mill
Local District 5A Hunter Mill
Local District 1A1 Dranesville
Local District 1A2 Dranesville
Local District 1A3 Dranesville
Local District 1A4 Dranesville
Local District 1A5 Dranesville
Local District 1A6 Dranesville
Local District 1A8 Dranesville
Local District 1A9 Dranesville
Local District 1A11 Dranesville
Local District 1A12 Dranesville
Local District 1A21 Dranesville
Local District 1A22 Dranesville
Local District 1A61 Dranesville
Local District 1B Dranesville
Local District 1B1 Dranesville
Local District 1B2 Dranesville
Local District 1E Dranesville
Small District 3 Dranesville
Small District 4 Dranesville
Small District 6 Dranesville
Small District 7 Dranesville
Small District 8 Dranesville
Small District 9 Dranesville
Small District 10 Dranesville
Small District 11 Dranesville
Small District 12 Dranesville
Small District 13 Dranesville
Small District 14 Dranesville
Small District 15 Dranesville
Small District 1 Lee
Local District 1A Lee
Local District 1B Lee
Local District 1C Lee
Local District 1D Lee
Local District 1E Lee
Small District 2 Lee
Small District 3 Lee
Small District 4 Lee
Small District 1 Mason
Local District 1A Mason
Local District 1B Mason
Local District 1C Mason
Local District 1D Mason
Local District 1F Mason
Small District 2 Mason
Small District 3 Mason
Small District 4 Mason
Small District 5 Mason
Small District 6 Mason
Small District 7 Mason
Local District 7A Mason
Small District 8 Mason
Small District 9 Mason
Small District 10 Mason
Small District 11 Mason
Small District 1 Mount Vernon
Local District 1A Mount Vernon
Local District 1B Mount Vernon
Local District 1C Mount Vernon
Local District 1D Mount Vernon
Local District 1E Mount Vernon
Small District 2 Mount Vernon
Local District 2A Mount Vernon
Local District 2B Mount Vernon
Small District 1 Providence
Local District 1A Providence
Local District 1B Providence
Small District 3 Providence
Small District 4 Providence

Refuse Service (continued):

Small District 6 Providence
Small District 7 Providence
Small District 8 Providence
Small District 9 Providence
Small District 11 Providence
Small District 12 Providence
Small District 13 Providence
Small District 4 Springfield
Small District 6 Springfield

On each single-family dwelling and on each unit of two-family dwellings, excluding apartments (garden through high-rise), multi-family condominiums (garden through high-rise), and/or other multi-unit dwelling type buildings, existing or under construction January 1, 2021, within the boundaries of the above enumerated Districts, a base annual charge of $400.00 for refuse collection service to be added to the regular real estate tax bill, and that annual charge shall be subject to penalty and interest charges and becoming a lien against the property if not paid, in the same manner as any other real estate tax.

On any dwelling that is neither completed nor occupied by June 30, 2021, the owner thereof shall, upon application to the Director of the Department of Tax Administration or the Director DPWES, Solid Waste Collection and Recycling, made prior to December 5, 2021, be entitled to relief in the amount of the pro-rata portion based on the service period of the base annual charge hereby established. The claimant must provide acceptable evidence that the dwelling was not occupied, nor generating waste to the Director of the Department of Tax Administration or the Director DPWES, Solid Waste Collection and Recycling.

On any dwelling that is neither completed nor occupied by December 31, 2021, the owner thereof shall, upon application to the Director of the Department of Tax Administration or the Director DPWES, Solid Waste Collection and Recycling, made prior to March 31, 2022, be entitled to relief in the amount of the pro-rata portion based on the service period of the base annual charge hereby established. The claimant must provide acceptable evidence that the dwelling was not occupied, nor generating waste to the Director of the Department of Tax Administration or the Director DPWES, Solid Waste Collection and Recycling.

On any dwelling that is deleted from a sanitary district, as a result of the contraction of such sanitary district, the owner thereof will be entitled to relief in the amount of a pro rata portion of the base annual charge hereby established when service for refuse and recycling collection service is eliminated based on the service period.

On any dwelling that is added to a sanitary district, as a result of either the creation or the enlargement of a sanitary district or construction within the sanitary district, the owner thereof will be charged a pro rata portion of the base annual charge hereby established when service begins for refuse and recycling collection service based on the service period.

Water Service:

Small District One within Springfield District

On any lot within the district, an annual assessment of $661 for thirty years commencing July 1, 1993. This annual assessment is for the purpose of providing water service to Clifton Forest, a group of homes located within the Lincoln-Lewis-Vannoy Conservation District.

Small District Three within Springfield District

On any lot within the district, an annual assessment of $959 commencing January 1, 2003 and ending December 31, 2032. This annual assessment is for the purpose of providing water service to Colchester Road-Lewis Park, a group of 141 homes located within the Lincoln-Lewis-Vannoy Conservation District.

TRANSPORTATION IMPROVEMENT DISTRICT LEVIES*

State Route 28 Transportation Improvement District

On each $100.00 of assessed valuation of the taxable commercial and industrial real estate within the boundary of State Route 28 Transportation Improvement District, as specified by Virginia Code § 15.2-4607 and as set out in Chapter 587 of the 1997 Acts of the General Assembly, the tax rate shall be $0.17

Phase I Dulles Rail Transportation Improvement District

On each $100.00 of assessed valuation of the taxable commercial and industrial real estate within the boundary of Phase I Dulles Rail Transportation Improvement District, as specified by Virginia Code § 33.2-2105, the tax rate shall be $0.09

Phase II Dulles Rail Transportation Improvement District

On each $100.00 of assessed valuation of the taxable commercial and industrial real estate within the boundary of Phase II Dulles Rail Transportation Improvement District, as specified by Virginia Code § 33.2-2105, the tax rate shall be $0.20

*Tax will be levied and collected in two semi-annual tax billings.

SPECIAL SERVICE DISTRICT FOR THE CONTROL OF PEST INFESTATIONS*

On each $100.00 of assessed valuation of real estate within Fairfax County, but exclusive of the Lake Barcroft Water Improvement District, within the service district established by Appendix I of the Fairfax County Code, the tax rate shall be..... $0.0010

*Tax will be levied and collected in two semi-annual tax billings.

SPECIAL SERVICE DISTRICT FOR STORMWATER MANAGEMENT*

On each $100.00 of assessed valuation of real estate within Fairfax County, within the service district, the tax rate shall be $0.0325

*Tax will be levied and collected in two semi-annual tax billings.

TYSONS TRANSPORTATION SERVICE DISTRICT NO. 1*

On each $100.00 of assessed valuation of real estate within Fairfax County, within the service district, the tax rate shall be $0.05

*Tax will be levied and collected in two semi-annual tax billings.

DRAFT
Resolution Adopting Tax Rates for Fairfax County **ATTACHMENT II**
Fiscal Year 2022

RESTON TRANSPORTATION SERVICE DISTRICT NO. 1*

On each $100.00 of assessed valuation of real estate within Fairfax County, within the service district, the tax rate shall be $0.021

*Tax will be levied and collected in two semi-annual tax billings.

SERVICE CHARGES FOR AMBULANCE TRANSPORT SERVICE

Pursuant to Fairfax County Code § 4-26-1, each person being transported by any emergency medical services vehicle that is operated or maintained by the County or for which a permit has been issued to the County by the Virginia Office of Emergency Medical Services will be charged (1) a service fee of $500 for Basic Life Support transport (BLS), (2) $650 for Advanced Life Support, level 1 transport (ALS1), (3) $800 for Advanced Life Support, level 2 transport (ALS2), and (4) $12.00 per mile for ground transport mileage. The term "emergency medical services vehicle" has the definition specified in Virginia Code § 32.1-111.1.

GIVEN under my hand this _____ day of May, 2021

By: _____
Jill G. Cooper
Clerk for the Board of Supervisors

FAIRFAX COUNTY NOTICE OF PROPOSED REAL PROPERTY TAX INCREASE

In accordance with Virginia Code Section 58.1-3321, notice is hereby given that the Board of Supervisors of Fairfax County, Virginia, will meet in the Fairfax County Government Center, 12000 Government Center Parkway, Fairfax, Virginia, on April 13, 2021, at 3:00 P.M. The meeting may be held electronically due to the State of Emergency caused by the COVID-19 pandemic. Please contact the Clerk for the Board of Supervisors at (703) 324-3151 or clerktothebos@fairfaxcounty.gov, or review on-line at https://www.fairfaxcounty.gov/boardofsupervisors/2021-board-meetings at least one week prior to the meeting for additional information on the status of the meeting. The meeting is available to view live on Channel 16 and stream live online at www.fairfaxcounty.gov/cableconsumer/channel-16/live-video-stream. Live audio of the meeting may be accessed via telephone as noted on the website.

At that meeting, the Board of Supervisors shall consider the matters described below.

The Fairfax County Executive has proposed the advertisement of a real estate tax rate of $1.14 per $100.00 of assessed value. The tax rate being proposed represents a decrease of $0.010 from the FY 2021 rate of $1.150 per $100.00 assessed value; however, the total assessed value of existing property has increased. It should be noted that the total increase in assessed value of existing properties is expected to be 2.02 percent, including an increase of 4.25 percent for residential real property and a decrease of 4.05 percent for non-residential real property. As a result, most property owners will experience an increase in their real estate tax bill. Because the average value of real property in Fairfax County has appreciated by at least one percent, Virginia Code Section 58.1-3321 requires Fairfax County to publish the following notice.

Fairfax County, Virginia proposes to increase property tax levies.

1. Assessment Increase: Total assessed value of real property, excluding additional assessments due to new construction or improvements to property, exceeds last year's total assessed value of real property by 2.02 percent.

2. Lowered Rate Necessary to Offset Increased Assessment: The tax rate which would levy the same amount of real estate tax as last year, when multiplied by the new total assessed value of real estate with the exclusions mentioned above, would be $1.1273 per $100.00 of assessed value. This rate will be known as the "lowered tax rate."

3. Effective Rate Increase: Fairfax County, Virginia, proposes to adopt a tax rate of $1.14 per $100.00 of assessed value. The difference between the lowered tax rate and the proposed rate would be $0.0127 per $100.00, or 1.13 percent. This difference will be known as the "effective tax rate increase."

   Individual property taxes may, however, increase at a percentage greater than or less than the above percentage.

4. Proposed Total Budget Increase: Based on the proposed real property tax rate and changes in other revenues, the total budget of Fairfax County, Virginia, will exceed last year's by 1.51 percent[1].

A public hearing on this issue will be held at 3:00 P.M. on April 13, 2021, in the Fairfax County Government Center at 12000 Government Center Parkway.

All persons wishing to present their views on these subjects may sign up to be placed on the Speakers List at www.fairfaxcounty.gov/bosclerk/speakers-form or call the Office of the Clerk for the Board at 703-324-3151 and may appear and be heard via telephone or pre-recorded video. Deadlines by type of

testimony are on the website. In addition, written testimony and other submissions will be received at 12000 Government Center Parkway, Suite 552, Fairfax, 22035 and clerktothebos@fairfaxcounty.gov. If the meetings are in person, phone and video testimony are encouraged but in-person attendance and testimony are also permitted at 12000 Government Center Parkway, Fairfax VA 22035.

Copies of the full text of proposed ordinances, plans and amendments, as applicable, as well as other documents relating to the aforementioned subjects, are on file and may be examined at the Office of the Clerk for the Board of Supervisors, Suite 552 of the Fairfax County Government Center, 12000 Government Center Parkway, Fairfax, Virginia.

Fairfax County supports the Americans with Disabilities Act by making reasonable accommodations for persons with disabilities. Open captioning will be provided in the Board Auditorium. For sign language interpreters or other accommodations, please call the Clerk's Office, 703-324-3151, TTY 711 (Virginia Relay Center) no later than 48 hours before the public hearing. Assistive listening devices will be available at the meeting.

The Board will conduct a separate public hearing on the FY 2022 Advertised Budget Plan which will commence on April 13, 2021, at 4:00 PM and on April 14 and April 15 at 3:00 PM.

Copies of the FY 2022 Advertised Budget Plan and the Advertised Capital Improvement Program for Fiscal Years 2022-2026 (With Future Fiscal Years to 2031) are available on the Internet at https://www.fairfaxcounty.gov/budget/.

A Copy - Teste:

Jill G. Cooper, Clerk
Board of Supervisors

[1] The total budget increase is based on all revenues received by the General Fund of Fairfax County. Projected FY 2022 disbursements reflect a decrease of 4.68 percent from the FY 2021 level.

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 9

Approval of "$200 Additional Fine for Speeding" Signs as Part of the Residential Traffic Administration Program (Mount Vernon District)

ISSUE:
Board endorsement of "$200 Additional Fine for Speeding" signs as part of the Residential Traffic Administration Program (RTAP).

RECOMMENDATION:
The County Executive recommends approval of the resolutions (Attachment I and Attachment III) for the installation of "$200 Additional Fine for Speeding" signs on the following roads:

- Edinburgh Drive between Rolling Road and Rolling Road (Attachment I) (Mount Vernon District)
- Northumberland Road between Edinburgh Drive and Rolling Road (Attachment III) (Mount Vernon District)

In addition, the County Executive recommends that the Fairfax County Department of Transportation (FCDOT) request VDOT to schedule the installation of the approved "$200 Additional Fine for Speeding" signs (Attachment II and Attachment IV) as soon as possible.

TIMING:
Board action is requested on March 9, 2021 to help facilitate a prompt installation of the proposed signage.

BACKGROUND:
Section 46.2-878.2 of the *Code of Virginia* permits a maximum fine of $200, in addition to other penalties provided by law, to be levied on persons exceeding the speed limit on appropriately designated residential roadways. These residential roadways must have a posted speed limit of 35 mph or less and must be shown to have an existing speeding problem. To determine that a speeding problem exists, staff performs an engineering review to ascertain that certain speed and volume criteria are met.

Edinburgh Drive, between Rolling Road and Rolling Road, and Northumberland Road, between Edinburgh Drive and Rolling Road, (Mount Vernon District) meet the RTAP requirements for posting the "$200 Additional Fine for Speeding Signs." On January 28, 2021, FCDOT received written verification from the Mount Vernon District Supervisor's office confirming community support.

FISCAL IMPACT:
For the "$200 Additional Fine for Speeding" signs, $1,000 is to be paid out of the VDOT secondary road construction budget.

ENCLOSED DOCUMENTS:
Attachment I: "$200 Additional Fine for Speeding" Signs Resolution – Edinburgh Drive
Attachment II: Area Map of Proposed "$200 Additional Fine for Speeding" Signs – Edinburgh Drive
Attachment III: "$200 Additional Fine for Speeding" Signs Resolution – Northumberland Road
Attachment IV: Area Map of Proposed "$200 Additional Fine for Speeding" Signs – Northumberland Road

STAFF:
Rachel Flynn, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Gregg Steverson, Deputy Director, FCDOT
Eric Teitelman, Chief, Capital Projects and Traffic Engineering Division, FCDOT
Neil Freschman, Chief, Traffic Engineering Section, FCDOT
Steven K. Knudsen, Transportation Planner, Traffic Engineering Section, FCDOT

Attachment I

RESOLUTION

FAIRFAX COUNTY DEPARTMENT OF TRANSPORTATION
RESIDENTIAL TRAFFIC ADMINISTRATION PROGRAM (RTAP)
$200 ADDITIONAL FINE FOR SPEEDING SIGNS
EDINBURGH DRIVE
MOUNT VERNON DISTRICT

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held electronically (due to the State of Emergency caused by the COVID-19 pandemic), on Tuesday, March 9, 2021, at which a quorum was present and voting, the following resolution was adopted:

WHEREAS, Section 46.2-878.2 of the *Code of Virginia* enables the Board of Supervisors to request by resolution signs alerting motorists of enhanced penalties for speeding on residential roads; and

WHEREAS, the Fairfax County Department of Transportation has verified that a bona-fide speeding problem exists on Edinburgh Drive from Rolling Road to Rolling Road. Such road also being identified as a Minor Collector Road; and

WHEREAS, community support has been verified for the installation of "$200 Additional Fine for Speeding" signs on Edinburgh Drive.

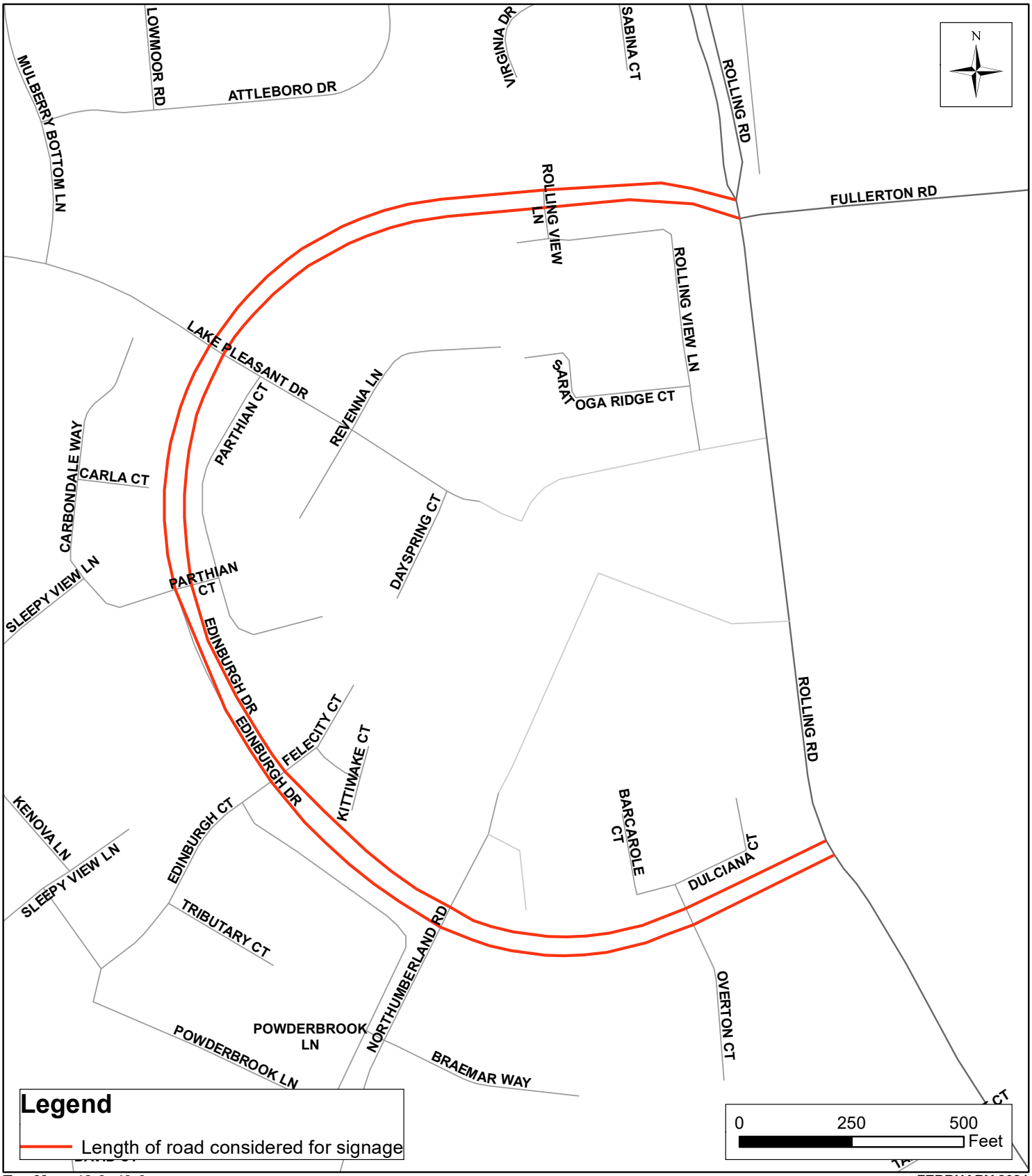
NOW, THEREFORE BE IT RESOLVED that "$200 Additional Fine for Speeding" signs are endorsed for Edinburgh Drive from Rolling Road to Rolling Road.

AND FURTHER, the Virginia Department of Transportation is requested to allow the installation of the "$200 Additional Fine for Speeding" signage, and to maintain same, with the cost of each sign to be funded from the Virginia Department of Transportation's secondary road construction budget.

ADOPTED this 9th day of March, 2021.

A Copy Teste:

_____
Jill G. Cooper
Clerk for the Board of Supervisors



Tax Map: 48-9, 49-3

FEBRUARY 2021

Fairfax County Department of Transportation
Residential Traffic Administration Program
Additional $200 Fine for Speeding Signs
Edinburgh Drive
Mount Vernon District

Attachment III

RESOLUTION

FAIRFAX COUNTY DEPARTMENT OF TRANSPORTATION
RESIDENTIAL TRAFFIC ADMINISTRATION PROGRAM (RTAP)
$200 ADDITIONAL FINE FOR SPEEDING SIGNS
NORTHUMBERLAND ROAD
MOUNT VERNON DISTRICT

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held electronically (due to the State of Emergency caused by the COVID-19 pandemic), on Tuesday, March 9, 2021, at which a quorum was present and voting, the following resolution was adopted:

WHEREAS, Section 46.2-878.2 of the *Code of Virginia* enables the Board of Supervisors to request by resolution signs alerting motorists of enhanced penalties for speeding on residential roads; and

WHEREAS, the Fairfax County Department of Transportation has verified that a bona-fide speeding problem exists on Northumberland Road from Edinburgh Drive to Rolling Road. Such road also being identified as a Local Road; and

WHEREAS, community support has been verified for the installation of "$200 Additional Fine for Speeding" signs on Northumberland Road.

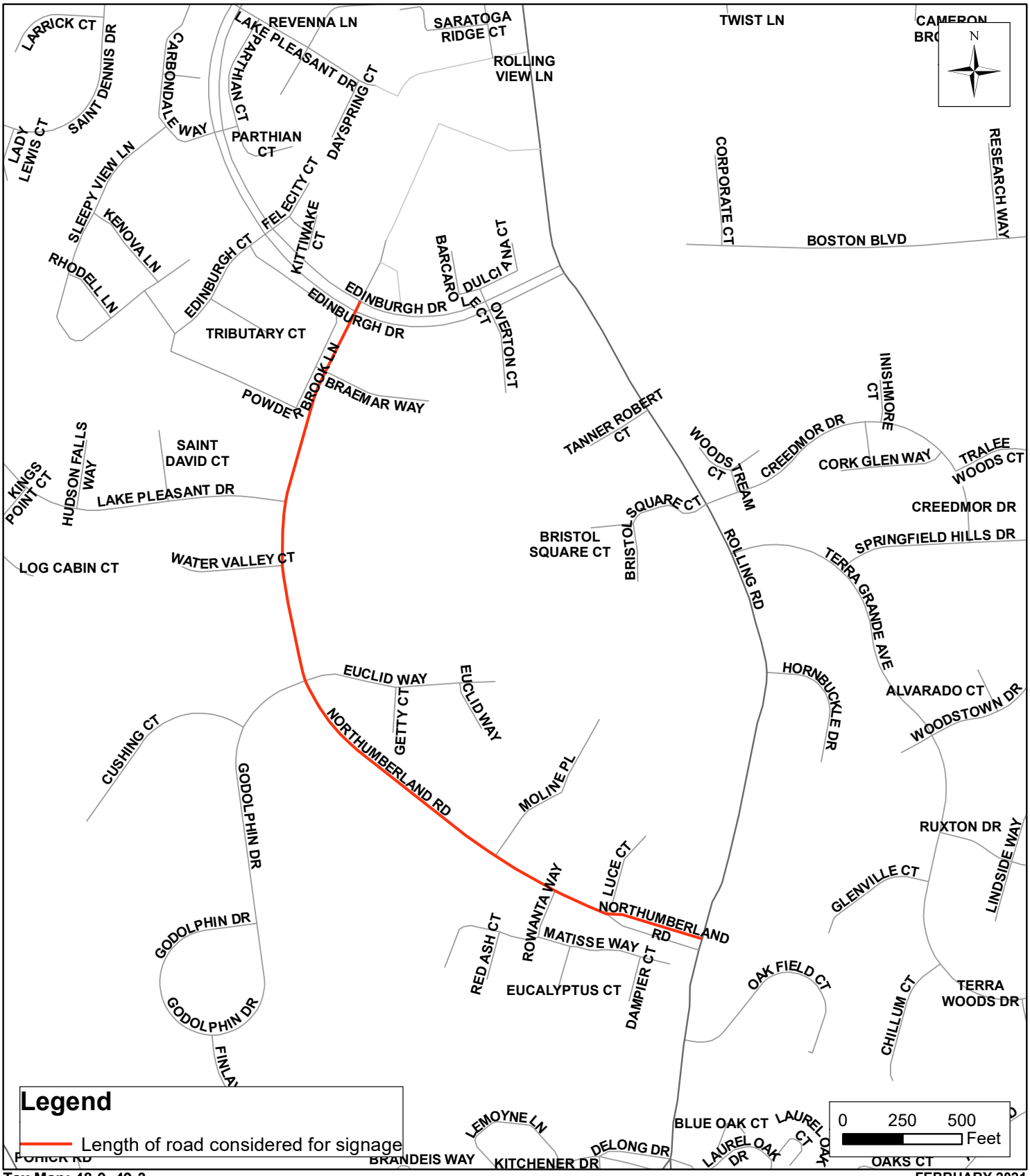
NOW, THEREFORE BE IT RESOLVED that "$200 Additional Fine for Speeding" signs are endorsed for Northumberland Road from Edinburgh Drive to Rolling Road.

AND FURTHER, the Virginia Department of Transportation is requested to allow the installation of the "$200 Additional Fine for Speeding" signage, and to maintain same, with the cost of each sign to be funded from the Virginia Department of Transportation's secondary road construction budget.

ADOPTED this 9th day of March, 2021.

A Copy Teste:

_____
Jill G. Cooper
Clerk for the Board of Supervisors



Legend

Length of road considered for signage

Tax Map: 48-9, 49-3

FEBRUARY 2021

Fairfax County Department of Transportation
Residential Traffic Administration Program
Additional $200 Fine for Speeding Signs
Northumberland Road
Mount Vernon District

Board Agenda Item
March 9, 2021

ADMINISTRATIVE - 10

Approval of Traffic Calming Measures as Part of the Residential Traffic Administration Program (Mount Vernon and Springfield Districts)

ISSUE:
Board endorsement of traffic calming measures as part of the Residential Traffic Administration Program (RTAP).

RECOMMENDATION:
The County Executive recommends that the Board endorse the traffic calming plans for 3rd Place (Attachment I and Attachment II) and Yates Ford Road (Attachment III and Attachment IV) consisting of the following:

- Two speed humps on 3rd Place (Mount Vernon District)
- Five speed humps on Yates Ford Road (Springfield District)

In addition, the County Executive recommends that the Fairfax County Department of Transportation (FCDOT) be requested to schedule the installation of the approved traffic calming measures as soon as possible.

TIMING:
Board action is requested on March 9, 2021, in order to allow the proposed measures to be installed as soon as possible.

BACKGROUND:
As part of RTAP, roads are reviewed for traffic calming when requested by a Board member on behalf of a homeowners or civic association. Traffic calming employs the use of physical devices such as speed humps, speed tables, raised pedestrian crosswalks, chokers, or median islands to reduce the speed of traffic on a residential street. Staff performs engineering studies documenting the attainment of qualifying criteria. Staff works with the local Supervisor's office and community to determine the viability of the requested traffic calming measure to reduce the speed of traffic. Once the plan for the road under review is approved and adopted by staff, that plan is then submitted for approval to the residents within the ballot area in the adjacent community.

On January 22, 2021, FCDOT received verification from the Mount Vernon District

Board Agenda Item
March 9, 2021

Supervisor's office confirming community support for the 3rd Place traffic calming plan.

On January 26, 2021, FCDOT received verification from the Springfield District Supervisor's office confirming community support for the Yates Ford Road traffic calming plan.

FISCAL IMPACT:
Funding in the amount of $60,000 is necessary to fund the traffic calming measures associated with these traffic calming projects. Funds are currently available in Project 2G25-076-045, 3rd Place Traffic Calming, Fund 300-30050, Transportation Improvements, and in Project 2G25-076-046, Yates Ford Road Traffic Calming, Fund 300-30050, Transportation Improvements.

ENCLOSED DOCUMENTS:
Attachment I: Traffic Calming Resolution for 3rd Place
Attachment II: Traffic Calming Plan for 3rd Place
Attachment III: Traffic Calming Resolution for Yates Ford Road
Attachment IV: Traffic Calming Plan for Yates Ford Road

STAFF:
Rachel Flynn, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Gregg Steverson, Deputy Director, FCDOT
Eric Teitelman, Chief, Capital Projects and Traffic Engineering Division, FCDOT
Neil Freschman, Chief, Traffic Engineering Section, FCDOT
Steven K. Knudsen, Transportation Planner, Traffic Engineering Section, FCDOT

Attachment I

RESOLUTION

FAIRFAX COUNTY DEPARTMENT OF TRANSPORTATION
RESIDENTIAL TRAFFIC ADMINISTRATION PROGRAM (RTAP)
TRAFFIC CALMING MEASURES
3RD PLACE
MOUNT VERNON DISTRICT

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held electronically (due to the State of Emergency caused by the COVID-19 pandemic), on Tuesday, March 9, 2021, at which a quorum was present and voting, the following resolution was adopted:

WHEREAS, the residents in the vicinity of 3rd Place have requested the Mount Vernon District Supervisor's Office of Fairfax County to consider remedial measures to reduce the speed of traffic on 3rd Place; and

WHEREAS, an engineering study by the Fairfax County Department of Transportation (FCDOT) for 3rd Place indicates that all basic traffic calming criteria are met pertaining to functional classification of the roadway, identification of a significant speeding concern, and proof of community support; and

WHEREAS, the proposed Traffic Calming Plan was properly presented to the community in the affected survey area for their review and consideration; and

WHEREAS, the Traffic Calming Plan was subsequently approved by the occupied residences within the appropriate surveyed area; and

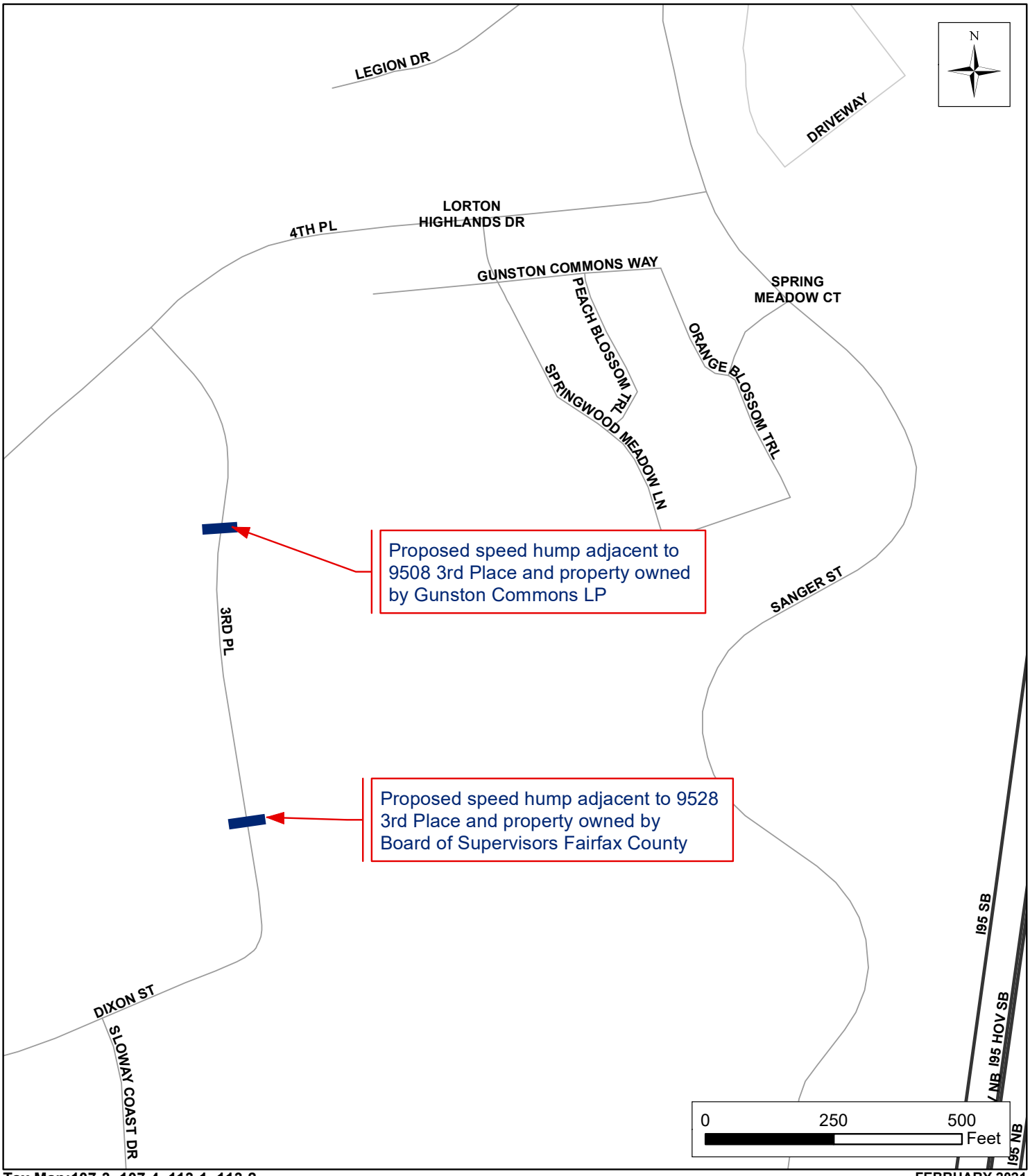
WHEREAS, the intended source of funding for the Traffic Calming Plan is Fairfax County.

NOW THEREFORE BE IT RESOLVED, that the Board of Supervisors endorses the proposed Traffic Calming Plan and requests that the Virginia Department of Transportation review and approve the feasibility of implementing traffic calming measures on 3rd Place as part of FCDOT's Residential Traffic Administration Program.

ADOPTED this 9th day of March, 2021.

A Copy Teste:

_____
Jill G. Cooper
Clerk for the Board of Supervisors



Tax Map:107-3, 107-4, 113-1, 113-2

FEBRUARY 2021

Fairfax County Department of Transportation
Residential Traffic Administration Program
Traffic Calming Plan
3rd Place
Mount Vernon District

Attachment III

RESOLUTION

FAIRFAX COUNTY DEPARTMENT OF TRANSPORTATION
RESIDENTIAL TRAFFIC ADMINISTRATION PROGRAM (RTAP)
TRAFFIC CALMING MEASURES
YATES FORD ROAD
SPRINGFIELD DISTRICT

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held electronically (due to the State of Emergency caused by the COVID-19 pandemic), on Tuesday, March 9, 2021, at which a quorum was present and voting, the following resolution was adopted:

WHEREAS, the residents in the vicinity of Yates Ford Road have requested the Springfield District Supervisor's Office of Fairfax County to consider remedial measures to reduce the speed of traffic on Yates Ford Road; and

WHEREAS, an engineering study by the Fairfax County Department of Transportation (FCDOT) for Yates Ford Road indicates that all basic traffic calming criteria are met pertaining to functional classification of the roadway, identification of a significant speeding concern, and proof of community support; and

WHEREAS, the proposed Traffic Calming Plan was properly presented to the community in the affected survey area for their review and consideration; and

WHEREAS, the Traffic Calming Plan was subsequently approved by the occupied residences within the appropriate surveyed area; and

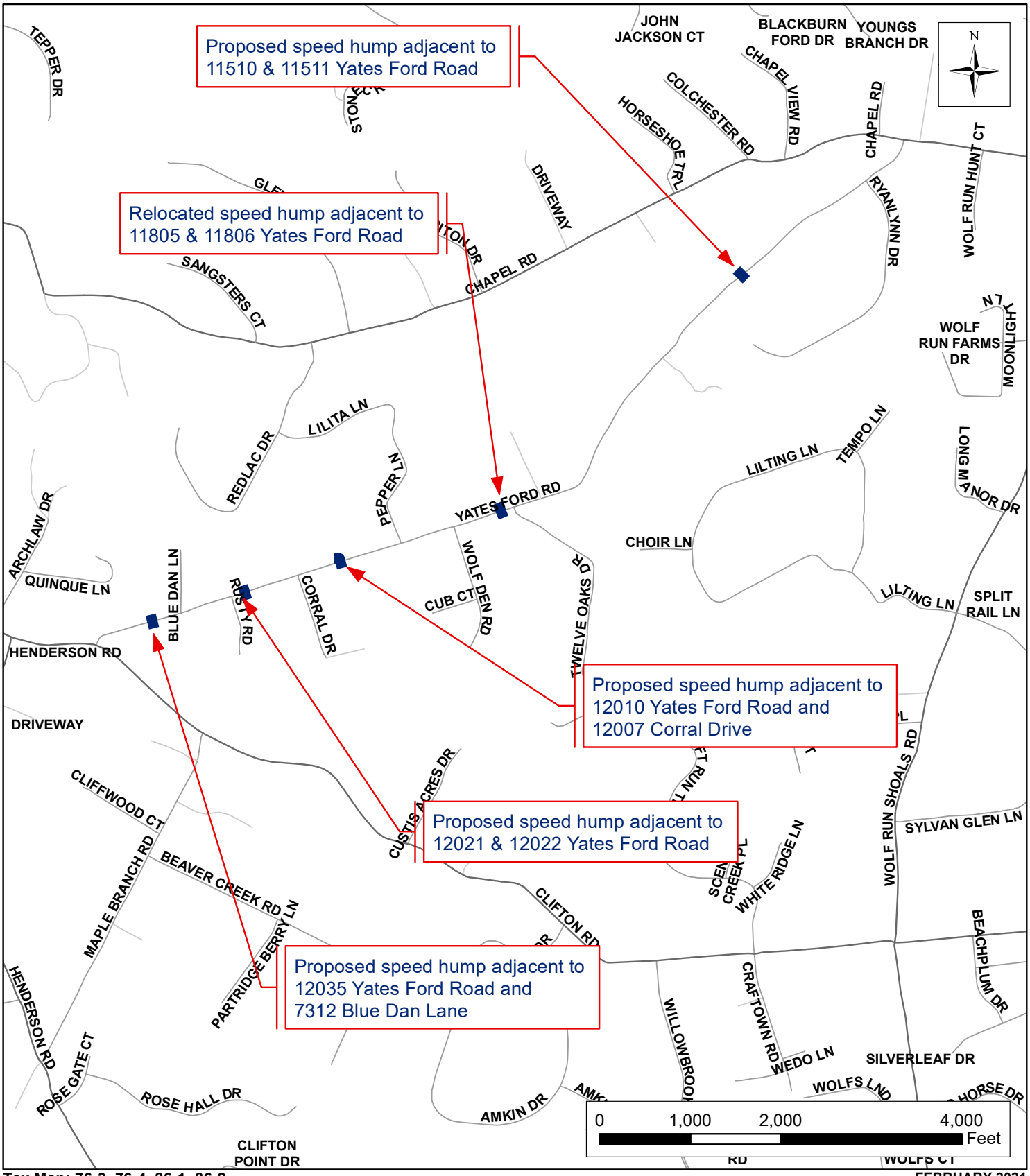
WHEREAS, the intended source of funding for the Traffic Calming Plan is Fairfax County.

NOW THEREFORE BE IT RESOLVED, that the Board of Supervisors endorses the proposed Traffic Calming Plan and requests that the Virginia Department of Transportation review and approve the feasibility of implementing traffic calming measures on Yates Ford Road as part of FCDOT's Residential Traffic Administration Program.

ADOPTED this 9th day of March, 2021.

A Copy Teste:

_____
Jill G. Cooper
Clerk for the Board of Supervisors



Tax Map: 76-3, 76-4, 86-1, 86-2

FEBRUARY 2021

Fairfax County Department of Transportation
Residential Traffic Administration Program
Traffic Calming Plan
Yates Ford Road
Springfield District

Board Agenda Item
March 9, 2021

ACTION - 1

Approval of a Resolution to Extend the Cable Franchise Term of Verizon Virginia LLC

ISSUE:
Adoption of a resolution (Attachment 1) authorizing the County Executive to execute an agreement extending the term of Verizon's cable franchise through March 31, 2022 (Attachment 2).

RECOMMENDATION:
The County Executive recommends that the Board authorize him to enter into an agreement with Verizon extending the term of Verizon's cable franchise without change in the terms and conditions of the franchise.

TIMING:
The Verizon cable franchise should be extended prior to its scheduled expiration on March 31, 2021.

BACKGROUND:
Section 546 of the federal Cable Communications Policy Act of 1984, as amended, 47 U.S.C. § 521 *ff.*, governs the process by which a local community may renew a cable franchise. The process normally used requires negotiation between the cable operator and the community regarding the terms and conditions of a new franchise agreement, consistent with federal and state law.

Verizon and County staff are currently engaged in active discussions regarding renewal of the Franchise. A renewal agreement has not yet been reached. A limited extension of the term through March 31, 2022, will maintain the parties' existing rights and obligations while they seek to develop a renewal agreement. Verizon and the Board previously extended the original term of the franchise in September 2020, from September 30, 2020, through March 31, 2021.

FISCAL IMPACT:
None.

Board Agenda Item
March 9, 2021

ENCLOSED DOCUMENTS:
Attachment 1 – Proposed resolution
Attachment 2 – Proposed agreement with Verizon

STAFF:
Joseph M. Mondoro, Chief Financial Officer
Michael S. Liberman, Director, Department of Cable and Consumer Services (DCCS)
Frederick E. Ellrod III, Director, Communications Policy and Regulation Division, DCCS

ASSIGNED COUNSEL:
Erin C. Ward, Deputy County Attorney
Joanna L. Faust, Assistant County Attorney

ATTACHMENT 1

RESOLUTION AUTHORIZING THE COUNTY EXECUTIVE TO SIGN A LETTER AGREEMENT WITH VERIZON VIRGINIA LLC

At a regular meeting of the Fairfax County Board of Supervisors ("Board of Supervisors"), held electronically (due to the State of Emergency caused by the COVID-19 pandemic) on March 9, 2021, at which a quorum was present and voting, the following resolution was adopted in public session.

WHEREAS:

1. Section 2.3 of the Cable Franchise Agreement by and between Fairfax County, Virginia, and Verizon Virginia Inc., the predecessor-in-interest of Verizon Virginia LLC, approved by the Fairfax County Board of Supervisors on September 26, 2005 ("Franchise Agreement"), established the term of the Franchise as 15 years from the effective date, defined in Section 2.3 as October 1, 2005; and

2. By agreement dated September 30, 2020, the term of the Franchise was extended through March 31, 2021; and

3. No renewal agreement has been reached and the parties are continuing to pursue the renewal procedures set forth in 47 U.S.C. § 546;

NOW, THEREFORE, be it resolved by the Board of Supervisors that the County Executive is authorized to sign the attached agreement, in which the parties agree to extend the term of the Franchise Agreement through March 31, 2022.

GIVEN under my hand this 9th day of March, 2021.

_____
Jill G. Cooper
Clerk for the Board of Supervisors

**AGREEMENT EXTENDING
THE TERM OF THE CABLE FRANCHISE GRANTED TO
VERIZON VIRGINIA LLC**

This Agreement is made this _____ day of March, 2021, by and between the County of Fairfax, Virginia (hereinafter the "County"), and Verizon Virginia LLC (hereinafter "Verizon").

WHEREAS, the County has granted a franchise ("Franchise") to Verizon pursuant to the Cable Franchise Agreement by and between Fairfax County, Virginia, and Verizon Virginia Inc., the predecessor-in-interest of Verizon Virginia LLC, approved by the Fairfax County Board of Supervisors on September 26, 2005 ("Franchise Agreement), and Chapter 9.2 of the County Code, as amended, collectively referred to as the "Franchise Documents"; and

WHEREAS, Verizon initiated the franchise renewal process consistent with Section 626 of the Cable Communications Policy Act of 1984, as amended ("Cable Act"), via letter to the County dated February 15, 2018; and

WHEREAS, by agreement dated September 30, 2020, the term of the Franchise was extended through March 31, 2021; and

WHEREAS, the Franchise is scheduled to expire on March 31, 2021; and

WHEREAS, the County and Verizon are currently engaged in active discussions regarding renewal of the Franchise; and

WHEREAS, the County and Verizon each desire to enter into an amendment extending the term of the Franchise as set forth herein in order to complete negotiations and reach agreement on the renewal of the Franchise; and

WHEREAS, Section 2.3 of the Franchise Agreement provides that it may be extended by mutual agreement;

NOW, THEREFORE, in consideration of the promises and undertakings herein, the receipt and adequacy of which are hereby acknowledged, the parties hereby agree as follows:

Section 1. The Franchise is hereby extended through March 31, 2022 (the "extension period").

Section 2. During the extension period, all the terms and conditions set forth in the Franchise Documents shall remain in full force and effect.

Section 3. This extension shall be without prejudice to any rights of either party under the Cable Act, the Franchise, or applicable law. No claim that either party may have against the other shall be released or otherwise affected by this extension.

Section 4. Nothing in this Agreement obliges the County to grant Verizon a renewal franchise, and this Agreement shall not be interpreted as a renewal of the Franchise or as a commitment to renew.

Section 5. Counterparts: This Agreement may be executed in several counterparts, each of which when so executed shall be deemed to be an original copy, and all of which together shall constitute one agreement binding on all parties hereto, notwithstanding that all parties shall not have signed the same counterpart.

IN WITNESS WHEREOF, the parties hereto have signed on the day first above written.

County of Fairfax, Virginia

By _____
Bryan J. Hill
County Executive

Verizon Virginia LLC

By _____
Christopher Childs
Region President - Consumer & Mass Business Markets

Board Agenda Item
March 9, 2021

ACTION - 2

Approval of Bond Underwriter Pool

ISSUE:
Board approval of the list of authorized underwriters for potential future negotiated bond sales.

RECOMMENDATION:
Board approval of Attachment 1, listing the twelve firms recommended by the Selection Advisory Committee, to serve as potential underwriters for future negotiated bond sales.

TIMING:
Board action is requested on March 9, 2021.

BACKGROUND:
In September 2010 and 2015, the County issued successive Request for Proposals (RFP) to underwriters for the purpose of obtaining a pool of qualified firms to be considered for underwriting future bonds issued by the County and/or through its authorities, such as the Fairfax County Economic Development Authority (EDA) and the Fairfax County Redevelopment and Housing Authority (RHA). Staff believed it was prudent to establish a pool of pre-qualified underwriters from which to choose at the appropriate time for various projects requiring financing. This action not only saved staff time from issuing multiple RFP's, but also saved respondent time and effort as the majority of firms would have been expected to resubmit to each new RFP. The underwriter pool has proven to be an invaluable tool that assisted with several special financings that have occurred since 2010 such as: the Mosaic District (Community Development Authority Revenue Bonds), Dulles Rail Phase 1 (Transportation District Improvement Revenue Bonds and Revenue Refunding Bonds), and multiple County buildings (EDA Public Facilities Revenue Bonds).

Staff recommends renewing the pool based on the past success it has provided and the future financing needs of the County. Some examples of where the pool could be utilized in the near future include the following potential financings and refinancings:

- Transportation District Improvement Revenue Refunding Bonds Series 2016 (Silver Line Phase 1 Project).

- Transportation District Improvement Revenue Bonds Series 2014 (Silver Line Phase 2 Transportation Infrastructure Finance and Innovation Act (TIFIA) loan with the United States Department of Transportation).
- Metrorail Parking System Revenue Bonds Series 2017 (Innovation Center and Herndon-Monroe Parking Garages - Silver Line Phase 2).
- Sewer Revenue Bonds and Sewer Revenue Refunding Bonds.
- Stormwater and Wastewater Facility - Consolidation of Stormwater Planning, Maintenance & Stormwater Management, and Wastewater Collection Divisions into a co-located facility.
- Other County projects included in the Capital Improvement Program (CIP).

For the Sewer Revenue and Revenue Refunding Bonds, as well as for the Stormwater and Wastewater Facility, County staff currently anticipate respective negotiated bond sales in the spring and summer 2021 timeline. Briefings on each of these bond sales will be provided to the Board in advance through either a memorandum or Board Committee presentation. A subsequent Board action item would then follow with the accompanying bond documents at a Board meeting.

On December 22, 2020, Fairfax County issued a Request for Proposals (RFP) to underwriting firms for purposes of obtaining a pool of qualified firms on financings through June 30, 2024, with two optional one-year renewal periods (through June 30, 2025 and June 30, 2026). In response to this RFP, the County received eighteen proposals. The Selection Advisory Committee (SAC) evaluated the proposals in accordance with the criteria established in the RFP. These criteria included experience with transactions comparable to the County's; financial strength, including capitalization; sales and distribution capabilities including retail distribution capabilities in Virginia; feedback on investor interest in the County's environmental sustainability initiatives and programs; understanding of the County's needs; and innovative financing structures. With technical assistance from the County's financial advisor, the SAC chose the top ranked firms, ensuring that the mix of firms in the underwriting pool would provide access to a broad and diverse group of potential investors to include large institutional investors, regional market investors, and smaller retail investors.

Following the SAC evaluation of the proposals, the SAC recommends that the County establish a pool of twelve underwriters that are pre-qualified to undertake future financings (Attachment 1). If the County were to plan for a negotiated bond sale, the firms included in the Senior Manager pool will be asked to submit proposals specific to the bond issue under consideration and formally compete to serve as the senior manager, and/or co-senior manager for a particular bond issue. Future senior underwriter selections will be based upon understanding of the credit, ability to explain the credit to investors and market the bonds to a wide audience, recommendations for cost effective bond features and structures, and favorable pricing consistent with then-

current market conditions and the bond issue under consideration. Combined with the fundamental qualifications being reviewed, County staff can then make a decision on the best qualified underwriter(s) for a particular bond sale.

There are two methodologies by which issuers typically sell municipal bonds – on a "negotiated" or "competitive" basis. Historically, the County has sold the majority of its bonds on a competitive basis. In a competitive bond sale, the County posts a public sale notice inviting underwriters to bid on its bonds at a specified date and time and awards the bonds to the bidder offering the lowest interest cost. This was done most recently in January as part of the County's General Obligation Public Improvement Bonds Series 2021A. By comparison, for a negotiated bond sale, the underwriter(s) is selected in advance of a bond sale, typically based upon a series of questions posed with respect to the County's proposed financing. The interest rates and other terms of the bonds are then set based on a negotiation with the underwriter. The decision to use one methodology over another primarily depends upon the attributes of the bond issue, the County's needs, and market conditions at the time of sale.

As cited earlier, the County has utilized negotiated bond sales for its Silver Line-related financings, which were at the time new County credits offered to the bond market. This approach provided the advantage of an underwriting team to review the credit (e.g., tax district composition, debt service payments and coverage, and reserves), the tie-in to the overall Silver Line project, and subsequently market the bonds to investors. It should be noted that most large, highly rated, and active issuers, such as Arlington County and the Commonwealth of Virginia, utilize an established an underwriter pool as part of their bond sale evaluation process.

The establishment of an underwriting pool neither requires the County to sell bonds on a negotiated basis, nor guarantees that any or all of the firms in the underwriter pool will serve as an underwriter on a future financing. Rather, the pool allows the County to use a streamlined selection process for future bond issuances that provides the County with flexibility to meet bond issuance schedules. Another advantage to establishing an underwriting pool is that it may encourage underwriting firms to earn the County's confidence by bidding aggressively on the County's competitive sales.

FISCAL IMPACT:
There is no fiscal impact at this time. One of the factors that will determine whether a bond sale is conducted on a competitive or negotiated basis will be an assessment of which method is most effective and cost advantageous to the County, and the underlying market conditions leading up to the proposed date of the bond sale.

Board Agenda Item
March 9, 2021

ENCLOSED DOCUMENTS:
Attachment 1: List of Recommended Underwriter Firms

STAFF:
Joseph Mondoro, Chief Financial Officer
Christina Jackson, Director, Department of Management and Budget
Joseph LaHait, Debt Manager, Department of Management and Budget

ASSIGNED COUNSEL:
Emily Smith, Assistant County Attorney

Attachment 1

Fairfax County Underwriter Pool

Pool of qualified firms for financings through June 30, 2024, with two optional one-year renewal periods (through June 30, 2025 & June 30, 2026)

Firms included in the Senior Manager Pool:

1. BofA Securities
2. Citigroup Global Markets
3. J.P. Morgan Securities
4. Morgan Stanley
5. Raymond James
6. Siebert Williams Shank & Company
7. Wells Fargo Securities

Firms in the Senior Manager Pool may also serve as co-managers.

Firms included in the Co-Manager Pool:

1. American Veterans Group
2. Drexel Hamilton
3. Loop Capital
4. Piper Sandler
5. Stifel Nicolaus & Company

Board Agenda Item
March 9, 2021

ACTION - 3

Proposed Revision to the Board Policy on the Use of Stormwater Funds for Stormwater System Improvements in the Right-of-Way

ISSUE:
As a result of Board policy, the County cannot use Stormwater Service District Tax (Stormwater Tax) funds to improve existing stormwater infrastructure within the Virginia Department of Transportation (VDOT) right-of-way that do not serve to protect streams or improve water quality. Inadequate stormwater infrastructure, like undersized culverts, can cause localized flooding. Revision of this Board policy would provide an additional tool to allow the County and VDOT to improve collaboration on stormwater system improvements, address flood safety hazards, and reduce structural flooding in the County.

RECOMMENDATION:
It is recommended that the Board of Supervisors revise the 2006 policy that restricts the use of stormwater funds for road projects, allowing Stormwater Tax funds to be used for stormwater improvements within the VDOT right-of-way to address flood safety hazards and reduce structural flooding. The recommended revised policy is as follows:

> Stormwater funds may be used to implement stormwater improvements in the right-of-way where the primary objective is to mitigate property or road flooding, and:
>
> 1) No Stormwater funds will be used for pedestrian, street lighting, or vehicular improvements except to replace existing facilities that are either damaged by or removed to implement a flood mitigation project; and
> 2) No Stormwater funds will be used to address maintenance needs or fund other roadway or transportation improvements.

Potential right-of-way projects will be evaluated by staff based on safety, severity and frequency of the flooding problem, length of time since a flooding concern was first identified, cost-sharing or matching opportunities with VDOT or Fairfax County Department of Transportation, alignment with other proposed County infrastructure projects, equity, and community support. If the revision is approved, it is also recommended that proposed projects in the VDOT right-or-way be presented to the Board as an information item, as part of the annual stormwater capital improvement program process.

Board Agenda Item
March 9, 2021

TIMING:
Board action is requested on March 9, 2021.

BACKGROUND:
The January 23, 2006, Board Summary for the Adoption of the Popes Head Creek Watershed Management Plan stated that, “road projects not related to the protection of stream beds or banks or water quality will not be funded out of the stormwater and watershed budget” (Attachment 1). This statement was also included in subsequent watershed management plans adopted by the Board. As a result, the County has not used Stormwater Tax funds to improve existing VDOT stormwater drainage infrastructure that do not serve to protect stream or improve water quality.

Inadequate stormwater infrastructure, like undersized culverts, can cause localized flooding when water backs up on the upstream side. The collected water may overflow across the street, producing road or structural flooding and downstream erosion. Flooding at undersized culverts can also damage public and private property and infrastructure. Revising the Board policy to allow stormwater funds to be used for stormwater system improvements within the VDOT right-of-way would provide another tool to better allow the County and VDOT to collaboratively address public safety and community flooding. Due to the existing Board policy, County staff has not expended resources to develop conceptual plans or cost estimates of potential projects in the right-of-way.

FISCAL IMPACT:
There will be no fiscal impact to the General Fund, but there may be more projects eligible for the Stormwater Service District Tax funds.

ENCLOSED DOCUMENTS:
Attachment 1 – January 23, 2006, Adoption of the Popes Head Creek Watershed Management Plan Board Summary

STAFF:
Rachel Flynn, Deputy County Executive
Randolph W. Bartlett, Director, Department of Public Works and Environmental Services (DPWES)
Craig Carinci, Director, DPWES, Stormwater Planning Division (SPD)
Chad Crawford, Director, DPWES, SPD, Maintenance and Stormwater Management Division

ASSIGNED COUNSEL:
Marc E. Gori, Assistant County Attorney

17. **A-4 – ADOPTION OF THE POPES HEAD CREEK WATERSHED MANAGEMENT PLAN (BRADDOCK AND SPRINGFIELD DISTRICTS)** (12:21 p.m.)

Supervisor Gross moved adoption of the Popes Head Creek Watershed Management Plan. Supervisor Bulova seconded the motion.

Chairman Connolly noted that he, along with Supervisor McConnell met with staff to resolve questions regarding the cost structure of the management plan. As a follow up to the meeting, Chairman Connolly issued a written statement that includes the following:

- The Board's reaffirming of its long history of environmental vigilance, endorsed by its adoption of the Environmental Agenda, which calls for the need to complete the watershed management planning process. The information in these plans is vital to establishing a baseline inventory of potential project and policy needs Countywide.

- These plans represent a menu of options and concepts that require an additional level of fiscal scrutiny. This "cost-scrubbing" exercise for each potential project is essential.

Chairman Connolly relinquished the Chair to Vice-Chairman Bulova and asked to amend the motion to direct staff to recognize the following:

- Projects, programs, and policy items in this plan will first undergo appropriate review by County staff and the Board prior to implementation. Board adoption of the watershed plan will not set into motion automatic implementation of projects, programs, initiatives, or policy recommendations.

- The Watershed plan is a conceptual master-list of non-structural programs and structural capital projects. Each fiscal year, staff will prepare and submit to the Board a detailed spending plan to include a description of proposed projects and an explanation of their ranking, based on specific criteria, such as the cost-effectiveness as compared to alternative projects, a clear public benefit, a need to protect public or private lands from erosion or flooding, and a need to meet a specific watershed or water quality goal.

- Road projects not related to protection of streambeds or banks or water quality will not be funded out of the stormwater and watershed budget.

Fairfax County Watershed Planning Program Schedule, January 2006

Project	Start	Completion	% Complete
Little Hunting Creek	Dec-02	Dec-04	100
Popes Head Creek	May-03	Oct-05	100
Cameron Run	Jun-03	Apr-06	70
Cub Run/Bull Run	Oct-03	May-06	65
Difficult Run	Jan-04	May-06	60
Pimmit/Bull Neck/Scotts/Dead/Turkey	Aug-04	Jun-06	50
Program Evaluation	Mar-05	July-05	100
Little Rocky Run/Johnny Moore Cr.	Apr-06	Nov-07	NA
Pohick Creek	May-06	May-08	NA
Accotink Creek	May-06	May-08	NA
Four-mile Run	Jul-06	Feb-08	NA
Sugarland Run/Horsepen Creek	Sep-07	Jul-09	NA
Pond Branch/Nichol Run	Sep-07	Jul-09	NA
Dogue Creek	May-08	Dec-09	NA
Belle Haven	May-08	Dec-09	NA
Kane Creek/High Point/ Old Mill/Wolf/Ryans/Sandy/Occoquan	May-08	Dec-09	NA

The County's 30 watersheds are grouped into 14-15 watershed planning projects.

Board Agenda Item
March 9, 2021

ACTION - 4

Approval of the Calendar Year 2021 Forest Pest Management Program

ISSUE:
Board approval of the Calendar Year 2021 Forest Pest Management Program.

RECOMMENDATION:
The County Executive recommends that the Board of Supervisors direct staff to take the following actions concerning Fairfax County's Calendar Year 2021 Forest Pest Management Program:

Asian Longhorned Beetle (ALB)

a. Continue to update the long-term management plan for ALB.

b. Continue to conduct an outreach program to educate the public and private industry on the potential impacts of this pest.

c. Continue to monitor in areas that have been identified as being at high risk for ALB introduction.

Beech Bark Disease (BBD)

a. Initiate a monitoring program for BBD in beech forest stands on County owned properties.

Beech Leaf Disease (BLD)

a. Initiate a monitoring program for BLD in beech forest stands on County owned properties.

Emerald Ash Borer (EAB)

a. Continue to inventory the County for ash resources as well as investigate new control methods for EAB, including the use of biological control.

b. Continue a control program for this pest on high value ash trees on Fairfax County owned properties. Staff plans to use the trunk injected pesticide

Mectinite® (Attachment 1) and basal bark trunk spray Safari® 20 SG (Attachment 2).

c. Monitor ash trees that were treated as part of the previous year's program to determine the effectiveness of the control.

d. Monitor areas where EAB parasitoids were previously released to determine if parasitoids can be recovered. Investigate additional areas that are suitable for parasitoid release.

e. Continue to implement an extensive outreach program targeting the tree care industry and residents of the County on EAB control methods and removal of dead ash trees.

f. Coordinate the remediation of damage caused by EAB, including the removal of dead ash trees from County property.

g. Continue to inventory the County for ash tree resources as well as investigate new control methods for EAB, including the use of biological control.

Fall Cankerworm

a. Continue a monitoring program for all life stages of the fall cankerworm in the County.

b. Continue fall cankerworm spring defoliation surveys.

c. Continue to conduct an outreach program to the public on the insect's role in the environment and its potential impact on trees.

Forest Health Initiative

a. Continue to evaluate forest health using data from the i-Tree™ survey conducted in 2017.

b. Continue to evaluate the soil microbiota and its effects on forest health.

Gypsy Moth

a. Continue a monitoring program for life stages of the gypsy moth in all areas of the County.

b. Continue to conduct an outreach program targeting the tree care industry and residents of the County in monitoring of gypsy moth populations.

Hemlock Woolly Adelgid (HWA)

a. Continue to inventory the County for hemlock resources as well as investigate new control methods for HWA, including the use of biological control.

b. Continue a control program in naturally occurring forest stands of eastern hemlock on County and Northern Virginia Regional Park Authority property. Staff has selected sites in the Dranesville and Springfield districts and may provide control at each site. Staff plans to use the soil or trunk injected pesticides IMA-jet® (Attachment 3), Safari® 20 SG (Attachment 2), and CoreTect® (Attachment 4).

c. Continue to evaluate hemlock trees that have been treated to determine treatment efficacy and tree health.

Spotted Lanternfly (SLF)

a. Continue to monitor the latest scientific research for SLF to determine its potential impact on trees in the County should it arrive from nearby infestation areas.

b. Continue to survey all life stages in all areas of the County.

c. Continue to inventory tree of heaven on County property. These may be treated with an herbicidal treatment of Arsenal® (Attachment 5), Garlon® 3A (Attachment 6) or Garlon® 4 (Attachment 7), Milestone® (Attachment 8), and Rodeo® (Attachment 9).

d. Plan a control program with Merit® 2F (Attachment 10) and Safari® 20 SG (Attachment 2), systemic insecticides that deliver insecticides into host trees, or Botanigard® (Attachment 11), a contact insecticide, to be implemented in the event SLF is discovered in the County.

e. Develop a SLF management plan for the County.

f. Continue to conduct an informational outreach program targeting the tree care industry and residents of the County to help monitor SLF.

Sudden Oak Death (SOD)

a. Continue to conduct a monitoring program to determine if SOD is present in the County.

b. Continue to update a management plan for SOD.

Thousand Canker Disease of Walnut

a. Continue to explore the potential impact of this disease that is threatening black walnut.

b. Continue to provide outreach opportunities for residents on methods for protecting black walnut trees on their properties.

c. Investigate new control methods for the walnut twig beetle, including the use of biological control.

TIMING:
Board action is requested on March 9, 2021. The timing of this item corresponds with the beginning of program monitoring activities.

BACKGROUND:
The Code of the County of Fairfax, Virginia requires the submission of the annual Integrated Pest Management Program proposal for Board of Supervisors' approval.

Asian Longhorned Beetle (ALB)
ALB (*Anoplophora glabripennis*) is an invasive insect that is thought to have been brought to the United States via wood packing material used in shipping. Since the mid 1990's, ALB infestations in Chicago, New York City, New Jersey, Boston, Ohio, and South Carolina have been discovered. ALB will infest many hardwood species. According to recent analysis conducted by the Urban Forest Management Division, approximately 4.2 million trees in the County are susceptible to this pest. ALB larvae kill trees by boring into the heartwood of the tree and disrupting its nutrient flow causing eventual tree death.

ALB infestations are difficult to detect. Most ALB infestations in the United States have been established for several years before detection. Eradication can be particularly difficult since they have had time to spread well beyond the initial site of introduction. ALB has the potential to have drastic economic and social impacts should it be

introduced in the County. It is critical that private and public tree care experts remain vigilant in monitoring for this pest. According to the United States Department of Agriculture (USDA), Forest Service, most of the infestations found in the United States have been detected by tree care professionals or informed homeowners.

Beech Bark Disease (BBD)
BBD affects American beech trees (*Fagus grandifolia*) through the introduction of a fungal pathogen by an insect vector. The insect, a small, white, fuzzy scale known as *Cryptococcus fagisuga,* feeds on the bark. The multitude of wounds made by the feeding insects create entry points for *Neonectria faginiata*, a lethal fungus. The fungus in turn creates lesions under the bark, disrupting vasculature, and killing the tree within a few years. BBD is present in portions of western Virginia, but it has not been found in the County. According to recent analysis conducted by the Urban Forest Management Division (UFMD), approximately 4.3 million trees in the County are susceptible to this pest. Staff proposes a limited monitoring program in at-risk areas of the County in 2021.

Beech Leaf Disease (BLD)
BLD is a recently discovered disease of American beech trees. This disease is known to occur in Ohio, Pennsylvania, New York, and Connecticut. While the causal agent has yet to be officially identified, diagnostic efforts have revealed an association with a foliar nematode (*Litylenchus crenatae*) and fungal pathogens.

Emerald Ash Borer (EAB)
EAB was first identified in the County in 2003 at a school site in the Wolftrap area. Due to the extremely destructive nature of this pest, the Virginia Department of Agriculture and Consumer Services (VDACS) and the ~~United States Department of Agriculture (~~USDA~~)~~ - Animal Plant Health Inspection Service (APHIS) ordered all ash trees within a one-half mile radius of the introduction site be removed and destroyed. Staff carried out this project during the spring of 2004 and set-in place a monitoring program for EAB.

Without treatment, most infested ash trees die. Many ash trees have already succumbed, resulting in tree hazards and negative economic impacts for homeowners, parks, and private businesses. Staff is implementing a research based EAB control program for individual ash trees on public lands within the County. They have coordinated with those responsible for the maintenance of the trees, advising them of ongoing control activities. An annual health assessment is made for each of the treated trees to evaluate its overall health and crown condition based on parameters set in the EAB Management Plan. To date, there are 185 ash trees in this control program.

EAB control is currently accomplished through tree injections that deliver the insecticide into the tree. The insecticide is then transported throughout the tree by its vascular tissues. The insecticide is a material that contains emamectin benzoate that is sold by

the trade name Mectinite ® (Attachment 1). Research indicates that the treatment used is effective, providing control for up to three years. To date, staff have effectively conducted all this control activity; however, this year staff proposes to investigate the cost effectiveness of contracting with a tree care company to perform the injections. Also being investigated, are basal bark trunk sprays that are more suitable for treating small trees. The preferred insecticide for this technique contains dinotefuran and is sold by the trade name Safari® 20 SG (Attachment 2). The material is sprayed on a segment of the trunk and absorbed through the bark into the vascular tissues of the wood.

Research by universities and government agencies has shown that the introduction of EAB parasitoids is an effective control option. Since 2017, staff has released EAB parasitoids at specific locations on Fairfax County Park Authority (FCPA) properties. Parasitoids are produced and supplied by the USDA EAB Parasitoid Rearing Facility in Brighton, Michigan. Staff will continue to monitor the release sites to determine if the parasitoids have successfully established. Staff also continues to research additional locations that qualify for parasitoid release.

EAB has caused widespread damage and tree mortality to ash trees in the County and nationwide. The dead and dying trees pose a safety risk to people and property, requiring remediation. In July 2019, amendments in Appendix I of *The Code of the County of Fairfax, Virginia* enabled the use of service district funds for the remediation of damage caused by forest pests, including pruning or removal of trees directly killed or damaged by forest pests. In FY 2021, $300,000 was allotted in service district funds to remove hazardous infested ash trees. Both FCPA and Facilities Management Department will be using service district funds for the removal of hazardous infested ash trees in 2021.

As of January 14, 2021, USDA APHIS ended the federal domestic EAB quarantine rule that included regulations that applied to the movement of firewood. The movement of firewood for EAB is also not regulated in Virginia, however VDACS and UFMD staff actively discourage the movement of firewood due to the ever-present risk of transporting invasive species and diseases.

Fall Cankerworm
Fall cankerworm populations were monitored this winter in those areas of the County that have experienced outbreaks in the past. Results of monitoring indicate that fall cankerworm population levels are low in the Mount Vernon, Lee, and Mason magisterial districts. **Staff has identified no areas that will require treatment in 2021**.

The method used for monitoring fall cankerworm is a USDA, Forest Service recommended technique that involves trapping female moths as they emerge in the winter.

Over the last several years, staff has received input from civic groups regarding the implementation of this control program. Staff continues to explore ways to refine and improve this program to address these concerns.

Parasite Study - Fall cankerworms have natural predators that can be influential in their population levels. One explanation for outbreak populations in these areas is a lack of predator controls like *Telenomus alsophilae*, an egg parasitoid. Staff have been monitoring *T. alsophilae* to determine its presence in the County.

Staff collect eggs from survey bands and from small branches of trees located near the bands. Cankerworm eggs are reared indoors, and the number of viable eggs is counted to determine the level of parasitism.

The data acquired from this survey will increase understanding of overall cankerworm population dynamics in the County as well as locating areas of concern to be targeted in the ensuing year's fall cankerworm banding survey.

Defoliation Survey – In 2020, staff conducted an extensive defoliation survey to locate and assess any damage caused by fall cankerworm. The data acquired from this survey provides an understanding of overall cankerworm population dynamics in the County, as well as locating areas of rising populations to be targeted in the ensuing year's fall cankerworm banding survey.

Staff used band counts, defoliation surveys, and parasite surveys in determining whether control for fall cankerworm was warranted in the spring of 2021. Staff plan to continue these activities in 2021.

Forest Health Initiative
The Forest Pest Management Branch conducted a countywide survey of the urban forest called i-Tree ECO™ in 2017. The study involved evaluating forest conditions in 204 randomly selected sites throughout the County. The i-Tree data and protocol will be used by the Forest Pest Management Branch to monitor overall forest health. Staff plans to revisit these sites to help County agencies understand current conditions and how the condition of the trees and forests change over time.

Staff has analyzed the 2017 data and will continue to use updated data to communicate forest health impacts on ecosystem services such as stormwater runoff reduction, energy savings, carbon sequestration, and pollution removal. Ongoing analyses include mapping at-risk forest resources which may be susceptible to invasive insects and diseases.

In 2019, the University of Maryland was contracted for an evaluation of soil microbiota (bacteria and mycorrhizae) and its effects on forest health. For the evaluation, soil and root samples were collected from the same sites where i-Tree ECO™ data were collected. Evaluating soil microbiota can help in developing an overall metric for soil condition as it relates to overall ecosystem health, including its influence on restoration in degraded urban sites. Other County agencies, including Stormwater Planning and the FCPA, would have applications for the results of this project. This is a collaborative partnership between the Stormwater Planning Division (SWPD), UFMD, and the Northern Virginia Soil and Water Conservation District. A report of this evaluation will be ready in 2021.

Gypsy Moth
Based on egg mass surveys conducted during the fall of 2020, staff has determined that gypsy moth populations have remained low. **Staff has identified no areas that will require treatment in 2021**.

Gypsy moth populations, like all insect populations, are cyclical in nature. Periods of high pest levels are followed by periods of low pest levels. There are many factors which influence the timing and duration of pest outbreaks and declines. Staff believes that the recurrent low gypsy moth pest levels are the result of effective treatment programs in the past and a fungal disease, *Entomaphaga maimaiga*. Gypsy moth caterpillars are very susceptible to *E. maimaiga*, a moisture dependent fungal pathogen. This fungus is well established in the County and can potentially have a dramatic effect on gypsy moth populations. Gypsy moth outbreaks were observed in parts of the eastern United States in 2020. Staff plan to continue to monitor the gypsy moth population in 2021.

Hemlock Woolly Adelgid (HWA)
Staff continues to explore various control options for HWA. HWA is an insect that attacks and kills eastern hemlock (*Tsuga canadensis*) trees. Native eastern hemlock is relatively rare in the County. The rarity of this species, the multiple benefits to wildlife, and the natural beauty that they impart make them worthy of protection. Staff will continue to inventory the County's natural stands of eastern hemlock. Staff has identified native stands in Dranesville and Springfield districts for control.

HWA control can be accomplished through trunk or soil injection. Soil injection is an effective method for providing control to a target tree. Once injected into the soil around the base of the tree, an insecticide is absorbed by the tree roots. The insecticide that will be used for soil injection is a material containing dinotefuran that is sold by the trade name Safari® 20 SG (Attachment 2). Another viable soil injection treatment option is a soil pellet containing imidacloprid that is sold by the trade name CoreTect® (Attachment 4). Control by soil injection can last up to eight years. Trunk injection is another effective

method for providing control to a target tree. Once injected, the insecticide is transported throughout by the tree's vascular tissues. The insecticide that will be used for trunk injection is a material containing imidacloprid that is sold by the trade name IMA-jet® (Attachment 3). Control by trunk injection can also last up to eight years. The control method selection for any tree is based on site location and conditions. Staff has the ability to conduct this control activity, therefore treatment will be cost effective, as well as biologically effective. Staff continues to investigate other insecticide options that may provide better control for HWA while minimizing environmental impacts.

In addition to chemical control, staff has released parasites of HWA in hopes of establishing a more balanced environment for the trees. This effort was conducted in cooperation with local universities. The possibility of releasing additional parasites in the future is being investigated.

Spotted Lanternfly (SLF)
Spotted lanternfly (*Lycorma delicatula*) is an insect native to Asia that was found in suburban Philadelphia, Pennsylvania in 2014. Since January of 2018, this insect has been found in both Frederick County and Clarke County, Virginia. Due to the destructive nature of this pest, VDACS and USDA APHIS have begun eradication efforts in the infested areas.

While SLF is not known to be in Fairfax County yet, it has potential to cause a significant financial impact should it become established here. This insect feeds on a broad range of host trees and has a strong preference for tree of heaven (*Ailanthus altissima*). Tree of heaven, also native to Asia, is an invasive tree species here in the County. Staff proposes a SLF monitoring program throughout the County in 2021 including at-risk areas. Areas that are considered at-risk are light industrial sites, transportation corridors, as well as orchards and vineyards. Monitoring will consist of trapping for all life stages of SLF and inventorying tree of heaven in the County. The removal of tree of heaven could minimize the negative impact of this pest once it arrives. Removal of tree of heaven would include an herbicidal treatment of Arsenal® (Attachment 5), Garlon® 3A (Attachment 6) or Garlon® 4 (Attachment 7), Milestone® (Attachment 8), and Rodeo® (Attachment 9). Herbicides are essential for successful removal since cutting alone would result in vigorous resprouting. Staff will monitor areas that received herbicide treatment for the effectiveness. Remediation in sites where tree of heaven is removed may be necessary to ensure the success of the effort. If SLF were to be found in the County, insecticidal treatments would become necessary to minimize the negative impact. A variety of effective options are available including systemic insecticides Merit® 2F (Attachment 10) and Safari® 20 SG (Attachment 2), that will deliver the insecticide into host trees, or contact insecticides such as Botanigard® 22 WP (Attachment 11). In coordination with staff, FCPA will be using service district funds for the removal and remediation of tree of heaven in 2021.

Staff is collaborating with a team from Virginia Tech, Rutgers University, Bioprodex, and USDA Forest Service who are developing a bioherbicide for tree of heaven using *Verticilium nonalfalfae* (Attachment 12). The bioherbicide is currently undergoing Environmental Protection Agency (EPA) registration overview. The team has requested Fairfax County to host one of their demonstration sites. Staff is using tree of heaven inventory data to find a suitable site on County property.

Sudden Oak Death (SOD)
In 1995, a disease was found to be killing oak trees in California. Scientists determined that SOD was caused by a fungus called *Phytophthora ramorum*. This disease has caused wide scale tree mortality in the western United States. Fortunately, SOD has only been found in a few isolated locations in the eastern United States and officials feel that these infestations have been contained.

Like other invasive insects and diseases, diligent monitoring is critical in slowing the spread of SOD. Recent testing methods have been developed that are simple and cost effective, and staff will continue to monitor for this disease following VDACS recommended monitoring techniques. Staff will continue to implement an outreach component that will educate private and public groups on this disease and its control.

Thousand Cankers Disease (TCD) of Black Walnut
Black walnut (*Juglans nigra*) is a native tree to the County. Scientists have observed a disease called thousand cankers disease that affects black walnut trees in the western United States and have identified a beetle that spreads the disease. Scientists have confirmed that the beetle and disease have been unintentionally introduced to the eastern United States.

TCD was found in the vicinity of Richmond, Virginia, in the summer of 2011 and in Fairfax and Prince William Counties in 2012. VDACS established a quarantine to curtail the movement of walnut material in hopes of slowing the spread of this disease. Staff will continue to implement an outreach component that will educate private and public groups on this disease and its control.

FISCAL IMPACT:
Currently, the Forest Pest Program is funded through the Special Service District for the Control of Infestations that May Carry a Disease that is Dangerous to Humans, Gypsy Moth, Fall Cankerworm, and Certain Identified Pests. The total amount budgeted for FY 2021 is sufficient for this program.

Board Agenda Item
March 9, 2021

ENCLOSED DOCUMENTS:
Attachment 1 – Mectinite® Label
Attachment 2 - Safari® 20 SG Label
Attachment 3 - IMA-jet® Label
Attachment 4 - CoreTect® Label
Attachment 5 - Arsenal® Label
Attachment 6 - Garlon® 3A Label
Attachment 7 - Garlon® 4 Label
Attachment 8 - Milestone® Label
Attachment 9 - Rodeo® Label
Attachment 10 - Merit® 2F Label
Attachment 11 – BotaniGard® 22 WP Label
Attachment 12 - *Verticillium nonalfalfae*, A promising, naturally occurring Biological Herbicide to control Tree of Heaven Booklet

STAFF:
Rachel O. Flynn, Deputy County Executive
Randolph W. Bartlett, Director, Department of Public Works and Environmental Services (DPWES)
Eleanor Ku Codding, Deputy Director, DPWES, Stormwater and Wastewater Management Programs
Brian Keightley, Director, DPWES, Urban Forest Management Division

MECTINITE™

Injected insecticide for two year control of listed insect and mite pests in deciduous, coniferous, and palm trees

ACTIVE INGREDIENT:	
Emamectin Benzoate[1]	4.0%
Other Ingredients:	96.0%
Total:	**100.0%**

[1]CAS No. 155569-91-8. Contains 0.36 lb. emamectin per gallon.

EPA Reg No. 74779-17 **EPA Est. No.** 65387-AR-002

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

See complete Precautionary Statements and Directions For Use inside booklet.

NET CONTENTS: 1 Quart (946 mL)

Manufactured for:

Rainbow Treecare™
Scientific Advancements

Rainbow Treecare Scientific Advancements
11571 K-Tel Dr.
Minnetonka, MN 55343

1-877-272-6747
www.treecarescience.com
AD040418

FIRST AID

IF SWALLOWED:	• Call poison control center or doctor immediately for treatment advice. Have person sip glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
IF ON SKIN:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN:

Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Vomiting within one-half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (<15 minutes) administer repeatedly medical charcoal in a large quantity of water or ipecac. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic emamectin benzoate exposure.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

HOT LINE NUMBER

For 24-Hour Medical Emergency Assistance (Human or Animal)
call **1-800-222-1222.**
For Chemical Emergency Assistance (Spill, Leak, Fire or Accident)
call **CHEMTREC at 1-800-424-9300.**

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves (Category C) such as barrier laminate; butyl rubber ≥14 mils; nitrile rubber ≥14 mils; or neoprene rubber ≥14 mils.
- Shoes and socks
- Protective eyewear

ENVIRONMENTAL HAZARDS:

This product is highly toxic to fish, mammals, and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater. This product is highly toxic to bees exposed to direct treatment or residues on blooming trees.

PHYSICAL OR CHEMICAL HAZARDS:

Do not use or store near heat or open flame. Do not mix or allow to come into contact with an oxidizing agent. Hazardous chemical reaction may occur.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of Rainbow Treecare Scientific Advancements (RAINBOW) or Seller.

To the extent permitted by applicable law, Buyer and User agree to hold RAINBOW and Seller harmless for any claims relating to such factors.

RAINBOW warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or RAINBOW, and (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, RAINBOW MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall RAINBOW be liable for any incidental, consequential or special damages resulting from the use or handling of this product.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF RAINBOW AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF RAINBOW OR SELLER, THE REPLACEMENT OF THE PRODUCT.

RAINBOW and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of RAINBOW.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

IMPORTANT: Read entire label before using this product. Failure to follow label instructions may result in poor control or tree injury. Failure to follow label directions may cause injury to people, animals, and environment.

PRODUCT INFORMATION

Mectinite is for control of mature and immature insect and mite pests of deciduous, coniferous, and palm trees including, but not limited to, those growing in residential and commercial landscapes, parks, plantations, seed orchards, and forested sites (in private, municipal, state, tribal and national areas). Mectinite contains the active ingredient emamectin benzoate and is formulated to translocate in the tree's vascular system when injected. This product must be placed into active sapwood and will actively control pests for up to two years.

Mectinite is designed for use with tree injection devices that meet the label and dose requirements for the control of listed pests of trees. Follow manufacturer's directions for equipment use.

Dosages are based on the Diameter (in inches) of the tree at Breast Height ("DBH"). DBH is the outside bark diameter of the trunk at 4.5 feet (1.37m) above the ground on the uphill side of the tree. For the purposes of determining breast height, the ground includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line. The diameter is determined by measuring the circumference of the tree at DBH, and dividing circumference (in inches) by three (3). To determine DBH for multi-stemmed woody ornamentals, measure the DBH for each stem or branch and add together for the total DBH per tree.

Placement of Application/Injection Sites: Inject at the base of the tree. Inject into the stem within 12" of the soil, into the trunk flare or into tree roots exposing them by shallow excavation. Make applications into intact, healthy sapwood. Do not inject into injured areas or areas with decay.

Number of Injection Sites: Work around the tree, spacing injection sites approximately every 4 to 8 inches of tree's circumference or according to the manufacturer's recommendation for the application device.

Drill Depth: Drill through the bark then 5/8" to 1-5/8" (hardwoods) or 1-5/8" to 2" (conifers) into the sapwood with the appropriate sized drill bit. Use clean, sharp drill bits. Precautions should be taken to avoid diseased areas and transferring infected tissues to other injection sites.

Resinous Conifers: In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake on account of resin flow into opening.

WHEN TO TREAT

Mectinite contains the active ingredient emamectin benzoate which is a glycoside insecticide. It is active against immature and adult stages of arthropods. The primary route of toxicity is through ingestion.

ENVIRONMENTAL CONDITIONS: Uptake of Mectinite is dependent upon the tree's transpiration. Transpiration is dependent on a number of abiotic and biotic factors, such as soil moisture, soil and ambient temperature, and time of day. For uptake, apply when soil is moist, soil temperatures are above 45 ° F, ambient temperatures are between 40 ° F to 90 ° F, and during the 24 hour period when transpiration is greatest, typically before 2:00 p.m. Applications to drought or heat stressed trees may result in injury to tree tissue, poor treatment and subsequent control. Avoid treating trees that are moisture stressed or suffering from herbicide damage.

MONITOR TREE HEALTH and PEST INFESTATIONS: Effective injection treatment is favored by a full canopy (i.e., leaves) and healthy vascular system. Once these tissues are compromised by pest damage (larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of Mectinite may be difficult to achieve and subsequent control may be poor. For optimum results, treat at least 2 to 3 weeks before pests historically infest the host tree. As a result of systemic movement and longevity of Mectinite in trees, this interval may be extended much earlier to 6 months should tree dormancy, adverse weather, management, asynchronous life cycle of pests, etc., allow earlier application timing.

Mectinite may also be effective as a remedial treatment against some pests, such as those with slower development or if multiple life stages are susceptible to Mectinite. Pests that attack the stem and branches such as clearwing borers may disrupt vascular tissue resulting in poor distribution in an infested tree. This includes the initial larval stages of pests, such as flat-headed borers and clearwing borers, that attack the stem and branches, which may disrupt vascular tissue resulting in poor distribution of the product in an infested tree. However, control may be achieved if larvae come into contact or feed on Mectinite treated tissues.

USE RATES

Use as formulated or dilute with equivalent 1 to 3 volumes of water or more, as necessary.

Tree Diameter (DBH) (Inches)	**Low** (mL product/ tree)	**Medium** (mL product/ tree)	**Medium - High** (mL product/ tree)	**High** (mL product/ tree)
4 to 6	15	25	50	-
7 to 9	20	40	80	-
10 to 12	30	55	110	165
13 to 15	35	70	140	210
16 to 18	42	85	170	225
19 to 21	50	100	200	300
22 to 24	-	115	230	345
25 to 27	-	130	260	390
28 to 30	-	145	290	435
31 to 33	-	160	320	480
34 to 36	-	175	350	525
37 to 39	-	190	380	570

(continued)

USE RATES (continued)

40 to 42	-	205	410	615
43 to 45	-	220	440	660
46 to 48	-	235	470	705
49 to 51	-	250	500	750
52 to 54	-	265	530	795
55 to 57	-	280	560	840
58 to 60	-	295	590	885
61 to 63	-	310	620	930
64 to 66	-	325	650	975
67 to 69	-	340	680	1020
70 to 72	-	355	710	1065

The use of low, medium, medium-high and high rates are based on the professional judgment of the applicator as to what constitutes a low, medium or high infestation. Higher rates tend to provide longer residual and control of more difficult to control insects. See **Target Pest** table for additional information in choosing the amount of product to apply.

ADDITIONAL DIRECTIONS FOR APPLICATION IN TREES			
Tree Tissue	**Target Pest**	**Application Rate Range[1]**	**Comments**
Seed and Cone	**Pine Coneworm** (*Dioryctria spp.*) **Cone Beetle[2]** (*Conopthora spp.*) **Pine Cone Seed Bug** (suppression of *Leptoglossus* and *Tetyra spp.* in the year of treatment)	Medium to High	For optimal control apply in the fall for early season pests or at least 30 days before insect attack.
Bud and Leaf	**Aphid[2]** **Bagworm** **Conifer Mites[2]** **Fall Webworm** **Japanese Beetle** **Gypsy Moth** **Honeylocust Plant Bug** **Leafminers** (such as Lepidoptera, Coleoptera, Hymenoptera) **Mimosa Webworm** **Oak Worm** **Pine Needle Scale** **Red Palm Mite** **Sawfly** (such as Elm, Pine) **Tent Caterpillars** (such as Eastern, Forest, Pacific, and Western) **Western Spruce Budworm** **Winter Moth**	Low to High	Apply at least 2-3 weeks before the pest has historically been present. Consult with local extension agent for when this will occur in your area.

[1]Use medium to high rates for remedial and longer residual control
[2]Not registered for use in California

(continued)

ADDITIONAL DIRECTIONS FOR APPLICATION IN TREES (continued)			
Shoot, Stem Trunk, and Branch	**Clearwing Borers** (such as Ash and Sequoia Pine Pitch Tube Moth) **Flatheaded Borers** (such as adult and larvae of Bronze Birch Borer[2], Emerald Ash Borer, and Two-lined Chestnut Borer[2])	Low to High	For optimal control apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged. If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.
	Ambrosia Beetles **Cynipid Gall Wasp[2]** **Roundheaded Borers** (excluding Asian longhorn beetles) **Pinewood Nematode**	Medium to High	

[1]Use medium to high rates for remedial and longer residual control
[2]Not registered for use in California

COMPATIBILITY

Do not mix Mectinite before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants, and fertilizers whose labels indicate that it should not be mixed with Mectinite. If applicator has no prior experience with a particular tank mix, check physical compatibility by making a small clear jar test using correct proportions to be tank mixed. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

RESTRICTION

Do not apply to trees that may be harvested for food consumption by humans or used in animal feed.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.
Pesticide Storage: Store in a cool, dry place, away from children and pets. Keep from freezing.

Pesticide Disposal: Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, if allowed by state and local authorities. Stay out of smoke from burning container.

Rainbow Treecare™
Scientific Advancements

All ™ property of RAINBOW Treecare Scientific Advancements.
© Copyright 2018 RAINBOW Treecare Scientific Advancements.
The RAINBOW logo is a trademark of RAINBOW Treecare Scientific Advancements

GROUP	4A	INSECTICIDE

Safari®
20 SG INSECTICIDE



FOR FOLIAR AND SYSTEMIC INSECT CONTROL IN ORNAMENTAL PLANTS AND VEGETABLE TRANSPLANTS IN ENCLOSED STRUCTURES.

FOR GREENHOUSE, NURSERY, INTERIOR PLANTSCAPE AND OUTDOOR LANDSCAPE USE ONLY

Active Ingredient:	
Dinotefuran, [N-methyl-N′-nitro-N″-((tetrahydro-3-furanyl)methyl)guanidine]	20%
Other Ingredients	80%
Total:	100%

EPA Reg. No. 86203-11-59639
EPA Est. 67545-AZ-01

KEEP OUT OF REACH OF CHILDREN
CAUTION

SEE BELOW FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

FIRST AID

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.

If swallowed: Call poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by the poison control center or doctor. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

(continued)

FIRST AID (continued)

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact **800-892-0099** for emergency medical treatment information.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Causes moderate eye irritation. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:
- Long-sleeved shirt and long pants
- Shoes plus socks

USER SAFETY REQUIREMENTS

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:
- Wash hands with soap and water before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in water adjacent to treated areas. Do not dispose of equipment washwaters or rinsate into a natural drain or water body.

This product is toxic to honey bees. The persistence of residues and potential residual toxicity of dinotefuran in nectar and pollen suggests the possibility of

SPECIMEN

chronic toxic risk to honey bee larvae and the eventual instability of the hive.

- This product is toxic to bees exposed to residues for more than 38 hours following treatment.
- Do not apply this product to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period, unless the application is made in response to a public health emergency declared by appropriate state or federal authorities.

Dinotefuran and its degradate, MNG, have the properties and characteristics associated with chemicals detected in groundwater. The high water solubility of dinotefuran, and its degradate, MNG, coupled with its very high mobility, and resistance to biodegradation indicates that this compound has a strong potential to leach to the subsurface under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill or store near heat or open flame.

SPRAY DRIFT ADVISORY

Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crop thereof rendered for sale, use or consumption.

PROTECTION OF POLLINATORS

APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.

Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

This product can kill bees and other insect pollinators.

Bees and other insect pollinators will forage on plants when they flower, shed pollen or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications.
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

(continued)

PROTECTION OF POLLINATORS (continued)

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the application site.
- Minimize drift of this product onto beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at: http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx. Pesticide incidents (for example, bee kills) should immediately be reported to the State/Tribal lead agency. For contact information for your State, go to: www.aapco.org/officials.html. Pesticide incidents should also be reported to the National Pesticide Information Center at: www.npic.orst.edu or directly to EPA at: beekill@epa.gov.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

FOR COMMERCIALLY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS

- **Do not apply this product while bees are foraging.**
- **This product is toxic to bees exposed to residue for more than 38 hours following treatment.**
- **Do not apply this product to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period, unless the application is made in response to a public health emergency declared by appropriate state or federal authorities.**

Do not apply Safari® 20 SG Insecticide while bees are foraging. Do not apply *Safari* 20 SG Insecticide to plants that are flowering. Only apply after all flower petals have fallen off.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS
Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, greenhouses and handlers of agricultural insecticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

EXCEPTION: If product is drenched or soil-injected, workers may enter the area at any time if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water is:
- Coveralls
- Shoes plus socks
- Chemical-resistant gloves (made of waterproof material)

NON-AGRICULTURAL USE REQUIREMENTS
The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not allow others to enter treated areas until sprays have dried.

CONDITIONS OF SALE
Valent U.S.A. Corporation warrants that this product in its unopened package conforms to the chemical description on the label and is reasonably fit for the purposes set forth on the label when used according to directions under normal use conditions to the crops specified. To the extent consistent with applicable law, there are no other warranties, expressed or implied, concerning the use of this product other than indicated on the label. To the extent consistent with applicable law, this warranty does not extend to the handling or use of this product contrary to label instructions or under abnormal conditions or conditions not reasonably foreseeable to seller, and buyer assumes all risk of any such use.

APPLICATION INFORMATION
- Applications of *Safari* 20 SG Insecticide in residential areas may be made by commercially licensed applicators.

Application to Ornamental Plants:
- *Safari* 20 SG Insecticide can be applied as a foliar spray, a broadcast spray, a soil drench, soil injection and via chemigation for insect control in ornamental plants in greenhouses, nurseries, outdoor landscapes and interior plantscapes.
- *Safari* 20 SG Insecticide is a systemic product and will be taken up by the root system and translocated upward throughout the plant. When applied as a foliar spray, the product offers translaminar and locally systemic control of foliar pests.
- When applied to the soil, *Safari* 20 SG Insecticide will be translocated more quickly in herbaceous plants than in woody shrubs and trees. Speed of insect control will range from as little as one day for small herbaceous plants in containers, to several weeks in large trees growing in the landscape.
- Do not apply more than a total of 2.7 lbs of product (0.54 lb active ingredient) per acre per year for all application types.
- **Do not apply this product, by any application method, to linden, basswood or other *Tilia* species.**

Application to Vegetable Transplants:
- *Safari* 20 SG Insecticide can be applied as a foliar spray or a broadcast spray for insect control in vegetable transplants.
- Do not apply more than 1.34 lbs (0.268 lbs ai) per acre of nursery per year.

MIXING INSTRUCTIONS:
Safari 20 SG Insecticide Alone: Add half of the required amount of water to the mix tank. With the agitator running, add the desired amount of *Safari* 20 SG Insecticide to the tank. Continue agitation while adding the remainder of the water. Begin application of the solution after *Safari* 20 SG Insecticide has completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

Safari 20 SG Insecticide + Tank Mixtures: Add half of the required amount of water to the mix tank. Start the agitator running before adding any tank mix partners. In general, add tank mix partners in this order: products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables), liquid flowables, liquids, emulsifiable concentrates, and surfactants/adjuvants. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all the mixture has been applied.

NOTE: When using *Safari* 20 SG Insecticide in tank mixtures, add all products in water-soluble packaging to the tank before any other tank mix partner, including *Safari* 20 SG Insecticide. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank.

If using *Safari* 20 SG Insecticide in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, precautions, and limitations which appear on the tank mix product label. Do not exceed

label dosage rate, and follow the most restrictive label precautions and limitations. Do not mix this product with any product that prohibits such mixing. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are labeled.

Compatibility

IMPORTANT: The safety of all potential tank mixes has not been tested on all crops. Before applying any tank mixture not specifically listed on this label, confirm the safety to the target crop.

Safari 20 SG Insecticide is compatible with most commonly used pesticides, crop oils, adjuvants, and nutritional sprays. However, since it is not possible to test all possible mixtures, pre-test to assure the physical compatibility and lack of phytotoxic effect of any proposed mixtures with *Safari* 20 SG Insecticide. To determine the physical compatibility of *Safari* 20 SG Insecticide with other products, use a jar test, as described below:

Using a quart jar, add the proportionate amounts of the products to 1 quart of water. Add wettable powders and water dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for additional required ingredients to the spray tank.

RESISTANCE MANAGEMENT

Safari 20 SG Insecticide contains a Group 4A insecticide. Insect biotypes with acquired resistance to Group 4A may eventually dominate the insect population if Group 4A insecticides are used repeatedly in the same crop or in successive years as the primary method of control for a targeted species. This may result in partial or total loss of control of those species by *Safari* 20 SG Insecticide or other Group 4A insecticides.

To delay the development of insecticide resistance in greenhouse, nursery and interiorscape use sites, strongly consider the following guidelines:

- Do not apply *Safari* 20 SG Insecticide or other Group 4A insecticides to consecutive generations of the same insect pest species.
- Do not drench soil media with *Safari* 20 SG Insecticide or other Group 4A insecticides more than one time per crop cycle or three months, whichever is shorter.
- Do not make more than two foliar or broadcast sprays of *Safari* 20 SG Insecticide or other Group 4A insecticides to a single crop during a two-month period.
- Do not make more than one soil drench and one foliar or broadcast spray with *Safari* 20 SG Insecticide or other Group 4A insecticides during a two-month period.

(continued)

RESISTANCE MANAGEMENT (continued)

- Base insecticide use on a comprehensive IPM program.
- Monitor treated insect populations for loss of field efficacy.
- Contact your local extension specialist, certified crop advisors, and/or manufacturers for insecticide resistance management and/or IPM guidelines for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact Valent U.S.A. Corporation, at toll free number: 1-800-898-2536.

APPLICATION PROCEDURES AND SPRAY EQUIPMENT

Ground Application: Select spray nozzles that will provide accurate and uniform spray deposition. Use spray nozzles that provide medium-sized droplets and reduce drift. To help insure accuracy, calibrate sprayer before each use. For information on spray equipment and calibration, consult nozzle manufacturers and/or State Extension Service specialists.

Apply *Safari* 20 SG Insecticide using sufficient water volume to provide thorough and uniform coverage. In situations where a dense canopy exists and/or pest pressure is high, use greater water volumes. The use of a spray adjuvant may improve spray coverage. Do not apply under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

Applications to ornamental plants, and vegetable transplants: *Safari* 20 SG Insecticide can be applied using many different types of application equipment. Apply in sufficient water to ensure good coverage of ornamental plants. Tank mixing with a surfactant will produce better coverage when making applications to plants with hard to wet foliage such as holly or pine. If concentrate or mist type spray equipment is used, apply the same amount of product on the sprayed area as would be used in a dilute solution. To assure optimum effectiveness, the product must be placed where the growing portion of the target plant can absorb the active ingredient. Applications can be made to foliage or as a soil drench.

RESTRICTIONS

- With the exception of non-livestock animals, do not graze treated areas or use clippings from treated areas for feed or forage.
- Prevent runoff or puddling of irrigation water following application.
- Keep children and pets off treated areas until spray has dried.
- Do not apply to areas that are water logged or saturated, or frozen, which will not allow penetration into the root zone of the plant.

APPLICATION THROUGH IRRIGATION SYSTEMS (CHEMIGATION):

Safari 20 SG Insecticide may be applied by injection into an irrigation system, either alone or in combina-

tion with other pesticides or chemicals that are registered for application through irrigation systems. Dilution ratios are normally 1:100 to 1:200, depending on the system. Apply this product only through microirrigation (individual spaghetti tube), drip irrigation, overhead irrigation, or motorized calibrated irrigation equipment (Ornamentals). Do not apply through any other type of irrigation system. Lack of effectiveness can result from non-uniform distribution of treated water. If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make adjustments when necessary.

Using Water from Public Water Systems:
DO NOT APPLY *SAFARI* 20 SG INSECTICIDE THROUGH ANY IRRIGATION SYSTEM PHYSICALLY CONNECTED TO A PUBLIC WATER SYSTEM.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days per year. *Safari* 20 SG Insecticide may be applied through irrigation systems which may be supplied by a public water system only if the water from the public water system is discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Any irrigation system using water supplied from a public water system must also meet the following requirements:

Operating Instructions for Irrigation Systems:
1. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers, or other experts.
2. The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
6. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
7. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
8. Do not apply when wind speed favors drift beyond the area intended.

Calibration and Application Instructions:
Apply *Safari* 20 SG Insecticide under the schedule specified in the specific use instructions, not according to the irrigation schedule unless the events coincide. In general, set the equipment to apply the minimum amount of water per acre. Run the system at 86 - 90% of the manufacturer's maximum rated travel speed.

The following calibration and application techniques are provided for user reference, but do not constitute a warranty of fitness for application through sprinkler irrigation equipment. Check with State and local regulatory agencies for potential use restrictions before applying any agricultural chemical through sprinkler irrigation equipment.

MINIMIZING SPRAY DRIFT
As with all crop protection products, it is important to minimize off-target movement. Do not allow spray to drift onto adjacent land, crops, or aquatic areas. To minimize spray drift:
1. Make applications when wind velocity favors on-target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 10 mph. Do not apply when wind gusts approach 10 mph.
2. Risk of exposure to sensitive aquatic areas can be reduced by not applying when wind direction is toward the aquatic area.
3. Do not cultivate or plant crops within 25 feet of the aquatic area as to allow growth of a vegetative filter strip.
4. Do not make applications during temperature inversions. Inversions are characterized by stable air and increasing temperatures with increased height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.
5. Use the largest droplet size consistent with good pest control. Small droplets are more prone to spray drift and can be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by not using excessive spray boom pressure.

6. Apply as close to target plants as practical to obtain a good spray pattern for adequate coverage. Do not apply more than 10 ft above the crop canopy.
7. For aerial applications, mount spray boom on the aircraft so as to minimize drift caused by wing tip vortices. Use minimum practical boom length and do not use boom that exceeds 75% of wing span or rotor diameter.

Air Assisted (Air Blast) Tree and Vine Sprayers (Ornamentals Only):
Air assisted tree and vine sprayers carry droplets into the canopy of trees and vines via a radially or laterally directed air stream. In addition to the general drift management principles already described, the following specific practices will further reduce the potential for drift:

1. Adjust deflectors and aiming devices so that spray is only directed into the canopy.
2. Block off upward pointed nozzles when there is no overhanging canopy.
3. Use only enough air volume to penetrate the canopy and provide good coverage. Use a minimum of 50 gallons finished spray per acre.
4. Do not allow spray to go beyond the edge of the cultivated area. Spray the outside row only from outside the planting.

VEGETABLE TRANSPLANTS (IN ENCLOSED STRUCTURES)
FOLIAR OR BROADCAST SPRAY APPLICATION
For foliar insect control on vegetable transplants grown in enclosed structures.

Crop	Pest	Product Rate (By Weight)	Remarks
Cucurbits (Transplants only) Cantaloupe Cucumber Melons Squash Fruiting Vegetables Eggplant Peppers Tomato Head and Stem Brassica Broccoli Brussels Sprouts Cabbage Cauliflower Kohlrabi	Aphids Leafminers Mealybugs Thrips (suppression) Whiteflies including: Silverleaf/ Sweetpotato (B and Q Biotypes)	3.5 - 7.0 oz per 100 gal 7 - 14 oz per Acre 0.16 - 0.32 oz per 1,000 sq ft (0.09 to 0.18 lbs ai per Acre)	Do not make more than one application per crop. Apply only to cucurbits and brassica being grown as transplants and before transplants are sold. 100 gals of spray mix will treat 20,000 sq ft of area when using a typical high volume sprayer. If using a low volume sprayer, adjust concentration to apply the same amount of product per unit area.
Leafy Vegetables (Transplants only) (Excluding *Brassica* spp.)	Aphids Leafminers Mealybugs Thrips (suppression) Whiteflies including: Silverleaf/ Sweetpotato (B and Q Biotypes)	3.5 - 5.5 oz per 100 gal 7 - 11 oz per Acre 0.16 - 0.25 oz per 1,000 sq ft (0.09 to 0.134 lbs ai per Acre)	Do not make more than one application per crop. Apply only to leafy vegetables being grown as transplants and before transplants are sold. 100 gals of spray mix will treat 20,000 sq ft of area when using a typical high volume sprayer. If using a low volume sprayer, adjust concentration to apply the same amount of product per unit area.

One (1) level teaspoon contains 2.4 grams and 1 cup (8 fl oz) contains 4.0 oz by weight of *Safari* 20 SG Insecticide.

Begin applications when first pest activity is noticed or when insects reach threshold levels per University/Extension recommendations. Time application before a damaging population becomes established.

Restriction:
Do not apply more than 1.34 lbs (0.268 lbs ai) per acre of nursery per year.

To delay the development of resistance: Do not apply *Safari* 20 SG Insecticide or other Group 4A insecticides to consecutive generations of the same insect species without switching to a different mode of action. Do not make more than two sprays of *Safari* 20 SG Insecticide or other Group 4A insecticides to a single crop. Refer to "Resistance Management" section of label for further guidelines.

ORNAMENTAL PLANTS – FOLIAR OR BROADCAST SPRAY APPLICATION – OUTDOOR



For foliar insect control on ornamental plants in nurseries and outdoor landscapes (commercial, industrial, recreational and residential).

Crop	Pest	Product Rate	Remarks
Ornamental plants including: Shrubs Bedding Plants Flowering Plants Foliage Plants Ground Covers Evergreens Ornamental Trees Non-Bearing Fruit Trees Non-Bearing Nut Trees Non-Bearing Vines	Adelgids including: Hemlock Woolly Aphids (suppression) Japanese Beetles (adults) Lacebugs including: Azalea, Hawthorne Leaf Beetles, Viburnum Leafhoppers including: Glassy-Winged Sharpshooter, Potato Leafminers including: Serpentine Mealybugs including: Citrus, Long-Tailed, Madeira, Obscure, Pink Hibiscus Psyllids including: Asian Citrus Root Weevils (adults) including: Black Vine, Diaprepes Scale (Armored and Soft) including: Cryptomeria, Cycad Aulacaspis, Elongate Hemlock, Euonymus, Florida Red, Florida Wax, Tea Thrips including: Chilli (suppression) Whiteflies including: Giant, Greenhouse, Silverleaf/ Sweetpotato (B and Q Biotypes)	**Foliar Spray** 1/4 to 1/2 lb per 100 gallons (4 to 8 oz per 100 gallons) (0.05 to 0.1 lbs ai per 100 gallons) 8 - 16 oz per Acre (0.1 to 0.2 lbs ai/A) 0.2 - 0.4 oz per 1,000 sq ft For treatment of small areas: 1/2 - 1.0 tsp per gallon	Make first application just before pest populations reach an economic threshold. If necessary, make a second application after 14 - 21 days. Tank mixing with a surfactant may improve control of pests such as whitefly, mealybug and scale. Confirm plant safety of tank mix in small area before using on a commercial scale. 100 gals of spray mix will treat 20,000 sq ft of area when using a typical high volume sprayer. If using a low volume sprayer, adjust concentration to apply the same amount of product per unit area.

One (1) level teaspoon contains 2.4 grams and 1 cup (8 fl oz) contains 4.0 oz by weight of *Safari* 20 SG Insecticide.

Make first application just before pest populations reach an economic threshold. If necessary, make a second application after 14-21 days.

Restrictions:
Not for use on house plants grown inside private residences.

Do not apply more than 2.7 lbs (0.54 lbs ai) per acre of nursery or landscape per year.

To delay the development of resistance: Do not apply *Safari* 20 SG Insecticide or other Group 4A insecticides to consecutive generations of the same insect species without switching to a different mode of action. Do not make more than two sprays of *Safari* 20 SG Insecticide or other Group 4A insecticides to a single crop. Refer to "Resistance Management" section of label for further guidelines.

ORNAMENTAL PLANTS – FOLIAR OR BROADCAST SPRAY APPLICATION – INDOOR

For foliar insect control on ornamental plants in greenhouses, interior plantscapes, lath and shadehouses.

