TOWN OF SHELBURNE, VERMONT
PUBLIC TREE AND STREET TREE MANAGEMENT PLAN

April 2016

Created by the Shelburne Tree Advisory Committee,
with funding and strategic guidance provided by the
Vermont Urban & Community Forestry Program, and with assistance
from the Chittenden County Regional Planning Commission
I think that I shall never see
A poem lovely as a tree.

A tree whose hungry mouth is prest
Against the earth's sweet flowing breast;

A tree that looks at God all day,
And lifts her leafy arms to pray;

A tree that may in summer wear
A nest of robins in her hair;

Upon whose bosom snow has lain;
Who intimately lives with rain;

Poems are made by fools like me,
But only God can make a tree.
INTRODUCTION

The Town of Shelburne values its trees for the wide array of aesthetic, functional, and ecological values they add to the community. Imagine the Parade Ground as just an open field of grass, without the shade and beauty that the trees provide. Imagine our residential streets and views without trees adding beauty, providing habitat and nesting spots, creating oxygen, sequestering carbon, filtering pollutants, dampening noise, soaking up stormwater, providing shade and reducing solar heating in the summer, and enhancing property values.

Trees are an important part of the fabric of our community, part of the infrastructure that supports our community and that makes it a special place. Most of these trees were planted purposefully by previous generations looking to the future, beyond their own lifetimes, and creating a heritage that we all enjoy today.

Just as the Town of Shelburne plans for and maintains its built infrastructure of roads, bridges, or water and sewer lines, trees must also be part of our short and long range planning. Trees must be placed properly and carefully, cared for and maintained over time, and eventually replaced. Nothing in this process happens by accident -- it requires ongoing planning, time, attention, and funding; perhaps more so than with other infrastructure, as trees are living things, not inanimate objects.

The goals of this management plan are to provide a vision, structure, and foundation for the care and management of our public and street trees, now and for the future health and well-being of our community. Many of these ideas and concepts will also be relevant and applicable to privately owned land and trees, which are the overwhelmingly dominant portion of Shelburne’s overall landscape.

Funded by the Vermont Urban & Community Forestry Program, this Plan is one part of a three-phase project intended to:

- Help the Town gain a clearer understanding of the current conditions of its street trees and urban forest through a tree inventory (conducted in 2014);
- Create this management plan for present and future care of this the Town’s public street trees and urban forest; and to
- Teach local volunteers and staff key techniques for tree planting and pruning/maintenance (workshop held in the fall of 2015 with tree expert Mark Duntemann of Natural Path Urban Forestry Consultants - http://naturalpathforestry.com.
EXISTING CONDITIONS

Understanding our landscape – what does the 2014 Shelburne Tree Inventory tell us?
The Shelburne Tree Inventory, completed in August 2014, was conducted by the University of Vermont Land Stewardship Program, with guidance from the Vermont Urban & Community Forestry Program. As shown on the following maps, this inventory covered a defined area within the Village proper. Due to time and resource constraints, the inventory did not cover the broader Town road network. While the conclusions drawn here are specific to the inventoried area, the ideas and concepts discussed are applicable townwide.

Key findings from the inventory (please also see graphics on page 6, 7, and 9):
- 23 public streets were surveyed
- 722 trees were studied
- 49 different tree species were identified
- $49,585 in annual monetary benefits were attributed to these trees
- 65 potential new planting locations were identified

Although 49 different tree species were identified, half of these public trees are either ash or maple, both potentially at risk of infestation with emerald ash borer (EAB) or Asian longhorned beetle (ALB). In order to avoid a sudden, dramatic, and expensive loss of such a large portion of the Town’s street trees (such has happened in many communities in the 1900s with Dutch Elm disease), it is important to plan ahead now. This may involve gradual replacement of these trees with other, hardy species, and also considering different species in new planting locations. General invasive pest information:

http://www.vtcommunityforestry.org/community-planning/tree-pests

Emerald Ash Borer: http://www.vtinvasives.org/invaders/emerald-ash-borer


Over time, a wider range of tree species and age classes of trees will strengthen Shelburne’s urban forest, as it will be less susceptible to sudden, dramatic loss of any particular species, type, or size of tree, whether due to a forest pest, storm, or disease. Appendix A of this Plan offers guidance for site and species selection.
At this point in time, most of the public trees evaluated in the inventory are in good condition. Of the 722 trees surveyed, 84 are in fair or poor condition; and only five are already dead. The five dead trees should be scheduled for removal and/or replacement in the near term, and the 84 trees known to be in only fair or poor condition should be monitored closely and evaluate for further treatment or removal as may be warranted. 77 trees were questioned as needing further review, and part of the long-term plan described below should include monitoring and evaluation of these trees.

