

Town of Gray, Maine

# **Community Forest Strategic Plan**

For Gray Village

Prepared by:

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Town of Gray Community Forest  
Strategic Plan

## Executive Summary

### Purpose and Scope

At the end of the 19<sup>th</sup> century and during the early years of the 20<sup>th</sup> century, Gray Village was the hub of a thriving community. Magnificent elms and sugar maples lining the streets and framing the vista of public buildings signified the Town's economic success and its pride in its quality of life. Unfortunately, like most of northern New England, the movement of people and capital to urban areas and to other parts of the country during the second half of the 20<sup>th</sup> century resulted in economic decline and neglect of Gray Village. During this period, the Town's elm trees were devastated by disease, and the urban forest in general fell into decay.

Today, the situation has turned around. Gray is becoming a vibrant community again as part of the expansion of the greater Portland metropolitan area. Along with the Town's economic revival has come a renewed interest in the appearance of its historic village, including the street trees that once graced its streets. This plan documents the Town's goals and strategies to reestablish and maintain this village forest.

The boundaries of the village forest are shown in Figure 1. The area includes 237 trees within or near the public right-of-way of Main Street, Portland Road, Yarmouth Road and Shaker Road.



Figure 1 – Gray Village Project Canopy study area.

### **The Forest's Present Condition**

A street tree inventory was conducted in September of 2009 and the results analyzed by Town's staff and consultants. In general, the street trees in the village are in better condition than the Project Team had expected, considering the long years during which the urban forest has been neglected. The problems discovered were the following:

1. 30 trees (13%) should be removed or heavily pruned immediately because they pose a safety hazard;
2. 68 trees (29%) need some type of cultural treatment, such as pruning, fertilizing or cabling, in order to improve their vigor;
3. 179 trees (76%) are maples, mainly sugar maples and Norway maples –a biologically undiversified condition which makes the forest vulnerable to similar diseases and environmental stresses;
4. Trees are entirely absent in some parts of the village, including the boundary of the MDOT maintenance facility on Portland Street and some of the shopping areas in the heart of the village.;
5. Many trees within the district are located too close to pavement and other obstructions in order to grow well and will create difficulties for proper maintenance in the long run.

### **Forest Management Goals**

In order to reinvigorate the village forest, the Town seeks to address both the immediate and long-term needs of the trees.

1. Remove trees that are now deemed a safety hazard by the end of 2011.
2. Complete the maintenance needs of the trees identified in the inventory by 2012.
3. Begin diversifying the species mix of the forest starting in 2011 by planting new trees from a variety of different genera on private property outside the public-right-of-way in cooperation with residents and business owners.
4. Increase canopy coverage in front of the MDOT maintenance site on Portland Street in cooperation with MDOT in 2010.
5. Increase canopy coverage along the boundary of the village shopping areas where trees are now largely absent, also in cooperation with residents and business owners, starting in 2011.

The Town seeks to build its administrative and financial capacity to implement these goals, as described below.

### **Strategies to Build Administrative Capacity**

1. Create an oversight committee consisting of the Public Works Director, the Community Development Director, and the Town Arborist (see No. 3 below).

2. The Oversight Committee would organize and oversee implementation of the projects needed to rebuild the community forest and work with Town residents to achieve the goals of the Strategic Plan.
3. Obtain professional services in arboriculture or urban forestry in one of at least two ways:
  - a. Hiring a certified professional arborist on a part-time basis (approximately \$6,000 annually) in order to help launch the community forest program. The position would be reevaluated after about 2 years to determine if it should continue.
  - b. Appoint a resident with expertise in arboriculture, forestry, or a related field as a member of the Oversight Committee, but incorporate many of the services needed by the community on specific projects into the bid contracts for the work.

### **Strategies to Build Financial Capacity**

1. Partner with MDOT and CMP in hazardous tree removals.
2. Maintain a consistent annual appropriation for tree work of approximately \$6,000 over the next 7 years to act as a source of matching funds for state and federal funding, particularly Project Canopy.
3. Apply to Project Canopy annually for assistance in developing the urban forestry program (grants have traditionally been available for both planning and implementation projects).
4. Develop a cooperative tree planting program in association with residents that locates new street trees on private property.
5. Take advantage of federal emergency relief funds after storms and other natural disasters to implement the goals of the Strategic Plan, including hazardous tree removal, pruning, planting and other management practices encouraged by these programs.
6. Explore the options for adding new trees as part of road widening and reconstruction work using federal transportation funds.
7. Partner with other organizations on programs that can include urban forestry as part of a broad-based approach to solving urban problems, including park and recreation facilities, energy conservation, Homeland Security, and road construction projects.
8. Develop a private trust fund, perhaps in cooperation with Gray Community Endowment that is designed to support community forest projects in the village.