Crop	Pest	Product Rate	Remarks
Ornamental plants including: Shrubs Bedding Plants Flowering Plants Foliage Plants Ground Covers Evergreens Ornamental Trees Non-Bearing Fruit Trees Non-Bearing Nut Trees Non-Bearing Vines	Adelgids including: Hemlock Woolly Aphids (suppression) Japanese Beetles (adults) Lacebugs including: Azalea, Hawthorne Leaf Beetles, Viburnum Leafhoppers including: Glassy-Winged Sharpshooter, Potato Leafminers including: Serpentine Mealybugs including: Citrus, Long-Tailed, Madeira, Obscure, Pink Hibiscus Psyllids including: Asian Citrus Root Weevils (adults) including: Black Vine, Diaprepes Scale (Armored and Soft) including: Cryptomeria, Cycad Aulacaspis, Elongate Hemlock, Euonymus, Florida Red, Florida Wax, Tea Thrips including: Chilli (suppression) Whiteflies including: Giant, Greenhouse, Silverleaf /Sweetpotato (B and Q Biotypes)	**Foliar Spray** 1/4 to 1/2 lb per 100 gallons (4 to 8 oz per 100 gallons) (0.05 to 0.1 lbs ai per 100 gallons) 8 - 16 oz per Acre (0.1 to 0.2 lbs ai/A) 0.2 - 0.4 oz per 1,000 sq ft For treatment of small areas: 1/2 - 1.0 tsp per gallon	Make first application just before pest populations reach an economic threshold. If necessary, make a second application after 14 - 21 days. Tank mixing with a surfactant may improve control of pests such as whitefly, mealybug and scale. Confirm plant safety of tank mix in small area before using on a commercial scale. 100 gals of spray mix will treat 20,000 sq ft of area when using a typical high volume sprayer. If using a low volume sprayer, adjust concentration to apply the same amount of product per unit area.

One (1) level teaspoon contains 2.4 grams and 1 cup (8 fl oz) contains 4.0 oz by weight of *Safari* 20 SG Insecticide.

Make first application just before pest populations reach an economic threshold. If necessary, make a second application after 14 - 21 days.

Restrictions:
Not for use on house plants grown inside private residences.

Do not apply more than 2.7 lbs (0.54 lbs ai) per acre of nursery or landscape per year.

To delay the development of resistance: Do not apply *Safari* 20 SG Insecticide or other Group 4A insecticides to consecutive generations of the same insect species without switching to a different mode of action. Do not make more than two sprays of *Safari* 20 SG Insecticide or other Group 4A insecticides to a single crop. Refer to "Resistance Management" section of label for further guidelines.

ORNAMENTAL PLANTS – PESTS CONTROLLED BY *SAFARI* 20 SG INSECTICIDE WHEN APPLIED TO THE SOIL

Adelgids including: Hemlock Woolly Aphids including: Crepe Myrtle Green Peach Melon Bagworms Flatheaded Borers including: Alder Emerald Ash Flatheaded Appletree Fungus Gnats (larvae) Lacebugs including: Azalea Hawthorne Leaf Beetles including: Viburnum Leafhoppers including: Glassy-Winged Sharpshooter Potato	Leafminers including: Boxwood Serpentine Mealybugs Citrus Longtailed Madeira Obscure Pink Hibiscus Root Psyllids including: Asian Citrus Root Weevils (larvae and adults) including: Black Vine Diaprepes Roundheaded Borers (excluding Asian Longhorned)	Scales (Armored and Soft) including: Azalea Bark Calico Cottony Cushion Cottony Maple Cryptomeria Cycad Aulacaspis Duplachionaspis Elongate Hemlock Euonymus False Oleander Fig (Ficus) Wax Fletcher Florida Red Florida Wax Lecanium Oystershell Poplar (Aspen) Pine Needle Tea Tuliptree	Thrips including: Chilli (suppression) Gynaikothrips uzeli (suppression) Western Flower (suppression) Whiteflies including: Ficus Giant Greenhouse Silverleaf/Sweetpotato (B and Q Biotypes) White Grubs including: Oriental Beetle

ORNAMENTAL PLANTS – APPLICATION TO SOIL: For systemic insect control on containerized and field grown (in-ground) ornamental plants in nurseries, greenhouses, interior plantscapes, lath and shadehouses, and outdoor landscapes (commercial, industrial, recreational and residential), when applied via soil drench, soil injection, micro-irrigation (spaghetti tube or emitter), drip irrigation, overhead irrigation, ebb and flood irrigation equipment or motorized irrigation equipment.

<table>
<tr><th>Crop</th><th colspan="2">Product Rate (By Weight)</th><th>Remarks</th></tr>
<tr><td rowspan="11">Ornamental plants including:
Shrubs
Bedding Plants
Flowering Plants
Foliage Plants
Ground Covers
Evergreens
Ornamental Trees
Non-Bearing Fruit Trees
Non-Bearing Nut Trees
Non-Bearing Vines</td><td colspan="2">Containerized Plants
Soil Media Drench
3/4 to 1-1/2 pounds per 100 gallons
12 to 24 ounces per 100 gallons
1.5 - 3.0 teaspoons per gallon</td><td rowspan="11">Only apply to moist soil media. Do not apply to dry or saturated media.
Do not apply media drench until roots from transplanted plugs or liners have extended at least half way to the edge of pots.
Do not leach treated soil media for at least 7 days after application or performance may be reduced.
Heavy rainfall or excessive irrigation following application may decrease performance.
Higher rates will be needed to control insects on woody plants than on herbaceous plants.
Poinsettia: For optimal control of whiteflies, treat plants 1 - 3 weeks after pinch. Late season drenches will take longer to provide effective control.</td></tr>
<tr><td colspan="2">Media Drench Volume for Individual Pots</td></tr>
<tr><td>Pot diameter (inches)</td><td>Fl oz of dilute solution per pot</td></tr>
<tr><td>4</td><td>2</td></tr>
<tr><td>5</td><td>3</td></tr>
<tr><td>6</td><td>4</td></tr>
<tr><td>7</td><td>5</td></tr>
<tr><td>8</td><td>6</td></tr>
<tr><td colspan="2">For larger pot volumes, apply 3 - 4 fl oz of dilute solution (0.11 to 0.22 g product per 4 fl oz water) per gallon of potting media. Use a drench volume that is sufficient to wet soil media without resulting in overflow or runoff through drain holes in pot.</td></tr>
<tr><td colspan="2">Containerized Plants
Media Drench Volume for Plants in Raised Beds, Benches, Bedding Flats, Plug and Liner Trays:
Apply sufficient dilute solution to wet soil media without loss of liquid from bottom of bed or liner.</td></tr>
</table>

(continued)

ORNAMENTAL PLANTS – APPLICATION TO SOIL (continued)

<table>
<tr><th>Crop</th><th colspan="2">Product Rate (By Weight)</th><th>Remarks</th></tr>
<tr><td rowspan="8">Ornamental plants including:
Shrubs
Bedding Plants
Flowering Plants
Foliage Plants
Ground Covers
Evergreens
Ornamental Trees
Non-Bearing Fruit Trees
Non-Bearing Nut Trees
Non-Bearing Vines</td><td colspan="2">Containerized Plants
Ebb and Flood Irrigation</td><td rowspan="3">Bring several pots to field capacity, let soil dry and then measure amount of water required to bring pots back to field capacity. Multiply the average volume of water required to rehydrate one pot by the number of pots to be treated. Add this volume of water to the minimum amount of water needed to flood the area to be treated. Re-use any returned volume in subsequent irrigation of same plants.

For pot diameter greater than 8”, use 3.7 - 7.5 ounces of Safari 20 SG Insecticide per 1,000 gallons of potting soil media.</td></tr>
<tr><td>Pot diameter (inches)</td><td>Ounces per 1,000 pots</td></tr>
<tr><td>4</td><td>1.9 - 3.7</td></tr>
<tr><td>5</td><td>2.8 - 5.6</td></tr>
<tr><td>6</td><td>3.7 - 7.5</td></tr>
<tr><td>7</td><td>4.7 - 9.3</td></tr>
<tr><td>8</td><td>5.6 - 11.2</td></tr>
<tr><td colspan="2">Chemigation of individual containers using a micro-irrigation system (spaghetti tube)</td><td rowspan="3">Use typical injection ratio for injectors (e.g. 1:100, which equals 1 part injector tank solution: 100 parts irrigation water). Do not mix more than 24 oz of Safari 20 SG Insecticide per gallon of injector tank water, or some product may settle out of solution. Calibrate irrigation system to deliver 3 - 4 fl oz of dilute solution per gallon of potting media.</td></tr>
<tr><td>Injection Ratio</td><td>Ounces per gallon of injector tank water</td></tr>
<tr><td>1:100</td><td>12 - 24</td></tr>
</table>

(continued)

ORNAMENTAL PLANTS – APPLICATION TO SOIL (continued)

Crop	Product Rate (By Weight)	Remarks
Ornamental plants including: Shrubs Bedding Plants Flowering Plants Foliage Plants Ground Covers Evergreens Ornamental Trees Non-Bearing Fruit Trees Non-Bearing Nut Trees Non-Bearing Vines	**Field Grown (In-Ground) Shrubs** 3 - 6 grams (1.25 - 2.5 level teaspoons) per foot of height 1.0 - 2.1 ounces per 10 feet of height	When applied to the soil, *Safari* 20 SG Insecticide is taken up by actively growing trees and shrubs. Speed of control will be dependent on plant size, plant health, environmental conditions and how actively pests are feeding. In actively growing plants, control may be evident within 1 - 3 weeks after application depending on plant size. Time applications to coincide with when most vulnerable pest life stage is present on plants. Control may be less effective when applied to dry, saturated, or frozen soil, or at times when plants are not actively taking up water from soil. If possible, irrigate dry soils 1 - 3 days before application, or apply irrigation within 3 days after application. Heavy rainfall or inadequate irrigation immediately following application may decrease performance. Use higher labeled rates for broadleaf evergreens with dense foliage (ex. hollies), and with very large trees. **Soil Drench:** Mix required dose in water and uniformly apply to soil around base of shrub or tree. Pull back mulch before drenching. Apply 1 - 4 pints of drench solution per foot of height (shrubs) or inch of trunk diameter (trees). Adjust drench volume based on soil type, soil moisture and thickness of mulch so that product is moved into root zone. To enhance soil penetration in heavy soils and sloping terrain, dig shallow holes around tree or shrub, and apply drench solution in holes. Lower drench volumes may be less effective in dry soils or when applied over heavy mulch unless there is adequate rainfall or irrigation after application to move product into root zone.

(continued)

ORNAMENTAL PLANTS – APPLICATION TO SOIL (continued)

Crop	Product Rate (By Weight)	Remarks
Ornamental plants including: Shrubs Bedding Plants Flowering Plants Foliage Plants Ground Covers Evergreens Ornamental Trees Non-Bearing Fruit Trees Non-Bearing Nut Trees Non-Bearing Vines	**Field Grown (In-Ground) Trees (Less than 24" diameter at breast height)** 3 - 12 grams (1.25 - 5.0 level teaspoons) per inch of trunk diameter at breast height (DBH) 1.05 - 4.2 ounces per 10 inches of trunk diameter at breast height (DBH) For multi-stem trees, base rate on cumulative inches of diameter of all stems at breast height.	**Soil Injection:** Mix required dose in water and make at least four injections per shrub or tree with a low-pressure applicator. Use same amount of solution per hole. Injections can be made using the following methods: Grid System – Space injections on a 2.5 ft center extending to drip line. Circle System – Make injections in concentric circles extending inward from drip line. Basal System – Space injections evenly around trunk no more than 24" out from the base. *Safari* 20 SG Insecticide may be soil injected with low volume (e.g. Kioritz injector) or high volume injection equipment. Inject 1 - 32 fl oz of dilute solution per foot of height or inch of trunk diameter depending on application equipment. Make shallow injections where feeder roots are most concentrated.
	Field Grown (In-Ground) Trees (24" diameter or greater at breast height) 6 - 12 grams (2.5 - 5.0 level teaspoons) per inch of trunk diameter at breast height (DBH) 2.1 - 4.2 ounces per 10 inches of trunk diameter at breast height (DBH) For multi-stem trees, base rate on cumulative inches of diameter of all stems at breast height.	
	Hedges 0.25 - 1.0 oz per foot of hedge height per 100 linear feet of hedge row	Apply in enough water to wet the lower 12" of trunk and surrounding soil surface. Apply in a one foot wide band over base of trunk and soil down center of hedgerow. To improve performance, rake back mulch before application.

(continued)

ORNAMENTAL PLANTS – APPLICATION TO SOIL (continued)

<table>
<tr><th>Crop</th><th colspan="2">Product Rate (By Weight)</th><th>Remarks</th></tr>
<tr><td rowspan="9">Ornamental plants including:
Shrubs
Bedding Plants
Flowering Plants
Foliage Plants
Ground Covers
Evergreens
Ornamental Trees
Non-Bearing Fruit Trees
Non-Bearing Nut Trees
Non-Bearing Vines</td><td colspan="2">Field Grown Nursery Stock
Banded spray application to soil surface
(2.7 lbs per acre)</td><td rowspan="8">Apply as a uniform band in row over root zone and lower 6 - 12” of trunk. Apply from peak adult flight to peak egg hatch.
Apply in at least two gallons of water per 1,000 linear feet. Irrigate after application to move product into soil profile.
Control any weeds in treated area prior to application, or performance may be reduced.
Adjust rates accordingly for other row spacing. Irrigate after application to move Safari 20 SG Insecticide to the root zone.</td></tr>
<tr><td>Row spacing in feet</td><td>Ounces per 1,000 linear feet of row</td></tr>
<tr><td>3</td><td>3</td></tr>
<tr><td>4</td><td>4</td></tr>
<tr><td>5</td><td>5</td></tr>
<tr><td>6</td><td>6</td></tr>
<tr><td>7</td><td>7</td></tr>
<tr><td>8</td><td>8</td></tr>
<tr><td colspan="2">Broadcast spray to soil of plant beds
2.7 lbs per acre</td><td>Apply over the top of ornamental plant beds in a water volume sufficient to move product to soil surface. If necessary, irrigate after application to move product off of foliage and into upper root zone of soil. May be less effective on large woody shrubs than on herbaceous annuals and perennials.</td></tr>
<tr><td colspan="4">Important Notes:
One (1) level teaspoon contains 2.4 grams, and 1 cup (8 fl oz) contains 4.0 oz by weight of Safari 20 SG Insecticide.
For all soil applications, including chemigation, retreatments may be made after 7 days but do not apply more than 2.7 lbs (0.54 lbs ai) per acre of nursery or landscape per year.
Restrictions:
Do not apply more than 2.7 lbs (0.54 lbs ai) per acre of nursery or landscape per year.
To delay the development of resistance in greenhouses, nurseries and interiorscapes, do not make more than one soil application per crop cycle or three months, whichever is shorter. Refer to “Resistance Management” section of the label for additional guidelines.</td></tr>
</table>

ORNAMENTAL PLANTS

BASAL TRUNK SPRAYS IN TREES AND LARGE SHRUBS

For systemic insect control in containerized and field grown (in-ground) ornamental trees and shrubs in nurseries, interior plantscapes, lath and shadehouses and outdoor landscapes (commercial, industrial, recreational and residential) when applied as a trunk spray.

Crop	Pest	Product Rate (By weight)	Remarks
Shrubs Ornamental Trees Non-Bearing Fruit Trees Non-Bearing Nut Trees	Adelgids including Hemlock Woolly Flatheaded Borers including Emerald Ash Flatheaded Appletree Roundheaded Borers (Excluding Asian Longhorned) Scales including Calico Whiteflies including Fig (Ficus)	12 - 24 oz per gallon Depending on bark type and thickness, one gallon of spray solution will typically cover 65 - 85" of cumulative trunk diameter (1.5 - 2.0 fl oz per inch of trunk diameter) when applied to trunk between soil surface and 4.5 feet above soil surface.	When sprayed on the trunk, *Safari* 20 SG Insecticide will be absorbed through the bark and into the vascular system, and then transported throughout the tree. Speed of control will be dependent on tree size, tree health, environmental conditions and how actively pests are feeding. In actively transpiring trees, control may be evident within 1-3 weeks after application. Spray bark on root flare (buttress roots) and on trunk between soil surface and 4-5 feet above the soil surface. Adjust nozzle to uniformly distribute spray over the entire circumference of the tree trunk and buttress roots. Wet bark just to the point of saturation and run off onto soil. Apply ONLY with a low volume sprayer operated at less than 20 PSI to prevent tree damage, bounce back and drift of spray droplets. Time applications to coincide with when most vulnerable pest life stage is present on plants. **Do not apply to wet bark, during rainfall or if rain is expected within 12 hours.** Control may be less effective in trees with thick bark, and at times when trees are not actively growing or transpiring.

One (1) level teaspoon contains 2.4 grams, and 1 cup (8 fl oz) contains 4.0 oz by weight of *Safari* 20 SG Insecticide.

Restrictions:
Do not apply more than 2.7 lbs (0.54 lbs a.i.) per acre of nursery or landscape per year.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.
Pesticide Storage: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in a cool dry place. Do not store diluted spray. For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.
Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
Container Handling: Nonrefillable container: Do not reuse or refill the container. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Products That Work, From People Who Care and Safari are a registered trademarks of Valent U.S.A. Corporation

Manufactured for
Valent U.S.A. Corporation
P.O. Box 8025
Walnut Creek CA 94596-8025
Made in U.S.A.
Form 1510-E
EPA Reg. No. 86203-11-59639
EPA Est. 67545-AZ-01

Information contained in this booklet is accurate at the time of printing. Since product testing is a continuous process, please read and follow the directions on the product label for the most current directions and precautionary statements.

Always check with your state to verify state registration status or call 800-89-VALENT (898-2536).

For state registration and/or supplemental labels, please call or visit us online.

Products That Work, From People Who Care® | **valentpro.com** | 800-89-VALENT (898-2536)

Always read and follow label instructions.

©2014 Valent U.S.A. Corporation. All rights reserved. Printed in the U.S.A.

IMA-jet

Systemic Insecticide for Micro-Infusion®

SYSTEMIC INSECTICIDE

Micro-injectable Systemic Insecticide for use with the Arborjet Injection System in the Management of Specific Insect Pests of Forests, Trees, Landscape Ornamentals and Interior Plantscapes.

ACTIVE INGREDIENT:
Imidacloprid 1-[(6-chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine.....5.0%
OTHER INGREDIENTS.....95.0%
TOTAL.....100.0%

Net Contents: See Individual Container EPA Reg No. 74578-1 • EPA Est. No. 74578 - MA-001

KEEP OUT OF REACH OF CHILDREN

CAUTION!

STOP - READ THE ENTIRE LABEL BEFORE USE

Precaución al usuario: Si usted no puede leer o entender inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente. To the user: If you cannot read or understand English, do not use this product until the label has been fully explained to you.

Manufactured by: ARBORJET INC.: 781-935-9070 99 Blueberry Hill Road, Woburn, MA 01801

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS:
CAUTION: Harmful if swallowed. Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

Personal Protective Equipment (PPE):
Wear long-sleeved shirt and long pants, socks, shoes, and chemical resistant gloves. Remove and wash contaminated clothing before reuse.

FIRST AID

IF SWALLOWED:

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or a doctor for further treatment advice.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or a doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the Infotrac Chemical Emergency Response System at **1-800-535-5053**.

Note to Physician: No specific antidote is available. Treat the patient symptomatically.

ENVIRONMENTAL HAZARDS:
This pesticide is highly toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. This product is highly toxic to honeybees exposed to direct treatment or residues on blooming trees and shrubs.

PHYSICAL OR CHEMICAL HAZARDS:
Do not use or store near heat or open flame. Do not mix or allow coming in contact with oxidizing agents. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

IMPORTANT: Read the entire label before use. Failure to follow label directions may result in poor control or plant injury. Failure to follow label directions may cause injury to people, animals and environment.

Do not apply this product, by any application method, to linden, basswood or other Tilia species in the State of Oregon.

APPLICATION TO TREES AND ORNAMENTALS

IMA-jet is a systemic insecticide used to control a variety of insect pests of ornamental or forest trees. Pests controlled include aphids, whiteflies, soft scales, adelgids, gall forming wasps, leafhoppers, lace bugs, mealybugs, psyllids, serpentine leafminers, sawflies, thrips and leaf feeding beetles. Use IMA-jet as directed in trees in residential, business and commercial areas, golf courses, airports, cemeteries, parks, street trees, playgrounds, athletic fields, commercial forestry production, seed orchard trees, nurseries, and in private, municipal, state, federal, county and local recreational forests.

WHEN TO TREAT: For optimum results, apply IMA-jet prior to infestation. Also apply when insects are infesting and feeding upon the tree. IMA-jet insecticide moves upward into the tree's canopy from the application sites. Systemic activity occurs only after the active ingredient is translocated upward in the tree. This product must be applied below the bark into the sapwood (i.e., the vascular) tissues.

In the case of severe infestation, use the highest label rate for the targeted pest. In trees larger than 24" use the highest rate listed for that insect pest. Dosages are designed for insect control and retreatment is generally not necessary during the year after initial treatment. Monitor insect activity to establish a damage threshold for retreatment. Repeat applications as necessary.

The need for an application can be based on historical monitoring of the site, previous records or experiences, current season adult trapping and other methods. Due to potential foliar injury or poor (i.e. slow) uptake, do not apply to trees stressed by drought or extreme heat.

BASIC INJECTION PROCEDURE: This product must be placed into the tree's sapwood, the conductive tissue that moves water to the canopy. Make applications around the base of the tree. Inject into tree roots exposing them by careful excavation or, alternatively into the trunk flare or tissue immediately above the trunk flare, locating the injection site in the first few xylem (i.e., sapwood) elements. Drill holes through the bark and into the sapwood a minimum of 3/8" deep. When using the Arborjet Arborplug, drill a minimum of 5/8" deep into the sapwood.

CALCULATING APPLICATION RATE: The dosages and number of application sites are based on tree diameter.

To determine the application/dose rate per tree:

1) Measure the tree diameter in inches at chest height (54" from ground) to find the Diameter at Breast Height (DBH). (If measuring tree circumference, divide circumference by 3 to obtain the DBH in inches.)
2) Calculate the number of injection sites by dividing the DBH in inches by 2.
3) Multiply the tree DBH by the dosage rate (see table below for appropriate dosage rate) to calculate the total dose in milliliters per tree.
4) Divide the total dose by the number of injection sites to determine required dosage per injection site.

Example: For a tree with a DBH of 12 inches (or circumference of 36 inches) and 8 mL dosage rate:

1) DBH = 12" (circumference 36" ÷ 3 =12")
2) Divide DBH of 12" by 2 = 6 injection sites.
3) Multiply DBH of 12" by 8 mL = 96 mL total dose per tree.
4) Divide 96 mL by 6 injection sites = 16 mL per injection site to deliver the required dosage.

To apply the highest dosage rate to trees as specified in the table, "Applications for Use in Listed Trees and Ornamentals and Forest and Woodlands Areas," it may be necessary to increase the number of injection sites applied. In the example given in "Calculating Application Rate," if the total dose per tree applied is less than the calculated 96 mLs, the remaining dosage should be placed into a new injection site. Do not place injection sites closer than 2" apart. Treat Cycads (i.e. gymnosperms) using this method of application. In resinous conifers (such as pine and spruce), start the injection immediately after drilling. A prolonged delay may reduce uptake on account of resin flow. In palms (i.e., monocots), only one injection site is required: locate the application site 1-3' from the soil level and drill 4" deep into the stem.

APPLICATION EQUIPMENT: IMA-jet is designed for use with the Arborjet Tree Injection Systems or with other tree injection devices that meet the label requirements and are chemically resistant. For all injection systems, read carefully and follow manufacturer's directions for use.

APPLICATIONS FOR USE IN LISTED TREES AND ORNAMENTALS AND FOREST AND WOODLAND AREAS

(For flowering trees, make applications post bloom)

For trees less than 12" in diameter, use the lower rate for the targeted pest. If trees are severely infested, use the highest label rate specified for control of the targeted pest. For trees larger than 24" diameter, always use the highest label rate for the targeted pest.

CROP	PEST	DOSAGE
Trees & Ornamentals: Trees, Shrubs, Evergreens, Interior Plantscapes, Palms **Forest areas:** Non-urban Forests, Tree Plantations, Planted Christmas Trees, Parks, Rural Shelter Belts, Rangeland Trees and Woodland Trees including Conifers	Adelgids (including Hemlock Woolly Adelgid*), Aphids, Gall Wasps (including Erythrina Gall Wasp), Lacebugs, Leafhoppers, Leaf miners, Mealybugs, Psyllids, Soft scales, Thrips, Whiteflies	2.0 – 4.0 mL IMA-jet Systemic Insecticide per inch of cumulative trunk diameter at breast height (54" from the ground). Space injection holes approximately 6" apart, around the circumference of the tree.
Trees & Ornamentals: Trees, Shrubs, Evergreens, Interior Plantscapes, Palms **Forest areas:** Non-urban Forests, Trees Plantations, Planted Christmas Trees, Parks, Rural Shelter Belts, Rangeland Trees and Woodland Trees including Conifers	Adelgids (including Hemlock Woolly Adelgid*), Gall Wasps (including Erythrina Gall Wasp), Flatheaded Borers (including Bronze birch borer, Emerald ash borer) adults, Japanese Beetles (adults), Leaf Beetles (including elm leaf beetle), Leaf bugs (including leaf footed seed bugs), Leaf miners, Pine tip moth larvae, Roundheaded Borers (including Eucalyptus longhorned borer), Royal palm bug, Sawfly larvae, Soft scales, Thrips, Whiteflies	4.0 – 8.0 mL IMA-jet Systemic Insecticide per inch of cumulative trunk diameter at breast height (54" from the ground). Space injection holes approximately 6" apart, around the circumference of the tree.

*IMA-jet provides 1-2 years of residual control of Hemlock Woolly Adelgid. Trees infested with Hemlock Woolly Adelgid might require two applications before significant control is seen.

FOR USE UNDER USDA SUPERVISION ONLY

HOST TREES	PEST	DBH RANGE	DOSE RATE mL/DBH"
Elm, Maple, Birch, Willow, Box elder, Horse Chestnut, Buckeye, European Mountain Ash, Ash, Poplar, Albizia, London Plane, Hackberry and Sycamore	Asian Longhorned Beetle	2 - 23" 24" +	4.0 mL 8.0 mL

RESTRICTIONS

- Use as formulated. Do not mix with water.
- Keep children and pets away from treatment area until injection and uptake are complete.
- This product is not to be used on trees that will produce food within the year following treatment.
- Do not use on syrup-producing sugar maples where sap is harvested.

ARBORJET MICRO-INFUSION® PROCEDURES

Basic Arborjet Micro-Infusion® Procedures:

1. Determine the dosage based on target pest and tree diameter.

2. Pour concentrate into the medicament bottle and cap.

3. **For Tree I.V.:** pressurize the contents from 25 to 60 PSI and prime the lines by opening each injector valve slowly to purge the air; close the valve when liquid begins to flow, or **For Hydraulic Device:** pressurize the contents to 15 PSI and prime the lines by depressing the trigger and pulling back slowly on the dose-sizer.

4. Determine the number and placement of injection sites around the base of the tree. Drill through the bark then 5/8" into the sapwood using the appropriate sized drill bit. For best results, use clean and sharp Brad point drill bits.

5. Insert the Arborplug™ using the set tool and mallet. Use the #4 Arborplug (3/8" d) for most applications, including conifers. In hardwoods, you may also use smaller diameter Arborplugs including the #3 (9/32" d). Insert the VIPER needle into the Arborplug. To start the Tree I.V. infusion, open the needle valve. Close the valve and remove the VIPER needle upon completion of infusion. To inject with the Hydraulic Device, depress the trigger to apply the dose.

Alternative Arborjet STINGER Procedure:

6. Alternatively, insert the #2 (7/32" drill bit) STINGER injector tip 5/8" deep into the sapwood in the predrilled hole with a hand push or by gently tapping the injector tip into the sapwood with a mallet. Remove STINGERS upon completion of infusion process by pulling and twisting out counter-clockwise. Use a cleaner or an EPA registered disinfectant between trees when using the reusable STINGER tips.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store bottles in a cool, dry place above 45° F. Store in original container out of reach of children, preferably in a locked storage area.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available, or puncture and dispose of empty bottle in a sanitary landfill.

NOTICE OF WARRANTY

ARBORJET, Inc. makes no warranty of fitness of this product for any other purpose, beyond its uses under normal conditions in keeping with the statements made on this label. The buyer accepts and understands that failure to follow label directions is the responsibility of the buyer.

ARBORjet®
Revolutionary Plant Health Solutions

Micro-Infusion® is a registered trademark of Arborjet, Inc.

REV 7/2017



BAYER

CoreTect®

GROUP 4A INSECTICIDE

Pull here to open

TREE AND SHRUB INSECTICIDE TABLETS

For use in landscapes, forested areas, nurseries, greenhouses and interiorscapes.

ACTIVE INGREDIENT: Imidacloprid,
1-[(6-Chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine 20%
OTHER INGREDIENTS: 80%

TOTAL: 100%

Guaranteed Analysis 12-9-4

EPA Reg. No. 432-1457

Contents

250 Tablets

Net Weight

1.38 LB (.625kg)

79283261 61384462C 160516AV2

STOP - Read the label before use.
Keep out of reach of children.

CAUTION

See Back Panel for First Aid Instructions and Booklet for Complete Precautionary Statements and Directions for Use.

For MEDICAL and TRANSPORTATION Emergencies
ONLY Call 24 Hours A Day 1-800-334-7577
For PRODUCT USE Information Call 1-800-331-2867

GROUP 4A INSECTICIDE

CoreTect®

TREE AND SHRUB INSECTICIDE TABLETS

For use in landscapes, forested areas, nurseries, greenhouses and interiorscapes.

ACTIVE INGREDIENT: Imidacloprid,
1-[(6-Chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine 20%
OTHER INGREDIENTS: 80%

TOTAL: 100%

Guaranteed Analysis 12-9-4

EPA Reg. No. 432-1457

Contents

250 Tablets

Net Weight

1.38 LB (.625kg)

79283261 61384462C 160516AV2

STOP - Read the label before use.
Keep out of reach of children.

CAUTION

See Back Panel for First Aid Instructions and Booklet for Complete Precautionary Statements and Directions for Use.

For MEDICAL and TRANSPORTATION Emergencies
ONLY Call 24 Hours A Day 1-800-334-7577
For PRODUCT USE Information Call 1-800-331-2867

FIRST AID	
If on skin or clothing:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If in eyes:	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
In case of emergency call toll free the Bayer Environmental Science Emergency Response Telephone No. 1-800-334-7577. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.	
Note To Physician: No specific antidote is available. Treat the patient symptomatically.	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.

Personal Protective Equipment (PPE):

WPS USES: Applicators and Other Handlers who handle this product for any use covered by the Worker Protection Standard (40 CFR part 170) – must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of any waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton.
- Shoes plus socks

Non-WPS USES: Applicators and other handlers who handle this product for any use NOT covered by the Worker Protection Standard (40 CFR part 170) – in general, only agricultural plant uses are covered by the WPS, must wear:

- Long-sleeved shirt and pants
- Shoes plus socks
- Gloves

Follow manufacturer's instructions for cleaning/ maintaining personal protective equipment, PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is highly toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Resistance Management Recommendations

Some insects are known to develop resistance to insecticides after repeated use. As with any insecticide, the use of this product should conform to resistance management strategies established for the use area. CoreTect® contains a Group 4A insecticide. Insect biotypes with acquired or inherent resistance to Group 4A insecticides may eventually dominate the insect population if Group 4A insecticides are used repeatedly as the predominant method of control for targeted species.

The active ingredient in CoreTect is a member of the neonicotinoid chemical class. Insect pests resistant to other chemical classes have not shown cross-resistance to CoreTect.

Contact your Cooperative extension specialist, certified crop advisor and/or product manufacturer for additional insect resistance management recommendations.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Use CoreTect as directed on ornamental trees, shrubs, and plants on home lawns, business and office complexes, shopping complexes, multi-family residential complexes, golf courses, airports, cemeteries, parks, playgrounds, athletic fields, and municipal, city, state, national, and private wooded and forested areas.

Use Coretect as directed on ornamental trees, shrubs, and plants in interiorscapes, nurseries and greenhouses.

Restrictions:

- Do not apply more than 450 tablets per acre per calendar year (0.5 lb imidacloprid) to in ground plants.
- Apply only to ornamentals and non-bearing fruit trees. Non-bearing trees are defined as trees that will not bear fruit until at least 1 year after treatment.
- Restriction for Outdoor Use: Do not apply this product, by any application method, to linden, basswood, or other Tilia species.
- Do not apply tablets to saturated soils.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance.
It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.
Exception: The Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of any waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep children and pets off treated area until dry.

LANDSCAPE, INTERIORSCAPES AND FORESTED AREAS*

CoreTect will control or significantly reduce populations of insects that attack containerized, newly-planted, and established trees. For trees and shrubs grown in landscapes and interiorscapes for more than one year, CoreTect will provide control of insects for up to one year. The decision to retreat plants in the second year after application should be based on the presence of pests.

CoreTect is formulated to provide consistent delivery of active ingredient over time. Release of active ingredient is dependent on presence of adequate soil moisture. For best results, irrigate the plant after treatment, and ensure that the plant receives regular irrigation for at least 2-3 months after treatment.

Treatment of containerized or balled and burlapped ornamentals at planting – While planting containerized ornamentals, place the prescribed number of CoreTect tablets in each planting hole directly underneath the root ball, or 1-4" deep into the root ball after the plant has been placed in the hole and the hole filled with soil. Do not apply tablets if the soil is saturated or if there is water present at the bottom of the planting hole.

Treatment of in-ground and permanently-containerized ornamentals – For best results on established ornamentals, place CoreTect as close to the fine absorptive roots as possible. For most deciduous trees and shrubs, an adequate number of these absorptive roots are located within 6-24" of the trunk, depending on tree size. Apply CoreTect 2-5" below the soil surface, next to the plant (ca. within 3-5" of newly planted trees or shrubs, or within 6-24" of well-established ornamentals). Ensure that the tablets are completely covered with soil after application.

For bushy coniferous trees and shrubs, numerous absorptive roots may be located near the drip-line. To apply CoreTect post-plant to plants with a definite drip-line, place tablets 2-5" below the

soil surface, evenly spaced around the tree and along the drip-line. Ensure that the tablets are completely covered with soil after application.

*Natural or planted stands of trees and excludes tree stands in agricultural production systems.

LANDSCAPE, INTERIORSCAPES AND FORESTED AREAS			
Sites	**Pest**	**Container size**	**Dose (# tablets per pot)**
Ornamental trees, shrubs, and ornamental plants in containers prior to, during or after planting into landscapes and interiorscapes	Adelgids (hemlock woolly adelgid) Aphids Flatheaded borers (excluding emerald ash borer) Leaf-feeding beetles (Japanese beetle and vine weevil adults) Leaf-feeding bugs (lace bugs, leaf bugs and plant bugs) Leafhoppers, planthoppers, sharpshooters (glassy-winged sharpshooter) and spittlebugs Leafminers Mealybugs	< 1 gallon 1 gallon 3 gallon 5 gallon 7 gallon 10 gallon Large containers (spaded, balled and burlapped, and pot-in-pot)	1 1-2 2-3 3-4 4-5 5-7 2-3 tablets per inch of trunk diameter or per foot of shrub height

continued

LANDSCAPE, INTERIORSCAPES AND FORESTED AREAS			
Sites	**Pest**	**Container size**	**Dose (# tablets per pot)**
Ornamental trees, shrubs, and ornamental plants in containers prior to, during or after planting into landscapes and interiorscapes	Pine tip moth larvae Psyllids Roundheaded borers (excluding Asian longhorned beetle) Royal palm bug Sawfly larvae Scales (Brown soft, Camellia, Cottony cushion, European elm, False oleander, Fletcher, Florida red, Florida wax, Green, Green shield, Hemispherical, Indian wax, Lecanium, Magnolia, Oystershell, Striped pine, Tea, Tortoise,Tuliptree, and White peach scales)	< 1 gallon 1 gallon 3 gallon 5 gallon 7 gallon 10 gallon Large containers (spaded, balled and burlapped, and pot-in-pot)	1 1-2 2-3 3-4 4-5 5-7 2-3 tablets per inch of trunk diameter or per foot of shrub height

continued

LANDSCAPE, INTERIORSCAPES AND FORESTED AREAS			
Sites	**Pest**	**Container size**	**Dose (# tablets per pot)**
Ornamental trees, shrubs, and ornamental plants in containers prior to, during or after planting into landscapes and interiorscapes	Thrips (foliage only) White grub, billbug, and root weevil larvae Whiteflies (including fig whitefly)	< 1 gallon 1 gallon 3 gallon 5 gallon 7 gallon 10 gallon Large containers (spaded, balled and burlapped, and pot-in-pot)	1 1-2 2-3 3-4 4-5 5-7 2-3 tablets per inch of trunk diameter or per foot of shrub height

continued

LANDSCAPE, INTERIORSCAPES AND FORESTED AREAS		
Sites	**Pest**	
Established or newly-planted ornamental trees and shrubs	Adelgids (including hemlock woolly adelgid) Aphids Leaf-feeding beetles (Japanese beetle and vine weevil adults) Leaf-feeding bugs (lace bugs, leaf bugs and plant bugs) Leafhoppers, planthoppers, sharpshooters (including glassy-winged sharpshooter) and spittlebugs Leafminers Mealybugs Pine tip moth larvae Psyllids Royal palm bug Sawfly larvae Soft scales Whiteflies	2-3 tablets per inch of trunk diameter or per foot of shrub height

continued

LANDSCAPE, INTERIORSCAPES AND FORESTED AREAS		
Sites	**Pest**	
Established or newly-planted ornamental trees and shrubs	Armored scales (including Camellia, False oleander, Florida red, Oystershell, Tea, and White peach scales) Flatheaded borers (excluding emerald ash borer) Roundheaded borers (excluding Asian longhorned beetle) Thrips (foliage only) White grub, billbug, and root weevil larvae	3 tablets per inch of trunk diameter or per foot of shrub height
Restriction: Do not apply this product, by any application method, to linden, basswood, or other Tilia species; do not apply more than 450 tablets per acre per calendar year (0.5 lb imidacloprid) to in-ground plants.		

NURSERY AND GREENHOUSE

Coretect will control or significantly reduce populations of insects that attack containerized, newly-planted and established trees and shrubs. For trees and shrubs grown in nurseries and greenhouses, Coretect will provide control of insects for up to one year. The decision to retreat plants in the second year after application should be based on the presence of pests.

Coretect is formulated to provide consistent delivery of active ingredient over time. Release of active ingredient is dependent on presence of adequate soil moisture. Irrigate moderately but thoroughly after application, allowing no leaching and runout from container for at least 3 irrigations or 10 days which ever is longer. Ensure that the plant receives regular irrigation for at least 2-3 months after treatment.

Treatment of containerized ornamental plants - For containerized, balled and burlapped, and pot-in-pot trees and shrubs, place the prescribed number of Coretect 1-4" deep into the media, and at least 2" from the outside edge of the container. Ensure that the tablet is completely covered with media after application.

Treatment of bare root seedlings, whips, sticks, cuttings, etc., at planting – Place the prescribed number of Coretect in each planting hole or slit, directly underneath to or next to the root system of the plant. Or, place the tablets 1-4" deep into the soil next to the plant (ca. within 2-5") after the plant has been planted and the root system covered with soil. Do not apply tablets if the soil is saturated or if there is water present at the bottom of the planting hole or slit.

Treatment of containerized or balled and burlapped trees and shrubs at planting – While planting containerized trees and shrubs, place the prescribed number of Coretect in each planting hole directly underneath the root ball, or 1-4" deep into the root ball after the plant has been placed

in the hole and the hole filled with soil. Do not apply tablets if the soil is saturated or if there is water present at the bottom of the planting hole.

Treatment of in-ground trees and shrubs – For best results on established trees and shrubs, place Coretect as close to the fine absorptive roots as possible. For most deciduous trees and shrubs, these and adequate number of these absorptive roots are located within 6-24" of the trunk, depending on tree size. Apply Coretect 2-5" below the soil surface, next to the plant (ca. within 3-5" of newly planted trees or shrubs, or within 6-24" of well-established ornamentals). Ensure that the tablets are completely covered with soil after application.

For bushy coniferous trees and shrubs, numerous absorptive roots may be located near the drip-line. To apply Coretect post-plant to plants with a definite drip-line, place tablets 2-5" below the soil surface, evenly spaced around the tree and along the drip-line. Ensure that the tablets are completely covered with soil after application.

NURSERY AND GREENHOUSE			
Crop	**Pest**	**Container size**	**Dose (# tablets per pot)**
Ornamental trees and shrubs (including non-bearing fruit and nut trees) in containers or in containers prior to planting, during or after planting into landscape environments	Adelgids Aphids Armored scales (suppression) Black vine weevil larvae Flatheaded borers (excluding emerald ash borer) Japanese beetle adults Lace bugs Leaf beetles Leafhoppers (including glassy-winged sharpshooter) Leafminers Mealybugs Pine tip moth larvae Psyllids	< 1 gallon 1 gallon 3 gallon 5 gallon 7 gallon 10 gallon Large containers, or spaded, balled and burlaped, and pot-in-pot ornamentals	1 1-2 2-3 3-4 4-5 5-7 2-3 tablets per inch of trunk diameter or per foot of shrub height

continued

NURSERY AND GREENHOUSE			
Crop	**Pest**	**Container size**	**Dose (# tablets per pot)**
Ornamental trees and shrubs (including non-bearing fruit and nut trees) in containers or in containers prior to planting, during or after planting into landscape environments	Roundheaded borers (excluding Asian longhorned beetle) Royal palm bugs Sawfly larvae Soft scales Thrips (foliage only) White grub larvae Whiteflies	< 1 gallon 1 gallon 3 gallon 5 gallon 7 gallon 10 gallon Large containers, or spaded, balled and burlaped, and pot-in-pot ornamentals	1 1-2 2-3 3-4 4-5 5-7 2-3 tablets per inch of trunk diameter or per foot of shrub height
Restriction for Outdoor Use: Do not apply this product, by any application method, to linden, basswood, or other Tilia species; do not apply more than 450 tablets per acre per calendar year (0.5 lb imidacloprid) to in-ground plants.			

NURSERY AND GREENHOUSE		
Crop	**Pest**	**Dose (# tablets)**
Newly-planted whips or seedling ornamentals (including non-bearing fruit and nut trees), less than 1" dbh, or less than 1 ft of shrub height	Adelgids Aphids Armored scales (suppression) Japanese beetle adults Lace bugs Leaf beetles Leafhoppers (including glassy-winged sharpshooter) Mealybugs Psyllids Soft scales Thrips (foliage feeding) White grub larvae Whiteflies	1 tablet per plant for preventative or first onset of infestation 2 tablets per plant - higher rate for heavy pest population

continued

NURSERY AND GREENHOUSE *(continued)*		
Crop	**Pest**	**Dose (# tablets)**
Newly-planted whips or seedling ornamentals (including non-bearing fruit and nut trees), less than 1" dbh, or less than 1 ft of shrub height	Black vine weevil larvae Flatheaded borers (excluding emerald ash borer) Leafminers Pine tip moth larvae Roundheaded borers (excluding Asian longhorned beetle) Royal palm bugs Sawfly larvae	2 tablets per plant
Restriction for Outdoor Use: Do not apply this product, by any application method, to linden, basswood, or other Tilia species; do not apply more than 450 tablets per acre per calendar year (0.5 lb imidacloprid) to in-ground plants.		

NURSERY AND GREENHOUSE		
Crop	**Pest**	**Dose (# tablets)**
Established or newly-planted ornamental trees and shrubs (greater than 1" dbh, or greater than 1 ft of shrub height)	Adelgids Aphids Armored scales (suppression) Black vine weevil larvae Flatheaded borers (excluding emerald ash borer) Japanese beetle adults Lace bugs Leaf beetles Leafhoppers (including glassy-winged sharpshooter) Leafminers Mealybugs Pine tip moth larvae Psyllids	2-3 tablets per inch of trunk diameter or per foot of shrub height

continued

NURSERY AND GREENHOUSE *(continued)*		
Crop	**Pest**	**Dose (# tablets)**
Established or newly-planted ornamental trees and shrubs (greater than 1" dbh, or greater than 1 ft of shrub height)	Roundheaded borers (excluding Asian longhorned beetle) Royal palm bugs Sawfly larvae Soft scales Thrips (foliage only) White grub larvae Whiteflies	2-3 tablets per inch of trunk diameter or per foot of shrub height
Restriction for Outdoor Use: Do not apply this product, by any application method, to linden, basswood, or other Tilia species; do not apply more than 450 tablets per acre per calendar year (0.5 lb imidacloprid) to in-ground plants.		

Guaranteed Analysis 12-9-4

Total Nitrogen (N) 12.00%
1.30% Ammoniacal Nitrogen
0.70% Other Water Soluble Nitrogen
10.00% Water Insoluble Nitrogen*
Available Phosphate (P2O5).....9.00%
Soluble Potash (K2O).....4.00%
Magnesium (Mg).....0.50%
0.50% Water Soluble Magnesium (Mg)
Sulfur (S).....3.40%
3.40% Combined Sulfur (S)
Molybdenum (Mo).....0.004%
F1559
Derived from: Isobutylidene Diurea, Ammonium Phosphate, Ammonium Sulfate, Sulfate of Potash, Magnesium Sulfate and Ammonium Molybdate
*10.00% Slowly Available Nitrogen from Isobutylidene Diurea.
F1559
CAUTION: The application of fertilizing materials containing Molybdenum (MO) may result in forage crops containing levels of Molybdenum (MO) which are toxic to ruminant animals.
*WIN (Water Insoluble Nitrogen) is stated on an unground basis. Powdered or ground samples will analyze at 3.00%.
Information regarding the contents and levels of metals in this product are available on the Internet at http://www.aapfco.org/metals.htm

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or dispose of in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Handle and open container in a manner as to prevent spillage. If the container is leaking, invert to prevent leakage. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides above. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Environmental Science Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Environmental Science Emergency Response Telephone No. is 1-800-334-7577 or contact Chemtrec at 1-800-424-9300.

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury or ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer CropScience LP. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTANT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTANT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTANT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES

RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

Bayer (reg'd), the Bayer Cross (reg'd) and CoreTect® are registered trademarks of Bayer.

Produced for:
Bayer Environmental Science
A Division of Bayer CropScience LP
2 T. W. Alexander Drive
Research Triangle Park, NC 27709

Bayer



GROUP 4A INSECTICIDE

BAYER

CoreTect®

TREE AND SHRUB INSECTICIDE TABLETS

For use in landscapes, forested areas, nurseries, greenhouses and interiorscapes.

ACTIVE INGREDIENT:

Imidacloprid, 1-[(6-Chloro-3-pyridinyl) methyl]-N-nitro-2-imidazolidinimine 20%

OTHER INGREDIENTS: 80%

TOTAL: 100%

Guaranteed Analysis 12-9-4

EPA Reg. No. 432-1457

Contents

250 Tablets

Net Weight

1.38 LB (.625kg)

79283261

61384462C 160516AV2

STOP - Read the label before use.
Keep out of reach of children.

CAUTION

See Back Panel for First Aid Instructions and Booklet for Complete Precautionary Statements and Directions for Use.

For MEDICAL and TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577
For PRODUCT USE Information Call 1-800-331-2867

Pull here to open

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.

ENVIRONMENTAL HAZARDS

This product is highly toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

61384551C 160516AV2

FIRST AID	
If on skin or clothing:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If swallowed:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If in eyes:	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
In case of emergency call toll free the Bayer Environmental Science Emergency Response Telephone No. 1-800-334-7577. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.	
Note To Physician: No specific antidote is available. Treat the patient symptomatically.	

Produced for:
Bayer Environmental Science
A Division of Bayer CropScience LP
2 T. W. Alexander Drive
Research Triangle Park, NC 27709
Product of France

Bayer

ARSENAL®

herbicide

SPECIMEN

For control of undesirable vegetation growing within specified aquatic sites, forestry sites, pasture/rangeland, and nonagricultural lands; and for establishment and maintenance of wildlife openings, release of unimproved Bermudagrass and Bahiagrass, bareground weed control, and for use under certain paved surfaces

Active Ingredient:

isopropylamine salt of imazapyr: (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid)*	27.8%
Other Ingredients:	72.2%
Total:	100.0%

* Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon

EPA Reg. No. 241-346 **EPA Est. No.**

KEEP OUT OF REACH OF CHILDREN

CAUTION/PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid**, **Precautionary Statements**, **Directions For Use**, **Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

BASF
The Chemical Company

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • **DO NOT** induce vomiting unless told to by a poison control center or doctor. • **DO NOT** give anything by mouth to an unconscious person.
If in eyes	• Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).	

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION. Harmful if swallowed. Avoid contact with eyes or clothing.

Personal Protective Equipment (PPE)

Some materials that are chemically resistant to this product are listed below. If you want more options, follow the instructions for **Category A** on an EPA chemical-resistance category selection chart.

Mixers, loaders, applicators, and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions are given for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them.

Engineering Controls

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands with plenty of soap and water before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Physical and Chemical Hazards

Spray solutions of **Arsenal® herbicide** must be mixed, stored, and applied only in stainless steel, fiberglass, plastic, and plastic-lined steel containers.

Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

Environmental Hazards

This product is toxic to plants. Drift and runoff may be hazardous to plants in water adjacent to treated areas. **DO NOT** apply to water except as specified in this label. Treatment of aquatic weeds may result in oxygen depletion or loss because of decomposition of dead plants. This oxygen loss may cause suffocation of some aquatic organisms. **DO NOT** treat more than 1/2 of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

This pesticide is toxic to vascular plants and must be used strictly in accordance with the drift precautions on the label.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Arsenal® herbicide must be used only in accordance with the instructions on the label attached to the container. Keep containers closed to avoid spills and contamination.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **48 hours**.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Chemical-resistant gloves made of any waterproof material
- Protective eyewear

NONAGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

DO NOT enter or allow others to enter treated areas until sprays have dried.

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

Pesticide Storage

DO NOT store below 10° F.

Pesticide Disposal

Wastes resulting from the use of this product must be disposed of on-site or at an approved waste disposal facility.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Container. Refill this container with pesticide only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

(continued)

STORAGE AND DISPOSAL *(continued)*

Container Handling *(continued)*

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

In Case of Emergency

In case of large-scale spillage regarding this product, call:

- CHEMTREC 1-800-424-9300
- BASF Corporation 1-800-832-HELP (4357)

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

Steps to be taken in case material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

Product Information

Arsenal® herbicide is an aqueous solution to be mixed with water and a surfactant and applied as a spray solution to control undesirable vegetation growing within specified aquatic sites, forestry sites, pasture/rangeland and nonagricultural lands. Aquatic sites consist of standing and flowing water, estuarine/marine, wetland, and riparian areas. Nonagricultural lands include private, public and military lands as follows: uncultivated nonagricultural areas (including airports, highway, railroad and utility rights-of-way, and sewage disposal areas); uncultivated agricultural areas - noncrop producing (including farmyards, fuel storage areas, fence rows, nonirrigation ditchbanks, and barrier strips); industrial sites - outdoor (including lumberyards, pipeline and tank farms); and natural areas (including wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads, and trails). **Arsenal** may also be used for the release of unimproved Bermudagrass and Bahiagrass, for bareground weed control, and for use under certain paved surfaces.

Herbicidal Activity

Arsenal will control most annual and perennial grass and broadleaf weeds in addition to many brush and vine species with some residual control of undesirable species that germinate above the waterline. **Arsenal** is readily absorbed through emergent leaves and stems and is translocated rapidly throughout the plant with accumulation in the meristematic regions. For maximum activity, weeds should be growing vigorously at the time of application, and the spray solution should include a surfactant (see **Adjuvants** section for specific use directions). Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into and kills underground or submerged storage organs, which prevents regrowth. Chlorosis and tissue necrosis may not be apparent in some plant species until 2 or more weeks after application. Complete kill of plants may not occur for several weeks. **Arsenal** applications are rainfast 1 hour after treatment.

Product Use and Restrictions

Applications may be made for control of undesirable vegetation growing within specified aquatic sites, forestry sites, pasture/rangeland and nonagricultural lands. Aquatic sites consist of standing and flowing water; estuarine/marine, wetland, and riparian areas; for control of most annual and perennial grass weeds, broadleaf weeds, vines and brambles, and hardwood brush and trees for forestry site preparation and release of conifers from woody and herbaceous competition. **Arsenal** may also be used for selective woody and herbaceous weed control in natural regeneration of certain conifers (see **Conifer Release Treatment**).

Nonagricultural lands include private, public and military lands as follows: uncultivated nonagricultural areas (including airports, highway, railroad and utility rights-of-way, and sewage disposal areas); uncultivated agricultural areas - noncrop producing (including farmyards, fuel storage areas, fence rows, nonirrigation ditchbanks, and barrier strips); industrial sites - outdoor (including lumberyards, pipeline and tank farms); and natural areas (including wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads, and trails).

Restrictions and Limitations

- **DO NOT** use on food crops.
- **DO NOT** apply this product within 1/2 mile upstream of an active potable water intake in flowing water (i.e. river, stream, etc.) or within 1/2 mile of an active potable water intake in a standing body of water, such as a lake, pond, or reservoir.
- **DO NOT** apply to water used for irrigation except as described in **Product Use and Restrictions** section of this label.
- Keep from contact with fertilizers, insecticides, fungicides, and seeds.
- **DO NOT** drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the treated soil may be washed or moved into contact with their roots.
- **DO NOT** use on lawns, walks, driveways, tennis courts, or similar areas.
- **DO NOT** side trim desirable vegetation with this product unless severe injury and plant death can be tolerated. Prevent drift of spray to desirable plants.
- Clean application equipment after using this product by thoroughly flushing with water.

Nonagricultural Lands and Forestry Sites

- **DO NOT** apply more than 1.5 lbs acid equivalent (ae) imazapyr (equivalent to 96 fl ozs of **Arsenal® herbicide**) per acre per year.

Pasture/Rangeland Sites

- For spot treatment only.
- **DO NOT** treat more than 1/10 of the available area to be grazed or cut for hay.
- **DO NOT** apply more than 0.75 lb ae imazapyr (equivalent to 48 fl ozs of **Arsenal**) per acre per year.

Aquatic Sites

- **DO NOT** apply more than 1.5 lbs ae imazapyr (equivalent to 96 fl ozs of **Arsenal**) per acre per year.
- **Public waters** - Application of **Arsenal** to water can only be made by federal or state agencies, such as Water Management District personnel, municipal officials, and the U.S. Army Corps of Engineers, or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the state or local government. Treatment to other than non-native invasive species is limited to only those plants that have been determined to be a nuisance by a federal or state government entity.
- **Permitting** - Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.
- **Private waters** - Applications may be made to private waters that are still, such as ponds, lakes, and drainage ditches where there is minimal or no outflow to public waters.
- **Aerial application** - Aerial application to aquatic sites is restricted to helicopter only.
- **Irrigation water** - Application to water used for irrigation that results in **Arsenal** residue greater than 1.0 ppb **MUST NOT** be used for irrigation purposes for 120 days after application or until **Arsenal** residue levels are determined by laboratory analysis or other appropriate means of analysis to be 1.0 ppb or less. When applications are made within 500 feet of an active irrigation intake, **DO NOT** irrigate for at least 24 hours following application to allow for dissipation.

Recreational Use of Water in Treatment Area

There are no restrictions on the use of water in the treatment area for recreational purposes, including swimming and fishing.

Livestock Use of Water in/from Treatment Area

There are no restrictions on livestock consumption of water from the treatment area.

Restrictions for Potable Water Intakes

DO NOT apply **Arsenal** directly to water within 1/2 mile upstream of an active potable water intake in flowing water (i.e. river, stream, etc.) or within 1/2 mile of an active potable water intake in a standing body of water such as a lake, pond, or reservoir. To make aquatic applications around and within 1/2 mile of active potable water intakes, the water intake must be turned off during application and for a minimum of 48 hours after application. These aquatic applications may be made only in cases where there are alternative water sources or holding ponds that would permit turning off an active potable water intake for a minimum period of 48 hours after applications.

NOTE: Existing potable water intakes that are no longer in use, such as those replaced by connections to wells or a municipal water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertent overspray of water in terrestrial use sites.

Quiescent or Slow-moving Waters

In lakes and reservoirs, **DO NOT** apply **Arsenal** within 1 mile of an active irrigation water intake during the irrigation season. Applications less than 1 mile from an active irrigation water intake may be made during the off-season if the irrigation intake will remain inactive for a minimum of 120 days after application or until **Arsenal** residue levels are determined by laboratory analysis or other appropriate means of analysis to be 1.0 ppb or less.

Precautions for Avoiding Injury to Nontarget Plants

Untreated desirable plants can be affected by root uptake of **Arsenal® herbicide** from treated soil. Injury or loss of desirable plants may result if **Arsenal** is applied on or near desirable plants, on areas where their roots extend, or in locations where the treated soil may be washed or moved into contact with their roots. When making application along shorelines where desirable plants may be present, use caution to avoid spray contact with their foliage or spray application to the soil in which they are rooted. Shoreline plants that have roots which extend into the water in an area where **Arsenal** has been applied generally will not be adversely affected by uptake of the herbicide from the water.

If treated vegetation is to be removed from the application site, **DO NOT** use the vegetative matter as mulch or compost on or around desirable species.

Managing Off-target Movement

Aerial Application

- Applicators are required to use a coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater for release heights below 10 feet. Applicators are required to use a very coarse or coarser droplet size or, if specifically using a spinning atomizer nozzle, applicators are required to use a VMD of 475 microns or greater for release heights above 10 feet. Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.
- Applicators are required to use upwind swath displacement.
- The boom length must not exceed 60% of the wingspan or 90% of the rotor-blade diameter to reduce spray drift.
- Applications with wind speeds less than 3 mph and with wind speeds greater than 10 mph are prohibited.
- Applications into temperature inversions are prohibited.

Ground Boom Application

- Applicators are required to use a nozzle height below 4 feet above the ground or plant canopy and coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater.
- Applications with wind speeds greater than 10 mph are prohibited.
- Applications into temperature inversions are prohibited.

Wind Erosion

Avoid treating powdery, dry, or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

Adjuvants

Postemergence applications of **Arsenal** require the addition of a spray adjuvant. When making aquatic applications, only spray adjuvants approved or appropriate for aquatic use must be used.

Nonionic Surfactant

Use a nonionic surfactant (NIS) at the rate of 0.25% volume/volume (v/v) or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a hydrophilic-to-lipophilic balance (HLB) ratio between 12 and 17 with at least 70% surfactant in the formulated product. Alcohol, fatty acid, oil, ethylene glycol, or diethylene glycol should not be considered as surfactants to meet the above requirements.

Methylated Seed Oil or Vegetable Oil Concentrate

Instead of a surfactant, a methylated seed oil (MSO) or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre, mix MSO or vegetable-based seed oil concentrates at a rate of 1% of total spray volume, or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in **Arsenal** deposition and uptake by plants under moisture or temperature stress.

Silicone-based Surfactant

See manufacturer's label for specific rates. Silicone-based surfactants may reduce the surface tension of the spray droplet allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

Invert Emulsions

Arsenal can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray runoff, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

Other

An antifoaming agent, spray pattern indicator, or drift-reducing agent may be applied at the product labeled rate if necessary or desired.

Tank Mixes

Arsenal may be tank mixed with other herbicides.

Consult manufacturer's labels for specific rate restrictions and weeds controlled. Always follow the more restrictive label restrictions and precautions for all products used when making an application involving tank mixes.

Application Methods

Arsenal® herbicide may be selectively applied using low-volume directed application techniques or may be broadcast-applied using ground equipment, watercraft, or aircraft. Aerial applications to aquatic sites must be made by helicopter. In addition, **Arsenal** may also be applied using cut-stump, cut-stem, and frill or girdle treatment techniques within nonagricultural lands, pasture/rangeland, and aquatic sites; see **Aerial Application** and **Ground Application** sections for additional details.

Aerial Application

All precautions must be taken to minimize or eliminate spray drift. Both fixed-wing aircraft and helicopters can be used to apply **Arsenal** on nonagricultural lands, but only helicopters can be used for aquatic applications. **DO NOT** make applications by fixed-wing aircraft or helicopter unless appropriate buffer zones can be maintained to prevent spray drift out of the target area; or when treating open tracts of land, spray drift as a result of fixed-wing aircraft application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a **Microfoil™ boom**, **Thru-Valve™ boom**, or raindrop nozzles, must be used and calibrated. Except when applying with a **Microfoil boom**, a drift control agent may be added at the specified label rate. **DO NOT** side trim with **Arsenal** unless death of treated tree can be tolerated.

Uniformly apply the specified amount of **Arsenal** in 2 to 30 gallons of water per acre. A foam-reducing agent may be added at the specified label rate, if needed.

Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of the exposed part. The maintenance of an organic coating (paint) may prevent corrosion.

Ground Application

Foliar Application

Low-volume Foliar Application

Use equipment calibrated to deliver 5 to 20 gallons of spray solution per acre. To prepare the spray solution, thoroughly mix in water 0.5% to 5% **Arsenal** plus surfactant; see the **Adjuvants** section of this label for specific use directions. A foam-reducing agent may be applied at the specified label rate, if needed. For difficult-to-control species (see **Aquatic Weed Control** and **Terrestrial Weed Control** sections for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes, but **DO NOT** apply more than 3 quarts of **Arsenal** per acre in aquatic sites and nonagricultural lands and 1.5 quarts per acre in pasture/rangeland. Excessive wetting of foliage is not necessary.

For low-volume foliar application, select proper nozzles to avoid overapplication. Proper application is critical to ensure desirable results. Best results are achieved when spray covers the crown and approximately 70 percent of the plant. The use of an even, flat-fan tip with a spray angle of 40 degrees or less will aid in proper deposition.

Appropriate tip sizes include 4004E or 1504E. For a straight-stream and cone pattern, adjustable cone nozzles, such as 5500 X3 or 5500 X4, may be used. Attaching a rollover valve onto a Spraying Systems Model 30 gunjet or other similar spray gun allows for the use of both flat-fan and cone tips on the same gun.

Moisten, but **DO NOT** drench target vegetation causing spray solution to run off.

Low-volume Foliar Application with Backpack. For low-growing species, spray down on the crown, covering crown and penetrating approximately 70% of the plant.

For target species 4 to 8 feet tall, swipe the sides of target vegetation by directing spray to at least 2 sides of the plant in smooth vertical motions from the crown to the bottom. Make sure to cover the crown whenever possible.

For target species over 8 feet tall, lace sides of target vegetation by directing spray to at least 2 sides of the target in smooth zigzag motions from crown to bottom.

Low-volume Foliar Application with Hydraulic Handgun Application Equipment. Use the same technique as described for **Low-volume Foliar Application with Backpack**.

For broadcast application, simulate a gentle rain near the top of target vegetation allowing spray to contact the crown and penetrate the target foliage without falling to the understory. Herbicide spray solution that contacts the understory may result in severe injury or death of plants in the understory.

High-volume Foliar Application

For optimum performance when spraying medium-density to high-density vegetation, use equipment calibrated to deliver up to 100 gallons of spray solution per acre (GPA). Spray solutions exceeding 100 GPA may result in excessive spray runoff, causing increased ground cover injury and injury to desirable species.

To prepare the spray solution, thoroughly mix **Arsenal** in water and add a surfactant; see **Adjuvants** section for specific use directions and rates for surfactants. A foam-reducing agent may be added at the specified label rate, if needed. For difficult-to-control species (see **Aquatic Weed Control** and **Terrestrial Weed Control** sections for relative susceptibility of weed species), use the higher concentrations of herbicide and/or spray volumes, but **DO NOT** apply more than 3 quarts of **Arsenal** per acre in aquatic sites and nonagricultural lands and 1.5 quarts per acre in pasture/rangeland. Uniformly cover the foliage of the vegetation to be controlled, but **DO NOT** apply to runoff. Excessive wetting of foliage is not necessary.

Side Trimming

DO NOT side trim with **Arsenal® herbicide** unless severe injury or death of the treated tree can be tolerated. **Arsenal** is readily translocated and can result in death of the entire tree.

Cut-surface Treatment

Arsenal may be used to control undesirable woody vegetation by applying the **Arsenal** solution to the cambium area of freshly cut stump surfaces or to fresh cuts on the stem of target woody vegetation. Application can be made any time of the year except during periods of heavy sap flow in the spring. **DO NOT** overapply solution causing runoff from the cut surface.

Injury may occur to desirable woody plants if shoots extend from the same root system or their root systems are grafted to those of the treated tree.

Cut-surface Application with Dilute and Concentrate Solutions

Arsenal may be mixed as either a concentrate or dilute solution. The dilute solution may be used for application to the cut surface of the stump or to cuts on the stem of target woody vegetation. Concentrate solutions may be used for application to cuts on the stem. Use of the concentrate solution permits application to fewer cuts on the stem, especially for large-diameter trees. Follow application instructions for proper application techniques for each type of solution.

- To prepare a dilute solution, mix 8 to 12 fluid ounces of **Arsenal** with 1 gallon of water. A surfactant or penetrating agent may improve uptake through partially callused cambiums.
- To prepare a concentrate solution, mix 2 quarts of **Arsenal** with no more than 1 quart of water.

Cut-stump Treatment

Dilute Solution. Spray or brush the solution onto the cambium area of the freshly cut stump surface. Ensure that the solution thoroughly wets the entire cambium area (the wood next to the bark of the stump).

Cut-stem Treatment (injection, hack-and-squirt)

Dilute Solution. Using standard injection equipment, apply 1 milliliter (mL) of solution at each injection site around the tree with no more than 1-inch intervals between cut edges. Ensure that the injector completely penetrates the bark at each injection site.

Concentrate Solution. Using standard injection equipment, apply 1 mL of solution at each injection site. Make at least 1 injection cut for every 3 inches of diameter at breast height (DBH) on the target tree. For example, a 3-inch DBH tree will receive 1 injection cut, and a 6-inch DBH tree will receive 2 injection cuts. On trees requiring more than 1 injection site, place the injection cuts at approximately equal intervals around the tree.

Frill or Girdle Treatment

Using a hatchet, machete, or chainsaw, make cuts through the bark and completely around the tree to expose the cambium. The cut should angle downward extending into the cambium enough to expose at least 2 growth rings. Using a spray applicator or brush, apply a 25% to 100% solution of **Arsenal** into each cut until thoroughly wet. Avoid applying so much herbicide that runoff to the ground or water occurs.

Forestry Use

Site Preparation Treatment

Arsenal may be used to control labeled grass weeds, broadleaf weeds, vines and brambles, and woody brush and trees on forest sites in advance of regeneration for the following conifer crop species:

Common Name	**Scientific Name**	**Rate** (fl ozs/A)
Loblolly pine	*Pinus taeda*	48 to 80
Loblolly X pitch hybrid		
Longleaf pine	*Pinus palustris*	
Shortleaf pine	*Pinus echinata*	
Virginia pine	*Pinus virginiana*	
Slash pine	*Pinus elliottii*	40 to 64
Coastal redwood	*Sequoia sempervirens*	24 to 48
Douglas fir	*Pseudotsuga menziesii*	
Western hemlock	*Tsuga heterophylla*	
California red fir	*Abies magnifica*	24 to 40
California white fir	*Abies concolor*	
Jack pine	*Pinus banksiana*	24 to 32
Lodgepole pine	*Pinus contorta*	
Pitch pine	*Pinus rigida*	
Ponderosa pine	*Pinus ponderosa*	
Sugar pine	*Pinus lambertiana*	
White pine	*Pinus strobus*	
Black spruce	*Picea mariana*	
Red spruce	*Picea rubens*	
White spruce	*Picea glauca*	

Use the label rate of **Arsenal** per acre applied as a broadcast foliar spray for long-term control of labeled woody plants and residual control of herbaceous weeds. Within 4 to 6 weeks of treatment, grass and other herbaceous weeds will be controlled and may provide fuel to facilitate a site preparation burn, if desired, to control conifers or other species tolerant to the herbicide.

Apply the label rate of **Arsenal** per acre in 5 to 30 gallons total spray solution for helicopter applications or 5 to 100 gallons total spray solution for mechanical ground spray and backpack applications. Use a minimum of 0.5% by volume nonionic surfactant (NIS). Use the higher label rates of **Arsenal** and higher spray volumes when

controlling particularly dense or multilayered canopies of hardwood stands or difficult-to-control species.

In certain cases, tank mixes may be necessary for chemical control of conifers and other species tolerant to **Arsenal® herbicide**. Observe all precautions and restrictions on the product labels. Always follow the most restrictive label. Combinations with other products labeled for forest site preparation may kill certain plants such as legumes and blackberry, which are desirable for wildlife habitat.

Where quick initial brownout (deadening of foliage) is desired for burning, apply a tank mixture of 32 fl ozs to 64 fl ozs **Arsenal** with 16 fl ozs to 64 fl ozs glyphosate or 16 fl ozs to 48 fl ozs triclopyr ester per acre. For control of seedling pines, apply 32 fl ozs to 64 fl ozs **Arsenal** with 3 to 4 quarts glyphosate. For site preparation, rates less than 48 fl ozs **Arsenal** will provide suppression of hardwood brush and trees; some resprouting may occur.

DO NOT plant seedlings of black spruce (*Picea mariana*) or white spruce (*Picea glauca*) on sites broadcast-treated with **Arsenal** or into the treated zone of spot or banded applications for 3 months following application or injury may occur.

Herbaceous Weed Control

Use **Arsenal** for selective weeding in the following conifers:

Common Name	Scientific Name	Rate (fl ozs/A)
Loblolly pine	*Pinus taeda*	12 to 20
Loblolly X pitch hybrid		
Virginia pine	*Pinus virginiana*	
Longleaf pine[1]	*Pinus palustris*	8 to 12
Slash pine[1]	*Pinus elliottii*	
Douglas fir[1]	*Pseudotsuga menziesii*	

[1] Use of surfactant is not recommended.

Arsenal may be applied as a broadcast treatment, banded over tree rows, or as a directed spray for release of young conifers from herbaceous weeds. To prevent possibility of conifer injury, **DO NOT** apply **Arsenal** when conifers are under stress from drought, disease, animal or winter injury, planting shock, or other stresses reducing conifer vigor. Broadcast applications may be made by helicopter, ground, or backpack sprayer. For difficult-to-control weeds, use the higher labeled rates. Where herbaceous weeds have overtopped conifer seedlings, a nonionic surfactant may be added to improve weed control (except for slash pine, long-leaf pine, and Douglas fir), at a rate not to exceed 0.5% of spray solution volume. Some minor conifer growth inhibition may be observed when herbaceous weed control treatments are made during periods of active conifer growth.

Arsenal may also be applied using backpack or handheld sprayers to control herbaceous weeds around individual conifer seedlings. Mix 0.8 fl oz to 1.2 fl ozs **Arsenal** and 0.2 oz nonionic surfactant per gallon of water. Direct the spray to the weeds and minimize the amount applied to conifer foliage for best conifer tolerance. Ensure that maximum labeled rates per acre for previously listed crop species are not exceeded.

Arsenal may be tank mixed with sulfometuron to broaden the spectrum of weeds controlled. For loblolly pine, apply 8 fl ozs to 12 fl ozs **Arsenal** plus 1 oz to 2 ozs sulfometuron per acre. The application of **Arsenal** plus sulfometuron on other conifer species may cause growth suppression.

Conifer Release Treatment

Arsenal may be applied as a broadcast or directed spray application for suppression of labeled brush, tree, and herbaceous weed species. Directed spray applications may be made with low-volume applications in conifer stands of all ages by targeting the unwanted vegetation and avoiding direct application to the conifer. Ensure that maximum labeled rates per acre listed for the following crop species are not exceeded.

Broadcast Applications for release of the following conifers from hardwood competition:

Common Name	Scientific Name	Rate (fl ozs/A)
Loblolly pine[3]	*Pinus taeda*	24 to 40
Loblolly X pitch hybrid[3]		
Virginia pine[3]	*Pinus virginiana*	
Longleaf pine	*Pinus palustris*	24 to 32
Pitch pine	*Pinus rigida*	
Shortleaf pine	*Pinus echinata*	
Slash pine	*Pinus elliottii*	
White pine[1]	*Pinus strobus*	16 to 32
California red fir	*Abies magnifica*	16 to 24
California white fir	*Abies concolor*	
Lodgepole pine[2]	*Pinus contorta*	
Douglas fir[2]	*Pseudotsuga menziesii*	
Jack pine[2]	*Pinus banksiana*	12 to 24
Black spruce[2]	*Picea mariana*	
Red spruce[2]	*Picea rubens*	
White spruce[2]	*Picea glauca*	

[1] **DO NOT** make applications to white pine stands younger than three years old. To minimize potential white pine injury, release treatments should not be made prior to July 15.

[2] Applications should be made after formation of final conifer resting buds in the fall or height growth inhibition may occur.

[3] **Mid-rotation release:** For broadcast applications below the pine canopy in established stands of loblolly pine, loblolly X pitch hybrid, and Virginia pine, use 32 fl ozs to 64 fl ozs product per acre. For mid-rotation release of other species, use rates listed in chart above.

For slash pine and longleaf pine, broadcast release treatments over the top of pines for the purpose of woody plant control must be made after August 15 and only in stands 2 through 5 years old. For applications over the top of slash pine and longleaf pine, DO NOT add surfactant and use lower labeled rates on sandy soils.

Apply the label rate of **Arsenal® herbicide** per acre when making broadcast applications with helicopter or ground spray equipment. Refer to mixing and application instructions for proper spray volumes. A nonionic surfactant may be added at no more than 0.25% by volume.

Use the higher label rates of **Arsenal** when controlling particularly dense stands or difficult-to-control species.

Some minor conifer growth inhibition may be observed when release treatments are made during periods of active conifer growth. To minimize potential conifer height growth inhibition, **DO NOT** make broadcast applications to conifer stands except loblolly pine before the end of the second growing season. To minimize potential conifer height growth inhibition, broadcast release treatments may be made late in the growing season. To prevent possibility of conifer injury, **DO NOT** apply **Arsenal** when conifers are under stress from drought, disease, animal or winter injury, or other stresses reducing conifer vigor.

Arsenal may be used to release loblolly pine seedlings during the first growing season following planting or for one-year-old natural loblolly pine regeneration. For one-year-old loblolly pine release, apply 24 fl ozs to 40 fl ozs per acre of **Arsenal** after July 15. Rates below 32 fl ozs per acre are intended for hardwood growth suppression; expect hardwood resprouting.

Spot Treatment of Undesirable Hardwood Vegetation

Arsenal may be used as a directed foliar or cut-stem application to control undesirable brush and hardwoods in the management of stands of all ages for the conifer species listed in the broadcast application section above. Refer to mixing and application instructions in the directed foliar or cut-stem sections above for proper use rates, equipment, and application techniques. **DO NOT** exceed maximum labeled rates per acre listed for crop species. Cut-stem applications may be used for spot treatment of undesirable hardwoods in Ponderosa pine stands using 24 fl ozs or less of **Arsenal** per acre.

Avoid direct application to desired plant species or injury may occur. Injury may occur to nontarget or desirable hardwoods or conifers if they extend from the same root system, or their root systems are grafted to those of the treated tree, or their roots extend into the treated zone.

Late Rotation Vegetation Control in Western Conifer

In California, the Pacific Northwest and Inland Northwest, broadcast aerial applications of **Arsenal** up to 48 fl ozs per acre are permissible in conifer stands that are targeted for harvesting the year following treatment. Use minimum spray volume of 15 gallons per acre. Significant conifer injury or mortality must be expected. **DO NOT** use this treatment if conifer injury or mortality cannot be tolerated.

Bag and Spray Application for Conifer Release

In Douglas fir and Ponderosa pine stands, broadcast applications of **Arsenal** up to 32 fl ozs per acre are permissible when the trees are covered by bags prior to the application. The bags must prevent the spray mix from contacting the conifer foliage. On sites with coarse textured soils (e.g. decomposed granite, pumice, sandy or rocky sites) or low levels of soil organic matter (generally 5% or less), significant conifer growth inhibition and mortality is possible. **DO NOT** use this treatment on these types of sites if conifer growth inhibition and mortality cannot be tolerated.

Nonagricultural Land Use

Arsenal may be used for woody and herbaceous weed control in nonagricultural lands including private, public and military lands as follows: uncultivated nonagricultural areas (including airports, highway, railroad and utility rights-of-way, and sewage disposal areas); uncultivated agricultural areas - noncrop producing (including farmyards, fuel storage areas, fence rows, nonirrigation ditchbanks, and barrier strips); industrial sites - outdoor (including lumberyards, pipeline and tank farms); and natural areas (including wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads, and trails).

Applications to nonagricultural lands are not applicable to treatment of commercial timber or other plants grown for sale or other commercial use, or for commercial seed production, or for research purposes.

Brush Control

Use the specified rate of **Arsenal** with the preferred application technique for control of undesirable brush.

Tank Mixes and Application Rates for Low-volume Foliar Brush Control*

Target Vegetation	Arsenal Rate (% by volume)	Tank Mix
Mixed hardwoods without elm, locust, or pine	1.0 to 1.5	Surfactant
Mixed hardwoods containing elm, locust, and pine	0.5 to 1.0	**Accord®** at 2% to 3% by volume plus surfactant
Mixed hardwoods with locust and pine but no elm		**Krenite®** at 2% to 5% by volume plus surfactant
Mixed hardwoods with locust and elm but no pine		**Escort®** at 2 ozs/A **or** 2.3 grams/gal plus surfactant

* Tank mixes with 2,4-D or products containing 2,4-D have resulted in reduced **Arsenal** efficacy.

Backpack and Handheld Spray Mixing Guide

% solution	Product per gallon of mix (fl ozs)	Product per 4-gallon backpack (fl ozs)
0.25	0.3	1.3
0.5	0.6	2.6
1.0	1.3	5.1
2.0	2.6	10.2
3.0	3.8	15.4
5.0	6.4	25.6

Measuring Chart

128 fluid ounces	=	1 gallon
16 fluid ounces	=	1 pint
8 pints	=	1 gallon
4 quarts	=	1 gallon
2 pints	=	1 quart

Selective Control of Undesirable Weeds in Unimproved Bermudagrass and Bahiagrass

Arsenal® herbicide may be used on unimproved Bermudagrass and Bahiagrass turf such as roadsides, utility rights-of-way, and other nonagricultural lands. **Arsenal** application on established common and coastal Bermudagrass and Bahiagrass provides control of labeled broadleaf and grass weeds. Competition from these weeds is eliminated, releasing the Bermudagrass and Bahiagrass. Treatment of Bermudagrass with **Arsenal** results in a compacted growth habit and seedhead inhibition.

Uniformly apply with properly calibrated ground equipment using at least 10 gallons of water per acre.

Temporary yellowing of grass may occur when treatment is made after growth begins.

- **DO NOT** add surfactant in excess of the specified rate (1 fl oz per 25 gallons of spray solution).
- **DO NOT APPLY** to grass during its first growing season.
- **DO NOT APPLY** to grass under stress from drought, disease, insects, or other causes.

Dosage Rate and Timing

Bermudagrass. Apply **Arsenal** at 6 fl ozs to 12 fl ozs per acre when Bermudagrass is dormant. Apply **Arsenal** at 6 fl ozs to 8 fl ozs per acre after Bermudagrass has reached full greenup. Applications made during greenup will delay greenup. Include a surfactant in the spray solution.

For additional preemergence control of annual grass and small-seeded broadleaf weeds, add **Pendulum® AquaCap™ herbicide** at the rate of 3.1 to 6.3 pints per acre. Consult the **Pendulum AquaCap** label for weeds controlled and for other use directions and precautions.

For control of Johnsongrass in Bermudagrass turf, apply **Arsenal** at 8 fl ozs per acre, plus **Roundup® herbicide** at 12 fl ozs per acre, plus surfactant. For additional control of broadleaves and vines, **Garlon® 3A herbicide** may be added to the above mix at 1 to 2 pints per acre. Observe all precautions and restrictions on the **Garlon 3A** and **Roundup** labels.

Bahiagrass. Apply **Arsenal** at 4 fl ozs to 8 fl ozs per acre when Bahiagrass is dormant or after grass has initiated greenup but has not exceeded 25% greenup. Include a surfactant in the spray solution; see **Adjuvants** section for specific use directions for surfactants.

Weeds Controlled in Unimproved Bermudagrass and Bahiagrass

Common Name	Scientific Name
Bedstraw*	*Galium* spp.
Bishopweed*	*Ptilimnium capillaceum*
Buttercup*	*Ranunculus parviflorus*
Carolina geranium	*Geranium carolinianum*
Fescue	*Festuca* spp.
Foxtail	*Setaria* spp.
Little barley	*Hordeum pusillum*
Seedling Johnsongrass	*Sorghum halepense*
White clover	*Trifolium repens*
Wild carrot	*Daucus carota*
Yellow woodsorrel	*Oxalis stricta*

* Use not permitted in California unless otherwise directed by supplemental labeling.

Grass Growth and Seedhead Suppression

Arsenal may be used to suppress growth and seedhead development of certain turfgrass in unimproved areas. When **Arsenal** is applied to desirable turf, it may result in temporary turf damage and/or discoloration. Effects to the desirable turf may vary with environmental conditions. For optimum performance, apply before culm elongation. Applications may be made before or after mowing. If applied before mowing, allow at least 3 days of active growth before mowing. If applied after mowing, allow sufficient time for grass to recover before applying this product or injury may be amplified.

DO NOT APPLY to turf under stress (drought, cold, insect damage, etc.) or severe injury or death may occur.

Bermudagrass. Apply **Arsenal** at 6 fl ozs to 8 fl ozs per acre from early greenup to before seedhead initiation. **DO NOT** add surfactant for this application.

Cool-season Unimproved Turf. Apply **Arsenal** at 2 fl ozs per acre plus 0.25% nonionic surfactant. For increased suppression, **Arsenal** may be tank mixed with products such as **Embark® growth regulator** (8 fl ozs per acre). Tank mixes may increase injury to desired turf. Consult each product label for labeled turf species and other use directions and precautions. Tank mixes with 2,4-D or products containing 2,4-D may decrease the effectiveness of **Arsenal**.

Total Vegetation Control where Bare Ground is Desired

Arsenal® herbicide is an effective herbicide for pre-emergence or postemergence control of many annual and perennial broadleaf and grass weeds where bare ground is desired. **Arsenal** is particularly effective on hard-to-control perennial grasses. **Arsenal** at 1.5 to 6 pints per acre can be used alone or in tank mix with herbicides approved for use in bare ground. The degree and duration of control are dependent on **Arsenal** rate used, tank mix partner, volume of carrier, soil texture, rainfall, and other conditions.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label restrictions and precautions for all products used when making an application involving tank mixes.

Applications of **Arsenal** may be made any time of the year. Use equipment calibrated to deliver desired gallons per acre spray volume and uniformly distribute the spray pattern over the treated area.

Postemergence Application. Always use a spray adjuvant (see **Adjuvants** section of this label) when making a postemergence application. For optimum performance on tough-to-control annual grass weeds, apply **Arsenal** at a total volume of 100 gallons per acre or less. For quicker burndown or brownout of target weeds, **Arsenal** may be tank mixed with **Roundup® herbicide**. Tank mixes with 2,4-D or products containing 2,4-D may reduce the performance of **Arsenal**. Always follow the most restrictive label restrictions and precautions for all products used when tank mixing.

Spot Treatment. Arsenal may be used as a follow-up treatment to control escapes or weed encroachment in a bareground situation. To prepare the spray solution, thoroughly mix in each gallon of water 0.5% to 5% **Arsenal** plus an adjuvant. For increased burndown, include **Roundup** as a tank mixture. For added residual weed control or to increase the weed spectrum, add **Pendulum® AquaCap™ herbicide**, **Overdrive® herbicide**, or diuron. Always follow the most restrictive label restrictions and precautions for all products used when tank mixing.

Control of Undesirable Weeds under Paved Surfaces

Arsenal can be used under asphalt, pond liners, and other paved areas, **ONLY** in industrial sites or where the pavement has a suitable barrier along the perimeter that prevents encroachment of roots of desirable plants.

Use **Arsenal** only where the area to be treated has been prepared according to good construction practices. If rhizomes, stolons, tubers, or other vegetative plant parts are present in the site, remove them by scalping with a grader blade to a depth sufficient to ensure their complete removal.

Follow **Arsenal** applications with paving as soon as possible. **DO NOT** apply where **Arsenal** may contact the roots of desirable trees or other plants.

Arsenal is not to be used under pavement on residential properties, such as driveways or parking lots, or for use in recreational areas, such as under bike or jogging paths, golf cart paths, or tennis courts, or where landscape plantings could be anticipated.

Injury or death of desirable plants may result if **Arsenal** is applied where roots are present or where roots may extend into the treated area. Roots of trees and shrubs may extend a considerable distance beyond the branch extremities (drip line).

Apply to the soil surface only when final grade is established. **DO NOT** move soil following **Arsenal** application.

Apply **Arsenal** in sufficient water (at least 100 gals per acre) to ensure thorough and uniform wetting of the soil surface, including shoulder areas. Add **Arsenal** at a rate of 3 quarts per acre (2.2 fluid ounces per 1000 square feet) to clean water in the spray tank during filling operation. Agitate before spraying.

If soil is not moist before treatment, incorporation of **Arsenal** is needed for herbicide activation. Incorporate **Arsenal** into the soil to a depth of 4 to 6 inches using a rototiller or disc. Rainfall or irrigation of 1 inch will also provide uniform incorporation. **DO NOT** allow treated soil to wash or move into untreated areas.

Spot Treatment and Crack-and-crevice Treatment

Use **Arsenal** as an initial or follow-up treatment to control weed escapes or weed encroachment in a bareground situation, including cracks and crevices in paved surfaces such as roadways, runways, and parking areas.

Grass Pasture and Rangeland Spot Treatment Weed Control

For control of undesirable vegetation in grass pasture and rangeland, **Arsenal** may be applied as a spot treatment at a rate of 2 to 48 fluid ounces of product per treated acre using any of the described ground application methods. Spot applications to grass pasture and rangeland may not exceed more than 1/10 of the area to be grazed or cut for hay. See appropriate sections of this label for specific use directions for the application method and vegetation control desired. **DO NOT** apply more than 48 fluid ounces of **Arsenal** per acre per year.

Grazing and Haying Restrictions

- There are no grazing restrictions following **Arsenal** application.
- **DO NOT** cut forage grass for hay for 7 days after **Arsenal** application.

Rangeland Use Instructions

Arsenal® herbicide may be applied to rangeland for control of undesirable vegetation to achieve one or more of the following vegetation management objectives:

- Control of undesirable (nonnative, invasive, and noxious) plant species
- Control of undesirable vegetation to aid in the establishment of desirable rangeland plant species
- Control of undesirable vegetation to aid in the establishment of desirable rangeland vegetation following a fire
- Control of undesirable vegetation to reduce wildfire fuel
- Release of existing desirable rangeland plant communities from the competitive pressure of undesirable plant species
- Control of undesirable vegetation for wildlife habitat improvement

To ensure the protection of threatened and endangered plants when applying **Arsenal** to rangeland:

- Federal agencies must follow NEPA regulations to ensure protection of threatened and endangered plants.
- State agencies must work with the Fish and Wildlife Service or the Service's designated state conservation agency to ensure protection of threatened and endangered plants.
- Other organizations or individuals must operate under a habitat conservation plan if threatened or endangered plants are known to be present on the land to be treated.

See the appropriate section(s) of this label for specific use directions for the desired rangeland vegetation management objective.

Arsenal must only be applied to a given rangeland acre as specific weed problems arise. Long-term control of undesirable weed species ultimately depends on the successful use of land management practices that promote the growth and sustainability of desirable rangeland plant species.

Rotational Crop Instructions

Rotational crops may be planted 12 months after applying **Arsenal** at the specified pasture and rangeland rate. Following 12 months after an **Arsenal** application and before planting any crop, a successful field bioassay must be completed. The field bioassay consists of a test strip of the intended rotational crop planted in the previously treated area in the grass pasture/rangeland and grown to maturity. The test strip should include low areas and knolls and include variations in soil type and pH within the treated area. If no crop injury is evident in the test strip, the intended rotational crop may be planted the following year.

Use of **Arsenal** in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible.

Aquatic Weed Control

Arsenal may be applied for control of floating and emergent undesirable vegetation (see **Aquatic Weeds Controlled** and **Terrestrial Weeds Controlled**) in or near bodies of water that may be flowing, nonflowing, or transient. **Arsenal** may be applied to aquatic sites that include lakes, rivers, streams, ponds, seeps, drainage ditches, canals, reservoirs, swamps, bogs, marshes, estuaries, bays, brackish water, transitional areas between terrestrial and aquatic sites, riparian sites, and seasonal wet areas. See **Product Use and Restrictions** section of this label for restrictions and instructions on aquatic uses.

Read and observe the following directions if aquatic sites are present in nonagricultural lands and are part of the intended treatment area.

Arsenal must be applied to the emergent foliage of the target vegetation and has little-to-no activity on submerged aquatic vegetation. **Arsenal** concentrations resulting from direct application to water are not expected to be of sufficient concentration or duration to control target vegetation. Apply **Arsenal** to maximize spray interception by target vegetation while minimizing the amount of overspray that enters the water.

Arsenal does not control plants that are completely submerged or have a majority of their foliage under water.

Arsenal may be applied with surface or helicopter application equipment in a minimum of 2 gallons of water per acre. When applying by helicopter, follow directions under the **Aerial Application** section of this label; otherwise, refer to the **Ground Application** section when using surface equipment.

Applications to moving bodies of water should be made while traveling upstream to prevent concentration of this herbicide in water. **DO NOT** apply to bodies of water or portions of bodies of water where emergent and/or floating weeds do not exist.

When applying to target vegetation that covers a large percentage of the surface area of impounded water, treating the area in strips may avoid oxygen depletion because of decaying vegetation. Oxygen depletion may result in the suffocation of some sensitive aquatic organisms. If oxygen depletion is a concern, treat no more than 1/2 of the surface area of the water in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outward in bands to allow aquatic organisms to move into untreated areas.

Avoid washoff of sprayed foliage by spray boat or recreational boat backwash for 1 hour after application.

Apply **Arsenal** at 1 to 3 quarts per acre depending on species present and weed density. **DO NOT** exceed the maximum label rate of 3 quarts per acre (1.5 lbs ae/A) per year. Use the higher labeled rates for heavy weed pressure. Consult **Aquatic Weeds Controlled** and **Terrestrial Weeds Controlled** for specific rates.

Arsenal® herbicide may be applied as a draw-down treatment in areas described above. Apply **Arsenal** to weeds after water has been drained and allow 14 days before reintroduction of water.

Weeds Controlled

Aquatic Weeds Controlled

Arsenal® herbicide will control the following target species as specified in the **Use Rates and Application Directions** column of the table. Rates are expressed in terms of product volume for broadcast applications and as a % solution for directed applications including spot treatments. **For % solution applications, DO NOT apply more than the equivalent of 3 quarts of Arsenal per acre.**

Common Name	Scientific Name	Use Rates and Application Directions
Floating Weeds		
*Floating heart	*Nymphodes* spp.	2 to 4 pints/A (0.5 to 1.0% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
*Frogbit	*Limnobium spongia*	1 to 2 pints/A (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
*Spatterdock	*Nuphar luteum*	Apply a tank mix of: 2 to 4 pints/A **Arsenal** + 4 to 6 pints/A glyphosate (0.5% **Arsenal** + 1.5% glyphosate) in 100 GPA water for best control. Ensure 100% coverage of actively growing emergent foliage.
*Water hyacinth	*Eichhornia crassipes*	1 to 2 pints/A (0.5% solution) applied in 100 GPA water to actively growing foliage.
*Water lettuce	*Pistia stratiotes*	1 to 2 pints/A (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
Emerged Weeds		
*Alligatorweed	*Alternanthera philoxeroides*	1 to 4 pints/A (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
*Arrowhead, duck-potato	*Sagittaria* spp.	1 to 2 pints/A (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
*Bacopa, lemon	*Bacopa* spp.	1 to 2 pints/A (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
*Parrot feather	*Myriophyllum aquaticum*	Foliage must be above water for sufficient **Arsenal** uptake. Apply 2 to 4 pints/A **Arsenal** to actively growing emergent foliage.
*Pennywort	*Hydrocotyle* spp.	1 to 2 pints/A (0.5% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
*Pickerelweed	*Pontederia cordata*	2 to 3 pints/A (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
*Taro, wild Coco yam Dasheen Elephant's ear	*Colocasia esculentum*	4 to 6 pints/A (1.5% solution) applied in 100 GPA with a high quality sticker adjuvant. Ensure good coverage of actively growing emergent foliage.

*** Use not permitted in California unless otherwise directed by supplemental labeling.**

(continued)

Aquatic Weeds Controlled *(continued)*

Common Name	Scientific Name	Use Rates and Application Directions
Emerged Weeds *(continued)*		
*Water chestnut	*Trappa natans*	4 to 6 pints/A (1.5% solution) applied in 100 GPA with a high quality sticker adjuvant. Ensure good coverage of actively growing emergent foliage.
*Water lily	*Nymphaea odorata*	2 to 3 pints/A (1% solution) applied in 100 GPA water mix. Ensure 100% coverage of actively growing emergent foliage.
*Water primrose	*Ludwigia uruguayensis*	4 to 6 pints/A (1.5% solution). Ensure 100% coverage of actively growing emergent foliage.
Terrestrial/Marginal Weeds		
*Aquatic nightshade Soda apple	*Solanum tampicense*	2 pints/A applied to foliage
*Bamboo, Japanese	*Phyllostachys* spp.	3 to 4 pints/A applied to foliage when plant is actively growing; before setting seedhead. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Beach, vitex	*Vitex rotundifolia*	5% solution + 1% MSO foliar spray 17% solution stem injection (hack and squirt)
Brazilian pepper Christmasberry	*Schinus terebinthifolius*	2 to 4 pints/A applied to foliage
Cattail	*Typha* spp.	2 to 4 pints/A (1% solution) applied to actively growing green foliage after full leaf elongation. Lower rates will control cattail in the North; higher rates are needed in the South.
Chinese tallow tree	*Sapium sebiferum*	16 to 24 fl ozs/A applied to foliage
Cogongrass	*Imperata cylindrica*	Burn foliage, till area; then fall-spray 2 quarts/A **Arsenal® herbicide** + MSO applied to new growth.
Cordgrass, prairie	*Spartina* spp.	4 to 6 pints/A applied to actively growing foliage
*Cutgrass	*Zizaniopsis miliacea*	4 to 6 pints/A applied to actively growing foliage
*Elephant grass Napier grass	*Pennisetum purpureum*	3 pints/A applied to actively growing foliage
*Flowering rush	*Butomus umbellatus* L.	2 to 3 pints/A applied to actively growing foliage
Giant reed Wild cane	*Arundo donax*	4 to 6 pints/A applied in spring to actively growing foliage
*Golden bamboo	*Phyllostachys aurea*	3 to 4 pints/A applied to foliage when plant is actively growing; before setting seedhead. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Junglerice	*Echinochloa colonum*	3 to 4 pints/A applied to actively growing foliage
Knapweed	*Centaurea* spp.	**Russian knapweed:** 2 to 3 pints/A + 1 quart/A MSO fall-applied after senescence begins
Knotweed, Japanese	*Polygonum cuspidatum* *Fallopia japonica*	3 to 4 pints/A applied postemergence to actively growing foliage

*** Use not permitted in California unless otherwise directed by supplemental labeling.**

(continued)

Aquatic Weeds Controlled *(continued)*

Common Name	Scientific Name	Use Rates and Application Directions
Terrestrial/Marginal Weeds *(continued)*		
Melaleuca Paperbark tree	*Melaleuca quinquenervia*	• **Established stands** - Apply 6 pints/A **Arsenal® herbicide** + 6 pints/A glyphosate + spray adjuvant. For best results, use 4 quarts/A MSO as an adjuvant. • **Ground foliar application** - Uniformly apply to ensure 100% coverage. • **Broadcast foliar control** - Apply aerially in a minimum of 2 passes at 10 gallons/A applied cross treatment. • **Spot treatment** - Use a 25% **Arsenal** + 25% solution of glyphosate + 1.25% MSO in water applied as a frill or stump treatment.
*Nutgrass Kili'p'opu	*Cyperus rotundus*	2 pints/A **Arsenal** + 1 quart/A MSO applied early postemergence
*Nutsedge	*Cyperus* spp.	2 to 3 pints/A postemergence to foliage or preemergence incorporated; nonincorporated preemergence applications will not control.
Phragmites Common reed	*Phragmites australis*	4 to 6 pints/A applied to actively growing green foliage after full leaf elongation. Ensure 100% coverage. If stand has a substantial amount of old stem tissue, mow or burn; allow to regrow to approximately 5 feet tall before treatment. Lower rates will control phragmites in the North; higher rates are needed in the South.
*Poison hemlock	*Conium maculatum*	2 pints/A **Arsenal** + 1 quart/A MSO applied preemergence to early postemergence to rosette before flowering
Purple loosestrife	*Lythrum salicaria*	1 pint/A applied to actively growing foliage
Reed canarygrass	*Phalaris arundinacea*	3 to 4 pints/A applied to actively growing foliage
Rose, swamp	*Rosa palustris*	2 to 3 pints/A applied to actively growing foliage
Russian olive	*Elaeagnus angustifolia*	2 to 4 pints/A (1% solution) applied to foliage
Saltcedar Tamarisk	*Tamarix* spp.	**Aerial application** - 2 quarts **Arsenal** + 0.25% v/v NIS applied to actively growing foliage during flowering. **Spot treatment** - Use 1% solution of **Arsenal** + 0.25% v/v NIS and spray to wet foliage. After application, wait at least 2 years before disturbing treated saltcedar. Earlier disturbance can reduce overall control.
Smartweed	*Polygonum* spp.	2 pints/A applied early postemergence
Sumac	*Rhus* spp.	2 to 3 pints/A applied to foliage
Swamp morningglory Kangkong Water spinach	*Ipomoea aquatica*	1 to 2 pints/A **Arsenal** + 1 quart/A MSO applied early postemergence
Torpedo grass	*Panicum repens*	4 pints/A (1.0 to 1.5% solution). Ensure good coverage to actively growing foliage.
*White top Hoary cress	*Cardaria draba*	1 to 2 pints/A applied in spring to foliage during flowering
Willow	*Salix* spp.	2 to 3 pints/A **Arsenal** applied to actively growing foliage. Ensure good coverage.

*** Use not permitted in California unless otherwise directed by supplemental labeling.**

Terrestrial Weed Control

In terrestrial sites, **Arsenal® herbicide** will provide preemergence or postemergence control with residual control of the following target vegetation species at the rates listed. Residual control refers to control of newly germinating seedlings in both annuals and perennials. In general, annual weeds may be controlled by preemergence or postemergence applications of **Arsenal**. For established biennials and perennials, postemergence applications of **Arsenal** will provide the best control.

The rates shown below refer to broadcast applications and indicate the relative sensitivity of these weeds. The relative sensitivity should be referenced when preparing low-volume spray solutions (see **Low-volume Foliar Application** section of **Ground Application**); low-volume applications may provide control of the target species with less **Arsenal** per acre than is shown for the broadcast treatments. Use **Arsenal** only in accordance with the specific use directions on this label and the leaflet label.

Use the relative sensitivity of the species listed following to determine the relative risk of nontarget plant injury if any of the species listed following are considered to be desirable within the area to be treated.

Resistant Biotypes. Naturally occurring biotypes (a plant within a given species that has a slightly different but distinct genetic makeup from other plants of the same species) of some weeds listed on this label may not be effectively controlled. If naturally occurring resistant biotypes are present in an area, tank mix **Arsenal** or apply sequentially with an appropriate registered herbicide having a different mode of action to ensure control.

Terrestrial Weeds Controlled

Common Name	Scientific Name	Growth Habit[2]
Grass Weeds		
Apply 2 to 3 pts/A[1]		
Annual bluegrass	*Poa annua*	A
Broadleaf signalgrass	*Brachiaria platyphylla*	A
Canada bluegrass	*Poa compressa*	P
Downy brome	*Bromus tectorum*	A
Fescue	*Festuca* spp.	A/P
Foxtail	*Setaria* spp.	A
Italian ryegrass	*Lolium multiflorum*	A
Johnsongrass[4]	*Sorghum halepense*	P
Kentucky bluegrass	*Poa pratensis*	P
Napier grass[5]	*Pennisetum purpureum*	P
Orchardgrass	*Dactylis glomerata*	P
Paragrass	*Brachiaria mutica*	P
Quackgrass	*Agropyron repens*	P

(continued)

Terrestrial Weeds Controlled *(continued)*

Common Name	Scientific Name	Growth Habit[2]
Grass Weeds *(continued)*		
Apply 2 to 3 pts/A[1] *(continued)*		
Sandbur	*Cenchrus* spp.	A
Smooth brome	*Bromus inermis*	P
Vaseygrass	*Paspalum urvillei*	P
Wild oats	*Avena fatua*	A
Witchgrass	*Panicum capillare*	A
Apply 3 to 4 pts/A[1]		
Barnyardgrass	*Echinochloa crus-galli*	A
Beardgrass	*Andropogon* spp.	P
Bluegrass, annual	*Poa annua*	A
Bulrush[5]	*Scirpus validus*	P
Cheat	*Bromus secalinus*	A
Cogongrass	*Imperata cylindrica*	P
Crabgrass	*Digitaria* spp.	A
Crowfootgrass	*Dactyloctenium aegyptium*	A
Fall panicum	*Panicum dichotomiflorum*	A
Goosegrass	*Eleusine indica*	A
Itchgrass	*Rottboellia exaltata*	A
Lovegrass[4]	*Eragrostis* spp.	P
Maidencane[5]	*Panicum hemitomon*	A
Panicum, browntop	*Panicum fasciculatum*	A
Panicum, Texas	*Panicum texanum*	A
Prairie threeawn	*Aristida oligantha*	P
Sandbur, field	*Cenchrus incertus*	A
Signalgrass	*Brachiaria platyphylla*	A
Wild barley	*Hordeum* spp.	A
Woolly cupgrass	*Eriochloa villosa*	A
Apply 4 to 6 pts/A[1]		
Bahiagrass	*Paspalum notatum*	P
Bermudagrass[3, 4]	*Cynodon dactylon*	P
Big bluestem	*Andropogon gerardii*	P
Dallisgrass	*Paspalum dilatatum*	P
Feathertop	*Pennisetum villosum*	P
Guineagrass	*Panicum maximum*	P
Saltgrass[3]	*Distichlis stricta*	P
Sand dropseed	*Sporobolus cryptandrus*	P
Sprangletop	*Leptochloa* spp.	A
Timothy	*Phleum pratense*	P
Wirestem muhly	*Muhlenbergia frondosa*	P

[1] Use higher rate where heavy or well-established infestations occur.
[2] Growth Habit: A = Annual, B = Biennial, P = Perennial
[3] Use a minimum of 75 GPA.
[4] Use higher labeled rates.
[5] Use not permitted in California unless otherwise directed by supplemental labeling.

Terrestrial Weeds Controlled *(continued)*

Common Name	Scientific Name	Growth Habit[2]
Broadleaf Weeds		
Apply 2 to 3 pts/A[1]		
Burdock	*Arctium* spp.	B
Carolina geranium	*Geranium carolinianum*	A
Carpetweed	*Mollugo verticillata*	A
Clover	*Trifolium* spp.	A/P
Common chickweed	*Stellaria media*	A
Common ragweed	*Ambrosia artemisiifolia*	A
Dandelion	*Taraxacum officinale*	P
Dogfennel	*Eupatorium capillifolium*	A
Filaree	*Erodium* spp.	A
Fleabane	*Erigeron* spp.	A
Hoary vervain	*Verbena stricta*	P
Indian mustard	*Brassica juncea*	A
Kochia	*Kochia scoparia*	A
Lambsquarters	*Chenopodium album*	A
Lespedeza[3]	*Lespedeza* spp.	P
Miner's lettuce	*Montia perfoliata*	A
Mullein	*Verbascum* spp.	B
Nettleleaf goosefoot	*Chenopodium murale*	A
Oxeye daisy	*Chrysanthemum leucanthemum*	P
Pepperweed	*Lepidium* spp.	A
Pigweed	*Amaranthus* spp.	A
Puncturevine	*Tribulus terrestris*	A
Russian thistle	*Salsola kali*	A
Smartweed	*Polygonum* spp.	A/P
Sorrell	*Rumex* spp.	P
Sunflower	*Helianthus* spp.	A
Sweet clover	*Melilotus* spp.	A/B
Tansymustard	*Descurainia pinnata*	A
Western ragweed	*Ambrosia psilostachya*	P
Wild carrot	*Daucus carota*	B
Wild lettuce	*Lactuca* spp.	A/B
Wild parsnip	*Pastinaca sativa*	B
Wild turnip	*Brassica campestris*	B
Woollyleaf bursage	*Franseria tomentosa*	P
Yellow woodsorrel	*Oxalis stricta*	P

(continued)

Terrestrial Weeds Controlled *(continued)*

Common Name	Scientific Name	Growth Habit[2]
Broadleaf Weeds *(continued)*		
Apply 3 to 4 pts/A[1]		
Broom snakeweed[4]	*Gutierrezia sarothrae*	P
Bull thistle	*Cirsium vulgare*	B
Burclover	*Medicago* spp.	A
Chickweed, mouseear	*Cerastium vulgatum*	A
Clover, hop	*Trifolium procumbens*	A
Cocklebur	*Xanthium strumarium*	A
Cudweed	*Gnaphalium* spp.	A
Desert camelthorn	*Alhagi pseudalhagi*	P
Dock	*Rumex* spp.	P
Fiddleneck	*Amsinckia intermedia*	A
Goldenrod	*Solidago* spp.	P
Henbit	*Lamium amplexicaule*	A
Knotweed, prostrate	*Polygonum aviculare*	A/P
Pokeweed	*Phytolacca americana*	P
Purslane	*Portulaca* spp.	A
Pusley, Florida	*Richardia scabra*	A
Rocket, London	*Sisymbrium irio*	A
Rush skeletonweed[4]	*Chondrilla juncea*	B
Saltbush	*Atriplex* spp.	A
Shepherdspurse	*Capsella bursa-pastoris*	A
Spurge, annual	*Euphorbia* spp.	A
Stinging nettle[4]	*Urtica dioica*	P
Velvetleaf	*Abutilon theophrasti*	A
Yellow starthistle	*Centaurea solstitialis*	A
Apply 4 to 6 pts/A[1]		
Arrowwood	*Pluchea sericea*	A
Canada thistle	*Cirsium arvense*	P
Giant ragweed	*Ambrosia trifida*	A
Gray rabbitbrush	*Chrysothamnus nauseosus*	P
Little mallow	*Malva parviflora*	B
Milkweed	*Asclepias* spp.	P
Primrose	*Oenothera kunthiana*	P
Silverleaf nightshade	*Solanum elaeagnifolium*	P
Sowthistle	*Sonchus* spp.	A
Texas thistle	*Cirsium texanum*	P

[1] Use higher rate where heavy or well-established infestations occur.
[2] Growth Habit: A = Annual, B = Biennial, P = Perennial
[3] Use not permitted in California unless otherwise directed by supplemental labeling.
[4] For best results, early postemergence applications are required.

Terrestrial Weeds Controlled *(continued)*

Common Name	Scientific Name	Growth Habit[2]
Vines and Brambles		
Apply 1 pt/A		
Field bindweed	*Convolvulus arvensis*	P
Hedge bindweed	*Calystegia sepium*	A
Apply 2 to 3 pts/A[1]		
Wild buckwheat	*Polygonum convolvulus*	P
Apply 3 to 4 pts/A[1]		
Greenbriar	*Smilax* spp.	P
Honeysuckle[3]	*Lonicera* spp.	P
Morningglory	*Ipomoea* spp.	A/P
Poison ivy	*Rhus radicans*	P
Redvine	*Brunnichia cirrhosa*	P
Wild rose[3]	*Rosa* spp.	P
including:		
Multiflora rose	*Rosa multiflora*	P
Macartney rose	*Rosa bracteata*	P
Apply 4 to 6 pts/A[1]		
Trumpetcreeper	*Campsis radicans*	P
Virginia creeper	*Parthenocissus quinquefolia*	P
Wild grape	*Vitis* spp.	P

[1] Use higher rate where heavy or well-established infestations occur.
[2] Growth Habit: A = Annual, B = Biennial, P = Perennial
[3] Use higher labeled rates.