(Please see maps included in the Tree Inventory for further details and locations).
Figure 1: Trees surveyed in the 2014 tree inventory
Figure 2: Summary of findings of the 2014 tree inventory
Recommendations

- No Emerald Ash Borer!
- Continued Monitoring
- The Invasive Norway Maple
- Diversify the Urban Forest
- The Future? Not just the ROW

*Figure 3: Recommendations from the 2014 tree inventory*
Figure 4: Potential new planting locations within the village area
Surveyed in the 2014 tree inventory
Figure 5: Calculated financial value of urban trees
CONCEPT TREE MANAGEMENT PLAN/SCHEDULE

A key purpose of this document is to create a foundation for a strategic plan and approach to the Town’s street trees and public trees; collectively, its urban forest. This requires
- Understanding current conditions, present and future opportunities and constraints;
- Thoughtful approaches to both improving future conditions and managing risk; and
- Identifying needs, priorities, and sources of funding to accomplish essential and desired tasks.

With these, and through cooperation of and collaboration with other interested and responsible parties, the Shelburne Tree Advisory Committee can fulfill a vision of a strong, healthy, dynamic, and beautiful urban forest.

Key issues are discussed in more detail below, and in the attached appendices, or online sources. These include:

- ‘Big picture’ planning: with over half of the inventoried trees being only two species, diversifying the types and ages of trees in Shelburne’s urban forest will create greater resiliency and long-term health by lessening the risk of major tree loss due to disease, pests, or storms.

- Site selection and site-specific needs: for example, Shelburne has widely varying soil types, ranging from clay to sand to loam to ledge. Site-specific micro-climate also varies widely: consider the differences between the undeveloped, exposed, windy shoreline of Lake Champlain, as compared with the along more urban environment along Shelburne Road. Tree health and vigor can relate directly to the right “match” of species for site specific conditions. Important aspects to consider include:
  - wind exposure,
  - moisture levels,
  - solar exposure,
  - salt tolerance, and
  - soil types and drainage patterns.

Other site conditions or needs affecting species selection include:
- Desire for shade or screening, as well as seasonal or year-round growth,
- Sight distances and visibility at driveways or intersections,
- Visibility of buildings and signs,
- Growth patterns related to presence or future likelihood of overhead or underground utilities,
- Seasonal flowering patterns, fruiting habits, or seed production,
- Soil compaction caused by pedestrian or vehicular traffic,
- Brittleness of wood, or breakage of branches, and
- Desire or need for stormwater management.

These are neither singular, nor simple ‘yes’ or ‘no’ decisions. Often, multiple needs can be satisfied simultaneously. For example: commercial businesses often want an unobstructed view of buildings and signs, yet Town standards may require landscaping. A tree with appropriate growth habit may be ‘limbed up’ by a skilled arborist, allowing for visibility and light, while maintaining a healthy branching structure and keeping intact the aesthetic/ecological benefits that trees provide.

Yet planning and site/species selection are meaningless unless trees are planted properly, and maintained over time. Keys to successful tree planting include:

- Proper site preparation,
- Proper planting depth,
- Initial and subsequent watering,
- Mulching around the tree, but keeping mulch away from the trunk

It is essential that a tree’s root flare, where the trunk broadens at its base into the root structure, be kept exposed and not buried into the soil at time of planting. Then, mulch must not be piled up against the trunk with each spring’s landscaping. Keeping the lower trunk and root flare exposed allows a tree to ‘breathe’ properly, keeps mice or other small creatures from nesting there and eating the bark, and helps the roots to grow outward instead of encircling the trunk. Keeping a mulched area around trees helps minimize or prevent damage caused by “weed whackers” or lawnmowers.

Please see the information and illustrations below for more information about proper planting techniques and maintenance strategies.
NEW TREE PLANTING

SOURCE: www.isa-arbor.com
Tree Maintenance

A full featured tree maintenance plan requires funding, staffing, and time. For example, with even just the 722 public trees identified in the Tree Inventory (and this is not a complete inventory of all trees on all Town roads or properties), it’s clear that a regular cycle of review, inspection, and maintenance should be instituted as soon as possible. Otherwise, proper maintenance is left to chance, trees may not mature in an optimal manner, and preventable problems may become hazards that are only discovered too late or after the fact. While not every possible issue is discoverable in advance, a regular cycle of inspection and maintenance may lessen risk, liability, and cost.

