TOWN OF FAIRFAX

EMERALD ASH BORER STUDY

DECEMBER 2013

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SUBJECTIVE: EMERALD ASH BORER (EAB)

The Emerald Ash Borer is a wood-boring beetle that kills all types of North American ash trees. It was first detected in the Detroit/Windsor areas in 2002. It arrived from Asia in wooden shipping material. The EAB starves ash trees of nutrients and water by tunneling under the bark. As of 2014, the insect has been found in isolated pockets surrounding Vermont, Massachusetts, New York, New Hampshire and Quebec. As of 2/3/14, no detection has been made in Vermont, but it is probably inevitable that it will eventually be found in our communities. The insect causes almost 100% mortality of all native ash species within approximately 10 years. It also often goes undetected for several years until mortality starts to be widespread and therefore more noticeable.

There are three varieties of Ash trees in Vermont: The White ash; Fraxinus ameicana, Green ash; Fraxinus pensylvanica and Black ash: Fraxinus nigra, all commonly found along the public road Right-of-Ways and often planted in public spaces. Mountain ash (Sorbus spp.), not a true ash, is unaffected. EAB is known to attack both healthy and declining ash trees and can infest branches as small as one inch in diameter. Left on its own, EAB can travel ½ mile to several miles per year during its flight period.

The Emerald Ash Borer preparedness plan, which has been developed with the assistance of Mr. Doug Reaves of the UVM, Forest Pest, 1st detector, and the Fairfax Boy Scouts, is designed to provide a plan to address the public safety concerns and minimize the impact to the town by developing an inventory along the right-of-way of public roads and a plan of action by the Highway Department to monitor and take action on trees that need to be addressed.

The roadside removal of ash trees is to remove a safety hazard and to minimize the financial burden to the community. The Department of Forests, Parks and Recreation discourages preemptive salvage of ash in the forest, and will not approve any Use value Appraisal plan that recommends such treatment. Where safety is not the primary concern, the department feels the value of ash remaining in the forest is greater than the value of the wood product that may be lost. Lowering the percentage of ash, or harvesting the largest diameter as in a woodlot may be allowed if done in conjunction with other forest management activities. Allowing the ash to respond in the natural environment can only happen if ash remains a component of the landscape.

The best way to prevent the EAB from entering into a community is to *not move firewood.* The larval stage of the insect is the damaging factor, and this stage remains under the bark of ash for most of the year. If firewood is moved from an infected area the larvae will emerge as an adult from the firewood in the spring, it mates, lays eggs in living tress and the destruction begins.

Fairfax has a 100-acre woodlot in North Fairfax which is currently being developed with walking trails and other recreational uses. The Recreation Department, under the leadership of Katrina Antonovich, Parks and Recreation Direction, with the help of the Youth Conservation Corp., is working to clear the grounds for paths to be used by the community. It's definitely a concern of the town should an infestation occur the impact it would have on this area and the devastation of the natural fauna it could cause. Taking a proactive approach to a possible infestation enables the Town to address public needs in an efficient and effective manner, as well as lessen the social and economic impact that such an infestation would/could have on the quality of life in our community.

By implementing the provisions in this management plan, the Town of Fairfax is attempting to mitigate the disruption of the Highway Department's budget for removal of hazard roadside trees caused by a pending infestation of the EAB. Taking a proactive approach to this infestation enables the Town to address public needs in an efficient and effective manner. It will also allow the Town to use the best management practices, the most recent scientific findings, and the Town's roadside tree inventory data to minimize costs and distribute them over a manageable time period.

OBJECTIVE:

A Town of Fairfax Tree & Mowing Policy was adopted on 9.3.13. The policy was written to protect the town's investment in their roads, to provide safety, to allow for efficient maintenance of the roads, to allow for landowners notification and input, to help protect the natural beauty of the Town of Fairfax and to ensure stewardship of disease, and or pest infested trees, or the prevention of. The policy outlines the objectives and plan of action that will be used to meet the current or anticipated impact of EAB on our roadside trees.

As previously stated in the Subjective, the EAB is a non-native wood-boring insect that feeds on North American ash trees. EAB is a native of Asia, in particular northeast China, Korea, Japan and Taiwan, and a small area in adjacent Russia and Mongolia. All beetles, including the EAB, undergo complete metamorphosis. They lay eggs singly, in crevices in the bark of the host tree. A single female can lay up to 90 eggs. The eggs hatch within 7-9 days. The EAB's green color acts as camouflage within the forest foliage. The adults fly quickly fleeing from danger when needed and can produce a bitter chemical to deter predators.