### **Strategies to Evaluate Success**

1. The Oversight Committee should keep a continuous record of the work that is performed and the cost to implement the program.
2. On the advice of the Oversight Committee, the Town should repeat the street tree inventory whenever the inventory becomes obsolete due to work that has been accomplished or a change in circumstances, such as when the boundaries

of the management area are changed or after a significant number of new trees have been planted.

- 3. The Oversight Committee should report to the Town Council as needed, but at least once a year to describe its goals for the coming fiscal year and what it has accomplished in the past year. This information will also be useful when applying for matching funds under various state and federal grant programs.

### VILLAGE CHARACTER & STREET TREES



Historic



Modern

# Town of Gray Community Forest Strategic Plan

## Part 1: Introduction

### **A. Statement of Purpose and Scope**

Gray village is the heart of the community. It contains the historic buildings and thoroughfares that housed the Town's major institutional, commercial, educational and spiritual activity during most of the Town's history, and the area remains the primary seat of local government and commercial activity today.

A commitment to the redevelopment of this historic area, therefore, has multiple purposes and benefits. It strengthens the Town's identity as a desirable location to live and work, it improves the Town's attractiveness for new and existing businesses, and it provides recreational and visual amenities to Town residents.

Restoring and maintaining the street trees and other plantings in the village are a vital part of this redevelopment effort. Trees provide a sense of place and keep us in touch with the seasons. They reduce chilly winds in winter and provide shade in summer. They help to conserve energy in nearby buildings and to define the boundaries of public, semi-public and private spaces throughout the built environment.

Street trees and other plantings in the village also add economic value to both individual properties and to entire residential and commercial districts. Indeed, trees in Gray and throughout the nation have traditionally been used both as a means to add economic value to property as well as to serve as a symbol of that prosperity for future generations.

The boundaries of Gray Village for the purposes of the Town's street tree program are shown in Figure 1. It includes a large portion of Main Street, as well as Portland Road, Yarmouth Road, Shaker Road, plus a small portion of Lewiston Road. The program is designed to maintain and improve the community forest in this area, using public property where available. However, because the public right-of-way space is limited, a cooperative relationship between the Town and the residents and business owners in the village is necessary in order to make the program a success.

### **B. Historical Background**

Like many northern New England communities, Gray reached its heyday of development in the last quarter of the nineteenth century and the early years of the 20<sup>th</sup> century. The success of the community was expressed in the high cost and excellent styling of many buildings constructed during this period. Some of these structures are now National Historic Landmarks and are an important feature of Gray's downtown redevelopment program.

Large shade trees and other plantings were also an important part of the village landscape at this time. Based upon the inventory of street trees conducted in September of 2009 and photographs from the Gray Historical Society, it appears that the tree species of choice in the late 19<sup>th</sup> century were sugar maples and American elms.

Trees were used in sophisticated ways. They framed the views of important public buildings, such as the Pennell Institute. They lined the streets to provide shade in summer and to separate private spaces, such as front yards, from public spaces, such as roadways and sidewalks. Trees were used for cooling, dust control and for their beauty. In a very important way, the large shade trees of the time symbolized the pride that Gray residents felt in their community.

The decline of rural northern New England that occurred in the middle and late 20<sup>th</sup> century is well documented. As people and capital emigrated to urban centers and to other regions of the country, Gray village also declined. Public buildings and homes were no longer well tended, the landscaped areas were neglected, and the stately shade trees of the past were not always replaced when they fell victim to disease, storm damage, road salt, and other hazards. Indeed, for many decades, the residents of Gray seem to have almost forgotten about their community forest.

The Town of Gray now intends to reverse this decline and make the village forest once again an integral part of its economic and community development program.

### **C. Steps Leading to the Strategic Plan**

For a long period, the only Town official charged with the responsibility for overseeing the community forest was the Public Works Director. Every year, as part of his duty to keep the roads in town safe for motorists, he would evaluate the condition of trees overhanging the town's roads and put hazardous tree removal and pruning work out to bid. There was no attempt to replace trees or increase canopy coverage in areas where trees were few or absent.