The 77 priority trees identified in the Tree Inventory should be the first priority. If roughly that many trees are inspected each year, it would create a ten-year inspection cycle for the current tree inventory; yet as noted, this would not cover trees within other Town highway rights of way outside of the core area inventoried. Acknowledging limited resources, it will still benefit the Town to clarify and create an achievable strategy for inspection and maintenance of its street trees, including a plan for who is responsible for this work (including but not limited to inspection, maintenance, decisionmaking, site/species selection, and tree replacement), guidelines for that work, and a funding mechanism to ensure consistent action; no different than that already in place for other types of municipal infrastructure. This is important for the health of the trees themselves, and to help lessen municipal liability for any incidents that may occur.
PRUNING YOUNG TREES

*Keep these few simple principles in mind before pruning a tree:*

- Always have a purpose in mind before making a cut. Each cut has the potential to change the growth of the tree.
- Poor pruning can cause damage that lasts for the life of the tree. Learn where and how to make the cuts before picking up the pruning tools.
- Trees do not heal the way people do. When a tree is wounded, it must grow over the damage. As a result, the wound is contained within the tree forever.
- Small cuts do less damage to the tree than large cuts. Correcting issues when a tree is young will reduce the need for more drastic pruning later.

*Making the Cut*

Pruning cut location is critical to a tree’s growth and wound closure response. Make pruning cuts just outside the branch collar to avoid damaging the trunk and compromising wound responses. Improper pruning cuts may lead to permanent internal decay.

If a large branch must be shortened, prune it back to a secondary branch or a bud. Cuts made between buds or branches may lead to stem decay, sprout production, and misdirected growth.

SOURCE: [www.isa-arbor.com](http://www.isa-arbor.com)

PRUNING MATURE TREES

*Making Proper Pruning Cuts*

Pruning cuts should be made just outside the branch collar. The branch collar contains trunk or parent branch tissue and should not be damaged or removed. If the trunk collar has grown out on a dead limb to be removed, make the cut just beyond the collar. Do not cut the collar.

If a large limb is to be removed, its weight should first be reduced. This is done by making an undercut about 12 to 18 inches (30 to 46 cm) from the limb’s point of attachment. Make a second cut from the top, directly above or a few inches farther out on the limb. Doing so removes the limb, leaving the 12- to 18-inch (30- to 46-cm) stub. Remove the stub by cutting back to the branch collar. This technique reduces the possibility of tearing the bark.

SOURCE: [www.isa-arbor.com](http://www.isa-arbor.com)
LONG RANGE PLANNING

The Tree Advisory Committee sets forth below a strategic plan for actions and timeframes, understanding that some needs or tasks may overlap in time, others are ongoing, and not all of these may be within the Tree Advisory Committee’s jurisdiction or control. A strategic plan is subject to review and revision as needed.

Year 1: Complete management plan and gain approval by Selectboard; work with Town to remove the five dead trees identified in the inventory; consider site conditions for potential replacement; determine resource opportunities and constraints toward further review/evaluation of the 77 trees identified in the inventory; use inventory and management plan to build support for funding. Review the Memorial Tree program to make sure that current costs are accounted for. Expand Memorial Tree program: increase publicity, celebrate recent or current gifts/plantings, identify likely or appropriate locations and species in advance so it is part of an overall municipal beautification plan, and not a more random approach to species and site selection at the time of donor inquiry.

Year 2: Consider how and whether the tree inventory might be expanded along other Town roads. Strengthen relationships, trainings, and collaboration with others, including but not limited to:

Town Manager/Selectboard: Seek annual meeting to share information and build support; seek recurring, dedicated funding for actual needs, and in anticipation of applying for Tree City USA recognition in year 4. Has general and statutory authority for overall municipal governance, determining and managing budget, setting strategic direction for the Town; the Town Manager plays a key role in implementing the Board’s policies. Requests for budget and commitment of staff time go through these channels. Approves grant applications. Funding for tree planning, planting, maintenance, replacement may come from multiple sources capital improvement plan, annual operating budget, grants, private donations (such as the Memorial Tree program). Typically, a successful program will benefit from a multi-pronged approach, within the context of a strategic, long range approach such as this Plan. Purchasing of goods or services should be handled in a manner consistent with the Town’s adopted procurement procedures.

Tree Warden: Has clear statutory authority and responsibilities, which ideally are carried out in a manner consistent with this Plan. Clarify how these statutory duties/responsibilities relate to Committee roles, and define potential areas of
collaboration. The Tree Advisory Committee and Tree Warden can create synergy in support of each other’s work.

**Recreation Committee:** Manages public parks and recreation land, including trees on these public lands; overlaps with Tree Warden’s authority and responsibilities.

**Highway Department:** ‘Front line’ of observation; often involved with or responsible for tree trimming, maintenance, or removal work within Town highway rights of way.