The EAB is thought to have been introduced to southeastern Michigan through solid wood packing material, such as crates and pallets, originating from Asia. The insect was found in 2002, but is believed to have arrived in the early 1990's. Experts suspect that the insect was present for 12 years before it was identified. In its native range, EAB feeds on a variety of plant species and is only considered a minor pest. This is partly due to the fact that Asian ash trees have been able to develop co-evolutionary resistant to EAB attacks and populations are also kept in check by predators and pathogens. However, this is not the case in North America where ash trees have no natural resistance and EAB has few predators. In North America, woodpeckers and a native wasp have been shown to attack EAB eggs and larvae, but with little impact on populations. In addition, research is being conducted with three species of wasps from China that show some promise of control.

The EAB has spread over much greater distances than it would have moved naturally. The number one human activity that has led to the spread of EAB is the movement of firewood. In addition, the movement of nursery stock has also played a key role in its movement. EAB has had a devastating effect on North American forests and has been compared to the effects of chestnut blight and Dutch elm disease.

If left unchecked, EAB could result in the losses of millions of dollars to the lumber and nursery industries as well as urban communities. Preliminary findings by the USDA Forest Service estimate that EAB's potential impact to the national urban landscape is a potential loss of between 0.5 to 2% of the total leaf area (30-90 million trees) and a value loss of monetary value in the billions. If EAB is not contained or eradicated, it could cause

approximately $7 billion in additional costs at the state and local levels as well as the landowners to remove and replace dead and dying ash trees over the next 25 years.

There are numerous metallic green insects common to the northeast that could easily be confused with EAB. In addition, there are several native pests other than EAB that attacks ash trees.

ASSESSMENT:

TREE INVENTORY

The first and most important step in managing a community's urban forest resource and preparing for EAB is to conduct a tree inventory. This process includes counting, characterizing, and recording information about the public and sometimes private trees that make up the forest or the stand of trees in woodlots. It is a useful tool that documents important information related to the total number of trees. The most common type of data collected in tree inventories are: location, land use, species, size, condition, site information, and maintenance needs. The goal of any community tree inventory is to provide inflation essential for management in a timely fashion, at a reasonable cost.

Documentation of street, right-of-way trees is useful for identifying trees a town is responsible for maintenance. This information can then be used to identify areas of susceptibility. The information can also be used to document a risk assessment where trees prone to failure are identified and can be preemptively dealt with.

A Forest Management Plan was conducted of the 100 acre parcel in December 2012 by Nancy Patch, Franklin-Grand Isle County Forester. The schedule of management activities includes control and monitoring for invasive plant species which needs to include monitoring for EAB.

The Town of Fairfax conducted a 38.55 mile roadside tree inventory. Trees were inventoried within the town's right-of-way at a diameter of 8" <d<20" and a diameter greater than 20".

INVENTORY RESULTS

Please see Ash survey summary as of December 15, 2013.

Ash Survey Summary
as of 15 December 2013

Survey technique

- Minimum diameter at breast height (DBH) was actually about 8"-10"
- Most trees were painted with an orange dot of paint. Doug did not paint trees near yards or driveways or near the edge of the right-of-way and did not paint King and Nichols roads.
- Not all roads were surveyed. (See list below.)
- The tree location was, when possible, identified by GPS. Those that were identified this way have been uploaded to Google Earth. When a GPS was not available, tree location was identified by odometer readings, so will be accurate only to the tenth of a mile.
- Some trees that were counted may be the responsibility of the utility companies.
- Some trees that were counted may have been out of the right-of-way, because we could not always positively identify the exact boundary of the right-of-way. On at least one road (Meade), there were many ash that were not counted, because they were just a few feet outside the right-of-way.

Comment

- There are some ash trees in yards that are used as landscape trees, but are in the right-of-way. A few of these trees are of substantial size.
- I talked to one person who wondered how the right-of-way location is determined when the road moves from side to side as a result of general maintenance such as a new culvert or grading.