Common Name	Scientific Name	Growth Habit[2]
Brush Species		
Apply 2 to 4 pts/A[1]		
Brazilian peppertree	*Schinus terebinthifolius*	P
Chinese tallow tree Popcorn tree	*Sapium sebiferum*	P
Russian olive	*Elaeagnus angustifolia*	P
Sumac	*Rhus* spp.	P
Willow	*Salix* spp.	P
Apply 4 to 6 pts/A[1]		
Alder	*Alnus* spp.	P
American beech	*Fagus grandifolia*	P
Ash[3]	*Fraxinus* spp.	P
Aspen	*Populus* spp.	P
Autumn olive	*Elaeagnus umbellata*	P
Bald cypress	*Taxodium distichum*	P
Bigleaf maple	*Acer macrophyllum*	P
Birch[3]	*Betula* spp.	P
Black gum[4]	*Nyssa sylvatica*	P
Black oak	*Quercus kelloggii*	P
Boxelder	*Acer negundo*	P
Ceanothis	*Ceanothis* spp.	P
Cherry[3, 4]	*Prunus* spp.	P

(continued)

Terrestrial Weeds Controlled *(continued)*

Common Name	Scientific Name	Growth Habit[2]
Brush Species *(continued)*		
Apply 4 to 6 pts/A[1]		
Chinaberry	*Melia azedarach*	P
Chinquapin	*Castanopsis chrysophylla*	P
Cottonwood	*Populus trichocarpa* *P. deltoides*	P
Cypress	*Taxodium* spp.	P
Dogwood[3]	*Cornus* spp.	P
Elm[5]	*Ulmus* spp.	P
Eucalyptus	*Eucalyptus* spp.	P
Hawthorn	*Crataegus* spp.	P
Hickory[3]	*Carya* spp.	P
Huckleberry	*Gaylussacia* spp.	P
Lyonia spp.		
including:		
Fetterbush	*Lyonia lucida*	
Staggerbush	*Lyonia mariana*	P
Madrone	*Arbutus menziesii*	P
Maple	*Acer* spp.	P
Melaleuca	*Melaleuca quinquenervia*	P
Mulberry[3, 6]	*Morus* spp.	P
Oak[7]	*Quercus* spp.	P
Persimmon[4]	*Diospyros virginiana*	P
Poison oak	*Rhus diversiloba*	P
Poplar	*Populus* spp.	P
Privet	*Ligustrum vulgare*	P
Red alder	*Alnus rubra*	P
Red maple	*Acer rubrum*	P
Saltcedar	*Tamarix pentandra*	P
Sassafras	*Sassafras albidum*	P
Sourwood[4]	*Oxydendrum arboreum*	P
Sweetgum	*Liquidambar styraciflua*	P
Sycamore	*Platanus occidentalis*	P
Tanoak[3]	*Lithocarpus densiflorus*	P
Titi[8]	*Cyrilla racemiflora*	P
Tree of heaven	*Ailanthus altissima*	P
Vaccinium spp.		
including:		
Blueberry	*Vaccinium* spp.	
Sparkleberry	*Vaccinium arboreum*	P
Water willow[9]	*Justicia americana*	P
Yellow poplar[3]	*Liriodendron tulipifera*	P

[1] Use higher rate where heavy or well-established infestations occur.
[2] Growth Habit: A = Annual, B = Biennial, P = Perennial
[3] Use higher labeled rates.
[4] Best control with applications before formation of fall leaf color
[5] Tank mix with glyphosate
[6] Degree of control may be species dependent.
[7] For water oak (*Quercus nigra*), laurel oak (*Q. laurifloria*), willow oak (*Q. phellos*), and live oak (*Q. virginiana*), use higher labeled rates.
[8] Suppression only
[9] **Use not permitted in California unless otherwise directed by supplemental labeling.**

Conditions of Sale and Warranty

The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND BASF'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF THE PRODUCT.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BASF AND THE SELLER DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL, EXEMPLARY, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF. 1108

Arsenal, ***Overdrive***, *and* ***Pendulum*** *are registered trademarks of BASF.*

AquaCap *is a trademark of BASF.*

Accord *and* ***Garlon*** *are registered trademarks of Dow AgroSciences LLC.*

Roundup *is a registered trademark of Monsanto Technology LLC.*

Embark *is a registered trademark of PBI-Gordon Corporation.*

Escort *and* ***Krenite*** *are registered trademarks of E.I. duPont de Nemours and Company.*

Microfoil *is a trademark of Rhone Poulenc Ag Company.*

Thru-Valve *is a trademark of Waldrum Specialties.*

© 2012 BASF Corporation
All rights reserved.

000241-00346.20120911b.**NVA 2012-04-104-0184**
Based on: NVA 2011-04-104-0062
Supersedes: NVA 2011-04-104-0115

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

The Chemical Company

Specimen Label

Dow AgroSciences

Garlon® 3A

SPECIALTY HERBICIDE

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

For the control of woody plants, broadleaf weeds in range and pasture, forests and non-crop areas, including manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, fence rows, non-irrigation ditch banks, and around farm buildings; and applications to grazed areas, and establishment and maintenance of wildlife openings, and in Christmas tree plantations and aquatic sites.

For use in New York State, comply with Section 24(c) Special Local Need labeling for Garlon 3A, SLN NY-110005.

GROUP	4	HERBICIDE

Active Ingredient:	
Triclopyr: 2-[(3,5,6-trichloro-2-pyridinyl)oxy] acetic acid, triethylamine salt	44.4%
Other Ingredients	55.6%
Total	100.0%

Acid equivalent: triclopyr - 31.8% - 3 lb/gal

Precautionary Statements

Hazard to Humans and Domestic Animals

EPA Reg. No. 62719-37

DANGER

Corrosive • Causes Irreversible Eye Damage • Harmful If Swallowed Or Absorbed Through Skin • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reaction In Some Individuals

Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Protective eyewear
- Chemical resistant gloves (≥14 mils) such as butyl rubber, natural rubber, neoprene rubber or nitrile rubber

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Note to Applicator: Allergic skin reaction is not expected from exposure to spray mixtures of Garlon 3A herbicide when used as directed.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

Environmental Hazards

Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Under certain conditions, treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants, which may contribute to fish suffocation. This loss can cause fish suffocation. Therefore, to minimize this hazard, do not treat more than one-third to one-half of the water area in a single operation and wait at least 10 to 14 days between treatments. Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency for fish and game before applying to public water to determine if a permit is needed.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Physical or Chemical Hazards

Combustible. Do not use or store the product near heat or open flame.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Protective eyewear
- Chemical-resistant gloves (≥14 mils) such as butyl rubber, natural rubber, neoprene rubber or nitrile rubber

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: For applications to non-cropland areas, do not allow entry into areas until sprays have dried, unless applicator and other handler PPE is worn.

Storage and Disposal

Do not contaminate water, food, or feed by storage and disposal. Open dumping is prohibited.
Pesticide Storage: Store above 28°F or agitate before use.
Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Nonrefillable containers 5 gallons or less:
Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers 5 gallons or larger:
Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Nonrefillable containers 5 gallons or larger:
Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Product Information

Use Garlon® 3A specialty herbicide for the control of woody plants and broadleaf weeds in range and pasture, forests and non-crop areas including manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, fence rows, non-irrigation ditch banks, and around farm buildings, and applications to grazed areas, and establishment and maintenance of wildlife openings, and in Christmas tree plantations and aquatic sites.
Obtain Required Permits: Consult with appropriate state or local water authorities before applying this product to public waters. State or local public agencies may require permits.

Use Precautions

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs), and transitional areas between upland and lowland sites.

When making applications to control unwanted plants on banks or shorelines of moving water sites, minimize overspray to open water.

Use Restrictions

For use in New York State, comply with Section 24(c) Special Local Need labeling for Garlon 3A, SLN NY-110005.

Chemigation: Do not apply this product through any type of irrigation system.

Do not apply Garlon 3A directly to, or otherwise permit it to come into direct contact with, grapes, tobacco, vegetable crops, flowers, or other desirable broadleaf plants. Do not permit spray mists containing Garlon 3A to drift onto such plants.

Do not apply to salt water bays or estuaries.

Do not apply directly to un-impounded rivers or streams.

Do not apply on ditches or canals currently being used to transport irrigation water or that will be used for irrigation within 4 months following treatment. It is permissible to treat irrigation and non-irrigation ditch banks.

Do not apply where runoff water may flow onto agricultural land as injury to crops may result.

Do not apply with a mistblower.

Water treated with Garlon 3A may not be used for irrigation purposes for 120 days after application or until residue levels of Garlon 3A are determined by laboratory analysis, or other appropriate means of analysis, to be 1 ppb or less.

Seasonal Irrigation Waters: Garlon 3A may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis provided that there is a minimum of 120 days between applying Garlon 3A and the first use of treated water for irrigation purposes, or until residue levels of Garlon 3A are determined by laboratory analysis, or other appropriate means of analysis, to be 1 ppb or less.

Irrigation Canals/Ditches: Do not apply Garlon 3A to irrigation canals/ditches unless the 120-day restriction on irrigation water usage can be observed or residue levels of Garlon 3A are determined by laboratory analysis, or other appropriate means of analysis, to be 1 ppb or less.

Maximum Use Rates

- Apply no more than 6 lb ae of triclopyr (2 gallons of Garlon 3A) per acre per year on aquatic sites.
- Apply no more than 2 lb ae of triclopyr (2/3 gallon of Garlon 3A) per acre per growing season on range and pasture sites, including rights-of-way, fence rows or any area where grazing or harvesting of hay is allowed.
- On forestry sites, Garlon 3A may be used at rates up to 6 lb ae of triclopyr (2 gallons of Garlon 3A) per acre per year.
- For all terrestrial use sites other than range, pasture, forestry sites, and grazed/hayed areas, the maximum application rate is 9 lb ae of triclopyr (3 gallons of Garlon 3A) per acre per year.

Precautions for Potable Water Intakes for Emerged Aquatic Weed Control
See chart below for specific setback distances near functioning potable water intakes. **Note:** Existing potable water intakes which are no longer in use, such as those replaced by potable water wells or connections to a municipal water system, are not considered to be functioning potable water intakes. These setback restrictions do not apply to terrestrial applications made adjacent to potable water intakes.

	Garlon 3A Application Rate			
Area Treated	**2 qt/acre**	**4 qt/acre**	**6 qt/acre**	**8 qt/acre**
(acres)	**Setback Distance (ft)**			
4	0	200	400	500
>4 - 8	0	200	700	900
>8 - 16	0	200	700	1000
>16	0	200	900	1300

To apply Garlon 3A around and within the distances noted above from a functioning potable water intake, the intake must be turned off until the triclopyr level in the intake water is determined to be 0.4 parts per million (ppm) or less by laboratory analysis or immunoassay.

Recreational Use of Water in Treatment Area: There are no restrictions on use of water in the treatment area for recreational purposes, including swimming and fishing.

Livestock Use of Water from Treatment Area: There are no restrictions on livestock consumption of water from the treatment area.

Grazing and Haying Restrictions

Grazing green forage:
- There are no grazing restrictions for livestock or dairy animals on treated areas.

Haying (harvesting of dried forage)
- Do not harvest hay for 14 days after application.

Slaughter Restrictions: During the season of application, withdraw livestock from grazing treated grass at least 3 days before slaughter.

Avoiding Injurious Spray Drift

Make applications only when there is little or no hazard from spray drift. Small quantities of spray, which may not be visible, may seriously injure susceptible plants. Do not spray when wind is blowing toward susceptible crops or ornamental plants that are near enough to be injured. It is suggested that a continuous smoke column at or near the spray site or a smoke generator on the spray equipment be used to detect air movement, lapse conditions, or temperature inversions (stable air). If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

Aerial Application: For aerial application on rights-of-way or other areas near susceptible crops, apply through a Microfoil† or Thru-Valve boom†, or use an agriculturally labeled drift control additive. Other drift reducing systems or thickened sprays prepared by using high viscosity inverting systems may be used if they are made as drift-free as mixtures containing agriculturally labeled thickening agents or applications made with the Microfoil or Thru-Valve boom. Keep spray pressures low enough to provide coarse spray droplets. Spray boom should be no longer than 3/4 of the rotor length. Do not use a thickening agent with the Microfoil or Thru-Valve booms, or other systems that cannot accommodate thick sprays. Spray only when the wind velocity is low (follow state regulations). Avoid application during air inversions. If a spray thickening agent is used, follow all use recommendations and precautions on the product label.

†Reference within this label to a particular piece of equipment produced by or available from other parties is provided without consideration for use by the reader at its discretion and subject to the reader's independent circumstances, evaluation, and expertise. Such reference by Dow AgroSciences is not intended as an endorsement of such equipment, shall not constitute a warranty (express or implied) of such equipment, and is not intended to imply that other equipment is not available and equally suitable. Any discussion of methods of use of such equipment does not imply that the reader should use the equipment other than is advised in directions available from the equipment's manufacturer. The reader is responsible for exercising its own judgment and expertise, or consulting with sources other than Dow AgroSciences, in selecting and determining how to use its equipment.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most operating nozzles on the boom must not exceed 3/4 the length of the rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the following Aerial Drift Reduction Advisory. [This information is advisory in nature and does not supersede mandatory label requirements.]

Aerial Drift Reduction Advisory

Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:
- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the rotor length may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Ground Equipment: To aid in reducing spray drift, Garlon 3A should be used in thickened (high viscosity) spray mixtures using an agriculturally labeled drift control additive, high viscosity invert system, or equivalent as directed by the manufacturer. With ground equipment, spray drift can be reduced by keeping the spray boom as low as possible; by applying 20 gallons or more of spray per acre; by keeping the operating spray pressures at the lower end of the manufacturer's recommended pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when wind velocity is low (follow state regulations). In hand-gun applications, select the minimum spray pressure that will provide adequate plant coverage (without forming a mist). Do not apply with nozzles that produce a fine-droplet spray.

High Volume Leaf-Stem Treatment: To minimize spray drift, do not use pressure exceeding 50 psi at the spray nozzle and keep sprays no higher than brush tops. An agriculturally labeled thickening agent may be used to reduce drift.

Weed Resistance Management:

Triclopyr, the active ingredient in this product, is a Group 4 herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain or develop plants resistant to Group 4 herbicides. Resistant weeds may dominate the weed population if these herbicides are used repeatedly in the same field. Such resistant weed plants may not be effectively managed using Group 4 herbicides but may be effectively managed utilizing other herbicides alone or in mixtures from a different herbicide Groups that are labeled for control of these weeds and/or by using cultural or mechanical practices. However, a herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Consult your local company representative, state cooperative

extension service, professional consultants or other qualified authorities to determine appropriate actions for treating specific resistant weeds.

Best Management Practices:

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended. A diversified weed management program may include the use of multiple herbicides with different modes of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and directions for use is important to delay the selection for resistant weeds. Scouting after a herbicide application is important because it can facilitate the early identification of weed shifts and/or weed resistance and thus provide direction on future weed management practices. One of the best ways to contain resistant weed populations is to implement measures to avoid allowing weeds to reproduce by seed or to proliferate vegetatively. Cleaning equipment between sites and avoiding movement of plant material between sites will greatly aid in reducing the spread of resistant weed seed.

Plants Controlled

Woody Plant Species

alder
arrowwood
ash
aspen
Australian pine
bear clover (bearmat)
beech
birch
blackberry
blackgum
Brazilian pepper
cascara
ceanothus
cherry
chinquapin
choke cherry
cottonwood
crataegus (hawthorn)
Douglas fir
dogwood
elderberry
elm
gallberry
hazel
hornbean
kudzu[1]
locust
madrone
maples
mulberry
oaks
persimmon
pine
poison ivy
poison oak
poplar
salt-bush (*Baccharis* spp.)
salt cedar[2]
salmonberry
sassafras
scotch broom
sumac
sweetbay magnolia
sweetgum
sycamore
tanoak
thimbleberry
tulip poplar
waxmyrtle
western hemlock
wild rose
willow
winged elm

[1]For complete control, re-treatment may be necessary.
[2]Use cut surface treatments for best results.

Annual and Perennial Broadleaf Weeds

bindweed
burdock
Canada thistle
chicory
curly dock
dandelion
field bindweed
lambsquarter
Mexican petunia
plantain
purple loosestrife
ragweed
smartweed
Spanish needles/ common beggarthicks
tansy ragwort
tropical soda apple
vetch
wedelia
wild lettuce

Purple Loosestrife (*Lythrum salicaria*)

Purple loosestrife can be controlled with foliar applications of Garlon 3A. For broadcast applications, use a minimum of 4 1/2 to 6 lb ae of triclopyr (6 to 8 quarts of Garlon 3A) per acre. Apply Garlon 3A when purple loosestrife is at the bud to mid-flowering stage of growth. Follow-up applications for control of regrowth should be made the following year in order to achieve increased control of this weed species. For all applications, a non-ionic surfactant should be added to the spray mixture. Follow all directions and use precautions on the label of the surfactant. Thorough wetting of the foliage and stems is necessary to achieve satisfactory control. A minimum spray volume of 50 gallons per acre is neededfor ground broadcast applications.

If using a backpack sprayer, a spray mixture containing 1% to 1.5% Garlon 3A or 5 to 7.6 fl oz of Garlon 3A per 4 gallons of water should be used. All purple loosestrife plants should be thoroughly wetted.

Application Methods

Use Garlon 3A at rates of 3/4 to 9 lb ae of triclopyr (1/4 to 3 gallons of Garlon 3A) per acre to control broadleaf weeds and woody plants. In all cases, use the amount specified in enough water to give uniform and complete coverage of the plants to be controlled. Use only water suitable for spraying. Use an agriculturally labeled non-ionic surfactant for all foliar applications. When using surfactants, follow the use directions and precautions listed on the surfactant manufacturer's label. Use the higher concentrations of surfactant in the spray mixture when applying lower spray volumes per acre. The order of addition to the spray tank is water, spray thickening agent (if used), additional herbicide (if used), and Garlon 3A. Surfactant should be added to the spray tank last or as recommended on the product label. If combined with emulsifiable concentrate herbicides, moderate continuous adequate agitation is required.

Before using any recommended tank mixtures, read the directions and all use precautions on both labels. **Note:** If tank mixing with Rodeo® herbicide, mix the Garlon 3A with at least 75% of the total spray volume desired and ensure that Garlon 3A is well mixed before adding the Rodeo to avoid incompatibility.

For best results, apply when woody plants and weeds are actively growing. When hard to control species such as ash, blackgum, choke cherry, elm, maples, oaks, pines, or winged elm are prevalent and during applications made in late summer when the plants are mature and during drought conditions, use the higher rates of Garlon 3A alone or in combination with Tordon® 101 Mixture specialty herbicide. (Tordon 101 Mixture is a restricted use pesticide. See product label.) Tordon 101 Mixture is not registered for use in the states of California and Florida.

When using Garlon 3A in combination with 2,4-D 3.8 lb amine, like DMA 4 IVM, or low volatile ester herbicides, generally the higher rates should be used for satisfactory brush control.

Use the higher dosage rates when brush approaches an average of 15 feet in height or when the brush covers more than 60% of the area to be treated. If lower rates are used on hard to control species, resprouting may occur the year following treatment.

On sites where easy to control brush species dominate, rates less than those listed may be effective. Consult State or Local Extension personnel for such information.

Foliage Treatment With Ground Equipment
High Volume Foliage Treatment

For control of woody plants, use Garlon 3A at the rate of 3 to 9 lb ae of triclopyr (1 to 3 gallons of Garlon 3A) per 100 gallons of spray solution, or Garlon 3A at 3/4 to 3 lb ae of triclopyr (1 to 4 quarts of Garlon 3A) may be tank mixed with 2,4-D amine, like DMA 4 IVM, or low volatile ester or Tordon 101 Mixture and diluted to make 100 gallons of spray solution. Apply at a volume of 100 to 400 gallons of total spray per acre depending upon size and density of woody plants. Coverage should be thorough to wet all leaves, stems, and root collars. (See Use Precautions and Restrictions.) Do not exceed maximum allowable use rates per acre (see table below). Tordon 101 Mixture is not registered for use in the states of California and Florida.

Maximum Labeled Rate versus Spray Volume per Acre

Total Spray Volume (gal/acre)	Maximum Rate of Garlon 3A		
	Range and Pasture Sites[1] (gal/100 gal of spray)	Forestry Sites[2] (gal/100 gal of spray)	Other Non-Cropland Sites[3] (gal/100 gal of spray)
400	Do not use	0.5	0.75
300	Do not use	0.67	1
200	Do not use	1	1.5
100	0.67	2	3
50	1.33	4	6
40	1.67	5	7.5
30	2.33	6.65	10
20	3.33	10	15
10	6.67	20	30

[1]Do not exceed the maximum use rate of 2 lb ae of triclopyr (2/3 gal of Garlon 3A)/acre/year.
[2]Do not exceed the maximum use rate of 6 lb ae of triclopyr (2 gal of Garlon 3A)/acre/year.
[3]Do not exceed the maximum use rate of 9 lb ae of triclopyr (3 gal of Garlon 3A)/acre/year on non-cropland use sites other than rangeland, pasture, forestry, and grazed/hayed areas.

Low Volume Foliage Treatment
To control susceptible woody plants, apply up to 15 lb ae of triclopyr (5 gallons of Garlon 3A) in 10 to 100 gallons of finished spray. The maximum volume of the finish spray applied to an acre is limited by the maximum use rate per site type (See Maximum Use Rates section - Range and Pasture, Grazing, Haying sites 2 lb ae, Forestry sites 6 lb ae, and all other sites 9 lb ae triclopyr).The spray concentration of Garlon 3A and total spray volume per acre should be adjusted according to the size and density of target woody plants and kind of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars (see General Use Precautions and Restrictions). For best results, a surfactant should be added to all spray mixtures. Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 psi may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

Tank Mixing: As a low volume foliar spray, up to 9 lb ae of triclopyr (3 gallons of Garlon 3A) may be applied in tank mix combination with Tordon K or Tordon 101 Mixture in 10 to 100 gallons of finished spray. The maximum volume of the finish spray applied to an acre is limited by the maximum use rate per site type (See Maximum Use Rates section - Range and Pasture, Grazing, Haying sites 2 lb ae, Forestry sites 6 lb ae, and all other sites 9 lb ae triclopyr). Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

When applying this product in tank mix combination, follow all applicable use directions, precautions and limitations on each manufacturer's label. **Note:** If tank mixing with Rodeo® herbicide, mix the Garlon 3A with at least 75% of the total spray volume desired and ensure that Garlon 3A is well mixed before adding the Rodeo to avoid incompatibility.

Broadcast Applications With Ground Equipment
Apply using equipment that will assure uniform coverage of the spray volumes applied. To improve spray coverage, add an agriculturally labeled non-ionic surfactant as described later under Directions for Use. See Maximum Labeled Rate versus Spray Volume per Acre table above for relationship between mixing rate, spray volume and maximum application rate.

Woody Plant Control
Foliage Treatment: Use 6 to 9 lb ae of triclopyr (2 to 3 gallons of Garlon 3A) in enough water to make 20 to 100 gallons of total spray per acre or 1 1/2 to 3 lb ae of triclopyr (1/2 to 1 gallon of Garlon 3A) may be combined with 2,4-D amine, like DMA 4 IVM, or low volatile esters or Tordon 101 Mixture in sufficient water to make 20 to 100 gallons of total spray per acre. Tordon 101 Mixture is not registered for use in the states of California and Florida.

Broadleaf Weed Control
Use Garlon 3A at rates of 1 to 4 1/2 lb ae of triclopyr (1/3 to 1 1/2 gallons of Garlon 3A) in a total volume of 20 to 100 gallons of water per acre. Apply any time during the growing season. Garlon 3A at 1 to 3 lb ae of triclopyr (1/3 to 1 gallon of Garlon 3A) may be tank mixed with Tordon K, Tordon 101 Mixture or 2,4-D amine, like DMA 4 IVM, or low volatile herbicides to improve the spectrum of activity. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Aerial Application (Helicopter Only)
Aerial sprays should be applied using suitable drift control. (See Use Precautions and Restrictions.) Add an agriculturally labeled non-ionic surfactant as described under Directions for Use. See Maximum Labeled Rate versus Spray Volume per Acre table above for relationship between mixing rate, spray volume and maximum application rate.

Foliage Treatment (Non-Grazed Rights-of-Way)
Non-grazed areas: Use 6 to 9 lb ae of triclopyr (2 to 3 gallons of Garlon 3A) or 3 to 4 1/2 lb ae of triclopyr (1 to 1 1/2 gallons of Garlon 3A) in a tank mix combination with 2,4-D amine, like DMA 4 IVM, or low volatile esters or Tordon 101 Mixture, and apply in a total spray volume of 10 to 30 gallons per acre. Use the higher rates and volumes when plants are dense or under drought conditions. Tordon 101 Mixture is not registered for use in the states of California and Florida.

Interspersed areas in non-grazed rights-of-ways that may be subject to grazing may be spot treated if the treated area comprises no more than 10% of the total grazable area.

Cut Surface Treatments
Individual plant treatments such as basal bark and cut surface applications may be used on any use site listed on this label at a maximum use rate of 2.67 gallons of Garlon 3A (8 lb ae of triclopyr) per acre. These types of applications are made directly to ungrazed parts of plants and, therefore, are not restricted by the grazing maximum rate of 2/3 of a gallon of Garlon 3A (2 lb ae of triclopyr) per acre.

To control unwanted trees of hardwood species such as elm, maple, oak and conifers in labeled sites, apply Garlon 3A, either undiluted or diluted in a 1 to 1 ratio with water, as directed below.

With Tree Injector Method
Apply by injecting 1/2 milliliter of undiluted Garlon 3A or 1 milliliter of the diluted solution through the bark at intervals of 3 to 4 inches between centers of the injector wound. The injections should completely surround the tree at any convenient height. **Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is injected directly into plants.**

With Hack and Squirt Method
Make cuts around the tree trunk at a convenient height with a hatchet or similar equipment so that the cuts overlap slightly and make a continuous circle around the trunk. Spray 1/2 milliliter of undiluted Garlon 3A or 1 milliliter of the diluted solution into the pocket created between the bark and the inner stem/trunk by each cut.

With Frill or Girdle Method
Make a single girdle through the bark completely around the tree at a convenient height. The frill should allow for the herbicide to remain next to the inner stem and absorb into the plant. Wet the cut surface with undiluted or diluted solution.

Both of the above methods may be used successfully at any season except during periods of heavy sap flow of certain species - for example, maples.

Stump Treatment
Spray or paint the cut surfaces of freshly cut stumps and stubs with undiluted Garlon 3A. The cambium area next to the bark is the most vital area to wet.

Forest Management Applications
For best control from broadcast applications of Garlon 3A, use a spray volume which will provide thorough plant coverage. Recommended spray volumes are usually 10 to 25 gallons per acre by air or 10 to 100 gallons per acre by ground. To improve spray coverage of spray volumes less than 50 gallons per acre, add an agriculturally labeled non-ionic surfactant as described under Directions for Use. Application systems should be used to prevent hazardous drift to off-target sites. Nozzles or additives that produce larger droplets of spray may require higher spray volumes to maintain brush control.

Forest Site Preparation (Not for Conifer Release)
Use up to 6 lb ae of triclopyr (2 gallons of Garlon 3A) and apply in a total spray volume of 10 to 30 gallons per acre or Garlon 3A at 3 to 4 1/2 lb ae of triclopyr (1 to 1 1/2 gallons of Garlon 3A) may be used with Tordon 101 Mixture or 2,4-D low volatile ester in a tank mix combination in a total spray volume of 10 to 30 gallons per acre. Use a non-ionic agricultural surfactant for all foliar applications as described under Directions for Use. Tordon 101 Mixture is not registered for use in the states of California and Florida.

Note: Conifers planted sooner than one month after treatment with Garlon 3A at less than 4 lb ae of triclopyr (1 1/3 gallons of Garlon 3A) per acre or sooner than two months after treatment at 4 to 6 lb ae of triclopyr (1 1/3 to 2 gallons of Garlon 3A) per acre may be injured. When tank mixtures of herbicides are used for forest site preparation, labels for all products in the mixture mustbe consulted and the longest recommended waiting period before planting observed.

Directed Spray Applications for Conifer Release
To release conifers from competing hardwoods such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, hickory, alder, birch, aspen, and pin cherry, mix 3 to 6 lb ae of triclopyr (1 to 2 gallons of Garlon 3A) in enough water to make 100 gallons of spray mixture. To improve spray coverage, add an agriculturally labeled non-ionic surfactant as described under Directions for Use. The spray mixture should be directed onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent any time after hardwoods have reached full leaf size, but before autumn coloration. The majority of treated hardwoods should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct spray away from contact with conifer foliage, particularly foliage of desirable pines.

Note: Spray may cause temporary damage and growth suppression where contact with conifers occurs; however, injured conifers should recover and grow normally. Over-the-top spray applications can kill pines.

Broadcast Applications for Conifer Release in the Northeastern United States
To release spruce, fir, red pine and white pine from competing hardwoods, such as red maple, sugar maple, striped maple, alder, birch (white, yellow or gray), aspen, ash, pin cherry and *Rubus* spp. and perennial and annual broadleaf weeds, use Garlon 3A at rates of 1 1/2 to 3 lb ae of triclopyr (2 to 4 quarts of Garlon 3A) per acre alone or with 2,4-D amine, like DMA 4 IVM, or 2,4-D ester to provide no more than 4 lb ae per acre

from both products. Apply in late summer or early fall after conifers have formed their over wintering buds and hardwoods are in full leaf and prior to autumn coloration.

Broadcast Applications for Douglas-Fir Release in the Pacific Northwest and California

To release Douglas-fir from susceptible competing vegetation such as broadleaf weeds, alder, blackberry or Scotch broom, apply Garlon 3A at 1 to 1 1/2 lb ae of triclopyr (1 1/3 to 2 quarts of Garlon 3A) per acre alone or in combination with 4 lb per acre of atrazine. Mix all sprays in a water carrier with a non-ionic surfactant. Apply in early spring after hardwoods begin growth and before Douglas fir bud break ("early foliar" hardwood stage) or after Douglas fir seasonal growth has "hardened off" (set winter buds) in late summer, but while hardwoods are still actively growing. When treating after Douglas fir bud set, apply prior to onset of autumn coloration in hardwood foliage. **Note:** Treatments applied during active Douglas fir shoot growth (after spring bud break and prior to bud set) may cause injury to Douglas fir trees.

Christmas Tree Plantations

Use Garlon 3A for the control of woody plants and annual and perennial broadleaf weeds in established Christmas tree plantations. For best results, apply when woody plants and weeds are actively growing. Garlon 3A does not control weeds which have not emerged at the time of application. If lower rates are used on hard to control woody species, resprouting may occur the year following treatment. Brush over 8 feet tall is difficult to treat efficiently using hand equipment such as backpack or knapsack sprayers. When treating large brush or trees or hard to control species such as ash, blackgum, choke cherry, elm, hazel, madrone, maples, oaks or sweetgum, and for applications made during drought conditions or in late summer when the leaves are mature, use the higher rates of Garlon 3A or use cut surface application methods. For foliar applications, apply in enough water to give uniform and complete coverage of the plants to be controlled. Applications made under drought conditions may provide less than desirable results.

Use Precautions:

- Newly seeded turf (alleyways, etc.) should be mowed two or three times before any treatment with Garlon 3A.

Use Restrictions:

- Do not use on newly seeded grass until well established as indicated by vigorous growth and development of secondary root system and tillering
- Do not reseed Christmas tree areas treated with Garlon 3A for a minimum of three weeks after application.
- Do not use Garlon 3A if legumes, such as clover, are present and injury cannot be tolerated.

Spray Preparation

The order of addition to the spray tank is water, drift control agent (if used), non-ionic agricultural surfactant and Garlon 3A. Continue moderate agitation while mixing and spraying. Use a non-ionic agricultural surfactant for all applications. When using surfactants, follow use directions and precautions listed on the manufacturer's label. Use the higher recommended concentrations of surfactant in the spray mixture when applying lower spray volumes per acre. **Note:** If tank mixing with Rodeo herbicide, mix the Garlon 3A with at least 75% of the total spray volume desired and ensure that Garlon 3A is well mixed before adding the Rodeo to avoid incompatibility.

Application

Apply in late summer or early autumn after terminal growth of Christmas trees has hardened of, but before leaf drop of, target weeds. Apply at a rate of 3/4 to 1 3/4 lb ae of triclopyr (2 to 5 pints of Garlon 3A) per acre as a foliar spray directed toward the base of Christmas trees. Use sufficient spray volume to provide uniform coverage of target plants (20 to 100 gallons per acre). **Do not apply with 2,4-D.** Application rates of Garlon 3A directed for Christmas trees will only suppress some well established woody plants that are greater than 2 to 3 years old (see table below). Broadcast sprays may also be applied in bands between the rows of planted trees. Use spray equipment that will assure uniform coverage of the desired spray volume.

Spray solution from Garlon 3A can cause needle and branch injury to Christmas trees. To minimize injury to Christmas trees, direct sprays so as to minimize contact with foliage. Blue spruce, white spruce, balsam fir and Frasier fir are less susceptible to injury than white pine and Douglas fir.

Restriction: Apply Garlon 3A only to established Christmas trees that were planted at least one full year prior to application.

Application Rates and Species Controlled:

Garlon 3A		
2 pints/acre (3/4 lb ae of triclopyr)	3 to 4 pints/acre (1 1/2 lb ae of triclopyr)	5 pints/acre (1 3/4 lb ae of triclopyr)
clover dandelion dock, curly lambsquarters lespedeza plantain, broadleaf plantain, buckhorn ragweed, common vetch	bindweed, field (TG) blackberry[1] chicory (s) fireweed ivy, ground lettuce, wild oxalis poison ivy smartweed (TG) thistle, Canada (TG) violet, wild Virginia creeper[1]	arrowwood (SDL) aspen beech (SDL) birch (SDL) chinquapin cottonwood (SDL) elderberry grape, wild mulberry (SDL) poplar (SDL) sassafras (SDL) sumac (SDL) sycamore (SDL)

(TG) Top growth control, retreatment may be necessary
(S) Suppression
(SDL) Seedlings less than 2 to 3 years old
[1]Use 4 pint per acre rate

Directed Applications

To control hardwoods such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, alder, birch, aspen, and pin cherry, mix 4 to 20 fl oz of Garlon 3A in enough water to make 3 gallons of spray mixture. For directed applications, do not exceed 6 lb ae of triclopyr (2 gallons of Garlon 3A) per acre per year. To improve coverage, add a non-ionic agricultural surfactant to the spray. This spray mixture should be directed onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent any time after hardwoods have reached full leaf size, but before autumn coloration (when plants are actively growing). The majority of treated hardwoods should be less than 8 feet in height to ensure adequate spray coverage. **Note:** To prevent Christmas tree injury, care should be taken to direct spray away from contact with Christmas tree foliage.

Cut Surface Treatments

When treating large brush or trees or hard to control species such as ash, blackgum, choke cherry, elm, hazel, madrone, maples, oaks, salt cedar or sweetgum, and for applications made during drought conditions or in late summer when the leaves are mature, use cut surface treatments. (See directions for Cut Surface Treatments in preceding section of this label.)

Wetland Sites in Forests and Non-Crop Areas

Garlon 3A may be used within forests and non-crop sites to control target vegetation in and around standing water sites, such as marshes, wetlands, and the banks of ponds and lakes and transition areas between upland and lowland sites.

For control of woody plants and broadleaf weeds in these sites, follow use directions and application methods on this label for forestry and non-cropland sites.

Use Precautions:

Minimize overspray to open water when treating target vegetation in and around non-flowing, quiescent or transient water. When making applications to control unwanted plants on banks or shorelines of flowing water, minimize overspray to open water. **Note:** Consult local public water control authorities before applying this product in and around public water. Permits may be required to treat such areas.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: D02-101-041
Replaced Label: D02-101-040
LOES Number: 010-00084

EPA accepted 02/25/16

Revisions:

1. Added Crop Group 4 Herbicide box MOA, Weed Resistance Management and Best Management Practices language.
2. Updated Active Ingredient section.
3. Updated the Hazard to Human and Domestic Animals section.
4. Updated language under Engineering Controls section.
5. Updated the User Safety Recommendations section.
6. Updated the Use Precautions and Use Restrictions sections.
7. Added the title for Maximum Use Rates section and updated section.
8. Added/updated the Grazing and Haying Restriction as follow:
   Grazing and Haying Restrictions
   Grazing green forage:
   - There are no grazing restrictions for livestock or dairy animals on treated areas.

   Haying (harvesting of dried forage)
   - Do not harvest hay for 14 days after application.

   Slaughter Restrictions: During the season of application, withdraw livestock from grazing treated grass at least 3 days before slaughter.
9. Removed all tank mix partner rates throughout the label.
10. Added the following sentence to direct users to the Maximum Use Rates section: The maximum volume of the finish spray applied to an acre is limited by the maximum use rate per site type (See Maximum Use Rates section - Range and Pasture, Grazing, Haying sites 2 lb ae, Forestry sites 6 lb ae, and all other sites 9 lb ae triclopyr).
11. Corrected 4 to 9 lb ae of triclopyr to 4 to 6 lb and update 3 gallons of Garlon 3A to 2 gallons.
12. Changed the word recommended to directed throughout the label.

Specimen Label

Dow AgroSciences

Garlon® 4

SPECIALTY HERBICIDE

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

For the control of woody plants and annual and perennial broadleaf weeds in non-crop industrial manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, forests and in the establishment and maintenance of wildlife openings. Use on these sites may include application to grazed areas.

Active Ingredient:
triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester 61.6%
Other Ingredients..... 38.4%
Total..... 100.0%

Contains petroleum distillates
Acid Equivalent: triclopyr - 44.3% - 4 lb/gal

Precautionary Statements

Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-40

CAUTION

Causes Moderate Eye Irritation • Harmful If Swallowed • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reactions In Some Individuals

Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Personal Protective Equipment (PPE)

Applicators and other handlers who handle this pesticide must wear:
- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables are given, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the WPS (40 CFR 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:
- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If swallowed: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give **any** liquid to the person. Do not give anything by mouth to an unconscious person.

Note to Physician: This product may pose an aspiration pneumonia hazard. Contains petroleum distillates.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

This pesticide is toxic to fish. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Physical or Chemical Hazards

Combustible. Do not use or store the product near heat or open flame.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

The requirements in this box apply to forestry uses.

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
- Coveralls
- Chemical-resistant gloves
- Shoes plus socks
- Protective eyewear

Non-Agricultural Use Requirements

The requirements in this box apply to all use sites on this label except for forestry uses.

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: For applications to non-cropland areas, do not allow entry into areas until sprays have dried.

Storage and Disposal

Do not contaminate water, food, or feed by storage and disposal. Open dumping is prohibited.
Pesticide Storage: Store above 28°F or agitate before use.
Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Nonrefillable containers 5 gallons or less:
Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Storage and Disposal (Cont.)

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers 5 gallons or larger:
Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Nonrefillable containers 5 gallons or larger:
Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Product Information

Use Garlon® 4 specialty herbicide for the control of woody plants and annual and perennial broadleaf weeds in non-crop industrial manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides, railroads, forests and in the establishment and maintenance of wildlife openings. Use on these sites may include application to grazed areas.

Garlon 4 is an oil soluble, emulsifiable liquid product containing the herbicide triclopyr. Garlon 4 may be applied to woody or herbaceous broadleaf plants as a foliar spray or as a basal bark or cut stump application to woody plants. As a foliar spray, Garlon 4 controls only herbaceous plants that have emerged from the soil or woody plants that are in full leaf at the time of application. Small amounts of Garlon 4 can kill or injure many broadleaf plants. To prevent damage to crops and other desirable plants, follow all directions and precautions.

Use Precautions and Restrictions

In Arizona: The state of Arizona has not approved Garlon 4 for use on plants grown for commercial production; specifically forests grown for commercial timber production, or on designated grazing areas.

When applying this product in tank mix combination, follow all applicable use directions, precautions, and limitations on each manufacturer's label.

Chemigation: Do not apply this product through any type of irrigation system.

Apply no more than 1/2 gallon of Garlon 4 (2 lb ae of triclopyr) per acre per growing season on rights-of-way or any area where grazing or harvesting is allowed.

On forestry sites, Garlon 4 may be used at rates up to 6 quarts (6 lb ae of triclopyr) per acre per year.

Garlon 4 may be used at rates up to 8 quarts (8 lb ae of triclopyr) per acre per year on non-cropland industrial manufacturing and storage sites, rights-of-way such as electrical power lines, communication lines, pipelines, roadsides and railroads, fence rows, non-irrigation ditch banks. Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lb ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Do not apply Garlon 4 directly to, or otherwise permit it to come into direct contact with, cotton, grapes, peanuts, soybeans, tobacco, vegetable crops, flowers, citrus, or other desirable broadleaf plants. Do not permit spray mists containing Garlon 4 to drift onto such plants.

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs) and transitional areas between upland and lowland sites where surface water is not present except in isolated pockets due to uneven or unlevel conditions. Do not apply to open water (such as lakes, reservoirs, rivers, streams, creeks, salt water bays, or estuaries).

Do not apply on ditches currently being used to transport irrigation water. Do not apply where runoff or irrigation water may flow onto agricultural land as injury to crops may result.

Do not apply this product using mist blowers unless a drift control additive, high viscosity inverting system, or equivalent is used to control spray drift.

Sprays applied directly to Christmas trees may result in conifer injury. When treating unwanted vegetation in Christmas tree plantations, care should be taken to direct sprays away from conifers.

Garlon 4 is formulated as a low volatile ester. However, the combination of spray contact with impervious surfaces, such as roads and rocks, and increasing ambient air temperatures, may result in an increase in the volatility potential for this herbicide, increasing a risk for off-target injury to sensitive crops such as grapes and tomatoes.

Grazing and Haying Restrictions
Except for lactating dairy animals, there are no grazing restrictions following application of this product.

- **Grazing Lactating Dairy Animals:** Do not allow lactating dairy animals to graze treated areas until the next growing season following application of this product.
- Do not harvest hay for 14 days after application.
- Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lb ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Slaughter Restrictions: During the season of application, withdraw livestock from grazing treated grass at least 3 days before slaughter.

Avoiding Injurious Spray Drift
Make applications only when there is little or no hazard from spray drift. Small quantities of spray, which may not be visible, may seriously injure susceptible plants. Do not spray when wind is blowing toward susceptible crops or ornamental plants that are near enough to be injured. It is suggested that a continuous smoke column at or near the spray site or a smoke generator on the spray equipment be used to detect air movement, lapse conditions, or temperature inversions (stable air). If the smoke layers or indicates a potential of hazardous spray drift, do not spray.

Aerial Application: Garlon 4 may be aerially applied by fixed wing aircraft or helicopter. For aerial application on rights-of-way or other areas near susceptible crops, apply through a Microfoil† or Thru-Valve boom†, or use an agriculturally labeled drift control additive. Other drift reducing systems or thickened sprays prepared by using high viscosity inverting systems may be used if they are made as drift-free as mixtures containing agriculturally labeled thickening agents or applications made with the Microfoil or Thru Valve boom. Do not use a thickening agent with the Microfoil or Thru Valve booms, or other systems that cannot accommodate thick sprays. Spray only when the wind velocity is low (follow state regulations). Avoid application during air inversions. If a spray thickening agent is used, follow all use directions and precautions on the product label.

†Reference within this label to a particular piece of equipment produced by or available from other parties is provided without consideration for use by the reader at its discretion and subject to the reader's independent circumstances, evaluation, and expertise. Such reference by Dow AgroSciences is not intended as an endorsement of such equipment, shall not constitute a warranty (express or implied) of such equipment, and is not intended to imply that other equipment is not available and equally suitable. Any discussion of methods of use of such equipment does not imply that the reader should use the equipment other than is advised in directions available from the equipment's manufacturer. The reader is responsible for exercising its own judgment and expertise, or consulting with sources other than Dow AgroSciences, in selecting and determining how to use its equipment.

Spray Drift Management
Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outer most operating nozzles on the boom must not exceed 3/4 the length of the rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the following Aerial Drift Reduction Advisory. [This information is advisory in nature and does not supersede mandatory label requirements.]

Aerial Drift Reduction Advisory
Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:
- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produced larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Ground Equipment: To aid in reducing spray drift, Garlon 4 should be used in thickened (high viscosity) spray mixtures using an agriculturally labeled drift control additive, high viscosity invert system, or equivalent as directed by the manufacturer. When using a spray thickening or inverting additive, follow all use directions and precautions on the product label. With ground equipment, spray drift can be reduced by keeping the spray boom as low as possible; by applying 20 gallons or more of spray per acre; by keeping the operating spray pressures at the lower end of the manufacturer's recommended pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when wind velocity is low. In hand-gun applications, select the minimum spray pressure that will provide adequate plant coverage (without forming a mist). Do not apply with nozzles that produce a fine droplet spray. Select nozzles and pressures which provide adequate plant coverage, but minimize the production of fine spray particles.

High Volume Leaf-Stem Treatment: To minimize spray drift, keep sprays no higher than brush tops and keep spray pressures low enough to provide coarse spray droplets. An agriculturally labeled thickening agent may be used to reduce drift.

Mixing Directions

Garlon 4 may be foliarly applied by diluting with water or by preparing an oil-water emulsion. For woody plant control, an oil-water emulsion performs more dependably under a broader range of conditions than a straight water dilution and is recommended for aerial applications.

Oil-Water Mixture Sprays
Prepare a premix of oil, surfactant and Garlon 4 in a separate container using diesel fuel, fuel oil, or kerosene plus an emulsifier such as Sponto 712 or Triton X-100. Use a jar test to check spray mix compatibility before preparing oil-water emulsion sprays in the mixing tank. Do not allow any water or mixtures containing water to get into the premix or Garlon 4 since a thick "invert" (water in oil) emulsion may form that will be difficult to break. Such an emulsion may also be formed if the premix or Garlon 4 is put into the mixing tank before the addition of water. Fill the spray tank about one-half full with water, then slowly add the premix with continuous agitation and complete filling the tank with water. Continue moderate agitation.

Ground Application: Add oil to the spray mix at a rate of 5 to 10% of the total mix, up to a maximum of 1 gallon of oil per acre, using agricultural spray emulsifiers according to mixing instructions below.

Aerial Application: Use oil and water in the spray mixture in a 1:5 ratio (1 part oil to 5 parts water), up to a maximum of 1 gallon of oil per acre according to mixing instructions below.

Oil Mixture Sprays for Basal Treatment
Prepare oil-based spray mixtures using either diesel fuel, No. 1 or No. 2 fuel oil, kerosene or a commercially available basal oil. Substitute other oils or diluents only as recommended by the oil or diluent's manufacturer. When preparing an oil mixture, read and follow the use directions and precautions on the manufacturer's product label. Add Garlon 4 to the required amount of oil in the spray tank or mixing tank and mix thoroughly. If the mixture stands over 4 hours, reagitation is required.

Oil Mixtures of Garlon 4 and Tordon K: Tordon K and Garlon 4 may be used in tank mix combination for basal bark treatment of woody plants. These herbicides are incompatible and will not form a stable mixture when mixed together directly in oil. Make a stable tank mixture for basal bark application by first combining each product with a compatibility agent prior to final mixing in the desired ratio. (See product bulletin for mixing instructions.) Tordon K is not registered for use in the states of California and Florida.

Water Dilutions
For water dilutions, an agricultural surfactant at the manufacturer's recommended rate may be added to the spray mixture to provide improved wetting of foliage. To help minimize spray drift, a drift control and deposition aid cleared for application to growing crops is recommended.

Tank Mixing
Garlon 4 may be applied in tank mix combination with labeled rates of other herbicides provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product. When tank mixing Garlon 4 with other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. Use a clear glass quart jar with lid and mix the tank mix ingredients in the required order and their relative

proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Mixing Order for Tank Mixes: Add one-half of the needed water to the mixing tank and start agitation. Add different materials in the order indicated below, allowing time for complete dispersion and mixing after addition of each product.

1. Water soluble herbicide (if used)
2. Premix of oil, emulsifier, Garlon 4 and other oil-soluble herbicide (if used); see below

Add the remaining water. During the final filling of the tank, add a drift control and deposition aid cleared for application to growing crops (if used), plus an agricultural surfactant (if a water dilution rather than an oil-water emulsion spray is used). Maintain continuous agitation of the spray mixture during mixing, final filling and throughout application to ensure spray uniformity.

Premixing: Prepare a premix of oil, emulsifier (if oil-water emulsion), and Garlon 4 plus other oil-soluble herbicide (if used), e.g., 2,4-D ester. **Note:** Do not allow water or mixtures containing water to get into the premix or Garlon 4 since a thick "invert" (water in oil) emulsion may form that will be difficult to break. Such an emulsion may also be formed if the premix or Garlon 4 is put into the mixing tank before the addition of water.

Tank Mixing Precautions:

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed labeled application rates. If products containing the same active ingredient are tank mixed, do not exceed the maximum allowable active ingredient use rates.
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

Mixing with Liquid Fertilizer for Broadleaf Weed Control

Garlon 4 may be tank mixed with liquid nitrogen fertilizer and foliarly applied for weed control and fertilization of grass pastures. Use Garlon 4 in accordance with directions for grass pastures as given on this label. Apply at rates directed by supplier or Extension Service Specialist. **Note:** Do not use Garlon 4 with liquid fertilizer on woody plants (brush). Foliage burn caused by liquid fertilizer may reduce herbicide effectiveness on woody plants. Test for mixing compatibility using desired procedure and spray mix proportions in clear glass jar before mixing in spray tank. A compatibility aid such as Unite or Compex may be needed in some situations. **Compatibility is best with straight liquid nitrogen fertilizer solutions. Mixing with N-P-K solutions or suspensions may not be satisfactory even with the addition of compatibility aid.** Premixing Garlon 4 with 1 to 4 parts water may help in difficult situations.

Fill in the spray tank about half full with the liquid fertilizer, then add the herbicide with agitation and complete filling the tank with fertilizer. Apply immediately and continue agitation in the spray tank during application. **Do not store liquid fertilizer spray mixtures**. Application during very cold weather (near freezing) is not advisable. The likelihood of mixing or compatibility problems with liquid fertilizer increases under cold conditions.

Note: Do not use spray equipment for other applications to land planted, or to be planted, to susceptible crops or desirable plants **unless** it has been determined that all phytotoxic herbicide residue has been removed by thoroughly cleaning the equipment.

Plants Controlled by Garlon 4

Woody Plant Species

alder	cascara	gorse	milkweed vine[3]
arrowwood	ceanothus	granjeno	mulberry
ash	cherry[3]	guajillo	oaks
aspen	chinquapin	guava[3]	osage orange
bear clover (bearmat)	choke cherry	hazel	pepper vine[3]
beech	cottonwood	hickory	persimmon, eastern
birch	crataegus (hawthorn)	hornbeam	pine
blackberry	dogwood	huisache (suppression)	poison ivy
blackbrush	Douglas-fir	kudzu[2]	poison oak
blackgum	elderberry	locust	poplar
boxelder[1]	elm (except winged elm)	madrone	salmonberry
Brazilian pepper	gallberry	maple (except bigleaf, vine[3])	saltbush (*Braccharis* spp.)[3]
buckthorn			

Plants Controlled by Garlon 4

Woody Plant Species (Cont.)

salt cedar[1]	sycamore	tulip poplar	willow
sassafras	tanoak	twisted acacia	willow primrose
scotch broom	thimbleberry	Virginia creeper[3]	winged elm
sumac	tree-of-heaven (*Ailanthus*)[1]	wax myrtle (top growth)	
sweetbay magnolia	trumpet creeper[3]	wild rose	
sweetgum			

[1]For best control, use either a basal bark or cut stump treatment.
[2]For complete control, re-treatment may be necessary.
[3]Basal or dormant stem applications only.

Annual, Biennial and Perennial Broadleaf Weeds

Note: Numbers in parentheses refer to footnotes below table.

black medic	curly dock	matchweed	sweet clover
bull thistle	dandelion	mustard	tropical soda apple (3)
burdock	(top growth)	Oxalis	vetch
Canada thistle	dogfennel	plantain	wild carrot
chicory	field bindweed	purple loosestrife	(Queen Anne's lace)
cinquefoil	goldenrod	ragweed	wild lettuce
clover	ground ivy	sericea lespedeza (1)	wild violet
creeping beggarweed	lambsquarters	smartweed	yarrow
	lespedeza	sulfur cinquefoil (2)	

1. **Sericea lespedeza:** Apply 1 to 2 pints of Garlon 4 per acre. For best results, apply after maximum foliage development in the late spring to early summer, but prior to bloom.
2. **Sulfur cinquefoil:** Apply 1 to 2 pints of Garlon 4 per acre. For best results, apply to plants in the rosette stage.
3. **Tropical soda apple:** Apply 2 pints of Garlon 4 per acre when tropical soda apple plants reach the first flower stage. For best results, apply in a total spray volume of 40 gallons per acre using ground equipment. An agricultural surfactant may be added at the manufacturer's recommended rate to provide more complete wetting and coverage of the foliage. Spot treatments may be used to control sparse plant stands. For spot treatment use a 1 to 1.5% solution of Garlon 4 in water (1 to 1 1/2 gallons of Garlon 4 in 100 gallons total spray mixture) and spray the entire plant to completely wet the foliage. **In Florida**, control of tropical soda apple may be improved by using the following management practices:
   - Mow plants to a height of 3 inches every 50 to 60 days or whenever they reach flowering. Continue the mowing operation through April.
   - In late May to June (50 to 60 days after the April mowing), apply Garlon 4 as a broadcast treatment.
   - Use spot treatment to control any remaining plants or thin stands of plants that germinate following a broadcast treatment.

Application Methods

Use Garlon 4 at rates of 1 to 8 quarts per acre to control broadleaf weeds and woody plants. It is suggested that rates higher in this rate range be used to control woody plants. In all cases, use the amount specified in enough water to give uniform and complete coverage of the plants to be controlled. The order of addition to the spray tank is water, spray thickening agent (if used), surfactant (if used), additional herbicide (if used), and Garlon 4. If a standard agricultural surfactant is used, use at a rate of 1 to 2 quarts per acre. Use continuous adequate agitation.

Before using any recommended tank mixtures, read the directions and all precautions on both labels.

For best results apply when woody plants and weeds are actively growing. When hard to control species such as ash, blackgum, choke cherry, elm, maples (other than vine or big leaf), oaks, pines, or winged elm are prevalent, during applications made during late summer when the plants are mature, or during drought conditions, use the higher rates of Garlon 4 alone or in combination with Tordon® 101 Mixture specialty herbicide or Tordon K herbicide. Tordon 101 Mixture and Tordon K are restricted use pesticides. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

When using Garlon 4 in combination with 2,4-D low volatile ester herbicide, generally the higher rates of Garlon 4 should be used for satisfactory brush control.

Use the higher dosage rates when brush approaches an average of 15 feet in height or when the brush covers more than 60% of the area to be treated. If lower rates are used on hard to control species, resprouting may occur the year following treatment.

On sites where easy to control brush species dominate, rates less than those listed may be effective. Consult state or local extension personnel for such information.

Foliage Treatment With Ground Equipment

Use sufficient spray volume to completely and uniformly cover foliage. For ground application, apply 10 gallons or more of total spray volume per acre. Use higher spray volumes for ground applications to ensure adequate coverage with increased depth and density of foliage, particularly for treatment of woody plants.

High Volume Foliage Treatment
For control of woody plants, use Garlon 4 at the rate of 2 to 6 quarts per 100 gallons of spray mixture, or Garlon 4 at 2 to 4 quarts may be tank mixed with labeled rates of 2,4-D low volatile ester herbicide, Tordon 101 Mixture, or Tordon K and diluted to make 100 gallons of spray. Do not apply more than 2 gallons of Garlon 4 per acre. On rangeland and permanent pasture sites, make 1 application per year and apply no more than 2 quarts of Garlon 4 (2 lb ae of triclopyr) per acre. Apply at a volume of 100 to 400 gallons of total spray per acre depending upon size and density of woody plants. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida. When tank mixing, follow applicable use directions and precautions on each manufacturer's label.

Depending upon the size and density of the woody plants, apply sufficient spray volume to thoroughly wet all leaves, stems, and root collars. To minimize spray drift, select the minimum spray pressure that provides adequate plant coverage without forming a mist and direct sprays no higher than the top of the target plants. Use a drift control additive cleared for application to growing crops to reduce spray drift. Before using any tank mixture, read the directions and use precautions on both labels. For best results, apply when woody plants and weeds are actively growing.

Table 1: The following table is provided as a guide to the user to achieve the proper rate of Garlon 4.

Total Spray Volume (gallons/ acre)	Rate of Garlon 4	
	Forestry Sites (qt/100 gallons of spray)[1]	Non-Cropland Sites (qt/100 gallons of spray)[2]
400	1.5	2
300	2	2.7
200	3	4
100	6	8
50	12	16
40	15	20
30	20	26.7
20	30	40
10	60	80

[1]Do not exceed the maximum use rate of 6 qt of Garlon 4 (6 lb ae of triclopyr) per acre per year.
[2]Do not exceed the maximum use rate of 8 qt of Garlon 4 (8 lb ae of triclopyr) per acre per year for non-grazable areas, or 2 qt (2 lb ae of triclopyr) per acre per year for grazed areas, except on portions of grazed areas that meet the following requirement. Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lb ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Table 2

Application Rates per 100 Gallons of Spray		
Garlon 4	**Plus Tank Mix Product**	**Rate (qt)**
1 - 4 qt	--	--
1 - 2 qt	Grazon® P+D specialty herbicide	4
1 - 2 pt	2,4-D low volatile ester herbicide	1 - 2
1 - 2 qt	Tordon 22K	1 - 2
2 qt	Reclaim® specialty herbicide [1,2]	2

[1]Reclaim is registered for use only in Arizona, Texas, Oklahoma and New Mexico.
[2]See directions for Mesquite Control Using High Volume Foliage Treatment below.

Mesquite Control Using High Volume Foliage Treatment: For control of mesquite infestations of low to moderate density, apply Garlon 4 and Reclaim in a tank mixture to individual plants with backpack or hand-held sprayers or a vehicle-mounted sprayer with hand-held spray wand or spray gun. For individual plant treatment, use 2 quarts of Garlon 4 in combination with 2 quarts of Reclaim per 100 gallons of total spray solution (1/2% v/v of each product). Apply in water or as an oil-water emulsion as described in Mixing Directions. If using an oil-water emulsion, add the oil at a rate of 5% of the total spray volume. Apply as a complete spray-to-wet foliar application, including all leaves. Thorough coverage is necessary for good results, but do not spray to the point of runoff. Do not apply when mesquite foliage is wet. The total amount of Garlon 4 applied should not exceed 1 1/3 pints per acre. For best results, follow information given elsewhere in this label concerning effect of environmental conditions and application timing on control. This application method works best for brush less than 8 feet tall since efficient treatment and thorough coverage of taller brush is difficult to achieve with this method. To minimize drift, select a spray nozzle and pressure that provides good coverage while forming a coarse spray. Additionally, drift may be reduced by using the minimum pressure necessary to obtain plant coverage without forming a mist and by directing sprays no higher than the top of target plants. If desired, a spray dye may be added to the spray mixture to mark the treated plants.

Low Volume Foliage Treatment
To control susceptible woody plants, mix up to 20 quarts of Garlon 4 in 10 to 100 gallons of finished spray. The spray concentration of Garlon 4 and total spray volume per acre should be adjusted according to the size and density of target woody plants and kind of spray equipment used. With low volume sprays, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars (see General Use Precautions and Restrictions). For best results, a surfactant should be added to all spray mixtures. Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 psi may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

Tank Mixing: As a low volume foliage spray, up to 12 quarts of Garlon 4 may be applied in tank mix combination with labeled rates of Tordon K or Tordon 101 Mixture in 10 to 100 gallons of finished spray. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Broadcast Applications With Aerial or Ground Equipment

Environmental conditions and application timing influence brush and weed control results. For best results, apply when woody plants and weeds are actively growing. For woody species, apply after the rapid growth period of early spring when leaf tissue is fully expanded and terminal growth has slowed. Brush regrowth should be at least 4 ft high prior to treatment to insure adequate foliage for herbicide absorption. Adequate soil moisture before and after treatment as well as the presence of healthy foliage at the time of application are important factors contributing to optimal herbicidal activity.

Use sufficient spray volume to completely and uniformly cover foliage. For ground application, apply 10 gallons or more of total spray volume per acre. For aerial application, apply at least 2 gallons of total spray volume per acre. Use higher spray volumes for ground or aerial applications to ensure adequate coverage with increased depth and density of foliage, particularly for treatment of woody plants.

Mesquite: The herbicidal response of mesquite is strongly influenced by foliage condition, growth stage and environmental conditions. For best results, apply when new growth foliage has turned from light to dark green, when the soil temperature is above 75°F at a depth of 12 to 18 inches, and soil moisture is adequate for plant growth. Apply within 60 days after the 75°F minimum soil temperature at the 12- to 18-inch depth has been reached. Product performance may be adversely affected if application is made before mesquite foliage has turned from light to dark green or if foliage has been injured or removed by late frost, insects, hail or plant diseases. Do not treat if mesquite exhibits new (light green) terminal growth in response to recent heavy rainfall during the growing season. Rate of soil warm-up at the 12- to 18-inch depth may vary with soil texture and drainage. Coarse-textured (sandy) soils warm up sooner than fine-textured (clay) soils and dry soils warm up more quickly than wet soils. Mesquite regrowth should be at least 4 ft high prior to treatment to insure adequate foliage for herbicide absorption.

Mesquite Only
Apply 1/2 to 1 pint of Garlon 4 per acre in combination with 2/3 to 1 1/3 pint per acre of Reclaim. See label for Reclaim for additional treatment directions and information on mesquite control. Apply aerially as an oil:water emulsion in 4 gallons or more total volume per acre or with ground equipment in 10 gallons or more total volume per acre. Use a maximum of 1 gallon of oil per acre for aerial or ground application.

Mesquite and Pricklypear Cactus
If pricklypear cactus is a target species in association with mesquite, apply a tank mix of 1/2 to 1 pint of Garlon 4 with 1 to 2 pints of

Tordon 22K per acre. (The 2 pint per acre rate of Tordon 22K provides a higher and more uniform plant kill of pricklypear.) Tordon 22K may also be applied in combination with Reclaim to control pricklypear while providing improved control of mesquite. See labels for Tordon 22K and Reclaim for additional information and treatment directions. Apply aerially as an oil:water emulsion in 4 gallons or more total volume per acre or with ground equipment in 10 or gallons or more total volume per acre. If mesquite canopy is dense, use higher spray volumes. Use a maximum of 1 gallon of oil per acre for aerial or ground application.

South Texas Mixed Brush (Mesquite, Pricklypear Cactus, Blackbrush, Twisted Acacia and Granjeno)
Use 1 to 2 pints of Garlon 4 in a tank mix with 2 pints of Tordon 22K per acre if pricklypear is a problem, or with 2/3 to 1 1/3 pints of Reclaim per acre if mesquite is the prevalent species. Garlon 4 contributes to the control of non-legume species such as granjeno and oaks. However, if woody legume species are predominate, apply 2 pints of Tordon 22K per acre in combination with 2/3 to 1 1/3 pints of Reclaim per acre for improved control. See labels for Tordon 22K and Reclaim for additional information and treatment directions. Apply aerially in an oil:water emulsion in 4 gallons or more total volume per acre or with ground equipment in 15 gallons or more total volume per acre. Use a maximum of 1 gallon of oil per acre for aerial or ground application. The use of an oil:water emulsion is critical and good spray coverage is essential for acceptable brush control.

Sand Shinnery Oak Suppression
In Texas, New Mexico and Oklahoma, apply Garlon 4 alone at a rate of 1/2 to 2 pints per acre for suppression of shinnery oak growing on sandy soils. Grass response following suppression may be impressive where rainfall is adequate. Grazing deferment following application together with proper grazing management is recommended to allow for the reestablishment of grass stands.

Post Oak and Blackjack Oak - Regrowth Stands
Apply in the late spring (May) to early summer (June-July) when oak leaves are fully developed (expanded). Use 2 quarts of Garlon 4 alone or in tank mix combination with 0.5 to 1 pints of 2,4-D low-volatile ester herbicide per acre. Apply in an oil:water emulsion or water surfactant dilution in sufficient total volume per acre to assure thorough coverage, usually 5 gallons or more per acre by fixed-wing aircraft or helicopter or 15 to 25 gallons per acre by ground equipment. Use a maximum of 1 gallon of oil per acre for aerial or ground application. Lower rates may be used for suppression only. Control will require at least 3 consecutive treatments. **Note:** Regrowth plants have a large root mass relative to top growth when compared to undisturbed plants. In order for top growth to intercept and translocate enough herbicide to control the roots, delay broadcast treatment until top growth is at least 4 ft tall.

High Volume Foliage Treatment: For regrowth less than 4 ft tall, apply 2 quarts of Garlon 4 per 100 gallons of water and 2 quarts of ag surfactant alone or in tank mix combination with 1 gallon of Grazon P+D or 1 quart of Tordon 22K. Apply as a high volume leaf-stem treatment to individual plants using ground equipment.

Post Oak and Blackjack Oak - Mature Stands
For control of mature stands (greater than 5 ft tall), apply 2 quarts of Garlon 4 per acre in late spring (May) to early summer (June-July) when oak leaves are fully developed (expanded). Understory species such as winged elm, buckbrush, tree huckleberry and ash occurring in some areas will not be controlled (only suppressed or defoliated) by using Garlon 4 alone. Where these understory species occur, control may be improved by tank mixing 2 quarts of Garlon 4 with 1 quart of Tordon 22K or 4 quarts of Grazon P+D per acre. For best results, apply as an oil:water emulsion in a total volume of 5 gallons per acre or more by fixed-wing aircraft or helicopter.

Other Susceptible Woody Plants
Apply 2 to 4 pints of Garlon 4 alone or in combination with 2 to 3 quarts of 3.8 lb/gal 2,4-D low volatile ester or amine formulation per acre. If difficult to control species such as ash, choke cherry, elm, maple or oaks are prevalent, and during applications made when plants are mature late in the summer or during drought conditions, use the higher rates of Garlon 4, alone or with 2,4-D. Garlon 4 may also be applied in a tank mixture with Grazon P+D or Tordon 22K for increased control of certain species. See labels for Grazon P+D and Tordon 22K for additional information and treatment directions. Apply aerially in 4 gallons or more total volume per acre or with ground equipment in 10 gallons or more total volume per acre. For best results on blackberry, apply during or after bloom. For management of kudzu, apply 1 quart of Garlon 4 per acre. Repeat application may be necessary to achieve desired level of control.

Susceptible Broadleaf Weeds
Use 2 pints of Garlon 4 per acre in a water spray. Apply as a broadcast spray in a total volume of 10 gallons or more per acre by ground equipment or aerially in a total volume of 2 gallons or more per acre. Apply anytime the weeds are actively growing. Garlon 4 at 1/2 to 3 pints may be tank mixed with 1 to 2 quarts of 3.8 lb/gal 2,4-D amine or low volatile ester.

Woody Plant Control
Foliage Treatment: Use 4 to 8 quarts of Garlon 4 in enough water to make 5 gallons or more per acre of total spray, or 1 1/2 to 3 quarts of Garlon 4 may be combined with labeled rates of 2,4-D low volatile ester, Tordon 101 Mixture, or Tordon K in sufficient water to make 5 gallons or more per acre of total spray. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Broadleaf Weed Control
Use Garlon 4 at rates of 1 to 4 quarts in a total volume of 5 gallons or more per acre as a water spray mixture. Apply anytime weeds are actively growing. Garlon 4 at 0.25 to 3 quarts may be tank mixed with labeled rates of 2,4-D amine or low volatile ester, Tordon K, or Tordon 101 Mixture to improve the spectrum of activity. For thickened (high viscosity) spray mixtures, Garlon 4 can be mixed with diesel oil or other inverting agent. When using an inverting agent, read and follow the use directions and precautions on the product label. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Foliage Treatment (Utility and Pipeline Rights-of-Way)
Use 4 to 8 quarts of Garlon 4 alone, or 3 to 4 quarts of Garlon 4 in a tank mix combination with labeled rates of 2,4-D low volatile ester, Tordon 101 Mixture or Tordon K and apply in a total spray volume of 10 to 30 gallons per acre. Use the higher rates and volumes when plants are dense or under drought conditions. Tordon 101 Mixture and Tordon K are not registered for use in the states of California and Florida.

Portions of grazed areas that intersect treated non-cropland, rights-of-way and forestry sites may be treated at up to 8 lb ae per acre if the area to be treated on the day of application comprises no more than 10% of the total grazable area.

Basal Bark, Dormant Stem and Cut Surface Treatments

Individual plant treatments such as basal bark and cut surface applications may be used on any use site listed on this label at a maximum use rate of 8 lb ae of triclopyr per acre. These types of applications are made directly to ungrazed parts of plants and, therefore, are not restricted by the grazing maximum rate of 2 lb ae of triclopyr per acre.

Basal Bark Treatment
To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 1 to 5 gallons of Garlon 4 in enough oil to make 100 gallons of spray mixture. Apply with knapsack sprayer or power spraying equipment using low pressure (20 to 40 psi). Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground, thoroughly wetting the indicated area. Spray until runoff at the ground line is noticeable. Old or rough bark requires more spray than smooth young bark. Apply anytime, including the winter months, except when snow or water prevent spraying to the ground line. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Low Volume Basal Bark Treatment
To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 20 to 30 gallons of Garlon 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground in a manner that thoroughly wets the lower stems, including the root collar area, but not to the point of runoff. Herbicide concentration should vary with size and susceptibility of species treated. Apply anytime, including the winter months, except when snow or water prevent spraying to the ground line or when stem surfaces are saturated with water. See Table 1 for relationship between mixing rate, spray volume and maximum application rate. **Note:** The addition of a soil active herbicide to a basal bark mixture with Garlon 4 may result in damage to surrounding non-target vegetation. Care should be taken to assess the areas in which these soil active herbicides are used in combination with Garlon 4 in basal bark applications. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Garlon 4 Plus Tordon K in Oil Tank Mix: Garlon 4 and Tordon K may be used in tank mix combination as a low volume basal bark treatment to improve control of certain woody species such as ash, elm, maple, poplar, aspen, hackberry, oak, oceanspray, birch, hickory, pine, tanoak, cherry, locust, sassafras, and multiflora rose. (See product bulletin for mixing instructions.) Tordon K is not registered for use in the states of California and Florida.

Streamline Basal Bark Treatment (Southern States)
To control or suppress susceptible woody plants for conifer release, mix 20 to 30 gallons of Garlon 4 in enough oil to make 100 gallons of spray mixture. Streamline basal bark treatments are most effective on stems less than 4 inches in basal diameter. Apply with a backpack or knapsack sprayer using equipment that provides a directed straight

stream spray. Apply the spray in a 2- to 3-inch wide band to one side of stems less than 3 inches in basal diameter. When the optimum amount of spray mixture is applied, the treated zone should widen to encircle the stem within approximately 30 minutes. Treat both sides of stems which are 3 to 4 inches in basal diameter. Direct the spray at bark that is approximately 12 to 24 inches above ground. Pines (loblolly, slash, shortleaf, and Virginia) up to 2 inches in diameter breast height (dbh) can be controlled by directing the spray at a point approximately 4 feet above ground. Vary spray mixture concentration with size and susceptibility of the species being treated. Better control is achieved when spray is applied to thin juvenile bark and above rough thickened mature bark. This technique is not recommended for scrub and live oak species, including blackjack, turkey, post, live, bluejack and laurel oaks, or bigleaf maple. Apply anytime, including winter months, except when snow or water prevents spraying at the desired height above ground level. **Note:** Best results with some hardwood species occur when applications are made from approximately 6 weeks prior to leaf expansion in the spring until approximately 2 months after leaf expansion is completed. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Low Volume Stem Bark Band Treatment (North Central and Lake States)
To control susceptible woody plants with stems less than 6 inches in basal diameter, mix 20 to 30 gallons of Garlon 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6- to 10-inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results, apply the band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made anytime, including winter months. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Thinline Basal Bark Treatment
To control susceptible woody plants with stems less than 6 inches in diameter, apply Garlon 4, either undiluted or mixed at 50 to 75% v/v with oil, in a thin stream to all sides of the lower stems. The stream should be directed horizontally to apply a narrow band of Garlon 4 around each stem or clump. Use a minimum of 2 to 15 milliliters of Garlon 4 or oil mixture with Garlon 4 to treat single stems and from 25 to 100 milliliters to treat clumps of stems. Use an applicator metered or calibrated to deliver the small amounts required. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Dormant Stem Treatment
Dormant stem treatments control susceptible woody plants and vines with stems less than 2 inches in diameter. Plants with stems greater than 2 inches in diameter may not be controlled and resprouting may occur. This treatment method is best suited for sites with dense, small diameter brush. Dormant stem treatments of Garlon 4 can also be used as a chemical side-trim for controlling lateral branches of larger trees that encroach onto roadside, utility, or other rights-of-way.

Mix 4 to 8 quarts of Garlon 4 in 2 to 3 gallons of crop oil concentrate or other recommended oil and add this mixture in enough water to make 100 gallons of spray solution. Use continuous adequate agitation. Apply with knapsack or power spraying equipment, using low pressure (20 to 40 psi). In western states, apply anytime after woody plants are dormant and most of the foliage has dropped. In other areas apply anytime within 10 weeks of budbreak, generally February through April. Thoroughly wet the upper parts of the stems and use the remainder to wet the lower 12 to 15 inches above the ground to the point of runoff. For root suckering species such as sumac, sassafras and locust, also spray the ground under the plant to cover small root suckers which may not be visible above the soild surface. For oil-water mixture application, mix 6 quarts of Garlon 4, 25 gallons of oil and 1.5 gallons of an approved agricultural spray emulsifier such as Sponto 712 or Triton X-100 as indicated in the mixing directions. Treat as above. Garlon 4 may be mixed with 4 quarts of Weedone 170 herbicide to improve the control of black cherry and broaden the spectrum of herbicidal activity. Do not apply to wet or saturated bark as poor control may result.

Cut Stump Treatment
To control resprouting, mix 20 to 30 gallons of Garlon 4 in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressures and a solid cone or flat fan nozzle. Spray the root collar area, sides of the stump, and the outer portion of the cut surface, including the cambium, until thoroughly wet, but not to the point of runoff. Spray mixture concentration should vary with the size and susceptibility of species treated. Apply anytime, including in winter months, except when snow or water prevent spraying to the ground line. **Mixing with oil requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Cut Stump Treatment in Western States
To control resprouting of salt cedar and other *Tamarix* species, bigleaf maple, tanoak, Oregon myrtle, and other susceptible species, apply undiluted Garlon 4 to wet the cambium and adjacent wood around the entire circumference of the cut stump. Treatments may be applied throughout the year; however, control may be reduced with treatment during periods of moisture stress as in late summer. Cut stumps so that they are approximately level to facilitate uniform coverage of Garlon 4. Use an applicator which can be calibrated to deliver the small amounts of material required.

Growing Point and Leaf Base (Crown) Treatment of Yucca
Prepare a 2% v/v solution of Garlon 4 in diesel or fuel oil (13 fl oz of Garlon 4 in 5 gallons of spray mixture). Thoroughly wet the center of the plant including growing point and leaf bases to the soil surface. Complete coverage of leaves is not necessary.

Forest Management Applications

For broadcast applications, apply 1 to 6 quarts of Garlon 4 per acre in a total spray volume of 5 to 25 gallons per acre by air or 10 to 100 gallons per acre by ground. Use spray volumes sufficient to provide thorough coverage of treated foliage. Nozzles or additives that produce larger droplets of spray may require higher spray volumes to provide adequate coverage.

Plant Back Interval for Conifers: Conifers planted sooner than 1 month after treatment with Garlon 4 at less than 4 quarts per acre or sooner than 2 months after treatment at 4 to 6 quarts per acre may be injured. When tank mixtures of herbicides are used for forest site preparation, labels for all products in the mixture should be consulted and the longest waiting period before planting observed.

Forest Site Preparation (Not for Conifer Release)
Southern States including Alabama, Arkansas, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia: To control susceptible woody plants and broadleaf weeds, apply Garlon 4 at a rate of 4 to 6 quarts per acre. To broaden the spectrum of woody plants and broadleaf weeds controlled, apply 2 to 4 quarts of Garlon 4 per acre in tank mix combination with labeled rates of Tordon 101 Mixture or Tordon K. Tordon 101 Mixture and Tordon K is not registered for use in the state of Florida. Where grass control is also desired, Garlon 4, alone or in tank mix combination with Tordon K or Tordon 101 Mixture, may be applied with labeled rates of other herbicides registered for grass control in forests. Use of tank mix products must be in accordance with the most restrictive of label limitations and precautions. Do not exceed labeled application rates. Garlon 4 cannot be tank mixed with any product containing a label prohibition against such mixing.

Western, Northeastern, North Central, and Lake States (States not Listed Above as Southern States): To control susceptible woody plants and broadleaf weeds, apply Garlon 4 at a rate of 3 to 6 quarts per acre. To broaden the spectrum of woody plants and broadleaf weeds controlled, apply 1.5 to 3 quarts of Garlon 4 per acre in tank mix combination with labeled rates of Tordon 101 Mixture, Tordon K, or 2,4-D low volatile ester. Tordon 101 Mixture and Tordon K are not registered for use in the state of California. Where grass control is also desired, Garlon 4, alone or in tank mix combination with Tordon 101 Mixture or Tordon K, may be applied with labeled rates of other herbicides registered for grass control in forests. When applying tank mixes, follow applicable use directions and precautions on each product label.

Southern Coastal Flatwoods: To control susceptible broadleaf weeds and woody species such as gallberry and wax-myrtle, and for partial control of saw-palmetto, apply 2 to 4 quarts of Garlon 4 per acre. To broaden the spectrum of species controlled to include fetterbush, staggerbush, titi, and grasses, apply 2 to 3 quarts of Garlon 4 per acre in tank mix combination with labeled rates of Arsenal Applicator's Concentrate herbicide. Where control of gallberry, wax-myrtle, broadleaf weeds, and grasses is desired, apply 2 to 3 quarts of Garlon 4 per acre in tank mix combination with labeled rates of Accord Concentrate or Accord SP herbicide.

These treatments may be broadcast during site preparation of flat planted or bedded sites or, on bedded sites, applied in bands over the top of beds. For best results, apply in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August. **Note:** Do not apply after planting pines.

Directed Spray Applications for Conifer Release
To release conifers from competing hardwoods and brush such as red maple, sugar maple, striped maple, sweetgum, red and white oaks, ash, hickory, alder, birch, aspen, pin cherry, *Ceanothus* spp., blackberry, chinquapin, and poison oak, mix 4 to 20 quarts of Garlon 4 in enough water to make 100 gallons of spray mixture. This spray mixture should be directed onto foliage of competitive hardwoods using knapsack or backpack sprayers with flat fan nozzles or equivalent anytime after the

hardwoods and brush have reached full leaf size, but before autumn coloration. The majority of treated hardwoods and brush should be less than 6 feet in height to ensure adequate spray coverage. Care should be taken to direct spray away from contact with conifer foliage, particularly foliage of desirable pines. See Table 1 for relationship between mixing rate, spray volume and maximum application rate.

Note: Spray may cause temporary damage and growth suppression where contact with conifers occurs; however, injured conifers should recover and grow normally. Over-the-top spray applications can kill pines.

Broadcast Applications for Mid-Rotation Understory Brush Control in Southern Coastal Flatwoods Pine Stands (Ground Equipment Only)
For control of susceptible species such as gallberry and wax-myrtle and broadleaf weeds, apply 2 to 4 quarts of Garlon 4 per acre. To broaden the spectrum of woody plants controlled to include fetterbush, staggerbush, and titi, apply 2 to 3 quarts of Garlon 4 per acre in tank mix combination with labeled rates of Arsenal Applicator's Concentrate. Saw-palmetto will be partially controlled by use of Garlon 4 at 4 quarts per acre or by mixtures of Garlon 4 at 2 to 3 quarts per acre in tank mix combination with either Arsenal Applicator's Concentrate or Escort herbicide. These mixtures should be broadcast applied over target understory brush species, **but to prevent injury to pines, make applications underneath the foliage of pines.** Apply sprays in 30 gallons or more per acre of total volume. For best results, apply in late summer or fall. Efficacy may not be satisfactory when applications are made in early season prior to August.

Broadcast Applications for Conifer Release in the Pacific Northwest and California
Dormant Conifers Before Bud Swell (Excluding Pines): To control or suppress deciduous hardwoods such as vine maple, bigleaf maple, alder, scotch broom, or willow **before leaf-out**, or evergreen hardwoods such as madrone, chinquapin, and *Ceanothus* spp., use Garlon 4 at 1 to 2 quarts per acre. Use diesel or fuel oil as a diluent, or use water plus 1 to 2 gallons per acre of diesel oil or a suitable surfactant or oil substitute at manufacturer's recommended rates. **Mixing with oil as the only diluent requires vigorous agitation to form an oil solution.** Once a solution is formed it will stay stable.

Conifer Plantations (Excluding Pines) After Hardwoods Begin Growth and Before Conifer Bud Break ("Early Foliar" Hardwood Stage): Use Garlon 4 at 1 to 1.5 quarts alone or with 2,4-D low volatile ester herbicide in water carrier to provide no more than 3 lb ae per acre from both products. After conifer bud break, these sprays may cause more serious injury to the crop trees. Use of a surfactant may cause unacceptable injury to conifers especially after bud break.

Conifer Plantations (Excluding Pines) After Conifers Harden Off in Late Summer and While Hardwoods are Still Actively Growing: Use Garlon 4 at rates of 1 to 1.5 quarts per acre alone or with 2,4-D low volatile ester to provide no more than 3 lb ae per acre from both products. Treat as soon after conifer bud hardening as possible so that hardwoods and brush are actively growing. Use of oil, oil substitute, or surfactant may cause unacceptable injury to the conifers.

Broadcast Applications for Conifer Release in the Eastern United States
To release spruce, fir, red pine, and white pine from competing hardwoods such as red maple, sugar maple, striped maple, alder, birch (white, yellow, and grey), aspen, ash, pin cherry, and *Rubus* spp. and perennial and annual broadleaf weeds, use Garlon 4 at rates of 1.5 to 3 quarts per acre alone or with 2,4-D amine or low volatile ester to provide no more than 4 lb ae per acre from both products. Apply in late summer or early fall after conifers have formed their overwintering buds and hardwoods are in full leaf and prior to autumn coloration.

Broadcast Applications for Conifer Release in the Lake States Region
To release spruce, fir, and red pine from competing hardwoods such as aspen, birch, maple, cherry, willow, oak, hazel, and *Rubus* spp. and perennial and annual broadleaf weeds, use Garlon 4 at rates of 1.5 to 3 quarts per acre. Apply in late summer or early fall after conifers have formed their overwintering buds and hardwoods are in full leaf and prior to autumn coloration.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: D02-102-027
Replaces Label: D02-102-026
LOES Number: 010-00085

EPA accepted 07/30/14

Revisions:

1. Corrected "non-crop" to non-cropland" under Use Precautions and Restrictions section.
2. Added ", or using the toilet" to Hazards to Human and Domestic Animals statement under Precautionary Statements section.
3. Updated "Container Reuse" to Container Handling" under Storage and Disposal sections.
4. Changed "should" to "must" under Spray Drift Management section.
5. Updated language: "Garlon 4 is not recommended for use…" to "Do not use Garlon 4…" under Mixing with Liquid Fertilizer for Broadleaf Weed Control section.
6. Pricklypear Cactus, Blackbrush, Twisted Acacia and Granjeno) section.
7. Changed "recommendations" to "directions" under Other Susceptible Woody Plants section.
8. Deleted the word "recommended" under Forest Management Applications – Plant Back Interval for Conifer section.
9. Updated Terms and Conditions of Use and Warranty Disclaimer
10. Updated trademark line

Specimen Label

Dow AgroSciences

Milestone®

SPECIALTY HERBICIDE

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

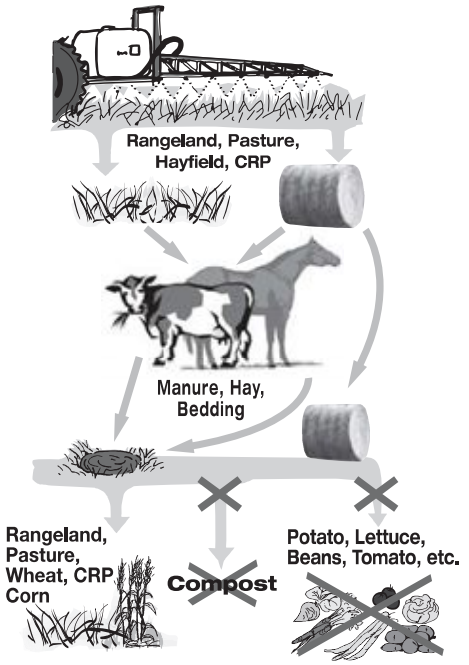
- **For control of annual and perennial broadleaf weeds including invasive and noxious weeds, certain annual grasses, and certain woody plants and vines, on:**
  - **rangeland, permanent grass pastures (including grasses grown for hay*), Conservation Reserve Program (CRP)**
  - **non-crop areas for example, airports, barrow ditches, communication transmission lines, electric power and utility rights-of-way, fencerows, gravel pits, industrial sites, military sites, mining and drilling areas, oil and gas pads, non-irrigation ditch banks, parking lots, petroleum tank farms, pipelines, roadsides, railroads, storage areas, dry storm water retention areas, substations, unimproved rough turf grasses; and**
  - **natural areas (open space) for example, campgrounds, parks, prairie management, trailheads and trails, recreation areas, wildlife openings, and wildlife habitat and management areas including seasonally dry flood plains, deltas, marshes, pairie potholes, or vernal pools;**
  - **including grazed areas in and around these sites.**

***Hay from grass treated with Milestone within the preceding 18-months can only be used on the farm or ranch where the product is applied unless allowed by supplemental labeling**

IMPORTANT USE PRECAUTIONS AND RESTRICTIONS TO PREVENT INJURY TO DESIRABLE PLANTS

- Carefully read the section ***"Restrictions in Hay or Manure Use ."***
- It is mandatory to follow the ***"Use Precautions and Restrictions"*** section of this label.
- Manure and urine from animals consuming grass or hay treated with this product may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- Hay can only be used on the farm or ranch where product is applied unless allowed by supplemental labeling.
- Consult with a Dow AgroSciences representative if you do not understand the "Use Precautions and Restrictions". **Call [1-(800) 263-1196] Customer Information Group.**

Forage and Manure Management



©Copyright 2011 Dow AgroSciences LLC

Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.
Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.

GROUP	4	HERBICIDE

Active Ingredient:
Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-..... 40.6%
Other Ingredients 59.4%
Total 100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 21.1% - 2 lb/gal

Container Use Directions

1 - Tip



Tilt container to angle as shown and fill head to desired amount – use vertical scale for measuring. Container should be closed.

2 - Level



Hold container up-right and check the amount for accuracy. Add or subtract as needed, using pour-back scale as guide.

3 - Dispense



Remove cap on head and pour into sprayer or other devices. No fluid will pour from the main container. Replace cap for storage in sealed condition.

Precautionary Statements

Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-519

CAUTION

Causes Moderate Eye Irritation

Avoid contact with eyes or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:
- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:
- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

Do not apply directly to water. Take care to minimize the incidental overspray along the shoreline when applying to terrestrial plants at the water's edge or to water in areas where surface water is present. Do not apply directly to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Directions for Use

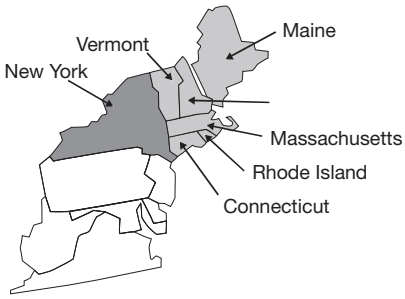
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

This product is not intended for reformulation or repackaging into other end-use products.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State.
Not For Sale, Distribution, or Use in the San Luis Valley of Colorado.

Not for use on pastures in Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. All other labeled uses are permitted in these states including grazed areas in and around these sites.



Grey = states where use in pasture is not permitted

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about Personal Protective Equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
- Coveralls
- Chemical-resistant gloves made of any waterproof material as polyethylene or polyvinyl chloride
- Shoes plus socks
- Protective eyewear

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS does not pertain to non-agricultural use on sites, such as, rangeland, permanent grass pastures, or non-cropland. See the Agricultural Use Requirements section below for information where the WPS applies.

Entry Restrictions for Non-WPS Uses: For applications on rangeland and permanent grass pastures (not harvested for hay) and non-cropland areas, do not enter or allow worker entry into treated areas until sprays have dried.

Storage and Disposal

Do not contaminate water, food, feed or fertilizer by storage or disposal. Open dumping is prohibited.
Pesticide Storage: If this product is exposed to subfreezing temperatures, the active ingredient may crystallize and settle out of solution. Under these conditions the product should be warmed to at least 40°F and agitated well to dissolve any crystallized active ingredient prior to use.
Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Nonrefillable containers 5 gallons or less:
Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Storage and Disposal (Cont.)

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable containers larger than 5 gallons:
Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Nonrefillable containers larger than 5 gallons:
Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Resistance Management Guidelines

- Development of plant populations resistant to this herbicide mode of action is usually not a problem on rangeland, permanent grass pastures, Conservation Reserve Program (CRP), or non-cropland sites since these sites receive infrequent pesticide applications.
- In croplands, use an effective integrated pest management (IPM) program, integrating tillage or other mechanical methods, crop rotation or other cultural control methods into weed control programs whenever practical.
- Similar looking biotypes of a given weed species occurring in a treated area may vary in their susceptibility to a herbicide. Application of a herbicide below its labeled rate may allow more tolerant weeds to survive and a shift to more tolerant biotypes within the treated area.
- Where identified, spreading of resistant weeds to other fields may be prevented by cleaning harvesting and tillage equipment before moving to other areas and by planting weed-free seed.
- Contact your extension specialist, certified crop consultant, or Dow AgroSciences representative for the latest resistance management information.

Use Precautions

- Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials such as asphalt or concrete, or soils through which rainfall will not readily penetrate may result in runoff and movement of Milestone. Injury to crops may result if treated soil and/or runoff water containing Milestone is washed, or moved onto land used to produce crops. Exposure to Milestone may injure or kill susceptible crops and other plants, such as grapes, soybeans, tobacco, sensitive ornamentals.
- **Grass revegetation**:
  - Milestone can be used to control broadleaf plants in grass revegetation programs. Consult Dow AgroSciences' literature for more details about Milestone applications and grass stand establishment.
- **Application before seeding grasses**
  - Milestone can be applied to control broadleaf weeds prior to grass planting. Grass seed germination and seedling development can be adversely effected by many factors such as seed viability and seedling vigor, soil condition (sub-optimal soil temperatures or soil water content), weather after planting, seedbed preparation and seed placement, disease, insects, or animals. Milestone applications will help to reduce competition from weeds and improve the chance for successful grass stand establishment. Some grass species are more sensitive to Milestone; consult Dow AgroSciences' literature for more details.
  - **Postemergence applications on grass:** During the season of establishment, Milestone should be applied only after perennial grasses are well established (have developed a good secondary root system and show good vigor. Most perennial grasses are tolerant to Milestone at this stage of development. Milestone may suppress certain established grasses, such as smooth bromegrass (*Bromus inermis*), especially when plants are stressed by adverse environmental conditions. Plants should recover from this transient suppression with the onset of environmental conditions favorable to grass growth and upon release from weed competition.
- **Seeding Broadleaf Plants (Forbs) and Wildflowers**
  Milestone can be applied in the summer to control broadleaf weeds prior to forb planting. Forbs can be seeded 90 days after a summer application as a dormant fall planting or the following spring. Consult Dow AgroSAciences literature for details.
- **Field Bioassay Instructions:** In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample variability in field conditions such as soil texture, soil organic matter, soil pH, rainfall pattern or drainage. The field bioassay can be initiated one year after the last application of aminopyralid in that field. Observe the test crop for symptoms of herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), epinasty, and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the intended rotational crop; plant only to wheat, forage grasses, native grasses or grasses grown for hay.

Consult with a Dow AgroSciences representative if you do not understand the "Use Precautions and Restrictions." Call (1-800-263-1196) for more information.

Pasture and Rangeland Restrictions

- **Do not use grasses treated with Milestone in the preceding 18-months for hay intended for export outside the United States.**
- **Hay from areas treated with Milestone in the preceding 18-months CAN NOT be distributed or made available for sale off the farm or ranch where harvested unless allowed by supplemental labeling.**
- **Hay from areas treated with Milestone in the preceding 18-months CAN NOT be used for silage, haylage, baylage and green chop unless allowed by supplemental labeling.**
- **Do not move hay made from grass treated with Milestone within the preceding 18-months off farm unless allowed by supplemental labeling.**
- **Do not use hay or straw from areas treated with Milestone within the preceding 18-months or manure from animals feeding on hay treated with Milestone in compost.**
- **Do not use grasses treated with Milestone in the preceding 18-months for seed production.**

Restrictions for All Uses

Maximum Application Rate: On all labeled use sites do not broadcast apply more than 7 fl oz per acre of Milestone per year. The total amount of Milestone applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl oz per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz) per acre of Milestone per year as a result of broadcast, spot or repeat applications.

Obtain Required Permits: Consult with appropriate state or local water authorities before applying this product around public waters. State or local public agencies may require permits.

- **Avoiding Injury to Non-Target Plants:** Do not aerially apply Milestone within 50 feet of a border downwind (in the direction of wind movement), or allow spray drift to come in contact with, any broadleaf crop or other desirable broadleaf plants, including, but not limited to, alfalfa, cotton, dry beans, flowers, grapes, lettuce, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes or other broadleaf or vegetable crop, fruit trees, ornamental plants, or soil where sensitive crops are growing or will be planted. Avoid application under conditions that may allow spray drift because very small quantities of spray may seriously injure susceptible crops. Read and consider the "Precautions for Avoiding Spray Drift and Spray Drift Advisory" to help minimize the potential for spray drift.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Do not contaminate water intended for irrigation or domestic purposes.** Do not treat inside banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation or domestic purposes.
- Do not apply this product to lawns, turf, ornamental plantings, urban walkways, driveways, tennis courts, golf courses, athletic fields, commercial sod operations, or other high-maintenance, fine turfgrass areas, or similar areas.
- Trees adjacent to or in a treated area can occasionally be affected by root uptake of Milestone. Do not apply Milestone within the root zone of desirable trees unless such injury can be tolerated. Use special caution near roses, and leguminous trees such as locusts, redbud, mimosa, and caragana.
- Do not treat frozen soil where runoff could damage sensitive plants.
- **Grazing and Haying Restrictions:** There are no restrictions on grazing or grass hay harvest following application of Milestone at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with Milestone to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- **Grazing Poisonous Plants:** Herbicide application may increase palatability of certain poisonous plants. Do not graze treated areas until poisonous plants are dry and no longer palatable to livestock.
- **Restrictions in Hay or Manure Use:**
  - ♦ Do not use aminopyralid-treated plant residues, including grass, wood plants, trees, hay or straw from areas treated within the preceeding 18-months, in compost, mulch wood chips, or mushroom spawn.-
  - ♦ Do not use manure from animals that have eaten aminopyralid-treated forage or hay within the previous 3 days in compost, mulch or mushroom spawn. Livestock must have 3 days of eating non-aminopyralid-treated materials in order to clear their system of aminopyralid. Do not use aminopyralid-treated plants in areas where commercially grown mushrooms or susceptible broadleaf plants may be grown.
  - ♦ Do not spread manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days on land used for growing susceptible broadleaf crops.
  - ♦ Manure from animals that have consumed aminopyralid-treated forage or hay within the previous 3 days may only be used on areas used for pasture, grass grown for seed, wheat and corn.
  - ♦ Do not plant a broadleaf crop (including soybeans, sunflower, tobacco, vegetables, field beans, peanuts, and potatoes) in fields or areas treated with aminopyralid or manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
  - ♦ Do not plant a broadleaf crop in fields or areas treated in the previous year with manure from animals that have consumed aminopyralid-treated forage or hay until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
  - ♦ To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.
- **Crop Rotation:** Do not rotate to any crop from rangeland, permanent pasture or CRP acres within one year following treatment. Cereals and corn can be planted one year after treatment. Broadleaf crops are sensitive to aminopyralid residues in the soil and prediction of crop safety by field biassay (see instructions below) is the BEST way to determine planting options. Broadleaf crops such as canola, flax, and alfalfa can require **at least** 2 to 3 years depending on the crop and environmental conditions. More sensitive crops such as soybeans, tobacco, peanuts, potatoes, and peas may require a longer plant back interval and should not be planted until a field bioassay shows that the level of aminopyralid present in the soil will not adversely affect that broadleaf crop.

Precautions for Avoiding Spray Drift

Avoid application under conditions that may allow spray drift because very small quantities of spray, which may not be visible, may injure susceptible crops. This product should be applied only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, non-target crops and other plants) is minimal (e.g., when wind is blowing away from the sensitive areas. A drift control aid may be added to the spray solution to further reduce the potential for drift. If a drift control aid is used, follow the use directions and precautions on the manufacturer's label. Do not use a thickening agent with Microfoil, Thru-Valve booms, or other spray delivery systems that cannot accommodate thickened spray solutions.

Ground Equipment: With ground equipment spray drift can be lessened by keeping the spray boom as low as possible; by applying 10 gallons or more of spray per acre; by keeping the operating spray pressures at the manufacturer's specified minimum pressures for the specific nozzle type used (low pressure nozzles are available from spray equipment manufacturers); and by spraying when the wind velocity is low (follow state regulations). Avoid calm conditions which may be conducive to thermal inversions. Direct sprays no higher than the tops of target vegetation and keep spray pressures low enough to provide coarse spray droplets to minimize drift.

Aerial Application: Avoid spray drift at the application site. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. Users are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The boom length must not exceed 75% of the fixed wing span and must be located at least 8 -10 inches below the trailing edge of the fixed wing; the boom length must not exceed 85% of the rotary blade.
2. Nozzles should be pointed backward parallel with the air stream or not pointed downwards more than 45 degrees.

State regulations must be followed.

The applicator should be familiar with and take into account the information covered in the following **Aerial Drift Reduction Advisory**. This information is advisory in nature and does not supersede mandatory label requirements.

Aerial Drift Reduction Advisory

Information on Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that will provide uniform coverage.

- **Nozzle Orientation** - Orient nozzles so that the spray is released parallel to the airstream to produce larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: The distance of the outer most operating nozzles on the boom must not exceed 75% of wingspan or 85% of rotor diameter.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note**: Local terrain such as valleys and ravines can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sprayer Clean-Out Instructions

It is recommended to use separate spray equipment on highly sensitive crops such as tobacco, soybeans, potatoes, peanuts and tomatoes.

Do not use spray equipment used to apply Milestone for other applications to land planted to, or to be planted to, broadleaf plants unless it has been determined that all residues of this herbicide have been removed by thorough cleaning of equipment.

Equipment used to apply Milestone should be thoroughly cleaned before reusing to apply any other chemicals as follows:

1. Rinse and flush application equipment thoroughly after use. Dispose of rinse water in non-cropland area away from water supplies.
2. Rinse a second time, adding 1 quart of household ammonia or tank cleaning agent for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Spray nozzles and screens should be removed and cleaned separately.

- Do not apply this product with mist blower systems that deliver very fine spray droplets. Use of mist blower equipment can reduce control achieved with the herbicide and increase spray drift potential.

Use Information

Apply the specified rate of Milestone as a coarse low-pressure spray. Do not apply this product with mist blower systems that deliver very fine spray droplets. Spray volume should be sufficient to uniformly cover foliage or intended application site. Increase spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. To enhance foliage wetting and coverage, a non-ionic agricultural surfactant or other adjuvant may be added to the spray mixture as specified by the adjuvant label.

Milestone may be applied by ground or aerial application equipment on any registered use site specified on this label.

Ground Broadcast Application: Higher spray volumes (greater than 10 gallons per acre) generally provide better coverage and better control, particularly in dense and/or tall foliage.

Aerial Broadcast Application: Do not apply less than 2 gallons per acre total spray volume. Five gallons per acre or greater will generally provide better coverage and better control, particularly in dense and/or tall foliage.

High-Volume Foliar Application: High volume foliar treatments may be applied at rates equivalent to a maximum of 7 fl oz per acre per year. Use sufficient spray volume to thoroughly and uniformly wet foliage and stems.

For basal bark and cut stubble and all types of cut surface applications, see woody plant section.

Low-Volume Foliar Treatment

To control susceptible woody plants, use Milestone alone or in tank mixes with other herbicides in water. The spray concentration of Milestone tank mixes and total spray volume per acre should be adjusted according to the size and density of target woody plants and type of spray equipment used. With low-volume application, use sufficient spray volume to obtain uniform coverage of target plants including the surfaces of all foliage, stems, and root collars.

For best results, an adjuvant should be added to all spray mixtures. Match equipment and delivery rate of spray nozzles to height and density of woody plants. When treating tall, dense brush, a truck mounted spray gun with spray tips that deliver up to 2 gallons per minute at 40 to 60 psi may be required. Backpack or other types of specialized spray equipment with spray tips that deliver less than 1 gallon of spray per minute may be appropriate for short, low to moderate density brush.

Spot Application: Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz) per acre of Milestone per year as a result of broadcast, spot or repeat applications.) Spray volume should be sufficient to thoroughly and uniformly wet weed foliage, but not to the point of runoff. Repeat treatments may be made, but the total amount of Milestone applied must not exceed 7 fl oz per acre per year. To prevent misapplication, spot treatments should be applied with a calibrated sprayer with a known volume per acre. Table 1 shows Milestone amount to mix for various sprayer outputs in gallons per acre (GPA)

Table 1: Amount of Milestone **(in mL)** to mix in **1 gallon of water**

Gallons per acre	Milestone amount (in mL) to mix to achive target application rates		
GPA	**5 fl oz/a**	**7 fl oz/a**	**14 fl oz/a**
20	7.5	10.5	21.0
30	5.0	7.0	14.0
40	3.8	5.3	10.5
50	3.0	4.2	8.4
60	2.5	3.5	7.0
70	2.1	3.0	6.0
80	1.9	2.6	5.3
90	1.7	2.3	4.7
100	1.5	2.1	4.2

Use a syringe to measure cc

Note: Table 1 above shows mixes for various sprayer outputs in gallons per acre (GPA).

Conversions:

1 tsp = 5 mL 30 ml = 1 fluid ounce 1 cc = 1 mL
3 tsp = 1 Tbsp 2 Tbsp = 1 fluid ounce

Mixing Instructions

Mixing with Water: To prepare the spray, add about half the required amount of water in the spray tank. Then, with agitation, add the specified amount of Milestone and other herbicides, if tank mixing. Finally, with continued agitation, add the rest of the water and additives such as adjuvants, surfactants or drift control and deposition aids.

Addition of Surfactants or Adjuvants on All Labled Use Sites: The addition of a high quality non-ionic surfactant (of at least 80% active principal) or adjuvant at 0.25 to 0.5 % volume per volume (1 to 2 quarts per 100 gallons of spray) is recommended to enhance herbicide activity under adverse environmental conditions (such as, high temperature, low relative humidity, drought conditions, dusty plant surfaces) or when weeds are heavily pubescent or more mature.

Tank Mixing with Other Herbicides: Milestone may be applied in tank mix combination with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the tank mix product(s), and (3) that the tank mix combination is physically compatible (see tank mix compatibility testing below). When tank mixing, use only in accordance with the restrictions, precautions and limitations on the respective product labels.

- It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- Do not exceed specified application rates. If products containing the same active ingredient are mixed, do not exceed the maximum allowable active ingredient use rates.
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a jar test to ensure the compatibility of products to be used in tank mixture.

Tank Mix Compatibility Testing: Perform a jar test prior to mixing in a spray tank to ensure compatibility of Milestone and other pesticides or carriers. Use a clear glass jar with lid and mix ingredients in the same order and proportions as will be used in the spray tank. The mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for 1/2 hour or, if separation occurs, should readily remix if agitated. An incompatible mixture is indicated by separation into distinct layers that do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film in the jar. Use of an appropriate compatibility aid may resolve mix incompatibility. If the mixture is incompatible do not use that tank mix partner in tank mixtures.

Invert emulsion spray mixtures
Milestone can be applied in an invert emulsion using oil and an appropriate inverting agent. Follow label directions of the inverting agent.

Mixing with Sprayable Liquid Fertilizer Solutions: Milestone is usually compatible with liquid fertilizer solutions. It is anticipated that Milestone will not require a compatibility agent for mixing with fertilizers; however, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water sources change, or when tank mixture ingredients or concentrations are changed. Compatibility may be determined by mixing the spray components in the desired order and proportions in a clear glass jar before large scale mixing of spray components in the spray tank.

Note: The lower the temperature of the liquid fertilizer, the greater the likelihood of mixing problems. Use of a compatibility aid may be required if Milestone is mixed with a 2,4-D-containing product and liquid fertilizer. **Mixing Milestone and 2,4-D in N-P or N-P-K liquid fertilizer solutions is more difficult than mixing with straight nitrogen fertilizer and should not be attempted without first conducting a successful compatibility jar test.** Agitation in the spray tank must be vigorous to be comparable with jar test agitation. Apply the spray mixture the same day it is prepared while maintaining continuous agitation. Rinse the spray tank thoroughly after use.

Note: Foliar-applied liquid fertilizers themselves can cause yellowing of the foliage of forage grasses and other vegetation.

Use Rates and Timing

Milestone may be applied as a broadcast spray by ground or aerial equipment or as a spot application to control weeds including, but not limited to, those listed on this label. When a rate range is given use the higher rate to control weeds at advanced growth stages, or under less than favorable growing conditions, or for longer residual control. Best results are obtained when spray volume is sufficient to provide uniform coverage of treated weeds. For optimum uptake and translocation of Milestone, avoid mowing, haying, shredding, burning or soil disturbance in treated areas for at least 14 days following application.

Milestone provides post emergence control and premergence control of emerging seedlings of susceptible weeds, and re-growth of certain perennial weeds following application. Preventing establishment of weeds will depend upon application rate, season of application, and environmental conditions after application.

Milestone can provide long-term control of susceptible weeds. The length of control is dependent upon the application rate, condition and growth stage of target weeds, environmental conditions at and following application, and the density and vigor of competing desirable vegetation. Long-term weed control is most effective where grass vegetation is allowed to recover from overgrazing, drought, etc., and compete with weeds.

Milestone can be an important component of integrated vegetation management programs designed to renovate or restore desired plant communities. To maximize and extend the benefits of weed control provided by Milestone, it is important that other vegetation management practices, including proper grazing management, biological control agents, replanting, fertilization, prescribed fire, etc., be used in appropriate sequences and combinations to further alleviate the adverse effects of weeds on desirable plant species and to promote development of desired plant communities. Agricultural and natural resources specialists with federal and state government agencies can provide guidance on best management practices and development of integrated vegetation management programs.

Plants Controlled

The following weeds and woody plants will be controlled with the rates of Milestone indicated below (table 2). For best results, most weeds and woody plants should be treated when they are actively growing and under conditions favorable for growth. Use a higher rate in the rate range when growing conditions are less than favorable or when weed foliage is tall and dense, or when optimal longer term residual control is desired. Milestone also provides preemergence control of germinating seeds or seedlings of susceptible weeds following application.