**Planning Commission:** Has statutory authority to create a municipal plan and other implementation strategies. Land use or landscaping plans, or bylaw requirements, should be consistent with this Plan and reference this Plan as an authoritative guideline.

**Development Review Board:** Has statutory authority for reviewing proposed development projects; decisions made and conditions attached to those projects should reference this Plan and be consistent with it. Species selection should consider both site-specific needs and conditions, as well as broader municipal corridor, land use, or tree planting plans. Standard conditions should be attached to all zoning permits, ensuring proper care is taken to protect trees and their root zones from disruption, damage, and soil compaction.

**Historic Preservation and Design Review Commission:** Explore areas of mutual concern; historic sites likely also have mature, historic trees that are important parts of the Village landscape.

**Natural Resource and Conservation Commission:** Explore areas of mutual interest and concern; seek synergy in funding and programs to achieve mutual goals.

**Police Department:** Filing crash report and insurance claim if trees are harmed or destroyed by vandalism, motor vehicle accidents, or other incidents (*Please see Appendix C for basic documents. The complete State of Vermont Uniform Crash Report and instructions may be found at [www.claimspages.com/documents/download/8451F.pdf](http://www.claimspages.com/documents/download/8451F.pdf)*

**VTrans:** Has legal jurisdiction within State highway rights of way. With RT 7 as the primary and highly visible highway corridor serving residents, visitors, and through traffic, building a shared sense of care, duty, and approaches to tree planting and maintenance will be a great benefit to the Town.
Utility Companies: Electric utilities often hire contractors to trim trees growing within and around overhead power lines; permission of the Tree Warden is required for any work performed within Town highway rights of way (which by definition and legal right is where most overhead utility lines run). Equal care is also needed for any installation or maintenance work done below ground anywhere near trees and their root structures, including water or sewer lines, sidewalks, driveways, drainage culverts, and the like. Building working relationships with both public and private utilities can help create a collaborative approach, and avoid risk of irreversible harm. Utility companies may include Green Mountain Power, Comcast, Vermont Gas, municipal water and sewer, and the like; calling these utilities and/or DigSafe (dial 811) is prudent before commencing work that may affect or involve underground utilities.

Media: Increase awareness of the Committee, its activities, and value added to the Town. This may include municipal media (Town Report, Town Manager’s weekly email summaries, other Town activities); or external media such as the Shelburne News and local cable access TV. Celebrate successes, publicize memorial contributions and tree plantings, participate in community events such as parades, the farmer’s market, collaborate with allies such as those involved in streambank stabilization/restoration programs, hold an Arbor Day celebration at the School.

Year 3: Clarify and confirm a plan for cyclical review/evaluation of inventoried trees. Identify new individual planting locations, as well as longer term landscaping/street plans, especially along major corridors (for example, in the new Form Based Code overlay district along Shelburne Road). Consider participating in the State’s “First Detector” program to keep close watch on potential arrival of disease, infestation, or pests (such as Asian Longhorned Beetle, Emerald Ash Borer, and Hemlock Wooly Adelgid). Consider participating in Master Gardener and/or Stewardship of the Urban Landscape (SOUL) programs; determine how past graduates of these programs may be helpful to the Committee.

Year 4: Consider applying for “Tree City USA“ recognition. Information, and the application are all available at http://www.arborday.org/programs/treecityusa/index-become.cfm

Year 5: Evaluate progress to date; adjust/expand/contract work plan and program as appropriate or warranted, and given time, resources, and interest. As progress is evaluated, consider how best to manage existing conditions, and how to take a strategic approach to new opportunities or planting plans/locations. While much of this Plan covers the former, the attached or linked appendices or resources provide much useful information for the latter, offering key issues to consider in site and species selection.
REFERENCES

There are many excellent references on tree-related topics; this is just a sampling of helpful resources.

Vermont Urban & Community Forestry Program:  http://www.vtcommunityforestry.org/resources


Cornell University horticulture resources: http://www.hort.cornell.edu/commfor/resources/index.html


Online Tree Selection Tool: http://www.vtcommunityforestry.org/resources/tree-care/tree-selection


Vermont State Statutes:

Tree Wardens: 24 VSA 67 2502 - 2511: http://legislature.vermont.gov/statutes/fullchapter/24/067

Cutting of Trees: 13 VSA 77 3601 - 3609: http://legislature.vermont.gov/statutes/fullchapter/13/077


Mark Duntemann - Natural Path Urban Forestry Consultants (http://naturalpathforestry.com)

Tree City USA Program: http://www.arborday.org/programs/TreeCityUSA/index.cfm

APPENDICES
Appendix A

Site Assessment and Species Selection
Section 2.