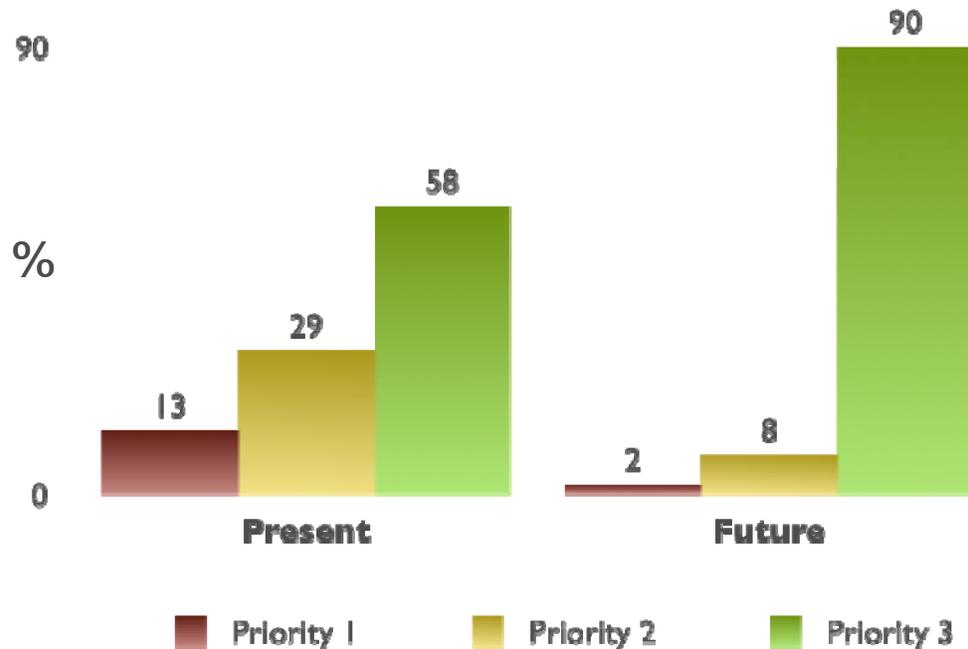
One day last year, however, the Public Works Director met with the Economic Development Director concerning the prospect of doing additional cultural work to preserve some of the Town's largest and most conspicuous sugar maples (most of the American elms had been removed after infection with the Dutch elm disease more than 40 years ago). From their discussions emerged the idea of reestablishing a genuine urban forestry program for Gray's historic village.

With in kind services provided by Town staff and funds provided in the 2009-2010 Public Works budget as a local match, the Town sought and obtained a Project Canopy Planning Grant in the summer of 2009. This money enabled the Town to hire Whitney Tree Service to conduct a street tree inventory and Land and People, LLC to advise the Town on community forest planning. With the assistance of these consultants, the information provided by the inventory, and from discussions among town staff and residents at a public workshop at Stimson Hall in January of 2010, the Town prepared its first Community Forest Strategic Plan.

### **D. Results of the Street Tree Inventory**

The inventory identified 237 trees within or near the right-of-way of public streets within the village, as shown in Exhibit B. They were identified by number (a metal tag was attached to aid future identification) and by species, size, and location. They were then assessed for the quality of the growing site, the presence or absence of overhead utilities, overall health, recommended management, priority for taking action, and the cost of performing the recommended work.

## FOREST CONDITION



From this data, the Town learned that 30 trees (13%) pose a safety hazard due to dead, dying or decaying limbs. Of these, 26 trees should be removed entirely while 4 trees can probably remain so long as they are carefully pruned. The distribution of these dead and dying trees appears to be essentially random, and, therefore, it does not indicate that any major disease or environmental stress is a factor in their decay. Most of them are large sugar maples dating back to Gray's heyday early in the 20<sup>th</sup> century and late 19<sup>th</sup> century, while a few are middle aged Norway maples that were probably planted during the 1960's to replace some of the American elms killed by the Dutch elm disease.

A 13% rate for immediate removal or heavy pruning may seem high by the standards of a properly managed urban forest, but not for one that has been neglected for decades. For comparison, when the City of Bath conducted its first street tree inventory in 1993, it found that the City contained 3,000 street trees. Of this number, 538 needed to be removed and another 178 needed to be pruned immediately for safety reasons -- 24% of the total. Today, however, Bath's street trees are thriving.

In addition to the trees that should be removed or pruned for safety reasons, the inventory also identified 68 trees (29%) that needed some cultural treatment within a few years to improve their overall vigor and condition. Most of this work would be pruning, but some fertilizing and cabling is also recommended. Again, this figure is high for a managed forest but not so for one that has been neglected.

The remaining 139 trees (58%) assessed by the inventory are doing fine at present and do not require immediate attention.

The data provided by the inventory highlight three other issues of major importance about the forest.