Road Name	**8"<d<20"**	**d>20"**	**Total Trees**	**~Road Length**
Shepardson Hollow	2	0	2	1.42
Goose Pond	22	4	26	3.60
River	7	0	7	1.85
McNall	27	15	42	2.20
Richards	22	8	30	0.32
Sand Hill	1	0	1	0.57
Meade	47	2	49	1.10
Berthiaume	32	0	32	2.17
Nichols	42	2	44	2.11
Woodward	11	0	11	2.19
King	17	0	17	0.70
Swamp	2	0	2	2.00
Sam Webb	49	0	49	2.14
Wilkins	64	5	69	2.53
Tabor Hill	4	0	4	1.11
Huntsville	20	1	21	2.61
Carroll Hill	15	1	16	2.50
Cherrierville	19	5	24	2.80
Austin	0	0	0	0.63
Buckhollow	15	1	16	4.00
Totals			462	**38.55**

PLAN:

REMOVAL

To date, communities in North America have not successfully eradicated EAB once detected. Symptoms of EAB are slow to appear, making initial infestations hard to detect. Once EAB is found it is usually estimated that it has been present for 3-5 years. As the population builds, EAB eventually infests and skills all varieties of ash trees in the area. Once ash trees are infested with EAB, they typically decline and die over a period of 2-3 years. The burden of dealing with hundreds to thousands of dead and dying trees in a short period of time can place an enormous strain on a Town's budget, personnel, and resources. Management options vary and there is no one all-inclusive method. Management options are typically divided into two categories: preventative i.e. education or reactive management efforts i.e. preemptive removal. By preemptively treating or removing ash trees before the arrival of EAB in the community, the strains placed on a community can be minimized and provide flexibility in tree budgets. In addition, it can potentially diminish the movement of EAB across the landscape by making it difficult for dispersing beetles to find host trees. Where reactive management delays actions taken until EAB has arrived; It usually entails removing a tree once it is dead or infested with EAB. With both management options, removal costs are significant.

The Town of Fairfax will prioritize the treatment and removal of public ash trees by using data from the tree inventory. In addition, an estimated budget and timeframe will be generated. A town ordinance will be developed to allow for the removal of ash trees without having a public hearing prior to each removal. Under state statutes the town tree warden, Sam Hudson, may designate trees for removal if posing a risk. The ash trees have the potential to be infected by EAB, but currently are not infected. The ordinance will allow the ash concentration be lowered slowly over time to minimize the impact to the town. The ordinance will include the requirement to hold an annual hearing for the removal of ash trees.

The roads with the highest concentration of ash trees as well as the larger trees will be targeted first. The road crew will be supplied with inventory maps and, as a tree is removed, will be removed from the map.

The cost of removing a tree is approximately $60.00/tree.

TOWN OF FAIRFAX

TREE & MOWING POLICY

Adopted 9.3.13

Guidelines:

1. To protect the Town's investment in their roads.
2. To provide safe roads.
3. To allow for efficient maintenance of the roads.
4. To allow for landowner notification and input.
5. To help protect the natural beauty of the Town of Fairfax.
6. To insure stewardship of disease, and or pest infested trees, or the prevention of.

Assumptions:

1. That it is the Town Board's responsibility to adopt a set of guidelines consistent with the above goals.
2. That these are considered guidelines, and as such, there is need for flexibility of interpretation based on the best judgment of the Road foreman, County Forester and the Town Board.
3. The guidelines do not apply to emergency cutting in the event of blow downs that obstruct roads.

Notification:

1. Notify affected landowners along roads targeted for major road work and/or trimming as soon as possible before the anticipated work begins.
2. When a landowner requests some cutting be done on the right-of-way bordering their own property the Road Foreman and the Town Board should attempt to notify neighboring land-owners.

Where to cut?

1. Within the town right-of-way.

What to cut?

1. Class 1 – Cut completely:
    a. Dead or decaying trees, plus any box-elder, buck thorn, prickly ash, poplar, honeysuckle and mulberry; and all other trees.
    b. Birch, cherry, red cedar, elms and other trees only if they present a safety concern on a road, curve or at an intersection.
2. Trim only
    a. Sound oaks, hickory, maple, walnut, and other mature species, more than four (4) inches in diameter.
    b. Trim only the branches that are hanging less than twenty-five (25) feet above an area that covers the road width, or cut back further to maintain shoulder of the road.. Trim these branches back to the tree. This trimming should be done while the tree is dormant. Because of oak blight, trimming of oaks and trimming near an oak should only be done in the winter months.
    c. Trim branches to obtain site distance for traffic safety.

TOWN OF FAIRFAX

TREE & MOWING POLICY

What do we do with wood that is cut?

1. All wood will be left in appropriate lengths along the roadway for the landowners to pick up.
2. If the wood is not picked up within seven (7) days, the Road Foreman may make other arrangements. The smaller branches should be clipped if possible.