Site Assessment & Species Selection

The conditions of the urban environment, no matter how large or small, are often harsh and unsuitable for trees. From the moment they are planted until the time of their death, urban trees are subjected to a variety of stresses, from both above and below ground, that are not found in a natural setting. This is the simple reality of growing trees in the urban ecosystem. However, the vast majority of these problems can be avoided through proper site assessment and species selection.

There are very few conditions under which trees are absolutely unable to grow; it is just a matter of finding the right species. Far too often, the decision of which tree to plant precedes the decision of exactly where and under what conditions it will be planted. The result is a stressed tree that is more susceptible to secondary agents, such as insects and disease. Identifying the critical limiting factors of the site and then determining which species can tolerate them is the most important step in planting a tree that will remain healthy and productive for many years. This section is designed to guide you through the assessment of several important site characteristics. Use the information provided to complete the Site Assessment and Species Selection Worksheet (pg. 5) which can then be kept as a reference for selecting and purchasing trees for that site. It is also a good idea to have this information on hand when visiting the nursery or seeking other professional advice.

Below Ground Site Assessment

Roughly 80 percent of the health problems associated with trees in the urban ecosystem originate from unsuitable conditions below ground. A tree is supported both structurally and nutritionally by its roots, and any limitations placed thereon will result, directly or indirectly, in future health problems. There are several below ground factors that are critical in determining the ability of a given tree to survive at a particular site.

Soil Texture

The texture of the soil determines its water- and nutrient-holding capacity. Some species are adapted to grow on dry, sandy soils while others tolerate poorly drained clays. The texture of the soil also dictates its resistance to compaction, which greatly affects oxygen availability and the moisture- and nutrient-holding capacity. To determine soil texture, pick up a small handful and rub it between your fingers. Does the texture feel coarse and dry (sand), wet and slick (clay), or moist but gritty (loam)?

Drainage

Drainage is highly dependent on the soil texture. Fine clays that are easily compacted will not allow water to drain freely, which limits the availability of oxygen to the roots. Sandy soils that don’t hold water at all are often too dry for many trees and they will suffer from drought if not watered regularly. Obstacles such as bedrock and other impermeable objects beneath the soil can also inhibit drainage. To see how your soil drains, dig a hole one foot deep and fill it with water. See the Site Assessment Worksheet to classify your soil as excessively drained, moderately drained, or poorly drained.
Section 2. Site Assessment & Species Selection

pH

Many tree species are only adapted to grow within a limited range of pH, generally under slightly acidic conditions. Urban soils often tend to be slightly alkaline from limestone containing materials, such as concrete, commonly found in urban environments. Kits and meters are widely available to test for pH.

Road Salt

Excessive amounts of salt spread on roadways can cause severe injury to salt intolerant trees. This damage is generally most severe within 25 feet of the road. Planting tolerant species further away from or above the grade of the roadway can help reduce problems associated with road salt. Also, pay close attention to the typical speed of the traffic moving adjacent to the planting site. Faster moving traffic increases the area of salt spray and may require you to plant further from the road.

Rooting Space

Trees planted in an urban setting often suffer from a lack of rooting space. Underground obstacles such as underground utilities, sewer and water lines, sidewalks, and pavement can prevent the roots from spreading and limit their nutrient-, water-, and oxygen-gathering capacity. Heavily compacted soil can also be an obstacle for expanding tree roots and, although some species may be more tolerant to this than others, it is a good idea to include only uncompacted soils in your determination of available rooting space.

In this booklet we list the recommended rooting space (i.e. soil volume) for each species. Keep in mind that these recommendations are under ideal circumstances, and in many cases you will be forced to plant in much tighter areas. Compensating for this by planting in longer, narrow strips is generally acceptable, but always make sure that the root system can spread far enough in all directions to keep the tree windfirm when fully grown.

Above Ground Site Assessment

Just as trees require healthy roots to grow, so do they require a healthy stem and crown. The ability of a tree crown to capture light and manufacture food for the tree dictates the overall success of that tree, so long as the roots are able to support the crown with water and nutrients. Once you have identified all potential limitations of the soil, look at the above ground conditions to make sure that nothing will prevent your tree from developing a full, healthy crown.

Plant Hardiness Zone

Plant hardiness zones were developed by the USDA to map areas according to their average minimum annual temperature. Vermont is included in three hardiness zones. To see which zone you are in, check the VT Plant Hardiness Zone Map (see Appendix A).