The first is that the species mix is heavily weighted toward maples, primarily sugar maples and Norway maples. In fact, 3 out of 4 trees (76%) belong to this single genus of closely related species. From a biological diversity point of view, this is a very undiversified condition, which makes the forest susceptible to diseases and environmental stresses that target maples. Although it was accepted practice a century ago to plant near monocultures of tree species for design purposes, this advice is no longer considered wise from a modern forest management point of view. Due to recurrent adverse conditions, including the spread of foreign tree diseases, pests and climate change, it is wiser to have no more than about 10% of the urban forest in species of any one genus.

The second issue is that some areas within the village are nearly devoid of trees of any kind, due to the expansion of parking lots in front of the shopping malls. In their present condition, these paved areas are naturally very hostile to plant growth, but with creative planning and reorganization, it may be possible to reintroduce some trees back into this part of the village.

The third issue is that many of the trees in the inventory have turned out to be located on private property outside the public right-of-way. This means that, with some notable exceptions, such as the magnificent maples at Pennell Institute, most of the street trees in the village are privately owned.

## Part 2: Forest Management

### **A, Administration**

The Town requires a skilled Oversight Committee to launch the community forest program over the next three years. The skill sets required are expertise in arboriculture and forest management, public works, economic development, and working with the public. Town staff can already provide most of these skill sets, but professional assistance of an arborist is missing. Thus, this gap must be filled in some way from someone currently outside local government.

Given the skill sets needed, the Oversight Committee should consist of individuals from the following three positions:

1. Public Works Director;
2. Community Development Administrator;
3. Town Arborist (see discussion below).

The tasks of the Oversight Committee should be the following:

1. Prepare an annual work plan to implement the long term goals of the Strategic Plan;
2. Initiate and oversee implementation of the activities described in the annual work plan;
3. Prepare grant requests, monitor the community forest budget, and advise the town on annual appropriations needed for the community forest;
4. Develop a cooperative public/private partnership in collaboration with residents and business owners in the village for planting and maintaining trees on private property;
5. Update the street tree inventory as needed;
6. Prepare requests for proposals and bid documents for tree work;
7. Monitor the quality of the work performed by contractors working for the town on community forest projects.

The position of Town Arborist has traditionally been filled in small Maine towns by a local arborist who works without compensation, but whose involvement is limited to monitoring the condition of street trees and helping the town decide on what tree work needs to be done. Since the arborist is working without pay, it has been customary to hire the arborist's own company on an as-needed basis for the tree work that would normally be done on an incremental basis. Often, this could be done without triggering the town's requirement for putting work out to bid on a competitive basis.

In the present situation, the amount of supervision that is likely to be required to get the community forest program underway may be such that such an arrangement might not work. Two options for solving this problem may be the following:

1. Hire a certified professional arborist on a part-time basis (approximately \$6,000 annually) under the supervision of the Public Works Director to help launch the

community forest program. The position would be reevaluated after two years to determine if it should continue. The person in this position would provide direct oversight and administration of the tree work performed by contractors for the Town.

2. Appoint a resident with expertise in arboriculture, forestry, or a related field as a member of the Oversight Committee, but incorporate many of the services needed by the community on specific projects into the bid contracts for the work. The member of the Oversight Committee with this professional background could help the Town by providing advice and perspective on the work performed by the Town's contractors but would not himself become involved in the day to day administration of the program. This responsibility would still lie with the Public Works Director.

### **B. Public/Private Partnership**

The Public Works Department (PW) and the Maine Department of Transportation (MDOT) reviewed available right-of-way information for the major thoroughfares passing through Gray village. Their conclusion was that many of the Town's street trees are, in fact, located on private property whether inside or outside of the public right-of-way. Therefore, although these trees provide a public benefit and although the Town and the State have responsibility to make sure that these trees do not pose a hazard to passing motorists, most of these trees are privately owned.

This situation has its advantages. Many trees evaluated in the inventory are too close to pavement, wires, parking lots, and other obstructions in order to grow optimally. Thus, it would be beneficial from a long-term management point of view to move any replacements further back on private property where lawns and other landscaped areas can provide better growing conditions.

The consequence is that the success of Gray's Community Forest Program depends on creating a good relationship between the Town and the residents and business owners of the village. There are several models of such partnerships that are thriving in Maine, of which those in the City of Portland and the City of Bath are two outstanding examples.