Table 2: Weeds and Woody Plants Controlled
Note: Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
amaranth, spiny	*Amaranthus spinosus*	4 to 7	annual	Amaranthaceae
bedstraw	*Galium spp.*	4 to 7	perennial	Rubiaceae
beggarticks	*Bidens spp.*	4 to 7	annual	Asteracea
broomweed, annual	*Amphiachyris dracunculoides*	4 to 7	annual	Asteraceae
burdock, common	*Arctium minus*	4 to 7	biennial	Asteraceae
buttercup, hairy	*Ranunculus sardous*	4 to 7	annual	Ranunculaceae
buttercup, tall	*Ranunculus acris*	4 to 7	perennial	Ranunculaceae
buttercup spp	*Ranunculus spp*	4 to 7	various	Ranunculaceae
camelthorn	*Alhagi pseudalhagi*	5 to 7	perennial	Fabaceae
cat's ear, common	*Hypochaeris radicata*	5 to 7	perennial	Asteracea
cat's ear	*Hypochaeris spp*	5 to 7	perennial	Asteracea
chamomile, scentless	*Matricaria inodora*	4 to 7	annual	Asteraceae
chicory	*Cichorium intybus*	4 to 6	perennial	Asteraceae
chickweed	*Stellaria media*	7	annual	Caryophyllaceae

Table 2: Weeds and Woody Plants Controlled (Cont.)
Note: Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
cinquefoil, sulfur (1)	*Potentilla recta*	4 to 7	perennial	Rosaceae
cocklebur	*Xanthium strumarium*	3 to 5	annual	Asteraceae
clover	*Trifolium spp.*	5 to 7	perennial	Fabaceae
crazyweed	*Oxytropisp*	5 to 7	perennial	Fabaceae
croton, tropic	*Croton glandulosus*	3 to 5	annual	Euphorbiaceae
crownvetch	*Securigera varia*	5 to 7	perennial	Fabaceae
cudweed, purple	*Gamochaeta purpurea*	4 to 7	annual	Asteraceae
daisy, oxeye (1)	*Leucanthemum vulgare*	4 to 7	perennial	Asteraceae
dock, curly	*Rumex crispus*	4 to 7	perennial	Polygonaceae
evening primrose, cutleaf	*Oenothera laciniata*	4 to 7	annual	Onagraceae
fiddleneck	*Amsinckia spp*	4 to 7	annual	Boraginaceae
fireweed	*Epilobium angustifolium*	5 to 7	perennial	Onagraceae
fleabane, flax-leaf	*Conyza bonariensis*	4 to 7	annual	Asteraceae
fleabane, hairy	*Conyza bonariensis*	5-7	annual/biennial	Asteraceae
hawkweed, orange (2)	*Hieracium aurantiacum*	4 to 7	perennial	Asteraceae
hawkweed, yellow (2)	*Hieracium caespitosum*	4 to 7	perennial	Asteraceae
henbane, black	*Hyoscyamus niger*	5 to 7	annual/biennial	Solanaceae
henbit	*Lamium amplexicaule*	5 to 7	annual/ biennial	Lamiaceae
hogweed, giant	*Heracleum mantegazzianum*	7	perennial	Apiaceae
horsenettle, Carolina	*Solanum carolinense*	4 to 7	perennial	Solanaceae
horseweed (marestail)	*Conyza canadensis*	4 to 7	annual	Asteraceae
ironweed, tall	*Vernonia gigantea*	5 to 7	perennial	Asteraceae
ironweed, western	*Vernonia baldwinii*	7	perennial	Asteraceae
knapweed, diffuse (3)	*Centaurea diffusa*	5 to 7	biennial/ perennial	Asteraceae
knapweed, meadow	*Centaurea debeauxii*	5 to 7	perennial	Asteraceae
knapweed, Russian (4)	*Acroptilon repens*	5 to 7	perennial	Asteraceae
knapweed, spotted (3)	*Centaurea stoebe*	5 to 7	biennial/ perennial	Asteraceae
knapweed, squarrose	*Centaurea virgata*	5 to 7	biennial/ perennial	Asteraceae
knapweeds	*Centaurea spp.*	5 to 7	biennial/ perennial	Asteraceae
knotweeds, Japanese, bohemian (11)	*Reynoutria japonica*	7-14	perennial	Polygonaceae
kudzu	*Pueraria montana*	7	perennial	Fabaceae
lady's thumb	*Polygonum persicaria*	3 to 5	annual	Polygonaceae
lambsquarters	*Chenopodium album*	5 to 7	annual	Chenopodiaceae
lespedeza, annual	*Lespedeza striata*	5 to 7	annual	Fabaceae
licorice, wild	*Glycyrrhiza lepidota*	7	perennial	Fabaceae
locoweed	*Astragalus spp.*	5 to 7	perennial	Fabaceae
locust, black	*Robinia pseudoacacia*	7	woody perennial	Fabaceae
locust, honey	*Gleditsia triacanthos*	7	woody perennial	Fabaceae
loosestrife, purple (12)	*Lythrum salicaria*	7-14	perennial	Lythraceae
mayweed, scentless	*Tripleurospermum perforate*	4 to 7	annual	Asteraceae
mayweed, stinking	*Anthemis cotula*	7	annual	Asteraceae
medic, black	*Medicago lupulina*	4 to 7	perennial	Fabaceae
mimosa	*Albizia julibrissin*	7	woody perennial	Fabaceae
mullein (5)	*Verbascum spp.*	7	biennial	Scrophulariaceae
nightshade, silverleaf	*Solanum elaeagnifolium*	4-7	perennial	Solanaceae
oxtongue, bristly	*Picris echioides*	5 to 7	biennial	Asteraceae
pea, Swainson	*Sphaerophysa salsula*	5-7	perennial	Fabaceae
povertyweed	*Iva axillaris*	5-7	perennial	Asteraceae
ragweed, common	*Ambrosia artemisiifolia*	3 to 5	annual	Asteraceae
ragweed, western	*Ambrosia psilostachya*	4 to 7	perennial	Asteraceae
ragweed, giant	*Ambrosia trifida*	4 to 7	annual	Asteraceae
ragwort, tansy	*Senecio jacobaea*	5 to 7	perennial	Asteraceae
redbud	*Cercis Canadensis*	7	woody perennial	Fabaceae

Table 2: Weeds and Woody Plants Controlled (Cont.)
Note: Numbers in parentheses (-) refer to specific use directions for a particular weeds species.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
rush skeletonweed	*Chondrilla juncea*	5 to 7	perennial	Asteraceae
sicklepod	*Cassia obtusifolia*	7	perennial	Fabaceae
smartweed, Pennsylvania	*Polygonum pensylvanicum*	3 to 5	annual	Polygonaceae
sneezeweed, bitter	*Helenium amarum*	4 to 7	annual	Asteraceae
soda apple, tropical (6)	*Solanum viarum*	5 to 7	perennial	Solanaceae
sowthistle, annual	*Sonchus oleraceae*	7	annual	Asteraceae
sowthistle, perennial	*Sonchus arvensis*	3 to 5	perennial	Asteraceae
spanishneedles	*Bidens bipinnata*	4 to 7	annual	Asteraceae
St. Johnswort, common	*Hypericum perforatum*	5 to 7	perennial	Clusiaceae
stiltgrass, Japanese	*Microstegium vimineum*	5-7	annual	Poaceae
starthistle, Malta (7)	*Centaurea melitensis*	3 to 5	annual	Asteraceae
starthistle, purple (7)	*Centaurea calcitrapa*	3 to 5	biennial	Asteraceae
starthistle, yellow (7)	*Centaurea solstitialis*	3 to 5	annual	Asteraceae
sunflower, common	*Helianthus annuus*	4 to 7	annual	Asteraceae
sweetclover, white	*Melilotus albus*	5 to 7	biennial	Fabaceae
sweetclover, yellow	*Melilotus officinalis*	5 to 7	biennial	Fabaceae
teasel	*Dipsacus spp.*	4 to 7	biennial	Dipsacaceae
thistle, artichoke	*Cynara cardunculus*	5 to 7	perennial	Asteracea
thistle, blessed milk	*Silybum marianum*	4-7	biennial	Asteraceae
thistle, bull (8)	*Cirsium vulgare*	3 to 5	biennial	Asteraceae
thistle, Canada (9)	*Cirsium arvense*	5 to 7	perennial	Asteraceae
thistle, woolly distaff	*Carthamus lanatus*	4 to 7	annual	Asteraceae
thistle, Italian	*Carduus pycnocephalus*	7	annual	Asteraceae
thistle, musk (8)	*Carduus nutans*	3 to 5	biennial	Asteraceae
thistle, plumeless (8)	*Carduus acanthoides*	3 to 5	biennial	Asteraceae
thistle, Scotch	*Onopordum acanthium*	5 to 7	biennial	Asteracea
thistle, Russian (preemergence)	*Salsola spp*	7	annual	Chenopodiaceae
tree of heaven	*Ailanthus altissima*	7	perennial	Simaroubaceae
vetch	*Vicia spp.*	3 to 7	perennial	Fabaceae
willoweed, panicle	*Epilobium brachycarpum*	5-7	annual	Onagraceae
wisteria	*Wisteria brachybotris*	7	woody perennial	Fabaceae
wormwood, absinth(10)	*Artemisia absinthium*	6 to 7	perennial	Asteraceae
yarrow, common	*Achillea millefolium*	7	perennial	Asteraceae

(1) **Sulfur cinquefoil or oxeye daisy:** Apply Milestone at 4 to 6 fl oz per acre to plants in the prebud stage of development.
(2) **Orange or yellow hawkweeds:** Apply Milestone at 4 to 7 fl oz per acre to plants in the bolting stage of development.
(3) **Diffuse, spotted, and squarrose knapweeds:** Apply Milestone at 5 to 7 fl oz per acre when plants are actively growing with the optimum time of application occurring from rosette to the bolting stages of development or in the fall. Plants will be controlled by mid-summer and fall applications even though plants may not show any changes in form or stature the year of application.
(4) **Russian knapweed:** Apply Milestone at 5 to 7 fl oz per acre to plants in the spring and summer at early bud to flowering stages and to dormant plants in the fall.
(5) Mullein: Apply to the rosette stage
(6) **Tropical soda apple:** Apply Milestone at 5 to 7 fl oz per acre at any growth stage, but application by flowering will reduce seed production potential.
(7) **Malta, purple, and yellow starthistle:** Apply Milestone at 3 to 5 fl oz per acre to plants at the rosette through bolting growth stages.
(8) **Bull, musk, and plumeless thistles:** Apply Milestone at 3 to 5 fl oz per acre in the spring and early summer to rosette or bolting plants or in the fall to seedlings and rosettes. Apply at 4 to 5 fl oz when plants are at the late bolt through early flowering growth stages. 2,4-D at 1 lb ae/acre should be tank-mixed with Milestone starting at the late bud stages
(9) **Canada thistle:** Apply Milestone at 5 to 7 fl oz per acre in the spring after all plants have fully emerged (some may be budding) until the oldest plants are in full flower stage. Use the higher rate when applying to the flower stage. Applications are also effective in the fall before a killing frost. Use higher rates for older/dense stands or for longer residual control.
(10) **Absinth wormwood:** Apply 6 to 7 fl oz per acre before wormwood is 12 inches tall. When applying by air on CRP, coverage is important and a minimum of 3 GPA is specified. Remove old duff and litter by fire or mowing for best results
(11) **Invasive knotweeds:** Japanese, Bohemian, giant knotweeds: Optimum suppression of invasive knotweeds with Milestone herbicide is obtained when applications are made to plants that are at least 3 to 4 feet tall. Results of field trials conducted in the western U.S. indicate that high volume applications (100 gpa or greater) of Milestone at 7 fl oz/A or a spot treatment rate up to 14 fl oz/A applied in summer will provide good control of invasive knotweeds. In the upper Midwest, mowing in summer followed by fall application of Milestone (prior to frost) provided the best control. Infestations of invasive knotweed that are mowed should be allowed to regrow to at least 3 feet in height prior to herbicide treatment. Monitoring and follow-up herbicide treatments on regrowth will be necessary to control resprouts and achieve long-term control.
(12) **Purple loosestrife:** For optimum control apply Milestone at 7 fl oz per acre plus 1 pt to 1 qt of 2,4-D amine or 1 to 2 qts of Garlon 3A. Spot treatments may also be made by applying Milestone at 14 fl oz (see Spot treatment section of the label) with or without the addition of 2,4-D or Garlon 3A.
(13) **Fiddleneck:** For optimum control apply Milestone at 4 to 7 fl oz per acre when the plants are young and before flowering. Use higher rates if the plants are older and larger. In California optimal application timing is November through March.

For Control or Suppression of Medusahead Rye

Milestone applied broadcast at 7 to14 fl oz/A can suppress or control medusahead rye (*Taeniatherum caput-medusae)* and downy brome *(Bromus tectorum,* also called cheatgrass*).* The key to optimum results is the timing of application. Applications should be made in late summer prior to rains and seed germination in order to provide the best possibility of suppression or control. In general, control or suppression will be poor if any of the seeds have germinated prior to application even if they have not yet emerged through the soil surface. Tank mixes with Accord XRT II at 12 fl oz/A, where a non-selective herbicide can be used or where desired grasses are dormant and will not be harmed, and will aid in control. Spot treatment restrictions (see spot treatment section) apply for rates above 7 fl oz/A for broadcast applications.

Control of Terrestrial Weeds near and up to the Water's Edge

Milestone can be used to treat terrestrial weeds that extend up to the water's edge. **Do not apply directly to water.** This product must not be used to treat vegetation standing in the water. When controlling terrestrial weed species near and up to the water's edge, take precautions to minimize incidental overspray to the adjacent water. Consult local public water control authorities before applying this product near public waters. Permits may be required to treat such areas. Apply the specified rate, listed in Table 2, of Milestone as a coarse low-pressure spray as ground broadcast or spot applications. Do not apply aerially for control of weeds growing at or near the water's edge. Spray volume should be sufficient to uniformly cover foliage. Increase the spray volume to ensure thorough and uniform coverage when target vegetation is tall and/or dense. It is also permissible to treat target weeds within dry non-irrigation ditches and seasonally dry transitional areas between upland and lowland sites (such as flood plains, deltas, marshes, prairie potholes or vernal pools), but only at times when those sites are dry and are forecasted or managed by water control systems to remain dry for at least 2 weeks following application.

Use Rate Restrictions:
Do not broadcast apply more than 7 fl oz per acre of Milestone per year.

The total amount of Milestone applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl oz per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz) per acre of Milestone per year as a result of broadcast, spot or repeat applications.

Woody Plant Control

Milestone may be applied to control woody plants by any application method listed on the label on any site listed.

Milestone may be applied alone or in tank-mix combinations with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the registered tank mixed products. Use as directed in the Directions of Use section of the tank-mix partner. Follow Mixing Instructions under the General Mixing and Application Instructions section.

Add Milestone to tank mixes for improved brush control on species such as alder, aspen, blackberry, boxelder, cherry, coyote brush, conifers, cottonwood, elm, maple, poplar, oak, brooms (Scotch, Spanish, French, Portuguese), gorse, hackberry, Russian and Autumn olive, salt-cedar.

Low or High Volume Foliar Applications:
For broad spectrum brush control using a foliar application, Milestone may be added to tank mixes with Accord® XRT II, Arsenal Powerline, DMA® 4IVM, Garlon 4 Ultra, Remedy Ultra, Tordon 101M, Transline, Forestry Garlon XRT, or Garlon 3A, Rodeo®, Tordon® K, Tordon 22K or other products labeled for use on the intended site.

Low Volume Basal Bark Applications:
To control susceptible woody plants with stems less than 6 inches in basal diameter, apply herbicide mix (see below for rates) with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Spray the basal parts of brush and tree trunks to a height of 12 to 15 inches from the ground in a manner that thoroughly wets the lower stems but not to the point of runoff. The use of a Spraying Systems Y2 nozzle or similar nozzle is recommended, which will narrow the spray pattern to target individual stems. Herbicide concentration should vary with tree diameter, bark thickness, volume used per acre, and susceptibility of species treated. Apply anytime, including the winter months, except when snow or water prevent spraying to the ground line or when stem surfaces are saturated with water.

Milestone may be used as a low volume basal treatment alone, for sensitive woody species in the Fabaceae family (legumes), or in combination with other products such as Garlon 4 Ultra, Forestry Garlon XRT, Remedy Ultra for broader control of other sensitive woody species. Applications should not exceed the maximum use rate per acre for the site.

Mix Milestone at 0.5 to 5% v/v alone, or with Garlon 4 Ultra or Forestry Garlon XRT in a commercially available basal diluent (or other oils or basal diluents as recommended by the manufacturer); the basal oil should be compatible with a water soluble herbicide such as Milestone. See table 3 to calculate the amount of Milestone that can be applied per acre at the various volumes and rates. Make a stable tank mixture for basal bark application by first combining each product with a compatibility agent prior to final mixing in the desired ratio. If using a tank mix, mix the oil-based products such as Garlon 4 Ultra thoroughly with basal oil and add any other oil-based products before adding the water based products. If the mixture stands for more than 30 minutes, reagitation may be required.

Oil and water based mixtures can separate over time. Long-term storage is not recommended without vigorous agitation prior to use or without a recommended compatibility agent.

Use caution when treating areas adjacent to susceptible and desirable species to avoid root uptake and possible injury when using Milestone or other soil active herbicides

Low Volume Stem Bark Band Treatment
To control susceptible woody plants (see table 2) with stems less than 6 inches in basal diameter, mix 0.5 to 5 gallons of Milestone in enough oil to make 100 gallons of spray mixture. Apply with a backpack or knapsack sprayer using low pressure and a solid cone or flat fan nozzle. Apply the spray in a 6- to 10-inch wide band that completely encircles the stem. Spray in a manner that completely wets the bark, but not to the point of runoff. The treatment band may be positioned at any height up to the first major branch. For best results apply the band as low as possible. Spray mixture concentration should vary with size and susceptibility of species to be treated. Applications may be made anytime, including winter months.

Table 3:

% of Milestone in Basal Mix	Fluid ounces of Milestone by GPA (gallons per acre)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.0	1.3	2.6	3.8	5.1	6.4	7.7	9.0
1.5	1.9	3.8	5.8	7.7	9.6	11.5	13.4
2.0	2.6	5.1	7.7	10.2	12.8		
2.5	3.2	6.4	9.6	12.8			
3.0	3.8	7.7	11.5				
3.5	4.5	9.0	13.4				
4.0	5.1	10.2					
5.0	6.4	12.8					

within spot treatment labeled rate

in excess of spot treatmentt labeled rate

NOTE: Avoid treating high density of stems adjacent to desirable trees with roots in the treatment zone. See table 4 for guidance on estimated volume per acre by treated stem density. Trees adjacent to or in a treated area can occasionally be affected by root uptake of Milestone. Applications of Milestone within the root zone of desirable trees should not be made unless injury can be tolerated. Severe injury or plant death can occur if used near roses, or leguminous trees such as locusts, redbud, mimosa, and caragana.

Table 4:

Estimated gallons of spray solution per acre for basal bark applications on various stem densities per acre		
	Volume Range	Target Spacing
Number of Stems/Acre	(gal/acre)	(ft between brush/trees)
250	1.0 - 1.7	8.4
500	2.0 - 3.3	5.9
750	3.0 - 5.0	4.9
1000	4.0 - 6.6	4.2
1250	5.0 - 8.3	3.8
1500	5.9 - 9.9	3.4

Cut surface

Apply Milestone in the cut surface applications listed below for control of susceptible tree species such as legumes like Albezia, mimosa, locust, etc. Mixtures of Milestone and Garlon 3A or Garlon 4 Ultra may be effective on species other than legumes such as elm, maple, oak and conifers.

Cut surface applications may be used successfully at any season except during periods of heavy sap flow of certain species - for example, maples in the spring.

Cut-Stump Treatment

Apply Milestone as a 10% dilution v/v in water, by spraying or painting all the exposed cambium layer on the freshly cut surface. The cambium area next to the bark is the most vital area to wet.

With Tree Injector Method

Apply by injecting 1 milliliter of 10% v/v Milestone in water through the bark at intervals of 3 to 4 inches between centers of the injector wound. The injections should completely surround the tree at any convenient height. Note: No Worker Protection Standard worker entry restrictions or worker notification requirements apply when this product is injected directly into plants.

With Hack and Squirt Method

Make cuts around the tree trunk at a convenient height with a hatchet or similar equipment so that the cuts overlap slightly and make a continuous circle around the trunk. Spray 1 milliliter of 10% v/v Milestone in water into the pocket created between the bark and the inner stem/trunk by each cut.

With Frill or Girdle Method

Make a single girdle through the bark completely around the tree at a convenient height. The frill should allow for the herbicide to remain next to the inner stem and absorb into the plant. Wet the cut surface with 10% v/v Milestone in water.

For use in Hawaii only:
Incision Point Application (IPA) also known as Tree Injection or Hack and Squirt

For control of susceptible tree species such as Albezia, and other legumes and susceptible tree species, make cuts around the tree trunk at a convenient height with a machete, hatchet or similar equipment so that the cuts are about 6 inches apart between centers. Inject ½ to 1 milliliter of undiluted Milestone into the pocket created between the bark and the inner stem/trunk by each cut as soon as possible after cutting. The cambium area next to the bark is the most vital area to wet.

Preemergent Weed Control

Typically Milestone is used as a post emergent herbicide but it has preemergent activity on susceptible weeds. Use Milestone as a preemergence spray prior to weed seed germination. Control will depend upon species susceptibility, application timing, and environmental conditions, such as precipitation, following application. When applied at rates lower than 7 fl oz per acre, Milestone can provide short-term control of some susceptible weeds but when applied at 7 fl oz (broadcast) or 14 fl oz (spot treatment), weed control is extended.

Best results for use as a premergent application for total vegetation control are obtained if Milestone at 7 fl oz per acre is tank mixed with other herbicides to broaden the weed spectrum and to control grasses. If grasses and broadleaf weeds tolerant to Milestone are present at the time of application or will germinate on the site, then tank mixtures with other herbicides, such as Accord® XRT II, Rodeo®, Dimension® 2EW or EC (annual grasses), Oust XP, Esplanade, flumioxazin, diuron, or other herbicides labeled for total vegetation control applications.

SPOT TREATMENTS FOR AREAS SUCH AS SUBJECT POLES, SUBSTATIONS, AND OTHER SMALL AREAS

Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per year to small spots for clearing around utility subject poles to help prevent fire damage, on small substations and other spot areas. To prevent misapplication, spot treatments should be applied with a calibrated sprayer.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

Limitation of Remedies

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

®Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow
™Harmony, Express and Ally are trademarks of E. I. DuPont de Nemours and Company

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: D02-879-007
Replaced Label: D02-879-006
LOES Number: 010-02112

EPA accepted 01/30/17

Revisions:

1. Added the following to the use site list in description: "seasonally dry flood plains, deltas, marshes, prairie potholes, or vernal pools."
2. Revised the restriction for New York to read, "Not for Sale, Sale into, Distribution, and/or Use in Nassau and Suffolk counties of New York State."
3. Added the following restriction: "Not For Sale, Distribution, or Use in the San Luis Valley of Colorado."
4. Updated the Use Precautions and Restriction section and divided into two distinct sections.
5. Updated Tank Mixing with Other Herbicides section by adding, "It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture."
6. Added the following use section: Control of Terrestrial Weeds at the Water's Edge

Specimen Label

GLYPHOSATE	GROUP	9	HERBICIDE

CORTEVA™ agriscience

Rodeo®

HERBICIDE

® ™ Trademarks of Dow AgroSciences, DuPont or Pioneer and their affiliated companies or respective owners

For control of annual and perennial weeds and woody plants in natural and production (plantations), forests for site preparation, mid-rotation release treatments, timber stand improvement activities, noncrop sites including industrial sites, rights-of-way (including roadsides, electric utility and communication transmission lines, pipelines, railroads, airports), irrigation and drainage ditches, canals, reservoirs, natural areas (including wildlife management areas, wildlife openings, wildlife habitats and refuges, parks and recreational areas, campgrounds, trailheads and trails), rangeland, and in and around aquatic sites and wetlands; also for perennial grass release, and grass growth suppression and grazed areas on these sites.

Avoid contact of herbicide with foliage, green stems, exposed non-woody roots or fruit of crops, desirable plants and trees, because severe injury or destruction may result.

Active Ingredient:	
glyphosate† N-(phosphonomethyl)glycine, isopropylamine salt	53.8%
Other Ingredients	46.2%
Total	100.0%

†Contains 5.4 lb per gallon glyphosate, isopropylamine salt (4 lb per gallon glyphosate acid).

Precautionary Statements

Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-324

Keep Out of Reach of Children

CAUTION

Harmful If Inhaled • Avoid breathing spray mist. Remove contaminated clothing and wash before reuse. Wash thoroughly with soap and water after handling.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

First Aid

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss can cause fish suffocation.

In case of leak or spill, soak up and remove to a landfill.

Physical or Chemical Hazards

Spray solutions of this product should be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers.

Do not mix, store or apply this product or spray solutions of this product in galvanized steel or unlined steel (except stainless steel) containers or spray tanks. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas, which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

This is an end-use product. Dow AgroSciences does not intend and has not registered it for reformulation.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep people and pets off treated areas until spray solution has dried.

Storage and Disposal

Do not contaminate water, food, feed or seed by storage or disposal.
Pesticide Storage: Store above 10°F (-12°C) to keep product from crystallizing. Crystals will settle to the bottom. If allowed to crystallize, place in a warm room 68°F (20°C) for several days to redissolve and roll or shake container or recirculate in mini-bulk containers to mix well before using.
Pesticide Disposal: Wastes resulting from use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures.

Nonrefillable containers 5 gallons or less:
Container Handling: Nonrefillable container. Do not reuse or refill this container.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable containers larger than 5 gallons:
Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable containers 5 gallons or larger:
Container Handling: Nonrefillable container. Do not reuse or refill this container.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

This product is a broad spectrum, systemic, postemergent herbicide with no soil residual activity. It is intended for control of annual and perennial weeds and woody plants and brush. It is formulated as a water soluble liquid.

Time to Symptoms: The active ingredient in this product moves through the plant from the point of foliage contact to and into the root system. Visible effects are a gradual wilting and yellowing of the plant that advances to complete browning of above ground growth and deterioration of underground plant parts. Visible effects on most annual weeds occur within two to four days, but on most perennial weeds visible effects may not occur for seven days or more. Extremely cool or cloudy weather following treatment may slow the activity of this product and delay development of visual symptoms.

Stage of Weeds: Annual weeds are easiest to control when they are small. Best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity. Refer to the annual, perennial and woody brush and trees rate tables for specific weeds. Always use the higher rate within the rate range for heavy or dense weed growth or when weeds are growing in an undisturbed (noncultivated) area. When treating weeds with disease or insect damage, weeds heavily covered with dust, or weeds under poor growing conditions, reduced weed control may result.

Cultural Considerations: Reduced control may result when applications are made to annual or perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow to the specified stage for treatment.

Rainfastness: Heavy rainfall soon after application may wash off this product from the foliage and a repeat application up to the labled rate may be required for adequate control.

Spray Coverage: For best results, spray coverage should be uniform and complete.

Mode of Action: The active ingredient in this product inhibits an enzyme. This enzyme is found only in plants and microorganisms that are essential to forming specific amino acids.

No Soil Activity: Weeds must be emerged at the time of application to be controlled by this product. Weeds germinating from seed after application will not be controlled. Unemerged plants arising from unattached underground rhizomes or rootstocks of perennials will not be affected by the herbicide and will continue to grow.

Biological Degradation: Degradation of this product is primarily a biological process carried out by soil microbes.

Maximum Application Rates: The maximum application rates specified in this label are given in units of volume, either fluid ounces, pints or quarts, of this product per acre. The maximum allowed application rates apply to this product combined with the use of any and all other glyphosate- or sulfosate-containing herbicides, either applied separately or in a tank mix, on the basis of total pounds of glyphosate (acid equivalents) per acre. If more than one glyphosate- or sulfosate-containing product is applied to the same site within the same year, ensure that the total of pounds acid equivalent glyphosate does not exceed the maximum allowed.

Do not apply more than 8 quarts of this product (8 lb glyphosate acid) per acre per year for all use sites listed on this label.

IMPORTANT: When using this product, unless otherwise specified, mix with a surfactant, such as a nonionic surfactant containing 80% or greater active ingredient. For conifer release (pine release) use only surfactants that are approved for conifer release and specified on the surfactant label as safe for use in conifer release (pine release). Use of this product without surfactant will result in reduced herbicide performance. Ammonium sulfate, drift control additives, or dyes and colorants may be used. See Mixing Directions and the surfactant manufacturer's label for more information.

Grazing Restrictions: This product may be used to treat undesirable vegetation in utility rights-of-way that pass through pastures, rangeland, and forestry sites that are being grazed. For tank mix applications, comply with all restrictions appearing on the tank mix product label.

Except for lactating dairy animals there are no grazing restrictions following the labeled applications of this product.

For lactating dairy animals there are no grazing restrictions for the following labeled applications of this product:
- Where the spray can be directed onto undesirable woody brush and trees, including in handgun spray to wet or low volume directed spray treatments.
- For tree injection of frill applications and for cut stump treatments.

For broadcast applications, observe the following restrictions for lactating dairy animals:
- For application rates between 4.5 and 7.5 quarts per acre, no more than 15 percent of the available grazing area may be treated.
- For application rates less than 4.5 quarts per acre, no more than 25 percent of the available grazing area may be treated.

These restrictions do not apply to pastures, rangeland or forestry sites outside of utility rights-of-way.

Herbicide Resistance Management

Glyphosate, the active ingredient in this product, is a group 9 herbicide (inhibitor of EPSP synthase). Some naturally occurring weed biotypes that are tolerant (resistant) to glyphosate may exist due to genetic variability in a weed population. Where resistant biotypes exist, the repeated use

of herbicides with the same mode of action can lead to the selection for resistant weeds. Certain agronomic practices reduce the likelihood that resistant weed populations will develop, and can be utilized to manage weed resistance once it occurs.

To delay the selection for glyphosate resistant weeds, use the following practices:

- Scout fields before and after application to detect weed escapes or shifts in weed species.
- Start with a clean field by applying a burndown herbicide or by tillage.
- Control weeds early when they are small.
- Add other herbicides, including a selective and/or a residual herbicide, and cultural practices, including tillage or crop rotation, where appropriate.
- Use the application rate for the most difficult to control weed in the field. Do not tank mix with other herbicides that reduce this product's efficacy through antagonism or with ones that encourage application rates of this product below those specified on this label.
- Control weed escapes and prevent weeds from setting seeds.
- In situations where resistant weeds are a problem, before moving from one site to another, clean equipment to minimize the spread of weed seeds or plant parts.
- Use new commercial seed that is as free of weed seed as possible.
- Report any incidence of repeated non-performance of this product against a particular weed species to the local retailer, county extension agent, or Dow AgroSciences representative.

The following good agronomic practices are recommended to reduce the spread of confirmed glyphosate-resistant biotypes:

- Tank mix this product or apply it sequentially with an appropriately labeled herbicide with a different mode of action to achieve control if a naturally occurring resistant biotype is present in the site.
- Cultural and mechanical control practices, including crop rotation or tillage, may also be used.
- To control weed escapes, including resistant biotypes, before they set seed, scout treated sites after applying this product.
- Thoroughly clean equipment before leaving any site known to contain resistant biotypes.

Because the presence of glyphosate resistance in weed populations is difficult to detect prior to use, Dow AgroSciences accepts no liability for any losses that may result from the failure of this product to control glyphosate-resistant weeds.

Attention

Avoid contact of herbicide with foliage, green stems, exposed non-woody roots or fruit of crops, desirable plants and trees, because severe injury or destruction may result.

AVOID DRIFT. Use extreme care when applying this product to prevent injury to desirable plants and crops.

Do not allow the herbicide solution to mist, drip, drift or splash onto desirable vegetation since minute quantities of this product can cause severe damage or destruction to the crop, plants or other areas on which treatment was not intended. The likelihood of injury occurring from the use of this product increases when winds are gusty, as wind velocity increases, when wind direction is constantly changing, or when there are other meteorological conditions that favor spray drift. When spraying, avoid combinations of pressure and nozzle type that will result in splatter or fine particles (mist) which are likely to drift. **Avoid applying at excessive speed or pressure.**

NOTE: Use of this product in any manner not consistent with this label may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

- The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory.

Aerial Drift Reduction Advisory
This section is advisory in nature and does not supersede the mandatory label requirements.

Importance of Droplet Size: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent adverse effects from drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows product larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. Use the lower spray pressures for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height: Applications must not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance must increase with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Do not apply this product when wind speed is below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Do not apply this product during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: Apply this pesticide only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Mixing Directions

Use only clean, stainless steel, fiberglass, plastic or plastic-lined steel containers to mix, store and apply spray solutions of this product. Do not mix, store or apply this product or spray solutions of this product in galvanized steel or unlined steel, except stainless steel, containers or spray tanks.

Eliminate any risk of siphoning the contents of the tank mix back into the carrier source while mixing. Use approved anti-back-siphoning devices where required by state or local regulations.

Note: Reduced results may occur if water containing soil is used, including visibly muddy water or water from ponds and ditches that is not clear.

Rodeo – Alone
This product mixes readily with water. Mix spray solutions of this product as follows:

1. Fill the mixing or spray tank with the required amount of clean water.
2. Add the specified amount of this product and nonionic surfactant near the end of the filling process and mix well.
3. During mixing and application, foaming of the spray solution may occur. To prevent or minimize foaming, avoid the use of mechanical agitators, terminate by-pass and return lines at the bottom of the tank and, if needed, use an approved anti-foam or defoaming agent.

Rodeo – Tank Mix
This product does not provide residual weed control. For residual weed control or an alternate mode of action, tank mix this product with other herbicides. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture..

Under certain conditions, at certain growth stages, and/or under other circumstances, some tank mix products have the potential to cause injury. Read all labels for products used in the tank mix prior to using them to determine the potential for crop injury.

Tank mixing with other herbicides, insecticides, fungicides, micronutrients or foliar fertilizers may result in reduced weed control or injury. Do not use these products in applications with this product unless otherwise noted in this label. To the extent consistent with applicable law, buyer and all users are responsible for all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly specified in this labeling. Mixing this product with herbicides or other materials not specified on this label may result in reduced performance.

The user is responsible for ensuring that the specific application being made is included on the label of the product used in the tank mix when a tank mixture with a generic active ingredient, including 2,4-D, atrazine, dicamba, diuron, or pendimethalin, is used.

Read all individual product labels for all products in the tank mix and observe all precautions and restrictions on the label. Use according to the most restrictive directions for each product in the tank mix. Always predetermine the compatibility of all tank mix products, together in the carrier, by mixing small proportional quantities in advance of mixing and applying them to the use site. Add the tank mix product to the tank as directed by the label. Maintain agitation and add the required amount of this product.

Maintain good agitation at all times until the contents in the tank are sprayed. If the mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying resumes. Keep the bypass line on or near the bottom of the tank to minimize foaming. The screen size in the nozzle or line strainers must be no finer than 50 mesh.

Note: If tank mixing with Garlon® 3A herbicide, ensure that Garlon 3A is well mixed with at least 75 percent of the total spray volume before adding this product to the spray tank to avoid incompatibility.

Hand-Held Sprayers
Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table:

Spray Concentration (percent)	Amount of this Product for Desired Volume:		
	1 gal	25 gal	100 gal
0.5	2/3 fl oz	1 pt	2 qt
0.75	1 fl oz	1 1/2 pt	3 qt
1	1 1/3 fl oz	1 qt	1 gal
1.5	2 fl oz	1 1/2 qt	1 1/2 gal
2	2 2/3 fl oz	2 qt	2 gal
3.75	5 fl oz	3 3/4 qt	3 3/4 gal
5	6 1/2 fl oz	1 1/4 gal	5 gal
10	13 fl oz	2 1/2 gal	10 gal

Nonionic Surfactant
When using this product, unless otherwise specified, mix with a surfactant, including a nonionic surfactant containing 80% or more active ingredient. For conifer release (pine release), use only surfactants that are approved for conifer release and specified on the surfactant label as safe for use in conifer release. Using this product without surfactant will result in reduced herbicide performance.

Colorants or Dyes
Agriculturally-approved colorants or marking dyes may be added to this product. Colorants or dyes used in spray solutions of this product may reduce performance, especially at lower rates or dilutions. Use colorants or dyes according to the manufacturer's directions.

Drift Control Additives
Drift control additives may be used with all equipment types except wiper applicators, sponge bars and CDA equipment. When a drift control additive is used, it is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture..

Application Equipment and Application Methods

Chemigation: Do not apply this product through any type of irrigation system.

Apply spray solutions in properly maintained and calibrated equipment capable of delivering desired volumes.

This product may be applied with the following application equipment and application methods.

Aerial Application
Equipment: Fixed wing and helicopter

Do not apply this product using aerial spray equipment except under conditions as specified within this label.

Avoid drift. Do not apply when winds are gusty or under any other condition which favors drift. Drift may cause damage to any vegetation contacted to which treatment is not intended. To prevent injury to adjacent desirable vegetation, maintain appropriate buffer zones.

Do not directly apply to any body of water.

Use the specified rates of this herbicide in 3 to 25 gallons of water per acre unless otherwise specified on this label. Refer to the specific use directions of this label for volumes and application rates.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations that dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure. A drift control additive may be used. When a drift control additive is used, carefully read and observe the precautionary statements and all other information specified on the additive label.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

Aerial Application Restrictions in California Only

AVOID DRIFT: Do not apply when winds are gusty or under any other condition which favors drift. Drift may cause damage to any vegetation contacted to which treatment is not intended. To prevent injury to adjacent desirable vegetation, appropriate buffer zones must be maintained.

Do not aerially apply this product in a tank mix with dicamba in California.

Make aerial applications with helicopter only. To ensure uniform application, avoid streaking, uneven, or overlapped application, and use appropriate marking devices.

Use the following guidelines when aerial applications are made near crops or desirable perennial vegetation after budbreak and before total leaf drop, and/or near other desirable vegetation or annual crops:

- Do not apply this product using aerial equipment in residential areas.
- Do not apply within 100 feet of all desirable vegetation or crop(s).
- If wind up to 5 miles per hour is blowing toward desirable vegetation or crop(s), do not apply within 500 feet of the desirable vegetation or crop(s).
- Winds blowing from 5 to 10 miles per hour toward desirable vegetation or crop(s) may require buffer zones in excess of the 500-foot minimum buffer.
- Do not apply when winds are in excess of 10 miles per hour or when inversion conditions exist.

Use only coarse sprays to minimize drift. Do not use nozzles or nozzle configurations that dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure above the manufacturer's directions.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. Prolonged exposure of this product to uncoated steel surfaces may result in corrosion and possible failure of the part. Landing gear is most susceptible. The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38413 may prevent corrosion.

ADDITIONAL LIMITATIONS FOR AERIAL APPLICATION IN FRESNO COUNTY, CALIFORNIA ONLY

Always read and follow the label directions and precautionary statements for all products used in the aerial application.
The following information applies only from February 15 through March 31 within the following boundaries of Fresno County, California:
North: Fresno County line
South: Fresno County line
East: State Highway 99 West

Observe the following directions to minimize off-site movement during aerial application of this product. Minimization of off-site movement is the responsibility of the grower, Pest Control Advisor and aerial applicator.

Written Directions

Written directions MUST be submitted by or on behalf of the applicator to the Fresno County Agricultural Commissioner 24 hours prior to the application. These written directions MUST state the proximity of surrounding crops and that conditions of each manufacturer's product label and this label have been satisfied.

Aerial Applicator Training and Equipment

Aerial application of this product is limited to pilots who have successfully completed a Fresno County Agricultural Commissioner and California Department of Pesticide Regulation approved training program for aerial application of herbicides. All aircraft must be inspected, critiqued in flight and certified at a Fresno County Agricultural Commissioner approved fly-in. Test and calibrate spray equipment at intervals sufficient to insure that proper rates of herbicides and adjuvants are being applied during commercial use. Applicator must document such calibrations and testing. Demonstration of performance at Fresno County Agricultural Commissioner approved fly-ins constitutes such documentation, or other written records showing calculations and measurements of flight and spray parameters acceptable to the Fresno County Agricultural Commissioner.

Applications at Night – Do not apply this product by air earlier than 30 minutes prior to sunrise and/or later than 30 minutes after sunset without prior permission from the Fresno County Agricultural Commissioner.

To report known or suspected misuse of this product, call 1-800-332-3111.

For additional information on the proper aerial application of this product in Fresno County, call 916-784-1718.

Aquatic and Noncrop Sites

When this product is applied under the conditions described, it controls or partially controls the labeled weeds growing in the following industrial, recreational, and public areas or other similar sites.

Aquatic sites includes all bodies of fresh and brackish water that may be flowing, nonflowing, or transient-including lakes, rivers, streams, ponds, seeps, irrigation and drainage ditches, canals, reservoirs, estuaries and similar sites.

If aquatic sites are present in the noncrop area and are part of the intended treatment, read and observe the following directions:

- This product does not control plants that are completely submerged or have a majority of their foliage under water.
- There is no restriction on the use of treated water for irrigation, recreation, or domestic purposes.
- Consult local and state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.
- To make aquatic applications around and within 1/2 mile of active potable water intakes, the water intake must be turned off for a minimum period of 48 hours after the application. The water intake may be turned on prior to 48 hours if the glyphosate level in the intake water is below 0.7 parts per million as determined by laboratory analysis. These aquatic applications may be made only in those cases where there are alternative water sources or holding ponds that would permit the turning off of an active potable water intake for a minimum period of 48 hours after the application.

Restrictions:

- Do not apply this product within 1/2 mile upstream of an active potable water intake in flowing water (i.e., river stream, etc.), or within 1/2 mile of an active potable water intake in a standing body of water, such as a lake, pond, or reservoir.

Ground Application

Equipment: Boom or boomless systems, pull-type sprayer, floaters, pick-up sprayers, spray coupes and other ground broadcast equipment.

Use the specified rates of this product in 3 to 40 gallons of water per acre as a broadcast spray unless otherwise specified on this label. As density of weeds increases, increase the spray volume within the rate range to ensure complete coverage. Carefully select proper nozzles to avoid spraying a fine mist. For best results with ground application equipment, use flat fan nozzles. Check for even distribution of spray droplets.

Hand-Held and High-Volume Including Backpack Application

Equipment: Knapsack and backpack sprayers, pump up pressure sprayers, handguns, hand wands, mistblowers, lances, and other hand-held and motorized spray equipment used to direct the spray onto weed foliage. **Note:** This product is not registered in Arizona or California for use in mistblowers.

Apply to foliage of vegetation to be controlled. Do not spray to the point of runoff for applications made on a spray to wet basis. Use coarse sprays only. For best results, cover the top half of the plant and at least half of the total foliage. To ensure adequate spray coverage, spray both sides of large or tall woody brush and trees, when foliage is thick and dense, or where there are multiple sprouts.

High Volume Sprays: Prepare a 3/4 to 2 percent solution of this product in water, add a nonionic surfactant and apply to foliage of vegetation to be controlled. For specific rates of application and instructions for control of various annual and perennial weeds, see the Weeds Controlled section.

Make applications on a spray to wet basis with uniform and complete spray coverage. Do not spray to point of runoff.

Low Volume Directed Sprays: This product may be used as a 5 to 10 percent solution in low volume directed sprays for spot treatment of trees and brush. This treatment method is most effective in areas where there is a low density of undesirable trees or brush. If a straight stream nozzle is used, start the application at the top of the targeted vegetation and spray from top to bottom in a lateral zigzag motion. Ensure that at least 50 percent of the leaves are contacted by the spray solution. For flat fan and cone nozzles and with hand-directed mist blowers, mist the application over the foliage of the targeted vegetation. Treat small, open-branched trees only from one side. If the foliage is thick or there are multiple root sprouts, apply from several sides to ensure adequate spray coverage. Prepare the desired volume of spray solution by mixing the amount of this product in water as shown in the following table.

Spray Solution:

Desired Volume	Amount of This Product								
	0.5	0.75	1	1.25	1.5	2	5	8	10
1 gal	2/3 fl oz	1 fl oz	1 1/3 fl oz	1 2/3 fl oz	2 fl oz	2 2/3 fl oz	6 1/2 fl oz	10 1/4 fl oz	13 fl oz
25 gal	1 pt	1 1/2 pt	1 qt	1 1/4 qt	1 1/2 qt	2 qt	1 1/4 gal	2 gal	2 1/2 gal
100 gal	2 qt	3 qt	1 gal	1 1/4 gal	1 1/2 gal	2 gal	5 gal	8 gal	10 gal

2 Tablespoons = 1 fl oz

For best results when using knapsack sprayers, mix the specified amount of product with water in a larger container. Fill the knapsack sprayer with the solution and add the correct amount of surfactant.

Selective Equipment

Equipment: Recirculating sprayers, shielded and hooded sprayers, wiper applicators and sponge bars.

Do not contact desirable vegetation with herbicide. Droplets, mist, foam, or splatter of the herbicide settling on desirable vegetation is likely to result in discoloration, stunting or destruction.

Better results are obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations, or when the height of weeds varies so that not all weeds are contacted. If this occurs, repeat treatment up to the labled rate may be necessary.

Shielded and Hooded Applicators: A shielded or hooded applicator directs the herbicide solution onto weeds while shielding desirable vegetation from the herbicide. Use nozzles that provide uniform coverage within the treated area. Keep shields on these sprayers adjusted to protect desirable vegetation. **Exercise extreme care to avoid contact of the herbicide with desirable vegetation.**

Wiper Applicators: Wiper applicators are devices that physically wipe appropriate amounts of this product directly onto the weed. Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation.

Adjust wiper applicators used over the top of desirable vegetation so that the wiper contact point is at least 2 inches above the desirable vegetation. Better results are obtained when more of the weed is exposed to the herbicide solution. Weeds should be a minimum of 6 inches above the desirable vegetation. Adjust the applicator height to ensure adequate contact with weeds as weeds not contacted by the herbicide solution will not be affected. Poor contact may occur when weeds are growing in dense clumps, in severe weed infestations, or when weed height varies dramatically. If this occurs, repeat treatment up to the labeled rate may be necessary.

Operate this equipment at ground speeds no more than 5 mph. Performance may be improved by reducing speed in areas of heavy weed infestations to ensure adequate wiper saturation. Better results may be obtained if two applications are made in opposite directions.

Droplets, mist, foam, or splatter of the herbicide settling onto desirable vegetation may result in discoloration, stunting or destruction. Avoid leakage or dripping onto desirable vegetation. Adjust height of applicator to ensure adequate contact with weeds. Keep wiping surfaces clean. Be aware that on sloping ground the herbicide solution may migrate, causing dripping on the lower end and drying of the wicks on the upper end of a wiper applicator.

Do not use wiper equipment when weeds are wet.

Mix only the amount of solution to be used during a one-day period as reduced activity may result from use of leftover solutions. Clean wiper parts by thoroughly flushing with water immediately after using this product.

For best results, use a nonionic surfactant at a rate of 10 percent by volume of total herbicide solution for all wiper applications.
Rope or Sponge Wick Applicators: Use solutions of 33 to 75 percent of this product in water.
Panel Applicator: Use solutions of 33 to 100 percent of this product in water.

Injection Systems
Equipment: Aerial or ground injection sprayers.

This product may be used in aerial or ground injection spray systems. It may be used as a liquid concentrate or diluted prior to injecting into the spray stream. Do not mix this product with the concentrate of other products when using injection systems.

Controlled Droplet Applicator (CDA)
Equipment: Hand-held or boom-mounted applicators that produce a spray consisting of a narrow range of droplet sizes.

The rate of this product applied per acre by vehicle-mounted CDA equipment must not be less than the amount specified on this label when applied by conventional broadcast equipment. For vehicle-mounted CDA equipment, apply 3 to 15 gallons of water per acre.

For the control of annual weeds with hand-held CDA units, apply a 20 percent solution of this product at a flow rate of 2 fl oz per minute and a walking speed of 1.5 mph (1 1/2 pints of product per acre). For control of perennial weeds, apply a 20 to 40 percent solution of this product at a flow rate of 2 fl oz per minute and a walking speed of 0.75 mph (3 to 6 pints of product per acre).

CDA equipment produces a spray pattern that is not easily visible. Exercise extreme care to avoid spray or drift contacting the foliage or any other green tissue of desirable vegetation as damage or destruction may result.

Use Sites

Use this product in noncrop areas, including airports, apartment complexes, aquatic sites, Christmas tree farms, commercial sites, Conservation Reserve Program (CRP) areas, ditch banks, driveways, dry ditches, dry canals, fencerows, golf courses, greenhouses, habitat management, industrial areas, lumber yards, manufacturing sites, municipal sites, natural areas, office complexes, ornamentals, parking areas, parks, pastures, petroleum tank farms and pumping installations, plant nurseries, public areas, railroads, rangeland, recreation areas, utility rights-of-way, roadsides, shadehouses, sod or turf seed farms, sports complexes, storage areas, substations, turfgrass areas, utility sites, warehouse areas, wildlife habitat management areas, and in grazed areas on these sites.

Aquatic Sites

This product may be applied to emerged weeds in all bodies of fresh and brackish water that may be flowing, nonflowing or transient including lakes, rivers, streams, ponds, estuaries, rice levees, seeps, irrigation and drainage ditches, canals, reservoirs, wastewater treatment facilities, wildlife habitat restoration and management areas and similar sites.

If aquatic sites are present in the noncrop area and are part of the intended treatment, read and observe the following directions:

- This product does not control plants that are completely submerged or have a majority of their foliage under water.
- There is no restriction on the use of treated water for irrigation, recreation or domestic purposes.
- Consult local and state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.
- To make aquatic applications around and within 1/2 mile of active potable water intakes, the water intake must be turned off for a minimum period of 48 hours after the application. The water intake may be turned on prior to 48 hours if the glyphosate level in the intake water is below 0.7 parts per million as determined by laboratory analysis. These aquatic applications may be made **only** in those cases where there are alternative water sources or holding ponds which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the application.
- For treatments after draw down of water or in dry ditches, allow 7 days or more after treatment before reintroduction of water to achieve maximum weed control. Apply this product within 1 day after draw down to ensure application to actively growing weeds.
- Floating mats of vegetation may require retreatment up to the labeled rate. Avoid wash off of sprayed foliage by spray boat or recreational boat backwash or by rainfall within 6 hours of application. Do not re-treat within 24 hours following the initial treatment.
- Applications made to moving bodies of water must be made while traveling upstream to prevent concentration of this herbicide in water. When making any bankside applications, do not overlap more than 1 foot into open water. Do not spray in bodies of water where weeds do not exist. The maximum application rate of 7 1/2 pints per acre must not be exceeded in any single broadcast application that is being made over water.
- When emerged infestations require treatment of the total surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in fish kill.

Restrictions:
- Do not apply this product directly to water within 1/2 mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.), or within 1/2 mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. This restriction does not apply to intermittent inadvertent overspray of water in terrestrial use sites.

Wetland Sites

This product may be applied to undesirable vegetation in and around water (aquatic areas) and wetlands found in forestry, utility rights-of-way sites or other site listed on the label, including where these sites are adjacent to or surrounding domestic water supply reservoirs, supply streams, lakes and ponds.

If wetland sites are present, read and observe the following directions:
- There is no restriction on the use of treated water for irrigation, recreation or domestic purposes.
- Consult local public water control authorities before applying this product in and around public water. Permits may be required to treat in such areas.

Restrictions:
- Do not apply this product directly to water within 1/2 mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.), or within 1/2 mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. This restriction does not apply to intermittent inadvertent overspray of water in terrestrial use sites.
- Do not spray open bodies of water where woody brush, trees and herbaceous weeds do not exist. Do not apply more than 3 3/4 quarts per acre in a single over water broadcast application except in stream crossings in utility right-of-way or where applications will result in less than 20 percent of the total water area being treated. In either of these locations, any specified rate may be applied:

Christmas Tree Plantations

Broadcast Application (Oregon and Washington Only)
Broadcast apply this product over the established Christmas tree species Douglas fir (*Pseudotsuga menziesii*), fir species (*Abies* spp.), and pine species (*Pinus* spp.) (except eastern white, loblolly, longleaf, shortleaf, slash), and spruce species (*Picea* spp.). Use 1 quart of this product per acre in 5 to 30 gallons of water per acre. For best results, add up to 10 fl oz of Entry II surfactant per acre. If using a different surfactant, follow the manufacturer's directions for use and ensure conifer safety has been adequately tested for that surfactant. Apply after trees have completed at least a full growing season since planting or transplanting.

Apply only in the fall after the formation of the final conifer resting buds or in the spring prior to initial bud swell. Final resting buds must be fully hardened and in the dormant stage. Applying this product at any other time may result in unacceptable injury to the Christmas trees. Avoid spray pattern overlap as injury may occur.

In some areas, 1 to 2 quarts of this product per acre may be used. Consult your local representative for specific use instructions if rates greater than 1 quart per acre are required.

For best results, do not use drift control additives as they may increase injury to Christmas trees.

Precautions:
- Ensure that adequate buffers are maintained to prevent drift onto nearby desirable crops or vegetation.

Restrictions:
- **Preharvest Interval:** Do not apply within 1 full year prior to tree harvest.

Cut Stump

Treat cut stumps in any noncrop site listed on this label. This product will control regrowth of freshly cut stumps and resprouts of many types of woody brush and tree species, some of which are listed below. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut trees or resprouts close to the soil surface. Apply a 50 to 100 percent solution of this product to freshly cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, make applications during periods of active growth and full leaf expansion.

When used according to directions for cut stump application, this product will control, partially control or suppress most woody brush and tree species, some of which are listed below:

Common Name	Scientific Name
alder	*Alnus* spp.
coyotebrush[1]	*Baccharis pilularis*
dogwood[1]	*Cornus* spp.
eucalyptus	*Eucalyptus* spp.
hickory[1]	*Carya* spp.
madrone, Pacific	*Arbutus menziesii*
maple[1]	*Acer* spp.
oak	*Quercus* spp.
peppertree, Brazilian	*Schinus terebinthifolius*
Australian-pine,	*Casuarina equisetifolia*
poplar[1]	*Populus* spp.
reed, giant	*Arundo donax*
saltcedar	*Tamarix ramosissima*
sweetgum[1]	*Liquidambar styraciflua*
sycamore[1]	*Platanus occidentalis*
tan oak	*Lithocarpus densiflorus*
willow	*Salix* spp.

[1]Do not use this product on these species in the state of California.

Precautions:
- Adjacent trees that are of a similar age, height and spacing may indicate shared roots.
- Injury is likely to occur to non-treated stems or trees when one tree or more that shares a common root is treated.

Restrictions:
- Do not make cut stump applications when the roots of desirable woody brush or trees may be grafted to the roots of the cut stump. Some sprouts, stems, or trees may share the same root system.

Injection and Frill (Woody Brush and Trees)

Woody vegetation may be controlled by injection or frill application of this product. Apply this product using suitable equipment that penetrates into the living tissue. Apply the equivalent of 1 mL of this product per each two to three inches of trunk diameter at breast height (DBH). This is best achieved by applying 50 to 100 percent concentration of this product either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying diluted material to a continuous frill or more closely spaced cuttings. Do not make any applications that allow runoff to occur from frilled or cut areas in species that exude sap freely. In species such as this, make frill or cuts at an oblique angle to produce a cupping effect and use a 100 percent undiluted concentration of this product. For best results, apply during periods of active growth and full leaf expansion.

This product controls the following woody species:

Common Name	Scientific Name
oak	*Quercus* spp.
poplar	*Populus spp.*
sweetgum	*Liquidambar styraciflua*
sycamore	*Platanus occidentalis*

This product suppresses the following woody species:

Common Name	Scientific Name
blackgum[1]	*Nyssa sylvatica*
dogwood	*Cornus* spp.
hickory	*Carya* spp.
maple, red	*Acer rubrum*

[1]Do not use this product on these species in the state of California.

Forestry Site Preparation

This product is for the control or partial control of woody brush, trees, and herbaceous weeds in forestry. This product is also for use in preparing or establishing wildlife openings within these sites and maintaining logging roads.

In forestry sites, use this product in site preparation prior to planting any tree species including Christmas trees, eucalyptus, hybrid tree cultivars and silvicultural nursery sites. Unless otherwise specified, make applications of this product for control or partial control of herbaceous weeds, woody brush and trees listed in the Weeds Controlled section.

Application Rates

Method of Application	Rate	Spray Volume (gal/acre)
Broadcast		
aerial	1.5 - 7.5 qt/acre	5 - 30
ground		10 - 60
Spray to Wet		
handgun, backpack	0.75 - 2%	spray to wet
mistblower	by volume	
Low Volume Directed Spray[1]		
handgun, backpack	5 - 10%	partial coverage
mistblower	by volume	

[1] For low volume directed spray applications, coverage should be uniform with at least 50% of the foliage contacted. For best results, coverage of the top one-half of the plant, including the growing tip, is important (over the top and down coverage) To ensure adequate spray coverage, spray all sides of large or tall woody brush and trees, when foliage is thick and dense, or where there are multiple sense or tall sprouts.

Use a higher rate in the rate range for control or partial control of woody brush, trees and hard to control perennial herbaceous weeds. For best results, apply to actively growing woody brush and trees after full leaf expansion and before leaf drop. Use increased rates within the rate range to control perennial herbaceous weeds from emergence up to the appearance of seedheads, flowers or berries. Use a lower rate in the rate range to control annual herbaceous weeds and actively growing perennial herbaceous weeds after seedheads, flowers or berries appear. Apply to foliage of actively growing annual herbaceous weeds anytime after emergence.

This product has no herbicidal or residual activity in the soil. Where repeat applications up to the labled rate are necessary, do not apply more than 8 quarts of product per acre per year.

Tank Mixes
This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled. When tank mixing, read and observe applicable use directions, precautions and limitations on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

Note: For forestry site preparation, make sure the tank mix product is approved for use prior to planting the desired species. Observe planting interval restrictions.

Any specified rate of this product may be used in a tank mix with the following products for forestry site preparation:

Product
Milestone VM
Garlon 3A
Garlon 4
Arsenal Applicators Concentrate
Escort
Chopper
Oust XP
Arsenal Applicators Concentrate
Arsenal Applicators Concentrate

For control of herbaceous weeds, use the lower specified tank mixture rates. For control of dense stands or difficult to control woody brush and trees, use the higher specified rates.

Aerial Application
Aerially apply this product by helicopter only in forestry sites. See Aerial Application in Application Equipment and Application Methods for more details.

Ground Application
Apply this product using suitable ground equipment for broadcast applications in forestry sites. See Ground Application in Application Equipment and Application Methods for more details. Unless otherwise specified, apply the specified rates of this product as a broadcast spray in sufficient spray volume to provide complete and uniform coverage of plant foliage. Check for even distribution throughout the spray pattern.

Hand-Held and Backpack Application
Apply this product using handgun and backpack equipment in forestry sites. See Hand-Held and Backpack Application in Application Equipment and Application Methods for more details. For spray to wet applications, coverage should be uniform and complete, but not to the point of runoff.

This product may be used for low volume directed sprays for spot treatment of trees and brush. It is most effective in areas where there is a low density of undesirable trees or brush. For flat fan and cone nozzles, spray the foliage of the targeted vegetation. Small, open branched trees need only be treated from one side. If the foliage is thick or there are multiple root sprouts, apply from several sides to ensure adequate spray coverage.

Forestry Conifer and Hardwood Release

Directed Sprays and Selective Equipment
Apply this product as a directed spray or with selective equipment in forestry conifer and hardwood sites, including Christmas tree plantations and silvicultural nurseries. A surfactant must be used with this product. Use only surfactants approved for conifer release and specified on the surfactant label as safe for use in conifer release (pine release). Using this product without a surfactant will result in reduced herbicide performance. See Mixing Directions and Application Equipment and Application Methods sections.

Avoid contact of spray drift, mist or drips with foliage, green bark or non-woody surface roots of desirable plant species.

Tank Mixes: When tank mixing, read and observe applicable use directions, precautions and limitations on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture.

Broadcast Application Outside Area of Southeastern United States
Apply this product as a broadcast application for release of Douglas fir (*Pseudotsuga menziesii*), fir (*Abies* species), hemlock (*Tsuga* species), pines (*Pinus* species) (includes all species except loblolly, longleaf, shortleaf, or slash), and California redwood (*Sequoia* species) outside the area of the southeastern United States. Apply this product as a broadcast application only after formation of final conifer resting buds in the fall or prior to initial bud swelling in the spring. Note: Except where specified, make broadcast applications of this product only where conifers have been established for more than one year.

Injury may occur to conifers treated for release, especially where spray patterns overlap or the higher labeled rate is applied. Damage can be accentuated if applications are made when conifers are actively growing, are under stress from drought, flood water, improper planting, insects, animal damage or diseases.

Apply 3/4 to 1 1/2 quarts per acre as a broadcast spray. Apply 3/4 to 1 1/8 quarts of this product per acre to release Douglas fir, pine and spruce species at the end of the first growing season (except California). Ensure all conifers are well hardened off.

A surfactant must be used with this product for optimum weed control. Use only surfactants approved for use in over the top release applications. Using this product without a surfactant will result in reduced herbicide performance. For best results, do not use a surfactant for release of hemlock species or California redwood. In mixed conifer stands, injury to these species may result if a surfactant is used. See Mixing Directions and Application Equipment and Application Methods sections.

For release of Douglas fir, a nonionic surfactant for over the top foliar spray may be used. To avoid possible conifer injury, use nonionic surfactants at 2 fl oz per acre at elevations above 1500 feet, or 1 fl oz per acre in the coastal range or at elevations below 1500 feet. Using a higher rate of surfactant may result in unacceptable conifer injury. Ensure the nonionic surfactant has been adequately tested for safety to Douglas fir before using.

Tank Mixes with Oust XP: Apply 3/4 to 1 1/2 quarts of this product with the labeled rate of Oust XP per acre to release jack pine and white. Use the labeled rate of Oust XP per acre with this product to release white pine. Make applications to actively growing weeds as a broadcast spray over the top of established conifers. Make applications after formation of conifer resting buds in the late summer or fall.

Tank Mixes with Arsenal Applicators Concentrate: Apply 3/4 to 1 1/8 quarts of this product with the labeled rate of Arsenal Applicators Concentrate per acre to release Douglas fir. Apply 1 1/2 quarts of this product with the labeled rate of Arsenal Applicators Concentrate per acre to release balsam fir and red spruce.

In **Maine** and **New Hampshire**, apply up to 2 1/4 quarts of this product per acre to control or suppress difficult to control hardwood species. For the release of red pine, balsam fir, red spruce, white spruce, Norway spruce, and black spruce with dense tough to control brush, and where maples make up a large component of the undesirable trees, this product may be tank mixed with the labeled rate of Arsenal Applicators Concentrate and the labeled rate of Oust XP per acre. Apply this mix as a broadcast spray.

Broadcast Application in Southeastern United States
Apply this product as a broadcast application for release of loblolly pine (*Pinus taeda*), eastern white pine (*Pinus strobus*), shortleaf pine (*Pinus echinata*), slash pine (*Pinus elliottii*), Virginia pine (*Pinus virginiana*), and longleaf pine (*Pinus palustris*) in the southeastern United States.

Apply 1 1/8 to 1 7/8 quarts of this product per acre as a broadcast spray during late summer or early fall after the conifers have hardened off. For applications at the end of the first growing season, use 3/4 quart of this product alone or in a tank mix.

Tank Mixes with Arsenal Applicators Concentrate: For conifer release, apply 3/4 to 1 1/2 quarts of this product with the labeled rate of Arsenal Applicators Concentrate per acre as a broadcast spray. Use only on conifer species that are labeled for over the top spray for both products. Use the higher specified rates for dense tough to control wood brush and trees.

Herbaceous Release
When applied as directed, this product plus listed residual herbicides provide postemergence control of the annual weeds and control or suppression of the perennial weeds listed in this label, and residual control of the weeds listed in the residual herbicide label. Make applications to actively growing weeds as a broadcast spray over the top of labeled conifers.

Use a surfactant labeled for use in over the top herbaceous release applications. Using this product without a surfactant will result in reduced herbicide performance. See Mixing Directions and Application Equipment and Application Methods sections on this label.

Weed control may be reduced if spray solution water volumes exceed 25 gallons per acre for these treatments.

Tank Mixes with Oust XP: Apply 12 to 18 fl oz of this product with the labeled rate of Oust XP per acre to release loblolly pines. Apply 9 to 12 fl oz of this product with the labled rate of Oust XP per acre to release slash pines.

Tank Mix with Atrazine: Apply 3/4 quarts of this product with 4 lb ai of atrazine per acre to release Douglas fir. Apply only over Douglas fir that has been established for at least one full growing season. Apply in the early spring, usually mid-March through early April. Injury will occur if applications are made after bud swell in the spring. For this use, do not add surfactant to the tank mix.

In **Maine** and **New Hampshire**, for release of red pine, balsam fir, red spruce, white spruce, Norway spruce, and black spruce with heavy grass and herbaceous weeds infesting the site, up to 2 1/4 quarts of this product per acre may be tank mixed with the labled rate of Oust XP to control grass, herbaceous weeds and woody brush. Apply this mix as a broadcast spray.

Mid-Rotation Conifer Release and Spot Treatments for Crop Tree Release and Timber Stand Improvement

This product is applied as a ground broadcast or directed spray application for mid-rotation release applications under the canopy of pines (and other conifers) and hardwoods. Make applications using application techniques that prevent or minimize direct contact to the foliage of crop trees (including in stands of pine, other conifers, or hardwood). This may be accomplished using directed sprays and ground equipment with nozzles oriented to target only undesirable understory vegetation below the crop tree canopy. This product is applied as a spot, individual plant treatment for woody and herbaceous weeds (see Hand-Held and Backpack Application in Application Equipment and Application Methods section). When making spot applications, do not allow spray to contact the foliage of desirable crop trees.

Broadcast Application for Control of Undesirable Competitive Vegetation in Larch (*Larix* spp.) Plantations in Maine

Apply this product to control or reduce competition from undesirable vegetation in Larch (*Larix* spp.) plantations in the state of Maine.

Application Timing
Apply only after lignification has occurred in 50% or more of the current year's terminal growth.

Application Directions
Broadcast Spray: Use 1 to 3 quarts of this product per acre. Apply in a total spray volume of 10 to 60 gallons per acre using ground equipment or 5 to 15 gallons per acre if applied aerially. Up to 30 fl oz of Entry II surfactant may be added.

Directed Sprays: This product may be applied as a directed spray for competitive release of larch. Avoid contact of spray drift, mist or drips with foliage, green bark or non-woody surface roots of desirable plants. See Application Equipment and Application Methods of the product label.

Injury to larch may occur, especially where spray patterns overlap or higher labeled rates of this product or surfactant were applied. Damage can be accentuated if application is made when larch is actively growing or is under stress. Make applications only if some level of injury to larch is acceptable.

Noncrop Areas and Industrial Sites

See the rate tables in the Annual Weeds, Perennial Weeds, and Woody Brush and Trees sections for specific application rates. This product has no herbicidal or residual activity in the soil. Where repeat applications up to the labeled rate are necessary, do not apply more than 8 quarts of this product per acre per year.

Use a higher rate in the rate range for control or partial control of woody brush, trees, and hard to control perennial herbaceous weeds. For best results, apply to actively growing woody brush and trees after full leaf expansion and before fall color and leaf drop. Use increased rates within the rate range for difficult to control species, where dense stands occur, or where conditions for control are not ideal and to control perennial herbaceous weeds from emergence up to the appearance of seedheads, flowers or berries. Use a lower rate in the rate range to control annual herbaceous weeds and actively growing perennial herbaceous weeds after seedheads, flowers or berries appear. Apply to foliage of actively growing annual herbaceous weeds anytime after emergence.

Tank Mixing for Noncrop Areas
This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled. When tank mixing, read and observe applicable use directions, precautions and limitations on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

Maintain good agitation at all times during the mixing process and application. Ensure that the tank mix product(s) is well mixed with the spray solution before adding this product. Mix only the amount of spray solution that will be used during the same day. Reduced weed control may result if a tank mixture is allowed to stand overnight. If the spray mix is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed.

Weed Control, Trim and Edge, and Bare Ground
This product may be used in general noncrop and non-food areas. It may be applied with any application equipment described in this label. This product may be used to trim and edge around objects in noncrop sites, for spot treatment of unwanted vegetation, and to eliminate unwanted weeds growing in established shrub beds or ornamental plantings. This product may be used prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects.

To maintain bare ground, repeated applications up to the labeled rate of this product may be used.

This product provides control of emerged annual weeds and control or partial control of emerged perennial weeds, woody brush and trees when applied in a tank mix to bare ground.

Turfgrass Renovation, Seed or Sod Production

This product controls most existing vegetation prior to renovating turfgrass areas or establishing turfgrass grown for seed or sod. For maximum control of existing vegetation, delay planting or sodding to determine if any regrowth from escaped underground plant parts occurs. When repeat treatments are necessary, sufficient regrowth must be attained prior to application. For warm season turfgrass, including bermudagrass, summer or fall applications provide the best control. Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at last one regular mowing to allow sufficient grown for good interception of the spray.

Do not disturb soil or underground plant parts before treatment. Delay tillage or renovation techniques, including vertical mowing, coring, or slicing, for seven days after application to allow translocation into underground plant parts.

Desirable turfgrass may be planed following the above procedures.

Hand-held equipment may be used for spot treatment of unwanted vegetation growing in existing turfgrass. Broadcast or hand-held equipment may be used to control sod remnants or other unwanted vegetation after sod is harvested.

Do not feed or graze turfgrass grown for seed or sod production for eight weeks following application.

Ornamentals and Plant Nurseries

Post-Direct and Trim and Edge
This product may be used as a post-directed spray around established woody ornamental species, including arborvitae, azalea, boxwood, crabapple, euonymus, fir, Douglas fir, jojoba, hollies, lilac, magnolia, maple, oak, provet, pine, spruce and yew. This product may also be used to trim and edge around trees, buildings, sidewalks and roads, potted plants and other objects in a nursery setting.

Desirable plants may be protected from the spray solution by using shields or coverings made of cardboard or other impermeable material. Do not use this product for any over the top broadcast spray in ornamentals. Exercise care to avoid contact of spray, drift or mist with foliage or green bark of established ornamental species.

Site Preparation
This product may be used prior to planting any ornamental, nursery or Christmas tree species.

Greenhouse/Shadehouse
This product may be used to control weeds growing in and around greenhouses and shadehouses. Desirable vegetation must not be present during application and air circulation fans must be turned off.

Wildlife Habitat Management

This product may be used to control exotic and other undesirable vegetation in habitat management and natural areas, including rangeland and wildlife refuges. Apply to allow recovery of native plant species, prior to planting desirable native species, and for broad spectrum vegetation control. Apply spot treatments to selectively remove unwanted plants for habitat enhancement.

Wildlife Food Plots
This product may be used as a site preparation treatment to control annual and perennial weeds prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area. If tillage is needed to prepare a seedbed, wait 7 days after application before tilling to allow translocation into underground plant parts.

Hollow Stem Injection

Apply this product to control giant knotweed (*Polygonum sachalinense*), Japanese knotweed (*Polygonum cuspidatum*), or other invasive knotweeds using individual stem treatment. Use a hand-held injection device that delivers the specified amount of this product into these hollow stem plants.

Make a hole through both sides of the stem about 6 inches above the ground, just below a node, using an awl or other pointed tool. Inject 5 mL of undiluted product directly into this hole in the hollow stem. Treat each stem of the knotweed plant.

Restrictions:
- Do not apply more than a total of 8 quarts of this product per acre for all treatments combined. At 5 mL per stem, 7.5 quarts will treat approximately 1420 stems per acre.

Parks, Recreational and Residential Areas

Use this product in parks, recreational and residential areas. Apply it with any application equipment described in this label. Use this product to trim and edge around trees, fences, paths, around buildings, sidewalks, and other objects in these areas. This product may be used for spot treatment of unwanted vegetation, eliminate unwanted weeds growing in established shrub beds or ornamental plantings, and prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects.

All of the label instructions apply to park and recreational areas.

Railroads

All of the instructions in the Noncrop Areas and Industrial Sites and Roadside sections apply to railroads.

Bare Ground, Ballast and Shoulders, Crossings, and Spot Treatment
Use this product to maintain bare ground on railroad ballast and shoulders. Repeat applications up to the labled rate of this product may be used as weeds emerge to maintain bare ground. Use this product to control tall growing weeds to improve line of sight at railroad crossings and reduce the need for mowing along rights-of-way.

Brush Control
Apply 3 to 8 quarts of this product per acre as a broadcast spray, using boom-type or boomless nozzles. Applications up to 80 gallons of spray solution per acre may be used. Apply a 3/4 to 1.5 percent solution of this product when using high volume spray to wet applications. Apply a 5 to 10 percent solution of this product when using low volume directed sprays for spot treatment.

Roadsides

All of the instructions in the Noncrop Areas and Industrial Sites and Railroads sections apply to roadsides.

Shoulder Treatments
Use this product on road shoulders. Apply it with boom sprayers, shielded boom sprayers, high volume off-center nozzles, OC nozzle clusters, manifold nozzle systems, hand-held equipment, and similar equipment, and under-deck mowing plus herbicide systems.

Guardrails and Other Obstacles to Mowing
Use this product to control weeds growing under guardrails and around signposts and other objects along the roadside.

Spot Treatment
Use this product as a spot treatment to control unwanted vegetation growing along roadsides.

Tank Mixes: This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled and for residual weed control. Follow applicable use directions, precautions and limitations on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

Chemical Mowing
Perennials: This product suppresses perennial grasses listed in this section to serve as a substitute for mowing. Use 4.5 fl oz of this product per acre when treating Kentucky bluegrass, tall fescue, fine fescue, orchardgrass, or quackgrass. Apply 12 fl oz of this product per acre when treating bermudagrass. Apply 4.5 to 8 fl oz of this product per acre when treating bahiagrass. Use the higher labled rates when grass is under heat stress. Apply 3 pints of this product per acre when treating torpedograss or paragrass. Apply treatments in 10 to 20 gallons of spray solution per acre.

Annuals: For growth suppression of some annual grasses, including annual ryegrass, wild barley and wild oats growing in coarse turfgrass on roadsides or other industrial areas, apply 3 to 3.75 fl oz of this product in 10 to 40 gallons of spray solution per acre. Apply when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments may cause injury to the desired grasses.

Release of Dormant Bermudagrass or Bahiagrass
Apply 6 to 48 fl oz of this product per acre in 10 to 40 gallons of water per acre. Use only in areas where bermudagrass or bahiagrass are desirable groundcovers and where some temporary injury or discoloration can be tolerated. Treatments of more than 12 fl oz per acre may result in injury or delayed greenup in highly maintained areas, including golf courses and lawns.

For best results on winter annuals, treat when weeds are in an early growth stage (less than 6 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is in or beyond the 4- to 6-leaf stage.

Tank Mixes: This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled and for residual weed control. When tank mixing, read and follow all applicable use directions, precautions, and limitation on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

Actively Growing Bermudagrass
Use this product to control or partially control many annual and perennial weeds for effective release of actively growing bermudagrass. Use only in areas where some temporary injury or discoloration can be tolerated. Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment, but regrowth will occur under moist conditions. Repeat applications of the tank mix in the same season are not recommended because severe injury may occur.

Apply up to 2.25 pints of this product in 10 to 40 gallons of spray solution per acre. Use the lower rate when treating annual weeds less than 6 inches in height (or runner length). Use the higher labled rate as weeds increase in size or as they approach flower or seedhead formation.

Actively Growing Bahiagrass
For suppression of vegetable growth and seedhead inhibition of bahiagrass for approximately 45 days, apply 4.5 fl oz of this product in 10 to 40 gallons of water per acre. Apply one to two weeks after full greenup or after mowing to a uniform height of 3 to 4 inches. Make this application prior to seedhead emergence. For suppression up to 120 days, apply 3 fl oz of this product per acre, followed by an application of 1.5 to 3 fl oz per acre about 45 days later. Make no more than two applications per year.

Tank Mixes: This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled and for residual weed control. When tank mixing, read and follow all applicable use directions, precautions, and limitation on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

Utility Sites

Use this product for control of brush, tree, and weed control and side trimming in areas including electrical power, pipeline and telephone rights-of-ways, and other sites associated with these rights-of-ways including substations, roadsides, and railroads. This product may be applied with any application equipment or method described on this label unless specifically prohibited.

Tank Mixes: This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled and for residual weed control. When tank mixing, read and follow all applicable use directions, precautions, and limitation on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

Rangelands

Use this product to control or suppress many annual weeds growing in perennial cool and warm season grass rangelands. Preventing weed seed production is critical to the successful control of annual grassy weeds invading these perennial grass sites. Eliminate most of the viable seeds with follow up applications in sequential years. Delay grazing of treated areas to encourage growth of desirable perennials. Allowing desirable perennials to flower and reseed in the treated area will encourage successful transition.

***Bromus*:** Use this product to control or suppress downy brome/cheatgrass (*Bromus tectorum*), Japanese brome (*Bromus japonicus*), soft chess (*Bromus mollis*), cheat (*Bromus secalinus*), cereal rye, and jointed goatgrass. Apply 6 to 12 fl oz of this product per acre as a broadcast treatment.

For best results, coincide treatments with early seedhead emergence of the most mature plants. Delaying the application until this growth stage maximizes the emergence of other weedy grass flushes. Make applications to the same site each year until seed banks are depleted and the desirable perennial grasses become established on the site.

Medusahead: Apply 12 fl oz of this product per acre to control or suppress medusahead at the 3-leaf stage when plants are actively growing. Delaying applications beyond this stage results in reduced or unacceptable control. Repeat applications in subsequent years to eliminate the seed bank before reestablishing desirable perennial grasses. Apply in the fall or spring.

Apply by ground or air. Make aerial applications for these uses with fixed wing or helicopter equipment. For aerial applications, apply in 2 to 10 gallons of water per acre. For ground applications, apply in at least 10 to 20 gallons of water per acre.

Spot Treatment and Wiper Application
Apply this product in rangeland, pastures, or industrial sites as a spot treatment or over the top of desirable grasses using wiper applicators to control tall weeds. See Wiper Application section for specific instructions. Make repeat applications up to the labeled rate in the same area at 30-day intervals.

The entire site or any portion of it may be treated when using 2.25 quarts or less of this product per acre for spot treatments or wiper applications. No more than 10 percent of the total site may be treated at any one time when using more than 2.25 quarts of this product per acre for spot treatments or wiper applications. To achieve maximum performance, remove domestic livestock before application and wait 7 days after application before grazing livestock or harvesting for feed.

Pastures

Type of Pastures: Bahiagrass, bermudagrass, bluegrass, brome, fescue, orchardgrass, ryegrass, timothy, wheatgrass, alfalfa, clover

Spot Treatment and Wiper Application
This product may be applied as a spot treatment or as a wiper application. Make applications in the same area at 30-day intervals. See Wiper Application section for specific instructions.

Precautions:
- For spot treatment and wiper applications, the entire field or any portion of it may be treated when using a rate of 2.25 quarts or less per acre.
- To achieve maximum performance, remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.

Restrictions:
- Do not treat more than 10 percent of any acre at one time if applying more than 2.25 quarts per acre as a spot treatment or wiper application.

Preplant, Preemergence, and Pasture Renovation
Apply this product prior to planting or emergence of forage grasses and legumes. In addition, this product may be used to control perennial pasture species listed on this label prior to re-planting.

Precautions:
- If the application rates total 2.25 quarts or less per acre, there is no waiting period between treatment and feeding or livestock grazing is required.
- If the application rates total more than 2.25 quarts per acre, remove domestic livestock before application and wait eight weeks after application before grazing or harvesting.

Restrictions:
- Crops listed for treatment in this label may be planted into the treated area at any time. Wait 30 days between application and planting for all other crops.

Bamboo

Use this product on roadside rights-of way to control or suppress bamboo. Use the higher rate in the rate range for dense stands and larger plants. Mow or cut bamboo and allow it to resprout to have sufficient foliage in order for the spray solution to completely cover the foliage. Optimum control or suppression of bamboo is achieved when this product is applied between August and October (prior to frost). One application of this product plus a surfactant will not eradicate bamboo. Several mowings and applications are required to completely control bamboo.

Apply the specified rate plus a surfactant (1/4 to 1/2% v/v), such as a nonionic surfactant containing 80% active ingredient or more. Using this product without a surfactant results in reduced performance.

Application Method	Rate	Spray Volume (gal/acre)
ground broadcast	1.5 – 7.5 qt/acre	10 - 60
handgun spray to wet	0.75 – 2%	spray to wet
handgun or backpack low volume directed spray	4 – 10%	spray to cover

Restrictions:
- Do not apply more than a total of 8 quarts of this product per acre per year.

Annual Weeds, Perennial Weeds, and Woody Brush and Trees

Annual Weeds

Apply 24 fl oz of this product per acre if weeds are less than 6 inches in height or runner length. Use 1.25 to 3 quarts of this product per acre if weeds are more than 6 inches in height or runner length or when weeds are growing under stressed conditions. Use a higher rate in the rate range for tough to control species regardless of the size of the weed at the time of application. Treat tough to control weeds when they are relatively small. Tank mix this product with only those products that are labeled for application at the target site. Refer to the label of the tank mix partner for use sites and application rates.

Apply a 0.4 percent solution of this product as a spray to wet application to weeds less than 6 inches in height or runner length. Use a 0.7 to 1.5 percent solution for annual weeds more than 6 inches tall or for smaller weeds growing under stressed conditions. Use the higher concentration for tough to control species or for weeds more than 24 inches tall. Apply prior to seedhead formation in grass or bud formation in broadleaf weeds.

Use a 4 to 7 percent solution of this product for low volume directed spray applications. Spray coverage should be uniform with at least 50 percent of the foliage contacted. For best results, cover the top one-half of the plant. To ensure adequate spray coverage, spray both sides of large or tall weeds when foliage is thick and dense or where there are multiple sprouts.

Common Name	Scientific Name
anoda, spurred	*Anoda cristata*
balsamapple[1]	*Momordica charantia*
barley	*Hordeum vulgare*
barnyardgrass	*Echinochloa crus-galli*
bassia, fivehook	*Bassia hyssopifolia*
bittercress	*Cardamine* spp.
bluegrass, annual	*Poa annua*
bluegrass, bulbous	*Poa bulbosa*
brome, downy/cheatgrass	*Bromus tectorum*
brome, Japanese	*Bromus japonicus*
buttercup	*Ranunculus spp.*
Carolina foxtail	*Alopecurus carolinianus*
Carolina geranium	*Geranium carolinianum*
castorbean	*Ricinus communis*
chamomile, mayweed	*Anthemis cotula*
cheat	*Bromus secalinus*
chervil	*Anthriscus cerefolium*
chickweed	*Cerastium vulgatum*
cocklebur, common	*Xanthium strumarium*
coreopsis, plains	*Coreopsis tinctoria*
corn, volunteer	*Zea mays*
crabgrass	*Digitaria* spp.
dwarfdandelion, Virginia	*Krigia virginica*
eastern mannagrass	*Glyceria* spp.
eclipta	*Eclipta prostrata*
falsedandelion	*Pyrrhopappus carolinianus*
falseflax, smallseed	*Camelina microcarpa*
fiddleneck	*Amsinckia* spp.
field pennycress	*Thlaspi arvense*
fleabane, annual	*Erigeron annuus*
fleabane, hairy	*Conyza bonariensis*
fleabane, rough	*Erigeron strigosus*
Florida pusley	*Richardia scabra*
foxtail	*Setaria* spp.
goatgrass, jointed	*Aegilops cylindrica*
goosegrass	*Eleusine indica*
groundsel, common	*Senecio vulgaris*
henbit	*Lamium amplexicaule*
horseweed/marestail	*Conyza canadensis*
itchgrass	*Rottboellia cochinchinensis*
johnsongrass	*Sorghum halepense*
junglerice	*Echinochloa colona*
knotweed	*Polygonum* spp.
kochia[2]	*Kochia scoparia*
lambsquarters, common	*Chenopodium album*
mallow, little	*Malva parviflora*
medusahead	*Taeniatherum caput-medusae*
morningglory	*Ipomoea* spp.
mustard, blue	*Chorispora tenella*
mustard, tumble	*Sisymbrium altissimum*
mustard, wild	*Sinapis arvensis*
oats, wild	*Avena fatua*
panicum, fall	*Panicum dichotomiflorum*
pigweed, redroot	*Amaranthus retroflexus*
pigweed, smooth	*Amaranthus hybridus*
prickly lettuce	*Lactuca serriola*
puncturevine	*Tribulus terrestris*
purslane, common	*Portulaca oleracea*
ragweed, common	*Ambrosia artemisiifolia*
ragweed, giant	*Ambrosia trifida*
rocket, London	*Sisymbrium irio*
Russian-thistle	*Salsola tragus*
rye, cereal	*Secale cereale*
ryegrass, Italian[3]	*Lolium perenne*
sandbur, field	*Cenchrus spinifex*
sesbania, hemp	*Sesbania herbacea*
shattercane	*Sorghum bicolor*
shepherd's-purse	*Capsella bursa-pastoris*
sicklepod	*Senna obtusifolia*
signalgrass, broadleaf	*Urochloa platyphylla*
smartweed, Pennsylvania	*Polygonum pensylvanicum*
sowthistle, annual	*Sonchus oleraceus*
Spanishneedles[3]	*Bidens bipinnata*
speedwell, corn	*Veronica arvensis*
speedwell, purslane	*Veronica peregrina*
sprangletop	*Leptochloa* spp.
spurge, annual	*Chamaesyce* spp.
spurge, prostrate	*Chamaesyce humistrata*
spurge, spotted	*Chamaesyce maculata*
spurry, umbrella	*Holosteum umbellatum*
stinkgrass	*Eragrostis cilianensis*
sunflower, common	*Helianthus annuus*
tansymustard, pinnate	*Descurainia pinnata*
teaweed/sida, prickly	*Sida spinosa*
Texas panicum	*Panicum* spp.

Common Name (Cont.)	Scientific Name
velvetleaf	*Abutilon theophrasti*
Virginia pepperweed	*Lepidium virginicum*
wheat	*Triticum aestivum*
witchgrass	*Panicum capillare*
woolly cupgrass	*Eriochloa villosa*
yellow rocket	*Barbarea vulgaris*

[1]Apply with hand-held equipment only.
[2]Do not treat kochia in the button stage.
[3]Apply 3 pints of product per acre.

Perennial Weeds

Best results are obtained when perennial weeds are treated after they reach the reproductive stage of growth (seedhead initiation in grasses and bud formation in broadleaves). Best results are obtained when non-flowering plants are treated when they reach a mature stage of growth. In many situations, applications are required prior to these growth stages. Under these conditions, use a higher rate in the rate range.

When using spray to wet treatments with hand-held equipment, ensure thorough coverage of the plant. For best results, use a 1.5 percent solution on harder to control perennials including bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

Use a 4 to 7 percent solution of this product in low volume directed spray applications. Spray coverage should be uniform with at least 50 percent of the foliage contacted. For best results, cover the top one-half of the plant. To ensure adequate spray coverage, spray both sides of large or tall weeds when foliage is thick and dense or where there are multiple sprouts.

Allow 7 days or more after application before tillage.

Common Name	Scientific Name
alfalfa	*Medicago sativa*
alligatorweed[1]	*Alternanthera philoxeroides*
anise/fennel	*Foeniculum vulgare*
artichoke, Jerusalem	*Helianthus tuberosus*
bahiagrass	*Paspalum notatum*
beachgrass, European	*Ammophila arenaria*
bentgrass	*Agrostis* spp.
bermudagrass	*Cynodon dactylon*
bindweed, field	*Convolvulus arvensis*
bluegrass, Kentucky	*Poa pratensis*
blueweed, Texas	*Helianthus ciliaris*
brackenfern	*Pteridium aquilinum*
brome, smooth	*Bromus inermis*
bursage, woollyleaf	*Ambrosia grayi*
canarygrass, reed	*Phalaris arundinacea*
cattail	*Typha* spp.
clover, red	*Trifolium pratense*
clover, white	*Trifolium repens*
cogongrass	*Imperata clylindrica*
cordgrass-	*Spartina spp.*
cutgrass, giant[1]	*Zizaniopsis miliacea*
dallisgrass	*Paspalum dilatatum*
dandelion	*Taraxacum officinale*
dock, curly	*Rumex crispus*
dogbane, hemp	*Apocynum cannabinum*
fescue	*Festuca* spp.
fescue, tall	*Lolium arundinaceum*
German ivy	*Senecio mikanioides*
guineagrass	*Urochloa maxima*
horsenettle	*Solanum carolinense*
horseradish	*Armoracia rusticana*
iceplant, crystalline	*Mesembryanthemum crystallinum*
johnsongrass-	*Sorghum halepense*
kikuyugrass	*Pennisetum clandestinum*
knapweed, Russian	*Acroptilon repens*
lantana, largeleaf-	*Lantana camara*
lespedeza, common	*Kummerowia striata*
lespedeza, sericea-	*Lespedeza cuneata*
loosestrife, purple	*Lythrum salicaria*
lotus, American	*Nelumbo lutea*
maidencane	*Panicum hemitomon*
milkweed	*Asclepias* spp.
muhly, wirestem	*Muhlenbergia frondosa*
mullein, common	*Verbascum thapsus*
napiergrass	*Pennisetum purpureum*
nightshade, silverleaf	*Solanum elaeagnifolium*
nutsedge, purple	*Cyperus rotundus*
nutsedge, yellow	*Cyperus esculentus*
orchardgrass	*Dactylis glomerata*
pampasgrass	*Cortaderia selloana*
paragrass	*Urochloa mutica*
phragmites[2]	*Phragmites* spp.
poison-hemlock	*Conium maculatum*
quackgrass	*Elymus repens*
redvine	*Brunnichia ovata*
reed, giant	*Arundo donax*
ryegrass, perennial	*Lolium perenne*
smartweed, swamp	*Polygonum amphibium*
sowthistle, perennial	*Sonchus arvensis*
spatterdock	*Nuphar lutea*
starthistle, yellow-	*Centaurea solstitialis*
sweet potato, wild[1]	*Ipomoea pandurata*
thistle, artichoke	*Cynara cardunculus*
thistle, Canada	*Cirsium arvense*
timothy	*Phleum pratense*
torpedograss[1]-	*Panicum repens*
trumpetcreeper	*Campsis radicans*
tules, common	*Scirpus acutus*
vaseygrass	*Paspalum urvillei*
velvetgrass	*Holcus* spp.
water fern[3]	*Salvinia spp*
waterhyacinth	*Eichornia crassipes*
waterlettuce	*Pistia stratiotes*
waterprimrose	*Ludwigia* spp.
wheatgrass, western	*Pascopyrum smithii*

[1] Partial control.
[2] Partial control in southeastern states.
[3]Not for use in California

Woody Brush and Trees

Apply this product after full leaf expansion unless otherwise directed. Use the higher labeled rate for larger plants and/or dense areas of growth. On vines, use the higher labled rate for plants that have reached the woody stage of growth. Best results are obtained when application is made in late summer or fall after fruit formation.

In arid areas, best results are obtained when applications are made in the spring or early summer when brush species are at high moisture content and are flowering.

Ensure thorough coverage when using hand-held equipment.

See Low Volume Directed Spray Application section of label. Spray coverage should be uniform with at least 50 percent of the foliage contacted. For best results, cover the top half to 2/3 of the plant foliage. Spray both sides of large or tall woody brush and trees to ensure adequate spray coverage when foliage is thick and dense or where there are multiple sprouts. Symptoms may not appear prior to frost or senescence with fall treatments.

Allow seven days or more after application before tillage, mowing or removal. Repeat treatments up to the labeled rate may be necessary to control plants regenerating from underground parts or seed. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Reduced performance may result if fall treatments are made following a frost.

Note: If brush has been mowed or tilled, or trees have been cut, do not treat until regrowth has reached the specified stage of growth.

This product will control, partially control, or suppress the following woody brush and trees.

Common Name	Scientific Name
alder	*Alnus* spp.
ash[1]	*Fraxinus* spp.
aspen, quaking	*Populus tremuloides*
bearclover, bearmat	*Ceanothus prostratus*
beach	*Fagus* spp.
birch	*Betula* spp.
bittercherry	*Prunus emarginata*
blackberry	*Rubus* spp.
blackgum	*Nyssa sylvatica*
blue gum, Tasmanian	*Eucalyptus globulus*
brackenfern	*Pteridium aquilinum*
broom, French	*Genista monspessulana*
broom, Scotch	*Cytisus scoparius*
buckwheat, California[1]	*Eriogonum fasciculatum*
cascara[1]	*Frangula purshiana*
catclaw-vine[1]	*Macfadyena unguis-cati*
ceanothus	*Ceanothus* spp.
chamise	*Adenostoma fasciculatum*
cherry	*Prunus* spp.
cherry, black	*Prunus serotina*
cherry, pin	*Prunus pensylvanica*
copperleaf, hophornbeam	*Acalypha ostryifolia*
coyotebrush	*Baccharis pilularis*
deer vetch	*Lotus unifoliolatus*
dewberry, southern	*Rubus trivialis*
dogwood	*Cornus* spp.
elderberry	*Sambucus nigra*
elm[1]	*Ulmus* spp.
gorse	*Ulex europaeus*
hasardia[1]	*Haplopappus squamosus*
hawthorn	*Crataegus* spp.
hazel	*Corylus* spp.
hickory	*Carya* spp.
holly, Florida	*Schinus terebinthifolius*

Common Name (Cont.)	Scientific Name
honeysuckle	*Lonicera* spp.
hornbeam, American	*Carpinus caroliniana*
kudzu	*Pueraria montana*
locust, black[1-]	*Robinia pseudoacacia*
madrone, Pacific	*Arbutus menziesii*
manzanita	*Arctostaphylos* spp.
maple	*Acer* spp.
maple, red[1]	*Acer rubrum*
maple, sugar	*Acer saccharum*
maple, vine[1]	*Acer circinatum*
monkeyflower[1]	*Mimulus guttatus*
oak	*Quercus* spp.
oak, black[1]	*Quercus kellogia*
oak, pin	*Quercus palustris*
oak, post	*Quercus stellata*
oak, red	*Quercus rubra*
oak, southern red	*Quercus falcata*
oak, white[1]	*Quercus alba*
peppertree, Brazilian	*Schinus terebinthifolius*
persimmon[1]	*Diospyros* spp.
pine	*Pknus* spp.
poison-ivy, eastern	*Toxicodendron radicans*
poison-oak	*Toxicodendron* spp.
poison-sumac[1]	*Toxicodendron vernix*
prunus	*Prunus* spp.
raspberry	*Rubus* spp.
redbud, eastern-	*Cercis canadensis*
rose, multiflora-	*Rosa multiflora*
Russian-olive	*Elaeagnus angustifolia*
sage,: black, white	*Salvia* spp.
sagebrush, California	*Artemisia californica*
salmonberry	*Rubus spectabilis*
saltcedar[1-]	*Tamarix ramosissima*
saltbush, sea myrtle	*Baccharis halimifolia*
sassafras-	*Sassafras albidum*
sourwood[1]	*Oxydendrum arboreum*
sumac, smooth[1]	*Rhus glabra*
sumac, dwarf[1]	*Rhus copallinum*
sweetgum-	*Liquidambar styraciflua*
swordfern[1]	*Polystichum munitum*
tallowtree, Chinese-	*Triadica sebifera*
oak, tanbark resprouts	*Lithocarpus densiflorus*
thimbleberry, western	*Rubus parviflorus*
tobacco, tree[1]	*Nicotiana glauca*
trumpetcreeper-	*Campsis radicans*
Virginia-creeper[1]	*Parthenocissus quinquefolia*
waxmyrtle, southern[1]	*Myrica cerifera*
willow-	*Salix* spp.
yellow-poplar [1-]	*Liriodendron tulipifera*
yerba santa	*Eriodictyon californicum*

[1]Partial control

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, to the extent permitted by law, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT PERMITTED BY LAW, Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. To the extent permitted by law, all such risks shall be assumed by buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

(1) Refund of purchase price paid by buyer or user for product bought, or
(2) Replacement of amount of product used.

To the extent permitted by law, Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or Limitation of Remedies in any manner.

® ™ Trademarks of Dow AgroSciences, DuPont or Pioneer and their affiliated companies or respective owners

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label code: CD02-148-020
Replaced label: D02-148-007
LOES number: 010-01471

EPA accepted 11/27/18

Revisions

1. Updated the trademark line to read, "® ™ Trademarks of Dow AgroSciences, DuPont or Pioneer and their affiliated companies or respective owners"
2. Add "Caution" to the Precautionary Statements and combine the statements into one paragraph.
3. Under Rainfastness – revised sentence to read, "Heavy rainfall soon… repeat application up to the labeled rate may be required.
4. Revised 2nd paragraph of Directed Sprays to read, "Injury to larch may occur especially where spray patterns overlap or higher labeled rates of this…"
5. Removed rates and application method from table of Tank Mix Partners for Forestry Sites.
6. Broadcast Applications Outside Areas of Southeastern United States revised to read, "…overlap or the higher labeled rate is applied."
7. Chemical Mowing revised sentence to read, "Repeat applications of the tank mix in the same season are not recommended because severe injury may occur."
8. Add missing table for Hand Held Sprayers to sub-label B
9. Add following statements to Wiper Applications: "Rope or Sponge Wick applications: Use solutions of 33 to 75 percent of this product in water." "Panel Applications: Use solutions of 33 to 100 percent of this product in water."
10. Correct typo under "Hollow Stem Injection" "Do not apply more than a total of 7.5 quarts of this product…"
11. Update Mode of Action banner to reflect provisions in PR Notice 2017-01.

MERIT® 2F

INSECTICIDE

Specimen Label

* ***For Foliar and systemic insect control in turfgrass (including sod farms), landscape ornamentals, fruit and nut trees and interior plantscapes.***

ACTIVE INGREDIENT:

*Imidacloprid,1-[(6-Chloro-3-pyridinyl)methyl]-*N*-nitro-2-imidazolidinimin . . .	21.4%
OTHER INGREDIENTS:	78.6%
Total:	100.0%

*Protected by U.S. Patent No. 4,742,060
Contains 2 pounds of imidacloprid per gallon. **SHAKE WELL BEFORE USING**

EPA Reg. No. 432-1312
EPA Est. No indicated by 2nd and 3rd digits of the batch number on this package.
(19) = 3125-MO-1 (65) = 432-TX-1 (66) = 264-MO-02

STOP - Read the label before use. Keep out of reach of children.

CAUTION

PRECAUCION AL USUARIO: Si usted no puede leer o entender inglés, no use este producto hasta que la etiqueta le haya sido explicada ampliamente.

(TO THE USER: If you cannot read or understand English, do not use this product until the label has been fully explained to you.)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Keep children or pets off treated area until spray is dry.

Applicators and Other Handlers Must Wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of any waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchovinylchloride (PVC) or viton.
- Shoes plus socks

Follow manufacturer's instructions for cleaning/ maintaining personal protective equipment, PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering controls statements:

- When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

User should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

NET CONTENTS: ____ Ounces

BACKED by BAYER.

FIRST AID

If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

In case of emergency call toll free the Bayer Environmental Science Emergency Response Telephone No. 800-334-7577. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: No specific antidote is available. Treat the patient symptomatically.

ENVIRONMENTAL HAZARDS

This product is highly toxic to aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Do not formulate this product into other end-use products.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

Exception: If the product is applied by drenching, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Chemical resistant gloves made of any waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchovinylchloride (PVC) or viton.
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep children and pets off treated area until dry.

APPLICATION TO TURFGRASS

MERIT® 2F Insecticide can be used for the control of soil inhabiting pests of turfgrass, such as Northern & Southern masked chafers, *Cyclocephala borealis, C. immaculata,* and/or *C. lurida;* Asiatic garden beetle, *Maladera castanea;* European chafer, *Rhizotroqus majalis;* Green June beetle, *Cotinis nitida;* May or June beetle, *Phyllophaga* spp.; Japanese beetle, *Popillia japonica;* Oriental beetle, *Anomala orientalis;* Billbugs, *Sphenophorus* spp.; Annual bluegrass weevil, *Listronotus* spp.; Black turfgrass ataenius, *Ataenius spretulus* and *Aphodius* spp.; European crane fly, *Tipula paludosa;* and mole crickets, *Scapteriscus* spp.. MERIT® 2F Insecticide can also be used for suppression of cutworms and chinch bugs. MERIT® 2F Insecticide can be used as directed on turfgrass in sites such as home lawns, business and office complexes, shopping complexes, multi-family residential complexes, golf courses, airports, cemeteries, parks, playgrounds, athletic fields and sod farms.

The active ingredient in MERIT® 2F Insecticide has sufficient residual activity so that applications can be made preceding the egg laying activity of the target pests. High levels of control can be achieved when applications are made preceding or during the egg laying period. The need for an application can be based on historical monitoring of the site, previous records or experiences, current season adult trapping or other methods. Optimum control will be achieved when applications are made prior to egg hatch of the target pests, followed by sufficient irrigation or rainfall to move the active ingredient through the thatch.

Applications should not be made when turfgrass areas are waterlogged or the soil is saturated with water. Adequate distribution of the active ingredient cannot be achieved when these conditions exist. The treated turf area must be in such a condition that the rainfall or irrigation will penetrate vertically in the soil profile. Applications cannot exceed a total of 1.6 pints (0.4 lb of active ingredient) per acre per year.

APPLICATION EQUIPMENT FOR USE ON TURFGRASS

Apply MERIT® 2F Insecticide in sufficient water to provide adequate distribution in the treated area. The use of accurately calibrated equipment normally used for the application of turfgrass insecticides is required. Use equipment which will produce a uniform, coarse droplet spray, using a low pressure setting to eliminate off target drift. Check calibration periodically to ensure that equipment is working properly.

APPLICATION TO ORNAMENTALS

MERIT® 2F Insecticide is for use on ornamentals in commercial and residential landscapes and interior plantscapes. MERIT® 2F Insecticide is a systemic product and will be translocated upward into the plant system from root uptake. To assure optimum effectiveness, the product must be placed where the growing portion of the target plant can absorb the active ingredient. The addition of a nitrogen containing fertilizer, where applicable, into the solution may enhance the uptake of the active ingredient. Application can be made by foliar application or soil applications; including soil injection, drenches, and broadcast sprays. Foliar applications offer locally systemic activity against insect pests. When making soil applications to plants with woody stems, systemic activity will be delayed until the active ingredient is translocated throughout the plant. In some cases, this translocation delay could take 60 days or longer. For this reason, applications should be made prior to anticipated pest infestation to achieve optimum levels of control.

For outdoor ornamentals, broadcast applications cannot exceed a total of 1.6 pints (0.4 lb of active ingredient) per acre per year.

Ant Management Programs

Use MERIT® 2F to control aphids, scale insects, mealybugs and other sucking pests on ornamentals to limit the honeydew available as a food source for ant populations. MERIT® 2F applications can be then be supplemented with residual sprays, bait placements or other ant control tactics to further reduce the pest population.

NOTE: Not for use in commercial greenhouses, nurseries, or on grasses grown for seed, or on commercial fruit and nut trees.

APPLICATION EQUIPMENT FOR FOLIAR APPLICATIONS

MERIT® 2F Insecticide mixes readily with water and may be used in many types of application equipment. Mix product with the required amount of water and apply as desired dependent upon the selected use pattern.

When making foliar applications on hard to wet foliage such as holly, pine, or ivy, the addition of a spreader/ sticker is recommended. If concentrate or mist type spray equipment is used, an equivalent amount of product should be used on the area sprayed, as would be used in a dilute application.

MERIT® 2F Insecticide has been found to be compatible with commonly used fungicides, miticides, liquid fertilizers, and other commonly used insecticides. Check physical compatibility using the correct proportion of products in a small jar test if local experience is unavailable.

Do not apply through any irrigation system.

RECOMMENDED APPLICATIONS

CROP	PEST	DOSAGE MERIT® 2F	REMARKS
Turf Grasses	**Larvae of:** Annual bluegrass weevil Asiatic garden beetle Billbugs Black turfgrass ataenius Cutworms (suppression) European chafer European crane fly Green June beetle Japanese beetle Northern masked chafer Oriental beetle *Phyllophaga* spp. Southern masked chafer	1.25 to 1.6 pt per acre or 0.46 to 0.6 fl oz (14 to 17 mL) per 1000 sq ft	For optimum control of grubs, billbugs and annual bluegrass weevil, and European crane fly make application prior to egg hatch of the target pest. Be sure to read "APPLICATION EQUIPMENT" Section of this label.
	Chinchbugs (suppression) Mole crickets	1.6 pt per acre or 0.6 fl oz (17 mL) per 1000 sq ft	For suppression of chinchbugs, make application prior to or during the hatching of the first instar nymphs. For control of mole crickets make application prior to or during the peak egg hatch period. When adults or large nymphs are present and actively tunneling, MERIT® 2F application should be accompanied by a curative insecticide. Follow label instructions for other insecticides when tank-mixing.

Consult your local turf, state Agricultural Experiment Station, or State Extension Service Specialists for more specific information regarding timing of application.

NOTE: For optimum control, irrigation or rainfall should occur within 24 hours after application to move the active ingredient through the thatch. Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year. Avoid mowing turf or lawn area until after sufficient irrigation or rainfall has occurred so that uniformity of application will not be affected.

RECOMMENDED APPLICATIONS

For use only in and around industrial and commercial buildings and residential areas.

CROP	PEST	DOSAGE MERIT® 2F	REMARKS
Trees Shrubs Evergreens Flowers Foliage Plants Groundcovers Interior Plantscapes	Adelgids Aphids Japanese beetles Lace bugs Leaf beetles (including elm and viburnum leaf beetles) Leafhoppers (including glassy-winged sharpshooter) Mealybugs Psyllids Sawfly larvae Thrips (suppression) Whiteflies	1.5 fl oz (45 mL) per 100 gal of water	**Foliar Applications:** Start treatments prior to establishment of high pest populations and reapply on as needed basis.
	White grub larvae (such as Japanese beetle larvae, Chafers, *Phyllophaga* spp. Asiatic garden beetle, Oriental beetle)	0.46 to 0.6 fl oz (14 to 17 mL) per 1000 sq ft	**Broadcast Applications:** Mix required amount of product in sufficient water to uniformly and accurately cover the area being treated. Do not use less than 2 gallons of water per 1000 sq ft. For optimum control, irrigate thoroughly to incorporate MERIT® 2F Insecticide into the upper soil profile. Refer to use direction specific for FLOWERS and GROUND COVERS concerning additional use directions.

RECOMMENDED APPLICATIONS - TREES, SHRUBS, FLOWERS AND GROUNDCOVERS

For use only in and around industrial and commercial buildings and residential areas, and state, national, and private wooded and forested areas for the insect pests listed below.