Exposure

The exposure of a site can significantly modify the general climatic conditions, potentially resulting in several distinct micro-climates within a seemingly uniform area. Direct exposure to harsh wind and sun for example, can increase your tree’s susceptibility to drought and winter injury so you may need to select a species rated for a lower hardiness zone. Similarly, sheltered sites may offer the opportunity to plant a less cold-hardy species than your zone generally requires. Thoroughly examine the site and its exposure to the elements while thinking about how they may potentially affect the overall climatic conditions. Always remember to look ahead at how a tree will be exposed at full maturity.
Overhead Hazards
Overhead hazards such as wires, buildings, or any other existing or planned structures may interfere with crown development. Repetitive pruning to accommodate overhead obstacles is costly and results in frequent wounding and unbalanced crowns. Open wounds invite wood decay while deformed or strongly asymmetrical crowns can lead to structural failure of large limbs or windthrow. Always remember to consider the size and shape of the crown at full maturity.

Circulation/Site Use
Human activities can also impact site conditions significantly. For roadside plantings, select trees that are tolerant to road salt. Spread mulch around trees in parks or town greens to protect against soil compaction from pedestrian traffic and damage from lawnmowers. Always be aware of potential conflicts such as low hanging branches in pedestrian areas or excessive fruit production along roads.

Legal Concerns
Always check on ownership or easement locations as well as historical or landmark status that may prohibit you from planting in a certain area. Also be sure to check local ordinances that may prohibit the planting of certain species with malodorous fruit or those that pose leaf or fruit litter problems.

Importance of Species Diversity
Maintaining a high level of species diversity in our urban ecosystems is as important, if not more so, than in our natural forests. Besides providing the aesthetic appeal of a variety of shapes and sizes along streets or in town greens and parks, increasing diversity can also help safeguard against species-specific insect or disease outbreaks. Simply selecting the right tree for every site should in itself create diversity, yet we often rely far too heavily on one seemingly ideal species, as was the case with the American elm.

It is important to recognize that species diversity is not only a function of how many species are present, but also depends on the proportion of each species relative to others and their overall spatial distribution. In other words, planting a single tree of one species for every hundred trees of another species scarcely improves your diversity. Similarly, diversity is only improved significantly if all species are growing together, intermingled over an entire area as opposed to having each species in a separate area. Maintaining a predetermined level of diversity, such as specifying that no one species should comprise more than 5 percent of the community tree population, is a good way to help prevent some of these situations from occurring.

Potentially Invasive Species
Always be sure to check the potential for any species to become invasive when planting in or around natural areas. Several exotic species, most notably barberry, buckthorn, and honeysuckle, have overtaken many natural areas in Vermont and are preventing the natural regeneration of native species. Although few of the trees we recommend are known to be invasive in Vermont, we have identified several that have such potential. Norway maple in particular has already become naturalized in areas of southern New England and has begun to spread at the expense of several native maples, drastically altering the forest structure and preventing the regeneration of native species. While still appropriate for some locations, we strongly advise against planting Norway maple, amur maple, and amur corktree near field edges, wooded areas, or other natural habitats that they could invade. The use of these species should be limited only to streetside or isolated urban locations. Always remember that no species should ever be planted where it has the potential to spread where it is unwanted.
### Site Assessment and Species Selection Worksheet

**PART I: Site Assessment**

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<td>Root Space (pavement, buildings, etc.)</td>
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<td>Underground Utilities</td>
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<tr>
<td>Future</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q  Uncompacted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q  Moderately Compacted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q  Severely Compacted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil Quality (note if poor)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 4. Above Ground Conditions (may affect trunk/crown)

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Limiting Factor (✓)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sun</strong></td>
<td></td>
</tr>
<tr>
<td>☐ Full Sun</td>
<td></td>
</tr>
<tr>
<td>☐ Part Shade</td>
<td></td>
</tr>
<tr>
<td>☐ Shade</td>
<td></td>
</tr>
<tr>
<td><strong>Wind</strong></td>
<td></td>
</tr>
<tr>
<td>☐ Low</td>
<td></td>
</tr>
<tr>
<td>☐ Medium</td>
<td></td>
</tr>
<tr>
<td>☐ High</td>
<td></td>
</tr>
</tbody>
</table>

**Crown Space**
- Overhead Wire Height (20', 30', 40')
- Structural Limitations (Buildings, Lights, Signs & Other Trees)
- Distance from Road (potential for trucks to brush branches?)

**Air Born Salt Spray**
- ☐ No
- ☐ Yes
Section 2. Site Assessment & Species Selection

Part II: Species Selection

Choose Desirable Tree Attributes

1. Function (screen, shade, etc.)
2. Mature Size
3. Form
4. Longevity
5. Canopy Density
6. Deciduous vs. Evergreen
7. Growth Rate
8. Wood Strength
9. Ornamental Traits
   (fall color, flowers, fruit, bark, etc.)