In Portland, the Division of Forestry has been working with homeowners and businesses to plant trees on private property for at least 25 years. The main purpose of the Co-op Program, as it is called, is to increase canopy coverage along Portland's major arterial streets, but in such a way that the trees do not hang over the motorist travel lanes and do not pose a threat from falling limbs and branches in the event of a storm or other emergency. The Town and property owner work together to choose the right tree for the right location, using City-approved guidelines and a City-approved plant list. Then the property owner purchases the tree and the City picks it up at the nursery, transports it and ensures that it is planted properly using its own personnel. From then on, the property owner is responsible for maintaining the tree, but the City continues to provide technical advice and encouragement, and sometimes even emergency care, for as long as needed. The program is so popular that the City has to limit the number of new trees it will partner on annually.

In Bath, the Division of Forestry faces a similar situation as the one in Gray, because most of the streets in the city do not have adequate space for street trees. To help solve this problem, the City established the Tree Easement Program in 2004. Under the terms of the Tree

Easement, the property owner grants Bath the right to plant and maintain a public tree on a 4x4 foot piece of their property, but the City assumes all responsibility and cost for planting, watering and maintaining the tree during its lifetime. The Tree Easement is a restriction on the use of a small part of the owner's property. Nonetheless, the property owner receives the benefit of getting a great tree with all the benefits this provides at no cost to him or her. One of the main purposes of Bath's program is to encourage the planting of large shade trees, because these have the most visual and environmental effect on the urban landscape, and in this context the program is deemed a success.

With these two programs and others like them to learn from, it would appear that Gray could easily design a program that meets the needs of people in this community. In addition, there are some common characteristics of successful programs in both cities that certainly apply to Gray, as described below:

1. Trees planted under the partnership should serve the public interest by being plainly visible from the street and nearby sidewalks and other publicly accessible areas.
2. Trees should be selected from a Town-approved plant list, be suitable to the growing conditions at the site, and help to achieve the Town's goal of increasing biological diversity in its tree stock.
3. Trees should be selected from an approved nursery and planted according to Town-approved specifications, whether the tree is planted privately or by contractors working on behalf of the Town.
4. The Town and the property owner should agree on who maintains the tree, especially during the critical first growing season when the tree will probably frequent watering. Periodic corrective pruning during the next five to ten years after that is also essential (corrective pruning prevents the overlapping and weak branching structure that deforms tree crowns at maturity and makes older trees susceptible to damage from wind, snow and ice).
5. Trees planted under the partnership program should probably be included in updated street tree inventories (as in Bath), or, at a minimum, in a database program that lists tree species, location and ownership information (as in Portland).

### **C. Tree Work Schedule and Budget**

There is a logical order of steps to take in order to reestablish the vigor and canopy coverage of an urban forest, and the Town intends to follow a similar approach in its own program for the village.

Based on the September 2009 Street Tree Inventory, discussions with Town staff and consultants (Whitney Tree Service, Land and People, LLC) and public comments at the Public Forum at Stimson Hall in January of 2010, the sequence of steps the Town intends to take are the following:

1. Remove safety hazards (Priority 1 trees in the Street Tree Inventory);
2. Conduct corrective pruning, fertilizing, and other cultural treatments as recommended to improve the vigor of Priority 2 trees in the Street Tree Inventory;

3. Begin replanting in areas where Priority 1 trees have been removed or where they have been absent for years in collaboration with willing property owners (possibly including MDOT frontage on Portland Road and some of the shopping mall parking areas on Main Street);
4. Institute an annual maintenance program for the forest;
5. Update the inventory and other management information;
6. Reevaluate and update forest management plan as necessary.

**TABLE 1 – TREE WORK SCHEDULE & BUDGET**

	Task	Estimate	Other \$	Town \$	Annual Town \$
<b>Phase 1:</b> 2010-2011	1. Remove 26 trees (Priority 1)	12,800	3200	9,600	
	2. Prune 4 trees (Priority 1)	1000	250	750	
	3. Perform maintenance on 69 trees (Priority 2)	9200	3200	6000	
	Phase 1 Total	23,000	6650 (29%)	16,350 (71%)	8000
<b>Phase 2:</b> 2012-2014	4. Perform maintenance on 69 trees (Priority 2)	17,000	5750	11,250	
	Phase 2 Total	17,000	5,750 (34%)	11,250 (66%)	5625
<b>Phase 3:</b> 2012-2017	5. Grind 26 stumps from trees removed during Phase 1	3300	800	2,500	
	6. Replace 26 trees removed during Phase 1	13,000	6500	6500	
	7. Plant 15 new trees where needed	7500	3750	3750	
	Phase 3 Total	23,800	11,050 (46%)	12,750 (54%)	4250
<b>Total for 2010-2017</b>		<b>63,800</b>	<b>23,450 (37%)</b>	<b>40,350 (63%)</b>	<b>5764</b>

**Notes**

1. Priority 1 trees pose a safety hazard and should be removed as soon as possible. Priority 2 trees require some maintenance in order to improve or maintain their condition, but the need is not urgent. Priority 3 trees, not shown above, require no maintenance at this time. See the Gray Street Tree Inventory, September 2009, by Whitney Tree Service.
2. Other revenues include cost sharing with MDOT and CMP, the proposed public/private tree planting partnership, and matching grants from the Project Canopy Program. An assumption has been made that the size of Project Canopy grants available in the next few years may be reduced due to a reduction in federal spending on domestic programs.