Mowing:

1. Generally mow one (1) mower width when applicable from the edge of the road.
2. Every attempt will be made to respect any plants or other wildflowers along the roadways per landowner request, taking into consideration site distance traffic safety.

Fairfax SelectBoard:

Chair: Randy L. DeVine

Vice-Chair: Chris Santee

David Shea

Tom Fontaine

Leebeth Ann Lemieux

REACHING OUT TO THE COMMUNITY

1) We will continue to work with Doug Reaves, UVM, Forest Pest, 1st Detector.
2) We will work on a campaign regarding "Don't Move Firewood".
3) We will keep the community informed of EAB and the current status of.
4) We will generate a periodic press release in the local paper addressing EAB, and what work is currently being performed.

DISPOSAL AND UTILIZATION

EAB REGULATIONS FOR QUARANTINED AREA

In order to prevent further spread of EAB through artificial means, i.e. moving firewood, the following materials are regulated in quarantined areas:

- Ash trees, limbs, branches and roots
- Ash logs, slabs, or untreated ash lumber with bark attached
- Cut firewood of all non-coniferous species
- Ash chips and ash bark fragments larger than one inch in two dimensions
- Mixed wood residue that may contain ash
- Any wood items which could harbor living EAB eggs, larvae, or adults and thus transmit an infestation.

For practical purposes, the minimum level of quarantine will be at the county level. However, additional surrounding counties may be quarantined because of the possibility of natural EAB spread, and in order to allow for the processing of regulated articles. USDAAPHIS will primarily regulate interstate movement of regulated materials.

While movement of regulated material anywhere within a quarantine area is legal, caution should be placed on the movement of material across large expanses of the quarantine to limit any further spread of EAB. Quarantines will primarily affect nurseries, firewood dealers and users, and mills. Compliance agreements are the most common tool used to allow industries to conduct business and move affected material while protecting areas of the state not yet affected by the EAB. Compliance agreements allow for the movement of regulated material from quarantined areas to non-quarantined areas from October 1 to March 31 and require all material to be processed according to legal specifications by April 30. Under this treatment schedule, all life stages would be destroyed prior to adult emergence. The dates are determined based on the life cycle of EAB. EAB is in its larval stage under the bark of the trees from approximately October 1 to May 1, thus when transporting material during this time spread is minimized. However, due to EAB typically emerging from the trees in its adult "flight" stage between May 1 and September 30, no untreated material can be moved outside quarantine areas during this summer period.

Disposal Site: One aspect of reducing the spread of forest pests is properly disposing of or utilizing the wood, brush and stump grindings generated by the removal of infested trees. The disposal method and government regulations that apply to the movement, storage and disposal of woody material, varies by pest. Collaborating with adjacent towns on wood disposal areas, chipping equipment, tree care crews, and utilization of ash materials – i.e. chip marketing, will save staff time and resources. Consideration should be taken on how to best utilize the wood to minimize environmental impact, offset disposal costs, or even create a value-added product.

1. Locate at least one wood disposal site in your town or nearby.

The purpose of a debris disposal yard is to help prevent wood which could potentially house forest pests, such as the EAB, or hemlock woolly adelgid (HWA), from being transported out of a quarantined area. They can be used as staging sites for wood processing, such as chipping, grinding, and debarking, and related marketing activities. The yards also serve as temporary or emergency storage sites when trees are removed. They allow municipalities, tree service companies, utilities and individuals to drop off cut material for processing and disposal in a manner to prevent artificial spread of EAB and HWA. Disposal sites or wood recycling centers may also accept various species, not just ash and hemlock, and can make wood disposal more efficient and economical. Locate at least one wood disposal site in your town or nearby.