Identify Desired Attributes of Landscaped Area

1. Species Diversity
2. Spacing
Season of Planting

Trees can be most successfully planted at two times during the year—spring and fall. Regardless of the season, planting is best done while the tree is dormant and physiological activity is very low. Fall planting may be beneficial for some species because it allows for new root development earlier in the spring, but always check the requirements of the species you are considering. Many species can only be transplanted in the spring and will not do well following a fall transplant.

Street Tree Spacing

In urban areas there are many constraints which are generally not recognized in other forestry applications. Careful placement is necessary to maintain lines of sight for traffic and clearance around buildings and power lines. Proper spacing also helps prevent unnecessary injury to the tree caused by parked or moving cars while maintaining adequate room for the crown to develop unobstructed by buildings and other trees. The following diagram illustrates some spacing guidelines for planting along streets, driveways and sidewalks. Bear in mind that this is a very generalized diagram, and you may have to make special accommodations depending on the species you choose to plant.
Appendix B

*Town of Shelburne, VT Tree Policy*
TOWN OF SHELBURNE TREE POLICY

I. Purpose
The purpose of this policy to promote, protect, and enhance public health, safety, and general welfare by providing a policy governing the planting, maintenance, protection, and removal of trees, shrubs, and other woody plant material within public rights-of-ways and public places within the Town of Shelburne.

II. Authority
The Select Board shall appoint a Tree Warden, under 24 V.S.A. § 871. The Tree Warden may appoint a Deputy Tree Warden under 24 V.S.A. § 2505. Through its Tree Warden, the Town shall have control of all Public Trees and shall have the authority to plant, maintain, protect and remove such trees. The Tree Warden, where possible, should be a person skilled or trained in forestry, horticulture or other closely related field.

No Public Tree shall be pruned, removed or harmed in any way without the written permission of the Tree Warden.

No person shall plant any tree within town right-of-ways or on town property without written permission of the Tree Warden.

III. Applicable Regulations
The Town of Shelburne Public Works Specifications and Zoning Bylaws both address the planting of trees within the Town. Shelburne’s Subdivision Regulations require the planting of trees along both sides of streets (Section 810(4)), although the precise location of plantings relative to the right-of-way is not specified. This policy is consistent with and provides supplemental detail to both documents.

IV. Definitions
Certified Arborist: A person certified by the International Society of Arboriculture as having specialized knowledge, experience, and training related to arboriculture.

Diameter at Breast Height (DBH): The diameter of a tree measured in inches at a height of four (4) feet five (5) inches from the finished grade at the base of the tree.

Public Tree: All trees and shrubs for which any part of the trunk at DBH is located within the town right-of-way or on town property.

V. Tree Advisory Committee
The Selectboard may appoint a Tree Advisory Committee for specific purposes as outlined in the Tree Advisory Committee’s Charter. In general the Committee shall develop a written plan to include an inventory of all Town trees and for the planting and care of additional trees. They shall also educate the citizens of Shelburne about the benefits and care of this resource. In concert with Town staff, the Committee may apply for grant funds to accomplish the Tree Inventory and Plan, to plant and care for Town trees and other similar purposes.
VI. Construction in the Vicinity of Public Trees
Any construction within 10 lateral feet of the drip line of Public Trees requires consultation with the Tree Advisory Committee and Tree Warden who may provide specific written requirements for additional protections of trees.

VII. Public Tree Planting, Maintenance and Removal
The Town is supportive of planting and maintaining trees along its streets, roads and on other Town and private property. The benefits of street trees are well documented and this policy is consistent with and recognizes those benefits.

The Town shall have the right to plant, maintain and remove Public Trees as may be necessary to insure public safety, or to preserve or enhance the symmetry and beauty of public ways and places as set forth in the following guidelines.

1) Planting Specifications
   a. Trees to be planted within town right-of-ways and on town property should be appropriate for the site, meet the intended planting functions and increase the overall tree diversity of the town. To help assure that appropriate trees are selected, trees shall be chosen by a licensed landscape architect, certified arborist or other appropriate professional staff with concurrence of the Tree Advisory Committee and the Tree Warden.
   b. The quality of Public Trees to be planted must conform to American Standard for Nursery Stock for landscape trees.
   c. All public trees shall be planted in accordance with the current American National Standards Institute (ANSI) Standards for Tree Care Operations.
   d. Trees should be sited based on above and below ground site condition.
      Minimum offsets for intrusion elements should be as follows:
      Light standard: 18 feet
      Utility pole: 10 – 18 feet depending on cross arm size
      Hydrant: 15 feet Driveway: 10 feet
      Cross walk: 5 feet
      Transformer, connection box: 6 feet
      Underground utility connection: 15 feet
      Street sign: 6 feet
      Exceptions may be granted only by approval of the Tree Warden.
      Dig Safe shall be called prior to digging.