As shown in Table 1 above, the work is envisioned as proceeding in three phases over the next 7 years, with a total estimated cost of \$63,800. The forecast for matching funds from other sources of revenue during this time is estimated somewhat conservatively as only about 1/3 of this amount, due to the recession and possible constraints in federal spending on domestic programs. If this forecast turns out to be accurate, then the Town's share of the total cost of the program after 7 years would be a little over \$40,000.

Well run urban forestry programs usually bring in about 1 or 2 dollars in revenue from a variety of private and public sources for every dollar spent by the municipality. If, in spite of the recession, this scenario turns out to be true, the Town's share of the program after 7 years would be closer to \$20,000 or \$30,000, but this plan again figures more conservatively in case such funding does not come through.

A related issue is how much the municipality would need to appropriate annually to keep up with the proposed work schedule. Based on the modest revenues from other sources that are forecast, the Town would need to appropriate approximately \$5,800 annually on average to complete the program shown over 7 years. This could vary year by year, however, depending on the degree to which other revenues are available and the pace at which the Town might wish to proceed. The greatest need for income might occur between 2012 and 2014, when, if the Town wishes, it could begin combining maintenance work on existing street trees with planting new trees. After 2014, the estimated annual cost would begin to decline to a lower level for an indefinite period.

Note that the tree work budget shown in Table 1 doesn't include the value of staff time or the cost of hiring a part-time Town Arborist to administer the program. This subject is addressed above under Administration.

#### **D. Biological Diversity**

A critical concern for the long-term management of the forest will be increasing its biological diversity. As indicated in the analysis of the results of the Street Tree Inventory in Part I, maples constitute 76% of the species mix in the Gray Village Forest. Even after the removal of Priority 1 trees, which are mostly maples, the forest will still contain 156 maples out of a total of 212 trees (74%).

The Town's policy on new tree planting, therefore, is to avoid planting maples entirely for the foreseeable future and to select species instead from other genera until a more diversified species mix is achieved. Table 2 illustrates the existing species mix and a more diversified one that can be attained gradually by planting a variety of other tree species over a prolonged period, perhaps 10-20 years (depending the on the ultimate size of the forest).

An advantage of a public/private cooperative planting partnership recommended in this plan is that the choice of species for Gray Village increases greatly if trees are planted farther back from the roadway. Trees face numerous obstacles to growth as a result of being located close to streets. Typical hazards include compacted soils, poor drainage or excessive drainage, overhead wires, air pollution, sun scald, wind chill, snow banks, salt, and impacts from motor vehicles. Conditions such as these obviously limit the number of species usually considered suitable for use as street trees. However, farther back from roadways, where extra space and

better soil is available, growing conditions are much better. Thus, many additional species become suitable for planting in these areas.

**Table 2: Species Diversity**  
Current vs Future Species Composition

Tree Size (Mature Height)	Genus	Current Mix – Low Diversity		Future Mix – Higher Diversity	
		No. Trees	Percent	No. Trees	Percent
Small 20-30'	1. Malus	6	3	8	3
	2. Prunus	1	<1	8	3
	3. Sorbus	1	<1	1	<1
	4. Amelanchier	0	0	8	3
	5. Syringa	0	0	8	3
Medium 30-50'	6. Gleditsia	4	2	12	5
	7. Carpinus	0	0	12	5
	8. Ostrya	0	0	12	5
Large 50'+	9. Acer	179	76	50	20
	10. Quercus	13	5	25	10
	11. Fraxinus	8	3	25	10
	12. Tilia	7	3	25	10
	13. Betula	1	<1	5	2
	14. Thuja	3	1	3	1
	15. Picea	9	4	10	4
	16. Prunus	5	2	4	1
	17. Ulmus	0	0	12	5
	18. Gingko	0	0	12	5
	19. Fagus	0	0	12	5
<b>Total</b>		<b>237</b>	<b>100</b>	<b>252</b>	<b>100</b>

**Notes**

1. Information on the current species mix is derived from the Street Tree Inventory performed by Whitney Tree Service in September of 2009.
2. The preferred species mix would be achieved by replacing maples with species from other genera as the older maples die of natural causes over time (probably 10-20 years). Planting new trees in areas where they are now absent is another way to increase the biological diversity of the village forest.
3. The higher diversity mix shown above is only one of many combinations that are possible. The long-term goal is to make sure that no one genus exceeds 10% of the total.