CROP	PEST	DOSAGE MERIT® 2F	REMARKS
Trees	Adelgids Aphids Armored scales (suppression) Black vine weevil larvae Emerald ash borer Eucalyptus longhorned borer Flatheaded borers (including bronze birch and alder borer) Japanese beetles Lace bugs Leaf beetles (including elm and viburnum leaf beetles) Leafhoppers (including glassy-winged sharpshooter) Leafminers Mealybugs Pine tip moth larvae Psyllids Royal palm bugs Sawfly larvae Soft scales Thrips (suppression) White grub larvae Whiteflies	0.1 to 0.2 fl oz (3 to 6 mL) per inch of trunk diameter (D.B.H.)	**Soil Injection:** GRID SYSTEM: Holes should be spaced on 2.5 foot centers, in a grid pattern, extending to the drip line of the tree. CIRCLE SYSTEM: Apply in holes evenly spaced in circles, (use more than one circle dependent upon the size of the tree) beneath the drip line of the tree extending in from that line. BASAL SYSTEM: Space injection holes evenly around the base of the tree trunk no more than 6 to 12 inches out from the base. Mix required dosage in sufficient water to inject an equal amount of solution in each hole. Maintain a low pressure and use sufficient solution for distribution of the liquid into the treatment zone. For optimum control, keep the treated area moist for 7 to 10 days. Do not use less than 4 holes per tree. **No Soil Injection Applications Allowed in Nassau or Suffolk Counties of New York.** **Soil Drench:** Uniformly apply the dosage in no less than 10 gallons of water per 1000 square feet as a drench around the base of the tree, directed to the root zone. Remove plastic or any other barrier that will stop solution from reaching the root zone. **For Control of Specified Borers:** Application to trees already heavily infested may not prevent the eventual loss of the trees due to existing pest damage and tree stress.
Shrubs		0.1 to 0.2 fl oz (3 to 6 mL) per foot of shrub height	**Soil Injection:** Apply to individual plants using dosage indicated. Mix required dosage in sufficient water to inject an equal amount of solution in each hole. Maintain a low pressure and use sufficient solution for distribution of the liquid into the treatment zone, Keep the treated area moist for 7 to 10 days. Do not use less than 4 holes per shrub. **No Soil Injection Applications Allowed in Nassau or Suffolk Counties of New York.** **Soil Drench:** Uniformly apply the dosage in no less than 10 gallons of water per 1000 square feet as a drench around the base of the tree, directed to the root zone. Remove plastic or any other barrier that will stop solution from reaching the root zone.
Flowers and Groundcovers		0.46 to 0.6 fl oz (14 to 17 mL) per 1000 sq ft	Apply as a broadcast treatment and incorporate into the soil before planting or apply after plants are established. If application is made to established plants, optimum control will be attained if area is irrigated thoroughly after application.

RECOMMENDED APPLICATIONS

For use only in and around residential areas.

CROP	PEST	RATE PER APPLICATION	
Pome Fruits Apple Crabapple Loquat Mayhew Pear Pear (oriental) Quince	Aphids (except Wooly apple aphid) Leafhoppers (including glassy-winged sharpshooter) Leafminer Mealybugs* San Jose scale*	1.5 fl oz (45 mL) per 100 gal of water	6.0 fl oz/A[1]

Apply specified dosage as foliar spray as needed after petal-fall is complete.

For control of rosy apple aphid, apply prior to leafrolling caused by the pest.

For first generation leafminer control, make first application as soon as petal-fall is complete. Greatest leafminer control will result from the earliest possible application. For second and succeeding generations of leafminer, optimal control is obtained from applications made early in the adult flight against egg and early instar larvae. A second application may be required 10 days later if severe pressure continues or if generations are overlapping. A single application may result in suppression only. MERIT® 2F will not control late stage larvae.

For San Jose Scale, time applications to the crawler stage. Treat each generation.

For late season (preharvest) control of leafhopper species, apply MERIT® 2F while most leafhoppers are in the nymphal stage.

For optimal control of mealybug, insure good spray coverage of the trunk and scaffolding limbs or other resting sites of the mealybug.

Do not apply more than 6.0 fluid ounces per acre in a single application. Do not make more than 5 applications.

Allow 10 or more days between applications. Allow at least 7 days between last application and harvest.

* Not for use in California for control on pears.

Pecans*	Yellow pecan aphid Black margined aphid Pecan leaf phylloxera Pecan spittlebug Pecan stem phylloxera	1.5 fl oz (45 mL) per 100 gal of water	6.0 fl oz/A[1]

Make foliar applications as pests begin to build before populations become extreme. Two applications at a 10 to 14 day interval may be required to achieve control. Scout and retreat if needed.

Thorough uniform coverage of foliage is necessary for optimal control. Addition of an organosilicone-based spray adjuvant at a rate not to exceed the adjuvant manufacturer's recommended use rate may improve coverage.

Do not apply more than a total of 18.0 fluid ounces of MERIT® 2F per acre per year. Do not make more than 3 applications.

Allow 10 or more days between applications.

[1]The amount of MERIT® 2F required per acre will depend on tree size and volume of foliage present. The rate per acre is based on a standard of 400 gallons of dilute spray solution per acre for large trees.

* Use on pecans not permitted in California unless directed by specific supplemental labeling.

RECOMMENDED APPLICATIONS

For use only in and around industrial and commercial buildings and residential areas.

CROP	PEST		RATE PER APPLICATION	
Grapes	Leafhoppers (including glassy-winged sharpshooter)	Mealybugs	1.5 fl oz (45 mL) per 100 gal of water	3.0 fl oz/A (90 mL/A)

Apply specified dosage as a foliar spray using 200 gallons of water per acre. Do not apply more than a total of 6.0 ounces of MERIT® 2F per acre per year. Allow at least 14 days between applications. Applications may be applied up to and including day of harvest.

RESTRICTIONS

Do not graze treated areas or use clippings from treated areas for feed or forage. Avoid runoff or puddling of irrigation water following application. Keep children and pets off treated area until dry. Avoid application of MERIT® 2F Insecticide to areas which are water logged or saturated, which will not allow penetration into the root zone of the plant. Do not apply more than 1.6 pt (0.4 lb of active ingredient) per acre per year.

Treated areas may be replanted with any crop specified on an imidacloprid label, or with any crop for which a tolerance exists for the active ingredient.

For crops not listed on an imidacloprid label, or for crops for which no tolerances for the active ingredient have been established, a 12-month plant-back interval should be observed.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Disposal: Wastes resulting from the use of this product me be disposed of on site or at an approved waste disposal facility.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed.

Store in original container and out of the reach of children, preferably in a locked storage area.

Handle and open container in a manner as to prevent spillage. If the container is leaking or material spilled for any reason or cause, carefully sweep material into a pile. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Dispose of pesticide as directed below. In spill or leak incidents, keep unauthorized people away. You may contact the Bayer Emergency Response Team for decontamination procedures or any other assistance that may be necessary. The Bayer Environmental Science Emergency Response Telephone No. is 800-334-7577 or contact Chemtrec at 800-424-9300.

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of liability before using this product.

If terms are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following conditions, disclaimer of warranties and limitations of liability.

CONDITIONS: The directions for use of this product are believed to be adequate and should be followed carefully. However, because of manner of use and other factors beyond Bayer Environmental Science's control it is impossible for Bayer Environmental Science to eliminate all risks associated with the use of this product. As a result, crop injury or ineffectiveness is always possible. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: BAYER ENVIRONMENTAL SCIENCE MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer Environmental Science is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. Bayer Environmental Science disclaims any liability whatsoever for special, incidental or consequential damages, resulting from the use or handling of this product.

LIMITATIONS OF LIABILITY: THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER ENVIRONMENTAL SCIENCE'S ELECTION, THE REPLACEMENT OF PRODUCT.

This Product is specially formulated and sold under license from Bayer only for the uses set forth on this label. The active ingredient of this product, formulations containing this active ingredient, and/or methods of making or using this active ingredient or its formulations may be the subject of one or more Bayer patents, including but not limited to U.S. Patent No. 4,742,060. The purchase and/or use of this product constitutes acceptance of a limited license to use this product only in strict accordance with the instructions set forth on this label. Any use of this product other than as expressly set forth on this label is prohibited and is not licensed through the purchase and/or use of this product and may result in the infringement of one or more Bayer patents and/or other intellectual property rights.

©2004 Bayer AG
Backed By Bayer is a trademark of Bayer
Merit® is a registered trademark of Bayer

Bayer Environmental Science
A Business Group of Bayer CropScience LP

Bayer Environmental Science
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, NC 27709
www.bayerprocentral.com

040406B

BOTANIGARD® 22WP

Wettable Powder Mycoinsecticide

For use in controlling Whitefly, Aphids, Thrips, Psyllids, Weevils and Mealybugs in Ornamentals and Vegetables, Indoor/Outdoor Nursery, Greenhouse, Shadehouse, Commercial Landscape, Interiorscape and Turf.

Active Ingredient: *Beauveria bassiana* Strain GHA……..……22.0%*****
Inert Ingredients…… ……..78.0%**
Total:……..100.0%

*****Based on the weight estimate of 4.78 x 10^{-12} grams per spore.
**Contains petroleum distillates.
BotaniGard 22WP contains 2 x 10^{13} viable spores per pound.

KEEP OUT OF REACH OF CHILDREN

CAUTION

See additional precautionary statements and first aid statements in attached booklet.

Store between 40°F and 85°F

LAM INTERNATIONAL CORPORATION
117 S. Parkmont; PO Box 4109 – Butte, MT 59702;
Ph: (406)782-2386; Fax: (406)782-9912

EPA Registration Number 82074-2 EPA Establishment Number 65626-MT-02

ED131101C Net Contents: Pound; 500gm

Lot No.: Expiration Date:

BioWorks

Si Usted no entiende la etiqueta, busque a alguien para que se la explique a Usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation. Harmful if absorbed through the skin, inhaled or swallowed. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist or dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash clothing before reuse.

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 – 20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Immediately call a poison control center or doctor. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
HOT LINE NUMBER Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.	
NOTE TO PHYSICIAN Contains petroleum distillate. Vomiting may cause aspiration pneumonia.	

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as nitrile rubber or butyl rubber
- Shoes plus socks

Mixers/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least R-95 or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product is potentially pathogenic to honey bees. Avoid applying to areas where honey bees are actively foraging or around bee hives. This product may be toxic to fish. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment wash waters or rinsate. Do not discharge into lakes, streams, ponds, or public waterways.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

For use in controlling Whitefly, Aphids, Thrips, Psyllids, Weevils and Mealybugs in Ornamentals and Vegetables, Indoor / Outdoor Nursery, Greenhouse, Shadehouse, Commercial Landscape, Interiorscape and Turf. Suitable for use with ultra low-volume application equipment.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box apply only to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours unless wearing the appropriate personal protective equipment.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water). is:

- Coveralls
- Chemical-resistant gloves such as nitrile rubber or butyl rubber
- Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours unless wearing the appropriate personal protective equipment.

Keep unprotected persons out of treated areas until sprays have dried.

GENERAL INFORMATION

BotaniGard 22WP contains live spores of the naturally occurring fungus, *Beauveria bassiana* Strain GHA. Spores are alive and can be harmed by storage at high temperatures or contact with water for more than 24 hours. See STORAGE AND DISPOSAL instructions on the container label.

MODE OF ACTION AND APPLICATION TIMING

Begin treatment of crops at the first appearance of the insect pest. Typically, it takes 7-10 days after the first spray to see control. Application rates, frequency, spray coverage and insect numbers impact the speed at which acceptable control is achieved. BotaniGard 22WP is most effective when used early, before high insect populations develop. Reapply as necessary under a pest management program that includes close scouting. Intense pest outbreaks may require combination of BotaniGard 22WP with a compatible insecticide.

Contact LAM International Corporation or your distributor for specific information on compatible insecticides.

PRE-HARVEST INTERVAL

Pre-harvest interval for BotaniGard 22WP is zero (0) days. BotaniGard 22WP can be applied up to and including the day of harvest.

INSECTS FOR WHICH BOTANIGARD 22WP MAY BE USED

WHITEFLY

Banded-winged Whitefly
Citrus Blackfly
Citrus Whitefly
Giant Whitefly
Greenhouse Whitefly
Silverleaf Whitefly
Sweet Potato Whitefly (aka Tobacco Whitefly)

APHIDS

Bean Aphid
Cabbage Aphid
Cowpea Aphid
Green Peach Aphid
Greenbug
Hop Aphid
Melon/Cotton Aphid
Pea Aphid
Potato Aphid
Rose Aphid
Russian Wheat Aphid
Spotted Alfalfa Aphid

THRIPS

Greenhouse Thrips
Cuban Laurel Thrips
Pear Thrips
Potato/Onion Thrips
Thrips palmi
Western Flower Thrips

PSYLLIDS

Pear Psylla
Tomato/Potato Psylla

MEALYBUGS

Citrus Mealybug
Buffalo Grass Mealybug
Grape Mealybug
Longtailed Mealybug

LEAFHOPPERS AND PLANTHOPPERS

Grape Leafhopper
Leafhoppers
Planthoppers
Potato Leafhopper
Variegated Grape Leafhopper
Virginia Creeper Leafhopper

SCARAB BEETLES

Atenius
Green June Beetle
White Grubs

PLANT BUGS (HETEROPTERA)

Chinch Bugs
Lace Bugs

WEEVILS

Billbugs
Black Vine Weevil
Fuller Rose Weevil
Rose Curculio
Root Weevil
Strawberry Root Weevil

CROPS ON WHICH BOTANIGARD 22WP MAY BE USED

VEGETABLES

acerola	arracacha	arrowroot
artichoke	arugula	asparagus
atermoya	balsam pear	bamboo shoots
beans (all varieties)	beet	blackeyed peas
bokchoy	broccoli	broccoli raab

Brussels sprouts	burdock	cabbage
cantaloupe	carambols	carrots
casaba melons	cassava	catjang
cauliflower	celeriac	celery
celtuce	chayote	chervil
chickpeas	chicory	Chinese broccoli
Chinese cabbage	Chinese gai lon	Chinese longbeans
Chinese mustard	Chinese spinach	Chinese waxgourd
chrysanthemum (edible)	chufa	cilantro
citron melon	collards	corn salad
crenshaw melon	cress	cucumber
dandelion	dasheen	daikon
dock	edamame	eggplant
endive	escarole	fennel
garlic	gherkin	ginger
golden pershaw melon	gourds (edible)	groundcherry
guar	honey balls	honeydew melon
horseradish	kale	kohlrabi
leek	lentils	leren
lettuce	mango melon	muskmelon hybrids/varieties
mustard greens	New Zealand spinach	okra
onion	orach	parsley
parsnip	peas (all varieties)	pepinos
pepper (all varieties)	Persian melon	pimento (all varieties)
pineapple melon	potato	pumpkin
purslane	radish	radicchio
rambutan	rape greens	rapini
rhubarb	rutabaga	salsify
shallot	snake melon	soybeans
spinach	squash (summer/winter)	sugar beet
sweet potato	Swiss chard	tanier
tomatillo	tomatoes	tumeric
turnip	watermelon	yam
zucchini		

FRUITS AND BERRIES

apple	apricot	avocado
bananas	blackberry	blueberry
boysenberry	calamondin	carob
cherimoya	cherry (sweet/sour)	chironja
citrus citron	citrus hybrids	coffee
crabapple	cranberry	currant
dates	dewberry	durian
elderberry	fejoa	figs
gooseberry	grape (table, raisin, wine)	grapefruit
guava	huckleberry	kiwi
kumquat	lemon	limes
loganberry	loquat	lychee
mandarin	mango	marionberry
nectarine	olallie berry	olives (all varieties)
orange	oriental pear	papaya
passion fruit	peach	pear
persimmon	pineapple	plum
pomegranate	prune	pummelo
quihuna	quince	raspberry
sour cherry	strawberry	sweet cherry
tangelo	tangerine	youngberry

HERBS AND SPICES

allspice	anise	balm
basil	borage	burnet
chamomile	caperbuds	caraway
cardamom	catnip	celery seed
chervil	chicory	chives
cilantro/coriander	cinnamon	clary
coriander	costmary	cumin
curry leaf	dill	fennel
fenugreek	ginseng	horehound
hyssop	mace	marjoram
mint	mustard	nasturtium
nutmeg	oregano	paprika
pennyroyal	pepper (black/white)	peppermint
rosemary	rue	sage
saffron	savory	sesame
spearmint	sweet bay leaf	tansy

tarragon	thyme	wintergreen
woodruff	wormwood	

ORNAMENTALS, INCLUDING FLOWERS, FLOWERING AND FOLIAGE PLANTS, BEDDING PLANTS, GROUNDCOVERS, SHRUBS, VINES, EVERGREENS AND TREES

African lily	African violet	ageratum
alyssum	anthurium	arborvitae
ash	asparagus sprengeri	aster
atlas cedar	azalea	bald cypress
balsam fir	bamboo	barberry
beech	begonia	birch
Boston fern	bougainvillea	boxwood
bridal veil	cacti	caladium
calceolaria	calendula	calla lily
camella	camellias	carissa
carnation	ceanothus	celosia
chenille plant	cherro	Christmas cactus
chrysanthemum	cineraria	cleyera
coleus	cordyline	corylus avellana
cotoneaster	cottonwood	crabapple
crepe myrtle	crossandra	croton
cyclamen	cypress	daffodil
dahlia	daisy	delphinium
deodar cedar	dichondra	dieffenbachia
dogwood	Douglas fir	dracaena
dumb cane	Dusty Miller	elm
eucalyptus	ferns	ficus
fig	firethorn	fittonia
floss flower	foliage plants	forsythia
freesia	fuchsia	gardenia
geranium	gerbera	gerber daisy
gladiolus	gloxinia	grape
gynura	gypsophila	hackberry
hawthorn	hedera	hemlock
hibiscus	hickory	holly
honey suckle	hop bush	horsechesnut
hyacinth	hydrangea	iceplant
imitari	impatiens	India hawthorn
iris	ivy	Japanese aucuba
Japanese barberry	Japanese boxwood	Japanese spindle tree
Japanese yew	juniper	kalanchoe
lantana	larch	larkspur
laurel	leasianthus	leatherleaf fern
linden	lilac	lily
lithodora	lobelia	loquat
magnolia	mandevilla	maple
marigold	Mediterranean fan palm	mesembryanthemum
mimosa	monstera	mother-in-law plant
mountain laurel	myrtle	nandina
narcissus	oak	oleander
olive	orchid	ornamental kale
pachysandra	palms	pansy
parasol pine	pelargonium	peony
petunia	philodendron	phlox
photina	piggyback plant	pine
pink	pittosporum	planetree
podocarpus	poinsettia	poplar
pothos ivy	prayer plant	primrose
privet	pteris fern	pyracantha
rhododendron	rose	rubber plant
salvia	scabiosa	schefflera
schlumbegera	sedum	shrub verbena
shrubby cinquefoil	smoke tree	snapdragon
spathiphyllum	spruce	stock
sweet gum	sweet pea	sweet William
sycamore	syngonium	taxus
Texas sage	tulip	tulip tree
verbena	viburnum	vinca
Virginia creeper	walnut	wandering Jew
willow	yew	yucca
zinnia		

TURF, INCLUDING LAWN AND SOD TURF GRASSES

Bermuda grass	blue grass	fescue

St. Augustine grass zoysia grass

MIXING AND APPLICATION

Apply BotaniGard 22WP using hand-held, ground spray equipment and/or low-volume application equipment. Fill spray tank with half the desired amount of water, start agitation. Use a measuring cup, spoon or calibrated container to add BotaniGard 22WP to the spray tank and mix thoroughly. Add remainder of desired amount of water. Triple rinse empty container and add rinse water to spray tank. For best results, continue agitation during application. Do not mix more BotaniGard 22WP than can be sprayed in one day. One (1) cup contains approximately 4.5 ounces of BotaniGard 22WP. After mixing in water, spray within one day. Fungal spores in BotaniGard 22WP will die and lose effectiveness if left overnight or longer in water.

DOSAGE RATE FOR GREENHOUSE, NURSERY, LANDSCAPE AND INTERIORSCAPE

Typical Application Rates/100 Gallons of Spray Volume

Whitefly and Aphids…..…½ to 1 pound of BotaniGard 22WP/100 gallons spray volume
Thrips ……....1 to 2 pounds of BotaniGard 22WP/100 gallons spray volume
Other labeled insects…… to 2 pounds of BotaniGard 22WP/100 gallons spray volume
Rate depends on insect population.

Apply BotaniGard 22WP up to a maximum of 3 pounds per 100 gallons spray volume for high insect populations or dense foliage.

Use quantity of spray sufficient to thoroughly cover foliage infested with insects. Crop size, spray equipment and local practice will determine the volume of water needed. One hundred gallons of spray volume will typically cover 5,000-20,000 square feet. **SPRAY TO WET, BUT AVOID RUNOFF**.

Low Volume Application

Apply at a rate equivalent to area coverage of high volume spray. This would normally be ½ pound to 2 pounds of BotaniGard 22WP for 5,000 to 20,000 square feet. Follow spray equipment manufacturer's instructions for final spray volume to obtain adequate coverage. **DO NOT APPLY THROUGH A THERMAL PULSE FOGGER.**

Cuttings Dip

Applications of BotaniGard 22WP may be used as pre-plant dips for cuttings as noted below. To prepare dip solution, thoroughly mix ¼ - ½ oz. BotaniGard 22WP per gallon of water (2 ½ -5 oz. BotaniGard 22WP per 10 gallons water). Prepare only as much dip solution as can be used in one day. Do not use dip solution for more than one day. Spores in water for more than 24 hours will die. Dip a small number of plants in dip solution and observe for plant damage before using dip treatment. Do not use dips if there is any visible damage to test plants.

Unrooted Cuttings

Dip the unrooted cuttings in the BotaniGard 22WP solution just long enough to wet all surfaces, then removing to a flat area. For water-sensitive varieties, cover to protect until dry. Then proceed with normal planting and misting.

Rooted Cuttings

Holding by the roots, briefly dip in the BotaniGard 22WP solution just long enough to wet all surfaces, including leaves and stems. Once removed from the dip solution, cuttings can be potted, but allow plants to dry before watering.

DOSAGE RATE FOR TURF AND SOIL APPLICATIONS IN CONTAINER ORNAMENTALS

For most soil applications, apply 1-4 oz. (up to ¼ lb.) BotaniGard 22WP per 1,000 square feet. For difficult to control soil pests, especially citrus root weevil (*Diaprepes abbreviatus*), BotaniGard 22WP can be applied at 4 oz. per 1,000 square feet.

Do not apply to water-saturated soil. Apply BotaniGard 22WP in enough water to ensure good coverage of treated area, at least one gallon per 1,000 square feet. Irrigate treated area after application to disperse BotaniGard 22WP into soil.

APPLICATION FREQUENCY

Apply BotaniGard 22WP at 5-10 day intervals. High insect populations, especially whitefly and aphids, may require application at 2-5 day intervals. Repeat applications for as long as pest pressure persists. There is no limit on the number of applications or total amount of BotaniGard 22WP which can be applied in one season.

PHYTOTOXICITY

BotaniGard 22WP has shown plant safety but has not been tested on all plant varieties or in all available tank mixes. Use caution when making applications to open blooms, especially on varieties known to be sensitive. BotaniGard 22WP is non-phytotoxic to

melons, tomatoes, cole crops and a wide variety of ornamentals at specified label dosage rates.

For best results, foliage should be dry at time of spraying. Test BotaniGard 22WP on a small number of plants to check for potential damage before applying to larger number of plants

TANK MIX COMPATIBILITY

BotaniGard 22WP is physically and biologically compatible with a wide range of insecticides and spray adjuvants. It is compatible with some fungicides in tank mixtures. Fungicides may kill the spores. No label dosage should be exceeded. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures.

Adjuvants BotaniGard 22WP is designed for application without additional wetting agents and spreaders. If adjuvants are needed for some other reason, contact your dealer or LAM International Corporation for specific instructions. Some wetting agents and spreaders kill the spores, the active ingredient in BotaniGard 22WP, or contribute to poor mixing and spray problems. In all cases, pesticides must be used in accordance with their labels.

Compatibility With Chemical Insecticides BotaniGard 22WP is compatible with most chemical insecticides. However, some insecticide formulations can kill the fungal spores, the active ingredient in BotaniGard 22WP. If you are going to use BotaniGard 22WP in combination with other pesticides, contact your dealer or LAM International Corporation for specific information. In all cases, pesticides must be used in accordance with their labels.

Compatibility With Fungicides BotaniGard 22WP is compatible in tank mix with some fungicides. Contact LAM International or your dealer for specific instructions on using BotaniGard 22WP with fungicides.

CHEMIGATION

Do not apply this product through any type of irrigation system**.**

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE

Store in a cool, dry place. Avoid storage below freezing temperatures or above 85ºF. BotaniGard 22WP stability decreases with time at elevated temperatures above 85ºF. Tightly reclose the container of unused product. Do not contaminate unused product with water.

PESTICIDE DISPOSAL

To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

CONTAINER DISPOSAL

(For plastic containers) Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

(For foil bags) Nonrefillable container. Do not reuse or refill this container. Completely empty bat into application equipment by shaking and tapping sides and bottom to loosen clinging particles. Then offer for recycling, if available, or dispose of empty bag in sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

WARRANTY AND DISCLAIMER

BotaniGard 22WP conforms to the description set forth on this label and is reasonably fit for the purposes described herein when used according to the label directions and specified conditions. The manufacturer disclaims any and all other express or implied warranties of merchantability and fitness for particular purpose. Buyers and users shall assume all risk and responsibility for potential loss or damage if this product is used, stored, handled or applied in a manner inconsistent with this labeling. To the extent permitted by law, manufacturer shall not be liable for more than the purchase price for the quantity involved including incidental, consequential or special damages.

USDA Forest Health Assessment and Applied Sciences Team

FHAAST-2019-03
March 2020

Attachment 12

Verticillium nonalfalfae

A PROMISING, NATURALLY OCCURRING BIOLOGICAL HERBICIDE TO CONTROL

TREE OF HEAVEN

(*AILANTHUS ALTISSIMA*)






Rachel K. Brooks[1], Raghavan Charudattan[2], Donald D. Davis[3], Matt T. Kasson[4], Scott Salom[5], Anton Baudoin[1], Richard C. Reardon[6]

[1]School of Plant and Environmental Sciences, Virginia Tech, Blacksburg, VA
[2]BioProdex, Inc., Gainesville, FL
[3]Dept. Plant Pathology and Env. Microbiology, Penn State, University Park, PA
[4]Div. Plant and Soil Sciences, West Virginia University, Morgantown, WV
[5]Dept. Entomology, Virginia Tech, Blacksburg, VA
[5]FHAAST (retired), USDA Forest Service, Morgantown, WV

BioProdex, Inc. PennState VIRGINIA TECH. WestVirginiaUniversity.

The Forest Health Technology Enterprise Team (FHTET) was created in 1995 by the Deputy Chief for State and Private Forestry, USDA Forest Service, to develop and deliver technologies to protect and improve the health of American forests.

FHTET became Forest Health Assessment and Applied Sciences Team (FHAAST) in 2016. This booklet was published by FHAAST as part of the technology transfer series.

http://www.fs.fed.us/foresthealth/technology/

This publication is available online at:

https://www.fs.fed.us/foresthealth/technology/pdfs/FHAAST-2019-03_Verticillium_nonalfalfae.pdf

https://bugwoodcloud.org/resource/pdf/verticilliumwilt.pdf

For additional copies of this publication, contact:

Denise Binion FHAAST, USDA Forest Service, 180 Canfield Street, Morgantown, WV 26505; 304.285.1552; denise.binion@usda.gov

ACKNOWLEDGMENTS

This booklet was created as a compilation of the various works of the authors. In addition, we wish to thank Kristen Wickert (West Virginia University) and Joanne Rebbeck (Forest Service Northern Research Station, retired) for their assistance with this publication. We also extend our gratitude to Richard Reardon (FHAAST) for producing this booklet and to Rachel Winston (MIA Consulting) for designing the layout.

Cover images: (clockwise from top left) healthy TOH stand, diseased TOH stand, diseased TOH tree, healthy TOH tree (Photos: both stands by The Pennsylvania State University; Rachel K. Brooks, Virginia Tech; Chuck Bargeron, University of Georgia, Bugwood.org)

INTRODUCTION

Tree of heaven (TOH; *Ailanthus altissima* (Mill.) Swingle, Simaroubaceae) is native to eastern China. This deciduous hardwood tree was first introduced from England to the U.S. in 1784 to a garden in Pennsylvania, and then several more times directly from China, including to Rhode Island in 1804 and to California by Chinese immigrants in the mid-1800s. TOH now occurs across the U.S. (**Fig. 1**) and is reportedly invasive in over 44 U.S. states.

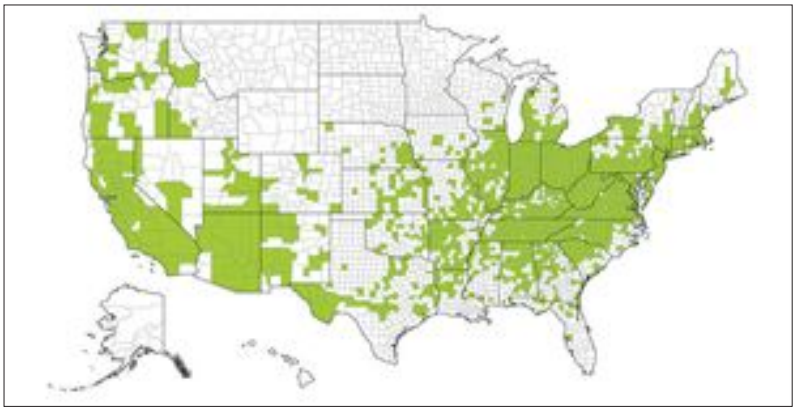


Figure 1. TOH distribution in the U.S. (Credit: EDDMapS, http://www.eddmaps.org/ accessed 11 February 2020)

- TOH invades forests, rights-of-ways, urban areas, and agricultural lands
- TOH displaces native vegetation important for wildlife habitat, timber production, recreation, and biodiversity
- TOH roots produce allelopathic compounds that may reduce the establishment of other plants
- TOH is the preferred host of other invasive pests including the spotted lanternfly, *Lycorma delicatula* (White) (**Fig. 2**), and the brown marmorated stink bug, *Halyomorpha halys* Stål
- TOH can cause allergic reactions (via pollen and direct contact) in humans
- TOH is also called Ailanthus, Chinese sumac, varnish tree, stink tree, and paradise tree



Figure 2. Spotted lanternfly colony on TOH (Photo: Rachel K. Brooks, Virginia Tech)

BIOLOGY & LIFE CYCLE

TOH is fast-growing with an extensive root system and prolific seed production. Mature trees can have a diameter up to 6 ft (1.8 m), reach up to 65 ft (20 m) tall, and can live for over 100 years. TOH tolerates a wide range of growing conditions, including air pollution and low quality soils, and is often found thriving in areas with high levels of disturbance. Once established, it is among the fastest growing trees in North America, often growing up to 6 ft (1.8 m) during its first year.

Seed production can begin within as little as 5 years (**Fig. 3a**). Flowers are first observed on TOH in late spring to early summer (**Fig. 3b**). A single tree may produce up to 1 million seeds per year and over 50 million seeds during its lifetime. Seeds are readily spread by wind and water. Unlike some other species, TOH seeds can germinate immediately upon contact with the soil and can also remain viable for over 5 years. The leaves are deciduous, falling from the tree in autumn and winter. New leaves emerge in late spring.

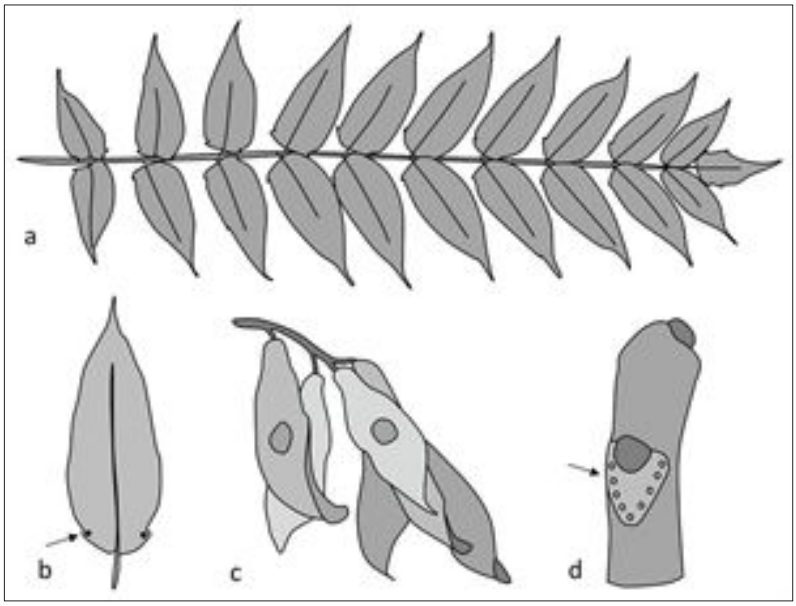
TOH also reproduces clonally through its suckering root system (**Fig. 3c**). Sprouts arise from the roots, root crown, and bole and typically grow much faster than seedlings (up to 10 ft [3 m] per year) because an extensive root system is already established. These develop into new plants and can quickly create large TOH monocultures.



Figure 3. TOH (a) tree, (b) flower clusters, and (c) suckers (Photos: a,c. Robert Vidéki, Doronicum Kft., Bugwood.org; b. H. Zell, Wikimedia)

IDENTIFICATION

- Leaves long, pinnately compound (**Figs. 4a, 5a**) whose leaflets have smooth margins and slightly lobed bases tipped by raised glands (**Figs. 4b, 5b**)
- Winged fruits 1 in (2.5 cm) long, turn from green/yellow to orange/red to brown (**Figs. 4c, 5c**)
- Leaf scars large, triangular, and edged by line of bundle scars (**Fig. 4d, 5d**)
- Flowers small with 5 greenish-yellow petals, produced in large clusters
- Native look-a-like trees include walnut and sumac



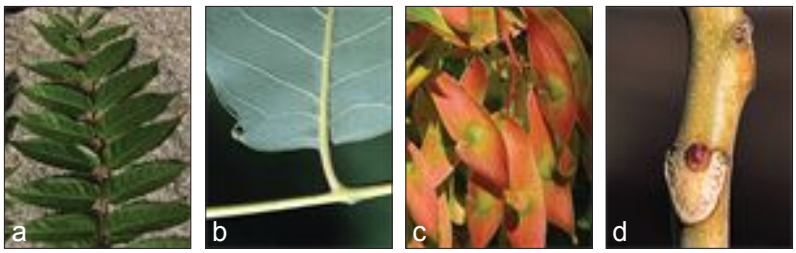


Figure 4 (top), 5 (bottom). Key identification characteristics of TOH including (a) leaf shape, (b) leaflet glands, (c) seed morphology, and (d) leaf scars (Illustrations: Rachel K. Brooks, Virginia Tech; Photos: a. Leslie J. Mehrhoff, University of Connecticut; b,d. James H. Miller Forest Service; c. Chuck Bargeron, University of Georgia; a–d Bugwood.org)

TRADITIONAL CONTROL

Small seedlings can be hand-pulled from an area. Pulling older seedlings and saplings is more difficult, and roots left in the soil will re-sprout. Cutting large trees is not recommended as the sole control method as it often results in significant basal and root sprouting (**Fig. 6**). Moreover, cutting is impractical since multiple cuttings are required to deplete root reserves.



Figure 6. TOH stand (a) cut to the ground 2 March 2007, (b) re-sprouting 14 June 2007, and (c) a monoculture 10 August 2007 (Photos: Scott Salom, Virginia Tech)

Several general-use herbicides are available that can be applied as foliar sprays, cut stump treatments, injections into the plant, or as basal sprays. These treatments are usually used on TOH at small scales but may also impact other nearby plants (non-target damage).

Chemical and mechanical control can remove TOH from a small area. However, because TOH is such an aggressive species, it will re-sprout, requiring multiple treatments and making large-scale, long-term eradication impractical and expensive.

BIOLOGICAL CONTROL

Due to the extensive negative impacts and invasive spread of TOH, as well as the shortcomings of traditional control methods for this species, there is an urgent need to develop biological control components for TOH Integrated Pest Management (IPM) programs. Bioherbicides may provide an efficient, inexpensive, and perennial control of TOH.

TOH's native range was surveyed, and multiple potential classical biological agents were identified and targeted for further research. Of these, the weevil *Eucryptorrhynchus brandti* (Harold) demonstrated the most promise. As of 2020, it is still undergoing host-range testing prior to consideration for its release in North America.

Early surveys of TOH in North America documented a lack of significant insect and pathogen agents. However, in 2002, a naturally occurring fungus was observed killing TOH trees in Pennsylvania (**Fig. 7**).



Figure 7. TOH trees exhibiting foliar symptoms of fungal infection (Photos: Rachel K. Brooks, Virginia Tech)

Verticillium nonalfalfae

HISTORY

Professor Don Davis and his students at the Pennsylvania State University first isolated this naturally occurring, deadly wilt-causing fungus from dead and dying TOH trees within forested areas in south-central Pennsylvania in 2002.

Early research at Penn State University on inoculating the fungus into TOH at several sites in south-central Pennsylvania documented its potential as an effective biological control agent.

The disease spread naturally and rapidly, creating small populations of infected TOH (**Table 1**), which prompted further interest in the fungus as a biological control agent. The fungus was originally thought to be *Verticillium albo-atrum* but has since been formally identified as *Verticillium nonalfalfae* Inderbitzin et al. in 2011.

Verticillium nonalfalfae was subsequently found on TOH in Virginia in 2008 by scientists at Virginia Tech and in Ohio in 2012 by U.S. Forest Service scientists. This promising, host-restricted biological control currently occurs over thousands of acres in these states.

By 2011, natural spread of the fungus had resulted in the mortality of >30,000 TOH trees, effectively removing most TOH from the landscape at these inoculated sites.

Table 1. The spread of *V. nonalfalfae* from inoculated TOH to adjacent TOH at 4 sites in Pennsylvania, USA (Source: Don Davis, unpub. data 2011)

Site	2006 # TOH inoculated	2010 # TOH dead or dying
1	20	2,663
2	20	503
3	10	941
4	10	701

LIFE CYCLE AND IMPACT

As a soil-borne plant pathogen, *Verticillium nonalfalfae* attacks only plants, not humans or other organisms. This fungus produces resting structures (dormant melanized mycelia) that can survive in the soil or within plant debris. Stimulated by root exudates, these resting structures germinate, form mycelia that penetrate the tree's root, and invade the xylem. The mycelia then spread quickly throughout the tree's vessels, ultimately clogging the xylem and eliciting typical wilt symptoms. This disease develops fairly quickly and kills mature trees within just a few months. All TOH growth stages are susceptible, from seedling to mature tree, as well as the roots and subsequent root suckers. It is thus a strong candidate for use as a biological control agent.

SYMPTOMS

- **Foliar (leaves) symptoms:** rapid onset of wilting, chlorosis (yellowing), necrosis (browning, **Fig. 8**), premature leaf drop, emergence of new leaves late in the season (epicormic sprouting and flushing, **Fig. 9**)
- **Wood symptoms:** branch drop and orange coloration of wood visible when bark is removed (**Fig. 10**)
- **Stand symptoms:** numerous diseased or dead TOH in one area (**Fig. 11**)

SAFETY

All native trees and understory plants that currently coexist with TOH are unaffected by this wilt, with the exception of striped maple, *Acer pensylvanicum*. Natural *V. nonalfalfae* infections have killed only 1% of associated striped maple, and striped maple populations were even observed increasing after TOH control. A large host-range testing has been conducted on *V. nonalfalfae* isolate VnAa140. Of the 71 plant species tested in a greenhouse and in the field, significant disease impact occurred only on TOH. Work is underway to screen VnAa140 against a much larger list of nontarget plant species representative of agriculturally and ecologically important plants.



Figure 8. Foliar symptoms on a *V. nonalfalfae*-inoculated TOH (Photo: Donald D. Davis, The Pennsylvania State University)



Figure 9. Epicormic sprouting on a *V. nonalfalfae*-inoculated TOH (Photo: Rachel K. Brooks, Virginia Tech)



Figure 10. Bark removed exposing color differences between healthy (left) and infected TOH (right) (Photo: Kristen Wickert, West Virginia University)



Figure 11. Aerial view of a TOH stand with several trees exhibiting foliar symptoms following *V. nonalfalfae* inoculations (Photo: The Pennsylvania State University)

SPREAD

Verticillium nonalfalfae can spread naturally from diseased to nearby healthy TOH through root contacts, soil movement, and transmission by insects. Due to this tree's aggressive growth and clonal tendencies, TOH stands include many functional root grafts (roots that have grown together, **Fig. 12**). Consequently, the fungus readily spreads within a stand and is highly effective at controlling TOH over large areas.



Figure 12. Excavated TOH roots showing a functional root graft (Photo: Kristen Wickert, West Virginia University)

Between or among stands, the fungus can be spread passively by ambrosia beetles, which feed on dead and dying trees. *Euwallacea validus* (Eichhoff) is the most common ambrosia beetle associated with symptomatic TOH. In laboratory studies, the weevil *E. brandti* demonstrated the ability to carry and transfer *V. nonalfalfae* to TOH. These insects would be able to spread the fungus to TOH stands otherwise unreachable for short-range pathogen dissemination.

It is relatively easy to infect TOH by injecting a suspension of spores into the stem or by the "hack and squirt" method. Disease develops quickly, killing 100% of the trees within three months following infection. Because the fungus can spread naturally from diseased to nearby healthy TOH through root contact, this ability for natural spread would greatly increase the biological control efficacy of the pathogen and decrease application coverage needs.

Advantages of *V. nonalfalfae*

- Native to the USA; not an introduced pathogen
- Found killing TOH in Pennsylvania, Ohio, and Virginia
- Host-restricted; needs further confirmation
- Kills TOH of all growth stages
- Can be mass produced and formulated
- Easy to inoculate TOH with existing tools
- 100% TOH kill—consistent and fairly quick
- Disease spreads from infected to untreated TOH—a highly desirable feature
- Could be integrated with other biological control agents (e.g., TOH weevil *Eucryptorrhynchus brandti* and spotted lanternfly pathogens and parasites)

BIOHERBICIDE POTENTIAL

An email survey was designed and conducted by the Florida Survey Research Center, University of Florida to determine the preference of using a registered bioherbicide as opposed to a chemical herbicide to control TOH. A total of 500 potential users (e.g., highway departments, state parks and foresters, extension scientists, and pest control companies) were contacted. Of the 100 responders ⅓ said they were "very likely" and another ⅓ responded they were "likely" to use the bioherbicide instead of the chemical herbicide.

Because *V. nonalfalfae* isolate VnAa140 from Pennsylvania has shown such excellent potential as a biocontrol agent for TOH, efforts are currently underway to register this isolate as a bioherbicide with the U.S. EPA. Registration would allow for the widespread general use of this biopesticide, in addition to its movement across state lines.

The registration process can take several years, although bio-based pesticides (e.g., bioherbicides) are usually granted "fast track" status and receive an expedited process. When registered by the U.S. EPA, this bioherbicide is expected to become a major component in IPM programs to control TOH.

REGISTRATION PROCESS

A preliminary meeting (15 February 2018) between the U.S. EPA Biopesticides and Pollution Prevention Division, the private company BioProdex, and Dr. Michael Braverman (Manager Biopesticide, Organic and International Capacity Building Programs, IR-4 Project, Rutgers University, NJ) outlined the requirements and work plan for registration of *V. nonalfalfae*.

- Beginning in 2019, BioProdex (contact Dr. Raghavan Charudattan), in collaboration with the USDA ARS U.S. Horticultural Research Laboratory, agreed to conduct laboratory and greenhouse trials on approximately 250 plant species to determine the pathogenicity of *V. nonalfalfae* isolate VnAa140, the host range of the isolate, and the potential non-host species at risk, if any.
- Dr. Braverman agreed to serve as Bioprodex's EPA liaison throughout the registration effort and to advise and assist the company regarding agency rules and regulations, data requirements, submissions, reviews, and other matters. His services are provided free of cost, as part of the IR-4's assistance to promote biopesticide registrations.
- Sylvan Bio, Kittanning, PA, a renowned world leader in fungal biomass production, agreed to industrially develop isolate VnAa140 biomass for the proposed effort and, after EPA registration, serve as the manufacturer of the fungal bioherbicide product for BioProdex.
- A certified commercial toxicology lab must still be subcontracted to gather toxicity data on the fungal isolate according to EPA Tier 1 testing guidelines.
- Gathering empirical data and submitting a full registration data package to the EPA is expected to take 3 years. An additional year might be needed to develop bioherbicide product specifications, application tools and methods, a pesticide label and use instructions, and packaging.
- During the EPA registration review, the bioherbicide is expected to be available for field testing under an Experimental Use Permit.

WHAT YOU CAN DO

Because industrially developing and registering the fungus as a bioherbicide would provide a powerful tool to hasten the control of TOH, there is an urgent need to identify funding sources to support its registration.

It is estimated that a total of $185,000 is needed to complete the host range trials, and a total of $215,000 is needed to complete the toxicology tests. These funds would cover studies conducted over 2 years and provide the initial critical data to determine whether or not to continue the registration process (e.g., field trials, formulation development). Research proposals have been submitted to potential funding sources (e.g., Farm Bill, Spotted Lanternfly Program, USDA Special Projects) to develop registration data, but to date funding has not materialized.

Funding is imperative as this native fungus has been demonstrated as a highly effective bioherbicide that kills TOH and spreads naturally. It is the only long-term, environmentally compatible control for TOH, either as a standalone treatment or as a component for an IPM approach. Contact your state department of agriculture, department of forestry, or department of highways to inquire about the registration status of this fungus.

UNTIL *V. NONALFALFAE* IS REGISTERED

STOP

- Movement of infected plant material or associated soil is highly discouraged as this practice can lead to the spread of other pests or diseases (such as spotted lanternfly or fusarium canker)
- Movement of *V. nonalfalfae* across state borders requires a government permit. Movement without a permit is punishable by law
- Use, production, and sale of *V. nonalfalfae* as a bioherbicide requires U.S. EPA registration

The use of trade, firm, or corporation names in this publication is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by the U.S. Department of Agriculture or the Forest Service of any product or service to the exclusion of others that may be suitable.

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

Booklet back cover image: A TOH stand whose center-most trees were inoculated with *V. nonalfalfae* two months prior to this photo (Photo: Rachel K. Brooks, Virginia Tech)



Federal Recycling Program
Printed on Recycled Paper

Board Agenda Item
March 9, 2021

ACTION - 5

Approval of Supplemental Appropriation Resolution 21223 to Accept Grant Funding and Authorization to Execute Project Administration Agreements with the Virginia Department of Transportation for the Implementation of Transportation Alternatives Funded Projects (Mason, Providence and Springfield Districts)

ISSUE:
Board of Supervisors' approval of Supplemental Appropriation Resolution AS 21223 for the Fairfax County Department of Transportation (FCDOT) to accept grant funding for three projects associated with the Transportation Alternatives Program (TAP) from the Virginia Department of Transportation (VDOT) in the amount of $1,500,000. Funding will specifically support the following projects:

- $560,000, Shrevewood Elementary Safe Routes to School;
- $160,000, Orange Hunt Elementary Safe Routes to School; and
- $780,000, Columbia Pike Complete Streets Phase I.

Authorization is also requested for the Director of the Fairfax County Department of Transportation to enter into Standard Project Administration Agreements with VDOT for the Shrevewood Elementary Safe Routes to School, Orange Hunt Elementary Safe Routes to School and Columbia Pike Complete Streets Phase I Improvements projects. These projects require a Local Cash Match of $375,000 ($140,000 for the Shrevewood Elementary Safe Routes to School, $40,000 for the Orange Hunt Elementary Safe Routes to School, and $195,000 for Columbia Pike Complete Streets Phase I). The total required Local Cash Match has been identified in Fund 40010, County and Regional Transportation Projects. No new General Fund resources are required.

RECOMMENDATION:
The County Executive recommends that the Board approve Supplemental Appropriation Resolution AS 21223 for FCDOT to accept grant funding from VDOT for three projects associated with the Transportation Alternatives Program in the amount of $1.5 million and authorize the Director of FCDOT to enter into Standard Project Administration Agreements with the VDOT. The total required Local Cash Match of $375,000 is available in Fund 40010, County and Regional Transportation Projects. There are no positions associated with these awards.

Board Agenda Item
March 9, 2021

TIMING:
Board approval is requested on March 9, 2021, to enable staff to immediately continue progress on these projects.

BACKGROUND:
On September 24, 2019, the Board of Supervisors endorsed the applications for Transportation Alternatives Projects for the three projects that were awarded funding. The Commonwealth Transportation Board awarded $560,000 for the Shrevewood Elementary Safe Routes to School, $160,000 for the Orange Hunt Elementary Safe Routes to School and $780,000 for Columbia Pike Complete Streets Phase I. All three projects are new Transportation Alternative Projects. The County must allocate part of the funding for VDOT review. The amounts for VDOT review are $52,530 for Shrevewood Elementary Safe Routes to School, $19,967 for Orange Hunt Elementary Safe Routes to School, and $78,866 for Columbia Pike Complete Streets Phase I.

The Shrevewood Elementary School Safe Routes to School project will add crosswalks across Shreve Road at Fairwood Lane and at the eastern driveway across the bifurcated portion of Shreve Road and add crosswalk across Virginia Lane at Virginia Avenue, including new connections to existing sidewalks and paths, curb ramps, curb extensions where feasible, and school crosswalk signing and markings. Grant funding will provide preliminary engineering, right-of-way, and construction.

The Orange Hunt Elementary Safe Routes to School project involves realigning the crosswalk on Huntsman Boulevard at Spelman Drive, including a median refuge and curb extensions to shorten the crossing distance. Grant funding will provide preliminary engineering, right-of-way, and construction.

The Columbia Pike Complete Streets Phase I project will add sidewalk along the south side of Columbia Pike from Backlick Road to Tom Davis Drive and add a crosswalk and curb ramps crossing Columbia Pike at the west leg of Tom Davis Drive. Grant funding will provide preliminary engineering, right-of-way, and construction.

All three projects are currently in scoping. After the project agreements are executed with VDOT, design work will begin on all projects.

FISCAL IMPACT:
Total grant funding of $1,500,000 is available from the VDOT, with a Local Cash Match requirement of $375,000. The total required Local Cash Match has been identified in Fund 40010, County and Regional Transportation Projects. Appropriation to the

Federal-State Grant Fund totals $1,348,637 ($507,470 for Shrevewood Elementary Safe Routes to School, $140,033 for Orange Hunt Elementary Safe Routes to School, and $701,134 for Columbia Pike Complete Streets Phase I) as VDOT expenses are not accounted for in the County's financial system. This action does not increase the expenditure level of the Federal-State Grant Fund, as funds are held in reserve for unanticipated grant awards. This grant does not allow for the recovery of indirect costs.

CREATION OF POSITIONS:
No positions will be created through these grant awards.

ENCLOSED DOCUMENTS:
Attachment 1 – Supplemental Appropriation Resolution AS 21223
Attachment 2 – Resolutions to Authorize Staff to Execute Standard Project Agreements
Attachment 3 – Standard Project Agreements

STAFF:
Rachel Flynn, Deputy County Executive
Tom Biesiadny, Director, FCDOT
Todd Wigglesworth, Chief, Coordination and Funding Division, FCDOT
Todd Minnix, Chief, Transportation Design Division, FCDOT
Ray Johnson, Chief, Funding Section, FCDOT
Michael Guarino, Chief, Capital Projects Section, FCDOT
Smitha L. Chellappa, Transportation Planner IV, Funding Section, FCDOT
Chris Wells, Transportation Planner IV, Capital Projects Section, FCDOT
Lauren Delmare, Transportation Planner III, Capital Projects Section, FCDOT

ASSIGNED COUNSEL:
Richard F. Dzubin, Assistant County Attorney

SUPPLEMENTAL APPROPRIATION RESOLUTION AS 21223

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held **electronically (due to the State of Emergency caused by the COVID-19 pandemic),** on March 9, 2021, at which meeting a quorum was present and voting, the following resolution was adopted:

BE IT RESOLVED by the Board of Supervisors of Fairfax County, Virginia, that in addition to appropriations made previously for FY 2021, the following supplemental appropriation is authorized, and the Fiscal Planning Resolution is amended accordingly:

Appropriate to:

Fund:	500-C50000, Federal-State Grant Fund	
Agency:	G4040, Department of Transportation	
Grants:	1400157-2021, Shrevewood Elementary Safe Routes to School,	$507,470
	1400158-2021, Orange Hunt Elementary Safe Routes to School,	$140,033
	1400159-2021, Columbia Pike Complete Streets Phase I,	$701,134

Reduce Appropriation to:

Agency:	G8787, Unclassified Administrative Expenses	$1,348,637
Fund:	500-C50000, Federal-State Grant Fund	

Source of Funds: Virginia Department of Transportation, $1,348,637

A Copy - Teste:

Jill G. Cooper
Clerk for the Board of Supervisors

Attachment 2

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held **electronically (due to the State of Emergency caused by the COVID-19 pandemic),** on March 9, 2021, at which meeting a quorum was present and voting, the following resolution was adopted.

AGREEMENT EXECUTION RESOLUTION

WHEREAS, in accordance with Virginia Department of Transportation project agreement procedures, it is necessary that a resolution be received from the local government authorizing execution of an agreement.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Fairfax County, Virginia, authorizes the Director of the Department of Transportation to execute on behalf of the County of Fairfax a Project Administration Agreement with the Virginia Department of Transportation for the for the Implementation of Shrevewood Elementary School Safe Routes to School Transportation Alternatives Funded Project by the County of Fairfax.

Adopted this 9th day of March, 2021, Fairfax, Virginia

ATTEST _____
Jill G. Cooper
Clerk for the Board of Supervisors

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held **electronically (due to the State of Emergency caused by the COVID-19 pandemic),** on March 9, 2021, at which meeting a quorum was present and voting, the following resolution was adopted.

AGREEMENT EXECUTION RESOLUTION

WHEREAS, in accordance with Virginia Department of Transportation project agreement procedures, it is necessary that a resolution be received from the local government authorizing execution of an agreement.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Fairfax County, Virginia, authorizes the Director of the Department of Transportation to execute on behalf of the County of Fairfax a Project Administration Agreement with the Virginia Department of Transportation for the for the Implementation of Orange Hunt Elementary School Safe Routes to School Transportation Alternatives Funded Project by the County of Fairfax.

Adopted this 9th day of March, 2021, Fairfax, Virginia

ATTEST _____
Jill G. Cooper
Clerk for the Board of Supervisors

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held **electronically (due to the State of Emergency caused by the COVID-19 pandemic),** on March 9, 2021, at which meeting a quorum was present and voting, the following resolution was adopted.

AGREEMENT EXECUTION RESOLUTION

WHEREAS, in accordance with Virginia Department of Transportation project agreement procedures, it is necessary that a resolution be received from the local government authorizing execution of an agreement.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Fairfax County, Virginia, authorizes the Director of the Department of Transportation to execute on behalf of the County of Fairfax a Project Administration Agreement with the Virginia Department of Transportation for the for the Implementation of Columbia Pike Complete Streets Phase I Transportation Alternatives Funded Project by the County of Fairfax.

Adopted this 9th day of March, 2021, Fairfax, Virginia

ATTEST _____
Jill G. Cooper
Clerk for the Board of Supervisors

STANDARD PROJECT ADMINISTRATION AGREEMENT
Federal-aid Projects

Project Number	UPC	Local Government
EN20-029-495 Shrevewood ES SRTS	118236	Fairfax County

THIS AGREEMENT, made and executed in triplicate this ____ day of _____, 20__, by and between the County of Fairfax, Virginia, hereinafter referred to as the LOCALITY and the Commonwealth of Virginia, Department of Transportation, hereinafter referred to as the DEPARTMENT.

WHEREAS, the LOCALITY has expressed its desire to administer the work described in Appendix A, and such work for each improvement shown is hereinafter referred to as the Project; and

WHEREAS, the funds shown in Appendix A have been allocated to finance each Project; and

WHEREAS, the LOCALITY is committed to the development and delivery of each Project described in Appendix A in an expeditious manner; and;

WHEREAS, both parties have concurred in the LOCALITY's administration of the phase(s) of work for the respective Project(s) listed in Appendix A in accordance with applicable federal, state, and local law and regulations.

NOW THEREFORE, in consideration of the mutual premises contained herein, the parties hereto agree as follows:

1. The LOCALITY shall:

   a. Be responsible for all activities necessary to complete the noted phase(s) of each Project shown in Appendix A, except for activities, decisions, and approvals which are the responsibility of the DEPARTMENT, as required by federal or state laws and regulations or as otherwise agreed to, in writing, between the parties. Each Project will be designed and constructed to meet or exceed current American Association of State Highway and Transportation Officials standards or supplementary standards approved by the DEPARTMENT

   b. Meet all funding obligation and expenditure timeline requirements in accordance with all applicable federal and state laws and regulations, and Commonwealth Transportation Board and DEPARTMENT policies and as identified in Appendix A to this Agreement. Noncompliance with this requirement can result in deallocation of the funding, rescinding of state funding match, termination of this Agreement, or DEPARTMENT denial of future requests to administer projects by the LOCALITY.

c. Receive prior written authorization from the DEPARTMENT to proceed with preliminary engineering, right-of-way acquisition and utility relocation, and construction phases of each Project.

d. Administer the project(s) in accordance with guidelines applicable to Locally Administered Projects as published by the DEPARTMENT.

e. Maintain accurate and complete records of each Project's development and documentation of all expenditures and make such information available for inspection or auditing by the DEPARTMENT. Records and documentation for items for which reimbursement will be requested shall be maintained for no less than three (3) years following acceptance of the final voucher on each Project.

f. No more frequently than monthly, submit invoices with supporting documentation to the DEPARTMENT in the form prescribed by the DEPARTMENT. The supporting documentation shall include copies of related vendor invoices paid by the LOCALITY and an up-to-date project summary and schedule tracking payment requests and adjustments. A request for reimbursement shall be made within 90 days after any eligible project expenses are incurred by the LOCALITY. For federally funded projects and pursuant to 2 CFR 200.338, Remedies for Noncompliance, violations of the provision may result in the imposition of sanctions including but not limited to possible denial or delay of payment of all or a part of the costs associated with the activity or action not in compliance.

g. Reimburse the DEPARTMENT all Project expenses incurred by the DEPARTMENT if, due to action or inaction solely by the LOCALITY, federally funded Project expenditures incurred are not reimbursed by the Federal Highway Administration (FHWA), or reimbursements are required to be returned to the FHWA, or in the event the reimbursement provisions of Section 33.2-214 or Section 33.2-331 of the Code of Virginia, 1950, as amended, or other applicable provisions of federal, state, or local law or regulations require such reimbursement.

h. On Projects that the LOCALITY is providing the required match to state or federal funds, pay the DEPARTMENT the LOCALITY's match for eligible Project expenses incurred by the DEPARTMENT in the performance of activities set forth in paragraph 2.a.

i. Administer the Project in accordance with all applicable federal, state, or local laws and regulations. Failure to fulfill legal obligations associated with the project may result in forfeiture of federal or state-aid reimbursements

j. Provide certification by a LOCALITY official that all LOCALITY administered Project activities have been performed in accordance with all federal, state, and local laws and regulations. If the LOCALITY expends over $750,000 annually in federal funding, such certification shall include a copy of

the LOCALITY's single program audit in accordance with 2 CFR 200.501, Audit Requirements.

k. If legal services other than that provided by staff counsel are required in connection with condemnation proceedings associated with the acquisition of Right-of-Way, the LOCALITY will consult the DEPARTMENT to obtain an attorney from the list of outside counsel approved by the Office of the Attorney General. Costs associated with outside counsel services shall be reimbursable expenses of the project.

l. For Projects on facilities not maintained by the DEPARTMENT, provide, or have others provide, maintenance of the Project upon completion, unless otherwise agreed to by the DEPARTMENT.

m. Ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, regulations of the United States Department of Transportation (USDOT), Presidential Executive Orders and the Code of Virginia relative to nondiscrimination; and as a sub-recipient of federal funds, adopt and operate under the DEPARTMENT's FHWA-approved Disadvantaged Business Enterprise (DBE) Program Plan in accordance with 49 CFR Part 26.

2. The DEPARTMENT shall:

a. Perform any actions and provide any decisions and approvals which are the responsibility of the DEPARTMENT, as required by federal and state laws and regulations or as otherwise agreed to, in writing, between the parties and provide necessary coordination with the FHWA as determined to be necessary by the DEPARTMENT.

b. Upon receipt of the LOCALITY's invoices pursuant to paragraph 1.f., reimburse the LOCALITY the cost of eligible Project expenses, as described in Appendix A. Such reimbursements shall be payable by the DEPARTMENT within 30 days of an acceptable submission by the LOCALITY.

c. If appropriate, submit invoices to the LOCALITY for the LOCALITY's share of eligible project expenses incurred by the DEPARTMENT in the performance of activities pursuant to paragraph 2.a.

d. Audit the LOCALITY's Project records and documentation as may be required to verify LOCALITY compliance with federal and state laws and regulations.

e. Make available to the LOCALITY guidelines to assist the parties in carrying out responsibilities under this Agreement.

3. Appendix A identifies the funding sources for the project, phases of work to be administered by the LOCALITY, and additional project-specific requirements agreed to by the parties. There may be additional elements that, once identified, shall be addressed by the parties hereto in writing, which may require an amendment to this Agreement.

4. If designated by the DEPARTMENT, the LOCALITY is authorized to act as the DEPARTMENT's agent for the purpose of conducting survey work pursuant to Section 33.2-1011 of the Code of Virginia, 1950, as amended.

5. Nothing in this Agreement shall obligate the parties hereto to expend or provide any funds in excess of funds agreed upon in this Agreement or as shall have been included in an annual or other lawful appropriation. In the event the cost of a Project is anticipated to exceed the allocation shown for such respective Project on Appendix A, both parties agree to cooperate in providing additional funding for the Project or to terminate the Project before its costs exceed the allocated amount, however the DEPARTMENT and the LOCALITY shall not be obligated to provide additional funds beyond those appropriated pursuant to an annual or other lawful appropriation.

6. Nothing in this Agreement shall be construed as a waiver of the LOCALITY's or the Commonwealth of Virginia's sovereign immunity.

7. The Parties mutually agree and acknowledge, in entering this Agreement, that the individuals acting on behalf of the Parties are acting within the scope of their official authority and the Parties agree that neither Party will bring a suit or assert a claim against any official, officer, or employee of either party, in their individual or personal capacity for a breach or violation of the terms of this Agreement or to otherwise enforce the terms and conditions of this Agreement. The foregoing notwithstanding, nothing in this subparagraph shall prevent the enforcement of the terms and conditions of this Agreement by or against either Party in a competent court of law.

8. The Parties mutually agree that no provision of this Agreement shall create in the public, or in any person or entity other than the Parties, rights as a third party beneficiary hereunder, or authorize any person or entity, not a party hereto, to maintain any action for, without limitation, personal injury, property damage, breach of contract, or return of money, or property, deposit(s), cancellation or forfeiture of bonds, financial instruments, pursuant to the terms of this Agreement or otherwise. Notwithstanding any other provision of this Agreement to the contrary, unless otherwise provided, the Parties agree that the LOCALITY or the DEPARTMENT shall not be bound by any agreements between either party and other persons or entities concerning any matter which is the subject of this Agreement, unless and until the LOCALITY or the DEPARTMENT has, in writing, received a true copy of such agreement(s) and has affirmatively agreed, in writing, to be bound by such Agreement.

9. This Agreement may be terminated by either party upon 30 days advance written notice. Eligible Project expenses incurred through the date of termination shall be reimbursed in accordance with paragraphs 1.f, 1.g., and 2.b, subject to the limitations established in this Agreement and Appendix A. Upon termination, the DEPARTMENT shall retain ownership of plans, specifications, and right of way, unless all state and federal funds provided for the Project have been reimbursed to the DEPARTMENT by the LOCALITY, in which case the LOCALITY will have ownership of the plans, specifications, and right of way, unless otherwise mutually agreed upon in writing.

10. Prior to any action pursuant to paragraphs 1.b or 1.g of this Agreement, the DEPARTMENT shall provide notice to the LOCALITY with a specific description of the breach of agreement provisions. Upon receipt of a notice of breach, the LOCALITY will be provided the opportunity to cure such breach or to provide a plan to cure to the satisfaction to the DEPARTMENT. If, within sixty (60) days after receipt of the written notice of breach, the LOCALITY has neither cured the breach, nor is diligently pursuing a cure of the breach to the satisfaction of the DEPARTMENT, then upon receipt by the LOCALITY of a written notice from the DEPARTMENT stating that the breach has neither been cured, nor is the LOCALITY diligently pursuing a cure, the DEPARTMENT may exercise any remedies it may have under this Agreement.

THE LOCALITY and DEPARTMENT acknowledge and agree that this Agreement has been prepared jointly by the parties and shall be construed simply and in accordance with its fair meaning and not strictly for or against any party.

THIS AGREEMENT, when properly executed, shall be binding upon both parties, their successors, and assigns.

THIS AGREEMENT may be modified in writing by mutual agreement of both parties.

IN WITNESS WHEREOF, each party hereto has caused this Agreement to be executed as of the day, month, and year first herein written.

COUNTY OF FAIRFAX, VIRGINIA:

_____

_____
Typed or printed name of signatory

Date

Title

_____
Signature of Witness Date

NOTE: The official signing for the LOCALITY must attach a certified copy of his or her authority to execute this Agreement.

COMMONWEALTH OF VIRGINIA, DEPARTMENT OF TRANSPORTATION:

_____
Chief of Policy Date
Commonwealth of Virginia
Department of Transportation

_____
Signature of Witness Date

Attachments
Appendix A – UPC 118236

Appendix A **Date:** 12/11/2020

Project Number: EN20-029-495 Shrevewood ES SRTS UPC: 118236 CFDA # 20.205 Locality: Fairfax County

Project Location ZIP+4: 22043-3204	Locality DUNS # 74837626	Locality Address (incl ZIP+4): 4050 Legato Road, Suite 400 Fairfax, VA 22033-2895

Project Narrative

Work Description:	Shrevewood ES SRTS - Add three new crosswalks with sidewalk connections serving Shrevewood Elementary School and the W&OD Trail.
From:	Fairwood Road
To:	Virginia Lane
Locality Project Manager Contact info:	Lauren Delmare 703-877-5949 Lauren.Delmare@fairfaxcounty.gov
Department Project Coordinator Contact Info:	Saif Qargha 703-259-3223 Saif.Qargha@vdot.virginia.gov

Project Estimates

	Preliminary Engineering	Right of Way and Utilities	Construction	Total Estimated Cost	[redacted]
Estimated Locality Project Expenses	$23,491	$53,558	$570,421	$647,470	
Estimated VDOT Project Expenses	$41,609	$4,717	$6,204	$52,530	
Estimated Total Project Costs	$65,100	$58,275	$576,625	$700,000	

Project Cost and Reimbursement

Phase	Estimated Project Costs	Funds type *(Choose from drop down box)*	Local % Participation for Funds Type	Local Share Amount	Maximum Reimbursement (Estimated Cost - Local Share)	Estimated Reimbursement to Locality (Max. Reimbursement - Est. VDOT Expenses)
Preliminary Engineering	$65,100	Transportation Alternatives	20%	$13,020	$52,080	[redacted]
				$0	$0	
Total PE	$65,100			$13,020	$52,080	$10,471
Right of Way & Utilities	$58,275	Transportation Alternatives	20%	$11,655	$46,620	[redacted]
				$0	$0	
Total RW	$58,275			$11,655	$46,620	$41,903
Construction	$576,625	Transportation Alternatives	20%	$115,325	$461,300	[redacted]
				$0	$0	
Total CN	$576,625			$115,325	$461,300	$455,096
Total Estimated Cost	$700,000			$140,000	$560,000	$507,470

Total Maximum Reimbursement by VDOT to Locality (Less Local Share)	$560,000
Estimated Total Reimbursement by VDOT to Locality (Less Local Share and VDOT Expenses)	$507,470

Project Financing

Transportation Alternatives - Federal (80%)	Local Match (20%)					**Aggregate Allocations**
$560,000	$140,000					$700,000

Program and Project Specific Funding Requirements

- This Project shall be administered in accordance with VDOT's Locally Administered Projects Manual and Transportation Alternatives Program Guide.
- In accordance with Chapter 12.1.3 (Scoping Process Requirements) of the LAP Manual, the locality shall complete project scoping on or before 11/22/2021.
- This is a limited funds project. The LOCALITY shall be responsible for any additional funding in excess of $560,000
- Reimbursement for eligible expenditures shall not exceed funds allocated each year by the Commonwealth Transportation Board in the Six Year Improvement Program.
- Eligible VDOT Project expenses will be recovered as follows: 80% will be deducted from the federal allocation and 20% will be deducted from reimbursement requests.
- Any ineligible items identified throughout Project development will not be reimbursable.
- The DEPARTMENT will conduct all environmental studies necessary to complete an environmental document in compliance with the National Environmental Policy Act including, but not limited to, basic coordination for cultural resources, basic clearances for threatened and endangered species, and any necessary certifications, recertifications, and/or reevaluations. The LOCALITY is responsible for tracking, implementing, and completing all environmental commitments associated with the project. In addition, the LOCALITY is responsible for obtaining any water quality permits, submitting a signed EQ-555 for natural resources due diligence, conducting any required hazardous materials efforts, and submitting a signed EQ-121 for hazardous materials due diligence (all submittals are to be in accordance with the LAP Manual). VDOT's estimated cost for preparing the environmental document and necessary supporting studies, including certifications, recertifications and/or reevaluations, will be provided to the LOCALITY and deducted from the Project funds.
- For Transportation Alternatives (TA) Projects, the LOCALITY shall maintain the Project or have it maintained in a manner satisfactory to the DEPARTMENT for its useful life and make ample provisions each year for such maintenance unless otherwise agreed to by the DEPARTMENT. Failure to do so, or the sale of a TA funded improvement prior to the expectations as identified in the TA Guide, may require repayment of federal funds.
- All local funds included on this appendix have been formally committed by the local government's board or council resolution subject to appropriation.
- In accordance with CTB policy, the Project must be under construction by November 1, 2024 or the federal Transportation Alternatives (TA) funding may be subject to de-allocation.

This attachment is certified and made an official attachment to this document by the parties to this agreement.

Authorized Locality Official Date

Tom Biesiadny

Typed or printed name of person signing

Authorized VDOT Official Date

Ray Burkhardt

Typed or printed name of person signing

Revised: February 1, 2019

STANDARD PROJECT ADMINISTRATION AGREEMENT
Federal-aid Projects

Project Number	UPC	Local Government
EN20-029-496 Orange Hunt ES SRTS	118237	Fairfax County

THIS AGREEMENT, made and executed in triplicate this ____ day of _____, 20__, by and between the County of Fairfax, Virginia, hereinafter referred to as the LOCALITY and the Commonwealth of Virginia, Department of Transportation, hereinafter referred to as the DEPARTMENT.

WHEREAS, the LOCALITY has expressed its desire to administer the work described in Appendix A, and such work for each improvement shown is hereinafter referred to as the Project; and

WHEREAS, the funds shown in Appendix A have been allocated to finance each Project; and

WHEREAS, the LOCALITY is committed to the development and delivery of each Project described in Appendix A in an expeditious manner; and;

WHEREAS, both parties have concurred in the LOCALITY's administration of the phase(s) of work for the respective Project(s) listed in Appendix A in accordance with applicable federal, state, and local law and regulations.

NOW THEREFORE, in consideration of the mutual premises contained herein, the parties hereto agree as follows:

1. The LOCALITY shall:

   a. Be responsible for all activities necessary to complete the noted phase(s) of each Project shown in Appendix A, except for activities, decisions, and approvals which are the responsibility of the DEPARTMENT, as required by federal or state laws and regulations or as otherwise agreed to, in writing, between the parties. Each Project will be designed and constructed to meet or exceed current American Association of State Highway and Transportation Officials standards or supplementary standards approved by the DEPARTMENT

   b. Meet all funding obligation and expenditure timeline requirements in accordance with all applicable federal and state laws and regulations, and Commonwealth Transportation Board and DEPARTMENT policies and as identified in Appendix A to this Agreement. Noncompliance with this requirement can result in deallocation of the funding, rescinding of state funding match, termination of this Agreement, or DEPARTMENT denial of future requests to administer projects by the LOCALITY.

c. Receive prior written authorization from the DEPARTMENT to proceed with preliminary engineering, right-of-way acquisition and utility relocation, and construction phases of each Project.

d. Administer the project(s) in accordance with guidelines applicable to Locally Administered Projects as published by the DEPARTMENT.

e. Maintain accurate and complete records of each Project's development and documentation of all expenditures and make such information available for inspection or auditing by the DEPARTMENT. Records and documentation for items for which reimbursement will be requested shall be maintained for no less than three (3) years following acceptance of the final voucher on each Project.

f. No more frequently than monthly, submit invoices with supporting documentation to the DEPARTMENT in the form prescribed by the DEPARTMENT. The supporting documentation shall include copies of related vendor invoices paid by the LOCALITY and an up-to-date project summary and schedule tracking payment requests and adjustments. A request for reimbursement shall be made within 90 days after any eligible project expenses are incurred by the LOCALITY. For federally funded projects and pursuant to 2 CFR 200.338, Remedies for Noncompliance, violations of the provision may result in the imposition of sanctions including but not limited to possible denial or delay of payment of all or a part of the costs associated with the activity or action not in compliance.

g. Reimburse the DEPARTMENT all Project expenses incurred by the DEPARTMENT if, due to action or inaction solely by the LOCALITY, federally funded Project expenditures incurred are not reimbursed by the Federal Highway Administration (FHWA), or reimbursements are required to be returned to the FHWA, or in the event the reimbursement provisions of Section 33.2-214 or Section 33.2-331 of the Code of Virginia, 1950, as amended, or other applicable provisions of federal, state, or local law or regulations require such reimbursement.

h. On Projects that the LOCALITY is providing the required match to state or federal funds, pay the DEPARTMENT the LOCALITY's match for eligible Project expenses incurred by the DEPARTMENT in the performance of activities set forth in paragraph 2.a.

i. Administer the Project in accordance with all applicable federal, state, or local laws and regulations. Failure to fulfill legal obligations associated with the project may result in forfeiture of federal or state-aid reimbursements

j. Provide certification by a LOCALITY official that all LOCALITY administered Project activities have been performed in accordance with all federal, state, and local laws and regulations. If the LOCALITY expends over $750,000 annually in federal funding, such certification shall include a copy of

the LOCALITY's single program audit in accordance with 2 CFR 200.501, Audit Requirements.

k. If legal services other than that provided by staff counsel are required in connection with condemnation proceedings associated with the acquisition of Right-of-Way, the LOCALITY will consult the DEPARTMENT to obtain an attorney from the list of outside counsel approved by the Office of the Attorney General. Costs associated with outside counsel services shall be reimbursable expenses of the project.

l. For Projects on facilities not maintained by the DEPARTMENT, provide, or have others provide, maintenance of the Project upon completion, unless otherwise agreed to by the DEPARTMENT.

m. Ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, regulations of the United States Department of Transportation (USDOT), Presidential Executive Orders and the Code of Virginia relative to nondiscrimination; and as a sub-recipient of federal funds, adopt and operate under the DEPARTMENT's FHWA-approved Disadvantaged Business Enterprise (DBE) Program Plan in accordance with 49 CFR Part 26.

2. The DEPARTMENT shall:

a. Perform any actions and provide any decisions and approvals which are the responsibility of the DEPARTMENT, as required by federal and state laws and regulations or as otherwise agreed to, in writing, between the parties and provide necessary coordination with the FHWA as determined to be necessary by the DEPARTMENT.

b. Upon receipt of the LOCALITY's invoices pursuant to paragraph 1.f., reimburse the LOCALITY the cost of eligible Project expenses, as described in Appendix A. Such reimbursements shall be payable by the DEPARTMENT within 30 days of an acceptable submission by the LOCALITY.

c. If appropriate, submit invoices to the LOCALITY for the LOCALITY's share of eligible project expenses incurred by the DEPARTMENT in the performance of activities pursuant to paragraph 2.a.

d. Audit the LOCALITY's Project records and documentation as may be required to verify LOCALITY compliance with federal and state laws and regulations.

e. Make available to the LOCALITY guidelines to assist the parties in carrying out responsibilities under this Agreement.

3. Appendix A identifies the funding sources for the project, phases of work to be administered by the LOCALITY, and additional project-specific requirements agreed to by the parties. There may be additional elements that, once identified, shall be addressed by the parties hereto in writing, which may require an amendment to this Agreement.

4. If designated by the DEPARTMENT, the LOCALITY is authorized to act as the DEPARTMENT's agent for the purpose of conducting survey work pursuant to Section 33.2-1011 of the Code of Virginia, 1950, as amended.

5. Nothing in this Agreement shall obligate the parties hereto to expend or provide any funds in excess of funds agreed upon in this Agreement or as shall have been included in an annual or other lawful appropriation. In the event the cost of a Project is anticipated to exceed the allocation shown for such respective Project on Appendix A, both parties agree to cooperate in providing additional funding for the Project or to terminate the Project before its costs exceed the allocated amount, however the DEPARTMENT and the LOCALITY shall not be obligated to provide additional funds beyond those appropriated pursuant to an annual or other lawful appropriation.

6. Nothing in this Agreement shall be construed as a waiver of the LOCALITY's or the Commonwealth of Virginia's sovereign immunity.

7. The Parties mutually agree and acknowledge, in entering this Agreement, that the individuals acting on behalf of the Parties are acting within the scope of their official authority and the Parties agree that neither Party will bring a suit or assert a claim against any official, officer, or employee of either party, in their individual or personal capacity for a breach or violation of the terms of this Agreement or to otherwise enforce the terms and conditions of this Agreement. The foregoing notwithstanding, nothing in this subparagraph shall prevent the enforcement of the terms and conditions of this Agreement by or against either Party in a competent court of law.

8. The Parties mutually agree that no provision of this Agreement shall create in the public, or in any person or entity other than the Parties, rights as a third party beneficiary hereunder, or authorize any person or entity, not a party hereto, to maintain any action for, without limitation, personal injury, property damage, breach of contract, or return of money, or property, deposit(s), cancellation or forfeiture of bonds, financial instruments, pursuant to the terms of this Agreement or otherwise. Notwithstanding any other provision of this Agreement to the contrary, unless otherwise provided, the Parties agree that the LOCALITY or the DEPARTMENT shall not be bound by any agreements between either party and other persons or entities concerning any matter which is the subject of this Agreement, unless and until the LOCALITY or the DEPARTMENT has, in writing, received a true copy of such agreement(s) and has affirmatively agreed, in writing, to be bound by such Agreement.

9. This Agreement may be terminated by either party upon 30 days advance written notice. Eligible Project expenses incurred through the date of termination shall be reimbursed in accordance with paragraphs 1.f, 1.g., and 2.b, subject to the limitations established in this Agreement and Appendix A. Upon termination, the DEPARTMENT shall retain ownership of plans, specifications, and right of way, unless all state and federal funds provided for the Project have been reimbursed to the DEPARTMENT by the LOCALITY, in which case the LOCALITY will have ownership of the plans, specifications, and right of way, unless otherwise mutually agreed upon in writing.

10. Prior to any action pursuant to paragraphs 1.b or 1.g of this Agreement, the DEPARTMENT shall provide notice to the LOCALITY with a specific description of the breach of agreement provisions. Upon receipt of a notice of breach, the LOCALITY will be provided the opportunity to cure such breach or to provide a plan to cure to the satisfaction to the DEPARTMENT. If, within sixty (60) days after receipt of the written notice of breach, the LOCALITY has neither cured the breach, nor is diligently pursuing a cure of the breach to the satisfaction of the DEPARTMENT, then upon receipt by the LOCALITY of a written notice from the DEPARTMENT stating that the breach has neither been cured, nor is the LOCALITY diligently pursuing a cure, the DEPARTMENT may exercise any remedies it may have under this Agreement.

THE LOCALITY and DEPARTMENT acknowledge and agree that this Agreement has been prepared jointly by the parties and shall be construed simply and in accordance with its fair meaning and not strictly for or against any party.

THIS AGREEMENT, when properly executed, shall be binding upon both parties, their successors, and assigns.

THIS AGREEMENT may be modified in writing by mutual agreement of both parties.

IN WITNESS WHEREOF, each party hereto has caused this Agreement to be executed as of the day, month, and year first herein written.

COUNTY OF FAIRFAX, VIRGINIA:

_____

_____
Typed or printed name of signatory

Date

Title

_____
Signature of Witness Date

NOTE: The official signing for the LOCALITY must attach a certified copy of his or her authority to execute this Agreement.

COMMONWEALTH OF VIRGINIA, DEPARTMENT OF TRANSPORTATION:

_____
Chief of Policy Date
Commonwealth of Virginia
Department of Transportation

_____
Signature of Witness Date

Attachments
Appendix A – UPC 118237

Appendix A **Date:** 12/11/2020

Project Number: EN20-029-496 Orange Hunt ES SRTS UPC: 118237 CFDA # 20.205 Locality: Fairfax County

Project Location ZIP+4: 22152-2642	Locality DUNS # 74837626	Locality Address (incl ZIP+4): 4050 Legato Road, Suite 400 Fairfax, VA 22033-2895

Project Narrative

Work Description:	Orange Hunt ES SRTS - Improve the existing crosswalk at Huntsman Blvd between the path to Orange Hunt ES and Spelman Dr by adding a pedestrian refuge island and curb extensions.
From:	Huntsman Blvd
To:	Spelman Dr
Locality Project Manager Contact info:	Lauren Delmare 703-877-5949 Lauren.Delmare@fairfaxcounty.gov
Department Project Coordinator Contact Info:	Saif Qargha 703-259-3223 Saif.Qargha@vdot.virginia.gov

Project Estimates

	Preliminary Engineering	Right of Way and Utilities	Construction	Total Estimated Cost	
Estimated Locality Project Expenses	$8,000	$19,689	$152,344	$180,033	
Estimated VDOT Project Expenses	$15,000	$3,311	$1,656	$19,967	
Estimated Total Project Costs	$23,000	$23,000	$154,000	$200,000	

Project Cost and Reimbursement

Phase	Estimated Project Costs	Funds type *(Choose from drop down box)*	Local % Participation for Funds Type	Local Share Amount	Maximum Reimbursement (Estimated Cost - Local Share)	Estimated Reimbursement to Locality (Max. Reimbursement - Est. VDOT Expenses)
Preliminary Engineering	$23,000	Transportation Alternatives	20%	$4,600	$18,400	
				$0	$0	
Total PE	$23,000			$4,600	$18,400	$3,400
Right of Way & Utilities	$23,000	Transportation Alternatives	20%	$4,600	$18,400	
				$0	$0	
Total RW	$23,000			$4,600	$18,400	$15,089
Construction	$154,000	Transportation Alternatives	20%	$30,800	$123,200	
				$0	$0	
Total CN	$154,000			$30,800	$123,200	$121,544
Total Estimated Cost	$200,000			$40,000	$160,000	$140,033

Total Maximum Reimbursement by VDOT to Locality (Less Local Share)	$160,000
Estimated Total Reimbursement by VDOT to Locality (Less Local Share and VDOT Expenses)	$140,033

Project Financing

Transportation Alternatives - Federal (80%)	Local Match (20%)					**Aggregate Allocations**
$160,000	$40,000					$200,000

Program and Project Specific Funding Requirements

- This Project shall be administered in accordance with VDOT's Locally Administered Projects Manual and Transportation Alternatives Program Guide.
- In accordance with Chapter 12.1.3 (Scoping Process Requirements) of the LAP Manual, the locality shall complete project scoping on or before 11/22/2021.
- This is a limited funds project. The LOCALITY shall be responsible for any additional funding in excess of $160,000
- Reimbursement for eligible expenditures shall not exceed funds allocated each year by the Commonwealth Transportation Board in the Six Year Improvement Program.
- Eligible VDOT Project expenses will be recovered as follows: 80% will be deducted from the federal allocation and 20% will be deducted from reimbursement requests.
- Any ineligible items identified throughout Project development will not be reimbursable.
- The DEPARTMENT will conduct all environmental studies necessary to complete an environmental document in compliance with the National Environmental Policy Act including, but not limited to, basic coordination for cultural resources, basic clearances for threatened and endangered species, and any necessary certifications, recertifications, and/or reevaluations. The LOCALITY is responsible for tracking, implementing, and completing all environmental commitments associated with the project. In addition, the LOCALITY is responsible for obtaining any water quality permits, submitting a signed EQ-555 for natural resources due diligence, conducting any required hazardous materials efforts, and submitting a signed EQ-121 for hazardous materials due diligence (all submittals are to be in accordance with the LAP Manual). VDOT's estimated cost for preparing the environmental document and necessary supporting studies, including certifications, recertifications and/or reevaluations, will be provided to the LOCALITY and deducted from the Project funds.
- For Transportation Alternatives (TA) Projects, the LOCALITY shall maintain the Project or have it maintained in a manner satisfactory to the DEPARTMENT for its useful life and make ample provisions each year for such maintenance unless otherwise agreed to by the DEPARTMENT. Failure to do so, or the sale of a TA funded improvement prior to the expectations as identified in the TA Guide, may require repayment of federal funds.
- All local funds included on this appendix have been formally committed by the local government's board or council resolution subject to appropriation.
- In accordance with CTB policy, the Project must be under construction by November 1, 2024 or the federal Transportation Alternatives (TA) funding may be subject to de-allocation.

This attachment is certified and made an official attachment to this document by the parties to this agreement.

Authorized Locality Official Date

Tom Biesiadny

Typed or printed name of person signing

Authorized VDOT Official Date

Ray Burkhardt

Typed or printed name of person signing

Revised: February 1, 2019

STANDARD PROJECT ADMINISTRATION AGREEMENT
Federal-aid Projects

Project Number	UPC	Local Government
EN20-029-497 Columbia Pike Complete Streets - Ph1	118238	Fairfax County

THIS AGREEMENT, made and executed in triplicate this ____ day of _____, 20__, by and between the County of Fairfax, Virginia, hereinafter referred to as the LOCALITY and the Commonwealth of Virginia, Department of Transportation, hereinafter referred to as the DEPARTMENT.

WHEREAS, the LOCALITY has expressed its desire to administer the work described in Appendix A, and such work for each improvement shown is hereinafter referred to as the Project; and

WHEREAS, the funds shown in Appendix A have been allocated to finance each Project; and

WHEREAS, the LOCALITY is committed to the development and delivery of each Project described in Appendix A in an expeditious manner; and;

WHEREAS, both parties have concurred in the LOCALITY's administration of the phase(s) of work for the respective Project(s) listed in Appendix A in accordance with applicable federal, state, and local law and regulations.

NOW THEREFORE, in consideration of the mutual premises contained herein, the parties hereto agree as follows:

1. The LOCALITY shall:

   a. Be responsible for all activities necessary to complete the noted phase(s) of each Project shown in Appendix A, except for activities, decisions, and approvals which are the responsibility of the DEPARTMENT, as required by federal or state laws and regulations or as otherwise agreed to, in writing, between the parties. Each Project will be designed and constructed to meet or exceed current American Association of State Highway and Transportation Officials standards or supplementary standards approved by the DEPARTMENT

   b. Meet all funding obligation and expenditure timeline requirements in accordance with all applicable federal and state laws and regulations, and Commonwealth Transportation Board and DEPARTMENT policies and as identified in Appendix A to this Agreement. Noncompliance with this requirement can result in deallocation of the funding, rescinding of state funding match, termination of this Agreement, or DEPARTMENT denial of future requests to administer projects by the LOCALITY.

c. Receive prior written authorization from the DEPARTMENT to proceed with preliminary engineering, right-of-way acquisition and utility relocation, and construction phases of each Project.

d. Administer the project(s) in accordance with guidelines applicable to Locally Administered Projects as published by the DEPARTMENT.

e. Maintain accurate and complete records of each Project's development and documentation of all expenditures and make such information available for inspection or auditing by the DEPARTMENT. Records and documentation for items for which reimbursement will be requested shall be maintained for no less than three (3) years following acceptance of the final voucher on each Project.

f. No more frequently than monthly, submit invoices with supporting documentation to the DEPARTMENT in the form prescribed by the DEPARTMENT. The supporting documentation shall include copies of related vendor invoices paid by the LOCALITY and an up-to-date project summary and schedule tracking payment requests and adjustments. A request for reimbursement shall be made within 90 days after any eligible project expenses are incurred by the LOCALITY. For federally funded projects and pursuant to 2 CFR 200.338, Remedies for Noncompliance, violations of the provision may result in the imposition of sanctions including but not limited to possible denial or delay of payment of all or a part of the costs associated with the activity or action not in compliance.

g. Reimburse the DEPARTMENT all Project expenses incurred by the DEPARTMENT if, due to action or inaction solely by the LOCALITY, federally funded Project expenditures incurred are not reimbursed by the Federal Highway Administration (FHWA), or reimbursements are required to be returned to the FHWA, or in the event the reimbursement provisions of Section 33.2-214 or Section 33.2-331 of the Code of Virginia, 1950, as amended, or other applicable provisions of federal, state, or local law or regulations require such reimbursement.

h. On Projects that the LOCALITY is providing the required match to state or federal funds, pay the DEPARTMENT the LOCALITY's match for eligible Project expenses incurred by the DEPARTMENT in the performance of activities set forth in paragraph 2.a.

i. Administer the Project in accordance with all applicable federal, state, or local laws and regulations. Failure to fulfill legal obligations associated with the project may result in forfeiture of federal or state-aid reimbursements

j. Provide certification by a LOCALITY official that all LOCALITY administered Project activities have been performed in accordance with all federal, state, and local laws and regulations. If the LOCALITY expends over $750,000 annually in federal funding, such certification shall include a copy of

the LOCALITY's single program audit in accordance with 2 CFR 200.501, Audit Requirements.

k. If legal services other than that provided by staff counsel are required in connection with condemnation proceedings associated with the acquisition of Right-of-Way, the LOCALITY will consult the DEPARTMENT to obtain an attorney from the list of outside counsel approved by the Office of the Attorney General. Costs associated with outside counsel services shall be reimbursable expenses of the project.

l. For Projects on facilities not maintained by the DEPARTMENT, provide, or have others provide, maintenance of the Project upon completion, unless otherwise agreed to by the DEPARTMENT.

m. Ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964, regulations of the United States Department of Transportation (USDOT), Presidential Executive Orders and the Code of Virginia relative to nondiscrimination; and as a sub-recipient of federal funds, adopt and operate under the DEPARTMENT's FHWA-approved Disadvantaged Business Enterprise (DBE) Program Plan in accordance with 49 CFR Part 26.

2. The DEPARTMENT shall:

a. Perform any actions and provide any decisions and approvals which are the responsibility of the DEPARTMENT, as required by federal and state laws and regulations or as otherwise agreed to, in writing, between the parties and provide necessary coordination with the FHWA as determined to be necessary by the DEPARTMENT.

b. Upon receipt of the LOCALITY's invoices pursuant to paragraph 1.f., reimburse the LOCALITY the cost of eligible Project expenses, as described in Appendix A. Such reimbursements shall be payable by the DEPARTMENT within 30 days of an acceptable submission by the LOCALITY.

c. If appropriate, submit invoices to the LOCALITY for the LOCALITY's share of eligible project expenses incurred by the DEPARTMENT in the performance of activities pursuant to paragraph 2.a.

d. Audit the LOCALITY's Project records and documentation as may be required to verify LOCALITY compliance with federal and state laws and regulations.

e. Make available to the LOCALITY guidelines to assist the parties in carrying out responsibilities under this Agreement.

3. Appendix A identifies the funding sources for the project, phases of work to be administered by the LOCALITY, and additional project-specific requirements agreed to by the parties. There may be additional elements that, once identified, shall be addressed by the parties hereto in writing, which may require an amendment to this Agreement.

4. If designated by the DEPARTMENT, the LOCALITY is authorized to act as the DEPARTMENT's agent for the purpose of conducting survey work pursuant to Section 33.2-1011 of the Code of Virginia, 1950, as amended.

5. Nothing in this Agreement shall obligate the parties hereto to expend or provide any funds in excess of funds agreed upon in this Agreement or as shall have been included in an annual or other lawful appropriation. In the event the cost of a Project is anticipated to exceed the allocation shown for such respective Project on Appendix A, both parties agree to cooperate in providing additional funding for the Project or to terminate the Project before its costs exceed the allocated amount, however the DEPARTMENT and the LOCALITY shall not be obligated to provide additional funds beyond those appropriated pursuant to an annual or other lawful appropriation.

6. Nothing in this Agreement shall be construed as a waiver of the LOCALITY's or the Commonwealth of Virginia's sovereign immunity.

7. The Parties mutually agree and acknowledge, in entering this Agreement, that the individuals acting on behalf of the Parties are acting within the scope of their official authority and the Parties agree that neither Party will bring a suit or assert a claim against any official, officer, or employee of either party, in their individual or personal capacity for a breach or violation of the terms of this Agreement or to otherwise enforce the terms and conditions of this Agreement. The foregoing notwithstanding, nothing in this subparagraph shall prevent the enforcement of the terms and conditions of this Agreement by or against either Party in a competent court of law.

8. The Parties mutually agree that no provision of this Agreement shall create in the public, or in any person or entity other than the Parties, rights as a third party beneficiary hereunder, or authorize any person or entity, not a party hereto, to maintain any action for, without limitation, personal injury, property damage, breach of contract, or return of money, or property, deposit(s), cancellation or forfeiture of bonds, financial instruments, pursuant to the terms of this Agreement or otherwise. Notwithstanding any other provision of this Agreement to the contrary, unless otherwise provided, the Parties agree that the LOCALITY or the DEPARTMENT shall not be bound by any agreements between either party and other persons or entities concerning any matter which is the subject of this Agreement, unless and until the LOCALITY or the DEPARTMENT has, in writing, received a true copy of such agreement(s) and has affirmatively agreed, in writing, to be bound by such Agreement.

9. This Agreement may be terminated by either party upon 30 days advance written notice. Eligible Project expenses incurred through the date of termination shall be reimbursed in accordance with paragraphs 1.f, 1.g., and 2.b, subject to the limitations established in this Agreement and Appendix A. Upon termination, the DEPARTMENT shall retain ownership of plans, specifications, and right of way, unless all state and federal funds provided for the Project have been reimbursed to the DEPARTMENT by the LOCALITY, in which case the LOCALITY will have ownership of the plans, specifications, and right of way, unless otherwise mutually agreed upon in writing.

10. Prior to any action pursuant to paragraphs 1.b or 1.g of this Agreement, the DEPARTMENT shall provide notice to the LOCALITY with a specific description of the breach of agreement provisions. Upon receipt of a notice of breach, the LOCALITY will be provided the opportunity to cure such breach or to provide a plan to cure to the satisfaction to the DEPARTMENT. If, within sixty (60) days after receipt of the written notice of breach, the LOCALITY has neither cured the breach, nor is diligently pursuing a cure of the breach to the satisfaction of the DEPARTMENT, then upon receipt by the LOCALITY of a written notice from the DEPARTMENT stating that the breach has neither been cured, nor is the LOCALITY diligently pursuing a cure, the DEPARTMENT may exercise any remedies it may have under this Agreement.

THE LOCALITY and DEPARTMENT acknowledge and agree that this Agreement has been prepared jointly by the parties and shall be construed simply and in accordance with its fair meaning and not strictly for or against any party.

THIS AGREEMENT, when properly executed, shall be binding upon both parties, their successors, and assigns.

THIS AGREEMENT may be modified in writing by mutual agreement of both parties.

IN WITNESS WHEREOF, each party hereto has caused this Agreement to be executed as of the day, month, and year first herein written.

COUNTY OF FAIRFAX, VIRGINIA:

_____

_____
Typed or printed name of signatory

Date

Title

_____
Signature of Witness Date

NOTE: The official signing for the LOCALITY must attach a certified copy of his or her authority to execute this Agreement.

COMMONWEALTH OF VIRGINIA, DEPARTMENT OF TRANSPORTATION:

_____
Chief of Policy Date
Commonwealth of Virginia
Department of Transportation

_____
Signature of Witness Date

Attachments
Appendix A – UPC 118238

Appendix A **Date:** 12/17/2020

Project Number: EN20-029-497 Columbia Pike Complete Streets - Ph 1 UPC: 118238 CFDA # 20.205 Locality: Fairfax County

Project Location ZIP+4: 22003-3109	Locality DUNS # 74837626	Locality Address (incl ZIP+4): 4050 Legato Road, Suite 400 Fairfax, VA 22033-2895

Project Narrative

Work Description:	Columbia Pike Complete Streets - Phase 1. Add sidewalk along the south side of Columbia Pike from Backlick Road to Tom Davis Drive, and a crosswalk across Columbia Pike at Tom Davis Drive.
From:	Backlick Road
To:	Tom Davis Drive
Locality Project Manager Contact info:	Chris Wells 703-877-5772 Chris.Wells@fairfaxcounty.gov
Department Project Coordinator Contact Info:	Susie Lue 703-259-2918 Susie.Lue@vdot.virginia.gov

Project Estimates

	Preliminary Engineering	Right of Way and Utilities	Construction	Total Estimated Cost	
Estimated Locality Project Expenses	$44,934	$125,000	$726,200	$896,134	
Estimated VDOT Project Expenses	$60,066	$6,250	$12,550	$78,866	
Estimated Total Project Costs	$105,000	$131,250	$738,750	$975,000	

Project Cost and Reimbursement

Phase	Estimated Project Costs	Funds type *(Choose from drop down box)*	Local % Participation for Funds Type	Local Share Amount	Maximum Reimbursement (Estimated Cost - Local Share)	Estimated Reimbursement to Locality (Max. Reimbursement - Est. VDOT Expenses)
Preliminary Engineering	$105,000	Transportation Alternatives	20%	$21,000	$84,000	
				$0	$0	
Total PE	$105,000			$21,000	$84,000	$23,934
Right of Way & Utilities	$131,250	Transportation Alternatives	20%	$26,250	$105,000	
				$0	$0	
Total RW	$131,250			$26,250	$105,000	$98,750
Construction	$738,750	Transportation Alternatives	20%	$147,750	$591,000	
				$0	$0	
Total CN	$738,750			$147,750	$591,000	$578,450
Total Estimated Cost	$975,000			$195,000	$780,000	$701,134

Total Maximum Reimbursement by VDOT to Locality (Less Local Share)	$780,000
Estimated Total Reimbursement by VDOT to Locality (Less Local Share and VDOT Expenses)	$701,134

Project Financing

Transportation Alternatives - Federal (80%)	Local Match (20%)					**Aggregate Allocations**
$780,000	$195,000					$975,000

Program and Project Specific Funding Requirements

- This Project shall be administered in accordance with VDOT's Locally Administered Projects Manual and Transportation Alternatives Program Guide.
- In accordance with Chapter 12.1.3 (Scoping Process Requirements) of the LAP Manual, the locality shall complete project scoping on or before 11/22/2021.
- This is a limited funds project. The LOCALITY shall be responsible for any additional funding in excess of $780,000
- Reimbursement for eligible expenditures shall not exceed funds allocated each year by the Commonwealth Transportation Board in the Six Year Improvement Program.
- Eligible VDOT Project expenses will be recovered as follows: 80% will be deducted from the federal allocation and 20% will be deducted from reimbursement requests.
- Any ineligible items identified throughout Project development will not be reimbursable.
- The DEPARTMENT will conduct all environmental studies necessary to complete an environmental document in compliance with the National Environmental Policy Act including, but not limited to, basic coordination for cultural resources, basic clearances for threatened and endangered species, and any necessary certifications, recertifications, and/or reevaluations. The LOCALITY is responsible for tracking, implementing, and completing all environmental commitments associated with the project. In addition, the LOCALITY is responsible for obtaining any water quality permits, submitting a signed EQ-555 for natural resources due diligence, conducting any required hazardous materials efforts, and submitting a signed EQ-121 for hazardous materials due diligence (all submittals are to be in accordance with the LAP Manual). VDOT's estimated cost for preparing the environmental document and necessary supporting studies, including certifications, recertifications and/or reevaluations, will be provided to the LOCALITY and deducted from the Project funds.
- For Transportation Alternatives (TA) Projects, the LOCALITY shall maintain the Project or have it maintained in a manner satisfactory to the DEPARTMENT for its useful life and make ample provisions each year for such maintenance unless otherwise agreed to by the DEPARTMENT. Failure to do so, or the sale of a TA funded improvement prior to the expectations as identified in the TA Guide, may require repayment of federal funds.
- All local funds included on this appendix have been formally committed by the local government's board or council resolution subject to appropriation.
- In accordance with CTB policy, the Project must be under construction by November 1, 2024 or the federal Transportation Alternatives (TA) funding may be subject to de-allocation.

This attachment is certified and made an official attachment to this document by the parties to this agreement.

Authorized Locality Official Date

Tom Biesiadny

Typed or printed name of person signing

Authorized VDOT Official Date

Ray Burkhardt

Typed or printed name of person signing

Revised: February 1, 2019

Board Agenda Item
March 9, 2021

ACTION - 6

Approval of the Disease Carrying Insects Program

ISSUE:
Board approval of the annual submission of the Disease Carrying Insects Program (DCIP).

RECOMMENDATION:
The County Executive recommends that the Board of Supervisors direct staff to take the following actions concerning Fairfax County's Disease Carrying Insects Program:

Mosquitoes, West Nile virus, Zika virus, and Other Mosquito-borne Diseases

1. Continue to conduct a county-wide mosquito surveillance program.

2. Continue to test mosquitoes for West Nile virus (WNV), Zika virus, and other pathogens, as necessary.

3. Continue inspections and larviciding of mosquito breeding areas in the County using appropriate and approved larvicides according to established criteria in as many rounds during the mosquito season, as necessary.

4. Continue to conduct an aggressive community outreach and education program to increase County residents' awareness of mosquitoes, West Nile virus, Zika virus, and other mosquito-borne diseases, as well as personal protection and prevention methods.

5. Continue to use adult mosquito control methods as necessary to protect public health.

Ticks, Lyme disease, and other Tick-borne Diseases

1. Continue to conduct tick surveillance activities.

2. Continue to test ticks for pathogens, including the bacteria that causes Lyme disease.

3. Continue to conduct a county-wide community outreach and education program to increase County residents' awareness of ticks, Lyme disease,

and other tick-borne diseases, as well as personal protection and prevention methods.

Other Disease-transmitting Insects of Public Health Importance

1. Continue to work with Environmental Health staff to provide information on other disease-transmitting insects of public health importance.

Board action on this item will cover all Disease Carrying Insects Program activities carried out through June 30, 2022.

TIMING:
Board approval is requested on March 9, 2021, in order to (1) continue mosquito suppression strategies (e.g., surveillance, larviciding mosquito breeding areas, and public outreach), (2) continue tick surveillance program and public outreach, and (3) continue outreach and education efforts for other disease-transmitting insects.

BACKGROUND:
The *Code of the County of Fairfax, Virginia* requires the submission of the annual Disease Carrying Insects Program for Board of Supervisors' approval (Appendix I, Section 7). The Annual Report for the program (Attachment I) provides an overview of many program activities and highlights the importance of vector-borne disease prevention and control.

West Nile Virus, Zika virus, and Other Mosquito-borne Diseases
During 2020, West Nile virus (Attachment II) continued to inflict disease and death across the continental United States as anticipated by the Centers for Disease Control and Prevention (CDC). Fairfax County WNV surveillance activities indicated that the virus was present and throughout the County. By the end of the 2020 WNV season, the virus had been detected in mosquitoes collected at many of the surveillance sites in the County. No human cases were reported in the County in 2020, three human cases in 2019, and nine in 2018. Seven fatal cases in the County since 2002 underlie the potential severity of this disease. A total of two WNV cases were reported in Virginia in 2020, six WNV cases in 2019, and a record number of 48 cases in 2018. No WNV-related deaths were reported in Virginia in 2020, one in 2019, and eight in 2018. Many factors have been suggested as influencing the presence of human cases in the County:

1. Viral activity in the mosquito vectors as found in the surveillance efforts;
2. Presumed feeding habits of *Culex pipiens;*
3. Birds acting as natural amplifiers of the virus;

4. Ambient temperatures which influence the development of the virus within the mosquito;
5. Increased public awareness resulting in increased use of personal protection measures; and
6. Proactive larvicide and adulticide treatments to help control *Culex* mosquitoes.

Due to the flood-prone nature of the area, the DCIP maintains surveillance and treatment activities in the Huntington area.

Based on past surveillance information, the DCIP will continue mosquito inspection and larviciding activities in stormwater ponds that are identified as a result of the larval surveillance activities, as was done in the 2020 mosquito season. The DCIP will initiate inspection activities in the spring and continue for the duration of the season. In 2021, staff will continue to use mobile GIS technology to efficiently perform these activities.

As in previous seasons, DCIP staff will continue to carry out mosquito surveillance activities during mosquito season (May to October). The Fairfax County Health Department's Division of Epidemiology and Population Health (DEPH) will continue to carry out human case surveillance for locally-acquired or travel-associated mosquito-borne disease. Environmental Health and DEPH staff will continue to work together to monitor and respond to vector-borne disease activity in the County.

The Health Department Laboratory began testing mosquitoes using molecular diagnostics in 2012. The laboratory currently offers WNV, Chikungunya, Dengue, and Zika virus testing for mosquito samples and Lyme disease testing for tick samples. In 2021, all mosquito testing and tick testing will be performed by the Health Department Laboratory.

All insecticides used in this program are registered with the U.S. Environmental Protection Agency (EPA) and sanctioned for use by the Commonwealth of Virginia. The principal larvicides that the County will use are spinosad, *Bacillus sphaericus* and *Bacillus thuringiensis* var. *israelensis* (Attachments III, IV, V, VI, VII and VIII). Some applications may require a mineral oil-based pupicide to control immature mosquitoes (Attachment IX). The Health Department has the ability to apply pesticides for adult mosquitoes should the public health need arise; however, this type of control is not routinely performed by the Health Department. The Health Department may apply insecticides to control adult mosquitoes, and in these instances, the application will target those mosquitoes which potentially transmit disease to humans. The following indicators may trigger adult mosquito spraying by the Health Department:

- Results of mosquito surveillance and testing,
- Environmental factors that impact mosquito or disease cycles,

- Detection of medically-important invasive species, or
- Reported cases of human disease.

Synthetic pyrethroids (Attachments X and XI) or other insecticides may be used to control adult mosquitoes. All applications of pesticides will be performed by certified applicators according to the label directions. The Health Department performs insecticide resistance testing on medically-important mosquito species found in the County. This will continue in 2021. The Health Department does not spray for nuisance mosquitoes.

The DCIP will continue to utilize an active and engaging outreach and education strategy. The program will also focus messaging to address at-risk groups, such as residents over 60 years of age who are at greater risk of developing a more severe form of the West Nile virus. Because the Zika virus has the potential to cause birth defects, specific messaging has also been developed for pregnant women and their partners to help minimize exposure. The program will again work with the Health Department's Community Outreach team to deliver its public health messages to the County's diverse population while continuing to seek out new ways to provide prevention messaging to the community. DCIP staff provided one educational and safety presentation, participated in other online meetings, and attended three events. The program produced the 18-month Fight the Bite calendar and updated other educational materials.

The Disease Carrying Insects Program Annual Report highlights the 2020 season activities, notes impacts on the program due to the COVID-19 pandemic, and presents wide-ranging plans for minimizing the impact and risk of mosquito-borne diseases through:

1. Countywide monitoring of WNV activity including mosquito and human surveillance;
2. An integrated approach to mosquito management and control practices, which will primarily target those mosquito species that have been shown to be the most probable WNV vectors in the County;
3. An intensive community outreach and education program to increase awareness of mosquitoes and WNV and other mosquito-borne diseases in County residents; and
4. A continuation of the multi-jurisdictional and multi-agency collaboration efforts to identify ways to minimize the risk of WNV transmission.

The Chikungunya virus (CHIKV) and the Zika virus (ZIKAV), which are transmitted by *Aedes* mosquitoes, began circulating in the Americas in 2013 and 2015, respectively (Attachments XII, XIII, and XIV). Locally-acquired cases of both viruses have been reported in many countries in the Americas. In Virginia, cases have been reported in returning travelers; however, mosquito-borne transmission of ZIKAV and CHIKV in the

continental United States has been reported in Florida and Texas. Cases of dengue (Attachment XV), which has been endemic in the Americas for many years, has also been reported in returning travelers. If locally-acquired cases of CHIKV, dengue, or ZIKAV are identified in the County, the Health Department will utilize guidance from the Centers for Disease Control and Prevention and the Virginia Department of Health in their response activities, which would include case investigation, vector surveillance and control activities, and community education.