2) Maintenance
   a. The Care of all Public Trees shall be in accordance with current ANSI Standards for Tree Care Operations.
   b. All contractors who work on Public Trees shall have a certified arborist on staff or in their employ.
3) Removal
   a. The Town, in consultation with the Tree Advisory Committee and Tree Warden, may remove or cause to be removed, any Public Tree or part thereof which is in an unsafe condition or which by reason of its nature is injurious to the municipal infrastructure or other public improvements, or is affected with any injurious disease, insect, or other pest.
   b. If, in the opinion of the Tree Advisory Committee and the Tree Warden, a Public Tree constitutes no hazard to public safety and is determined to be healthy but needs to be removed, then the Tree Warden will warn a public hearing, giving two weeks notice, and shall be held in accordance with 24 VSA §2509. Written appeals must be submitted to the Tree Warden and Selectboard within two weeks. The Selectboard’s decision is final.

VIII. Obstruction of Streets and Sidewalks
It shall be the responsibility of each property owner of any tree overhanging any town right-of-way or property to ensure the trees and shrubs on that property are maintained in a manner that will not obstruct: street lights from illuminating street level; the passage or visibility of vehicles or pedestrians; vision of traffic signs and signals; or the view of any intersection. If said owners fail to comply, the Town shall have the right to prune any tree or shrub on private property.

IX. Tree Removal on Private Property
The town shall have the right to cause the removal of any dead, diseased or hazard trees on private property within the Town, when such trees constitute a hazard to life and property, or harbor insects or disease which constitutes potential threat to other trees within the Town. The Tree Warden will notify in writing the owners of such trees. Removal shall be done by said owners at their own expense within sixty (60) days after the date of service of notice. In the event of failure of the owners to comply with such provision, the town shall have the authority to remove such trees and charge the owner for the cost of removal.

X. Street Trees in the Village
The Village is a densely settled portion of Town that includes a large portion of publicly owned property. Within the Village, buildings are closer together and closer to the street than in most other areas of Shelburne. The Village Plan includes streetscapes for the streets and roads within the village with trees planted in proposed green belts and in other areas. In this instance, consideration should be given to plant trees along the street and possibly within a green belt next to the street.

Adopted this 28th day of September, 2010 and amended on May 13, 2014.

__________________________  ____________________________
Gary von Stange, Chair            Allison Cranmer, vice Chair

__________________________  ____________________________
Tim Pudvar                      Colleen Parker

__________________________
Toni Supple
Appendix C

Replacement Cost Method Worksheet
Replacement Cost Method Work Sheet

Appraised Value = $800

[Installed Plant Cost × Species % × Condition % × Location %] + Removal and Cleanup Cost (if needed)

Installed Plant Cost = Replacement Plant Cost + Installation Cost

Case # Property 42 NO. WINDSKE AVE Date 2/6/06
Appraiser WARREN SPINNER

Field Observations
1. Species TATARIAN MAPLE - Acer tataricum
2. Condition 70 %
3. Trunk Circumference ___ in./cm and/or Diameter ___ in./cm or Shrub or Vine Size (height/spread/volume) __________
4. Location % = [Site 65% + Contribution 85% + Placement 60%] ÷ 3 = 70 %
5. Removal and Cleanup Costs for appraised plant or plant that will be replaced = $160

Regional Plant Appraisal Committee and/or Appraiser-Devolved or Modified Information
6. Species rating 65 %
7. Replacement Plant Size (diameter) ___ in./cm
8. Replacement Plant Cost = $675
9. Installation Cost = $1,350
10. Other Regional Information____________

Calculations by Appraiser Using Field and/or Regional Information
11. Installed Plant Cost = Plant Cost (#3) $675 + Installation Cost (#9) $1,350 = $2,025

12. Adjusted Installed Plant Cost = Installed Plant Cost (#11) $2,025 × Species rating (#6) 65 % × Condition (#2) 70 % × Location (#4) 70 % = $645

13. Add Removal and Cleanup Costs (#5) (if appraised plant is replaced). $160 = $805

14. The Appraised Value is either #12 or #13. = $805

15. If the Appraised Value (#14) is $5,000 or more, round it to the nearest $100; if it is less, round to nearest $10.

16. Appraised Value (#14) = $800

*A median cost is the most appropriate cost to use because there are an equal number of costs greater than and less than the median. Equally important, plants and installation are available at those specific costs.