## Part 3: Funding

### **A. General Approach**

Experience tells us that municipal forestry programs that rely solely on funding from annual appropriations based on taxation tend to be highly unstable. Although popular, park and street tree programs are not considered as high a priority as police and fire protection, road maintenance, or education, for obvious reasons. They are, therefore, usually one of the first items cut or reduced in municipal budgets whenever revenues decline or political opinion for any reason favors reduced spending.

Creative urban foresters have dwelt successfully with this problem by developing multiple revenue streams. Some of these sources are large and some are small, but cumulatively each revenue stream over time is of great importance. Therefore, the Town intends to place its community forestry program on a sound financial footing by balancing modest annual appropriations with grants, cost sharing, federal emergency relief funds, private donations and other sources of income. These revenue sources may vary individually in amount on a year to year to basis, but, over time, they should help to even out the revenue available to meet the Town's community forest goals.

### **B. Annual Appropriations**

Although annual appropriations from taxation tend to be subject to political winds, it is advantageous if the amount is regular, even if modest. In 2009, Public Works got the program launched with an appropriation of \$7,000, which was matched by a grant of \$6,000 from the Maine Forest Project Canopy Program. A similar amount appropriated annually should be sufficient to enable the Town to take advantage of various state and federal funding sources on a regular basis, as well as cost sharing programs with residents (such as Portland's Coop Planting Program), the Maine Department of Transportation (MDOT) and Central Maine Power (CMP).

In general, for programmatic costs (not including staff time), successful community forest programs generate about 2 to 3 dollars in matching grants and cost sharing funds annually for every 1 dollar appropriated from tax revenues. Thus, an initial target of matching every dollar of municipal money with a dollar from other sources for Gray's community forest program, on a long-term average basis, seems reasonable and achievable.

### **C. Matching Grants**

The principal source of matching grants in Maine for community forest programs is Project Canopy, administered by the Maine Forest Service (MFS). The money for this program is provided by the US Forest Service through its national initiative called the Urban and Community Forestry Program as authorized by the Cooperative Forestry Assistance Act of 1978 and revised by the 1990 Farm Bill. Congress has continued to fund the program fairly consistently during the 30 years of its existence.

Project Canopy Grants are available for street tree inventories, strategic plans, forest management plans, tree board development, public tree ordinances, tree planting, and tree maintenance. Some municipalities in Maine, such as Augusta, Portland, and Bath, apply for

Project Canopy Grants annually and often receive them because their urban forestry programs have a long track record of success.

MFS evaluates planning grants and tree maintenance grants separately; as they are different programs, but both have a limit on the award annually (it was \$7,000 in 2009 for planning projects). Funding amounts and the rules governing what projects are eligible are subject to change annually, however, and there is competition from other municipalities for the limited money available.

#### **D. Cost Sharing**

The Town can share the cost of tree work in at least three ways. For trees that must be pruned or removed due to conflict with overhead wires, the Town can partner with CMP. For trees that must be pruned or removed because they pose an immediate safety hazard on State highways, the Town can partner with MDOT. In these two instances, CMP and MDOT would perform most of the actual tree work, while the Town would probably participate by cleaning up the debris after it is piled on site and by stump grinding. The cost sharing formula in these cases might be estimated for general planning purposes as approximately a 75/25 split between CMP or MDOT and the municipality.

A third way to share the cost of tree work involves the planting and maintenance of trees on private property. This subject has been discussed at length in Part 2. The formula for dividing the cost between the Town and the property owner should be the same for everyone and from year to year to ensure parity. In Portland, as described in Part 2, the property pays for the tree and maintains it, while the city plants the tree (proper planting is vital to long-term success). In Bath, the property owner provides an easement that protects the tree permanently while it lives, while the city agrees to plant and maintain it indefinitely, an approach that ensures that the city has total control over the tree's well-being. As a general rule, the cost of planting a tree is about equal to its purchase price. Thus, in a coop program like Portland, the initial installation cost is shared approximately equally between the municipality and the property owner.