In 2020, Health Department staff monitored for reports of CHIKV, dengue, and ZIKAV. The Health Department will continue monitoring travel-associated cases and maintaining vigilance for locally-transmitted dengue virus, CHIKV, and ZIKAV and will engage their partners and the community to protect County residents.

Tick-Borne Disease
During 2020, Lyme disease (Attachment XVI) continued to be a major concern for County residents and it was the most frequently-reported vector-borne disease in the County. The Health Department recorded and reported at least 70 cases of Lyme disease in Fairfax County in 2020. Some of the factors that influence Lyme disease in the County include:

1. Presence of the Lyme disease-causing bacteria in the black-legged tick vectors;
2. White-footed mice and other animals acting as natural amplifiers of the bacteria;
3. Large deer populations that act as a tick transport system, distributing the ticks throughout the County, as well as a source of blood for the female ticks to develop their eggs; and
4. Increased public awareness resulting in increased use of personal protection measures.

Health Department staff plan to continue to perform tick surveillance, tick ID service, collections from veterinary clinics, collections from deer hunts, and human case surveillance in 2021.

The Health Department will continue to include tick prevention and personal protection from ticks in its outreach and education strategy. The Disease Carrying Insects Program Annual Report reviews the 2020 season activities and presents wide-ranging plans for minimizing the impact and risk of tick-borne diseases through:

1. Surveillance for the presence of Lyme disease and other tick-borne pathogens, including black-legged (deer) tick and human case surveillance;

2. An aggressive and intensive community outreach and education program to increase tick, Lyme disease, and tick-borne disease awareness in the County; and
3. A continuation of the multi-jurisdictional and multi-agency collaboration efforts to identify ways to minimize the risk of Lyme disease transmission.

Other Disease-transmitting Insects of Public Health Importance
The DCIP's 2020 Annual Report presents plans for minimizing the impact and risk of other diseases transmitted by insects through:

1. An intensive community outreach and education program to increase awareness of other insects that may transmit diseases of public health importance.

FISCAL IMPACT:
The Disease Carrying Insects Program is primarily funded by a Special Service District for the Control of Infestations that May Carry a Disease that is Dangerous to Humans, Gypsy Moth, Fall Cankerworm, and Certain Identified Pests in Fund 40080, Integrated Pest Management Program. No additional funding is required as the current funding level is sufficient to meet anticipated program needs.

ENCLOSED DOCUMENTS:
Attachment I - Disease Carrying Insects Program Annual Report
Attachment II - CDC WNV Fact Sheet
Attachment III - Natular G Label
Attachment IV - Natular G30 Label
Attachment V – VectoBac G Label
Attachment VI - VectoLex WSP Label
Attachment VII - VectoLex FG Label
Attachment VIII – VectoMax FG Label
Attachment IX - Cocobear Label
Attachment X - Flit 10EC Label
Attachment XI – Aqua Zenivex E20 Label
Attachment XII - CDC Chikungunya Fact Sheet
Attachment XIII - CDC Zika Fact Sheet
Attachment XIV - Zika Fact Sheet
Attachment XV - CDC Dengue Fact Sheet
Attachment XVI - CDC Lyme disease Fact Sheet

Board Agenda Item
March 9, 2021

STAFF:
Christopher A. Leonard, Deputy County Executive
Gloria Addo-Ayensu, MD, MPH, Director, Health Department
Pieter A. Sheehan, Director, Environmental Health Division, Health Department

Disease Carrying Insects Program Annual Report

Presented by

Pieter A. Sheehan, REHS
Director of Environmental Health
Fairfax County Health Department

March 9, 2021

This information can be made available in an alternative format upon request. Please call 703-246-2300 / TTY 711. Allow seven working days for preparation of the material.

Mosquitoes, ticks and other vectors are responsible for transmitting pathogens that can result in life-changing illnesses such as West Nile virus, Lyme disease, and the Zika virus. The Health Department's Disease Carrying Insects Program was established in 2003 and works to protect county residents and visitors from vector-borne diseases. The program uses an integrated approach to monitor and manage vectors. The program continuously promotes personal protection and vector prevention methods in the community to raise awareness of these public health pests, the diseases they transmit, and what residents can do to protect themselves.

Vision, Mission and Values

As part of the Health Department, the Disease Carrying Insects Program strives to help the agency meet its goals and embody the Vision, Mission and Values of the department.



COVID-19 Pandemic Impacts

The Health Department's COVID-19 response significantly impacted DCIP operations in 2020. Seasonal staffing was reduced and many full-time program staff were deployed to the COVID-19 response. Additionally, Environmental Health staff outside of the program were deployed to response activities and unable to assist in mosquito surveillance and control operations. Vehicles that previously transported two staff per shift, were only transporting one, and direct contact with the public was minimized. To manage these impacts, the DCIP implemented risk-based inspections to provide valuable, targeted mosquito control services, with significantly fewer staff. Although 73 out of 74 routine adult mosquito trap sites were still monitored, only one type of mosquito trap was being utilized—which led to a reduction in overall trapping by 60%. Tick identification, complaint responses and outreach activities continued using virtual, no-contact methods.

West Nile Virus

The United States continued to experience the effects of West Nile virus (WNV) in 2020 with cases and deaths throughout the country. During 2020, at least 557 human cases with 38 deaths were reported to the Centers for Disease Control and Prevention (CDC).[1] From 1999, when the first locally-acquired cases of WNV were reported in New York, through 2019, 51,801 cases and 2,390 deaths have been reported in the United States.

In Fairfax County, WNV was first detected in 2000 in a dead crow. In 2001, additional infected birds were detected and in 2002, the virus was found in birds, horses, mosquitoes and humans. Two cases of WNV and no deaths were reported in Virginia in 2020. There were a record number of human cases (48) and eight deaths reported in Virginia in 2018. No cases of WNV were reported in Fairfax County in 2020. From 2003 to present, there have been 232 human cases of WNV and 21 WNV-associated deaths in Virginia. In that same period, 62 human WNV cases, including seven deaths, were reported in Fairfax County. The primary vectors of WNV in our area are *Culex pipiens* and *Culex restuans*. The virus is normally transmitted between these mosquitoes and certain types of birds which serve as a reservoir or source of the virus. Humans and horses can be infected with WNV which may result in clinical illness or death. Mosquitoes cannot spread WNV from person to person.

Other Mosquito-borne Diseases

The Chikungunya virus (CHIKV) and the Zika virus (ZIKAV) began circulating in the Americas in 2013 and 2015, respectively. These viruses are transmitted by certain types of container-breeding *Aedes* mosquitoes. Locally-acquired cases of both viruses have been reported in many countries in the Americas. In 2016, an outbreak of ZIKAV was widespread throughout much of the western hemisphere. Other travel-associated, mosquito-borne diseases routinely reported to the CDC include dengue (DENV) and malaria.

Zika is of public health importance because it can be passed from a pregnant woman to her fetus and infection during pregnancy can cause certain birth defects. About 5-10% of babies of women with confirmed Zika virus infection during pregnancy had Zika-associated birth defects. The highest risk of birth defects is from Zika virus infection during the first trimester of pregnancy.

Since the 2016 outbreak, when 4,897 travel-associated Zika cases were reported in the US, the number of Zika cases reported annually has decreased. There have been 2 Zika cases reported in the US for 2020 with one of those being reported in Virginia.[1] We continue to maintain vigilance due to the public health importance of this disease. In 2020, 20 cases of CHIKV were reported in the U.S., with none of those cases being reported from Virginia.[1] This is a decrease from the number of Chikungunya cases reported in 2019. In 2020, 295 travel-associated cases of dengue have been reported in the US. Malaria, a parasitic disease transmitted by mosquitoes, is reported from approximately 1,500-2,000 travelers each year.

Occasionally, local mosquitoes can acquire these pathogens from infected individuals and transmit these diseases in the continental U.S. No cases of mosquito-transmitted Chikungunya or Zika have been reported in the continental US for 2020. The only evidence of

[1] 2020 provisional data obtained from CDC web site.

local mosquito transmission of the Zika virus in the continental United States so far has been in Florida and Texas in both 2016 and 2017. Cases of Zika in the US have also been reported where the virus was acquired through other routes, primarily sexual transmission, in both 2016 and 2017. To date, the only evidence of local mosquito-borne transmission of CHIKV has been in Florida and Texas. In 2020, locally-transmitted cases of dengue were reported from Florida (69) and Texas (8). Since 2009, sporadic DENV outbreaks have been identified in Florida. Local transmission of malaria has occurred in several locations in the U.S. In the last 20 years, it has occurred twice in Virginia with a total of 4 reported cases. If there are locally-acquired cases of CHIKV, DENV, ZIKAV or malaria in the County, the Health Department will utilize guidance from the CDC and Virginia Department of Health (VDH).

Tick-borne Disease

Tick-borne diseases are the most reported vector-borne diseases in the United States. Lyme disease, transmitted by the blacklegged tick, is common in many areas of the United States, including Virginia. Fairfax County began tick and Lyme disease surveillance in 2005 with a small pilot program. In light of significant results from the first year of tick surveillance, the DCIP implemented an enhanced surveillance program in subsequent years.

Tick-borne diseases continue to impact public health causing serious acute illness, long-term effects and, sometimes, death. The recent and widespread encroachment of suburban sprawl into areas that were once undeveloped or farmland, and the large deer populations in these suburban communities, have increased the prevalence of disease-carrying ticks and the exposure of the human population to the disease pathogens they carry.

Other Disease Transmitting Insects of Public Health Importance

Other insects with the potential to transmit disease can be found throughout Fairfax County. These insects or the conditions that allow them to proliferate, could, at times, be considered public health or safety menaces.

Human Case Surveillance

West Nile virus, Lyme disease, and other vector-borne diseases are among the over 70 notifiable diseases and conditions in Virginia. The Fairfax County Health Department (FCHD) uses enhanced passive surveillance to monitor physician and laboratory reporting of these diseases.

The Health Department encourages physicians and laboratories to report cases of these illnesses by educating medical practitioners about the importance of reporting vector-borne diseases and by contacting key medical staff at hospital centers to inquire about potential cases. See Table 1 for selected reported cases.

Condition	Number of Cases, Fairfax Health District	
	CY 2019*	CY 2020*
Mosquito-borne Disease		
WNV (neuroinvasive and non-neuroinvasive)	3	0
Dengue**	7	1
Chikungunya**	3	0
Malaria**	29	7
Zika virus disease**	0	0
Zika virus infection**	19	0
Tick-borne Disease		
Lyme Disease	71	70
Ehrlichiosis/Anaplasmosis	6	12
Spotted Fever Rickettsiosis	8	2
Babesiosis**	0	1
Other Vector-borne Disease		
Chagas Disease**	0	1

*2019 and 2020 data are provisional and subject to change.
**Travel-associated cases.

Table 1: Reported Human Cases of Vector-borne Disease, Fairfax County

Integrated Mosquito Management

The Disease Carrying Insects Program uses Integrated Mosquito Management (IMM) principles to carry out its duties. This approach utilizes three basic strategies: surveillance, control, and public education.

Integrated Mosquito Management is a comprehensive mosquito prevention/control strategy that utilizes all available mosquito control methods singly or in combination to exploit the known vulnerabilities of mosquitoes to reduce their numbers to tolerable levels while maintaining a quality environment. IMM does not emphasize mosquito elimination or eradication. Integrated mosquito management methods are specifically tailored to safely counter each stage of the mosquito life cycle. Prudent mosquito management practices for the control of immature mosquitoes include such methods as the use of biological controls, source reduction, water sanitation practices as well as the use of EPA-registered larvicides. When source elimination or larval control measures are not feasible or are clearly inadequate, or when faced with imminent mosquito-borne disease, application of EPA-registered adulticides by applicators trained in the special handling characteristics of these products may be needed.

Adulticide products are chosen based upon their demonstrated efficacy against species targeted for control, resistance management concerns and minimization of potential environmental impact.

IMM requires a thorough understanding of mosquitoes and their bionomics by control personnel; careful inspection and monitoring for their presence and conditions favoring their development; and prevention of oviposition and human/mosquito contact through effective public education, sanitation and facility maintenance. The Disease Carrying Insects Program strives to employ these IMM components to the extent possible, but resource availability may limit what the program will do.

All intervention measures will be driven by a demonstrated need based on surveillance data and action thresholds. IMM is knowledge-based and surveillance-driven, and when properly practiced is specifically designed to accomplish the following:

1. Protect human, animal and environmental health.
2. Promote a rational use of pesticides.
3. Reduce environmental contamination to soil, ground water, surface water, pollinators, wildlife and endangered species as a result of mosquito control activities.
4. Utilize biological controls (native, noninvasive predators) to conserve and augment other control methods.
5. Utilize source reduction (elimination, removal or reduction of larval mosquito habitats) where practical and prudent.
6. Use target-specific pesticides at the lowest effective rates to the extent possible.
7. Emphasize the proper timing of applications.
8. Minimize pesticide resistance problems.

Surveillance

Surveillance is essential to an integrated pest management program. The DCIP conducts surveillance for different vectors and some of the diseases they may carry. Surveillance is done for both adult (flying) and immature (swimming) mosquitoes and for West Nile virus. It is important to note that absolute high numbers of mosquitoes do not necessarily reflect high risk of human infection with WNV or other mosquito-borne disease. Surveillance for other vectors such as ticks is also performed.

Adult Mosquito Surveillance: The program is anchored by a strong adult mosquito surveillance component that will monitor abundance and viral activity during the 2021 mosquito season. During the 2020 season Fairfax County continued its comprehensive mosquito surveillance program at 73 fixed, weekly collection sites (Figure 1) for a total of 1,898 trapping periods. A trap period is defined as a trap collecting mosquitoes for 24 hours. Two trap sites were also used as part of a project at the Police Training Facility in Chantilly in 2020. Mosquito trapping routes used by staff (not shown) were previously optimized using available Geographic Information Systems (GIS) software.

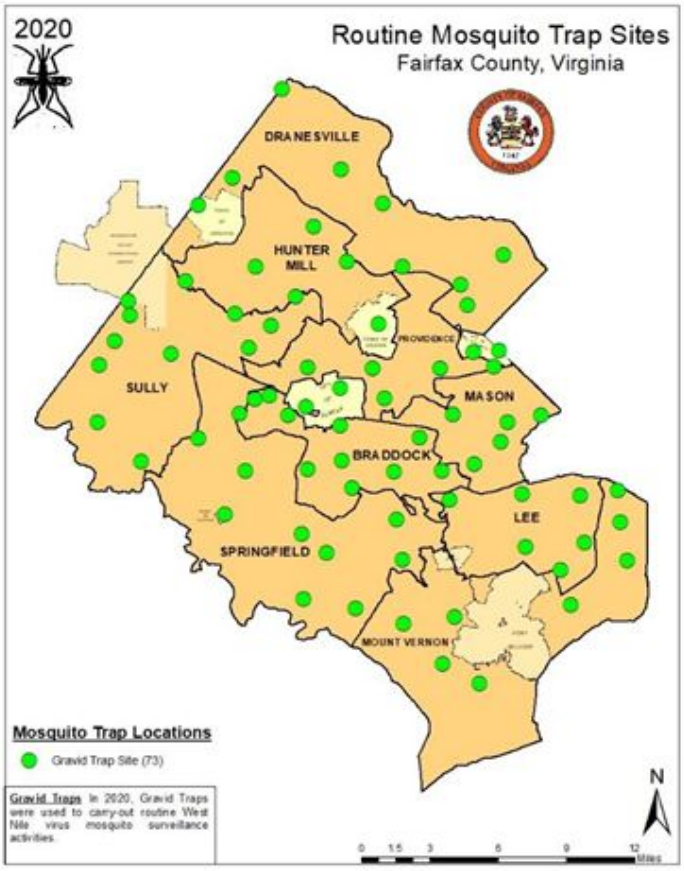


Figure 1. 2020 Routine Adult Mosquito Trap Locations

Historically, the program used three types of adult mosquito traps: CDC miniature light traps, gravid traps, and BG Sentinel traps. In 2019 all sites had one CDC miniature light trap and one gravid trap; 29 sites had one BG Sentinel trap. However, due to ongoing COVID-19 response activities in the Health Department, in 2020 the program utilized only gravid traps to collect adult mosquitoes.

During the 2020 mosquito surveillance season, 75,137 mosquitoes were identified (Figure 2) from routine trapping activities. The yellow fever mosquito *Aedes aegypti*, which has historically been rare in Virginia, has been found annually in the region since 2011 when an overwintering population was identified in Washington, D.C. Each year since 2015, this mosquito has been detected at routine trap sites in Fairfax County. Although numbers of mosquito individuals at these locations remain relatively low (usually a single adult in a trap), continued surveillance and multiple types of control are necessary to continue limiting the species' ability to establish here.



Figure 2: Staff sorting and identifying mosquitoes (left) and mosquitoes through the microscope (right). Please note, staff photo was taken prior to 2020.

The **gravid trap** (Figure 3) is a trap that collects mosquitoes that are looking for a place to lay their eggs. This trap is baited with an infusion (water, grass, straw, yeast) that is attractive to the *Culex* mosquitoes that are the primary vectors of WNV. The majority of mosquitoes collected in this trap are *Culex* species (*Culex pipiens* and *Culex restuans*) (Figure 4). In 2020, this trap was set for 1,898 trap periods and collected over 75,000 mosquitoes. Twenty-six different species of mosquitoes were collected in the trap in 2020, but more than 88 percent were *Culex* species (*Cx. pipiens* and *Cx. restuans*). In 2020, the population of *Culex* mosquitoes varied widely from the average of the previous five years with the weather and rainfall impacting collections throughout the season (Figure 5).



Figure 3: CDC Miniature Light Trap (left) and Gravid Trap (right).

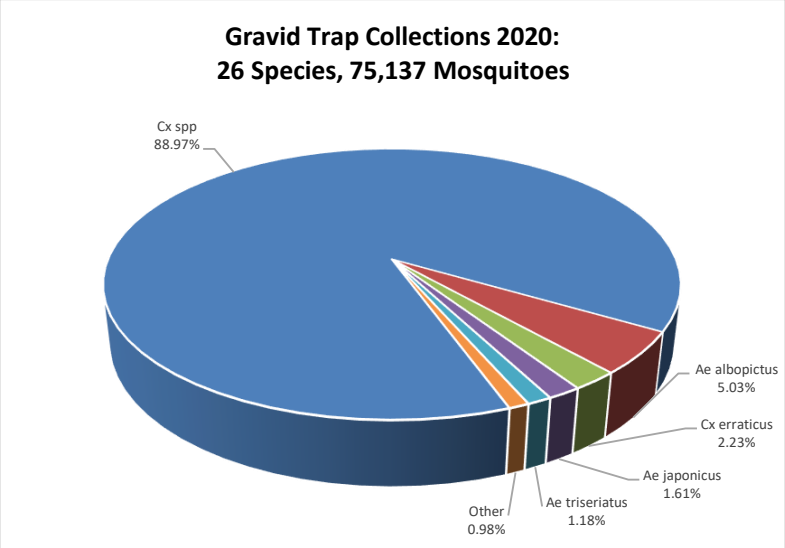


Figure 4: 2020 Gravid Trap Collections

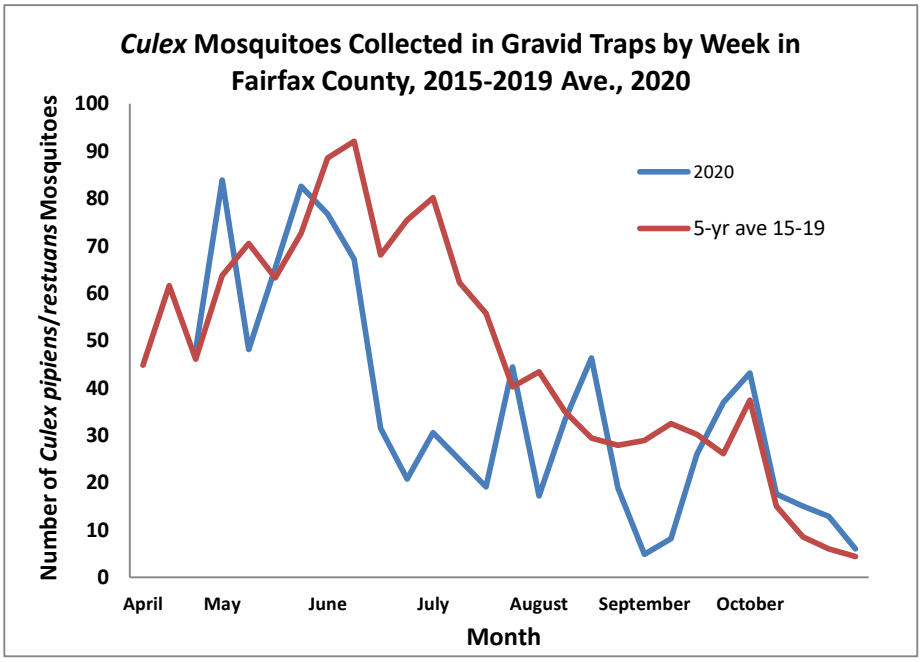


Figure 5: 2020 Average Culex Mosquitoes collected by week and average 2015-2019

The **CDC miniature light trap** (Figure 3) is a trap that collects mosquitoes that are searching for something to bite. This trap is baited with carbon dioxide (dry ice). This trap was not used during the 2020 mosquito season due to staffing limitations because of the COVID-19 pandemic.



Figure 6: BG Sentinel Trap.

The **BG Sentinel trap** (Figure 6) is another trap that collects mosquitoes that are looking for something to feed on. This trap is baited with carbon dioxide (dry ice) as well as a special lure that is based on the scent of human sweat. This trap was not used during the 2020 mosquito season due to staffing limitations because of the COVID-19 pandemic.

Mosquito Testing. In the 2020 mosquito season, 64,231 mosquitoes were tested in 2,105 pools. A mosquito pool is a batch of up to 50 mosquitoes of the same species from the same trap, location and trap period. These pools included mosquitoes collected outside of normal routine surveillance activities. There were 47 positive WNV pools. Positive mosquitoes were found in many parts of the county (Figure 7). As a comparison, during 2019, 111,663 mosquitoes were tested in 3,707 routine pools, of which 127 were positive. In 2020, *Culex* species of mosquitoes (*Culex pipiens* and *Culex restuans*) tested positive for West Nile virus. The mosquitoes tested were *Culex* species (*pipiens* or *restuans*) collected in gravid traps. The first WNV-positive mosquitoes of 2020 were *Culex* species collected in a gravid trap in mid-July. The infection rate of *Culex* species tested from gravid traps was calculated throughout the season. The peak infection rate (maximum likelihood estimate: MLE) in 2020 came in early September when the MLE was calculated at 7.39 mosquitoes per 1,000, which was lower than the 5-year average peak infection rate of 18.43 mosquitoes per 1,000. The last positive mosquitoes were collected in late-October (Figure 8). The infection rate was lower overall and peaked later than the general trend seen in previous years.

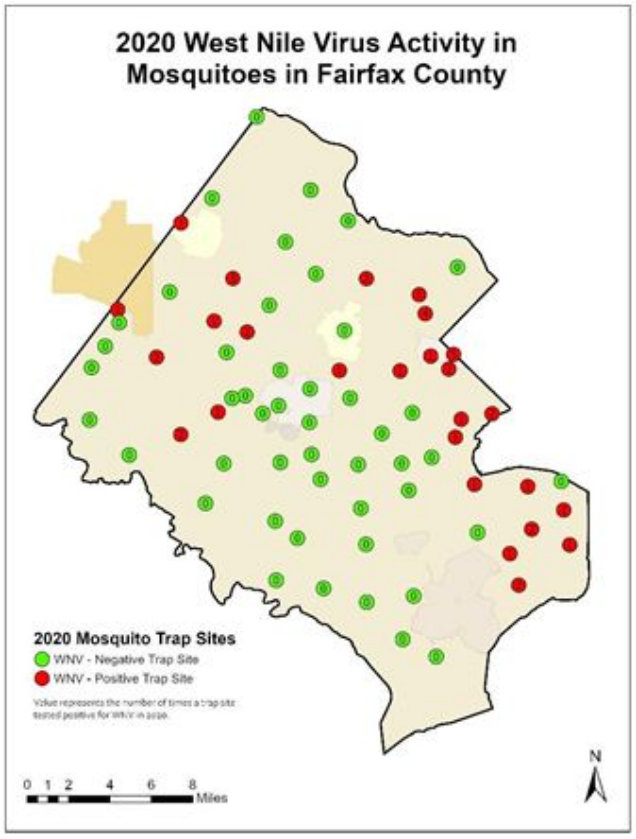


Figure 7: Map of WNV-positive Mosquito Trap Sites, 2020.

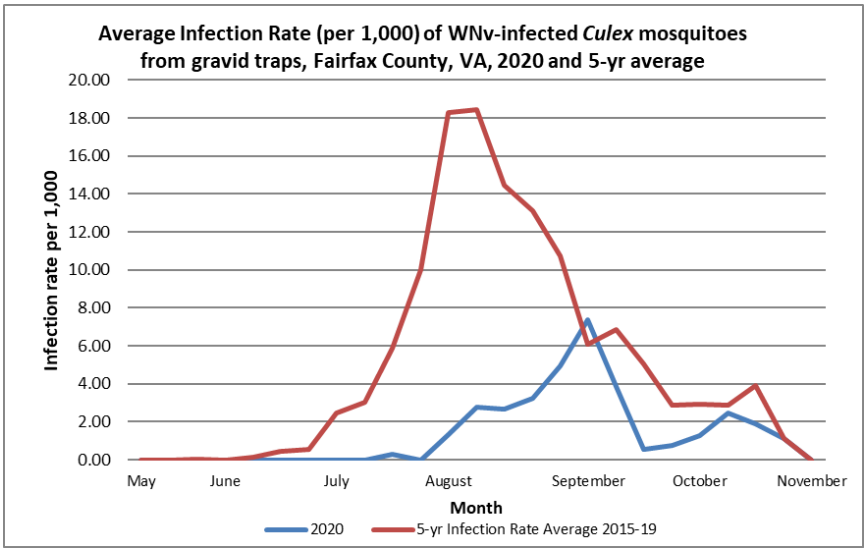


Figure 8: West Nile Virus Infection Rate (Maximum Likelihood Estimate) in Culex *species collected in Gravid Traps, 2020.*

Tick Surveillance: In 2020, 2,032 ticks (including 871 blacklegged ticks) were collected throughout the year using various techniques including a collaboration with the County Wildlife Management Specialist's office to collect ticks from deer harvested as a part of deer management activities. All ticks collected in 2020 were from harvested deer (n=1,209) or veterinary clinics (n=823). The lone star tick *Amblyomma americanum* was the most abundant tick species collected.

An invasive tick species, *Haemaphysalis longicornis* or the Asian longhorned tick, was first reported in New Jersey in late 2017 and has since been found in 11 other states, including Virginia. After reviewing archived specimens in 2018, a single tick of this species was identified from collections made in Fairfax County in 2017. This tick transmits a variety of pathogens to humans and animals in other parts of the world; however, its medical importance in the western hemisphere is uncertain.

Tick testing for Lyme disease was made available at the Health Department Laboratory in 2016. Blacklegged ticks from 2020 (n=373) have been submitted for testing. Eleven of the 187 blacklegged ticks tested (6%) from 2019 were positive for the Lyme disease bacteria. Ticks that have been feeding are not submitted for testing per protocol as the vertebrate blood in the ticks may interfere with the testing. As in previous years, tick surveillance and the tick identification service will be conducted by existing staff in the Division of Environmental Health and will follow previously-established protocols.

Control

Mosquito control is a component of an integrated management program. Routine and non-routine control decisions take a variety of factors into consideration including mosquito species, presence of mosquito-borne disease, proximity to people, mosquito tolerance, weather patterns, environment, non-target impacts, health and safety, mosquito habitat, and accessibility for surveillance and treatment. Pesticide applications are made according to the product label. Federal and state regulatory guidance is adhered to.

Larval Control: In 2016, the program embarked on a project to evaluate county-maintained stormwater dry ponds and their mosquito production. This activity continued in 2020. From April through October, both seasonal and merit staff checked up to 871 individual storm water sites throughout the county. These targeted sites were inspected multiple times during the season and a total of 5,743 inspections (e.g, Figure 9) were completed in 2020. Of those inspections, over 4,185 had water that could be sampled for mosquitoes. There were over 1,400 inspections where mosquito larvae were collected; 747 had enough immature mosquitoes to meet the treatment threshold (3 immature mosquitoes per dip or sample with a minimum of 3 dips). A total of 804 treatments were made with either Natular G or Cocobear. All applications were made by certified pesticide applicators or registered technicians and were made according to label guidelines.



Figure 9: Staff inspecting and treating a storm water pond. Please note, staff photo was taken prior to 2020.

Using available GIS software, staff created new larval inspection districts in 2018. Two mobile applications available through the county's GIS software were customized to streamline field and laboratory data collection processes. The apps took the place of hundreds of paper maps and forms and greatly increased staff efficiency in the field, laboratory, and office. Staff are working on incorporating this technology into adult mosquito surveillance activities as well.

Data collected since 2016 allowed staff to identify ways to streamline routine work. During the 2020 season, staff increased the number of inspections at sites where mosquitoes had been previously collected while reducing the inspection frequency at sites where no mosquitoes had ever been collected.

Adult Control: While source reduction and the application of larvicides are the principal and most effective interventions to reduce mosquito populations, situations may arise in which infected adult mosquitoes are present in significant numbers and pose a threat to human health. In these situations, judicious application of adulticides to control mosquito populations will be added to all other mosquito control activities as an additional measure to reduce vector populations.

Guidelines from CDC state that adulticiding based on surveillance data is an extremely important part of any integrated mosquito management program and should be used when there is significant risk of human illness. The Health Department may apply insecticides to control adult mosquitoes, and in these instances, the application will target those mosquitoes which potentially transmit disease to humans. The following indicators may trigger adult mosquito spraying by the Health Department:

- Results of mosquito surveillance and testing,
- Environmental factors that impact mosquito or disease cycles,
- Detection of medically-important invasive species, or
- Reported cases of human disease.

The Health Department is equipped to apply pesticides for adult mosquitoes should the public health need arise. The program has increased its capacity to respond to mosquito-borne

public health threats by purchasing additional equipment to include backpack sprayers (Figure 10), a truck-mounted ultra-low volume (ULV) sprayer (Figure 11), and a backpack ULV sprayer. Synthetic pyrethroids or other insecticides may be used to control adult mosquitoes. All applications of pesticides will be performed by certified applicators according to the label directions. Targeted mosquito spraying was done in 2005, 2006, 2007, 2016, 2017 and 2018. In 2020, no pesticide applications were made to control adult mosquitoes. In previous years, treatments to control adult mosquitoes have been made using the methods described above using either AquaZenivex E20 or Flit 10EC.



Figure 10: Application with a backpack sprayer.



Figure 11: Ultra-low volume sprayer mounted in the back of a pick-up truck.

In 2020, due to staffing limitations because of the COVID-19 pandemic, staff did not perform pesticide resistance testing on adult mosquitoes. Resistance testing would normally be performed to help ensure mosquito spraying is effective and help guide local mosquito control efforts. This activity will most likely resume in 2022 using the active ingredients of the pesticides used by the program against potential vector mosquitoes.

Community Outreach and Education

Fairfax County will continue to emphasize personal protection measures from mosquito bites, mosquito-borne disease, and mosquito prevention and control. This is done through distribution of informational materials, media interviews, advertising, web pages, social media, presentations, community events (Figure 12), and collaborations with community groups and homeowners associations. In 2021, the program will also continue its tick outreach activities as originally requested by the BOS.



Figure 12: Pictures from selected outreach activities in previous years (before 2020).

The 16th 18-month “Fight the Bite” calendar was produced in 2020. The calendar was not distributed to fourth graders in all Fairfax County Public Schools as in prior years due to the ongoing COVID-19 pandemic. (See Figure 13 for examples of outreach material.)



Figure 13: Some examples of outreach material.

The demand for educational material was lower in 2020 than in previous years, likely due to the lack of outreach events in the community. In previous years, DCIP staff attended a variety of events giving educational and safety presentations and participating in other community-based events such as health fairs, Celebrate Fairfax, Fall for Fairfax KidsFest, and SpringFest. However, in 2020, due to the ongoing COVID-19 pandemic, only three community-based events were attended early in the year, one virtual mosquito and tick prevention presentation was given and other events were attended virtually.

A Spanish-language digital ad campaign aimed at protecting outdoor workers from mosquito- and tick-borne diseases was honored by the National Public Health Information Coalition in 2019. The Health Department received a gold award in the government health marketing category of the 2019 Berreth Awards, recognizing excellence in public health communication. The mobile media campaign was designed to build awareness of mosquito and tick-bite prevention among local Hispanic men who work outdoors. The project was a collaboration between Health Department Outreach, Health Department Communications, Channel 16 and DCIP.

The program will continue to work with other staff in the Division of Environmental Health, the Health Department's Communications Office, the Community Outreach Team and the Division of Epidemiology and Population Health to develop messaging and provide messaging to all communities within the County. New outreach materials in 2021 include a new 18-month calendar.



Figure 14: Aedes albopictus, *the Asian Tiger mosquito--the main nuisance mosquito in Fairfax County. Image courtesy CDC.*

Service Requests: The FCHD continued to promote source reduction (elimination of mosquito breeding sites) in 2020 through the outreach campaign. The Asian tiger mosquito (*Aedes albopictus*) (Figure 14) was the source of most mosquito-related complaints. This mosquito, which generally lays its eggs in and develops in containers (Figure 15), is an aggressive, persistent biter that can be found in large numbers around residences. The most commonly identified breeding sites contributing to the presence of *Aedes albopictus*

around inspected homes include household containers, corrugated downspout extensions, gardening containers/flowerpots or saucers, trash/recycling containers, and tarps. The presence of black corrugated pipes at the end of the downspouts from the roof gutters, even when placed underground, continue to be a frequent source of mosquito problems. Most of these corrugated pipes do not drain adequately and they retain water throughout the season, thus providing great mosquito breeding habitat. This mosquito is a potential vector of the Chikungunya, dengue, West Nile and Zika viruses. During 53 site visits and inspections in 2020, DCIP and Environmental Health staff educated property owners and managers about the benefits of eliminating breeding sites and/or provided Mosquito Dunks®.



Figure 15: Some of the container breeding sites found on service requests.

Tick Identification Service: The Health Department's tick identification service encourages County residents to have their ticks identified by Health Department staff to help raise awareness of Lyme disease and provide information on preventing tick bites and tick-borne diseases. Due to the COVID-19 pandemic, the tick identification program had to adapt to a new model where

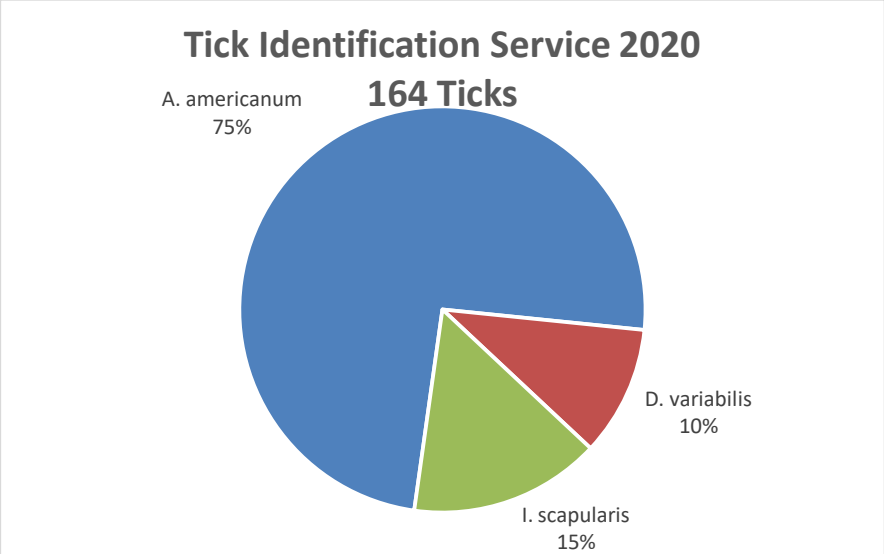


Figure 16: Ticks identified through Tick ID Service, 2020.

residents emailed pictures of their ticks or mailed ticks to the Health Department. In 2020, 172 pictures or specimens were sent to the Health Department for identification. Of these, 164 were ticks: 122 Lone Star ticks (*Amblyomma americanum*), 17 American Dog ticks (*Dermacentor variabilis*), and 25 blacklegged ticks (*Ixodes scapularis*) (Figure 16).

Preparedness and Response Activities

In 2016, the World Health Organization declared Zika virus to be a "Public Health Emergency of International Concern" due to the ongoing epidemic and concern about Zika's relationship to birth defects including microcephaly. The CDC and VDH continuously provided guidance before and throughout the 2016-17 mosquito seasons. The Fairfax County Health Department's Incident Command System (ICS) was active from March through October both years as staff worked together to develop a response plan and educate and engage the community and stakeholders. The Disease Carrying Insects Program worked together with Fairfax County Health Department staff and other stakeholders to help prepare for any potential local, mosquito-borne ZIKAV transmission.

The Division of Epidemiology and Population Health (DEPH) of the Health Department performed human case investigations and coordinated human testing. The Health Department Laboratory also helped with human testing coordination. Environmental investigations and mosquito-related activities were performed by DCIP staff and continue to be performed when cases are identified. These activities included site visits, education and outreach, source reduction, vector surveillance and vector abatement activities. The Health Department Laboratory performed mosquito testing for ZIKAV. These actions taken by the Health Department laid the foundation for how the agency may respond in similar scenarios involving this mosquito vector.

The DEH and the DEPH will continue to work together to respond to vector-borne disease issues that arise in the County. Staff from both divisions will continue working together to develop and revise response activities and incorporate communications strategies with the Health Department's Communications Office. Staff will stay abreast of current vector-borne disease issues and incorporate new knowledge and actions into response plans as appropriate.

The Division of Environmental Health has taken additional steps to increase preparedness and capacity within the agency by moving forward with a plan to have all Environmental Health staff become certified pesticide applicators. Currently, 44 merit Environmental Health staff (81%) have a Pesticide Applicator Certificate from the Virginia Department of Agriculture and Consumer Services. Staff have worked with community partners and stakeholders to create an in-house recertification opportunity for staff.

Climate change is expected to have an impact on vectors and vector-borne diseases. Staff will continue to monitor for vector presence and abundance, will stay abreast of vector-borne disease trends, and take steps to prepare and respond as appropriate.

***

In 2021, the program will continue perform vector surveillance, community outreach and public education, and mosquito control, primarily through proactive larviciding. We encourage the community to do their part by eliminating standing water to prevent mosquitoes and by preventing mosquito and tick bites. A healthier community begins with you!

West Nile Virus (WNV) Fact Sheet

What Is West Nile Virus?

West Nile virus infection can cause serious disease. WNV is established as a seasonal epidemic in North America that flares up in the summer and continues into the fall. This fact sheet contains important information that can help you recognize and prevent West Nile virus.

What Can I Do to Prevent WNV?

The easiest and best way to avoid WNV is to prevent mosquito bites.

- When outdoors, use repellents containing DEET, picaridin, IR3535, some oil of lemon eucalyptus or para-menthane-diol. Follow the directions on the package.
- Many mosquitoes are most active from dusk to dawn. Be sure to use insect repellent and wear long sleeves and pants at these times or consider staying indoors during these hours.
- Make sure you have good screens on your windows and doors to keep mosquitoes out.
- Get rid of mosquito breeding sites by emptying standing water from flower pots, buckets and barrels. Change the water in pet dishes and replace the water in bird baths weekly. Drill holes in tire swings so water drains out. Keep children's wading pools empty and on their sides when they aren't being used.

What Are the Symptoms of WNV?

- **Serious Symptoms in a Few People**. About 1 in 150 people infected with WNV will develop severe illness. The severe symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. These symptoms may last several weeks, and neurological effects may be permanent.
- **Milder Symptoms in Some People.** Up to 20 percent of the people who become infected will have symptoms which can include fever, headache, body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach and back. Symptoms can last for as short as a few days to as long as several weeks.
- **No Symptoms in Most People**. Approximately 80 percent of people who are infected with WNV will not show any symptoms at all, but there is no way to know in advance if you will develop an illness or not.

How Does West Nile Virus Spread?

- **Infected Mosquitoes.**
  WNV is spread by the bite of an infected mosquito. Mosquitoes become infected when they feed on infected birds. Infected mosquitoes can then spread WNV to humans and other animals when they bite.
- **Transfusions, Transplants, and Mother-to-Child.**
  In a very small number of cases, WNV also has been spread directly from an infected person through blood transfusions, organ transplants, breastfeeding and during pregnancy from mother to baby.
- **Not through touching.**
  WNV is not spread through casual contact such as touching or kissing a person with the virus.

How Soon Do Infected People Get Sick?

People typically develop symptoms between 3 and 14 days after they are bitten by the infected mosquito.

How Is WNV Infection Treated?

There is no specific treatment for WNV infection. In cases with milder symptoms, people experience symptoms such as fever and aches that pass on their own, although illness may last weeks to months. In more severe cases, people usually need to go to the hospital where they can receive supportive treatment including intravenous fluids, help with breathing, and nursing care.

What Should I Do if I Think I Have WNV?

Milder WNV illness improves on its own, and people do not need to seek medical attention for this infection though they may choose to do so. If you develop symptoms of severe WNV illness, such as unusually severe headaches or confusion, seek medical attention immediately. Severe WNV illness usually requires hospitalization. Pregnant women and nursing mothers are encouraged to talk to their doctor if they develop symptoms that could be WNV.



National Center for Emerging and Zoonotic Infectious Diseases
Division of Vector-Borne Diseases

CS242240-A

What Is the Risk of Getting Sick from WNV?

- **People over 50 at higher risk to get severe illness.** People over the age of 50 are more likely to develop serious symptoms of WNV if they do get sick and should take special care to avoid mosquito bites.
- **Being outside means you're at risk.** The more time you're outdoors, the more time you could be bitten by an infected mosquito. Pay attention to avoiding mosquito bites if you spend time outside, either working or playing.
- **Risk through medical procedures is very low.** All donated blood is checked for WNV before being used. The risk of getting WNV through blood transfusions and organ transplants is very small, and should not prevent people who need surgery from having it. If you have concerns, talk to your doctor.



What Is CDC Doing About WNV?

CDC is working with state and local health departments, the Food and Drug Administration and other government agencies, as well as private industry, to prepare for and prevent new cases of WNV.

Some things CDC is doing include:

- Coordinating a nation-wide electronic database where states share information about WNV
- Helping states develop and carry out improved mosquito prevention and control programs
- Developing better, faster tests to detect and diagnose WNV
- Creating new education tools and programs for the media, the public, and health professionals
- Working with partners to develop vaccines.

What Else Should I Know?

West Nile virus infects birds. In nature, West Nile virus cycles between mosquitoes and birds. Some infected birds can develop high levels of the virus in their bloodstream and mosquitoes can become infected by biting these infected birds. Some, but not all infected birds get sick and die of disease. One way health officials conduct surveillance for West Nile virus is by testing local birds. Finding dead birds may be a sign that West Nile virus is circulating between birds and the mosquitoes in an area. By reporting dead birds to state and local health departments, you can play an important role in monitoring West Nile virus. State and local agencies have different policies for collecting and testing birds, so check with your county or state health department to find information about reporting dead birds in your area.

If you find a dead bird: Don't handle the body with your bare hands. Contact your local health department for instructions on reporting and disposing of the body. They may tell you to dispose of the bird after they log your report.

For more information, visit www.cdc.gov/westnile, or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).

NATULAR® G

Mosquito Larvicide Granule

Controls larvae of mosquitoes which may transmit Zika, Dengue, or Chikungunya.
To be used in governmental mosquito control programs, by professional pest control operators, or in other mosquito or midge control operations.

Active Ingredient:	
Spinosad (a mixture of Spinosyn A and Spinosyn D)	0.5%
Other Ingredients	99.5%
Total	100.0%

Group	5	INSECTICIDE

KEEP OUT OF REACH OF CHILDREN

Precautionary Statements

Environmental Hazards

This product is toxic to aquatic invertebrates. Non-target aquatic invertebrates may be killed in water where this pesticide is used. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not apply when weather conditions favor drift from treated areas. Drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Apply this product only as specified on the label.

Directions For Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

Product Information

NATULAR® G is a product for killing mosquito and midge larvae. This product's active ingredient, spinosad, is biologically derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. NATULAR® G may be applied with suitable ground or aerial application equipment.

Use Precautions

Integrated Pest Management (IPM) Programs

NATULAR® G is intended to kill mosquito and midge larvae. Mosquitoes are best controlled when an IPM program is followed. Larval control efforts should be managed through habitat mapping, active adult and larval surveillance, and integrated with other control strategies such as source reduction, public education programs, harborage or barrier adult mosquito control applications, and targeted adulticide applications.

Insecticide Resistance Management (IRM)

NATULAR® G contains a Group 5 insecticide. Insect biotypes with acquired resistance to Group 5 insecticides may eventually dominate the insect population if appropriate resistance management strategies are not followed. Currently, only spinetoram and spinosad active ingredients are classified as Group 5 insecticides. Resistance to other insecticide groups is not likely to impact the effectiveness of this product. Spinosad may be used in rotation with all other labeled products in a comprehensive IRM program.

To minimize the potential for resistance development, the following practices are recommended:

- Base insecticide use on comprehensive IPM and IRM programs.
- Routinely evaluate applications for loss of effectiveness.
- Rotate with other labeled effective mosquito larvicides that have a different mode of action.
- In dormant rice fields, standing water within agricultural/crop sites, and permanent marine and freshwater sites, do not make more than 20 applications per year.
- Use insecticides with a different mode of action (different insecticide group) on adult mosquitoes so that both larvae and adults are not exposed to products with the same mode of action.
- Contact your local extension specialist, technical advisor, and/or Clarke representative for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact your local Clarke representative by calling 800-323-5727.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed.

Application

Proper application techniques help ensure adequate coverage and correct dosage necessary to obtain optimum kill of mosquito and midge larvae. Apply NATULAR® G prior to flooding as a prehatch application to areas that breed mosquitoes, or at any stage of larval development after flooding in listed sites. The following recommendations are provided for ground and aerial application of NATULAR® G.

Ground Application

Use conventional ground application equipment and apply NATULAR® G at the designated rate for the targeted site.

Spot Treatment

Apply NATULAR® G as a spot treatment to areas where mosquitoes are breeding at rates appropriate for the treatment site habitat and conditions.

Aerial Application

Equipment used in the application of NATULAR® G should be carefully calibrated before use and checked frequently during application to be sure it is working properly and delivering a uniform distribution pattern. Avoid overlaps that will increase NATULAR® G dosage above recommended limits.

Application Sites and Rates

The rates listed are typical for efficaciously killing mosquito and midge larvae in the listed habitat sites. Within this range, use lower rates when water is shallow, vegetation and/or pollution are minimal, and mosquito populations are low. Do not use less than labeled minimum rate. NATULAR® G may be applied at rates up to 20 lb per acre in waters high in organic content (such as polluted water, sewage lagoons, animal waste lagoons, and waters with high concentrations of leaf litter or other organic debris), deep-water mosquito habitats or those with dense surface cover, and where monitoring indicates a lack of kill at typical rates. Do not re-apply within 7 days of the initial application unless monitoring indicates that larval populations have reestablished or weather conditions have rendered initial treatments ineffective. Do not apply to water intended for irrigation.

AL0537

SAMPLE LABEL

For killing mosquito larvae species in the following non-crop sites:

Non-Crop Site	NATULAR® G lb/acre (lb ai/acre)
Temporary Standing Water: Woodland pools, snow pools, roadside ditches, retention ponds, freshwater dredge spoils, tire tracks and other natural or man-made depressions, rock holes, pot holes and similar areas subject to holding water **Other Freshwater Sites:** Natural and manmade aquatic sites, edges of lakes, ponds, canals, stream eddies, creek edges, detention ponds	3.5 - 6.5 (0.018 - 0.033)
Freshwater Swamps and Marshes: Mixed hardwood swamps, cattail marsh, common reed wetland, water hyacinth ponds, and similar freshwater areas with emergent vegetation **Marine/Coastal Areas:** Intertidal areas above the mean high water mark, mangroves, brackish water swamps and marshes, coastal impoundments and similar areas	9 (0.045)
Stormwater/Drainage Systems: Storm sewers, catch basins, drainage ditches, and similar areas **Wastewater:** Sewage effluent, sewers, sewage lagoons, cesspools, oxidation ponds, septic ditches and tanks, animal waste lagoons and settling ponds, livestock runoff lagoons, wastewater impoundments associated with fruit and vegetable processing, and similar areas	6.5 - 9 (0.033 - 0.045)
Dormant Rice Fields: Impounded water in dormant rice fields (for application only during the interval between harvest and preparation of the field for the next cropping cycle)	3.5 - 6.5 (0.018 - 0.033)
Natural and Artificial Containers: Tree holes, bromeliads, leaf axils, and other similar natural water holding containers, cemetery urns, bird baths, flower pots, rain barrels, buckets, single tires, tires stockpiled in dumps, landfills, recycling plants and other similar areas, abandoned swimming pools, ornamental ponds, flooded roof tops and similar water holding sites. Landfill containers, salvage yards, abandoned vehicles Do not apply to natural or artificial containers of water intended for consumption by people, animals, or livestock.	3.5 - 9 (0.018 - 0.045) For small to medium size containers, apply 1/8 teaspoon (about 0.37 g) of Natular G per 10-20 gallons of water. For very small containers, apply a pinch of Natular G (0.02 g) per ½ - 1 gallon of water. This is approximately 7 - 9 granules per ½ - 1 gallon of water.

Agricultural/Crop Sites Where Mosquito Breeding Occurs:

Apply NATULAR® G at the rate of 3.5 to 9 lb per acre in standing water within agricultural/crop sites where mosquito breeding occurs: pastures/hay fields, rangelands, orchards, vineyards, and citrus groves. Do not apply to waters intended for irrigation.

STORAGE AND DISPOSAL

Attachment III

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store in original container only. In case of leak or spill, contain material with absorbent materials and dispose as waste.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site according to label use directions or at an approved waste disposal facility.

Container Handling for Non-Refillable Bag: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Container Handling for Rigid Refillable Tote: Refillable container. Refill this container with granular spinosad pesticide formulation only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment. Use a sprayer with water to quickly and completely rinse the interior of the container. Ensure the top, bottom, and all sides are rinsed. A high pressure sprayer with a rinsing nozzle could provide a thorough rinse of the interior. Drain and collect rinsate from the container into a collection system for later disposal. Drain the container dry so no water remains. Return to point of sale. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by State and local authorities.

Warranty

To the extent consistent with applicable law CLARKE MOSQUITO CONTROL PRODUCTS, INC. makes no warranty, express or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use/handling of this material when use and/or handling is contrary to label instructions.

Natular® is a Registered Trademark of Clarke Mosquito Control Products, Inc.

IN CASE OF MEDICAL EMERGENCY, CALL THE INTERNATIONAL POISON CONTROL CENTER 1-800-214-7753

Manufactured By:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 North Garden Avenue
Roselle, IL 60172, U.S.A.
1-800-323-5727

EPA Reg. No.: 8329-80 NET WEIGHT: _____

EPA Est. No.: LOT:_____

AL0537

NATULAR® G30

Mosquito Larvicide / Extended Release Granule

Controls larvae of mosquitoes which may transmit Dengue, Chikungunya, or Zika.

To be used in governmental mosquito control programs, by professional pest control operators, or in other mosquito or midge control operations.

Active Ingredient (dry weight basis):	
Spinosad (a mixture of Spinosyn A and Spinosyn D)	2.5%
Other Ingredients	97.5%
Total	100.0%

U.S. Patent No. 5,362,634 and 5,496,931
Natular® G30 is a 2.5% extended release granule.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Precautionary Statements

Hazards to Humans and Domestic Animals
Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Avoid contact with eyes or clothing. Wear protective eyewear (such as goggles, face shield, or safety glasses).

First Aid	
If swallowed:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If in eyes:	• Hold eye open and rinse slowly and gently with warm water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.	

Environmental Hazards
This product is toxic to aquatic organisms. Non-target aquatic invertebrates may be killed in waters where this pesticide is used. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

Directions For Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Product Information
Natular® G30 is a product for killing mosquito and midge larvae. This product's active ingredient, spinosad, is biologically derived from the fermentation of *Saccharopolyspora spinosa*, a naturally occurring soil organism. Natular® G30 releases effective levels of spinosad for up to 30 days under typical environmental conditions. Natular® G30 may be applied with ground or aerial equipment.

Use Precautions

Integrated Pest Management (IPM) Programs
Natular® G30 is intended to kill mosquito and midge larvae. Mosquitoes are best controlled when an IPM program is followed. Larval control efforts should be managed through habitat mapping, active adult and larval surveillance, and integrated with other control strategies such as source reduction, public education programs, harborage or barrier adult mosquito control applications, and targeted adulticide applications.

Insecticide Resistance Management (IRM)
Natular® G30 contains a Group 5 insecticide. Insect biotypes with acquired resistance to Group 5 insecticides may eventually dominate the insect population if appropriate resistance management strategies are not followed. Currently, only spinetoram and spinosad active ingredients are classified as Group 5 insecticides. Resistance to other insecticides is not likely to impact the effectiveness of this product. Spinosad may be used in rotation with all other labeled products in a comprehensive IRM program.

To minimize the potential for resistance development, the following practices are recommended:

- Base insecticide use on comprehensive IPM and IRM programs.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or Clarke representative.
- Rotate with other labeled effective mosquito larvicides that have a different mode of action.
- In dormant rice fields, standing water within agricultural/crop sites, and permanent marine and freshwater sites, do not make more than 5 applications per year.
- Use insecticides with a different mode of action (different insecticide group) on adult mosquitoes so that both larvae and adults are not exposed to products with the same mode of action.
- Contact your local extension specialist, technical advisor, and/or Clarke representative for insecticide resistance management and/or IPM recommendations for the specific site and resistant pest problems.
- For further information or to report suspected resistance, you may contact your local Clarke representative by calling 800-323-5727.

Application

Proper application techniques help ensure adequate coverage and correct dosage necessary to obtain optimum kill of mosquito and midge larvae. Apply Natular® G30 prior to flooding as a prehatch application to areas that breed mosquitoes, or at any stage of larval development after flooding in listed sites. Do not allow this product to drift onto neighboring crops or non-crop areas or use in a manner or at a time other than in accordance with label directions.

Ground Application
Use conventional ground application equipment that provides even coverage at labeled rates.

Aerial Application
Fixed wing aircraft or helicopters equipped with granular spreaders capable of applying rates from 5 to 20 lb per acre may be used to apply Natular® G30. Aerial application equipment should be carefully calibrated before use to be sure it is working properly and delivering a uniform distribution pattern. Avoid flight path overlaps while dispensing granules. Do not exceed labeled limits.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the treatment coordinator are responsible for considering all these factors when making application decisions.

Application Sites and Rates
Apply Natular® G30 at rates (see table) for the targeted treatment site. Within these rate ranges apply at a rate appropriate to site habitat and conditions at the time of application. Use lower labeled rate when water is shallow, vegetation and/or pollution are minimal, and mosquito populations are low. Do not use less than labeled minimum rate. Within the labeled rate range, use higher rates when water is deep, vegetation and/or pollution are high, and mosquito populations are high in number.

Natular® G30 may be applied at rates up to 20 lb per acre in waters high in organic content, deep-water mosquito habitats or those with dense surface cover, and where monitoring indicates a lack of kill at typical rates.

Reapply after 30 days, if needed for extended control in continuously flooded habitat. More frequent applications may be made if monitoring indicates that larval populations have reestablished or weather conditions have rendered initial treatments ineffective.

AL0697

SAMPLE LABEL

Treatment Area	Natular® G30
Temporary Standing Water: Woodland pools, snow pools, roadside ditches, retention ponds, freshwater dredge spoils, tire tracks and other natural or manmade depressions, rock holes, pot holes and similar areas subject to holding water. **Other Freshwater Sites:** Natural and manmade aquatic sites; edges of lakes, ponds, canals, stream eddies, creek edges, and detention ponds. **Dormant Rice Fields:** Impounded water in dormant rice fields (for application only during the interval between harvest and preparation of the field for the next cropping cycle). **Freshwater Swamps and Marshes:** Mixed hardwood swamps, cattail marsh, common reed wetland, water hyacinth ponds, and similar freshwater areas with emergent vegetation. **Marine/Coastal Areas:** Intertidal areas above the mean high water mark, mangroves, brackish water swamps and marshes, coastal impoundments and similar areas.	Apply 5 to 12 lbs per acre (5.6 to 13.5 kg per hectare). Rate is equivalent to 5 to 12 g per 100 sq. ft. of water.
Stormwater/Drainage Systems: Storm sewers, catch basins, drainage ditches, and similar areas. **Wastewater:** Sewage effluent, sewers, sewage lagoons, cesspools, oxidation ponds, septic ditches and tanks, animal waste lagoons and settling ponds, livestock runoff lagoons, wastewater impoundments associated with fruit and vegetable processing, and similar areas.	Apply 5 to 20 lbs per acre (5.6 to 22.4 kg per hectare). Rate is equivalent to 5 to 20 g per 100 sq. ft. of water.
Natural and Artificial Containers: Tree holes, bromeliads, leaf axils, and other similar natural water holding containers; cemetery urns, bird baths, flower pots, rain barrels, buckets, single tires, tires stockpiled in dumps, landfills, recycling plants and other similar areas, abandoned swimming pools, ornamental ponds, flooded roof tops and similar water holding sites; landfill containers, salvage yards, abandoned vehicles. Do not apply to natural or artificial containers of water intended for consumption by people, animals, or livestock.	Apply 5 to 20 lbs per acre (5.6 to 22.4 kg per hectare). Rate is equivalent to 5 to 20 g per 100 sq. ft. of water. For small to medium size containers, apply 0.15 g of Natular G30 per 10-25 gallons of water. For very small containers, apply a pinch of Natular G30 (about 0.02 g) per 5 liters (1.3 gallons) of water. This is approximately 8-10 granules per 5 liters of water.
Agricultural/Crop Sites Where Mosquito Breeding Occurs Apply Natular® G30 to standing water within agricultural/crop sites where mosquito breeding occurs to kill mosquito larvae species, including: pastures/hay fields, rangeland, orchards, vineyards, and citrus groves. **Do not apply to waters intended for irrigation.**	Apply 5 to 20 lbs per acre (5.6 to 22.4 kg per hectare). Rate is equivalent to 5 to 20 g per 100 sq. ft. of water.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage: Store in a cool dry place in original container only. Keep away from moisture.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling for Non-Refillable Bag: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Offer for recycling, if available, or puncture and dispose of in a sanitary landfill or by incineration, or by other procedures approved by state and local authorities.

Container Handling for Rigid Refillable Tote: Refillable container. Refill this container with granular spinosad pesticide formulation only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the re-filler. To clean the container before final disposal, empty the remaining contents from this container into application equipment. Use a sprayer with water to quickly and completely rinse the interior of the container. Ensure the top, bottom, and all sides are rinsed. A high pressure sprayer with a rinsing nozzle could provide a thorough rinse of the interior. Drain and collect rinsate from the container into a collection system for later disposal. Drain the container dry so no water remains. Return to point of sale. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by State and local authorities.

Warranty: To the extent consistent with applicable law, CLARKE MOSQUITO CONTROL PRODUCTS, INC. makes no warranty, express or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risk of use/handling of this material when use and/or handling is contrary to label instructions.

Natular® is a Trademark of Clarke Mosquito Control Products, Inc.

Manufactured For:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 North Garden Avenue
Roselle, IL 60172, U.S.A.
1-800-323-5727

EPA Reg. No.: 8329-83
EPA Est. No.: 8329-IL-03
Net Contents: _____
Lot: _____

SAMPLE LABEL

AL0697

VectoBac® G

BIOLOGICAL LARVICIDE

GRANULE

ACTIVE INGREDIENT:

Bacillus thuringiensis, subspecies *israelensis*, strain AM 65-52, fermentation solids, spores, and insecticidal toxins	2.80%
OTHER INGREDIENTS	97.20%
TOTAL	100.00%

Potency: 200 International Toxic Units (ITU) per mg
(Equivalent to 0.091 billion potency: ITU per pound)

The percent active ingredient does not indicate product performance and potency measurements are not Federally standardized.

EPA Reg. No. 73049-10
EPA Est. No. 33762-IA-001 List No. 05108

INDEX:

1.0 First Aid
2.0 Precautionary Statements
  2.1 Hazard to Humans (and Domestic Animals)
  2.2 Environmental Hazards
3.0 Directions for Use
4.0 Application Directions
5.0 Storage and Disposal
6.0 Notice to User

KEEP OUT OF REACH OF CHILDREN
CAUTION

1.0 FIRST AID

If in Eyes	• Hold eyes open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. • Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 (24 hours) for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-323-9597.

2.0 PRECAUTIONARY STATEMENTS

2.1 HAZARD TO HUMANS (AND DOMESTIC ANIMALS)

CAUTION

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

Mixers/loaders and applicators not in enclosed cabs or aircraft must wear a dust/mist respirator meeting NIOSH standards of at least N-95, R-95 or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

2.2 ENVIRONMENTAL HAZARDS

Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption.

3.0 DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

4.0 APPLICATION DIRECTIONS

VectoBac G is an insecticide for use against mosquito larvae.

Mosquitoes Habitat (Such as the following examples):	**Suggested Range Rate***
Irrigation ditches, roadside ditches, flood water, standing ponds, livestock watering ponds and troughs, woodland pools, snow melt pools, pastures, catch basins, storm water retention areas, tidal water, salt marshes and rice fields	2.5 - 10 lbs. / acre

In addition, standing water containing mosquito larvae, in fields growing crops such as alfalfa, almonds, asparagus, corn, cotton, dates, grapes, peaches, sugar cane and walnuts may be treated at the recommended rates.

* Use 10-20 lbs. / acre when late 3rd and early 4th instar larvae predominate, mosquito populations are high, water is heavily polluted (sewage lagoons, animal waste lagoons), and/or algae are abundant.

Apply uniformly by aerial or ground conventional equipment.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the treatment coordinator are responsible for considering all of these factors when making decisions.

A 7 to 14 day interval between applications should be employed.

SPECIMEN

5.0 STORAGE AND DISPOSAL

Do not contaminate potable water, food or feed by storage or disposal.

Storage: Store in a cool [59-86°F (15-30°C)], dry place.

Pesticide Disposal: Completely empty bag into application equipment. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Once cleaned, some agricultural plastic pesticide containers can be taken to a container collection site or picked up for recycling. To find the nearest site, contact your chemical dealer or manufacturer, or contact Ag Container Recycling Council at 202-861-3144 or www.acrecycle.org. If recycling is not available dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

6.0 NOTICE TO USER

Seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label. User assumes all risks of use, storage or handling not in strict accordance with accompanying directions.

VectoBac is a registered trademark of Valent BioSciences Corporation.

VALENT BIOSCIENCES CORPORATION
870 TECHNOLOGY WAY
LIBERTYVILLE, IL 60048 USA
PH: 800-323-9597

04-6623/R6 ©Valent BioSciences Corporation, January 2012

VectoLex® WSP

BIOLOGICAL LARVICIDE

WATER SOLUBLE POUCH

ACTIVE INGREDIENT:
Bacillus sphaericus 2362, Serotype H5a5b, strain ABTS 1743 Technical Powder (670 BsITU/mg) 7.5%
OTHER INGREDIENTS 92.5%
TOTAL 100.0%

Potency: This product contains 50 BsITU/mg or 0.023 Billion BsITU/lb.

Expiration Date: (Two years from the date of manufacture).

The percent active ingredient does not indicate product performance and potency measurements are not federally standardized.

EPA Reg. No. 73049-20 List No. 05722
EPA Est. No. 33762-IA-001 (Lot No. Suffix 'N8')
EPA Est. No. 33967-NJ-1 (Lot No. Suffix 'Q5')

INDEX:

1.0 First Aid
2.0 Precautionary Statements
2.1 Hazards to Humans and Domestic Animals
2.2 Environmental Hazards
3.0 Directions for Use
4.0 Storage and Disposal
5.0 Directions for Use - VectoLex Water Soluble Pouches (WSP)
5.1 Application Directions
6.0 Notice to User

KEEP OUT OF REACH OF CHILDREN

CAUTION

1.0 FIRST AID

If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 (24 hours) for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-323-9597.

2.0 PRECAUTIONARY STATEMENTS

2.1 HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

2.2 ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of equipment washwaters or rinsate. Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption.

3.0 DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

4.0 STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not contaminate water when disposing of equipment washwaters.

Pesticide Storage: Store in a cool, dry place.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non refillable container. Do not reuse or refill this container. Offer for recycling if available. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. For Water Soluble Pouches, dispose of empty outer foil bag in trash.

Continued

SPECIMEN

5.0 DIRECTIONS FOR USE - VECTOLEX WATER SOLUBLE POUCHES (WSP)

Once the foil bag containing Water Soluble Pouches is opened, use pouches within one day.

5.1 APPLICATION DIRECTIONS

MOSQUITO CONTROL

VectoLex WSP is a selective microbial insecticide for use against mosquito larvae in a variety of habitats. VectoLex WSP can be applied to areas that contain fish, other aquatic life, and plants. VectoLex WSP can be applied to areas used by or in contact with humans, pets, horses, livestock, birds or wildlife.

I. For control of mosquito larvae species* in the following non-crop sites:

Habitat	Rate Range
Drainage/Drainage Systems:	
Storm drains, catch basins, retention, detention and seepage ponds.	1 pouch/50 sq.ft.(1)

Treatment Areas (For Use In)(1):

Ponds	Standing water	Unused swimming pools or spas
Lagoons	Storm water retention areas	Flooded basements
Water gardens	Catch basins	Pool covers
Hollow trees and tree holes	Birdbaths	Gutters and drains
Urns	Fountains	Wheelbarrows
Rain barrels	Flowerpots and planters	Garbage cans and covers
Livestock watering troughs/ponds/tanks	Snowmelt pools	Discarded tires
Irrigation ditches	Abandoned swimming pools	
Roadside ditches		
Flood water		

Any location where water accumulates and remains standing for periods of time, except treated, finished drinking water for human consumption.

(1)Treat on basis of surface area of potential mosquito breeding sites by placing one (1) VectoLex Soluble Pouch for up to 50 square feet of treatment area. Re-apply as needed after 1 to 4 weeks.

5.1 APPLICATION DIRECTIONS (cont'd)

Longer periods of mosquito population suppression may result where sufficient numbers of non-target aquatic invertebrate parasites and predators are present since these are not affected by the product and contribute to mosquito population reduction.

* Mosquito species effectively controlled by VectoLex WSP, including many of those known to carry/transmit West Nile Virus:

Culex spp.	
Aedes vexans	
Ochlerotatus melanimon	*(Aedes melanimon)*
Ochlerotatus stimulans	*(Aedes stimulans)*
Ochlerotatus nigromaculis	*(Aedes nigromaculis)*
Psorophora columbiae	
Psorophora ferox	
Ochlerotatus triseriatus	*(Aedes triseriatus)*
Ochlerotatus sollicitans	*(Aedes sollicitans)*
Anopheles quadrimaculatus	
Coquillettidia perturbans	

6.0 NOTICE TO USER

To the fullest extent permitted by law, seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label. User assumes all risks of use, storage or handling not in strict accordance with accompanying directions.

VALENT BIOSCIENCES CORPORATION
870 TECHNOLOGY WAY
LIBERTYVILLE, IL 60048 USA
PH: 800-323-9597

04-7321/R6 ©Valent BioSciences Corporation, August 2012

VectoLex® FG

BIOLOGICAL LARVICIDE

FINE GRANULE

ACTIVE INGREDIENT:

Bacillus sphaericus 2362, Serotype H5a5b, strain ABTS 1743 fermentation solids, spores, and insecticidal toxins . . .	7.5%
OTHER INGREDIENTS	92.5%
TOTAL	100.0%

Potency: This product contains 50 BsITU/mg or 0.023 Billion BsITU/lb.
Expiration Date: (Two years from the date of manufacture).

The percent active ingredient does not indicate product performance and potency measurements are not federally standardized.

EPA Reg. No.73049-20
EPA Est. No. 33762-IA-001 List No. 05722

INDEX:

1.0 First Aid
2.0 Precautionary Statements
  2.1 Hazard to Humans (and Domestic Animals)
  2.2 Environmental Hazards
3.0 Directions for Use
4.0 Storage and Disposal
5.0 Directions for Use - VectoLex FG
  5.1 Application Directions
6.0 Notice to User

KEEP OUT OF REACH OF CHILDREN
CAUTION

1.0 FIRST AID

If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 (24 hours) for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-323-9597.

2.0 PRECAUTIONARY STATEMENTS

2.1 HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Causes moderate eye irritation. Harmful if absorbed through the skin or inhaled. Avoid contact with skin, eyes or clothing. Wear protective eyewear. Avoid breathing dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Mixers/loaders and applicators not in enclosed cabs or aircraft, must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitizations.

2.2 Environmental Hazards

Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption.

3.0 DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

For use only by federal, state, tribal or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform mosquito control applications, or by persons under their direct supervision. IN CALIFORNIA: This product is to be applied by County Health Department, State Department of Health Services, Mosquito and Vector Control or Mosquito Abatement District personnel, or persons under contract to these entities only.

4.0 STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not contaminate water when disposing of equipment washwaters.

Pesticide Storage: Store in a cool, dry place.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment, then offer for recycling if available or dispose of empty bag in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

5.0 DIRECTIONS FOR USE - VECTOLEX FG

5.1 Application Directions

MOSQUITO CONTROL

VectoLex® FG Biological Larvicide Fine Granule (hereafter referred to as VectoLex FG) is a selective microbial insecticide for use against mosquito larvae in a variety of habitats. VectoLex FG can be applied to areas that contain fish, other aquatic life, and plants. VectoLex FG can be applied to areas used by or in contact with humans, pets, horses, livestock, birds, or wildlife.

CONTINUED

SPECIMEN

I. For control of mosquito larvae species* in the following non-crop sites:

Habitat	Rate Range
Wastewater: Sewage effluent, sewage lagoons, oxidation ponds, septic ditches, animal waste lagoons, impounded wastewater associated with fruit and vegetable processing.	5-20 lbs/acre**
Stormwater/Drainage Systems: Storm sewers, catch basins, drainage ditches, retention ponds, detention ponds and seepage ponds.	5-20 lbs/acre**
Marine/Coastal Areas: Salt marshes, mangroves, estuaries.	5-20 lbs/acre**
Water Bodies: Natural and manmade aquatic sites such as lakes, ponds, rivers, canals, streams and livestock watering ponds and troughs.	5-20 lbs/acre**
Dormant Rice Fields: Impounded water in dormant rice fields. (For application only during the interval between harvest and preparation of the field for the next cropping cycle.)	5-20 lbs/acre**
Waste Tires: Tires stockpiled in dumps, landfills, recycling plants, and other similar sites.	0.5-2 lbs/ 1000 sq. ft.

II. For the control of mosquito larvae species* in the following agricultural/crop sites where mosquito breeding occurs:

Habitats:	Rate Range
Rice, pastures/hay fields, orchards, citrus groves, irrigated crops.	5-20 lbs/acre**

Apply VectoLex FG uniformly by aerial or conventional ground equipment. Reapply VectoLex FG as needed after 1 to 4 weeks.

* Mosquito species effectively controlled by VectoLex FG, including many of those known to carry/transmit West Nile virus:

Culex spp.	
Aedes vexans	
Ochlerotatus melanimon	*(Aedes melanimon)*
Ochlerotatus stimulans	*(Aedes stimulans)*
Ochlerotatus nigromaculis	*(Aedes nigromaculis)*
Psorophora columbiae	
Psorophora ferox	
Ochlerotatus triseriatus	*(Aedes triseriatus)*
Ochlerotatus sollicitans	*(Aedes sollicitans)*
Anopheles quadrimaculatus	
Coquillettidia perturbans	

**Use higher rates (10 to 20 lbs/acre) in areas where extended residual control is necessary, or in habitats having deep water or dense surface cover.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the treatment coordinator are responsible for considering all these factors when making decisions.

6.0 NOTICE TO USER

To the extent consistent with applicable law, seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on this label. To the extent consistent with applicable law, user assumes all risks of use, storage or handling not in accordance with accompanying directions.

VALENT BIOSCIENCES CORPORATION
870 TECHNOLOGY WAY
LIBERTYVILLE, IL 60048 USA
PH: 800-323-9597

04-8636/R2 ©Valent BioSciences Corporation, June 2015

VectoMax® FG

BIOLOGICAL LARVICIDE

FINE GRANULE

FOR ORGANIC PRODUCTION

MADE WITH BioFuse™ TECHNOLOGY

ACTIVE INGREDIENTS:

Bacillus sphaericus 2362, Serotype H5a5b, Strain ABTS 1743 Fermentation Solids, Spores, and Insecticidal Toxins	2.7%
Bacillus thuringiensis subsp. *israelensis* Serotype H-14, Strain AM65-52 Fermentation Solids, Spores, and Insecticidal Toxins	4.5%
OTHER INGREDIENTS	92.8%
TOTAL	100.0%

Potency: This product contains 50 BsITU/mg or 0.023 Billion BsITU/lb.

Expiration Date: (Two years from date of manufacture)

The percent active ingredient does not indicate product performance and potency measurements are not Federally standardized.

EPA Reg. No.73049-429
EPA Est. No. 33762-IA-001 List No. 05750
US Patent No. 7,989,180, US Patent No. 8,454,983

INDEX:

1.0 First Aid
2.0 Precautionary Statements
  2.1 Hazard to Humans (and Domestic Animals)
  2.2 Environmental Hazards
3.0 Directions for Use
4.0 Application Directions
5.0 Storage and Disposal
6.0 Warranty and Disclaimer

KEEP OUT OF REACH OF CHILDREN
CAUTION

1.0

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 (24 hours) for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-323-9597.	

2.0 PRECAUTIONARY STATEMENTS

2.1 Hazards To Humans and Domestic Animals

CAUTION

Causes moderate eye irritation. Harmful if absorbed through the skin or inhaled. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes, or clothing. Avoid breathing dust. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Mixers/loaders and applicators not in enclosed cabs or aircraft, must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

2.2 Environmental Hazards

Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption.

3.0 DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

For use only by federal, state, tribal or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform mosquito control applications, or by persons under their direct supervision.

IN CALIFORNIA: This product is to be applied by County Health Department, State Department of Health Services, Mosquito and Vector Control or Mosquito Abatement District personnel, or persons under contract to these entities only.

CONTINUED

SPECIMEN

4.0 APPLICATION DIRECTIONS

MOSQUITO CONTROL

VectoMax® FG Biological Larvicide Fine Granule (hereafter referred to as VectoMax FG) is a selective microbial insecticide for use against mosquito larvae in a variety of habitats. VectoMax FG can be applied to areas that contain fish, other aquatic life, and plants. VectoMax FG can be applied to areas used by or in contact with humans, pets, horses, livestock, birds, or wildlife.

I. For control of mosquito larvae in the following non-crop sites:

Habitat	Application Rate Range
Wastewater: Sewage effluent, sewage lagoons, oxidation ponds, septic ditches, animal waste lagoons, and impound wastewater associated with fruit and vegetable processing.	5-20 lbs/acre*
Storm Water/Drainage Systems: Drainage ditches, roadside ditches, retention ponds, detention ponds, and seepage ponds.	5-20 lbs/acre*
Marine/Coastal Areas: Tidal water, salt marshes, mangroves, and estuaries.	5-20 lbs/acre*
Water Bodies: Natural and manmade aquatic sites such as lakes, ponds, canals, rivers and streams (including river & stream edges), floodplains, swamps, marshes, irrigation ditches, flood water, woodland pools, snow melt pools and livestock watering ponds and troughs.	5-20 lbs/acre*
Waste Tires: Tires stockpiled in dumps, landfills, recycling plants, and other similar sites.	0.5-2 lbs/ 1000 sq. ft.

II. For control of mosquito larvae in agricultural/crop sites where mosquito breeding occurs.

Habitat	Application Rate Range
Rice fields, pastures/hay fields, orchards (including citrus groves, peaches, almonds, dates, and walnuts), asparagus fields, corn fields, cotton fields, alfalfa fields, and vineyards.	5-20 lbs/acre*

Apply VectoMax FG uniformly by aerial or conventional ground equipment. Reapply VectoMax FG as needed (after 1-4 weeks under typical environmental conditions).

*Use higher application rates (10-20 lbs/acre) in areas where 4th instar *Aedes* or *Ochlerotatus* spp. larvae predominate, or in areas where very high densities of late instar mosquito larvae are present, or under conditions where local experience indicates the need for higher application rates to achieve extended residual control.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the treatment coordinator are responsible for considering all these factors when making desicions.

5.0 STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Store in a cool, dry place.

Pesticide Disposal: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

Container Handling: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available or dispose of empty bag in a sanitary landfill or by incineration. Do not burn, unless allowed by State and local ordinances. If burned, stay out of smoke.

6.0 WARRANTY AND DISCLAIMER

To the extent consistent with applicable law, seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on this label. To the extent consistent with applicable law, user assumes all risks of use, storage, or handling not in accordance with the accompanying directions.

VectoMax is a registered trademark and BioFuse is a trademark of Valent BioSciences Corporation.

VALENT BIOSCIENCES CORPORATION
870 TECHNOLOGY WAY
LIBERTYVILLE, IL 60048 USA
PH: 800-323-9597

04-8648/R2 ©Valent BioSciences Corporation, May 2015

COCOBEAR™
Mosquito Larvicide Oil

Kills larvae and pupa stages of mosquitoes. Physical control of mosquito broods: kills by suffocation - mosquitoes do not develop resistance. Prevents mosquito emergence.

Standing water treatment. Use on: ponds, pools, ditches, standing water within irrigated croplands and pastures, flood waters, and other listed areas where mosquitoes develop.

ACTIVE INGREDIENT	
Mineral Oil*	10.0%
OTHER INGREDIENTS	90.0%
TOTAL	100.0%

* Contains petroleum distillate

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.	
IF SWALLOWED:	Call a poison control center or doctor immediately for treatment advice. DO NOT induce vomiting unless told to do so by a poison control center or doctor. Do not give ANY liquid to the person. Do not give anything by mouth to an unconscious person.
NOTICE TO PHYSICIANS: This product contains petroleum distillate and may pose an aspiration pneumonia hazard.	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

CAUTION. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Personal Protective Equipment (PPE): Mixers, loaders, applicators, and other handlers must wear long-sleeved shirt and long pants, and shoes plus socks.

User Safety Requirements: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

User Safety Recommendations: Users should wash hands before eating, drinking, chewing gum, tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, except as directed for use on this label. Aquatic organisms may be killed in waters where this pesticide is used. Consult with the State or tribal agency with primary authority for regulating pesticides before applying this product to public waters to determine if a permit is needed.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

This product may cause injury to plants in the treatment area. Stressed plants may be more susceptible.

COCOBEAR may only be used to control mosquito larvae and pupae. COCOBEAR leaves a thin film on the surface of treated, non-flowing water and kills mosquito larvae and pupae by suffocation. COCOBEAR kills immature mosquitoes where they develop.

This product may be used for surface applications to standing water within irrigated croplands and pastures, drainage areas, ditches, stagnant pools, swamps, marshes, temporary rain pools, sloughs, log ponds, open sewage basins, settling ponds, catch basins, waste tires and intermittently flooded areas.

Apply at uniform rates of 3 gallons per surface acre (for smaller areas, treat at 10 ounces per 1,000 sq. ft. or 1 1/2 quart per 5,000 sq. ft.). Where there is extremely dense vegetation or if the water to be treated is high in organic content, up to 5 gallons per acre (15 ounces per 1,000 sq. ft. or 2 quarts per 5,000 sq. ft.) may be used.

When applying by aerial application, adjust spray volume up to 5 gallons per acre dependent on vegetation and surface conditions. 3 gallons per acre (36 gallons per 100 ft swath mile) is likely to be sufficient for most conditions.

Spray Drift Management

A variety of factors including weather conditions (e.g. wind direction, wind speed, temperature, and relative humidity) and method of application (e.g. ground, aerial) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Wind Speed: Do not apply this product at wind speeds greater than 15 mph at the application site.

Droplet Size: Apply as a medium or coarser spray (ASABE Standard

SAMPLE LABEL

AL0337

572), and the minimum mean volume diameter (VMD) for spinning atomizer nozzles.

Temperature Inversions: Application is allowed under stable and/or temperature inversion conditions as long as application is done below the point in the atmosphere where the inversion begins and the droplet size meets the dimensions of very coarse or extremely coarse as defined in ASABE Standard 572 (VMD of 400-500 microns).

Release Height for Ground Applications: Apply using a nozzle height of no more than 4 feet above the surface.

Aerial Applications: Applications must conform to the requirements indicated above regarding wind speed, droplet size, and temperature inversions and to the additional requirements listed below.

Release Height: Aircraft altitude should be maintained at the lowest altitude necessary for aircraft safety in order to reduce the exposure of droplets to evaporation and wind.

Boom Length: The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter. Nozzle placement may be extended to 100% of rotor blade diameter when very coarse droplets of VMD 400-500 microns (ASABE Standard 572) are used. Orient nozzles to spray backward and parallel to the air stream.

Swath Adjustment: When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the upwind and downwind edges of the application area by adjusting the path of the aircraft upwind.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

PESTICIDE STORAGE: Store upright at room temperature. In case of spill or leakage, soak up with absorbent material such as sand, sawdust, earth, fuller's earth, etc.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

(REFILLABLE DRUMS & TOTES): Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning the container before refilling is the responsibility of the refiller. To clean the container before disposal, drain the container until it is empty. Add a minimum amount of clean water to allow recirculation through the pump, meter and hoses. A commercial tank-cleaning detergent may be used, if desired. Thoroughly drench the interior sides, ceiling, and floor of the container. Using a steam-cleaning process or a high-pressure/low-water process, clean sides, ceiling, and floor of container. Recirculate wash water through the pump, meter and hoses. Drain the tank. Dispose of wash water or rinsate with pesticide waste. Offer cleaned container for recycling, if available, or puncture and dispose of it in a sanitary landfill, or by other procedures approved by State and local authorities.

(2.5 GALLON JUGS): Nonrefillable container. Do not reuse or refill this container. When container is empty, drain it completely, then puncture and dispose of it in a sanitary landfill or by other procedures approved by State and local authorities.

MANUFACTURED FOR:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 N. GARDEN AVENUE
ROSELLE, ILLINOIS 60172
For more information call: 1-800-323-5727

EPA REG. NO. 8329-93

EPA EST. NO._____

Available Packaging: 2.5 GAL, 30 GAL, 55 GAL, 275 GAL, BULK

LOT NO: Marked on Container Label

COCOBEAR™ is a trademark of Clarke Mosquito Control Products, Inc.

NOTICE: To the extent consistent with applicable law, Clarke Mosquito Control Products, Inc. makes no warranty, express or implied, concerning the use of this product other than as indicated on the label. To the extent consistent with applicable law, buyer assumes all risk of use/handling of this material when use and/or handling is contrary to label instructions.

AL0337

FLIT® 10EC

Broad Spectrum Multi-Use Insecticide

Quick Knockdown. For Use Outdoors and in Non-Food/Feed Areas of Commercial Buildings, Warehouses, and Food/Feed Processing Establishments. For Use on Livestock: Cattle (Beef and Dairy), Goats, Sheep, Swine, Horses, and Poultry.

Active Ingredient:	
Permethrin	10.00%
†**Other Ingredients:**	90.00%
	100.00%

†Contains petroleum distillate

KEEP OUT OF REACH OF CHILDREN

WARNING

FIRST AID	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-214-7753 for emergency medical treatment information.	
IF ON SKIN OR CLOTHING	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing the eye. • Call a poison control center or doctor for treatment advice.
IF INHALED	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
IF SWALLOWED	• Call a poison control center or doctor immediately for treatment advice. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
Note to Physician: Contains petroleum distillate – vomiting may cause aspiration pneumonia. Do not administer or instill milk, cream or other substances containing vegetable or animal fats which enhance absorption of lipophilic substances.	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS & DOMESTIC ANIMALS

WARNING. Causes skin irritation. Do not get on skin, or on clothing. Harmful if inhaled. Avoid breathing vapor or spray mist. Causes moderate eye irritation. Avoid contact with eyes. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear Coveralls worn over long sleeved shirt and long pants, socks, chemical resistant footwear, and chemical resistant gloves (barrier laminate, nitrile rubber, neoprene, rubber, Viton, selection category F*).

Personal Protective Equipment (PPE): Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber greater or equal to 14 mils, and nitrile rubber greater or equal to 14 mils. If you want more options, follow the instructions for category F on an EPA chemical-resistance category selection chart.

Applicators using ULV cold foggers or fog/mist generators in indoor spaces must wear:

- Coveralls over long-sleeved shirt and long pants,
- Chemical resistant gloves,
- Chemical-resistant footwear plus socks, and
- Chemical resistant headgear, if overhead exposure.

Applicators using ULV cold foggers and/or fog/mist generators in outdoor spaces must wear:

- Long-sleeve shirt and long pants,
- Shoes plus socks, and
- Chemical-resistant gloves

All other mixers, loaders, applicators, and other handlers must wear:

- Long-sleeve shirt and long pants,
- Shoes plus socks,
- Chemical-resistant gloves for all handlers except for applicators using motorized ground equipment, pilots, and flaggers.
- Chemical resistant apron for mixers/loaders, persons cleaning equipment, and persons exposed to the concentrate and for handlers performing animal dip.

See engineering controls for additional requirements.

User Safety Requirements: Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Entry Restrictions:

For space spray use:

Do not enter or allow others to enter until vapors, mists, and aerosols have dispersed, and the treated area has been thoroughly ventilated.

For surface spray use:

Except when applying to livestock, do not enter or allow others to enter treated area until sprays have dried.

ENVIRONMENTAL HAZARDS FOR TERRESTRIAL APPLICATIONS

This pesticide is extremely toxic to aquatic organisms, including fish and invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash waters. This pesticide is

SAMPLE LABEL

highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are foraging the treatment area.

ENVIRONMENTAL HAZARDS FOR WIDE AREA MOSQUITO ADULTICIDE APPLICATIONS

This pesticide is extremely toxic to aquatic organisms, including fish and invertebrates. Runoff from treated areas or deposition of spray droplets into a body of water may be hazardous to fish and aquatic invertebrates. When applying as a wide area mosquito adulticide, before making the first application in a season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.

When applying as a wide area mosquito adulticide, do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from the water in order to minimize incidental deposition into the water body.

PHYSICAL & CHEMICAL HAZARDS

Do not use or store near heat or open flame. Do not use this product in or on electrical equipment due to the possibility of shock hazard.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

APPLICATION RESTRICTIONS

- Do not breathe vapors or spray mist.
- Do not use in aircraft cabins.
- Use in a handheld cold or thermal fogger is prohibited.
- Except when applying to livestock or as a wide area mosquito adulticide, do not apply this product in a way that will contact workers or other persons, either directly or through drift.
- Except when applying to livestock or as a wide area mosquito adulticide, only protected handlers may be in the area during application.
- Do not apply when food is present.

WIDE AREA MOSQUITO CONTROL

For use by federal, state, tribal, or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

APPLICATION INSTRUCTIONS

Do not exceed 25 applications at 0.007 lbs. of permethrin per acre or 0.18 lbs. of permethrin per acre in any given season. More frequent treatments may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne diseases in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort. Apply when wind speed is greater than 1 mph.

GENERAL

FLIT® 10EC Broad Spectrum Multi-Use Insecticide is designed for application as an Ultra-Low Volume (ULV) aerosol to control adult mosquitoes and flies in residential, industrial, urban, recreational and other areas where adult mosquitoes and flies are found. FLIT® 10EC is also recommended for application with mist-blowers, backpack sprayers, handheld sprayers, and low pressure hand sprayers for barrier or surface applications. FLIT® 10EC is used for control of annoyance flies and mosquitoes, mosquitoes and flies of public health or disease vector importance in areas such as but not limited to residential areas, industrial areas, urban areas, parks, campsites, woodlands, athletic fields, golf courses, playgrounds, recreational and overgrown waste areas, roadsides, and other areas where adult mosquitoes and flies occur. Apply at a rate not to exceed 0.007 pounds of permethrin per acre in any given 24 hour period.

In the treatment of corrals, feed lots, swine lots, poultry ranges and zoos cover any exposed drinking water, drinking fountains and animal feed before application.

FLIT® 10EC provides effective control of adult mosquitoes, black flies, gnats, biting and non-biting midges, stable flies, horse flies, deer flies, sheep flies, horn flies, and nuisance flying insects such as houseflies.

SPRAY DROPLET SIZE DETERMINATION

Ground Equipment: Spray equipment must be adjusted so that the volume median diameter is less than 30 microns (Dv 0.5 < 30 µm) and that 90% of the spray is contained in droplets smaller than 50 microns (Dv 0.9 < 50µm). Directions from the equipment manufacturer or vendor, pesticide registrant or a test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

GROUND APPLICATION

Vehicle-Mounted ULV Cold Aerosol Generators or Vehicle-Mounted Non-Thermal Aerosol (Cold Fog): Dilute 1 part concentrate with 1 part water or suitable oil solvent or at proportional oil dilutions calculated on the basis of vehicle speed and swath width to achieve the target dose. Apply through non-thermal ULV application equipment and base acreage calculations on the equipment manufacturer's recommended swath width. Apply at a rate not to exceed 0.007 pounds of permethrin per acre in any given 24 hour period. An optimum swath is created when FLIT® 10EC is applied from a truck that is being driven perpendicular to the wind direction. Direct the spray head of equipment to ensure even distribution of the spray cloud throughout the area. For best results, apply when insects are most active and meteorological conditions are conducive to keeping the spray cloud in the air column close to the ground. An inversion of air temperatures and a light breeze is preferable. Do not exceed 25 applications at 0.007 pounds of permethrin per acre (not to exceed a total of 0.18 pounds of permethrin per acre) in any given season. More frequent applications may be made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort. Application during the cooler hours of the night or early morning is recommended.

FLIT® 10EC may be applied through ULV Cold Aerosol Generators, or other equipment designed for non-thermal ULV aerosol applications. The desired application rate may be obtained under different conditions by altering the dilution rate of FLIT® 10EC, the flow rate of the insecticide from the application equipment and the vehicle speed. Where dense vegetation is present, the use of higher rates and/or slower speeds is recommended.

BARRIER APPLICATIONS

For control and exclusion of resting or flying adult mosquitoes in areas such as animal quarters, roadsides, urban areas, residential areas, industrial areas, golf courses, parks, recreational areas, tire piles and all public areas where adult mosquitoes may occur. May be used to treat aggregation and harborage areas such as the perimeter of residential buildings, storage buildings, empty rail cars, truck transport trailers, abandoned buildings and other areas where adult mosquitoes find harborage. For application to resting or aggregation surfaces using low pressure hand sprayers or other similar equipment which has demonstrated the capacity to deliver an even distribution of the labeled rate over the desired treatment area, mix 1 part concentrate with 1 part of water or suitable oil diluents and apply sufficient spray to dampen surface. For application using backpack or truck-mounted mist blower equipment, apply at a rate not to exceed 36.6 fl. oz. of diluted product per acre or diluted at a rate not to exceed 0.1 lbs. a.i. per acre.

SAMPLE LABEL

Direct spray onto foliage at the perimeter of areas from which mosquitoes or flies are to be excluded or direct spray into harborage areas or resting areas where adult mosquitoes or flies may be found. When this product is applied as a barrier application using low pressure hand sprayers, hydraulic sprayers, or ground ULV equipment, do not apply within 100 feet (30 meters) of lakes and streams.

Not for use in outdoor residential misting systems.

To prepare dilutions, the concentrate should first be stirred or agitated well. Add the required amount of concentrate to water or oil and blend thoroughly. Do not hold dilutions for more than 24 hours.

For maximum effectiveness, a combination of localized application and space treatment is recommended. Remove pets, birds, and cover fish aquaria before spraying.

USE RESTRICTIONS FOR WIDE AREA MOSQUITO USE

Do not allow spray treatment to contaminate cropland, poultry ranges or water supplies. Do not use on crops used for food or forage.

USE RESTRICTIONS FOR INDOOR USE

Except when making wide area mosquito adulticide applications or treating livestock, do not apply this product in a way that will contact workers or other persons, either directly or through drift.

Except when making wide area mosquito adulticide applications or treating livestock, only protected handlers may be in the area during application.

Do not breathe dusts, vapors, or spray mist.

For applications to food/feed handling and service areas:

Do not apply when food is present.

Do not use in food areas of food handling establishments, restaurants, or other areas where food is commercially prepared or processed.

Do not use in serving areas while food is exposed or facility is in operation. Serving areas are areas where prepared foods are served, such as dining rooms, but excluding areas where foods may be prepared or held. All food processing surfaces and utensils should be covered during treatment or thoroughly washed before use. Exposed food should be covered or removed.

Do not apply indoors at residential sites, including nurseries, day care centers, schools, hospitals, and nursing homes.

Not for broadcast use.

Application is prohibited directly into sewers or drains, or to any area like a gutter where drainage to sewers, storm drains, water bodies, or aquatic habitat can occur. Do not allow the product to enter any drain during or after application.

USE RESTRICTIONS FOR OUTDOOR AND ANIMAL QUARTER USE

When used in dairy barns or facilities: Close milk bulk tank lids to prevent contamination from spray and from dead or falling insects. Remove or cover milking utensils before application. Wash teats of animals before milking.

All outdoor applications must be limited to spot or crack-and-crevice treatments only, except for the following permitted uses:

(1) Treatment to soil or vegetation around structures;
(2) Applications to lawns, turf, and other vegetation;
(3) Applications to building foundations, up to a maximum height of 3 feet.

Other than applications to building foundations, all outdoor applications to impervious surfaces such as sidewalks, driveways, patios, porches, and structural surfaces (such as windows, doors, and eaves) are limited to spot and crack-and-crevice applications only.

Do not water the treated area to the point of run-off.

Do not make applications during rain.

INDOOR USE AREAS

Bakeries, Flour Mills, Granaries, Meat Packing Plants, Truck Trailers, Beverage Plants, Food Processing Plants, Industrial Installations, Railroad Cars, Warehouses, Canneries, Grain Elevators, Kennels, Ships' Holds

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE AND SPILL PROCEDURES: Store upright at room temperature. Avoid exposure to extreme temperatures. In case of spill or leakage, soak up with an absorbent material such as sand, sawdust, earth, fuller's earth, etc. Dispose of with chemical waste.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING:

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

Rigid, Non-refillable containers, small enough to shake (i.e., with capacities equal to or less than 5 gallons)

Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

SAMPLE LABEL

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Clarke Mosquito Control Products, Inc. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, CLARKE MOSQUITO CONTROL PRODUCTS, INC. MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Clarke Mosquito Control Products, Inc. is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, CLARKE MOSQUITO CONTROL PRODUCTS, INC. DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT CLARKE MOSQUITO CONTROL PRODUCTS, INC.'S ELECTION, THE REPLACEMENT OF PRODUCT.

FLIT® is a Registered Trademark of Clarke Mosquito Control Products, Inc.

In Case Of Medical Emergency, Call The International Poison Control Center 1-800-214-7753

In Case Of Transportation Emergency, Call Info-Trac 1-800-553-5053

For More Information Call: 1-800-323-5727

Application Sites	Pests Controlled	Use Directions	Diluent	Dilution Rate	Application Rate
LIVESTOCK SPRAY: Dairy & Beef Cattle, Sheep, Goats, Swine, Horses, and Poultry (For swine, do not ship animals for slaughter within 5 days of last treatment).	Horn Flies, House Flies, Mosquitoes, and Gnats	Apply to wet the hair thoroughly, with particular attention to topline, underline, flanks, withers, and other infested areas. Repeat treatment at intervals of 5 to 12 days for small insect populations or as needed when flies are emerging in large numbers.	Water	1 part concentrate in 100 parts water (1.3 fl ounces per gallon)	
	Stable Flies, Horse Flies, and Deer Flies	Apply a quart per adult animal to wet the hair thoroughly with particular attention to the legs, flanks, barrel, topline, and other body areas commonly attacked by these flies. Repeat daily as needed.	Water	1 part concentrate in 100 parts water (1.3 fl ounces per gallon)	
	Face Flies	Apply using spray which produces large wetting droplets. Apply to the face of the animal in the morning before release to pasture. Apply sufficiently to wet the face but not more than 1.5 ounces per animal. Repeat daily as needed.	Water	1 part concentrate in 100 parts water (1.3 fl ounces per gallon)	
	Sheep "ticks" or keds	Thoroughly wet all portions of the body by dipping or by spraying with sufficient pressure and with a nozzle adjustment to give penetration of the wool. Treat at a rate sufficient to wet the animal.	Water	1 part concentrate in 100 parts water (1.3 fl ounces per gallon)	
	Fleas on Livestock (To kill and to protect against reinfestation)	Wet the animal by dipping or spraying	Water	1 part concentrate in 20 parts water (6.5 fl ounces per gallon)	
AS A SPACE SPRAY LIVESTOCK PREMISES: Barns, Milking Parlors, Milk Rooms, Dairies, Poultry Houses, Swine and Livestock Housing. Bakeries, Beverage Plants, Canneries, Flour Mills, Food Processing Plants, Granaries, Industrial Installations, Kennels, Meat Packaging Plants, Railroad Cars, Ships' Holds, Truck Trailers, Warehouses	Fleas, Mosquitoes, and Gnats	Apply as a fog or fine mist, directing the spray toward the ceiling and upper corners until the area is filled with mist, using about 2 ounces per 1000 cubic feet of space. For best results, close doors and windows before spraying and keep them closed for ten to fifteen minutes. Vacate the treated area and ventilate before reoccupying. Repeat treatment daily as needed.	Water	1 part concentrate in 20 parts water (6.5 fl ounces per gallon)	2 ounces per 1000 cubic feet
	House Flies, Fruit Flies, Gnats, Mosquitoes, Skipper Flies, Wasps, Hornets, Bees, Black Flies, Small Flying Moths.	Apply with mechanical or compressed air equipment (non-thermal) adjusted to deliver a fine mist. Close doors and windows and shut off ventilating systems. When using an oil dilution for space spraying extinguish all flames and pilot lights when applying. For rapid control of Houseflies, Fruit Flies, Gnats, Mosquitoes, Skipper Flies, Wasps, Hornets, Bees, Black flies, Small Flying Moths, direct spray at an upward angle distributing uniformly through the entire area at a rate of 1 ounce per 1000 cubic feet of space. Keep area closed for at least 10 minutes. Vacate areas after treatment and ventilate and sweep up dead insects before reoccupying. For rapid kill of exposed or accessible stages of other insects named on this label, apply using conventional mechanical or compressed air equipment (non-thermal) following directions for space spraying.	Oil or Water	1 part concentrate in 20 parts oil or water (6.5 fl ounces per gallon)	1 ounce per 1000 cubic feet

SAMPLE LABEL

MANUFACTURED BY:
CLARKE MOSQUITO CONTROL PRODUCTS, INC.
159 N. GARDEN AVENUE
ROSELLE, ILLINOIS 60172 U.S.A.

EPA Reg. No.: 8329-67
EPA Est. No.:

Lot No.: Marked On Container
Net Contents: Marked on Container

Aqua Zenivex™ E20

For use only by federal, state, tribal or local government officials responsible for public health or vector control, or by persons certified in the appropriate category or otherwise authorized by the state or tribal lead pesticide regulatory agency to perform adult mosquito control applications, or by persons under their direct supervision.

- **FOR EFFECTIVE ADULT MOSQUITOES, NON-BITING MIDGE CONTROL AND BLACK FLY CONTROL**
- **FOR USE AS A ULV, THERMAL OR SPACE SPRAY BY AIR AND GROUND APPLICATION TO CONTROL ADULT MOSQUITOES**
- **APPROVED FOR USE OVER AGRICULTURAL CROPS (INCLUDING THOSE INTENDED FOR HUMAN CONSUMPTION), PASTURE AND RANGELAND**
- **CAN BE USED UNDILUTED OR DILUTED**
- **FORMULATION ALLOWS DILUTION WITH WATER RATHER THAN OIL**
- **QUICK PERMANENT KNOCKDOWN OF ADULT MOSQUITOES AND OTHER TARGET INSECTS**
- **CONTROLS NON-BITING MIDGES AND NUISANCE FLIES**
- **CONTROLS ADULT MOSQUITOES THAT MAY CARRY WEST NILE, EASTERN EQUINE ENCEPHALITIS, ST. LOUIS ENCEPHALITIS, AND CHIKUNGUNYA VIRUSES**

SPECIMEN LABEL

ACTIVE INGREDIENT:

Etofenprox (CAS #80844-07-1)	20%
OTHER INGREDIENTS:	80%
TOTAL	100%

Contains 1.48 lbs Etofenprox per gallon

EPA Reg. No. 89459-81 EPA Est. No. 2724-TX-1

KEEP OUT OF REACH OF CHILDREN

WARNING

See additional Precautionary Statements

PRECAUTIONARY STATEMENTS – HAZARDS TO HUMANS & DOMESTIC ANIMALS – WARNING

Causes substantial but temporary eye injury. Do not get in eyes. Avoid contact with skin or clothing. Applicators and other handlers must wear long-sleeved shirt, long pants, socks and shoes. Repeated exposure to etofenprox can cause skin irritation.

FIRST AID

If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice. *(continued)*
If on skin	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-248-7763 for emergency medical treatment information.

USER SAFETY REQUIREMENTS

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them. Wash thoroughly with soap and water after handling. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Users should remove clothing/PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic organisms, including fish and aquatic invertebrates. Runoff from treated areas or deposition into bodies of water may be hazardous to fish and other aquatic organisms. Do not apply over bodies of water (lakes, rivers, permanent streams, natural ponds, commercial fish ponds, swamps, marshes or estuaries), except when necessary to target areas where adult mosquitoes are present, and weather conditions will facilitate movement of applied material away from water in order to minimize incidental deposition into the water body. Do not contaminate bodies of water when disposing of equipment rinsate or washwaters.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Time applications to provide the maximum possible interval between treatment and the next period of bee activity. Do not apply to blooming crops or weeds when bees are foraging the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease-causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

READ AND FOLLOW ALL LABEL DIRECTIONS. Before making the first application of the season, it is advisable to consult with the state or tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist.

PRODUCT INFORMATION

Aqua Zenivex™ E20 is an effective insecticide used at low doses to control adult mosquitoes, non-biting midges, biting and non-biting flies. Use Aqua Zenivex™ E20, either undiluted as Ultra-Low Volume (ULV) or diluted with water, for the control of pest species in or near residential, industrial, commercial, urban, recreational areas, woodlands, golf courses, and other areas where these pests are a problem. Aqua Zenivex™ E20 may be applied over agricultural areas prior to or following harvest for the control of adult mosquitoes within or adjacent to these areas. Apply Aqua Zenivex™ E20 aerially (both fixed and rotary aircraft) for low volume applications or through mist-blowers, backpack, and handheld sprayers for ground applications. Aqua Zenivex™ E20 will control non-biting midges, black flies and mosquitoes and can be used as part of a total integrated pest management program for controlling disease vectors. Apply Aqua Zenivex™ E20 at rates from 0.00175 to 0.00700 pounds of etofenprox per acre. Dilute this product with water. Apply when wind is ≥ 1 mph. Do not apply when wind speeds exceed 10 mph. A temperature inversion is preferable to keep the fog close to the ground and apply when labeled insects are most active.

Do not spray more than 0.18 lbs etofenprox per acre per site per year. Do not make more than 25 applications per site per year. More frequent treatments may be made to prevent or control a threat to public and/or animal health determined by a state, tribal, or local health or vector control agency on the basis of documented evidence of disease-causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or tribe during a natural disaster recovery effort.

GROUND APPLICATION

Use a vehicle-mounted cold aerosol ULV sprayer to apply the product. Direct the spray equipment nozzle to provide even distribution of the product. For best results, apply perpendicular to the wind direction using a swath width of 300 ft. Spray equipment must be adjusted so that the volume median diameter (VMD) is between 7-30 microns (10μ ≤ $Dv_{0.5}$ ≤ 30μ) and that 90% of the spray is contained in droplets smaller than 50 microns ($Dv_{0.9}$ < 50μ). Directions from the equipment manufacturer or vendor, pesticide registrant, or test facility using a laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be tested at least annually to confirm that nozzle flow rate(s) are properly calibrated.

The appropriate application rate can be achieved by altering the dilution rate of Aqua Zenivex™ E20. Refer to the following chart for examples.

Application rate pound AI per acre	Vehicle Speed MPH	Flow rates			
		Undiluted	Diluted 1 to 1	Diluted 1 to 2	Diluted 1 to 4.5
		Oz/minute	Oz/minute	Oz/minute	Oz/minute
0.00175	10	0.9	1.8	2.7	5.0
	15	1.4	2.7	4.1	7.6
	20	1.8	3.6	5.5	10.1
0.00350	10	1.8	3.6	5.5	10.1
	15	2.7	5.4	8.3	15.1
	20	3.6	7.2	11.0	20.2
0.00700	10	3.6	7.2	11.0	20.2
	15	5.4	10.8	16.5	30.3
	20	7.2	14.4	22.0	40.4

Use the higher label rates when spraying areas where dense vegetation is present. Conduct applications when temperatures are between 50-95° F.

Backpack Sprayer ULV Application: Apply Aqua Zenivex™ E20 diluted or undiluted through non-thermal ULV backpack sprayer capable of applying the product in the 7 to 30 micron range. Apply product to the area as evenly as possible. Apply at the rate of 0.00175 to 0.00700 pounds etofenprox per acre.

Urban ULV Mosquito Control Applications: For control of

resting or flying adult mosquitoes, biting flies and non-biting midges in areas such as utility tunnels, sewers, storm drains and catch basins, pipe chases, underground basements, underground passages, parking decks, crawl spaces or uninhabited buildings, apply Aqua Zenivex™ E20 using mechanical foggers, handheld or truck-mounted ULV equipment, thermal foggers or other spray equipment suitable for this application. Apply Aqua Zenivex™ E20 at rates up to but not exceeding 0.00700 pounds of etofenprox per acre.

Thermal Fogging Application: Apply using a truck, dolly mounted, handheld, or other thermal fogging equipment. Following the equipment manufacturer's instructions, apply this product at a rate of 0.00175 to 0.00700 pounds etofenprox per acre. Direct fog to areas where mosquitoes and other pests are located. The volume median diameter (VMD) of droplets produced by thermal foggers is less than 60 microns ($Dv_{0.5}$ < 60µ) and 90% of the spray is contained in droplets smaller than 100 microns ($Dv_{0.9}$ < 100µ).

AERIAL APPLICATION

Apply Aqua Zenivex™ E20 aerially, either diluted or undiluted, by fixed wing or rotary aircraft. Apply at the rate of 0.00175 to 0.00700 pounds of etofenprox per acre. Apply using ULV equipped and capable aircraft. Spray equipment must be adjusted so that the volume median diameter (VMD) produced is less than 60 microns ($Dv_{0.5}$ < 60µ) and that 90% of the spray is contained in droplets smaller than 100 microns ($Dv_{0.9}$ < 100µ). Directions from the equipment manufacturer or vendor, pesticide registrant, or test facility using a wind tunnel and laser-based measurement instrument must be used to adjust equipment to produce acceptable droplet size spectra. Application equipment must be calibrated annually to confirm that nozzle flow rate(s) are accurate. Do not apply Aqua Zenivex™ E20 at altitudes below 100 feet. Apply at altitudes from 100–300 feet. Apply when wind speed on the ground is ≥ 1 mph. Apply when labeled insects are most active. For best results, use Global Positioning System (GPS) equipped aircraft.

