

TOWN OF TEMPLETON
Department Of Public Services
381 Baldwinville Road
TEMPLETON, MASSACHUSETTS 01468

TEL: (978) 939-8666

To: Selectboard Members
From: Robert Szocik Department Of Public Services
Re: Tree Inventory
Date: 2/5/2024

Good Evening Board

As you know in the past, I have mentioned tree inventory and talked about some goals on Templetons trees.

Last summer I reached out to UMass Amherst trying to get a student to do a short tree inventory in parts of Templeton.

We are fortunate to have a student Madeleine Zygmunt come to town to do a 100-tree survey.

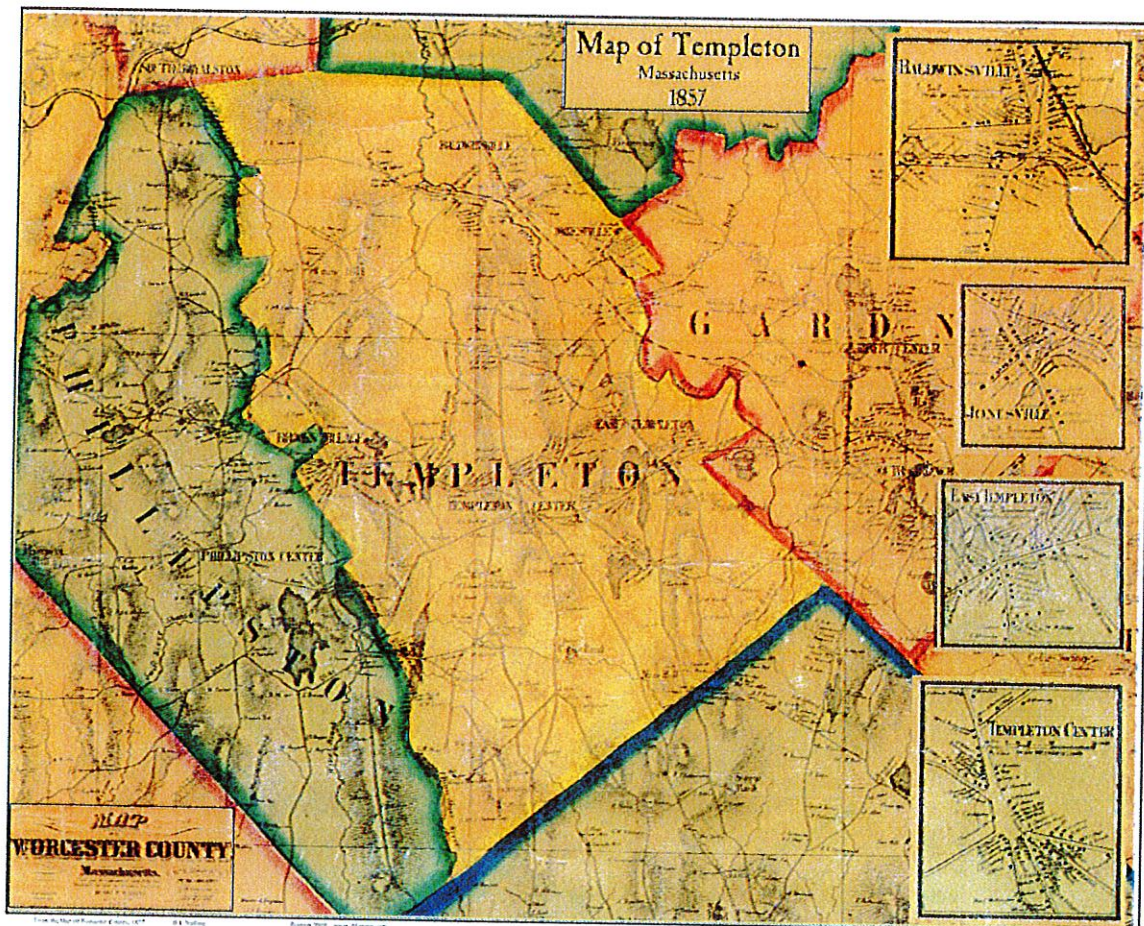
In the booklet provided by Madeleine you will see what is involved in a tree inventory such as risk trees, species, shade trees and the alike.