#### **E. Emergency Relief Funds**

Federal emergency relief funds are a critical source of funding for both immediate clean-up and long-term preventative tree work after a natural disaster. Although they are available only once after a disaster occurs, the amount of money involved can be significant. In addition, these funds are usually designed to help protect the municipality from future disasters by encouraging Towns to conduct preventative tree maintenance throughout the community. In Bath after the 1998 Ice Storm, for example, the City used \$500,000 in federal emergency relief funds to remove, prune or clean up debris from 1,000 trees. Bath is still enjoying the benefit of this preventative maintenance work 12 years after it was completed.

#### **F. Transportation Enhancement Funds**

Most federally funded transportation projects today include a component for restoring environmental and scenic benefits of the landscape impacted by road construction. In a case like Gray Village, road construction will almost certainly lead to tree loss, but even if no street trees are immediately affected, a case can usually be made that the impact of the larger road

can be mitigated by the planting of new trees off-site. The Town should make it a policy to explore this option on every new road project that occurs in the village.

### **G. Partnering on Grant Requests**

Trees often have a place in mitigating a number of problems in the urban environment, as well as providing scenic and recreational benefits. These ecosystem services include the abatement of noise, air pollution, glare, wind, dust, heat in summer and cold in winter. As a consequence, it is possible to include an urban forestry component in projects designed to solve a wide variety of urban problems. This is usually done by partnering with other organizations to provide multiple benefits for the community, a strategy that strengthens grant proposals at most private charities as well as government. An example is energy conservation, where trees and other landscape plantings can help keep buildings cooler in summer and reduce winter heat loss, a benefit that can be dovetailed with better insulation and other engineering solutions in building design.

Urban foresters say that the value of such partnering goes beyond fund raising to the equally important goal of increasing popular support and understanding for urban forestry in general.

### **H. Municipal Tree Trust**

Trust funds can be created to provide municipalities with a steady source of income for tree planting and maintenance work. The funds are regulated according to a legal document that establishes the purpose of the trust, a board of directors, the means of capitalizing the fund, and how income from the trust can be expended. The advantage of such an arrangement is that the trust can raise money from both private and public sources and, since the fund is dedicated to a specific purpose, it is largely immune from the annual budget process that afflicts most municipal forestry programs.

The most notable example of a community forest trust fund in Maine is the Forest City Tree Trust in Portland. The trust's strategic plan proposes to establish an endowment worth \$500,000, of which half is designed to be raised from private sources and half from public sources, including contributions from the City of Portland. Since its formation in 2001, the trust has raised about half of this amount. In the meantime, it has contributed annually to tree planting and maintenance projects throughout the community.

Perhaps a similar trust might be feasible in Gray, just at a smaller scale. Success would depend on good leadership and contributions from private sources of wealth within the community. Regular appropriations to the fund from the municipality would also help, but the fund would have the flexibility to solicit grants from many sources and to manage its endowment for growth and stability over a long period of time.

## Part 4: Program Evaluation

### **A. Street Tree Inventory**

The foundation for any intelligent decision-making about the urban forest is the street tree inventory, and so its value for scheduling work, estimating costs, understanding which new species to plant, and planning for the future cannot be underestimated.

As work proceeds on the present village forest, the current inventory will gradually become obsolete unless records are kept of the work that has been done. This can easily be done by adding a column to the existing database that allows the Town to indicate what work on each tree has been done as it occurs. New trees can be accounted for by tagging them with a number and entering them into the database as well.

Eventually, this method will in itself become cumbersome and errors will probably accumulate, at which time a new inventory should be conducted. In general, a new inventory is in order whenever the existing database becomes obsolete due the amount of work that has been accomplished, a change in the boundaries of the management district, storm events that affect a large proportion of the urban forest, or the planting of a significant number of new trees. Time elapsed since the last inventory is also a factor, because, of course, the condition of street trees changes over time due to age, the onset of disease, road construction and other factors.

### **B. Annual Report**

As indicated in Part 2, the responsibility for administering the urban forestry program lies with the Oversight Committee consisting of town staff and the Town Arborist. In addition to scheduling work and proper record keeping, the Oversight Committee should report to the Town Council at least once annually to report on what has been accomplished in the previous year and what the annual work plan is for the coming year.

The annual report should always frame its evaluation of past successes and failures in light of the goals of the Strategic Plan. Otherwise, there may be a tendency for the program to drift off track due to the inevitable changes that will occur in personalities and the political environment over time. The evaluation may, of course, reveal that the Strategic Plan itself should be modified or updated as a result, and this is, of course, a natural part of the continuous planning that is necessary to run a successful urban forestry program that is accountable to the public.