Applications over crops or to areas favoring drift over crops

Aqua Zenivex™ E20 may be applied over crops (including row, tree, fruit, citrus, pasture and other areas where agricultural enterprises take place) or to areas where drift over cropland could occur. Aqua Zenivex™ E20 can be applied to these areas by either ground or aerial application. Use label rates and follow Directions For Use as directed in this label. Applications over crops or where drift may occur over crops are limited to 4 applications per month to the same site but no more than two applications within a seven day interval. Do not apply more than 0.028 pounds of active ingredient per month to the same site within a month. Do not spray more than 0.18 lbs etofenprox per acre per site per year. Do not make more than 25 applications per site per year.

IN FLORIDA: Aerial applications of this product require trained personnel to perform industry accepted assays to monitor resistance formation in targeted mosquitoes.

PESTICIDE STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Storage and Spill Procedures: Store upright at room temperature, but do not store at temperatures below 50° F. Avoid exposure to extreme temperatures. In case of spill or leakage, soak up with an absorbent material such as sand, sawdust, earth, fuller's earth, etc. Dispose of with chemical waste.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Disposal: Refillable 275 Gallon Totes: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. If not refilled, offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration. To clean the container before final disposal, triple rinse (or equivalent) promptly after emptying. Triple rinse as follows. Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

In case of an emergency or for product use information, call 1-800-248-7763.

To the extent consistent with applicable law, seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risks of use and handling of this material when such use and handling are contrary to label instructions.

Manufactured for:

Central Garden & Pet Company
1501 East Woodfield Road 200W
Schaumburg, Illinois 60173

ZOËCON®

Aqua Zenivex and Zoecon with design are trademarks of Wellmark International.
©2016 Wellmark International.

VEC 16-020

May 2016
Schaumburg, IL

Chikungunya Virus: What you need to know



Chikungunya (pronunciation: \chik-en-gun-ye) is:

- A virus spread through *Aedes* species mosquito bites. *Aedes* mosquitoes also spread dengue and Zika viruses.
- A risk to anyone traveling to a region of the world where chikungunya virus is found.



Global risk

Outbreaks have occurred in parts of Africa, Europe, Southeast Asia, and islands in the Indian and Pacific Oceans.

In 2013, chikungunya was found for the first time in the Americas and has spread to the Caribbean, South and Central America, and North America.

For information on where chikungunya virus is found, see: http://www.cdc.gov/chikungunya/geo/.

Traveling? For country-specific travel information and recommendations, visit www.cdc.gov/travel.

Signs and symptoms of chikungunya virus disease (chikungunya)



- Common symptoms include fever and severe joint pain. Other symptoms may include headache, muscle pain, joint swelling, or rash.
- Symptoms usually begin 3—7 days after being bitten by an infected mosquito.
- Most patients will feel better within a week. In some people, the joint pain may persist for months. Death is rare.
- People at risk for more severe disease include newborns infected around the time of birth, older adults (≥65 years), and people with medical conditions such as high blood pressure, diabetes, or heart disease.

CS258143B September 23, 2015

Sick? Could it be chikungunya?



- See your healthcare provider.
- Your healthcare provider may order tests to look for chikungunya or similar diseases, like dengue or Zika.



Chikungunya is preventable, but not treatable

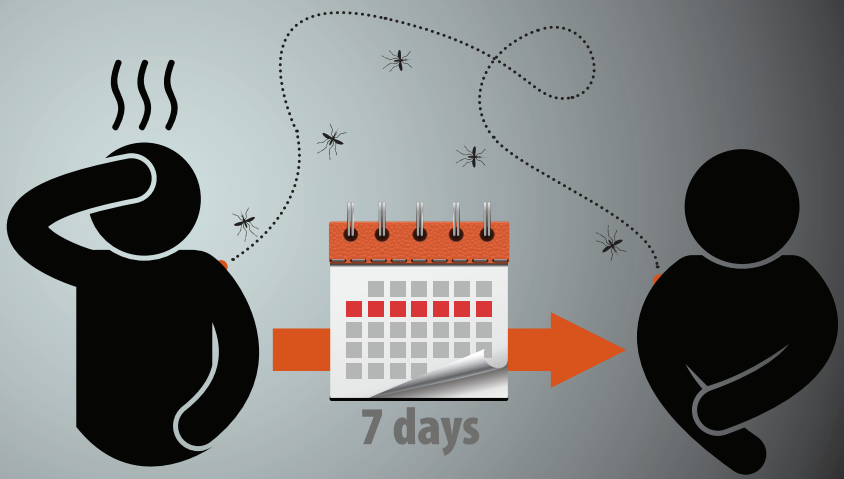
- No vaccine to prevent or medicine to treat infection is available.
- Mosquitoes that spread chikungunya bite aggressively during the day. Avoid infection by preventing mosquito bites.
  - » Use insect repellents. Repellents containing DEET, picaridin, IR3535, and some oil of lemon eucalyptus or para-menthane-diol products provide long-lasting protection.
  - » Use air conditioning or window/door screens.
  - » Wear long-sleeved shirts and long pants or permethrin-treated clothing.
  - » Once a week, empty and scrub, turn over, cover, or throw out items that hold water, such as tires, buckets, planters, toys, or trash containers. Check inside and outside your home.





If you are sick with chikungunya:

- During the first week of infection, chikungunya virus can be found in your blood. If a mosquito bites you, it can become infected and spread the virus to other people through bites.
- To help prevent others from getting sick, protect yourself from mosquito bites during the first week of illness.



www.cdc.gov/chikungunya

Attachment XIII

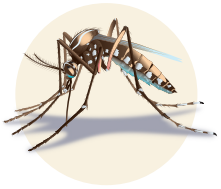
ZIKA BASICS AND HOW TO PROTECT YOURSELF

How Zika Spreads

Zika virus spreads to people primarily through the bite of an infected *Aedes* species mosquito (*Ae. aegypti and Ae. albopictus*). The mosquitoes that spread Zika can bite at day and night.

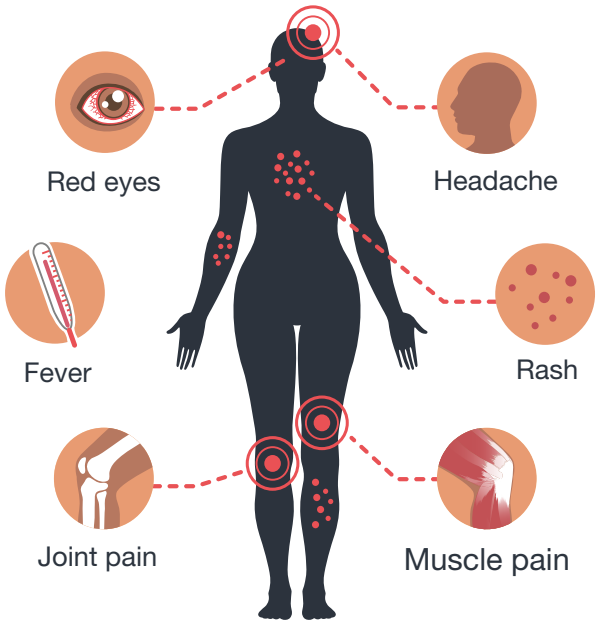
Zika virus can also spread

- During sex with a person who has Zika to his or her sex partners.
- From a pregnant woman to her fetus during pregnancy or around the time of birth.
- Through blood transfusion (likely but not confirmed).



Zika Symptoms

Many people infected with Zika won't have symptoms or will only have mild symptoms. The most common symptoms are fever, rash, headache, joint pain, red eyes, and muscle pain. Symptoms can last for several days to a week. People usually don't get sick enough to go to the hospital, and they very rarely die of Zika. Once a person has been infected with Zika, they are likely to be protected from future infections.





Visit our Areas with Risk of Zika webpage to find out where Zika is spreading.

www.cdc.gov/zika

CS289371-C August 21, 2018

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Why Zika is Risky for Some People

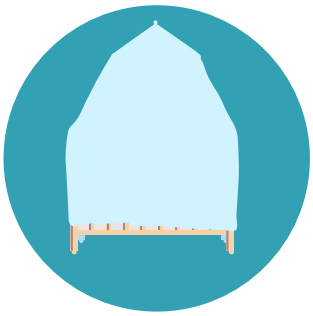
Zika infection during pregnancy can microcephal yand other birth defects. Microcephaly is a birth defect in which a baby's head is smaller than expected when compared to babies of the same sex and age. There have also been increased reports of Guillain-Barré syndrome, an uncommon sickness of the nervous system, in areas affected by Zika.



Microcephaly

How to Prevent Zika





There is no vaccine to prevent Zika. The best way to prevent diseases spread by mosquitoes is to protect yourself and your family from mosquito bites and from getting Zika through sex.. **Here's how:**

- Wear long-sleeved shirts and long pants.
- Stay in places with air conditioning and window and door screens to keep mosquitoes outside.
- Take steps to control mosquitoes inside and outside your home.
- Treat your clothing and gear with permethrin or buy pre-treated items.
- Use Environmental Protection Agency (EPA)-registered insect repellents. Always follow the product label instructions.
- When used as directed, these insect repellents are proven safe and effective even for pregnant and breastfeeding women.
    - Do not use insect repellents on babies younger than 2 months old.
        - Mosquito netting can be used to cover babies younger than 2 months old in carriers, strollers, or cribs to protect them from mosquito bites.
    - Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children younger than 3 years old.
- Sleep under a mosquito bed net if air conditioned or screened rooms are not available or if sleeping outdoors.
- Prevent sexual transmission of Zika by using condoms or not having sex.

What to Do if You Have Zika

There is no specific medicine to treat Zika. Treat the symptoms:

- Get plenty of rest.
- Drink fluids to prevent dehydration.
- Take medicine such as acetaminophen to reduce fever and pain.
- Do not take aspirin or other non-steroidal anti-inflammatory drugs.
- If you are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication.

To help prevent others from getting sick, strictly follow steps to prevent mosquito bites during the first week of illness.



www.cdc.gov/zika

ZIKA: What you need to know.

Attachment XIV

WHAT WE KNOW ABOUT ZIKA



(Aedes albopictus, or Asian tiger mosquito, is common in Northern Virginia.)

- **Zika is a viral disease spread to people mostly through the bite of an infected mosquito.** It is transmitted primarily by the yellow fever mosquito (*Aedes aegypti*). The Asian tiger mosquito (*Aedes albopictus*), which is common in Northern Virginia, can also spread the virus. These are both aggressive, daytime-biting mosquitoes.
- **There is a risk of Zika being imported into Virginia and being transmitted by local mosquitoes.**
- Zika can be passed through sex from a person who has Zika to his or her partners even if the infected person does not have symptoms.
- Zika may be transmitted through blood transfusions.
- Zika can pass from a pregnant woman to her fetus.
- **Infection with Zika during pregnancy can cause birth defects in babies, including microcephaly** (a condition in which a baby's head is smaller than expected).
- **Pregnant women should not travel to areas with active Zika transmission.**
- **There is no vaccine or medicine for Zika.**
- Based on information about similar infections, once a person has been infected with Zika, he or she is likely to be protected from future Zika virus infections.
- Local mosquito-borne Zika virus transmission has been reported in the continental United States.

SYMPTOMS OF ZIKA

Most people with Zika won't even know they have it. The illness is usually mild with symptoms lasting for several days to a week.

The most common symptoms of Zika are fever, rash, joint pain and conjunctivitis (red eyes). Other symptoms include muscle pain and headache. If you suspect you may be infected with Zika, contact your medical practitioner, especially if pregnant. Even if you do not feel sick, take steps to prevent mosquito bites for three weeks by staying indoors or wearing protective clothing and insect repellent. This will help prevent mosquitoes from biting you and spreading the virus to others in the community.

DO YOUR PART FROM THE START:
Prevent & Protect Against Mosquito Bites!

Control Mosquitoes in Your Yard

- *Aedes* mosquitoes lay eggs in containers. **To prevent mosquitoes in your yard, eliminate standing water weekly.** Tip and toss water from containers like tires, buckets, flower pots, drain pipes, tarps, bird baths, toys, etc. Scrub the inside of containers, discard them or place indoors.



- If you cannot dump water from a container, **treat it with a larvicide** like *Bacillus thuringiensis var. israelensis* (follow label instructions).
- If mosquitoes are biting, **use insecticides in your yard** to control them. Treat areas where they rest, such as dense vegetation or ground cover (follow label instructions).

Prevent Mosquito Bites

- **Use EPA-registered insect repellents** containing DEET, picaridin, oil of lemon eucalyptus or IR3535 (follow label instructions).
- **Cover exposed skin.** Wear light-colored, long-sleeved shirts and long pants.
- **Treat clothing with permethrin.** Treated clothing remains protective after multiple washings. Never apply permethrin to skin (follow label instructions).
- **Keep window and door screens in good repair** to keep mosquitoes out.

RESOURCES

www.fairfaxcounty.gov/hd/westnile/zika-virus.htm
http://www.vdh.virginia.gov/zika/
https://www.cdc.gov/zika/

Fairfax County Health Department

A Fairfax County, Va., publication. Updated Feb. 2017. To request this information in an alternate format, please call the Health Department at 703-246-2411, TTY 711.

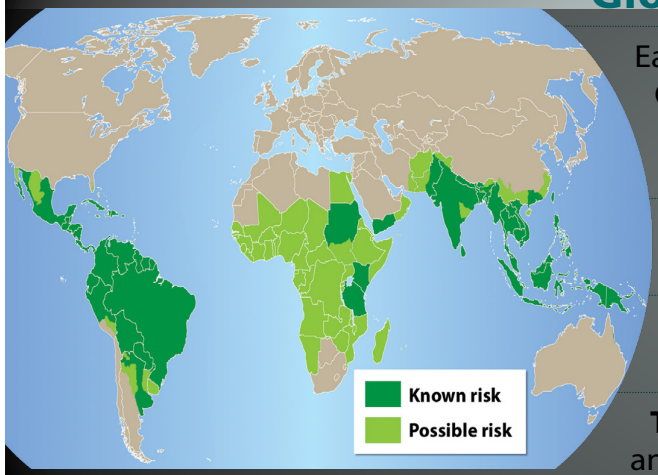
Dengue Virus:
What you need to know



Dengue is:

- A virus spread through mosquito bites. *Aedes* mosquitoes also spread chikungunya and Zika viruses.
- A risk to anyone traveling to a tropical or subtropical region of the world where dengue virus is found.

Global risk



Each year, an estimated 390 million people are infected. Outbreaks have occurred in parts of Southeast Asia, the Western Pacific, the Eastern Mediterranean, the Americas, the Caribbean, and Africa.

Forty percent of the world's population lives in areas at risk for dengue.

Dengue outbreaks have occurred in the United States where *Aedes* mosquitoes are found.

Traveling? For country-specific travel information and recommendations, visit www.cdc.gov/travel.

Signs and symptoms of dengue



- **Most people infected have mild or no symptoms.** About 1 in 4 people infected with dengue will get sick. Mild symptoms of dengue may be confused with other illnesses that cause fever and flu-like illness. Most people will recover after about one week.
- The most **common symptoms** of dengue **are fever** and **one or more of the following symptoms:** headache; eye pain (typically behind the eyes); muscle, joint, or bone pain; rash; nausea and vomiting; or unusual bleeding (nose or gum bleed, small red spots under the skin, or unusual bruising).
- **Severe dengue can result in shock, internal bleeding, and even death**.
  - » **Warning signs:** Watch for signs and symptoms of severe dengue to develop 24–48 hours after fever goes away.
  - » **If you or a family member develops any of the these warning signs, go to a local clinic or emergency room immediately:** Severe stomach pain or vomiting (at least 3 vomiting episodes within 24 hours); bleeding from the nose or gums; vomiting blood or blood in the stool; drowsiness or irritability; pale, cold, or clammy skin; difficulty breathing.

CS261360-A December 4, 2015

Sick? Could it be dengue?

- See your healthcare provider.
- Your healthcare provider may order tests to look for dengue or similar diseases, like chikungunya or Zika.



Dengue is preventable, but not treatable

- No vaccine to prevent, or medicine to treat, infection is available.
- Mosquitoes that spread dengue bite during the day. Avoid infection by preventing mosquito bites.
- Use insect repellents. Repellents containing DEET, picaridin, IR3535, and some oil of lemon eucalyptus or para-menthane-diol products provide long-lasting protection.
- Use air conditioning or window/door screens.
- Wear long-sleeved shirts and long pants or permethrin-treated clothing.
- Once a week, empty and scrub, turn over, cover, or throw out items that hold water, such as tires, buckets, planters, toys, or trash containers. Check inside and outside your home.



If you are sick with dengue:

- **Take acetaminophen or paracetamol** to control fever and relieve pain. Do not take aspirin or ibuprofen!
- Get plenty of rest and drink fluids to prevent dehydration.
- During the first week of infection, dengue virus can be found in your blood. If a mosquito bites you, it can become infected and spread the virus to other people through bites.
- To help prevent others from getting sick, protect yourself from mosquito bites during the first week of illness.
- Rest in a screened or air-conditioned room or under a bed net while you have a fever.



www.cdc.gov/dengue

Understanding Tick Bites and Lyme Disease

How to prevent tick bites



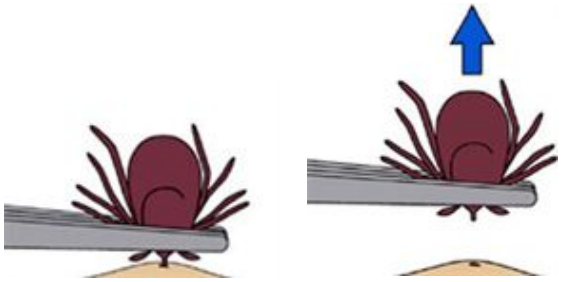
Ticks can spread disease, including Lyme disease.

Protect yourself:

- Use Environmental Protection Agency (EPA)-registered insect repellents containing DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-diol, or 2-undecanone. Always follow product instructions.
- Wear clothing treated with permethrin.
- Shower as soon as possible after spending time outdoors.
- Check for ticks daily. Ticks can hide under the armpits, behind the knees, in the hair, and in the groin.
- Tumble clothes in a dryer on high heat for 10 minutes to kill ticks on dry clothing after you come indoors. If the clothes are damp, additional time may be needed.

How to remove a tick

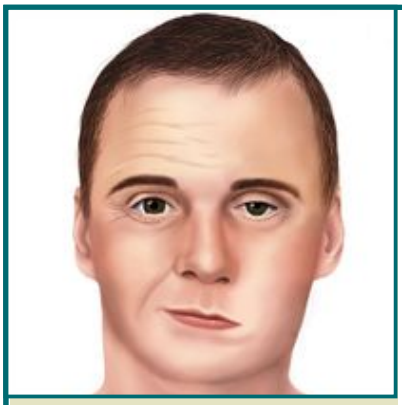
1. Use fine-tipped tweezers to grasp the tick as close to the skin's surface as possible.
2. Pull upward with steady, even pressure to remove the tick. Avoid twisting or jerking.
3. Clean the bite area and your hands with rubbing alcohol or soap and water.



Notes:

- Remove the tick as soon as possible to reduce your chances of getting an infection from the tick bite.
- Don't use nail polish, petroleum jelly, or a hot match to make the tick detach.
- If tick mouthparts remain in the skin, leave them alone. In most cases, they will fall out in a few days.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention



Facial paralysis.



Bull's eye rash on the back.



Arthritic knee.

When to see your healthcare provider

If you develop a rash, fever, exhaustion, or joint and muscle aches within several weeks of removing a tick or spending time in tick habitat, see your healthcare provider. Be sure to mention your recent tick bite and when it happened, or that you've spent time in places where ticks may live.

If left untreated, Lyme disease can affect the joints, heart, or nervous system.

Antibiotics treat Lyme disease

People treated with antibiotics in the early stages of Lyme disease usually recover rapidly and completely. The antibiotics most commonly used to treat Lyme disease include: doxycycline, amoxicillin, or cefuroxime axetil.

Looking ahead to recovery

Rest and take antibiotics as prescribed. Recovery may take several weeks or longer.

Some people wonder if there is a test to confirm that they are cured, but there is no such test. Retesting for Lyme disease is not recommended because blood tests might be positive for months or years after you have been treated. A positive test doesn't mean you are still infected. It simply means that your immune system remembers your infection.

You can get Lyme disease again if you are bitten by another infected tick, so protect yourself from tick bites.



For more information see www.cdc.gov/Lyme and www.cdc.gov/Ticks

Board Agenda Item
March 9, 2021

ACTION - 7

Approval of Comments on Washington Metropolitan Area Transit Authority (WMATA's) Proposed FY2022 Operating and FY2022-2027 Capital Improvement Program

ISSUE:
Board approval of comments on WMATA's proposed FY 2022 Operating Budget and FY 2022-2027 Capital Improvement Program.

RECOMMENDATION:
The County Executive recommends that the Board of Supervisors approve a letter (Attachment 1) conveying Fairfax County's comments on the proposed FY 2022 Operating Budget and FY 2022-2027 Capital Improvement Program to WMATA.

TIMING:
Board action is requested on March 9, 2021, because the public comment period for the FY 2022 Operating Budget and FY2022-2027 Capital Improvement Program ends on March 16, 2021.

BACKGROUND:
On December 27, 2020, the federal Coronavirus Response and Relief Supplemental Appropriations Act of 2021 (CRRSAA) was signed into law. The law contains $900 billion for COVID-19 relief, $14 billion of which is allocated to help preserve transit operations nationwide. Of the $14 billion allocated to transit, WMATA is slated to receive $610 million. The agency plans to use $95.5 million to support FY 2021 operations and $514.5 million for FY 2022. These additional funds caused WMATA to make substantive changes to the proposed FY 2022 Operating Budget and FY 2022-2027 Capital Improvement Program that the General Manager initially released on December 10, 2020.

WMATA's revised FY2022 operating budget totals $1.89 billion, not including operating reimbursables and debt service. In general, the budget attempts to maintain current levels (less than pre-COVID-19 levels) of Metrorail and Metrobus services for as long as funding allows. It forgoes the three percent subsidy growth provided by legislation, but includes $42 million in costs that are excluded by the legislation. The excluded initiatives include Silver Line Phase 2 revenue service, and converting the Cinder Bed Bus Facility operations from a private contractor to direct WMATA operations, as well as federal mandates for safety and paratransit services. The total subsidy owed by the jurisdictions is $1.153 billion.

The FY2022 proposed budget maintains current levels of Metrorail service, which are approximately 80 percent of pre-COVID-19 levels, until January 2022. The proposed budget also includes Silver Line Phase 2 service starting on July 1, 2021. However, beginning January 1, 2022, the budget proposes severe service adjustments to Metrorail service unless ridership returns to normal levels and/or additional federal assistance is provided. The proposed Metrorail service changes in January 2022 are:

- Reduce service span to 5:00 AM-9:00 PM seven days per week
- 30-minute headways on the Blue/Orange/Green/Yellow/Silver Lines and 15-minute headways on the Red Line
- Yellow Line and Red Line Turnbacks (not operating to the end of the Line)
- Closure of 22 Stations (including Greensboro, Innovation Center, McLean, and Reston Town Center in Fairfax County, as well as Van Dorn Street)

Similarly, the budget proposal also maintains existing levels of Metrobus service (approximately 80-85 percent of pre-pandemic levels), but then assumes drastic reductions beginning January 2022, if ridership does not return to normal and/or no additional federal assistance is provided. Based on ridership, the service cuts in Northern Virginia are more severe than in the District or Maryland. Staff recommends that Fairfax County encourage WMATA to find alternative means, aside from service cuts, to close the budget gap once CRRSAA funding is exhausted. Attachment 2 shows the proposed Metrobus service changes for routes operating wholly or partially in Northern Virginia.

As a result of the WMATA budget cuts, the Department of Transportation (FCDOT) is planning to assume operations of several Metrobus routes beginning in FY 2022. These routes are included in the County's Proposed FY 2022 Connector Budget (Fund 40000 County Transit Systems) and include the following routes: 3A, 3T, 15K, 29C and 29W. The Department of Transportation is tentatively planning to bring these proposed service changes to the Board for consideration on April 13, 2021, as part of the Connector service adjustment item.

Prior to the pandemic, WMATA public hearings would be scheduled as in-person public meetings. However, due to COVID-19, public outreach will only be conducted online. All public comments are due to WMATA by March 16, 2021.

FCDOT's recommended comments regarding WMATA's proposed FY 2022 Operating Budget and FY 2022-2027 Capital Improvement Program are contained in Attachment 1. Highlights from the letter are:

- Fairfax County is pleased to see that WMATA has included Silver Line Phase 2 in the budget. Every effort should continue to be made to ensure that service begins as soon as possible. However, the budget should accurately reflect the

anticipated start date for this service, so that the opening of the Silver Line Phase 2 is not delayed due to budget.

- Fairfax County appreciates that the proposed budget forgoes the three percent subsidy growth permitted by legislation.

- The County is concerned about the approach taken in the budget that current service levels continue for six months and then severe cuts are implemented in January 2022. This approach only harms the region's ability to recover economically precisely when it is anticipated that the recovery will be gaining momentum. The County encourages WMATA to maintain adequate and dependable levels of service across both modes and avoid drastic service reductions in the second half of FY 2022.

- Related to the proposed second-half shutdowns, the County is adamantly against the shutdown of 22 Metrorail stations, especially those along the Silver Line Phase 2 that would have just opened, as well as the proposed Metrorail and Metrobus service reductions.

- Fairfax County appreciates the need to balance the benefits of new service, like the Silver Line Phase 2, with the rest of the system in accordance with Title VI. However, how WMATA arrived at $20 million in Title VI offsets is not clear. WMATA should provide more information about how the proposed Title VI adjustments were calculated, and which services will be augmented as a result.

- The County supports the decision not to move preventive maintenance operating expenses to the capital program, as allowed by the Federal Transit Administration. This would not be fiscally responsible and would degrade the capital program. The region spent approximately two years overcoming years of such neglect of the capital program, and it cannot afford to start down that path again.

- The County suggests that WMATA continue to enhance messaging regarding the safety of public transportation and the measures it is taking to ensure passenger well-being. In addition, WMATA should continue to leverage partnerships with large employers in the region to encourage them to promote transit options for workers and customers.

- The County encourages WMATA to continue to engage with regional partners to seek additional federal and state funding support to overcome challenges presented by the pandemic.

FISCAL IMPACT:
There are no additional fiscal impacts to the County as a result of this item. The County Executive's proposed budget fully funds the County's share of WMATA's proposed FY 2022 budget, with no increase to the General Fund.

ENCLOSED DOCUMENTS:
Attachment 1 – Fairfax County Board of Supervisors' Comments on WMATA's FY 2022 Operating Budget and FY 2022-2027 Capital Improvement Program
Attachment 2 – Proposed Metrobus Service Changes for Northern Virginia in FY 2022

STAFF:
Rachel Flynn, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Todd Wigglesworth, Chief, Coordination and Funding Section, FCDOT
Brent Riddle, Transportation Planner IV, FCDOT

COMMONWEALTH OF VIRGINIA
COUNTY OF FAIRFAX
BOARD OF SUPERVISORS
FAIRFAX, VIRGINIA 22035

Attachment 1

Suite 530
12000 GOVERNMENT CENTER PARKWAY
FAIRFAX, VIRGINIA 22035-0071

TELEPHONE 703- 324-3151
FAX 703- 324-3955

chairman@fairfaxcounty.gov

JEFFREY C. MCKAY
CHAIRMAN

March 9, 2021

Mr. Paul J. Wiedefeld
General Manager and Chief Executive Officer
Washington Metropolitan Area Transit Authority
600 5th Street, N.W.
Washington, DC 20001

Reference: Washington Metropolitan Area Transit Authority (WMATA's) FY 2022 Operating Budget and FY 2022-2027 Capital Improvement Program

Dear Mr. Wiedefeld:

On behalf of the Fairfax County Board of Supervisors, I am writing to share our comments and concerns regarding many of the proposals included in WMATA's FY 2022 Operating Budget and FY 2022-2027 Capital Improvement Program. We, along with our partners in the Metro compact, certainly appreciate the recent passage of the Coronavirus Response and Relief Supplemental Appropriations Act of 2021 (CRRSAA). This legislation which helps mitigate the impacts of the health and financial crisis the region is confronting; however, we recognize that many difficult decisions remain. This budget reflects that reality.

Our comments on specific elements in the budget are:

- Fairfax County is pleased to see that WMATA has included Silver Line Phase 2 in the budget. Every effort should continue to be made to ensure that service begins as soon as possible. However, the budget should accurately reflect the anticipated start date for this service, so that the opening of the Silver Line Phase 2 is not delayed due to budget.

- Fairfax County appreciates that the proposed budget forgoes the three percent subsidy growth permitted by legislation. During these difficult times, an important objective for all our agencies is to continue to maintain high levels of existing service. When the system has more fully recovered from the pandemic and ridership begins to grow again, it will be appropriate to consider re-instituting the cap.

- The County is concerned about the approach taken in the budget that current service levels continue for the first six months of FY 2022 and then severe cuts are implemented in January 2022. The County encourages WMATA to maintain adequate and dependable levels of Metrorail and Metrobus service and avoid drastic service reductions in the

second half of FY 2022. The County is also adamantly against the shutdown of 22 Metrorail stations, especially those along the Silver Line Phase 2 that would have just opened, as well as the proposed Metrorail and Metrobus service reductions, particularly the 30-minute headways on all Metrorail lines. This approach would harm the region's ability to recover economically at the precise moment we anticipate the recovery will be gaining momentum.

- Fairfax County appreciates the need to balance the benefits of new service, like the Silver Line Phase 2, with the rest of the system in accordance with Title VI requirements. However, how WMATA calculated at $20 million in Title VI offsets is not clear. WMATA should provide more information about how the proposed Title VI adjustments were calculated and which services will be augmented as a result.

- The County supports the decision not to move preventive maintenance operating expenses to the capital program, as allowed by the Federal Transit Administration. This would not be fiscally responsible and would degrade the capital program. The region spent approximately two years overcoming years of such neglect of the capital program and cannot afford to start down that path again.

- The County recommends that WMATA continue to enhance messaging regarding the safety of public transportation and the measures it is taking to ensure passenger well-being to encourage the return of pre-pandemic ridership levels. In addition, WMATA should continue to leverage partnerships with large employers, including educational institutions, medical centers, business districts, and others in the region to encourage them to promote transit options for workers and customers alike.

- The County also encourages WMATA to continue to engage with regional partners and important stakeholders, from governmental jurisdictions to multi-national corporations, to stress the importance of public transportation and seek additional federal and state funding support to overcome the ongoing financial challenges presented by the pandemic.

In closing, the Fairfax County Board of Supervisors wishes to express appreciation to the WMATA Board and staff for the cooperative spirit in which the FY 2022 budget cycle has been conducted. WMATA staff have produced two vastly different budgets that reflect different realities, thanks to CRRSAA, in a very short time. Most importantly, WMATA staff have been responsive to questions and concerns expressed by Fairfax County staff and others in the region. While the budget does present significant challenges and decisions will be hard, we are confident that the region can work together to produce a budget that benefits our communities.

Thank you again for your consideration. If you have any questions, please call Brent Riddle at (571) 393-0183 or me at (703) 324-2321.

Sincerely,

Jeffrey C. McKay
Chairman

cc: Members, Fairfax County Board of Supervisors
The Honorable Tim Kaine, Senator, United States Senate
The Honorable Mark Warner, Senator, United States Senate
The Honorable Donald Beyer, Congressman, United States House of Representatives
The Honorable Gerry Connolly, Congressman, United States House of Representatives
The Honorable Jennifer Wexton, Congresswoman, United States House of Representatives
Members, Fairfax County Delegation to the Virginia General Assembly
Bryan J. Hill, County Executive
Rachel Flynn, Deputy County Executive
Tom Biesiadny, Director, Department of Transportation
Todd Wigglesworth, Chief, Coordination and Funding Division, Department of Transportation
Brent Riddle, Transportation Planner IV, Department of Transportation

Attachment 2

FY2022 Proposed Service Plans – Virginia

		Revised Proposal for 1st half FY22			Revised Proposal for 2nd half FY22		
Rte	**Line Name**	**Weekday Status**	**Sat/Sun Status**	**Description**	**Weekday Status**	**Sat/Sun Status**	**Description**
1A	Wilson Blvd-Vienna			Maintain FY21 span & frequency, add service until 2 am 7 days-a-week			Maintain FY21 span & Frequency.
1B							
1C	Fair Oaks-Fairfax Blvd			Maintain FY21 span & frequency			Eliminate entire line
2A	Washington Blvd-Dunn Loring			Maintain FY21 span & frequency			Maintain FY21 span & frequency
2B	Fair Oaks-Jermantown Rd			Maintain FY21 span & frequency			Eliminate entire line
3A	Annandale Rd			Eliminate entire line, Fairfax Connector proposing replacement service			Eliminate entire line, Fairfax Connector proposing replacement service
3T	Pimmit Hills			Maintain no service, Fairfax Connector proposing replacement service			Maintain no service, Fairfax Connector proposing replacement service
3Y	Lee Highway-Farragut Square		n/a	Maintain no service		n/a	Maintain no service
4A	Pershing Dr-Arlington Blvd		n/a	Maintain FY21 span & frequency on route 4B. Continue suspension on route 4A until crowding on adjacent services warrants restoration		n/a	Eliminate entire line
4B							
5A	DC-Dulles			Eliminate entire line (when Silver Line Phase II opens)			Eliminate entire line
7A	Lincolnia-North Fairlington			Eliminate routes 7F & 7Y, Maintain FY21 span & frequency on a modified route 7A operating from Pentagon to Southern Towers on existing alignment, then Seminary, Kenmore, N. Van Dorn, Holmes Run, Ripley, Duke, Reynolds, Edsall, Pickett, S. Van Dorn to Van Dorn Street Sta. DASH is proposing replacement service on Beauregard St. (Alex Transit Vision Plan Recommendation) / Add service until 2 am 7 days-a-week			Eliminate routes 7F & 7Y, Maintain FY21 span & frequency on a modified route 7A operating from Pentagon to Southern Towers on existing alignment, then Seminary, Kenmore, N. Van Dorn, Holmes Run, Ripley, Duke, Reynolds, Edsall, Pickett, S. Van Dorn to Van Dorn Street Sta. DASH is proposing replacement service on Beauregard St. (Alex Transit Vision Plan Recommendation)
7F							
7Y			n/a			n/a	
7C	Park Center-Pentagon		n/a	Continue suspension until crowding on adjacent services warrants restoration		n/a	Maintain no service
7P			n/a			n/a	

PROPOSED

		Revised Proposal for 1st half FY22			Revised Proposal for 2nd half FY22		
Rte	**Line Name**	**Weekday Status**	**Sat/Sun Status**	**Description**	**Weekday Status**	**Sat/Sun Status**	**Description**
7M	Mark Center-Pentagon		n/a	Maintain FY21 span & frequency		n/a	Eliminate entire line
7W	Lincolnia-Pentagon		n/a	Maintain no service, DASH proposing replacement service		n/a	Maintain no service
8S	Foxchase-Seminary Valley		n/a	Partially replace route 8Z service with new route 21C between Duke & Pickett Sts. & Pentagon Sta. / Restore regular route 8W and 8Z service when ridership warrants		n/a	Maintain no service
8W			n/a			n/a	
8Z			n/a			n/a	
10A	Alexandria-Pentagon			Eliminate route 10N / Maintain FY21 span & frequency on route 10A / Continue suspension on route 10E until crowding on adjacent services warrants restoration / Add service until 2 am 7 days-a-week			Eliminate entire line, route 10A trips replaced with modified route 10B trips between Huntington and Mt. Vernon Ave. & S. Glebe Rd. Service is eliminated between S. Glebe Rd. and Pentagon Sta.
10E			n/a			n/a	
10N							
10B	Hunting Point-Ballston			Maintain FY21 span & frequency			Modify route south of Washington & Franklin/Gibbon Sts. To operate via 10A alignment to Huntington Sta. Also modify route between Walter Reed & Columbia Pike and Glebe Rd. & 2nd St. S to operate via Columbia Pike and Glebe Road. Service is eliminated between Washington & Franklin/Gibbon Sts. and Hunting Point as well as between Walter Reed & Columbia Pike and Glebe Rd. and 2nd St. S
11Y	Mount Vernon Express		n/a	Restore service with modified route 11C between Mt. Vernon and Braddock Road Sta., restore full service to downtown DC when crowding on adjacent services warrants. Temporarily charge regular fare until service is restored to downtown DC		n/a	Maintain no service
15K	Chain Bridge Rd		n/a	Maintain no service, Fairfax Connector proposing replacement service		n/a	Maintain no service, Fairfax Connector proposing replacement service

PROPOSED

		Revised Proposal for 1st half FY22			Revised Proposal for 2nd half FY22		
Rte	**Line Name**	**Weekday Status**	**Sat/Sun Status**	**Description**	**Weekday Status**	**Sat/Sun Status**	**Description**
16A	Columbia Pike			Maintain FY21 span & frequency, add service until 2 am 7 days-a-week on route 16E			Eliminate service on routes 16A & 16E, modify route 16C to operate from Army Navy Dr. & Eads St. via Eads, 12th/15th and Hayes St. (both directions) to Hayes & Army-Navy or eastbound from Columbia Pike & Joyce St. Also modify route between Columbia Pike & Jefferson St. to Leesburg & Columbia Pikes to operate via Jefferson and Leesburg Pike. Service on route 16C is eliminated on Columbia Pike and South Rotary Rd. between Joyce and Eads Sts., on Army-Navy Dr. between Eads and Hayes Sts. and on Columbia Pike between Jefferson St. and Leesburg Pike. All 16H stops on Columbia Pike will be served by route 16C
16C							
16E							
16G	Columbia Pike-Pentagon City			Maintain FY21 span & frequency			Entire line is eliminated and replaced with additional modified 16C trips (making all stops on Columbia Pike)
16H							
16L	Annandale-Skyline City-Pentagon		n/a	Continue suspension until crowding on adjacent services warrants restoration		n/a	Maintain no service
16Y	Columbia Pike-Farragut Square		n/a	Continue suspension until crowding on adjacent services warrants restoration		n/a	Maintain no service
17B	Kings Park-North Springfield		n/a	Maintain FY21 span & frequency		n/a	Eliminate entire line
17M			n/a			n/a	
17G	Kings Park Express		n/a	Maintain FY21 span & frequency on routes 17G and 17H. Extend route 17H from Gainsborough & Commonwealth to the Twinbrook Dr. terminal on the route 17K alignment. Continue suspension on route 17L until crowding on adjacent services warrants restoration		n/a	Eliminate entire line
17H			n/a			n/a	
17K			n/a			n/a	
17L			n/a			n/a	
18G	Orange Hunt		n/a	Restore service on route 18J / Continue suspension on routes 18G		n/a	Maintain no service
18H			n/a			n/a	

PROPOSED

		Revised Proposal for 1st half FY22			Revised Proposal for 2nd half FY22		
Rte	**Line Name**	**Weekday Status**	**Sat/Sun Status**	**Description**	**Weekday Status**	**Sat/Sun Status**	**Description**
18J			n/a	and 18H until crowding on adjacent services warrants restoration		n/a	
18P	Burke Centre		n/a	Maintain FY21 span & frequency		n/a	Eliminate entire line
21A	Landmark-Bren Mar Park-Pentagon		n/a	Partially replace route 21A service with new route 21C between Stevenson & Walker and Reynolds & Duke, then operate via route 8Z alignment between Duke & Pickett and Pentagon Sta.		n/a	Maintain no service
21D			n/a			n/a	
22A	Barcroft-South Fairlington			Maintain FY21 span & frequency / Extend route 22F from Beauregard & Filmore to Skyline City via route 28G alignment until ridership warrants restoration of route 28G			Eliminate entire line
22C			n/a			n/a	
22F			n/a			n/a	
23A	McLean-Crystal City			Restore weekday service on routes 23B and 23T. / Maintain FY21 span & frequency and Saturdays and Sundays. / Add service until 2 am 7 days-a-week on route 23B			Eliminate entire line, route 23A and 23B trips replaced with modified route 10B trips. Service is eliminated between Tysons Corner and Ballston, between Shirlington and Mt. Vernon Ave. & Russell Rd. and between Mt. Vernon Ave. & South Glebe Rd. and Crystal City Sta.
23B							
23T							
25B	Landmark-Ballston			Modify route to operate between Ballston & Southern Towers only, 28A and 7A realignments replace some service south of Southern Towers (Alex Vision Plan Recommendations)			Eliminate entire line
26A	Annandale-East Falls Church		n/a	Restore service		n/a	Maintain no service
28A	Leesburg Pike			Modify route east of INOVA Alexandria Hospital to operate via Howard, Jordan and Duke Sts. To King St. Sta. Also modify route between Seven Corners and Broad & Washington Sts. To operate via Wilson, Roosevelt, Sycamore and Washington. Service is eliminated between Alexandria Hospital and King St. Station on King St. as well as on East Broad St. between Seven			Modify route east of INOVA Alexandria Hospital to operate via Howard, Jordan and Duke Sts. To King St. Sta. Also modify route between Seven Corners and Broad & Washington Sts. To operate via Wilson, Roosevelt, Sycamore and Washington. Service is eliminated between Alexandria Hospital and King St. Station on King St. as well as on East Broad St.

COPY

		Revised Proposal for 1st half FY22			Revised Proposal for 2nd half FY22		
Rte	**Line Name**	**Weekday Status**	**Sat/Sun Status**	**Description**	**Weekday Status**	**Sat/Sun Status**	**Description**
				Corners and Washington St. / Add service until 2 am 7 days-a-week			between Seven Corners and Washington St.
28F	Skyline City		n/a	Restore route 28F service / Continue suspension on route 28G until ridership warrants restoration (route 22F is extended to Skyline City to partially replace route 28G)		n/a	Maintain no service
28G			n/a			n/a	
29C	Annandale		n/a	Continue suspension until crowding on adjacent services warrants restoration		n/a	Eliminate entire line.
29G			n/a			n/a	
29K	Alexandria-Fairfax			Maintain FY21 span & frequency			Maintain FY21 span & frequency
29N							
29W	Braeburn Dr-Pentagon Express		n/a	Maintain no service, Fairfax Connector proposing replacement service		n/a	Maintain no service, Fairfax Connector proposing replacement service
38B	Ballston-Farragut Square			Maintain FY21 span & frequency, add service until 2 am 7 days-a-week			Eliminate entire line.
MW1	Metroway - Potomac Yard			Maintain FY21 span & freq. weekdays, 30 min. freq. Sat. & Sun.			Eliminate entire line
NH2	National Harbor-Alexandria			Maintain FY21 span & frequency on weekdays, restore Saturday & Sunday service			Eliminate entire line
REX	Richmond Highway Express			Maintain FY21 span & frequency			Eliminate entire line

PROPOSED

Board Agenda Item
March 9, 2021

3:30 p.m.

Public Hearing on SE 2020-DR-014 (Modern Media Design, Corp.) to Permit Office in a Residential District, Located on Approximately 15,125 Square Feet of Land Zoned R-3, CRD and SC (Dranesville District)

This property is located at 1566 Chain Bridge Rd., McLean, 22101. Tax Map 30-4 ((2)) (6) 41.

PLANNING COMMISSION RECOMMENDATION:
On February 24, 2021, the Planning Commission voted 11-0 (Commissioner Niedzielski-Eichner was absent from the meeting) to recommend to the Board of Supervisors approval of SE 2020-DR-014, subject to the proposed development conditions dated February 19, 2021, with amended changes to the proposed hours of use of the volleyball court to 9 a.m. to 9 p.m. and the removal of condition #15.

ENCLOSED DOCUMENTS:
Planning Commission Verbatim Excerpt and Staff Report available online at:
https://www.fairfaxcounty.gov/planning-development/board-packages

STAFF:
Tracy Strunk, Director, Zoning Evaluation Division, Department of Planning and Development (DPD)
Joseph Onyebuchi, Planner, DPD

Board Agenda Item
March 9, 2021

3:30 p.m.

Public Hearing on RZ 2018-PR-013 (White Granite Associates LLC) to Permit Residential Development with a Total Density of 14.2 Dwelling Units Per Acre, Located on Approximately 1.27 Acres of Land (Providence District)

This property is located in the N.E. quadrant of Chain Bridge Rd. and Interstate 66, along the terminus of White Granite Dr. Tax Map 47-4 ((1)) 14.

PLANNING COMMISSION RECOMMENDATION:
On January 27, 2021, the Planning Commission voted 12-0 to recommend to the Board of Supervisors the following actions:

- Approval of RZ 2018-PR-013, subject to the execution of proffered conditions consistent with those dated January 7, 2021, as editorially amended by the Commission;

- Waiver of Section 9-610 of the Zoning Ordinance of the four-acre minimum district size to allow the existing 1.27 acre property to be rezoned to the R-16 District;

- Modification of the Transitional Screening Yard requirement and a waiver of the barrier requirement on the western lot line is requested in accordance with Sect. 13-305 of the Zoning Ordinance, to allow the landscaping as shown on the GDP to satisfy the requirement; and

- Modification of the Transitional Screening Yard requirement along a portion of the eastern lot line in accordance with of Sect. 13-105 of the Zoning Ordinance to allow the landscaping as shown on the GDP to satisfy the requirement.

ENCLOSED DOCUMENTS:
Planning Commission Verbatim Excerpt and Staff Report available online at:
https://www.fairfaxcounty.gov/planning-development/board-packages

STAFF:
Tracy Strunk, Director, Zoning Evaluation Division, Department of Planning and Development (DPD)
Daniel Creed, Planner, DPD

Board Agenda Item
March 9, 2021

3:30 p.m.

Public Hearing on RZ 2019-SU-020 (EB Albemarle, LLC) to Rezone from I-5, WS to PDC, WS to Permit Mixed-Use Development with an Overall Floor Area Ratio of 0.47 and Approval of the Conceptual Development Plan, Located on Approximately 27.87 Acres of Land (Sully District) (Concurrent with PCA 74-2-124)

and

Public Hearing on PCA 74-2-124 (EB Albemarle, LLC) to Amend the Proffers for RZ 74-2-124 to Permit Deletion of Land Area, Located on Approximately 28.52 Acres of Land Zoned I-5 and WS (Sully District) (Concurrent with RZ 2019-SU-003 and RZ 2019-SU-020)

This property is located on the W. side of Sully Rd. and E. side of Lee Rd., approximately 1,300 ft. N. of Willard Rd. Tax Map 34-3 ((1)) 34 (pt.).

This property is located on the W. side of Sully Rd. and E. side of Lee Rd., approximately 1,300 ft. N. of Willard Rd. Tax Map 34-3 ((1)) 34.

PLANNING COMMISSION RECOMMENDATION:
On January 27, 2021, the Planning Commission voted 12-0 to recommend to the Board of Supervisors the following actions:

- Approval of RZ 2019-SU-020 and its associated CDP, CDP 2019-SU-020, subject to the execution of proffered conditions consistent with those dated December 3, 2020;

- Approval of PCA 74-2-124;

- Waiver of the 600' maximum private street length per Par. 2 of Sec. 11-302 of the Zoning Ordinance;

- Waiver of the Route 28 service drive requirement per Sect. 7-0104 of the Public Facilities Manual;

- Modification of Par. 5 of Sect. 6-206 of the Zoning Ordinance to permit greater than 50% of the gross floor area for residential use and to modify the secondary uses as referenced in the proffers;

- Waiver of the major paved trail requirement per Par. 2 of Sect. 17-201 of the Zoning Ordinance along the east side of Lee Road (northern portion of property);

- Waiver and modification of Pars. 1 and 2 of Sect. 13-203 of the Zoning Ordinance for peripheral parking lot landscaping in favor of that shown on the CDP/FDP;

- Waiver of the sidewalk requirement along Lee Road per Par. 2 of Sect. 17-201 of the Zoning Ordinance; and

- Modification of the transitional screening and barrier requirements, per Sect. 13-303 and Sect. 13-304 of the Zoning Ordinance, to modify internal transitional screening yard and barrier requirements within the PDC District per Par. 1 of Sect. 13-305.

In a related action, the Planning Commission voted 12-0 to approve FDP 2019-SU-020, subject to the development conditions dated November 24, 2020.

ENCLOSED DOCUMENTS:
Planning Commission Verbatim Excerpt and Staff Report available online at:
https://www.fairfaxcounty.gov/planning-development/board-packages

STAFF:
Tracy Strunk, Director, Zoning Evaluation Division, Department of Planning and Development (DPD)
Kelly Atkinson, Planner, DPD

Board Agenda Item
March 9, 2021

3:30 p.m.

Public Hearing on RZ 2019-SU-003 (Buchanan Partners, LLC) to Rezone from I-5 and WS to PDC and WS to Permit Mixed-Use Development with an Overall Floor Area Ratio of 0.72 and Approval of the Conceptual Development Plan, Located on Approximately 37.97 Acres of Land (Sully District) (Concurrent with PCA 74-2-124 and PCA 74-2-091)

and

Public Hearing on PCA 74-2-091 (Buchanan Partners, LLC) to Amend the Proffers for RZ 74-2-091 to Permit Deletion of Land Area, Located on Approximately 37.33 Acres of Land Zoned PDC and WS (Sully District) (Concurrent with RZ 2019-SU-003)

and

Public Hearing on PCA 74-2-124 (EB Albemarle, LLC) to Amend the Proffers for RZ 74-2-124 to Permit Deletion of Land Area, Located on Approximately 28.52 Acres of Land Zoned I-5 and WS (Sully District) (Concurrent with RZ 2019-SU-003 and RZ 2019-SU-020)

This property is located in the N.W. quadrant of the intersection of Sully Rd. and Willard Rd. Tax Map 34-3 ((1)) 34 (pt.); 34-3 ((14)) B, 2, 3, 4, 6; 44-1 ((17)) A, C, 1, 5.

This property is located in the N.W. quadrant of the intersection of Sully Rd. and Willard Rd. Tax Map 34-3 ((14)) B, 2, 3, 4 and 6; 44-1 ((17)) A, C, 1 and 5.

This property is located on the W. side of Sully Rd. and E. side of Lee Rd., approximately 1,300 ft. N. of Willard Rd. Tax Map 34-3 ((1)) 34.

PLANNING COMMISSION RECOMMENDATION:
On January 27, 2021, the Planning Commission voted 12-0 to recommend to the Board of Supervisors the following actions:

- Approval of RZ 2019-SU-003 and its associated CDP, CDP 2019-SU-003, subject to the execution of proffered conditions consistent with those dated January 15, 2021;

- Approval of PCA 74-2-091;

- Approval of PCA 74-2-124;

- Waiver of the minimum 200 square foot privacy yard for single family attached dwellings per Par. 2 of Section 6-207 of the Zoning Ordinance;

- Waiver of the 600' maximum length requirement for Private Streets per Par. 2 of Section 11-302 of the Zoning Ordinance;

- Waiver of the Route 28 Service Drive requirement per Section 7-0104.1 of the Public Facilities Manual;
- Modification of Par. 5 of Section 2-206 of the Zoning Ordinance to permit greater than 50 percent gross floor area for residential use;

- Modification of the transitional screening and barrier requirements, per Sect. 13-303 and Sect. 13-304 of the Zoning Ordinance, to modify internal transitional screening yard and barrier requirements within the PDC District per Par. 1 of Sect. 13-305;

- Waiver of the sidewalk requirement along Lee Road per Par. 2 of Sect. 17-201 of the Zoning Ordinance;

- Modification of Sect. 13-202 of the Zoning Ordinance and PFM Section 12-0314 for interior parking lot landscaping for the existing parking garage;

- Waiver of the loading space requirement per Sect. 11-203 of the Zoning Ordinance for the stacked, multifamily dwellings; and

- Waiver of Par. 10 of Sect. 11-102 of the Zoning Ordinance to permit the use of tandem parking spaces (driveway in line with a garage space) for the stacked, multifamily dwellings.

In a related action, the Planning Commission voted 12-0 to approve FDP 2019-SU-003, subject to the development conditions dated November 24, 2020.

ENCLOSED DOCUMENTS:
Planning Commission Verbatim Excerpt and Staff Report available online at:
https://www.fairfaxcounty.gov/planning-development/board-packages

Board Agenda Item
March 9, 2021

STAFF:
Tracy Strunk, Director, Zoning Evaluation Division, Department of Planning and Development (DPD)
Kelly Atkinson, Planner, DPD

Board Agenda Item
March 9, 2021

3:30 p.m.

Public Hearing on SE 2020-SP-009 (HHP Holdings, LLC) to Permit a Kennel and Permit an Increase in Fence Height to 8 Feet, Located on Approximately 4.84 Acres of Land Zoned R-C and WS (Springfield District)

This property is located at 12605 Braddock Rd., Fairfax, 22030. Tax Map 66-2 ((3)) 3.

PLANNING COMMISSION RECOMMENDATION:
On January 27, 2021, the Planning Commission voted 12-0 to recommend to the Board of Supervisors the following actions:

- Approval of SE 2020-SP-009, subject to the proposed development conditions dated January 26, 2021;

- Modification of screening requirements in Sect. 13-303 of the Zoning Ordinance to modify the transitional screening buffer in the western and eastern side yards in favor of that shown on the SE Plat; and

- Waiver of the barrier requirements of Sect. 13-304 of the Zoning Ordinance along the south, east, and west yards.

ENCLOSED DOCUMENTS:
Planning Commission Verbatim Excerpt and Staff Report available online at:
https://www.fairfaxcounty.gov/planning-development/board-packages

STAFF:
Tracy Strunk, Director, Zoning Evaluation Division, Department of Planning and Development (DPD)
Emma Estes, Planner, DPD

Board Agenda Item
March 9, 2021

4:00 p.m.

Public Hearing on a Proposal to Vacate Portions of Saint Augustine Lane and Saint Augustine Court (Providence District)

ISSUE:
Public hearing on a proposal to vacate portions of Saint Augustine Lane and Saint Augustine Court.

RECOMMENDATION:
The County Executive recommends that the Board adopt the attached ordinance (Attachment III) for vacation of the subject right-of-way.

TIMING:
On January 26, 2021, the Board authorized the public hearing to consider the proposed vacation for March 9, 2021, at 4:00 p.m.

BACKGROUND:
The applicant, Tri Tek Engineering, is requesting that portions of Saint Augustine Lane and Saint Augustine Court be vacated under §15.2-2272(2) of the Virginia Code. The applicant is seeking this request as part of a new two lot subdivision, known as Avondale Glen Parcel A (Fairfax County Plan #131-SD-003) to be served by a permanent cul-de-sac located adjacent to the areas proposed to be vacated.

The subject portions of right-of-way are located at the terminus of Saint Augustine Lane south of the intersection of Heathland Drive and Saint Augustine Lane. The areas of right-of-way proposed to be vacated are not part of the VDOT Secondary System of Roadways. The subject portions of right-of-way are also unbuilt. During the Avondale Glen Parcel A subdivision review process, VDOT granted an Secondary Subdivision Access Requirement (SSAR) Exception of multiple connections in multiple directions, and VDOT noted that the extension of Saint Augustine Lane and Saint Augustine Court were not feasible. Attachment VI shows the consolidation of the vacated areas of right-of-way after the proposed vacation action.

Traffic Circulation and Access
The vacation will have no long-term impact on pedestrian, transit, or vehicle circulation and access.

Easements
The project manager has certified that all easement requirements for the project have been met.

The proposal to vacate this right-of-way was circulated to the following public agencies and utility companies for review: Office of the County Attorney, Department of Public Works and Environmental Services, Fairfax County Department of Transportation, Department of Planning and Development, Fairfax County Park Authority, Fairfax County Water Authority, Fairfax County School Board, Fire and Rescue, Virginia Department of Transportation, Dominion Virginia Power, Washington Gas, and Verizon. None of these indicated any opposition to the proposal.

FISCAL IMPACT:
None.

ENCLOSED DOCUMENTS:
Attachment I: Application Letter and Justification/Background
Attachment II: Notice of Intent to Vacate
Attachment III: Ordinance of Vacation
Attachment IV: Metes and Bounds Description of Vacation
Attachment V: Vacation Plat
Attachment VI: Subdivision Plan and Consolidation Plat Exhibit
Attachment VII: Vicinity Map

STAFF:
Rachel Flynn, Deputy County Executive
Tom Biesiadny, Director, Fairfax County Department of Transportation (FCDOT)
Jeff Hermann, Division Chief, FCDOT-Site Analysis & Transportation Planning Division
Gregory Fuller Jr., Section Chief, FCDOT-Site Analysis Section (SAS)
Michelle Guthrie, Planner III, FCDOT-SAS
Jeffrey Edmondson, Planner II, FCDOT-SAS

ASSIGNED COUNSEL:
Pamela K. Pelto, Assistant County Attorney

ATTACHMENT I

TRI-TEK Engineering

August 4, 2020

Fairfax County Department of Transportation
4050 Legato Road
Suite 400
Fairfax, Virginia 22033

Attn: Jeffrey Edmondson

Re: Avondale Glen Parcel A (131-SD-003)
Tax Map: 47-3-((17))-000A1
Request for Vacation of a portion of Saint Augustine Lane & Saint Augustine Court

Dear Jeffrey,

On behalf of our client, I would like to submit this request for vacation of a portion of Saint Augustine Lane & Saint Augustine Court as shown on the enclosed subdivision plan.

The site is 3.17 acres, zoned R-1 and is located within the existing Avondale Glen Subdivision along the north side of Saint Augustine Lane (Route 10218), within the Providence District. The site is surrounded by residential parcels on all sides. To the east is an existing single family home, to the north and west are open space parcels owned by the Avondale Glen Homeowners Association. The HOA parcel to the north has an existing regional SWM/BMP pond. To the south is a vacant parcel, part of the Avondale Glen Subdivision, zoned R-1 and the Oakton View subdivision (1502-SD-001). The site has RPA in the north east corner.

Avondale Glen Parcel A (Fairfax County Plan #131-SD-003) proposes the construction of a new 2 lot subdivision to be served by an extension of Saint Augustine Lane to a permanent cul-de-sac. The site is not subject to any prior rezonings and therefore is not proffered. The plan proposes to vacate a portion of existing unimproved right of way known as Saint Augustine Lane and the entirety of existing, unimproved, Saint Augustine Court which we believe is no longer needed given the development that has occurred.

The portion of Saint Augustine Lane to be vacated extends to an outlot from the Avondale Glen – Phase 2 Subdivision, known as Outlot D. The outlet is owned by the Avondale Glen HOA, it is not likely to develop. The Saint Augustine Lane right of way is not necessary to extend to the HOA parcel as access to the parcel comes from a portion of Saint Augustine Lane that is to remain via a Stormwater

Maintenance Road (to the east of the subject site). As such, we feel that there is sufficient justification to vacate the identified portion of Saint Augustine Lane right of way.

The proposed to be vacated Saint Augustine Court extends to the rear of Lot 17 of the Oakton View Subdivision (1502-SD-001-2) to the South. Oakton View is a very recent subdivision that did not provide for any future connections that would facilitate an access and or connection to Saint Augustine Court. Lot 17 is served off of Oakton View Drive. There are no future connection locations provided by the proposed subdivision to the south, and the Oakton View Subdivision proposes a full single family residential buildout with a permanent cul-de-sac and no stub-outs, As such we feel that there is sufficient justification to vacate the Saint Augustine Court right of way.

Also important to note, that with the Avondale Glen Parcel A subdivision review and approval process by VDOT, an SSAR Exception of multiple connections in multiple directions was granted. VDOT agreed that no feasible extension of Saint Augustine Lane or Saint Augustine Court existed, further supporting the justification to vacate the portion of Saint Augustine Lane right of way and the entirety of the Saint Augustine Court right of way as indicated.

Given the above, we respectfully request the vacation of both a portion of Saint Augustine Lane and Saint Augustine Court as outlined above.

If you have any questions, concerns or require any additional information to aid in your review of this request, please feel free to contact me.

Sincerely,



Dan Brzezynski, P.E.
Project Manager

NOTICE OF INTENT TO
ADOPT AN ORDINANCE VACATING
A PART OF A PLAT ON WHICH IS SHOWN

(Saint Augustine Lane & Saint Augustine Court)

Providence District,
Fairfax County, Virginia

Notice is hereby given that the Board of Supervisors of Fairfax County, Virginia, will hold a public hearing electronically (due to the State of Emergency caused by the COVID-19 pandemic), on March 9, 2021, at 4:00 PM, pursuant to Virginia Code Ann. § 15.2-2204, vacating a part of the plat of AVONDALE GLEN, recorded in Deed Book 12818, at Page 977, on which is shown Saint Augustine Lane from Heathland Drive to its terminus, a distance of 1,820 feet and Saint Augustine Court from Saint Augustine Lane to its terminus, a distance of 118 feet. The roads are located on Tax Map 47-3 and are described and shown on the metes and bounds schedule and plat prepared by Tri-Tek Engineering, dated October 14, 2020, both of which are on file in the Fairfax County Department of Transportation, 4050 Legato Road, Suite 400, Fairfax, Virginia, 22033, Telephone Number (703) 877-5600.

All persons wishing to speak on this subject may call the Office of the Clerk to the Board, (703) 324-3151, to be placed on the Speaker's List, or may appear and be heard.
PROVIDENCE DISTRICT.

§ 15.2-2272(2)

ADOPTION OF AN ORDINANCE VACATING
A PART OF A PLAT ON WHICH IS SHOWN

(Saint Augustine Lane & Saint Augustine Court)

Providence District,
Fairfax County, Virginia

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held electronically (due to the State of Emergency caused by the COVID-19 pandemic), on March 9, 2021, at which meeting a quorum was present and voting, the Board, after conducting a public hearing upon due notice given pursuant to Virginia Code Ann. §15.2-2204 and as otherwise required by law, adopted the following ordinance, to-wit:

BE IT ORDAINED by the Board of Supervisors of Fairfax County, Virginia, that Part of the Plat of AVONDALE GLEN, recorded in Deed Book 12818, at Page 977, on which is shown Saint Augustine Lane from Heathland Drive to its terminus, a distance of 1,820 feet and Saint Augustine Court from Saint Augustine Lane to its terminus, a distance of 118 feet, located on Tax Map 47-3 and are described and shown on the metes and bounds schedule and plat prepared by Tri-Tek Engineering, dated October 14, 2020, and attached hereto and incorporated herein, be and the same is hereby vacated, pursuant to Virginia Code Ann. §15.2-2272(2).

This vacation is subject to any right, privilege, permit, license, easement, in favor of any public service company, utility, or other person or entity, including any political subdivision, whether located above, upon, or under the surface, either currently in use or of record, including the right to operate, maintain, replace, alter, extend, increase, or decrease in size any facilities in the vacated roadway, without any permission of the landowner.

A Copy Teste:

_____
Jill G. Cooper
Clerk for the Board of Supervisors

§15.2-2272(2)

TRI-TEK Engineering

METES AND BOUNDS DESCRIPTION
PROPOSED OUTLOT C
VACATION OF A PORTION OF
SAINT AUGUSTINE COURT
DEED BOOK 12818; PAGE 1003
(AVONDALE GLEN)
PROVIDENCE DISTRICT – FAIRFAX COUNTY VIRGINIA
FAIRFAX COUNTY MAP REFERENCE 47-3-((17))

Beginning at a point on the north east line of Lot 3 – Oakton Ridge Development, LLC (DB 25980; PG 1221), being the southerly terminus of the centerline of Saint Augustine Court (47' Wide).

Thence running with the north east line of Lot 3; N 63°19'41"W – 36.46' to a point on the north line of Lot 3, being the southerly terminus of the westerly line of Saint Augustine Court.

Thence departing Lot 3 running with the westerly line of Saint Augustine Court with a curve to the left as follows: R = 107.50' | A = 19.20' | Chd = 19.17' | Chd Brg = N 35°23'37"W to a point, and N 40°30'36" W – 5.51 feet to a point on the westerly line Saint Augustine Court.

Thence departing the westerly line of Saint Augustine Court running through Saint Augustine Court with a curve to the left as follows: R = 55.00' | A = 29.80' | Chd = 29.44' | Chd Brg = N 88°34'42"E feet to a point on the recorded centerline of Saint Augustine Court.

Thence running through Saint Augustine Court with the recorded centerline thereof with a curve to the left as follows: R = 131.00' | A = 41.17' | Chd = 41.00' | Chd Brg = S 25°47'23"E to the point of beginning, containing 747 Square Feet or 0.0171 Acres of land.

This description has been prepared in conjunction with a drawing titled "PLAT SHOWING VACATION OF A PORTION OF SAINT AUGUSTINE LANE AND A PORTION OF SAINT AUGUSTINE COURT, DB 12818; PG 1003" Dated 10-14-2020, prepared by Tri Tek Engineering.

Reference to said plat is hereby made for a more graphic and particular depiction of the property described herein.

TRI-TEK Engineering

METES AND BOUNDS DESCRIPTION
PROPOSED OUTLOT A
VACATION OF A PORTION OF
SAINT AUGUSTINE LANE
ROUTE #10218
DEED BOOK 12818; PAGE 1003
(AVONDALE GLEN)
PROVIDENCE DISTRICT – FAIRFAX COUNTY VIRGINIA
FAIRFAX COUNTY MAP REFERENCE 47-3-((17))

Beginning at the south corner of Parcel A – Avondale Glen (DB 12818; PG 1003), lying on the North line of Outlot D, Avondale Glen – Phase 2 (DB 15855; PG 1334), and being the south west terminus of the westerly line of Saint Augustine Lane – Route #10218 (44' Wide).

Thence departing Parcel D, running with the south line of Parcel A; N 49°29'24"E – 63.42' to a point on the south line of Parcel A, lying on the north line of Saint Augustine Lane.

Thence departing Parcel A running through Saint Augustine Lane with a curve to the left as follows: R = 55.00' | A = 30.40' | Chd = 30.02' | Chd Brg = S 02°21'45"W to a point on the recorded centerline of Saint Augustine Lane.

Thence running through Saint Augustine Lane along the recorded centerline S 49°29'24"W – 33.24 feet to a point on the southerly terminus of Saint Augustine Lane, lying on the North line of Outlot D, Avondale Glen – Phase 2.

Thence running with the north line of Outlot D, N 64°25'18"W – 24.07 feet to the point of beginning, containing 1,020 Square Feet or 0.0234 Acres of land.

This description has been prepared in conjunction with a drawing titled "PLAT SHOWING VACATION OF A PORTION OF SAINT AUGUSTINE LANE AND A PORTION OF SAINT AUGUSTINE COURT, DB 12818; PG 1003" Dated 10-14-2020, prepared by Tri Tek Engineering.

Reference to said plat is hereby made for a more graphic and particular depiction of the property described herein.

TRI-TEK Engineering

METES AND BOUNDS DESCRIPTION
PROPOSED OUTLOT D
VACATION OF A PORTION OF
SAINT AUGUSTINE COURT
DEED BOOK 12818; PAGE 1003
(AVONDALE GLEN)
PROVIDENCE DISTRICT – FAIRFAX COUNTY VIRGINIA
FAIRFAX COUNTY MAP REFERENCE 47-3-((17))

Beginning at the eastern most corner of Lot 3 – Oakton Ridge Development, LLC (DB 25980; PG 1221), lying on the west line of Lot 2 – Oakton Ridge Development, LLC, and being the south east terminus of the easterly line of Saint Augustine Court (47' Wide).

Thence departing Lot 2, running with the north line of Lot 3; N 63°19'41"W – 30.41' to a point on the north line of Lot 2, being the southerly terminus of the centerline of Saint Augustine Court.

Thence departing Lot 2 running through Saint Augustine Court along the recorded centerline with a curve to the left as follows: R = 131.00' | A = 41.17' | Chd = 41.00' | Chd Brg = N 25°47'23"W to a point on the centerline of Saint Augustine Court.

Thence departing the centerline running through Saint Augustine Court with a curve to the left as follows: R = 55.00' | A = 23.78' | Chd = 23.59' | Chd Brg = N 60°40'20"E feet to a point on the east line of Saint Augustine Court, lying on the west line of Lot 2 – Oakton Ridge Development, LLC (DB 25980; PG 1221).

Thence running with the the west line of Lot 2 – Oakton Ridge Development, LLC, with a curve to the left as follows: R = 154.50' | A = 67.29' | Chd = 66.76' | Chd Brg = S 21°28'56"E feet to the point of beginning, containing 1,258 Square Feet or 0.0289 Acres of land.

This description has been prepared in conjunction with a drawing titled "PLAT SHOWING VACATION OF A PORTION OF SAINT AUGUSTINE LANE AND A PORTION OF SAINT AUGUSTINE COURT, DB 12818; PG 1003" Dated 10-14-2020, prepared by Tri Tek Engineering.

Reference to said plat is hereby made for a more graphic and particular depiction of the property described herein.

TRI-TEK Engineering

METES AND BOUNDS DESCRIPTION
PROPOSED OUTLOT B
VACATION OF A PORTION OF
SAINT AUGUSTINE LANE
ROUTE #10218
DEED BOOK 12818; PAGE 1003
(AVONDALE GLEN)
PROVIDENCE DISTRICT – FAIRFAX COUNTY VIRGINIA
FAIRFAX COUNTY MAP REFERENCE 47-3-((17))

Beginning at a point lying on the north line of Outlot D, Avondale Glen – Phase 2 (DB 15855; PG 1334), being the south westerly terminus of centerline of of Saint Augustine Lane – Route #10218 (44' Wide).

Thence departing Parcel D, running through Saint Augustine Lane along the recorded centerline; N 49°29'24"E – 33.24' to a point, thence departing the recorded centerline, continuing through Saint Augustine Lane with a curve to the left as follows: R = 55.00' | A = 27.86' | Chd = 27.56' | Chd Brg = S 27°59'02"E to a point on the north line of a return curve between Saint Augustine Lane, and Saint Augustine Court.

Thence running with the return line between said roads with a curve to the left as follows: R = 25.00' | A = 15.93' | Chd = 15.66' | Chd Brg = S 67°44'25"W to a point, and S 49°29'24"W – 2.64 feet to a point on the southerly terminus of Saint Augustine Lane, lying on the North line of Outlot D, Avondale Glen – Phase 2.

Thence running with the north line of Outlot D, N 64°25'18"W – 24.06 feet to the point of beginning, containing 564 Square Feet or 0.0129 Acres of land.

This description has been prepared in conjunction with a drawing titled "PLAT SHOWING VACATION OF A PORTION OF SAINT AUGUSTINE LANE AND A PORTION OF SAINT AUGUSTINE COURT, DB 12818; PG 1003" Dated 10-14-2020, prepared by Tri Tek Engineering.

Reference to said plat is hereby made for a more graphic and particular depiction of the property described herein.

CURVE TABLE						
CURVE	RADIUS	ARC	DELTA	TAN.	CHORD	CHD. BRG.
C1	170.00'	69.89'	23°33'24"	35.45'	69.40'	S 61°16'06" W
C2	148.00'	60.85'	23°33'31"	30.86'	60.43'	S 61°16'02" W
C3	126.00'	51.81'	23°33'41"	26.28'	51.45'	S 61°15'57" W
C4	55.00'	113.10'	117°49'32"	91.22'	94.20'	S 16°25'09" W
C5	55.00'	30.40'	31°40'26"	15.60'	30.02'	S 2°21'45" W
C6	55.00'	27.86'	29°01'10"	14.23'	27.56'	S 27°59'02" E
C7	25.00'	15.93'	36°30'03"	8.24'	15.66'	S 67°44'25" W
C8	25.00'	23.34'	53°29'57"	12.60'	22.50'	N 67°15'35" W
C9	55.00'	53.58'	55°48'44"	29.13'	51.48'	N 76°11'39" E
C10	55.00'	29.80'	31°02'40"	15.28'	29.44'	N 88°34'42" E
C11	55.00'	23.78'	24°46'05"	12.08'	23.59'	N 60°40'20" E
C12	154.50'	67.29'	24°57'20"	34.19'	66.76'	N 21°28'56" W
C13	131.00'	41.17'	18°00'24"	20.76'	41.00'	N 25°47'23" W
C14	107.50'	19.20'	10°13'58"	9.63'	19.17'	N 35°23'37" W
C15	154.50'	17.66'	6°33'01"	8.84'	17.65'	N 37°14'06" W
C16	25.00'	39.27'	90°00'00"	25.00'	35.36'	S 4°29'24" W
C17	131.00'	13.07'	5°43'01"	6.54'	13.07'	N 37°39'06" W
C18	25.00'	11.28'	25°50'31"	5.74'	11.18'	N 62°24'39" E
C19	55.00'	54.84'	57°07'57"	29.94'	52.60'	S 46°45'57" W

LINE TABLE		
LINE	LENGTH	BEARING
L1	33.24'	N 49°29'24" E
L2	2.64'	S 49°29'24" W
L3	9.85'	S 40°30'36" E
L4	5.51'	S 40°30'36" E
L5	15.36'	N 40°30'36" W
L6	20.92'	N 49°29'24" E
L7	13.23'	S 49°29'24" W
L8	8.95'	S 82°15'36" W
L9	22.37'	S 82°15'36" W

APPROVED
COUNTY OF FAIRFAX
LAND DEVELOPMENT SERVICES
ADDRESSING REVIEW

_____ BY _____
Date Addressing Reviewer

FINAL PLAT
RECOMMENDED FOR APPROVAL
FAIRFAX COUNTY
LAND DEVELOPMENT SERVICES

ALL STREET LOCATIONS AND/OR EASEMENTS CONFORM TO THE REQUIREMENTS OF THIS OFFICE

THIS APPROVAL IS NOT A COMMITMENT TO PROVIDE PUBLIC SANITARY SEWER

_____ BY _____
Date Director, Site Development and Inspection Division or Agent

APPROVED
FOR
BOARD OF SUPERVISORS
FAIRFAX COUNTY, VIRGINIA

_____ BY _____
Date Director, Land Development Services or Agent

APPROVAL VOID IF PLAT IS NOT OFFERED FOR RECORD ON OR BEFORE _____

WETLANDS CERTIFICATION

I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES.

SIGNATURE:

FOR OWNER
OWNER / DEVELOPER:

AGENT
TITLE:

AREA TABULATION

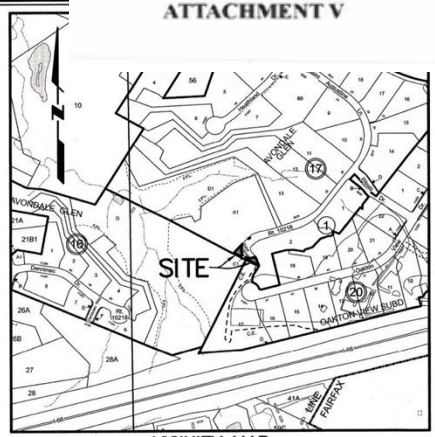
RIGHT OF WAY PORTION OF SAINT AUGUSTINE LANE VACATION = 1,584 S.F.

OUTLOT A = 1,020 S.F.
OUTLOT B = 564 S.F.

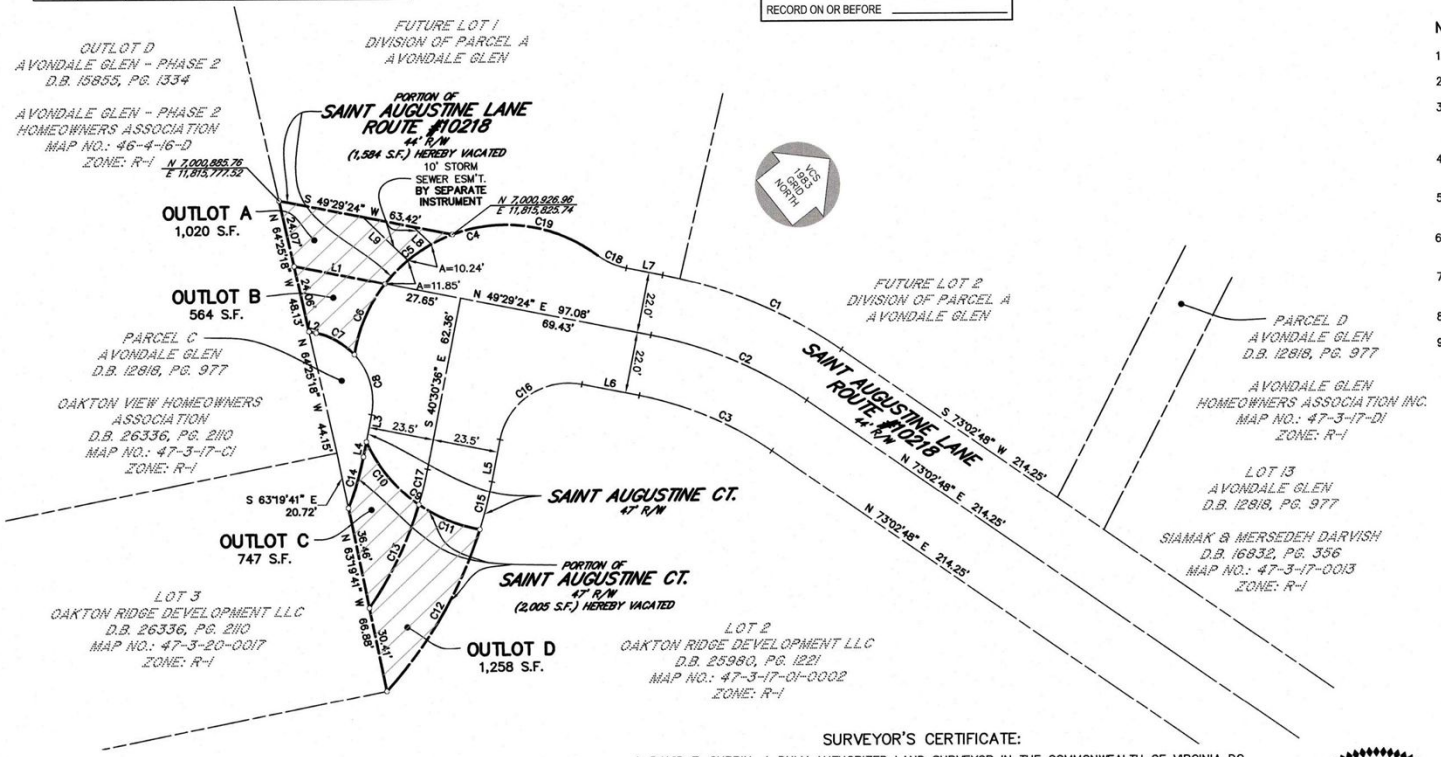
RIGHT OF WAY PORTION OF SAINT AUGUSTINE COURT VACATION = 2,005 S.F.

OUTLOT C = 747 S.F.
OUTLOT D = 1,258 S.F.

TOTAL RIGHT OF WAY VACATION = 3,589 S.F.



VICINITY MAP
SCALE: 1"=500'



NOTES:

1. THE PROPERTY SHOWN HEREON IS LOCATED ON MAP NO. 47-3.
2. ZONE: R-1
3. ALL PREVIOUSLY RECORDED RIGHTS OF WAY, EASEMENTS OR OTHER INTEREST OF THE COUNTY REMAIN IN FULL FORCE AND AFFECT UNLESS OTHERWISE SHOWN ON THIS PLAT.
4. THIS PLAT IS ASSOCIATED WITH THE SUBDIVISION PLAN TITLED AVONDALE GLEN PARCEL A, COUNTY PLAN NO. 131-SD-003-2.
5. THE PLAT OF THE PROPERTY SHOWN HEREON IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983 (VCS 1983).
6. THE BOUNDARY SURVEY OF THE LANDS DELINEATED HEREON MEETS THE MINIMUM ERROR OF CLOSURE 1 IN 20,000.
7. OUTLOT A SHALL BE CONVEYED TO THE OWNER OF FUTURE LOT 1, "DIVISION OF PARCEL A AVONDALE GLEN".
8. OUTLOTS B&C SHALL BE CONVEYED TO THE OWNER OF PARCEL C.
9. OUTLOT D SHALL BE CONVEYED TO THE OWNER OF LOT 2.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

SURVEYOR'S CERTIFICATE:

I, DAVID T. CURRIN, A DULY AUTHORIZED LAND SURVEYOR IN THE COMMONWEALTH OF VIRGINIA DO HEREBY CERTIFY THAT I HAVE CAREFULLY SURVEYED THE PARCELS OF LAND DELINEATED HEREON; THAT THE INFORMATION SHOWN HEREON IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND EXPERIENCE, THAT IT IS PART OF THE SAME ROAD IDENTIFIED BY REFERENCED DEEDS AS RECORDED IN DEED BOOK 12818 AT PAGE 1003 AMONG THE LAND RECORDS OF FAIRFAX COUNTY, VIRGINIA; THAT THIS VACATION IS WITHIN THE BOUNDARIES THEREOF.

DAVID T. CURRIN, L.S. NO. 1998 — DATED: 10/14/2020

COMMONWEALTH OF VIRGINIA
10/14/2020
DAVID T. CURRIN
Lic. No. 1998
LAND SURVEYOR

PLAT SHOWING
VACATION
OF A PORTION OF SAINT AUGUSTINE LANE
AND A PORTION OF SAINT AUGUSTINE COURT
D.B. 12818, PG. 1003

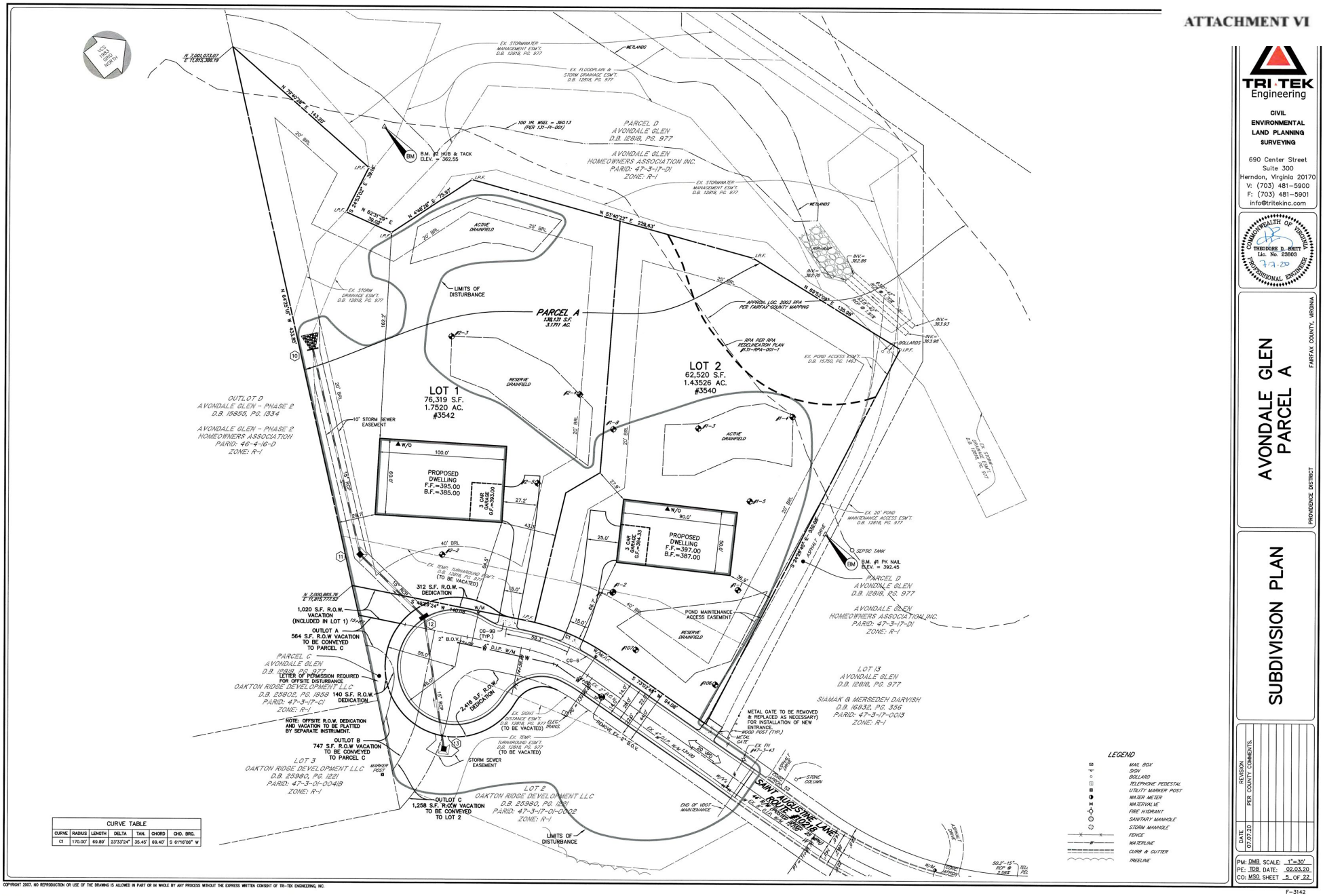
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: 1" = 30' DATE: 10-14-2020

SHEET 1 OF 1

TRI-TEK ENGINEERING
CIVIL ▲ ENVIRONMENTAL ▲ LAND PLANNING ▲ SURVEYING
a professional corporation
690 Center Street, Suite 300
Herndon, Virginia 20170-5018 (703) 481-5900

F-3142

O:\drawings\F-3142\plats\3142-VACATION.dwg, 10/15/2020 12:36:15 PM, dbrzezynski, HP PageWide XL 5100PS MFP HPGL2.pc3, 1:1, TRI-TEK Engineering, Inc.



TRI-TEK Engineering
CIVIL
ENVIRONMENTAL
LAND PLANNING
SURVEYING
690 Center Street
Suite 300
Herndon, Virginia 20170
V: (703) 481-5900
F: (703) 481-5901
info@tritekinc.com
COMMONWEALTH OF VIRGINIA
THEODORE D. BRITT
Lic. No. 25803
PROFESSIONAL ENGINEER
7.7.20

AVONDALE GLEN PARCEL A

FAIRFAX COUNTY, VIRGINIA
PROVIDENCE DISTRICT

SUBDIVISION PLAN

DATE	REVISION
07.07.20	PER COUNTY COMMENTS.

PM: DMB SCALE: 1"=30'
PE: TDB DATE: 02.03.20
CO: MSO SHEET 5 OF 22

F-3142

COPYRIGHT 2007. NO REPRODUCTION OR USE OF THE DRAWING IS ALLOWED IN PART OR IN WHOLE BY ANY PROCESS WITHOUT THE EXPRESS WRITTEN CONSENT OF TRI-TEK ENGINEERING, INC.

O:\drawings\F-3142\plots\SUB\3142-05-SP.dwg, 7/13/2020 11:33:06 AM, SOlsen, HP PageWide XL 8100PS MFP HPGL2.pc3, 1:1, TRI-TEK Engineering, Inc.

APPROVED
COUNTY OF FAIRFAX
LAND DEVELOPMENT SERVICES
ADDRESSING REVIEW

_____ BY _____
Date Addressing Reviewer

FINAL PLAT

RECOMMENDED FOR APPROVAL
FAIRFAX COUNTY
LAND DEVELOPMENT SERVICES

ALL STREET LOCATIONS AND/OR EASEMENTS CONFORM TO THE REQUIREMENTS OF THIS OFFICE

THIS APPROVAL IS NOT A COMMITMENT TO PROVIDE PUBLIC SANITARY SEWER

_____ BY _____
Date Director, Site Development and Inspection Division or Agent

APPROVED
FOR
BOARD OF SUPERVISORS
FAIRFAX COUNTY, VIRGINIA

_____ BY _____
Date Director, Land Development Services or Agent

APPROVAL VOID IF PLAT IS NOT OFFERED FOR RECORD ON OR BEFORE _____

WETLANDS CERTIFICATION

I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES.

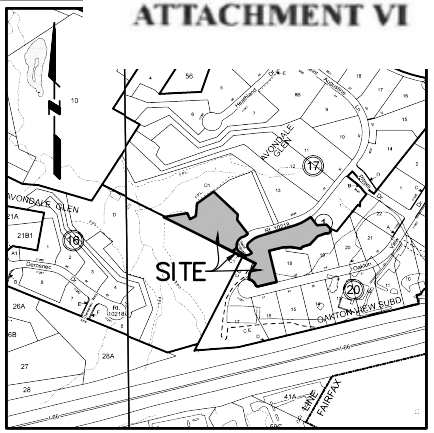
_____
SIGNATURE:
FOR OWNER
OWNER / DEVELOPER:
AGENT
TITLE:

CURVE TABLE

CURVE	RADIUS	ARC	DELTA	TAN.	CHORD	CHD. BRG.
C1	322.00'	115.80'	20°36'16"	58.53'	115.17'	N 62°44'20" E
C2	15.00'	21.41'	81°47'20"	12.99'	19.64'	S 62°43'27" E
C3	55.00'	55.65'	57°58'38"	30.47'	53.31'	N 50°49'10" W
C4	131.00'	41.17'	18°00'24"	20.76'	41.00'	N 25°47'23" W
C5	55.00'	90.92'	94°42'57"	59.72'	80.92'	N 25°41'53" E
C6	55.00'	23.78'	24°46'05"	12.08'	23.59'	N 60°40'20" E
C7	55.00'	67.15'	69°56'52"	38.47'	63.05'	N 13°18'51" E
C8	25.00'	37.97'	87°00'56"	23.73'	34.42'	S 21°50'53" W
C9	154.50'	17.66'	6°33'01"	8.84'	17.65'	N 37°14'06" W
C10	25.00'	39.27'	90°00'00"	25.00'	35.36'	S 4°29'24" W
C11	126.00'	51.81'	23°33'41"	26.28'	51.45'	S 61°15'57" W
C12	126.00'	34.90'	15°52'14"	17.56'	34.79'	S 57°25'14" W
C13	126.00'	16.91'	7°41'27"	8.47'	16.90'	S 69°12'04" W
C14	55.00'	89.72'	93°28'10"	58.44'	80.10'	S 60°12'33" E
C15	55.00'	27.86'	29°01'10"	14.23'	27.56'	S 27°59'02" E
C16	55.00'	32.07'	33°24'21"	16.50'	31.62'	S 59°11'48" E
C17	55.00'	29.80'	31°02'40"	15.28'	29.44'	N 88°34'42" E
C18	25.00'	23.34'	53°29'57"	12.60'	22.50'	N 67°15'35" W
C19	170.00'	6.35'	2°08'25"	3.18'	6.35'	S 50°33'36" W
C20	25.00'	11.28'	25°50'31"	5.74'	11.18'	N 62°24'39" E
C21	55.00'	85.25'	88°48'22"	53.87'	76.97'	S 30°55'44" W

LINE TABLE

LINE	LENGTH	BEARING
L1	30.00'	S 43°46'59" E
L2	19.28'	S 13°37'03" E
L3	16.54'	S 49°50'55" W
L4	19.13'	S 87°24'07" W
L5	12.36'	S 31°37'56" W
L6	15.36'	N 40°30'36" W
L7	20.92'	N 49°29'24" E
L8	33.24'	N 49°29'24" E
L9	9.85'	S 40°30'36" E
L10	4.72'	N 60°27'45" W
L11	10.64'	N 4°21'25" W
L12	11.15'	S 67°09'27" W
L13	10.19'	S 40°36'40" W
L14	7.50'	S 2°25'31" E
L15	11.24'	N 85°02'20" E
L16	2.65'	S 60°27'45" E
L17	13.23'	S 49°29'24" W



VICINITY MAP
SCALE: 1"=500'

NOTES:

1. THE PROPERTIES SHOWN HEREON ARE LOCATED ON MAP NO. 47-3-17-C1, 47-3-17-01-0002, _____.
2. ZONE: R-1
3. ALL PREVIOUSLY RECORDED RIGHTS OF WAY, EASEMENTS OR OTHER INTEREST OF THE COUNTY REMAIN IN FULL FORCE AND AFFECT UNLESS OTHERWISE SHOWN ON THIS PLAT.
4. THIS PLAT IS ASSOCIATED WITH THE SUBDIVISION PLAN TITLED AVONDALE GLEN PARCEL A, COUNTY PLAN NO. 131-SD-003-2.
5. THE PLAT OF THE PROPERTY SHOWN HEREON IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983 (VCS 1983).
6. THE BOUNDARY SURVEY OF THE LANDS DELINEATED HEREON MEETS THE MINIMUM ERROR OF CLOSURE 1 IN 20,000.

AREA TABULATION

EXISTING		PROPOSED	
MAP NO.: 47-3-17-C1	– 719 S.F. OR 0.0165 AC.	PARCEL C1	– 1,890 S.F. OR 0.0439 AC.
MAP NO.: 47-3-17-01-0002	– 74,286 S.F. OR 1.7054 AC.	LOT 2A	– 73,128 S.F. OR 1.6788 AC.
MAP NO.: _____(LOT 1)	– 75,299 S.F. OR 1.7286 AC.	LOT 1A	– 76,319 S.F. OR 1.7520 AC.
MAP NO.: _____(OUTLOT A)	– 1,020 S.F. OR 0.234 AC.	STREET DEDICATION	– 2,556 S.F. OR 0.0587 AC.
MAP NO.: _____(OUTLOT B)	– 564 S.F. OR 0.0129 AC.		
MAP NO.: _____(OUTLOT C)	747 S.F. OR 0.0171 AC.		
MAP NO.: _____(OUTLOT D)	– 1,258 S.F. OR 0.0289 AC.		
TOTAL AREA	153,893 S.F. OR 3.5329 AC.	TOTAL AREA	– 77,574 S.F. OR 1.7809 AC.

PLAT SHOWING
CONSOLIDATION OF VARIOUS OUTLOTS
AND STREET DEDICATION AND VACATION
& DEDICATION OF VARIOUS EASEMENTS
PARCEL C1
AVONDALE GLEN
(D.B. 12818, PG. 977)
LOT 2
OAKTON RIDGE
DEVELOPMENT, LLC
(D.B. 25980, PG. 1221)
LOT 1
DIVISION OF PARCEL A
AVONDALE GLEN
(D.B. _____, PG. _____)
AND THE VACATION OF
A PORTION OF SAINT AUGUSTINE LANE AND
A PORTION OF SAINT AUGUSTINE COURT
(D.B. _____, PG. _____)

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: 1" = 30' DATE: 10-12-2020

SHEET 1 OF 3

SURVEYOR'S CERTIFICATE:

I, DAVID T. CURRIN, A DULY AUTHORIZED LAND SURVEYOR IN THE COMMONWEALTH OF VIRGINIA DO HEREBY CERTIFY THAT I HAVE CAREFULLY SURVEYED THE PARCELS OF LAND DELINEATED HEREON; THAT THE INFORMATION SHOWN HEREON IS CORRECT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND EXPERIENCE, THAT THEY ARE THE SAME LANDS AS CONVEYED TO OAKTON RIDGE DEVELOPMENT LLC AS RECORDED IN DEED BOOK 25802 AT PAGE 1858 (PARCEL C1) AND IN DEED BOOK 25980 AT PAGE 1221 (LOT 2) AND ST. AUGUSTINE VENTURES, LLC IN DEED BOOK 25448 AT PAGE 805 (LOT 1) ALL AMONG THE LAND RECORDS OF FAIRFAX COUNTY, VIRGINIA; THAT THE PERIMETER OF THE LAND HEREON PLATTED WILL BE MONUMENTED USING IRON PIPE OR OTHER PERMANENT MARKER. MONUMENTS OF INTERNAL LOTS, STREETS, OUTLOTS, AND PARCELS CREATED BY RECORDATION OF THIS PLAT ARE COVERED BY SUBDIVISION ORDINANCE AND SURETY BOND AND WILL BE INSTALLED BY A LAND SURVEYOR LICENSED IN THE COMMONWEALTH PRIOR TO BOND RELEASE BY FAIRFAX COUNTY.

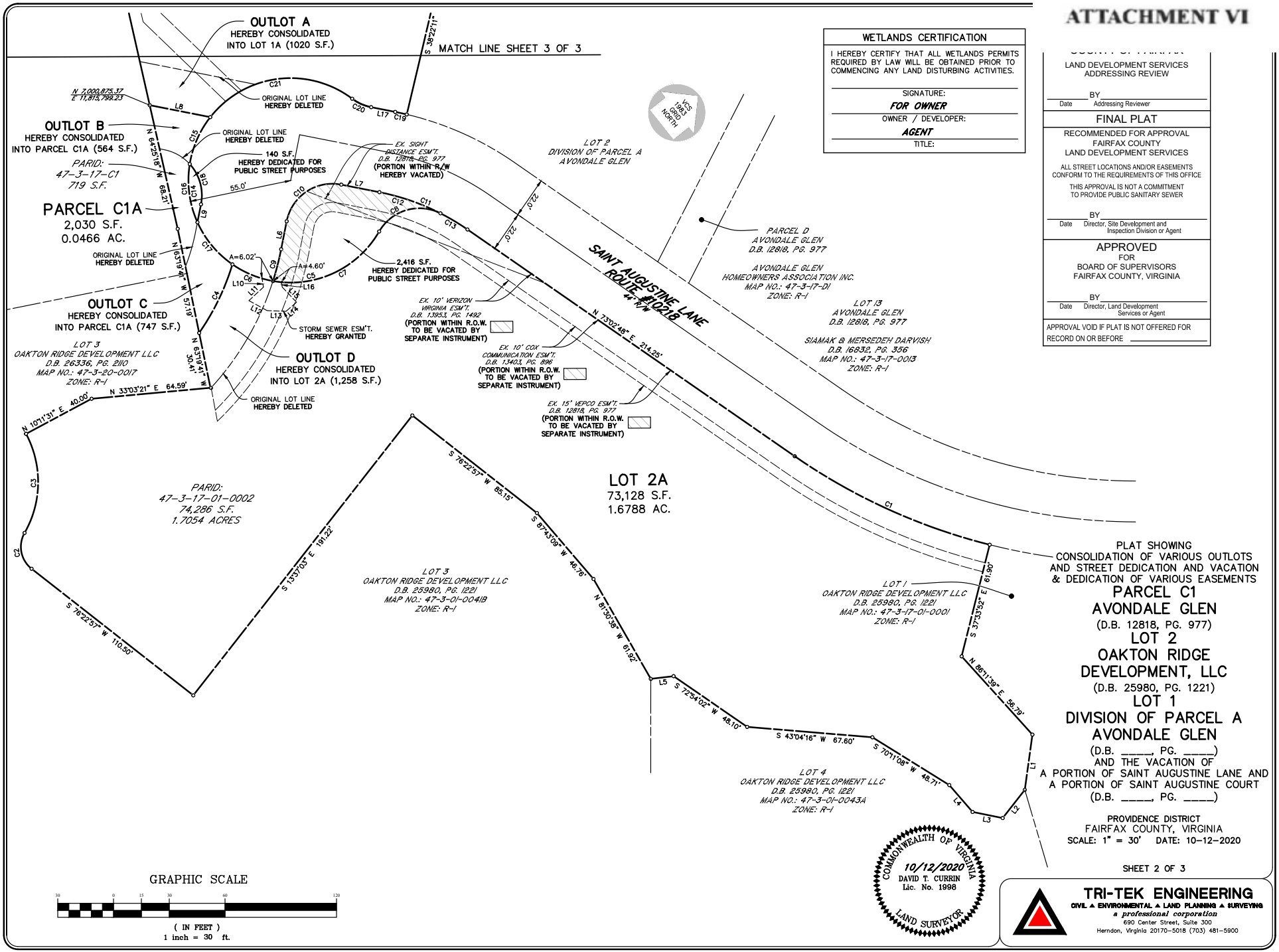
10/12/2020
DAVID T. CURRIN, L.S. NO. 1998 DATED:

COMMONWEALTH OF VIRGINIA
10/12/2020
DAVID T. CURRIN
Lic. No. 1998
LAND SURVEYOR

TRI-TEK ENGINEERING
CIVIL ▲ ENVIRONMENTAL ▲ LAND PLANNING ▲ SURVEYING
a professional corporation
690 Center Street, Suite 300
Herndon, Virginia 20170-5018 (703) 481-5900

F-3142

O:\drawings\F-3142\plats\3142-CONSOLIDATION.dwg, 10/15/2020 1:17:00 PM, dbrzezynski, , AutoCAD PDF (Smallest File).pc3, 1:1, TRI-TEK Engineering, Inc.



WETLANDS CERTIFICATION
I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES.
SIGNATURE:
FOR OWNER
OWNER / DEVELOPER:
AGENT
TITLE:

COUNTY OF FAIRFAX
LAND DEVELOPMENT SERVICES
ADDRESSING REVIEW

_____ BY _____
Date Addressing Reviewer

FINAL PLAT

RECOMMENDED FOR APPROVAL
FAIRFAX COUNTY
LAND DEVELOPMENT SERVICES

ALL STREET LOCATIONS AND/OR EASEMENTS CONFORM TO THE REQUIREMENTS OF THIS OFFICE

THIS APPROVAL IS NOT A COMMITMENT TO PROVIDE PUBLIC SANITARY SEWER

_____ BY _____
Date Director, Site Development and Inspection Division or Agent

APPROVED
FOR
BOARD OF SUPERVISORS
FAIRFAX COUNTY, VIRGINIA

_____ BY _____
Date Director, Land Development Services or Agent

APPROVAL VOID IF PLAT IS NOT OFFERED FOR RECORD ON OR BEFORE _____

PLAT SHOWING
CONSOLIDATION OF VARIOUS OUTLOTS
AND STREET DEDICATION AND VACATION
& DEDICATION OF VARIOUS EASEMENTS

PARCEL C1
AVONDALE GLEN
(D.B. 12818, PG. 977)
LOT 2
OAKTON RIDGE
DEVELOPMENT, LLC
(D.B. 25980, PG. 1221)
LOT 1
DIVISION OF PARCEL A
AVONDALE GLEN
(D.B. _____, PG. _____)
AND THE VACATION OF
A PORTION OF SAINT AUGUSTINE LANE AND
A PORTION OF SAINT AUGUSTINE COURT
(D.B. _____, PG. _____)

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: 1" = 30' DATE: 10-12-2020

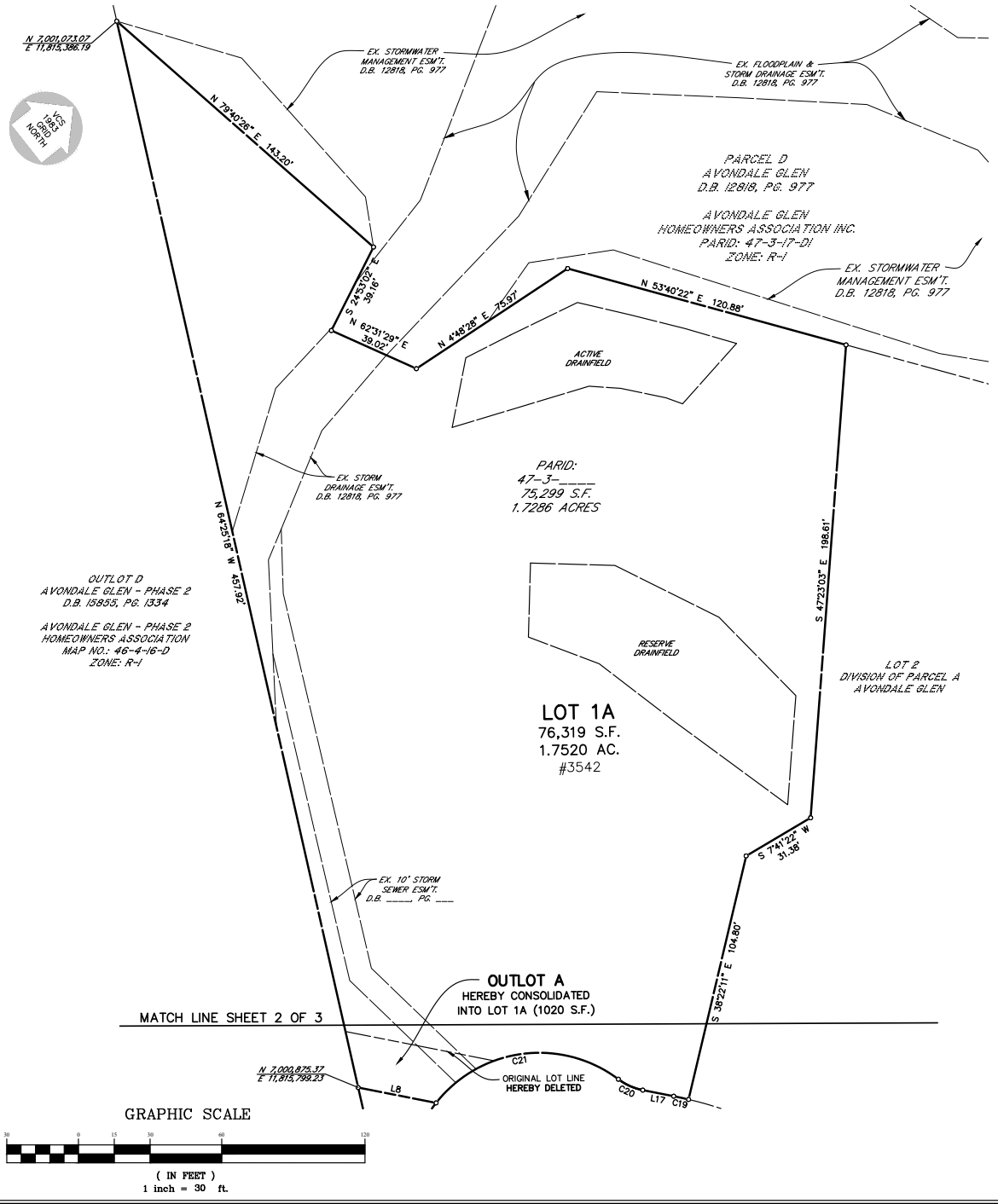
SHEET 2 OF 3

COMMONWEALTH OF VIRGINIA
10/12/2020
DAVID T. CURRIN
Lic. No. 1998
LAND SURVEYOR

TRI-TEK ENGINEERING
CIVIL ▲ ENVIRONMENTAL ▲ LAND PLANNING ▲ SURVEYING
a professional corporation
690 Center Street, Suite 300
Herndon, Virginia 20170-5018 (703) 481-5900

F-3142

O:\drawings\F-3142\plats\3142-CONSOLIDATION.dwg, 10/15/2020 1:17:03 PM, dbrzezynski, , AutoCAD PDF (Smallest File).pc3, 1:1, TRI-TEK Engineering, Inc.