Site 1 – Fairfax Town Garage

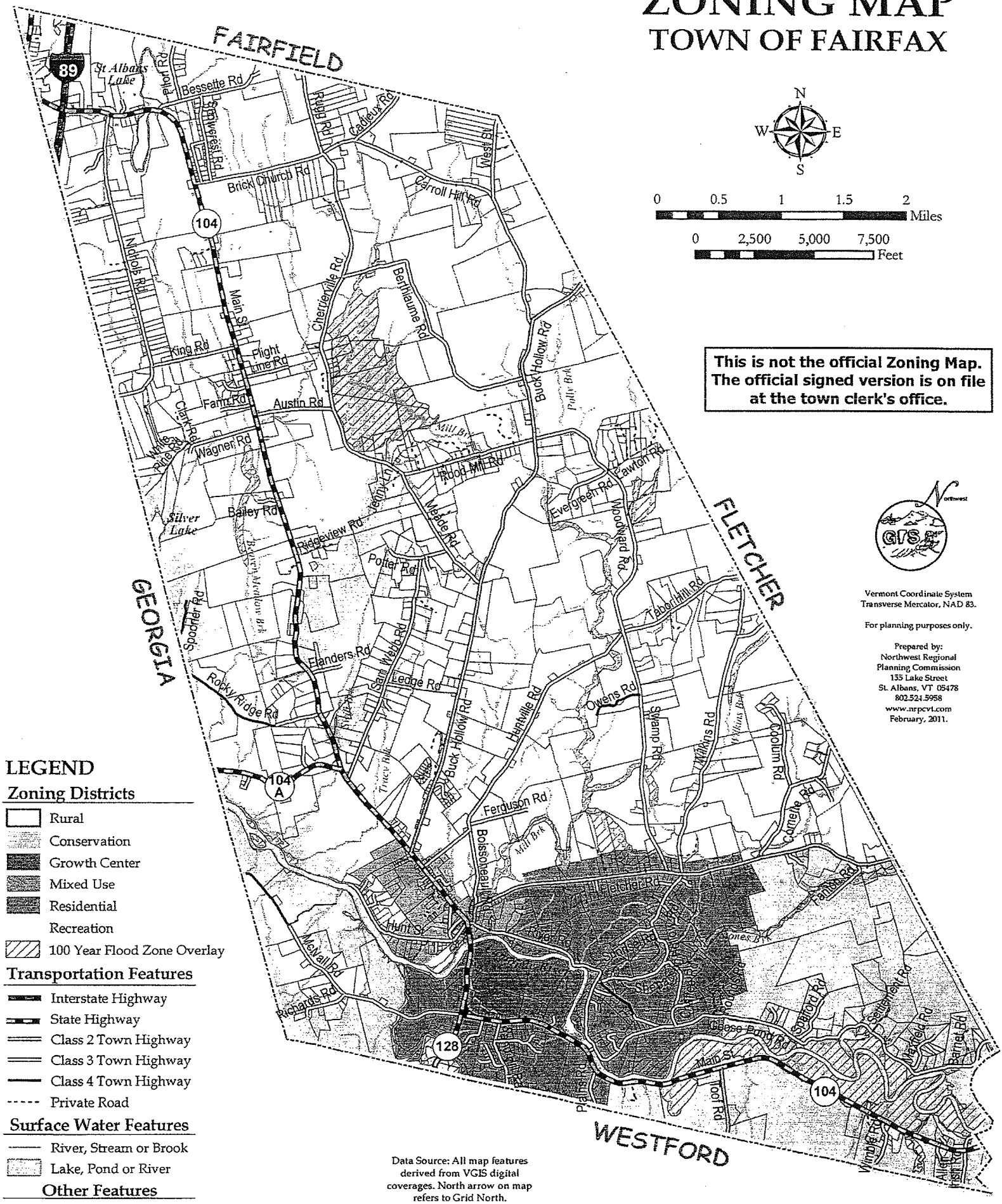
Contacts:
Randy DeVine, Chair of the Fairfax Selectboard: 849-6111 x7

Stacy Wells, Adm. Asst. to the Selectboard: 849-6111x7

D. Jay Leach, Road Foreman, Town of Fairfax Highway Department: Phone 802/849-6377 Cell: 802/309-9284

This information for this report was gathered and written by Stacy Wells, Adm. Asst.

ZONING MAP
TOWN OF FAIRFAX



N
W E
S

0 0.5 1 1.5 2 Miles

0 2,500 5,000 7,500 Feet

This is not the official Zoning Map. The official signed version is on file at the town clerk's office.

Vermont Coordinate System
Transverse Mercator, NAD 83.

For planning purposes only.

Prepared by:
Northwest Regional
Planning Commission
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802.524.5958
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February, 2011.

LEGEND

Zoning Districts
- Rural
- Conservation
- Growth Center
- Mixed Use
- Residential
- Recreation
- 100 Year Flood Zone Overlay

Transportation Features
- Interstate Highway
- State Highway
- Class 2 Town Highway
- Class 3 Town Highway
- Class 4 Town Highway
- Private Road

Surface Water Features
- River, Stream or Brook
- Lake, Pond or River

Other Features
- Parcel Line
- Town Boundary

Data Source: All map features derived from VGIS digital coverages. North arrow on map refers to Grid North.

Location: z:/gis/projects/county/franklin/fairfax/zoning2011/zoningletter.mxd