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

WETLANDS CERTIFICATION
I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES.
SIGNATURE:
FOR OWNER
OWNER / DEVELOPER:
AGENT
TITLE:

COUNTY OF FAIRFAX

LAND DEVELOPMENT SERVICES
ADDRESSING REVIEW

_____ BY _____
Date Addressing Reviewer

FINAL PLAT

RECOMMENDED FOR APPROVAL
FAIRFAX COUNTY
LAND DEVELOPMENT SERVICES

ALL STREET LOCATIONS AND/OR EASEMENTS CONFORM TO THE REQUIREMENTS OF THIS OFFICE

THIS APPROVAL IS NOT A COMMITMENT TO PROVIDE PUBLIC SANITARY SEWER

_____ BY _____
Date Director, Site Development and Inspection Division or Agent

APPROVED
FOR
BOARD OF SUPERVISORS
FAIRFAX COUNTY, VIRGINIA

_____ BY _____
Date Director, Land Development Services or Agent

APPROVAL VOID IF PLAT IS NOT OFFERED FOR RECORD ON OR BEFORE _____

PLAT SHOWING
CONSOLIDATION OF VARIOUS OUTLOTS
AND STREET DEDICATION AND VACATION
& DEDICATION OF VARIOUS EASEMENTS

PARCEL C1
AVONDALE GLEN
(D.B. 12818, PG. 977)
LOT 2
OAKTON RIDGE DEVELOPMENT, LLC
(D.B. 25980, PG. 1221)
LOT 1
DIVISION OF PARCEL A
AVONDALE GLEN
(D.B. _____, PG. _____)
AND THE VACATION OF
A PORTION OF SAINT AUGUSTINE LANE AND
A PORTION OF SAINT AUGUSTINE COURT
(D.B. _____, PG. _____)

PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA
SCALE: 1" = 30' DATE: 10-12-2020

SHEET 3 OF 3

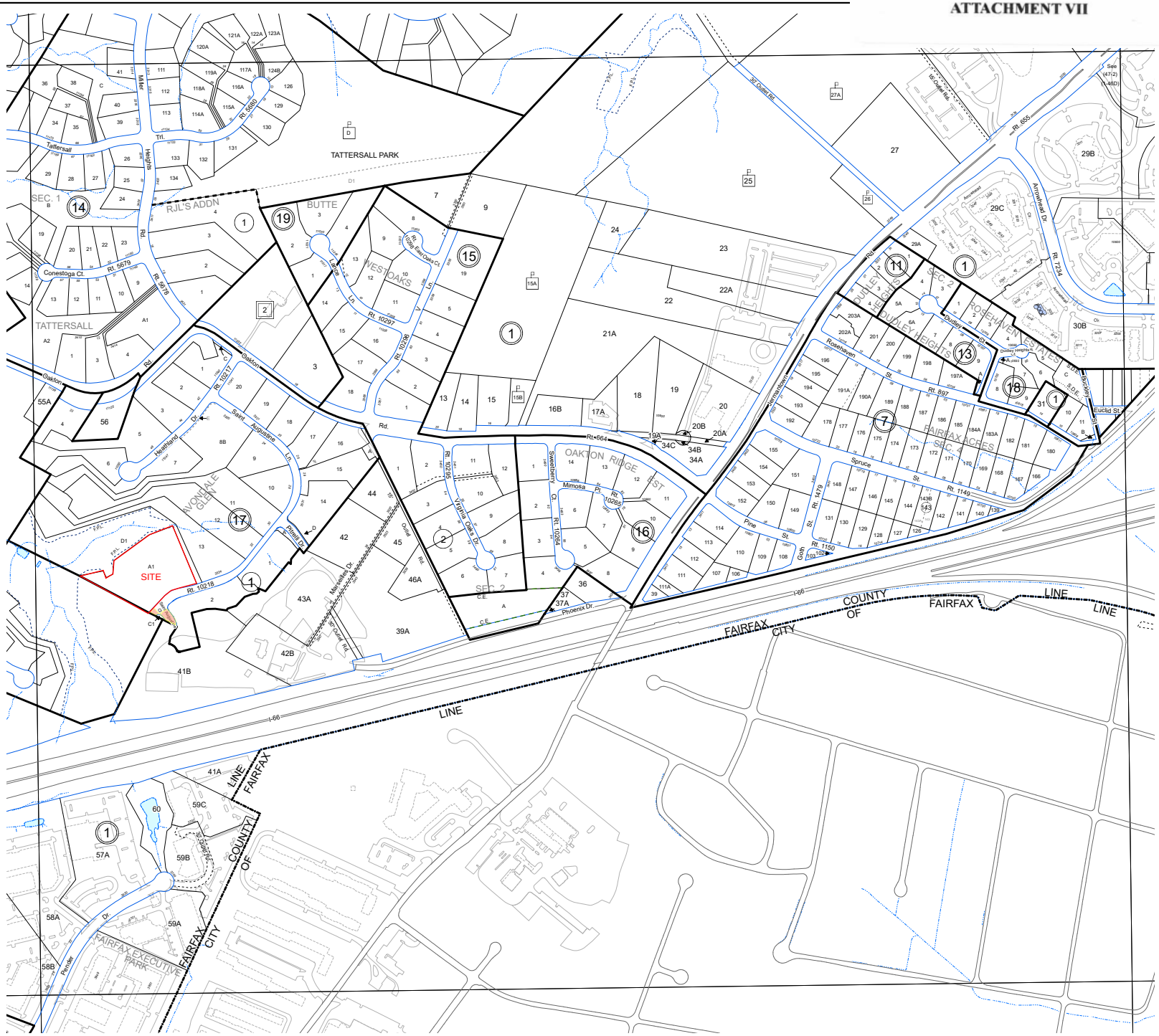
COMMONWEALTH OF VIRGINIA
10/12/2020
DAVID T. CURRIN
Lic. No. 1998
LAND SURVEYOR

TRI-TEK ENGINEERING
CIVIL ▲ ENVIRONMENTAL ▲ LAND PLANNING ▲ SURVEYING
a professional corporation
690 Center Street, Suite 300
Herndon, Virginia 20170-5018 (703) 481-5900

F-3142

O:\drawings\F-3142\plats\3142-CONSOLIDATION.dwg, 10/15/2020 1:17:08 PM, dbrzezynski, _AutoCAD PDF (Smallest File).pc3, 1:1, TRI-TEK Engineering, Inc.

ATTACHMENT VII



COUNTY OF FAIRFAX
1742
VIRGINIA

A Fairfax County, Virginia Publication

N

100 50 0 100 200 300 400 Feet

Map file is 50" X 75" based on USGS 1:24,000 scale 7 1/2 minute Quad. Virginia Coordinate System values are of 1983 North Zone in U.S. feet based on NAD 83/93 High Precision GPS Network adjustment.

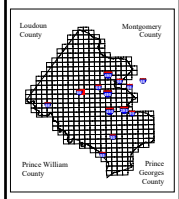
National Geodetic Vertical Datum 1929

GENERAL NOTES

MARINE CLAY DEPOSITS

The limits of the Marine Clay Deposits shown in this map are general in nature and are not to be scaled.

The information contained on this page is NOT to be construed or used as a "legal description". It is not a survey product. Any determination of topography or contours, or any depiction of physical improvements, property lines or boundaries is for general information only and shall not be used for the design, modification, or construction of improvements to real property or for flood plain determination. While Fairfax County strives to provide the best data possible, it does not provide any guarantee of accuracy or completeness regarding the map information. Any errors or omissions should be reported to the Fairfax County Geographic Information Systems and Mapping Services Branch of the Department of Information Technology. In no event will Fairfax County be liable for any damages, including but not limited to loss of data, lost profits, business interruption, loss of business information or any other pecuniary loss that might arise from the use of this map or information it contains.



ADMINISTRATIVE INDEX

46-2	47-1	47-2
46-4	47-3	47-4
56-2	57-1	57-2

SHEET INDEX

CADASTRAL MAP

47-3

Revised to : 01 - 01 - 2020

Prepared by:

DEPARTMENT OF INFORMATION TECHNOLOGY
GIS and Mapping Services Branch
12000 Government Center Parkway, Suite 117
Fairfax, Virginia 22035-0010
(703) 324-2712
FAX (703) 324-3937
E-mail: gis.helpsj@fairfaxcounty.gov

© THE COUNTY OF FAIRFAX

Print Code: 20200301

Board Agenda Item
March 9, 2021

4:00 p.m.

Public Hearing to Lease County-Owned Properties for the Purpose of Installing Solar Facilities (Braddock, Dranesville, Hunter Mill, Lee, Mason, Mount Vernon, Providence, Springfield, and Sully Districts)

ISSUE:
Public hearing to lease County-owned property to Sigora Solar, LLC for the installation, operation and maintenance of solar photovoltaic panels for the purpose of on-site electric generation at the Public Safety Headquarters and Parking Garage at 12099 Government Center Parkway, Great Falls Volunteer Fire Station at 9916 Georgetown Pike, McLean Government Center and Police Station at 1437 Balls Hill Road, Wolf Trap Fire Station #42 at 1315 Beulah Road, McLean Community Center at 1234 Ingleside Avenue, John Marshall Library at 6209 Rose Hill Drive, Richard Byrd Library at 7250 Commerce Street, Lillian Carey Center at 5920 Summers Lane, Mason District Government Center and Police Station at 6507 Columbia Pike, Thomas Jefferson Library at 7415 Arlington Boulevard, Gum Springs Community Center at 8100 Fordson Road, Newington Vehicle Maintenance Facility at 6900 Newington Road, Merrifield Center and Merrifield Center Garage at 8221 Willow Oaks Corporate Drive, Animal Shelter at 4500 West Ox Road, Girl's Probation House at 12720 Lee Highway, Pohick Regional Library at 6450 Sydenstricker Road, Jermantown Vehicle and Fire Apparatus Maintenance Facility at 3609 Jermantown Road, Reston Fire Station at 1820 Wiehle Avenue, Edsall Road Fire Station at 5316 Carolina Place, Lorton Community Center and Library at 9518 and 9520 Richmond Highway, Woodlawn Fire Station at 8701 Lukens Lane, and Sully Community Center at 13800 Wall Road.

RECOMMENDATION:
The County Executive recommends that the Board authorize staff to lease County-owned property at 12099 Government Center Parkway, 9916 Georgetown Pike, 1437 Balls Hill Road, 1315 Beulah Road, 1234 Ingleside Avenue, 6209 Rose Hill Drive, 7250 Commerce Street, 5920 Summers Lane, 6507 Columbia Pike, 7415 Arlington Boulevard, 8100 Fordson Road, 6900 Newington Road, 8221 Willow Oaks Corporate Drive, 4500 West Ox Road, 12720 Lee Highway, 6450 Sydenstricker Road, 3609 Jermantown Road, 1820 Wiehle Avenue, 5316 Carolina Place, 9518 and 9520 Richmond Highway, 8701 Lukens Lane, and 13800 Wall Road to Sigora Solar, LLC.

TIMING:
On February 9, 2021, the Board authorized advertisement of a public hearing to lease

Board Agenda Item
March 9, 2021

County-owned property at 12099 Government Center Parkway, 9916 Georgetown Pike, 1437 Balls Hill Road, 1315 Beulah Road, 1234 Ingleside Avenue, 6209 Rose Hill Drive, 7250 Commerce Street, 5920 Summers Lane, 6507 Columbia Pike, 7415 Arlington Boulevard, 8100 Fordson Road, 6900 Newington Road, 8221 Willow Oaks Corporate Drive, 4500 West Ox Road, 12720 Lee Highway, 6450 Sydenstricker Road, 3609 Jermantown Road, 1820 Wiehle Avenue, 5316 Carolina Place, 9518 and 9520 Richmond Highway, 8701 Lukens Lane, and 13800 Wall Road to Sigora Solar, LLC.

BACKGROUND:
The Board of Supervisors owns facilities at the 22 locations listed above. Facilities at the final five locations are currently under construction or are undergoing major renovations. Maps of each property are included in Attachments 1-22, and site-specific information is provided for each property below:

- The Public Safety Headquarters and Parking Garage is located at 12099 Government Center Parkway on a County-owned parcel identified as Tax Map Number 0561 15 006. A 560,332 square foot building is located on the property.
- The Great Falls Volunteer Fire Station is located at 9916 Georgetown Pike on a County-owned parcel identified as Tax Map Number 0131 01 0002. An 18,700 square foot building is located on the property.
- The McLean Government Center and Police Station is located at 1437 Balls Hill Road on a County-owned parcel identified as Tax Map Number 0301 01 0033A. A 39,200 square foot building is located on the property.
- The Wolf Trap Fire Station #42 is located at 1315 Beulah Road on a County-owned parcel identified as Tax Map Number 0193 01 0020. A 14,000 square foot building is located on the property.
- The McLean Community Center is located at 1234 Ingleside Avenue on a County-owned parcel identified as Tax Map Number 0302 03 0027. A 54,010 square foot building is located on the property.
- The John Marshall Library is located at 6209 Rose Hill Drive on a County-owned parcel identified as Tax Map Number 0823 12 B. A 14,685 square foot building is located on the property.
- The Richard Byrd Library is located at 7250 Commerce Street on a County-owned parcel identified as Tax Map Number 0803 01 0003C. An 18,000 square foot building is located on the property.
- The Lillian Carey Center is located at 5920 Summers Lane on a County-owned parcel identified as Tax Map Number 0614 01 0042. A 24,812 square foot building is located on the property.
- The Mason District Government Center and Police Station is located at 6507 Columbia Pike on a County-owned parcel identified as Tax Map Number 0613 01 0003. A 33,600 square foot building is located on the property.

- The Thomas Jefferson Library is located at 7415 Arlington Boulevard on a County-owned parcel identified as Tax Map Number 0503 01 0004. A 17,000 square foot building is located on the property.
- The Gum Springs Community Center is located at 8100 Fordson Road on a County-owned parcel identified as Tax Map Number 1012 01 0047. A 53,070 square foot building is located on the property.
- The Newington Vehicle Maintenance Facility is located at 6900 Newington Road on a County-owned parcel identified as Tax Map Number 0994 01 0017. A 94,000 square foot building is located on the property.
- The Merrifield Center and Merrifield Center Garage are located at 8221 Willow Oaks Corporate Drive on a County-owned parcel identified as Tax Map Number 0493 39 0001. A 161,454 square foot building and 230,000 square foot garage are located on the property.
- The Animal Shelter is located at 4500 West Ox Road on a County-owned parcel identified as Tax Map Number 0561 01 0002. A 29,000 square foot building is located on the property.
- The Girl's Probation House is located at 12720 Lee Highway on a County-owned parcel identified as Tax Map Number 0554 01 0010. An 11,397 square foot building is located on the property.
- The Pohick Regional Library is located at 6450 Sydenstricker Road on a County-owned parcel identified as Tax Map Number 0882 01 0026. A 24,367 square foot building is located on the property.
- The Jermantown Vehicle and Fire Apparatus Maintenance Facility is located at 3609 Jermantown Road on a County-owned parcel identified as Tax Map Number 47 3 02 005. A 42,642 square foot building is located on the property.
- The Reston Fire Station is being constructed at 1820 Wiehle Avenue on a County-owned parcel identified as Tax Map Number 0174 05 0005. Upon the expected substantial completion date of late summer 2021, a 17,400 square foot building will be located on the property.
- The Edsall Road Fire Station is being constructed at 5316 Carolina Place on a County-owned parcel identified as Tax Map Number 0802 01 0050. Upon the expected substantial completion date of winter 2021, a 14,000 square foot building will be located on the property.
- The Lorton Community Center & Library is being renovated and expanded at 9518 and 9520 Richmond Highway on a County-owned parcel identified as Tax Map Number 1074 01 0034. Following renovation and expansion, with an expected substantial completion date of spring 2022, a 46,000 square foot building will be located on the property, replacing the former 10,000 square foot Lorton Library.
- The Woodlawn Fire Station is being constructed at 8701 Lukens Lane on a County-owned parcel identified as Tax Map Number 1101 01 0028A and 1101 01

0029. Upon the expected substantial completion date of winter 2021, a 15,000 square foot building will be located on the property.

- The Sully Community Center is being constructed at 13800 Wall Road on a County-owned parcel identified as Tax Map Number 0244 0708 A. Upon the expected substantial completion date of winter 2022, a 36,000 square foot building will be located on the property.

Sigora Solar, LLC designs and installs solar photovoltaic panels and is a solar power purchase agreement (PPA) service provider. In December 2019, Fairfax County announced a contract with Sigora Solar for rooftop solar PPA installations on buildings owned by Fairfax County Government, Fairfax County Public Schools, Fairfax County Park Authority, and Fairfax County Redevelopment and Housing Authority (collectively, the "Fairfax Entities"). Under the contract, Sigora Solar will design, permit, install and operate rooftop solar panels at facilities that participate in the PPA program and sell the electricity generated by the solar panels to the participating facility at a fixed rate and over a fixed term (e.g. 25-28 years, depending on the term selected for the facility). The contract with Sigora Solar allows Fairfax County to purchase on-site renewable energy with little or no upfront or operational costs. Participation in the solar PPA program is expected to reduce the County's greenhouse gas emissions and electricity costs.

Sigora Solar requires access to and use of rooftop space at the 22 facilities listed above to install, operate and maintain solar photovoltaic panels over the course of each facility's PPA term.

The 22 locations that are the subject of the March 9, 2021 public hearing do not represent a complete list of the sites at which Sigora Solar will install solar facilities. The 2019 request for proposal (RFP) for solar PPA services and contract awards contemplated a phased approach to solar installations at facilities owned by Fairfax County Government and the other Fairfax Entities. The RFP listed a total of 247 possible projects in two phases, with Phase I including 113 possible projects and Phase II including 134 possible projects. Twenty-four projects in Phase I and 48 projects in Phase II pertained to facilities owned by Fairfax County Government; the remaining projects were proposed by the three other Fairfax Entities.

In the fall of 2020, leases with Sigora Solar were approved for a first tranche of Fairfax County Government-owned sites, including six Phase I locations. The March 9, 2021 public hearing includes additional Phase I sites and five Phase II sites with facilities currently under construction or renovation, with an expected substantial completion date within the next 12 to 18 months. Staff anticipates returning to the Board at a later date to request lease approvals for the remaining Fairfax County Government-owned facilities.

Board Agenda Item
March 9, 2021

Virginia Code Ann. § 15.2-1800 requires a locality to hold a public hearing before it may lease its real property. The County Executive recommends that the Board authorize staff to lease County property to Sigora Solar, which will allow for the installation, operation, and maintenance of solar panels on County-owned facilities. The public hearing requirement applies only to localities. As such, it applies only to Fairfax County Government and not the other Fairfax Entities. The other Fairfax Entities have their own procedures for lease approvals.

FISCAL IMPACT:
None. Electricity costs for facilities at which PPA solar projects are installed are expected to decrease as soon as the solar photovoltaic panels are activated. Under its contract with Fairfax County, Sigora Solar offered a fixed rate of $0.069 per kWh delivered for a 25-year contract term. The County-owned properties included in this request to authorize a public hearing are located in a service territory in which the current average cost of utility-delivered electric power is approximately $0.085 per kilowatt hour (kWh). At this cost, the County would save about $0.016 per kWh of delivered electric power. As the average cost of utility-delivered electric power is expected to increase over time, the savings are expected to increase, as well.

ENCLOSED DOCUMENTS:
Attachment 1 – Location Map 0561 15 006
Attachment 2 – Location Map 0131 01 0002
Attachment 3 – Location Map 0301 01 0033A
Attachment 4 – Location Map 0193 01 0020
Attachment 5 – Location Map 0302 03 0027
Attachment 6 – Location Map 0823 12 B
Attachment 7 – Location Map 0803 01 0003C
Attachment 8 – Location Map 0614 01 0042
Attachment 9 – Location Map 0613 01 0003
Attachment 10 – Location Map 0503 01 0004
Attachment 11 – Location Map 1012 01 0047
Attachment 12 – Location Map 0994 01 0017
Attachment 13 – Location Map 0493 39 0001
Attachment 14 – Location Map 0561 01 0002
Attachment 15 – Location Map 0554 01 0010
Attachment 16 – Location Map 0882 01 0026
Attachment 17 – Location Map 47 3 02 005
Attachment 18 – Location Map 0174 05 0005
Attachment 19 – Location Map 0802 01 0050
Attachment 20 – Location Map 1074 01 0034

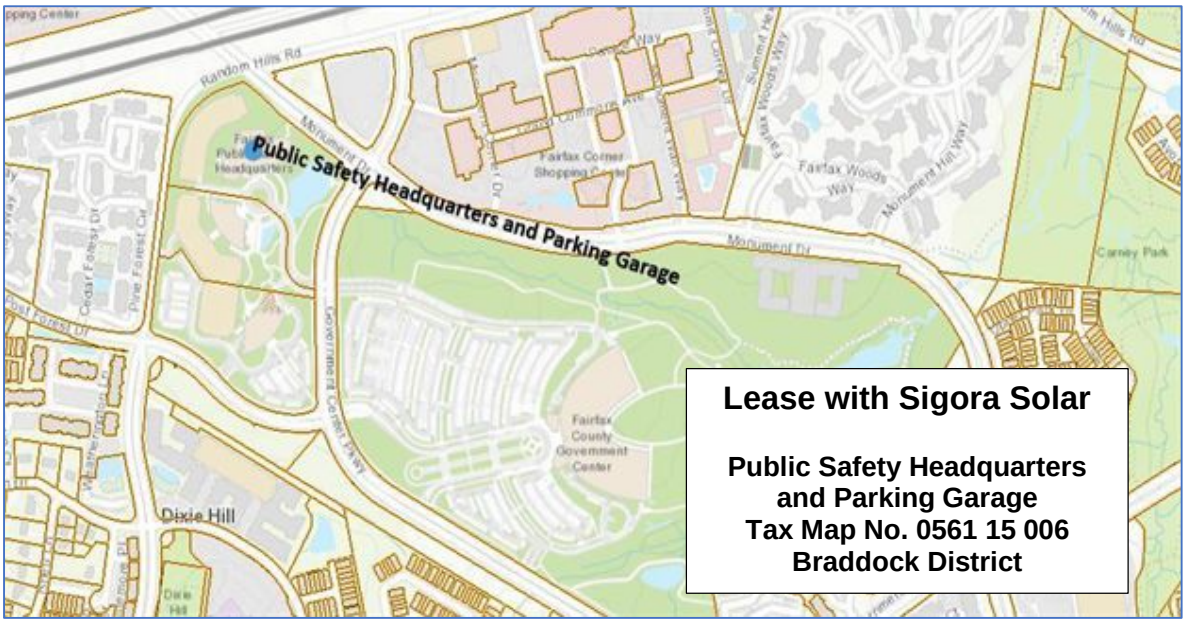
Board Agenda Item
March 9, 2021

Attachment 21 – Location Map 1101 01 0028A and 1101 01 0029
Attachment 22 – Location Map 0244 0708 A
Attachment 23 – Draft Lease Agreement

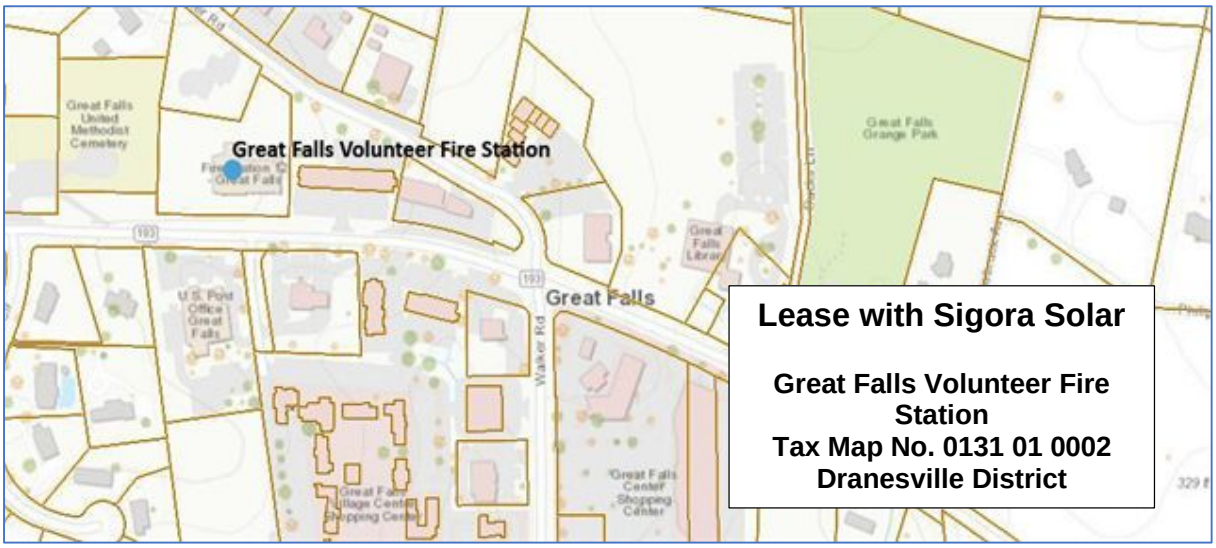
STAFF:
Joseph M. Mondoro, Chief Financial Officer
Kambiz Agazi, Director, Office of Environmental and Energy Coordination
Susan Hafeli, Deputy Director, Office of Environmental and Energy Coordination
Kathleen Daley, Office of Environmental and Energy Coordination

ASSIGNED COUNSEL:
Joanna Faust, Assistant County Attorney

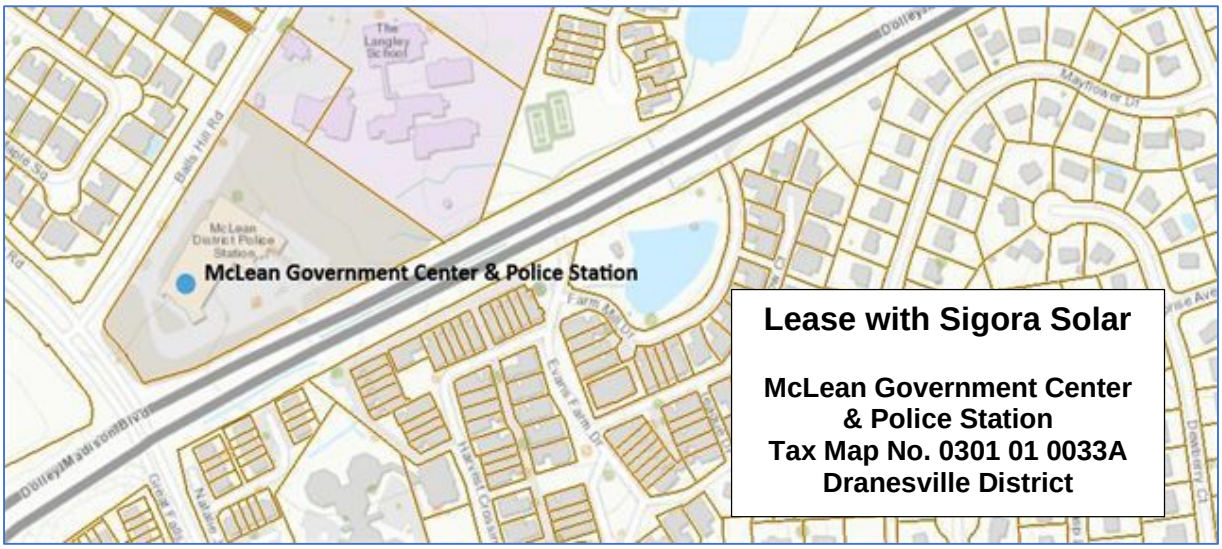
Attachment 1



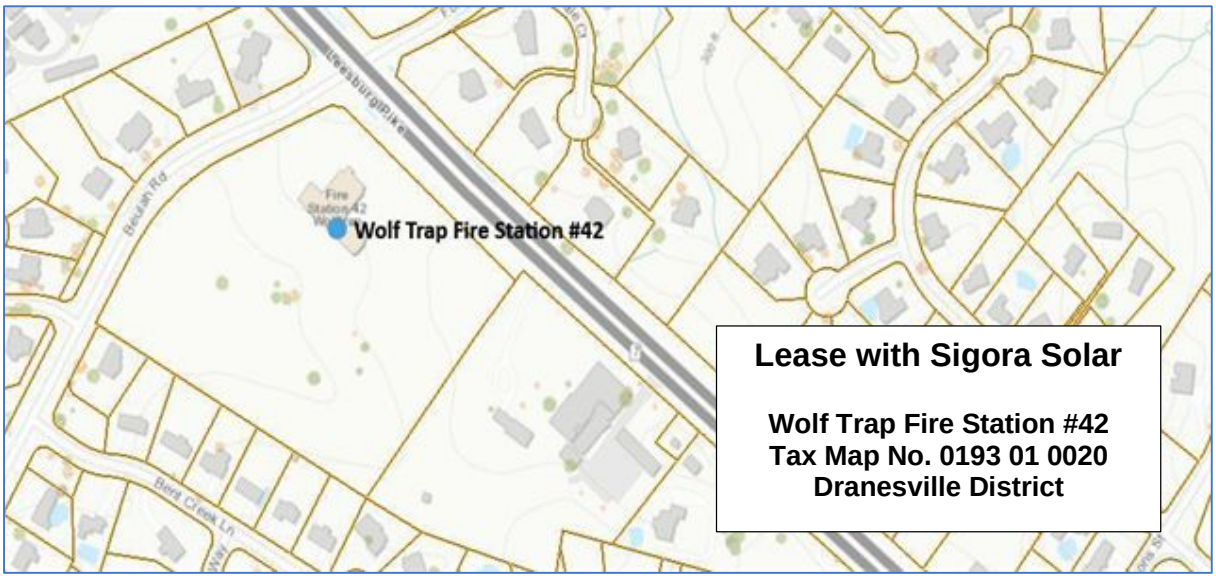
Attachment 2



Attachment 3



Attachment 4

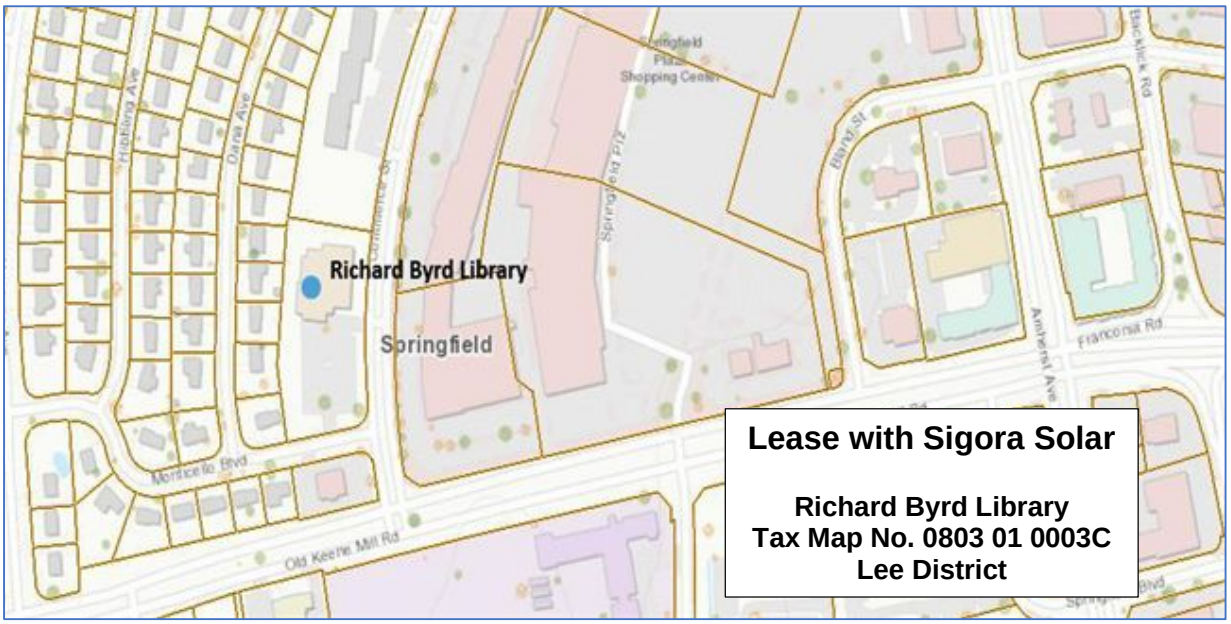


Attachment 5

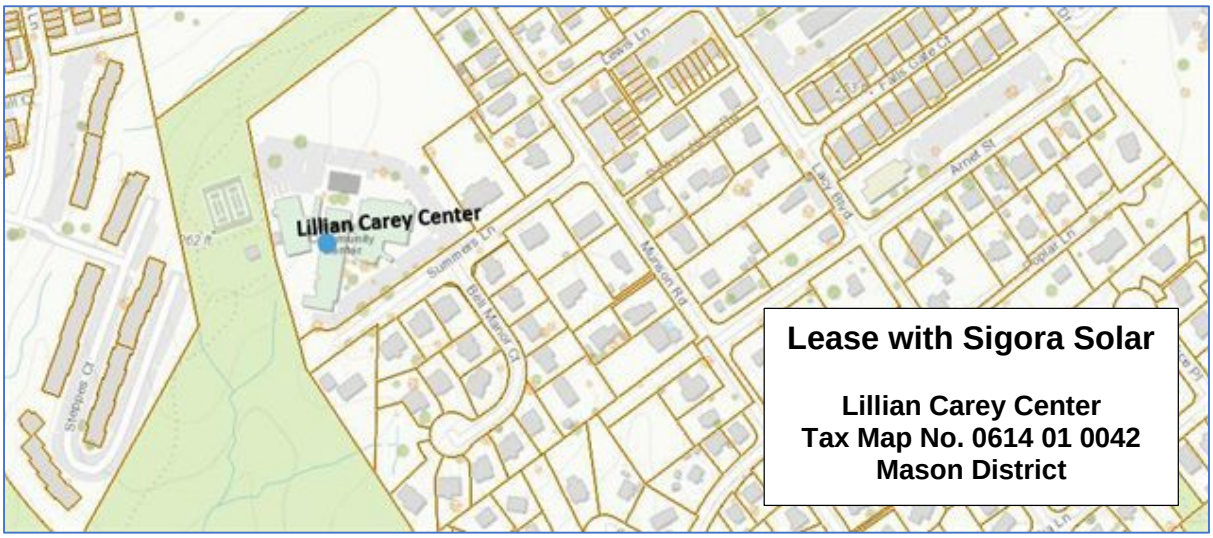


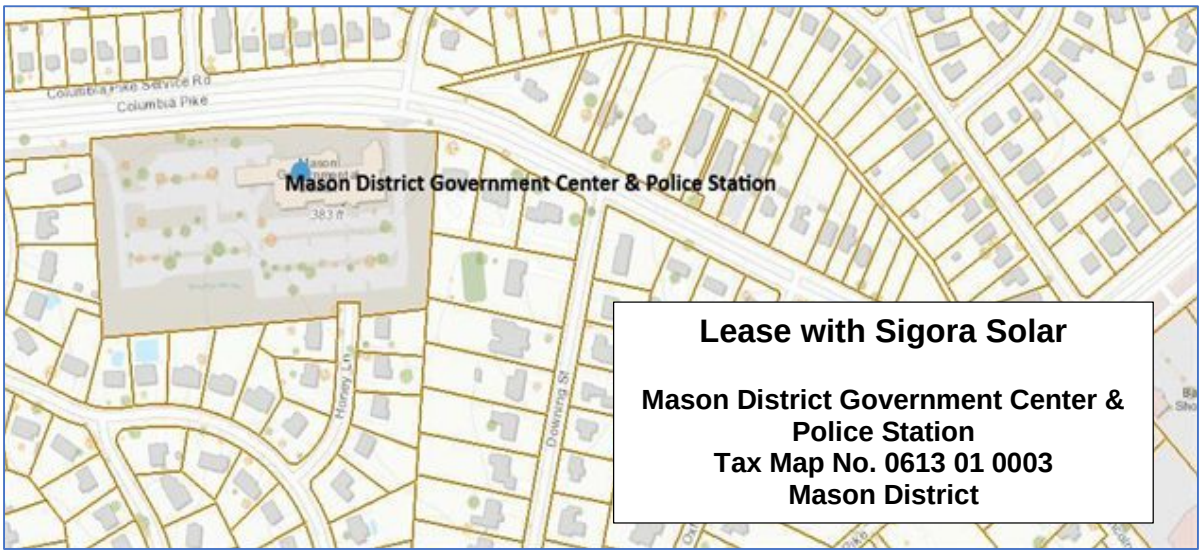
Attachment 6

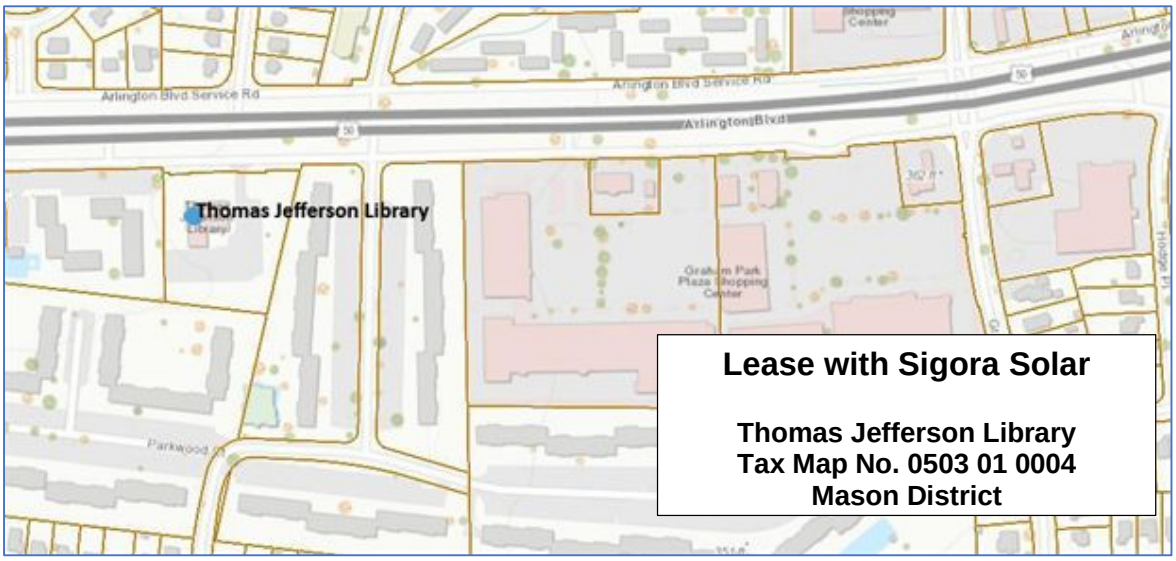


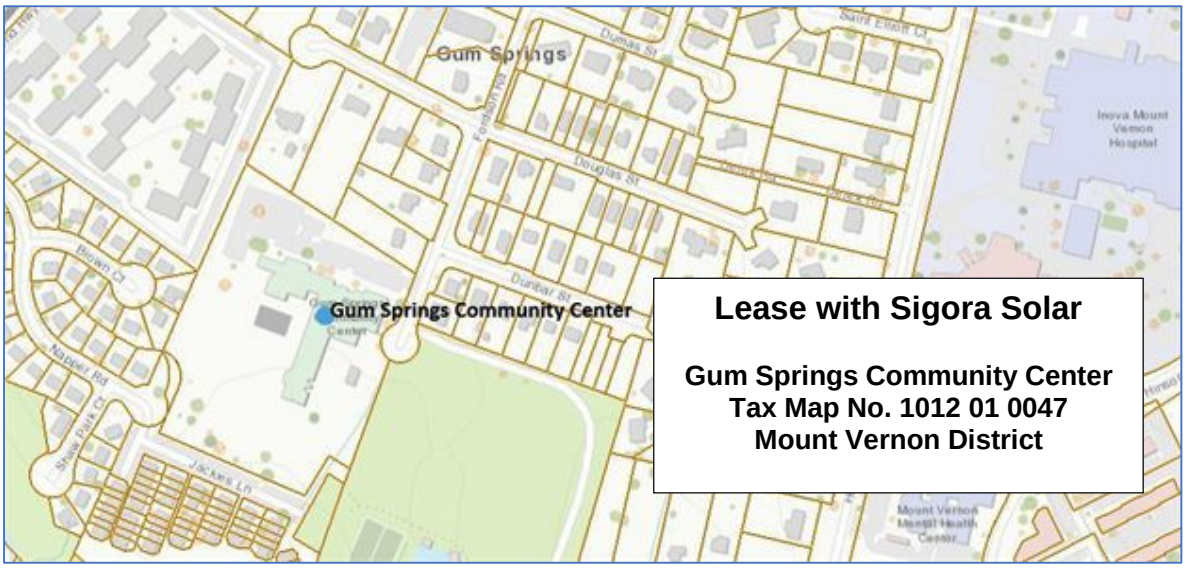

Richard Byrd Library
Springfield
Springfield Plaza Shopping Center
Ridgeloch Rd
Blond St
Springfield Plz
Commerce St
Ridgeloch Ave
Dorcas Ave
Francosa Rd
Amherst Ave
Montecito Blvd
Old Keene Mill Rd
Lease with Sigora Solar
Richard Byrd Library
Tax Map No. 0803 01 0003C
Lee District

Attachment 8

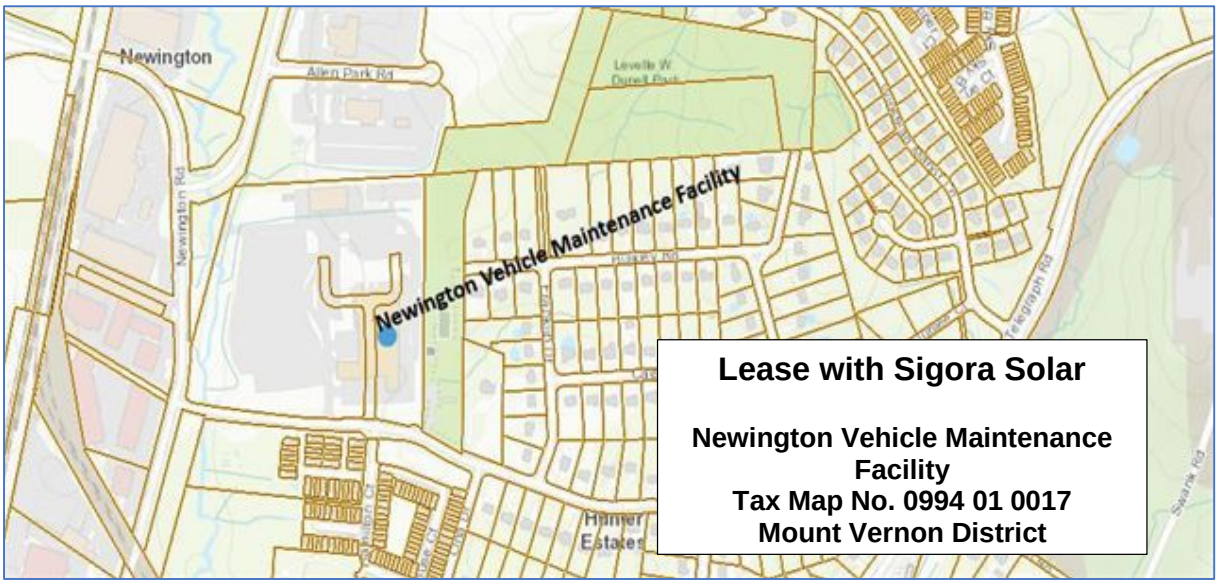



Columbia Pike Service Rd
Columbia Pike
Mason District Government Center & Police Station
Hurney Ln
Downing St
Lease with Sigora Solar
Mason District Government Center & Police Station
Tax Map No. 0613 01 0003
Mason District


Arlington Blvd Service Rd
Arlington Blvd
Thomas Jefferson Library
Parkwood Dr
Lease with Sigora Solar
Thomas Jefferson Library
Tax Map No. 0503 01 0004
Mason District

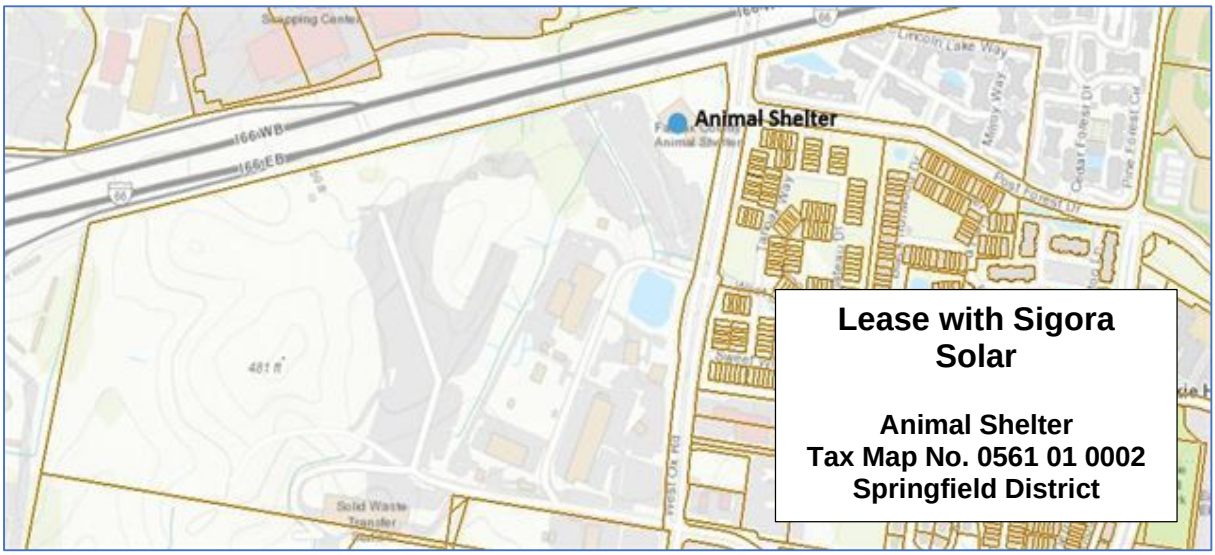

Gum Springs
Gum Springs Community Center
Lease with Sigora Solar
Gum Springs Community Center
Tax Map No. 1012 01 0047
Mount Vernon District

Attachment 12




Arlington Blvd
Merrifield Center & Merrifield Center Garage
Lease with Sigora Solar
Merrifield Center & Merrifield Center Garage
Tax Map No. 0493 39 0001
Providence District

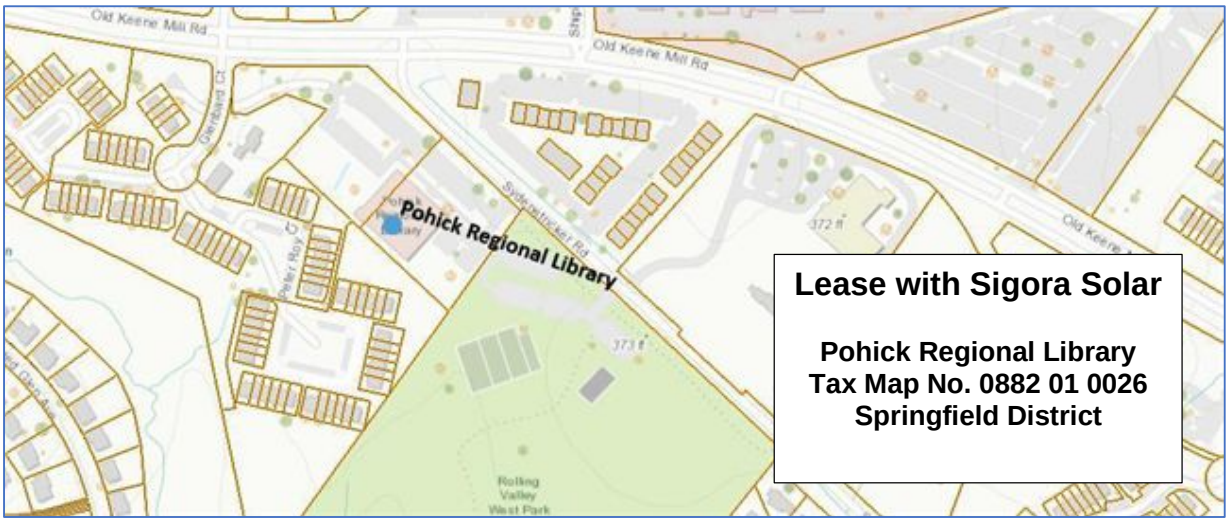
Attachment 14



Attachment 15

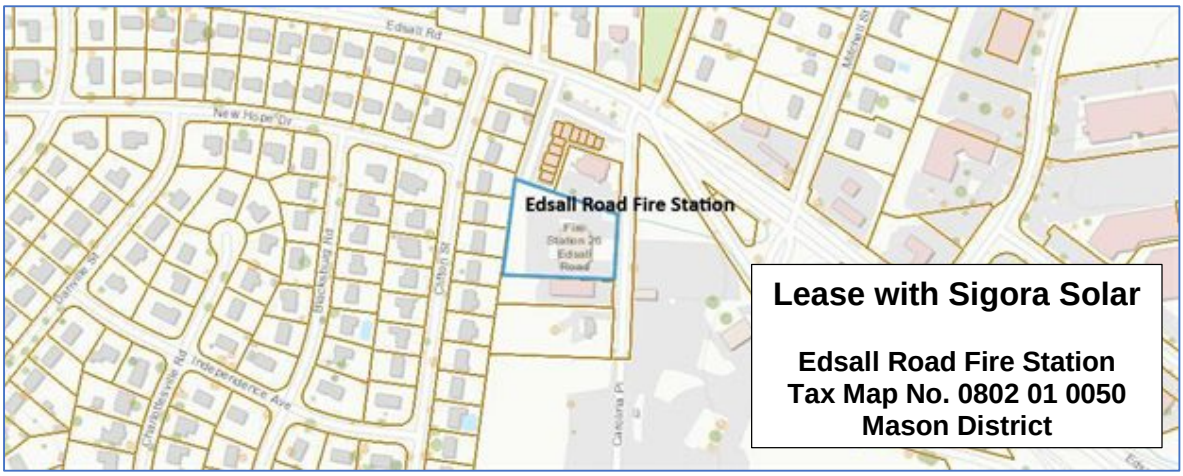


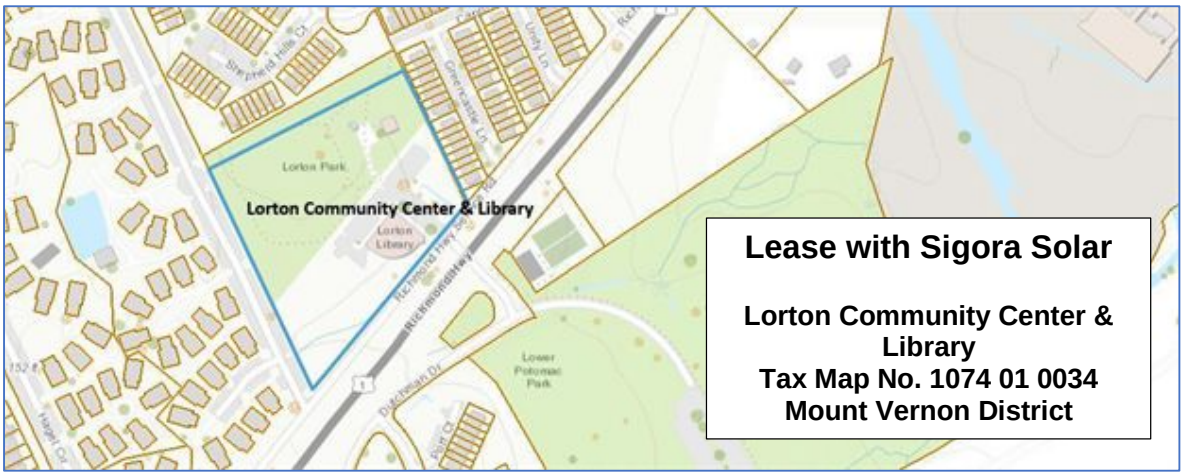
Attachment 16

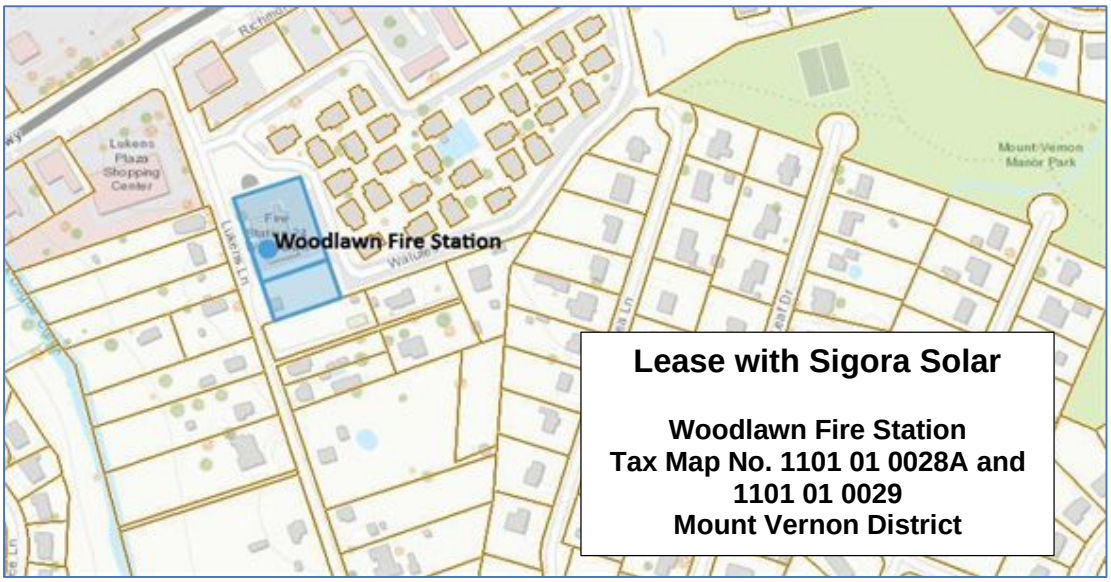


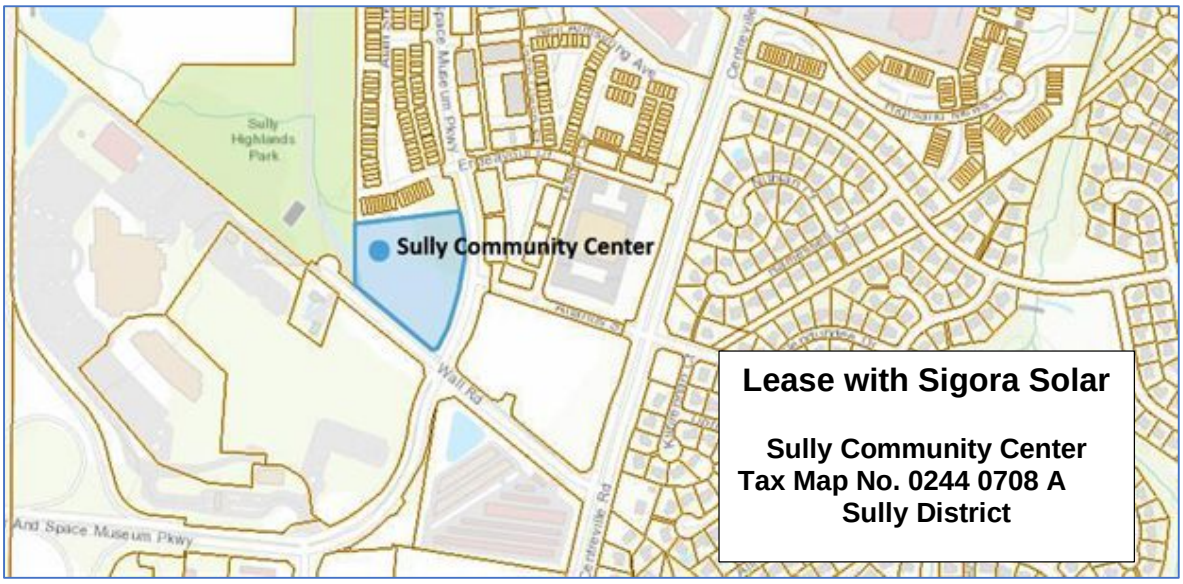

Jermantown Vehicle and Fire Apparatus Maintenance Facility
Cobbdale
Fairfax Woods
Providence Elementary School
Fairfax County Property Yard
Lanier Middle School
Oak Pl
Norman Ave
Carol St
Hill St
Ann St
Cobb Dr
Orchard St
Jermantown Rd
Chainbridge Rd
Lease with Sigora Solar
Jermantown Vehicle and Fire Apparatus Maintenance Facility
Tax Map No. 47 3 02 005
City of Fairfax


Reston Fire Station
Lease with Sigora Solar
Reston Fire Station
Tax Map No. 0174 05 0005
Hunter Mill District


Edsall Road Fire Station
Lease with Sigora Solar
Edsall Road Fire Station
Tax Map No. 0802 01 0050
Mason District


Lorton Community Center & Library
Lorton Park
Lorton Library
Richmond Hwy
Lower Potomac Park
Ditchman Dr
Greencastle Ln
Unity Ln
Shepherd Hills Ct
Hazel Ct
Pine Ct
Lease with Sigora Solar
Lorton Community Center & Library
Tax Map No. 1074 01 0034
Mount Vernon District


Lukens Plaza Shopping Center
Woodlawn Fire Station
Mount Vernon Manor Park
Lease with Sigora Solar
Woodlawn Fire Station
Tax Map No. 1101 01 0028A and
1101 01 0029
Mount Vernon District


Sully Highlands Park
Sully Community Center
Wall Rd
Space Museum Pkwy
Centreville Rd
Lease with Sigora Solar
Sully Community Center
Tax Map No. 0244 0708 A
Sully District

FORM OF
DEED OF ROOF LEASE AGREEMENT
[PROJECT SITE]

BY AND BETWEEN

[FAIRFAX ENTITY]
("LESSOR")

AND

[SOLAR POWER PROVIDER]
("LESSEE")

DATED: _____

DEED OF ROOF LEASE AGREEMENT
[PROJECT SITE]

THIS DEED OF ROOF LEASE AGREEMENT (this "Lease"), dated as of [•] (the "Effective Date"), is made by and between **[FAIRFAX ENTITY]** ("Lessor"), and **[SOLAR POWER PROVIDER]**, a [•] ("Lessee"). Lessor and Lessee may each be referred to herein as the "Party", or collectively as the "Parties", as the usage of such term may require.

RECITALS

WHEREAS, Lessor is the [owner] of that certain building commonly known as [•] (the "Building"), and located at [•], Fairfax County, Virginia (the "Project Site");

WHEREAS, pursuant to that certain Solar Power Purchase Agreement by and between Lessor and Lessee dated as of [•] (as amended, modified, or supplemented from time to time, the "PPA"), Lessor has selected and engaged Lessee to design, install, own, operate, and finance a grid connected solar photovoltaic energy system, as more particularly described in the PPA (the "System"), on the roof of the Building and to sell the Output produced by such System to Lessor, all in accordance with the terms of the PPA;

WHEREAS, in connection with the foregoing, Lessee desires that Lessor lease, and Lessor desires to lease to Lessee, the Demised Premises (as defined below), all in accordance with the terms and conditions set forth herein; and

WHEREAS, capitalized terms not otherwise defined herein shall have the meaning ascribed to them in the PPA.

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants and agreements herein contained, and intending to be legally bound hereby, Lessee and Lessor hereby agree as follows:

1. Lease of Demised Premises; Additional Property Rights.

(a) Demised Premises. Lessor hereby leases to Lessee, in accordance with the terms and conditions set forth herein, up to a maximum of [•] square feet of the roof of the Building, generally as shown on Exhibit A attached hereto and made a part hereof, where the System will be installed, operated and maintained (the "Demised Premises").

(b) Lessee's Ancillary Rights. In connection with Lessor's leasing the Demised Premises to Lessee, Lessor hereby grants to Lessee, for a period co-terminus with this Lease, the non-exclusive right to use portions of access drives, parking lots and other areas of the Project Site as shown on Exhibit B ("Facility Exterior Access"), and access routes in the interior of the Building as shown on Exhibit C ("Facility Interior Access"). Lessor may change the Facility Exterior Access and the Facility Interior Access at any time with reasonable prior Notice to Lessee. The Facility Interior Access and Facility Exterior Access are provided for the purpose of accessing the Demised Premises for installation, operation, maintenance, and decommissioning of the System and to locate any auxiliary equipment necessary to install, operate, or maintain the System on the Demised Premises and for the purposes of interconnecting the System with the Project Site's mechanical and electrical systems as agreed by Lessor and Lessee in accordance with the PPA. Lessee shall not install any improvements that would prevent access to or prevent use of the Building by Lessor or any occupant of the Building, or any holders of easements across the Project Site or any governmental or public utility personnel (e.g., fire, police, public

utility providers, etc.) or other similar parties. Furthermore, Lessee shall utilize the Facility Exterior Access and the Facility Interior Access in a manner as to not unreasonably interfere with the use of the Building and the Building's mechanical and electrical systems by Lessor or any occupant or invitee of the Building.

(c) Signage. Lessee shall not place any signage on or at the Project Site (other than as required by Applicable Law) unless approved in advance in writing by Lessor.

2. Term.

(a) Term. The term of this Lease shall commence on the Effective Date and shall terminate as provided in Section 2.1 of the PPA (the "Term"). The Term may be extended pursuant to Section 2.2 of the PPA.

(b) Termination. Notwithstanding anything contained herein to the contrary, this Lease shall automatically terminate if the PPA is terminated for any reason whatsoever.

(c) Access After Termination. Notwithstanding the foregoing, for a period of [sixty (60)] Days following the expiration or earlier termination of this Lease, Lessee shall have the right to access the Demised Premises for the purpose of decommissioning and removing the System in accordance with Section 8.1 of the PPA. The provisions of this Section 2(c) will survive the expiration or termination of this Lease.

3. Utilities. During the Term, Lessor shall have no obligation to provide any utilities to Lessee for Lessee's use in connection with the installation, operation, and maintenance of the System on the Demised Premises. To the extent that, during the Term, Lessee requires any utilities in connection with the installation, operation, and maintenance of the System on the Demised Premises, Lessee further acknowledges and agrees that Lessee shall be responsible, at its sole cost and expense, for providing or obtaining such utilities and that Lessee's inability to provide or obtain any such utilities shall not relieve Lessee from the performance of Lessee's obligations under this Lease or the PPA.

4. Annual Rent. Commencing on the Effective Date and continuing thereafter for the remainder of the Term, Lessee shall pay to Lessor annual rent for the Demised Premises in the amount of One and No/100 Dollars ($1.00) per year ("Annual Rent"). The Annual Rent for the first year of the Term shall be due and payable by Lessee to Lessor within ten (10) Business Days of the Effective Date, and Annual Rent for each succeeding year of the Term shall be due and payable by Lessee to Lessor, without notice or demand, on or before each anniversary of the Effective Date during the Term. The Annual Rent shall be payable by Lessee to Lessor at the address for the Lessor set forth in the PPA or at such other address as shall be designated in writing by Lessor.

5. System Installation. The System shall be installed in accordance with Section 5 of the PPA.

6. Liens.

(a) To the extent permitted by Applicable Law, all of Lessee's contracts with Subcontractors shall provide that no Lien shall attach to or be claimed against the Demised Premises or any interest therein by Lessee or its Subcontractors as a result of supplying goods or services pertaining to the Demised Premises, and Lessee shall use reasonable efforts to cause all subcontracts let thereunder to contain the same provision.

(b) Lessee shall indemnify and hold Lessor, the Board and Lessor's agents, officers, subcontractors, employees, invitees, and contractors harmless from, and defend against (with legal counsel reasonably acceptable to Lessor) all Losses of every kind, nature, and description which may arise out of or in any way be connected with such work. Lessee shall not permit the Demised Premises to become subject to any mechanics', laborers', or materialmen's lien on account of labor, material or services furnished to Lessee or claimed to have been furnished to Lessee (either directly or through Subcontractors) in connection with work of any character performed or claimed to have been performed for the Demised Premises by, or at the direction or sufferance of Lessee, and if any such Liens are filed against the Demised Premises, Lessee shall promptly and at its cost and expense discharge the same; provided, however, that Lessee shall have the right to contest, in good faith and with reasonable diligence, the validity of any such lien or claimed lien if Lessee shall give to Lessor, within [ten (10)] Business Days after demand, such security as may be reasonably satisfactory to Lessor to assure payment thereof and to prevent any sale, foreclosure, or forfeiture of Lessor's interest in the Demised Premises by reason of non-payment thereof; provided, further, that on final determination of the Lien or claim for Lien, Lessee shall immediately pay any judgment rendered, with all proper costs and charges, and shall have the lien released and any judgment satisfied. If Lessee fails to post such security or does not diligently contest such lien, Lessor may, without investigation of the validity of the lien claim, after [ten (10)] Days' Notice to Lessee, discharge such Lien and Lessee shall reimburse Lessor upon demand for all costs and expenses incurred in connection therewith, which expenses shall include any attorneys' fees and any and all other costs associated therewith, including litigation through all trial and appellate levels and any costs in posting bond to effect a discharge or release of the lien.

(c) Nothing contained in this Lease shall be construed as a consent on the part of Lessor to subject the Demised Premises to liability under any lien law now or hereafter existing.

7. System Operation, Ownership, Use and Removal.

(a) Operation, Maintenance and Removal of System. Lessee shall operate, maintain, decommission, and remove the System in accordance with Section 6 of the PPA and in accordance with all Applicable Laws and in such a manner as will not unreasonably interfere with Lessor's or, if there are any other occupants of the Building, such occupants' operation or maintenance of the Project Site.

(b) Ownership of System. Lessor acknowledges and agrees that (i) notwithstanding that the System may be a fixture under Applicable Laws, as between the Parties, the System shall be deemed to be personal property, and (ii) Lessee is the exclusive owner and operator of the System.

(c) Use of Demised Premises. Lessee shall use the Demised Premises solely for the installation, operation, and maintenance of the System, but for no other uses.

8. Access to Demised Premises.

(a) Subject to the notice and security requirements set forth in Section 9 below, Lessor shall provide Lessee with access to the Demised Premises as reasonably necessary to allow Lessee to perform the Services, including ingress and egress rights through the Building within the Facility Interior Access and across the Project Site within the Facility Exterior Access.

(b) Lessor shall at all times have access to and the right to observe the Services, including without limitation, installation of the System.

(c) During all activities involving the System or the Demised Premises, including but not limited to installation, maintenance, repairs, decommissioning and removal of the System, Lessor's property manager for the Building ("Building Manager") must be present onsite at all times.

(d) Lessee shall have access to the Demised Premises under the following conditions:

(i) Building Access. Lessee's employees, contractors, and Subcontractors must use the front entrance of the Building to obtain access to the Demised Premises.

(ii) Normal Business Hours. During normal business hours [(Monday through Friday 8:00 a.m. – 5:00 p.m.)] for routine maintenance of the System, provided that Lessee shall give the Building Manager at least [seventy-two (72)] hours' prior notice of the need for such access.

(iii) Outside Normal Business Hours; Emergency. Outside normal business hours and in the event of an emergency, Lessee shall contact the Building Manager, who will provide access to the Demised Premises.

(e) Any requested utility outages must be scheduled to occur on Sundays. Requests for outages shall be submitted to the Building Manager a minimum of two (2) weeks in advance of the requested date for the outage for either approval or rejection.

(f) All of Lessee's employees, contractors or agents must park their vehicles in the areas designated by Lessor and shall not park in any loading docks for the Building.

9. Identification, Security and Access Requirements.

(a) Identification. All of Lessee's employees and Subcontractors shall display Lessor-issued identification badges above the waist at all times that such individuals are on the Project Site. Any employee, contractor, or Subcontractor of Lessee who arrives at the Project Site without required identification will be dismissed from the Project Site. All such employees, contractors, and Subcontractors must pass to the satisfaction of Lessor a Fairfax County Criminal History Check. Notwithstanding the foregoing, Lessor disclaims any liability with respect to the accuracy or completeness of the Criminal History Checks. Lessee shall be solely responsible for all costs associated with such identification badges and Criminal History Checks.

(b) Inspection. All supplies, materials, and equipment for use at the Project Site are subject to security inspection by Lessor.

(c) Additional Security and Access Requirements. Lessee shall, and shall cause all of its Subcontractors to, at all times comply with the identification, security, and other access requirements set forth on Exhibit D attached hereto.

(d) Amendments to Security and Access Procedures. Lessor reserves the right to amend and/or update its security and access requirements or procedures relative to the Project Site, including Exhibit D, from time to time upon at least twenty-four (24) hours' Notice to Seller.

10. Insurance. Lessee covenants and agrees, from and after the Effective Date, to carry and maintain, at its sole cost and expense, the insurance required under Section 9 of the PPA.

11. Taxes. Lessee shall pay, on or before the due date thereof, all personal property taxes, business, and license taxes and fees, service payments in lieu of such taxes or fees, annual and periodic license and use fees, excises, assessments, bonds, levies, fees, and charges of any kind which are assessed, levied, charged, confirmed, or imposed by any Governmental Authority due to Lessee's occupancy and use of the Demised Premises (or any portion or component thereof) or the ownership and use of the System thereon, including but not limited to any real property taxes and assessments attributable the System improvements on the Building.

12. Indemnification.

(a) Indemnification. Lessee shall indemnify, defend, and hold harmless Purchaser Indemnified Parties from and against any liability for violations or alleged violation of any Applicable Law and Losses (including claims for property damage and claims for injury to or death of persons, including any claim or amounts recovered under "workers compensation laws" or any other Applicable Laws) arising in connection with, or out of, or resulting from (i) the negligent acts or omissions or willful misconduct of Lessee, its agents, officers, directors, employees, Subcontractors, or contractors; or (ii) the breach by Lessee of any of its obligations under this Lease. The obligation to indemnify shall extend to and encompass all costs incurred by Lessor and any Lessor Indemnitee in defending such claims, demands, lawsuits, or actions, including, but not limited to, attorney, witness, and expert witness fees, and any other litigation related expenses. This provision is intended to apply even if the injury or damage is caused in part by any act or omission or default of Purchaser Indemnified Parties, except that Lessee shall not be required to defend or indemnify Purchaser Indemnified Parties for a Loss to the extent any such Loss results solely from the negligence of a Purchaser Indemnified Party. The provisions of this Section 12(a) will survive the expiration or termination of the Lease.

(b) Exclusion of Certain Damages. EXCEPT FOR LIABILITY IN RESPECT OF (A) LESSEE'S INTENTIONAL OR WILLFUL MISCONDUCT, FRAUD OR RECKLESSNESS OR (B) CLAIMS FOR BODILY INJURY, INCLUDING DEATH, AND DAMAGE TO REAL PROPERTY OR TANGIBLE PERSONAL PROPERTY RESULTING FROM THE NEGLIGENCE OF LESSEE OR ANY AGENT OR EMPLOYEE OF LESSEE, NEITHER PARTY WILL BE LIABLE TO THE OTHER PARTY, IN CONTRACT OR IN TORT (INCLUDING NEGLIGENCE), OR UNDER ANY OTHER LEGAL THEORY (INCLUDING STRICT LIABILITY), FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, EXEMPLARY, CONSEQUENTIAL OR SIMILAR DAMAGES, INCLUDING DAMAGES FOR LOST PROFITS, LOST REVENUES, LOST TAX BENEFITS, OR ENERGY CREDITS, OR INTERRUPTION OF BUSINESS, ARISING OUT OF OR IN CONNECTION WITH THIS LEASE, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH CLAIMS OR DAMAGES.

13. Lessee Default.

(a) The occurrence of any one or more of the following shall constitute an event of default of Lessee (a "Lessee Default"):

(i) The failure of Lessee to pay the Annual Rent or other sums due hereunder that is not cured within [ten (10)] Days after Notice thereof to Lessee;

(ii) Any representation or warranty of Lessee hereunder provides to be false or misleading in any material respect;

(iii) The inability, failure, or refusal of Lessee to perform timely any material obligations under this Lease, unless such failure or refusal is caused by a Force Majeure Event, a Lessor

Default or Purchaser Event of Default; provided, however, such failure continues for [ten (10)] Business Days after Lessor shall have given Notice demanding that such failure to perform be cured; or

(iv) A Seller Event of Default under Section 12 of the PPA, which default continues beyond any applicable notice and cure period contained in the PPA.

(b) Upon the occurrence of a Lessee Default, Lessor shall have the following rights: (i) to terminate this Lease by Notice to Lessee, and (ii) to pursue any other remedy under the PPA or now or hereafter existing at law or in equity. No termination of this Lease resulting from a Lessee Default shall relieve Lessee of its liability and obligations under this Lease, and such liability and obligations shall survive any such termination.

14. Lessor Default.

(a) The occurrence of the following shall constitute an event of default of Lessor (a "Lessor Default"):

(i) The failure of Lessor to perform any material obligations under this Lease, unless such failure is caused by a Force Majeure Event, a Lessee Default or Seller Event of Default; provided, however, such failure continues for [fifteen (15)] Business Days after Lessee shall have given Notice demanding that such failure to perform be cured; or

(ii) A Purchaser Event of Default under Section 12 of the PPA, which default continues beyond any applicable notice and cure period contained in the PPA.

(b) Upon the occurrence of a Lessor Default, Lessee may pursue any remedies it may have under the terms of Section 12 of the PPA.

15. Casualty. Notwithstanding anything to the contrary contained herein, in the event of a casualty or condemnation to all or any portion of the Project Site, Lessor shall have no duty or liability to Lessee to restore the Project Site. If Lessor elects not to restore the Project Site, it shall give Lessee Notice of such election within thirty (30) Days after the occurrence of such casualty or condemnation, and, upon its receipt of such Notice, Lessee may, at its option, elect to terminate this Lease upon Notice to Lessor. Lessor shall be entitled to receive the entire award paid by the condemning authority for the Project Site, without deduction therefrom for any estate vested in Lessee by this Lease, and Lessee shall receive no part of such award.

16. Miscellaneous.

(a) Governing Law. The law of the Commonwealth of Virginia shall govern the validity, interpretation, construction, and performance of this Lease, including the Parties' obligation under this Lease, the performance due from each Party under it and the remedies available to each Party for breach of it. Any jurisdiction's choice of law, conflict of laws, rules, or provisions, including those of the State that would cause the application of any laws other than those of the Commonwealth of Virginia shall not apply.

(b) Assignment. Lessee shall not have the right to assign this Lease, or any of its rights, duties, or obligations hereunder, except in accordance with Section 14.2 of the PPA.

(c) Authority of Purchasing Agent. Lessee acknowledges and agrees that County's Purchasing Agent or his or her duly authorized representative or agent has the sole responsibility and authority to execute this Lease and any amendment or modification hereto on behalf of Lessor. Any

execution, amendment, or modification of this Lease by a Person other than the County's Purchasing Agent or his or her duly authorized representative or agent shall be null and void and of no force and effect.

(d) Dispute Resolution.

(i) County Purchasing Resolution. All claims, disputes, controversies, causes of action and other matters involving a question of fact between the Parties arising out of or relating to this Lease (collectively or individually, the "Dispute") which is not disposed of by the applicable terms of this Lease shall be decided by the County Purchasing Agent, who shall reduce his or her decision to writing and mail or otherwise forward a copy thereof to Lessee within ninety (90) Days. The decision of the County Purchasing Agent shall be final and conclusive unless Lessee appeals within six (6) months of the date of the final written decision by instituting legal action as provided in the Code of Virginia. Lessee may not institute legal action prior to receipt of the County Purchasing Agent's decision on the Dispute, unless the County Purchasing Agent fails to render such decision within the time specified. Lessee shall not institute any legal action until all statutory requirements have been met.

(ii) Venue. Any and all Disputes arising out of or in connection with this Lease or any performance hereunder, shall be brought in the Circuit Court of Fairfax County, Virginia or in the United States District Court, Eastern District of Virginia, Alexandria Division.

(e) Due Authorization. Each Party represents and warrants to the other Party that it (i) has been duly authorized to enter into this Lease by all necessary action, and (ii) the execution and delivery of this Lease and the performance by such Party of its obligations hereunder will not result in a default under any agreement to which it is a party.

(f) Notices. Notices shall be given in accordance with Section 14.6 of the PPA.

(g) Successors and Permitted Assignees. This Lease is binding on and inures to the benefit of successors and permitted assignees.

(h) Survivability. Any term, condition, covenant, or obligation that requires performance by a Party subsequent to termination or expiration of this Lease, whether specifically identified herein or not, shall remain enforceable against such Party subsequent to such termination or expiration.

(i) Negotiated Terms. The Parties agree that the terms and conditions of this Lease are the result of negotiations between the Parties and that this Lease shall not be construed in favor of or against any Party by reason of the extent to which any Party or its professional advisors participated in the preparation of this Lease.

(j) Further Assurances. Each Party agrees to, and shall use all reasonable efforts to, provide such information, execute, and deliver any instruments and documents and take such action as may be reasonably necessary or reasonably requested by the other Party that are not inconsistent with the provisions of this Lease and which do not involve the assumption of obligations other than those provided for in this Lease in order to give full effect to this Lease and to carry out the intent of this Lease.

(k) Waivers. No delay in exercising or failure to exercise any right or remedy accruing to or in favor of either Party shall impair any such right or remedy or constitute a waiver thereof. Every right and remedy given hereunder or by Applicable Law may be exercised from time-to-time and as often as may be deemed expedient by the Parties. Neither this Lease nor any provision hereof may be

changed, modified, amended, or waived except by a written instrument signed by a duly authorized officer of the Party against whom enforcement of such change, modification, amendment, or waiver is sought. If any representation, warranty, or covenant contained in this Lease is breached by either Party and thereafter waived by the other Party, such waiver shall be limited to the particular breach so waived and shall not be deemed to waive any other breach under this Lease.

(l) Relationship of the Parties. Nothing in this Lease shall be deemed to constitute either Party a partner, agent, employee, or legal representative of the other Party or to create any fiduciary relationship between the Parties. In addition, nothing in this Lease shall be deemed or construed as creating any contractual relationship between any Subcontractor and Lessor. The Parties agree that Lessee shall be fully responsible for the acts and omissions of any Subcontractor.

(m) Entire Agreement. This Lease, the recitals herein, together with the Exhibits attached to this Lease and the PPA, constitutes the entire and complete agreement and commitment of the Parties with respect to this Lease. All prior or contemporaneous understandings, arrangements, negotiations, or commitments, or any or all of the foregoing with respect to this Lease, whether oral or written, have been superseded by this Lease and the PPA.

(n) Amendments. No amendment, modification, or change to this Lease shall be effective unless the same shall be in writing and duly executed by an authorized person of each Party, which, in the case of Lessor, shall be by [County Purchasing Agent], or his or her duly authorized representative or agent, consistent with Section 16(c).

(o) No Third-Party Beneficiaries. Except as otherwise expressly provided herein, this Lease and all rights hereunder are intended for the sole benefit of the Parties hereto, and the Financing Parties to the extent provided in the PPA or in any other agreement between a Financing Party and Lessee or Lessor, and do not imply or create any rights on the part of, or obligations to, any other Person.

(p) Headings. Captions and headings in this Lease are for convenience of reference only and do not constitute a part of this Lease.

(q) Counterparts. This Lease may be executed in more than one counterpart, each of which shall be deemed an original, and all of which shall constitute one and the same agreement.

(r) Severability. If any provision, portion, or application of this Lease is, for any reason, held to be invalid, illegal, or unenforceable in any respect by any court of competent jurisdiction, the Parties shall negotiate in good faith and agree to such amendments, modifications, or supplements of or to this Lease or such other appropriate actions as shall, to the maximum extent practicable, in light of such determination, implement, and give effect to the intentions of the Parties as reflected herein, and the other terms of this Lease, as so amended, modified, supplemented, or otherwise affected by such action, shall remain in full force and effect.

(s) Liability of Officers and Employees. No member of the Board nor any director, officer, agent, consultant, representative, or employee of either Party shall be charged personally by the other or held contractually liable thereto under any term or provision of this Lease, because of either Party's execution or attempted execution of this Lease or because of any breach or alleged breach thereof; provided, however, that all Persons remain responsible for any of their own criminal actions.

(t) No Conflict of Interest. Lessee shall not enter into any agreements that would conflict with Lessee's performance of its obligations under this Lease, or the other transactions contemplated herein, without receiving prior written authorization from Lessor.

(u) Authorization to Conduct Business in the State. At all times during the Term, Lessee shall be authorized to transact business in the State as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia, as amended, or as otherwise required by law. Lessee shall not allow its existence to lapse or its certificate of authority or registration to transact business in the State, if so required under Title 13.1 or Title 50 of the Code of Virginia, as amended, to be revoked or cancelled at any time during the Term.

(v) Immigration Reform and Control Act. Lessee represents and warrants to Lessor that it does not, and Lessee covenants that it shall not during the performance of the Lease, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.

(w) Estoppel Certificates. Lessor and Lessee shall execute and deliver to each other, within [fifteen (15)] Business Days after receipt of a written request therefore, a certificate evidencing whether or not (i) this Lease is in full force and effect; (ii) this Lease has been modified or amended in any respect and describing such modifications or amendments, if any; and (iii) there are any existing defaults thereunder to the knowledge of the party executing the certificate, and specifying the nature of such defaults, if any. If either Party shall fail to deliver said certificate within fifteen (15) business days from request therefor it shall be concluded that this Lease is in full force and effect, unmodified and without default.

(x) Remedies Cumulative. No remedy herein conferred upon or reserved to Lessee or Lessor shall exclude any other remedy herein or by law provided, but each shall be cumulative and in addition to every other remedy given hereunder or now or hereafter existing at law or in equity or by statute.

(y) Attorneys' Fees. Lessee shall bear its own attorneys' fees, costs, and expenses in connection with negotiating and/or reviewing this Lease, including any amendments, and any additional documents relating to the System.

(z) Brokers. Each Party represents and warrants to the other Party that it has not engaged or had any conversations or negotiations with any broker, finder, or other third party concerning the leasing of the Demised Premises to Lessee who would be entitled to any commission or fee based on the execution of this Lease.

(aa) Time is of the Essence. Time is of the essence of this Lease.

(bb) Memorandum. Lessor and Lessee agree that at the request of either, each will execute a short form memorandum of this Lease in form satisfactory for recording in the Clerk's Office that shall be recorded on or promptly following the Effective Date at the cost of the Party seeking to record the same. Upon the expiration or earlier termination of this Lease, the Parties shall promptly execute any release or termination that may be required to release such memorandum of record.

(cc) Deed of Lease. The Parties intend for this Lease to be deemed a deed of lease and a conveyance of a leasehold interest real property by a sealed writing pursuant to Virginia Code Sections 55-2 and 11-3.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have executed this Lease on the day and year first above written.

LESSOR:

[FAIRFAX ENTITY]

By: _____(SEAL)
Name: _____
Title: _____

LESSEE:

[SOLAR POWER PROVIDER],
a _____

By: _____(SEAL)
Name: _____
Title: _____

[Signature Page to Deed of Roof Lease Agreement (PROJECT SITE)]

EXHIBIT A

ROOFTOP SURVEY DEPICTING DEMISED PREMISES

[TO BE ATTACHED]

EXHIBIT B

DEPICTION OF FACILITY EXTERIOR ACCESS

[TO BE ATTACHED]

EXHIBIT C

DEPICTION OF FACILITY INTERIOR ACCESS

[TO BE ATTACHED]

EXHIBIT D

ADDITIONAL SECURITY/ACCESS REQUIREMENTS

[**FOR PUBLIC SAFETY AND JUDICIAL FACILITIES**: Security Requirements for Public Safety and Judicial Facilities. The following additional security requirements shall apply for access to the Demised Premises:

(i) All of Lessee's employees, contractors, and Subcontractors must pass to the satisfaction of Lessor an additional criminal history check, which will be processed by the Fairfax County Police Department of Fairfax County Sheriff's Department ("Sheriff's Department").

(ii) Lessee must be accompanied by a representative of Lessor; however, Lessee must be accompanied by personnel from the Sheriff's Department if passage through a secured area of the Building is necessary.

(iii) If the Sheriff's Department places the Building under lockdown as a result of a security threat, Lessee shall not have access to the Building or Demised Premises and any of Lessee's agents or contractors within the Building and/or Demised Premises may be asked to immediately leave without gathering any equipment or personal belongings.]

[**FOR PUBLIC SCHOOLS**: Security Requirements for Public Schools.

(i) Lessee certifies to Lessor as follows:

(A) No employee, contractor or Subcontractor of Lessee who will have direct contact with students has been convicted of a felony or any offense involving the sexual molestation or physical or sexual abuse or rape of a child; and

(B) Unless prior Notice has been given to Lessor, no employee, contractor or Subcontractor of Lessee who has been convicted of a crime of moral turpitude will have direct contact with students.

(ii) The foregoing certifications shall be binding on Lessee throughout the Term, and Lessee hereby covenants and agrees to provide Lessor and Fairfax County Public Schools ("FCPS") with immediate Notice of any event or circumstance that renders such certification untrue. Lessee hereby covenants and agrees that it will require this certification to be included in all contracts or subcontracts that Lessee enters into related to the Project Site in order that the provisions contained herein shall be binding on each contractor and Subcontractor.

(iii) Lessee will ensure that no employees, contractors, or Subcontractors shall perform any work as prescribed under this Lease or the PPA in occupied areas of the Project Site during school hours unless FCPS has previously agreed to such work in writing and proper safety precautions have been exercised to isolate the area of any such work.

(iv) All of Lessee's employees, contractors, and Subcontractors shall check in and out at the main office for the Building each day and shall wear any additional identification badges as may be required. All such employees, contractors, and Subcontractors are required to present photo identification upon request. Lessee shall also provide all such employees, contractors, and Subcontractors with a form of identification reflecting their employment status with Lessee, and displaying such individual's name and photograph.

(v) Alcoholic beverages, illegal drugs and weapons are prohibited at the Project Site and shall constitute ground for immediate removal from the Project Site. The Lessee shall ensure that neither its employees, nor those of any contractor or Subcontractor, shall fraternize in any manner with any student of FCPS at the site of the Project. Lessor shall have the right to remove from the Project Site any person whose presence Lessor deems detrimental to the best interests of the FCPS. Any individual who is removed from the Project Site pursuant to this Section may not return to the Project Site or any other FCPS site without prior written permission from FCPS.]

Board Agenda Item
March 9, 2021

4:00 p.m.

Public Hearing to Convey Board-Owned Property at the Franconia Governmental Center to the Fairfax County Redevelopment and Housing Authority (Lee District)

ISSUE:
Public hearing regarding the conveyance of Board-owned property located at the Franconia Governmental Center to the Fairfax County Redevelopment and Housing Authority (FCRHA).

RECOMMENDATION:
The County Executive recommends that the Board authorize staff to convey certain Board-owned property at the Franconia Governmental Center to the FCRHA.

TIMING:
On February 9, 2021, the Board authorized the advertisement of a public hearing to convey certain Board-owned property at the Franconia Governmental Center to the FCRHA.

BACKGROUND:
The Board of Supervisors is the owner of five parcels of land located at 6121 Franconia Road and identified as Tax Map Nos. 0813 05 0002A, 0002B, 0002C1 and 0003A and Tax Map No. 0813 08 0503 (Property). The approximately 3.25-acre property is improved with the Franconia Governmental Center, a 25,800 square foot building constructed in 1992 that incorporates three facilities: the Lee District Supervisor's Office, the Franconia Police Station and the Franconia Museum. With limited parking and an interior layout that is ill-suited for police operations, the building is functionally obsolete. Consequently, the facilities that are housed therein are slated to be relocated to a new governmental complex in Kingstowne that will also include the library and active adult center that are currently in leased space as well as a new childcare facility and community meeting rooms (Kingstowne Governmental Center).

To leverage the vacant Property after relocation of the existing facilities, the FCRHA is evaluating measures to partner with a private developer pursuant to the terms of the Public-Private Education Facilities and Infrastructure Act of 2002 (PPEA), or through other development means, to expand the County's affordable housing portfolio by constructing a multi-unit structure on the Property. The creation of a new housing

development for individuals with low to moderate incomes (the Project) may require an amendment to the Comprehensive Plan and a rezoning of the site to allow for multifamily residential development at the site. These future land use and zoning actions will be evaluated by County staff and reviewed at public hearings by both the Planning Commission and the Board. The public will be afforded several opportunities during the review process to comment on the design of the Project and its possible impacts on the surrounding communities. Initial public outreach efforts are expected to begin as soon as the developer selection process is completed.

Before the conveyance of the Property occurs, staff for the Board and FCRHA will negotiate the terms of a memorandum of agreement that will enable the Board to continue to use the Property for its existing uses, at the Board's cost, until these uses are relocated to the Kingstowne Governmental Center.

Staff recommends that the conveyance of the Property to FCRHA be subject to the condition that the parcels must be used in connection with the Project. In the event the FCRHA no longer pursues the Project, the FCRHA will transfer ownership of the properties back to the Board. Staff recommends that any public utilities located on the property that are owned and maintained by County agencies, such as sanitary sewers and stormwater management facilities and structures, continue to be owned and maintained by the County.

FISCAL IMPACT:
None

ENCLOSED DOCUMENTS:
Attachment 1 – Location Map
Attachment 2 – Resolution

STAFF:
Joseph M. Mondoro, Chief Financial Officer
Christopher A. Leonard, Deputy County Executive
Thomas E. Fleetwood, Director, Department of Housing and Community Development
José A. Comayagua, Director, Facilities Management Department
Mike Lambert, Assistant Director, Facilities Management Department

ASSIGNED COUNSEL:
Alan M. Weiss, Assistant County Attorney

ATTACHMENT 1



ATTACHMENT 2

RESOLUTION

At a regular meeting of the Board of Supervisors of Fairfax County, Virginia, held electronically (due to the State of Emergency caused by the COVID-19 pandemic), on Tuesday, March 9, 2021, at which a quorum was present and voting, the following resolution was adopted:

WHEREAS, the Board of Supervisors owns land in Lee District known as the Franconia Governmental Center located at 6121 Franconia Road and identified as Tax Map Nos. 0813 05 0002A, 0002B, 0002C1 and 0003A and Tax Map No. 0813 08 0503 (the Franconia Governmental Center),

WHEREAS, the facilities and functions housed in the Franconia Governmental Center will be relocated to a new building called the Kingstowne Governmental Center;

WHEREAS, Fairfax County Redevelopment and Housing Authority (FCRHA) has requested that the Board of Supervisors transfer the Franconia Governmental Center to the FCRHA for incorporation into a future affordable housing development,

WHEREAS, the Board finds that it would be in the best interest of the residents of Fairfax County to convey the real property as described above to the FCRHA.

NOW, THEREFORE, upon public hearing duly advertised according to law, it is **RESOLVED** that the County Executive is hereby authorized to execute all necessary documents to convey the real property described above to the FCRHA.

A Copy Teste:

_____
Jill G. Cooper
Clerk for the Board of Supervisors

Board Agenda Item
March 9, 2021

4:00 p.m.

Public Hearing on a New and Modernized Zoning Ordinance to Replace the Current Zoning Ordinance

ISSUE:
With the assistance of consultant services, staff has prepared a new, modernized Zoning Ordinance to replace the current Zoning Ordinance in its entirety. The Zoning Ordinance regulates the use of land in the County in accordance with State Code to promote the health, safety, and general welfare of the public and to implement the Comprehensive Plan. The proposed new Ordinance is presented in a modernized format and structure with tables and illustrations, uses plain language that is easily understandable, and updates land uses and their associated regulations.

PLANNING COMMISSION RECOMMENDATION:
The Planning Commission held a public hearing on January 28, 2021, and deferred the decision to February 10, 2021. The Planning Commission also held a public hearing on the proposed changes to flags and flagpoles on February 10, 2021, which will be included in the public hearing on the new Zoning Ordinance before the Board. On February 10, 2021, the Planning Commission deferred their decision on the new and modernized Zoning Ordinance as well as the proposed changes to flags and flagpoles to February 24, 2021. On February 24, 2021, the Planning Commission deferred their decision to March 3, 2021. Staff will provide the Planning Commission recommendation prior to the March 9, 2021, public hearing.

RECOMMENDATION:
The County Executive recommendation will be provided prior to the March 9, 2021, public hearing.

TIMING:
The Board of Supervisors authorized advertisement of the public hearings on December 1, 2020. The Planning Commission held a public hearing on January 28, 2021, and deferred its decision to February 10, 2021. On February 10, 2021, the Planning Commission also held a public hearing on proposed changes to flags and flagpoles. On February 10, 2021, the Planning Commission deferred its decision on the new and modernized Zoning Ordinance as well as the proposed changes to flags and flagpoles to February 24, 2021. On February 24, 2021, the Planning Commission deferred its decision to March 3, 2021. It is anticipated that the new Zoning Ordinance will have a delayed effective date of July 1, 2021.

Board Agenda Item
March 9, 2021

BACKGROUND:
The Zoning Ordinance Modernization project (zMOD) has been included on the Zoning Ordinance Amendment Work Program since 2016. The goals of this project are to modernize the County's Zoning Ordinance, to make the regulations easier for all stakeholders to understand, to modernize uses, and to remove inconsistencies, gaps, and ambiguities that have found their way into the Ordinance since initial adoption of the current Ordinance in 1978. In addition to creating a new, more intuitive format and organization, creating new graphics, and editing the text for readability, this Phase I of the modernization effort has focused on certain revisions to the uses, including adding new use names, consolidating uses, creating new uses where appropriate, developing updated definitions, and making revisions to some of the use regulations. Fewer non-editorial changes are proposed to the other parts of the Ordinance. Certain additional substantive changes are expected to be the focus of Phase II updates (such as an amendment to the parking regulations, which is a separate topic on the Work Program) and which will undergo their own community outreach and engagement processes. After adoption, the Ordinance will be made available in a new online format that will be responsive to different types of devices from a cell phone to a tablet and desktop.

The proposed Zoning Ordinance consolidates the current 20 articles and six appendices into nine articles and one appendix. An overview of the content included in the new articles is provided below:

Article 1 – General Provisions

Article 1 lays the groundwork for the Ordinance, including the enabling legislation, the structure, and the purpose statements.

Article 2 – Zoning Districts

Article 2 includes the specific zoning districts and associated regulations, including aerial imagery and tables describing key lot and building dimension standards (e.g., height and setbacks).

Article 3 – Overlay and Commercial Revitalization Districts

Article 3 incorporates information currently located in Article 7 and separate appendices into the body of the Ordinance. Regulations related to Historic Overlay Districts, Commercial Revitalization Districts, and other overlays are included in this article.

Article 4 – Use Regulations

Article 4 includes all land uses, how they are permitted in the various zoning districts, and their associated use regulations. This article contains revisions from today's regulations, including new and consolidated uses, changes in some permissions, and revisions to use-specific standards that, depending on the use, may change the way that the use is established in the various zoning districts.

The proposed Ordinance arranges uses into two use tables, which are organized according to a three-tiered hierarchy. The new structure groups similar uses together as follows:

- Use Classifications: Each use is grouped under one of seven broad classifications: Agricultural; Residential; Public, Institutional, and Community; Commercial; Industrial; Accessory; and Temporary.

- Use Categories: Categories are subgroups within each use classification that have common functional or physical characteristics. For example, the Recreation and Entertainment category falls under the Commercial Uses classification, and the Household Living category falls under the Residential Uses classification.

- Uses: Uses are the specific land uses that can be established within a category, such as a Banquet or Reception Hall within the Recreation and Entertainment category or a Stacked Townhouse within the Household Living category.

There is a use table for the conventional districts and one for the planned districts. In both tables, the uses are listed along the left-hand column and ultimately will be hyperlinked to their definitions. Along the right-hand column, the use-specific standards are listed and will also be hyperlinked. Each district is listed across the top, and the planned district table further distinguishes principal and secondary uses, as well as the areas for the PRC District.

Since the publication of the November 24, 2020, Public Hearing Draft, a new subsection on flags and flagpoles has been added to Article 4. Under these provisions, flagpoles and monuments would no longer be exempt from maximum height regulations, and additional standards limiting the height, location, number, and size of flags and flagpoles have been included. The definition of a flag, included in Article 9, has also been revised. These changes are described in detail in Attachment 3.

Article 5 – Development Standards

The new Article 5 includes sections on the following topics:

- Lot, Bulk, and Open Space Regulations (including setbacks and permitted extensions)
- Affordable Dwelling Unit Program
- Earthborn Vibration Standards
- Water and Sewer Facility Requirements
- Grading, Erosion, Sediment Control, and Drainage
- Floodplain Regulations
- Common Open Space and Improvements
- Private Streets
- Landscaping and Screening

- Outdoor Lighting

Most of the current Zoning Ordinance provisions have been carried forward without substantive change, including the Affordable Dwelling Unit program.

Article 6 – Parking and Loading

This article includes the parking and loading standards from the current Article 11. Parking rates have been updated where needed to correspond to the new uses. A review of parking rates will take place as a separate amendment.

Article 7 – Signs

This article carries forward without any substantive changes the current sign regulations that were adopted in March 2019.

Article 8 – Administration, Procedures, and Enforcement

Article 8 includes the following sections:

- Review Procedures
- Submission Requirements
- Fee Schedule
- Review and Decision-Making Bodies
- Nonconformities
- Condominiums, and Condominium and Cooperative Conversions
- Enforcement, Violations, and Penalties

The standards have been reorganized from the current Ordinance to bring together related provisions and reduce repetition where possible.

Article 9 – Definitions and Ordinance Interpretation

Article 9 includes interpretations of words and terms used in the Ordinance, a list of abbreviations, and the definitions. All land uses are defined, as opposed to the current Ordinance, where only some of the uses are defined. The use definitions have been simplified where appropriate and any detailed regulations are contained in the use-specific standards. This approach, along with the classification and category structure, will assist with general understanding of the regulations as well as in issuing use determinations as the market develops new uses.

Appendix 1 – Provisions Relating to Previous Approvals

Unlike the appendices to the current Ordinance, Appendix 1 will not be part of the Ordinance but is provided for reference to include the general and specific provisions for when uses and structures are allowed to continue under the regulations of previous approvals.

A more detailed discussion of the proposed changes is contained in the November 24, 2020, Executive Summary included as Attachment 1. Additional edits were made

subsequent to the release of the November 24, 2020, draft to incorporate additional comments received from stakeholders and to make clarifying edits. These changes are described in two memorandums to the Planning Commission dated January 19, and February 17, 2021, included as Attachment 2. The February 17, 2021, memo also contains a link to an annotated version with footnotes. More information about the proposed changes for flags and flagpoles is contained in the report included as Attachment 3. A link to the proposed new Ordinance is provided as Attachment 4.

OUTREACH:
Extensive public outreach has been a hallmark of the zMOD project, which has employed a variety of ways to inform and engage the public. The feedback received during outreach has resulted in many substantive revisions to the proposed Ordinance.

- **Meetings** – Both in-person and remote meetings have been conducted by the consultant, Clarion Associates, and by County staff throughout the process and will continue until the Board's public hearing and decision on the revised Ordinance. There have been meetings for the general public, as well as presentations to specific community groups, including land use committees in all nine magisterial districts. Certain meetings have been streamed live on Facebook to provide an avenue for participation for those who could not attend in person, and those videos are archived on the zMOD website. Presentations have been given to elected and appointed officials, including the Board of Supervisors' Land Use Policy Committee, the Planning Commission's Land Use Process Review Committee, the Board of Zoning Appeals, the Architectural Review Board, and the History Commission. Videos of the Board of Supervisor's Land Use Policy Committee are available online.
- **Website** – zMOD has a dedicated website that includes contact information and posted drafts, presentations, and videos, and lists of previous and upcoming meetings.
- **Email** – zMOD has a dedicated email address. Many comments have been submitted to this email address, and staff responds to questions raised. zMOD also has an email Listserv for announcements.
- **Social Media and Channel 16** – Notices of the release of drafts, upcoming meetings, and surveys have been posted to Facebook and Nextdoor. The zMOD project has also been featured on Channel 16 through a public service announcement on the Consolidated Draft, as well as twice on the Planning Commission Roundtable show.
- **Videos** – Clarion Associates created videos that provide an overview of the individual releases of the use regulations. Videos for the Consolidated Draft are available in English and Spanish. Channel 16 created videos to summarize and accompany the surveys for accessory living units and home-based businesses.
- **Newsletters** – Information about drafts and meetings has been included in the Supervisor's individual newsletters.

- **Surveys** – An initial survey about ways to improve the current Ordinance was conducted in early 2018 and the results were posted on February 26, 2018. This spring, surveys were conducted on accessory living units and home-based businesses; information about these survey results was included in a memorandum to the Board and posted on the zMOD website.
- **Work Groups** – Three informal work groups (one each for citizens, industry, and land use attorneys) have been created to provide a sounding board for continued discussions. These members also serve as liaisons with their other community groups and contacts to help disseminate project information.

REGULATORY IMPACT:
As noted above, the proposed new Ordinance will replace the current Zoning Ordinance in its entirety. Most of the provisions of the current Ordinance are carried forward in the revised format. Instances where there are substantive changes are highlighted in the Executive Summary included in Attachment 1 and the Memorandum in Attachment 2.

FISCAL IMPACT:
The fiscal impacts of this effort are difficult to quantify. The modernized Ordinance will be easier for staff, residents, businesses and industry, and other stakeholders to understand and implement. The more easily understandable regulations may save staff time in interpreting the Ordinance, as well as responding to stakeholder inquiries, allowing additional time to be spent on daily zoning work. No fee increases are proposed, although several fees are proposed to be reduced to align with other similar fees. The application fee to amend a previously approved rezoning to delete land area is proposed to be reduced from ½ to ¼ of the applicable fee. In addition, the following three special exception application fees are proposed to be reduced from $16,375 to $8,180: an addition to or replacement of an existing single family detached dwelling in a floodplain; congregate living facility; and quasi-public park, playground, or athletic field. A special exception application for a Waiver of Certain Sign Regulations is proposed to be reduced from $16,375 to $8,260 to match the current fee for a Comprehensive Sign Plan application. In the past three years, there have been 14 of these types of special exception applications.

The new home-based business use consolidates the current administrative home occupation permit and the special permits for a home professional office and a barbershop or beauty parlor in the home. The proposed use could be approved administratively if it meets the applicable standards or by special permit to exceed certain standards. The administrative permit is proposed to be $100, which is an increase from the current $50 home occupation permit. The $16,375 special permit fee for a home professional office and a barbershop or beauty parlor in the home is proposed to be reduced to $435 to be in line with other special permits that generally apply to individual homeowners. The proposed $200 administrative permit for an interior

accessory living unit is a reduction from the current special permit fee of $435. The proposed revisions to the standards for accessory living units may result in an increase in the number of administrative permits and inspections. Staff anticipates that initially any increase in staff time can be accommodated within current resources.

In addition, the cost to put the Ordinance in an online, searchable, interactive platform is anticipated to be a one-time fee of approximately $67,000 and an annual fee of $7,000.

The potential revenue impacts will be minor, assuming the Board adopts the fee levels recommended by staff. Once implemented, staff will continue to monitor revenues in collaboration with the Department of Management and Budget, and will adjust budgeted revenues, if necessary.

ENCLOSED DOCUMENTS:
Attachment 1 – The Executive Summary dated November 24, 2020, can be found online at: https://www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/documents/zmod/executive-summary.pdf
Attachment 2 – The Memorandum dated January 19, 2021, can be found online at: https://www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/documents/zmod/pc-zmod-memo-1-19.pdf, and the Memorandum dated February 17, 2021, including a Link to Annotated Proposed Ordinance can be found online at: https://www.fairfaxcounty.gov/planning-development/sites/planning-development/files/Assets/documents/zmod/PC%20Memo_2021-02-17.pdf#page=1
Attachment 3 – The Flags and Flagpoles Report can be found online at: https://www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/documents/zmod/flags-flagpoles.pdf
Attachment 4 – The Proposed Zoning Ordinance can be found online at: https://www.fairfaxcounty.gov/planning-development/sites/planning-development/files/assets/documents/zmod/phd-2-17-2021.pdf#page=1
Attachment 5 – The Planning Commission Verbatim (to be provided prior to March 9, 2021) can be found online at: https://www.fairfaxcounty.gov/planningcommission/verbatim-home

STAFF:
Rachel Flynn, Deputy County Executive
Barbara Byron, Director, Department of Planning and Development (DPD)
Leslie B. Johnson, Zoning Administrator, DPD
Carmen Bishop, Deputy Zoning Administrator, DPD
Casey Judge, Senior Planner, DPD

ASSIGNED COUNSEL:
David Stoner, Deputy County Attorney
Laura S. Gori, Senior Assistant County Attorney

Board Agenda Item
March 9, 2021

4:00 p.m.

CLOSED SESSION:

(a) Discussion or consideration of personnel matters pursuant to Virginia Code § 2.2-3711(A) (1).

(b) Discussion or consideration of the acquisition of real property for a public purpose, or of the disposition of publicly held real property, where discussion in an open meeting would adversely affect the bargaining position or negotiating strategy of the public body, pursuant to Virginia Code § 2.2-3711(A) (3).

(c) Consultation with legal counsel and briefings by staff members or consultants pertaining to actual or probable litigation, and consultation with legal counsel regarding specific legal matters requiring the provision of legal advice by such counsel pursuant to Virginia Code § 2.2-3711(A) (7).

1. *CoxCom, LLC d/b/a Cox Communications Northern Virginia v. Fairfax County and Board of Supervisors of Fairfax County*, Case No. CL-2019-0005800 (Fx. Co. Cir. Ct.); *Board of Supervisors of Fairfax County, Virginia and Fairfax County, Virginia v. CoxCom, LLC d/b/a Cox Communications Northern Virginia*, Case No. CL-2019-0006603 (Fx. Co. Cir. Ct.)

2. *Fairfax County Police Department and Colonel Edwin C. Roessler Jr., v. Harrison Neal, Record No. 191129; Harrison Neal v. Fairfax County Police Department and Colonel Edwin C. Roessler Jr.,* Record No. 191127 (Va. Sup. Ct.)

3. *Jose Salazar, by GEICO (subrogee) v. Johnny Cleveland*; Case No. GV20-001059 (Fx. Co. Gen. Dist. Ct.)

4. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Bijun Chen and Hongbing Song,* Case No. CL-2020-0014698 (Fx. Co. Cir. Ct.) (Dranesville District)

5. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Lecia A. Reeve,* Case No. CL-2020-0008873 (Fx. Co. Cir. Ct.) (Dranesville District)

6. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Ronald Charles Hall*, Case No. CL-2020-0020427 (Fx. Co. Cir. Ct.) (Hunter Mill District)

7. *Elizabeth Perry, Property Maintenance Code Official for Fairfax County v. Ben Thomas,* Case No. CL-2020-0008874 (Fx. Co. Cir. Ct.) (Hunter Mill District)

8. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Richard M. Cole,* Case No. GV20-014557 (Fx. Co. Gen. Dist. Ct.) (Hunter Mill District)

9. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Wiehle Reston East Ventures, LLC,* Case No. GV20-012762 (Fx. Co. Gen. Dist. Ct.) (Hunter Mill District)

10. *Elizabeth Perry, Property Maintenance Code Official for Fairfax County v. Abderrahmane Hidara, Lalla Kantour, and Yamina Aanzaoui*, Case No. CL-2020-0014881 (Fx. Co. Cir. Ct.) (Mason District)

11. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Olympia Centre, LLC,* Case No. CL-2021-0001485 (Fx. Co. Cir. Ct.) (Mason District)

12. *Leslie B. Johnson, Fairfax County Zoning Administrator v. Richard F. Peredo*, Case No. CL-2020-0013577 (Fx. Co. Cir. Ct.) (Mason District)

13. *Leslie B. Johnson, Fairfax County Zoning Administrator v. U-Haul Real Estate Company,* Case No. CL-2021-0002114 (Fx. Co. Cir. Ct.) (Mason District)

14. *Hollin Hills Park Preservation v. Civic Association of Hollin Hills, Augustine J. Matson, Patrick K. Kelly, and Board of Supervisors of Fairfax County, Virginia*, Case No. CL-2021-000848 (Fx. Co. Cir. Ct.) (Mount Vernon District)

15. *Leslie B. Johnson, Fairfax County Zoning Administrator v. 8221 Old Courthouse Road, L.C.,* Case No. CL-2021-0001788 (Fx. Co. Cir. Ct.) (Providence District)

16. *Leslie B. Johnson, Fairfax County Zoning Administrator, and Elizabeth Perry, Property Maintenance Code Official for Fairfax County v. Maeen Al-Huraibi*, Case No. CL-2020-0008402 (Fx. Co. Cir. Ct.) (Springfield District)

17. *Elizabeth Perry, Property Maintenance Code Official for Fairfax County, Virginia v. Samuel A. Velasquez,* Case No. CL-2019-0002543 (Fx. Co. Cir. Ct.) (Sully District)