Future goals as I spoke to a few about is better the pruning and tree removal in town. Getting a grant for having a wood farm at old land fill. Improving on getting a much more involved tree survey for the whole town.

Please take a moment at your leisure to browse through the booklet provided.

Best Regards
Robert Szocik
Director Of Public Services

Urban Forestry Tree Inventory and Master Plan *for* Templeton, MA



Presented by Madeleine Zygmunt
NRC 310 Community Forestry
May 5th, 2022

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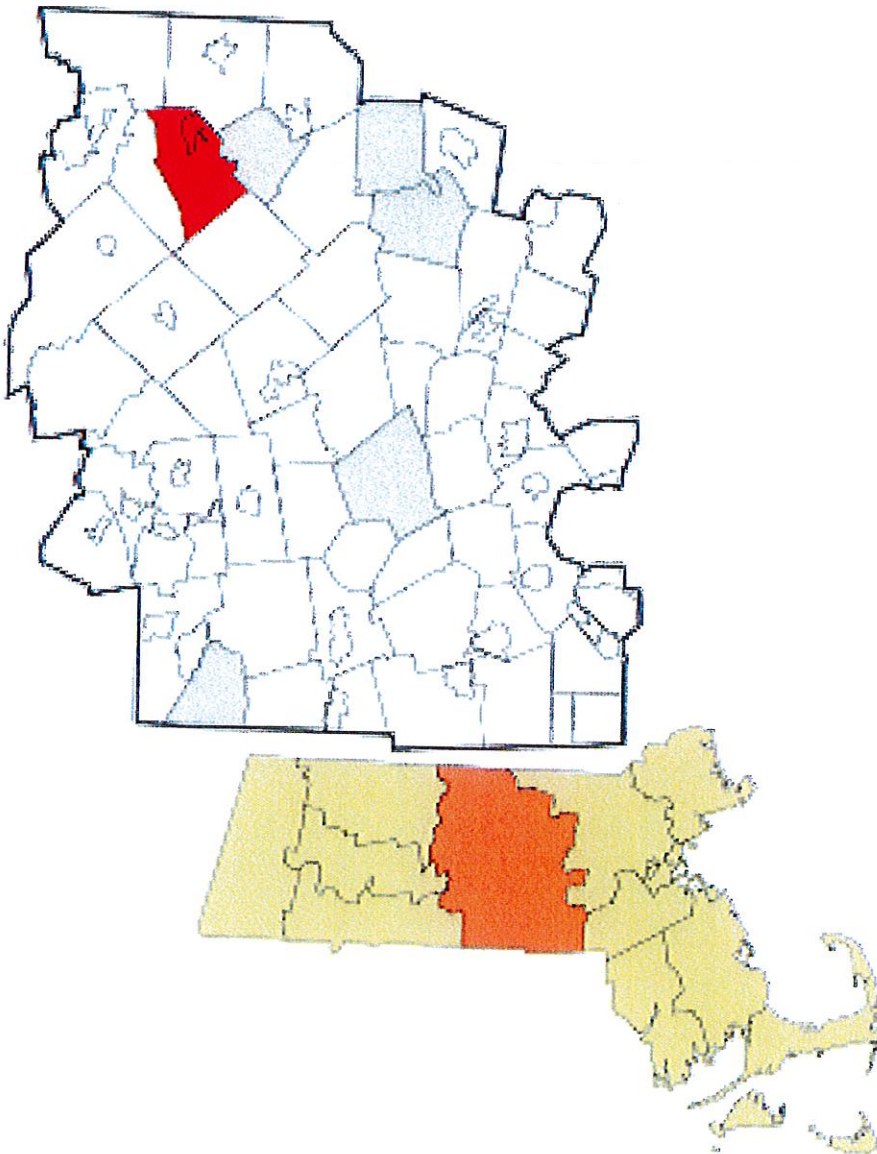
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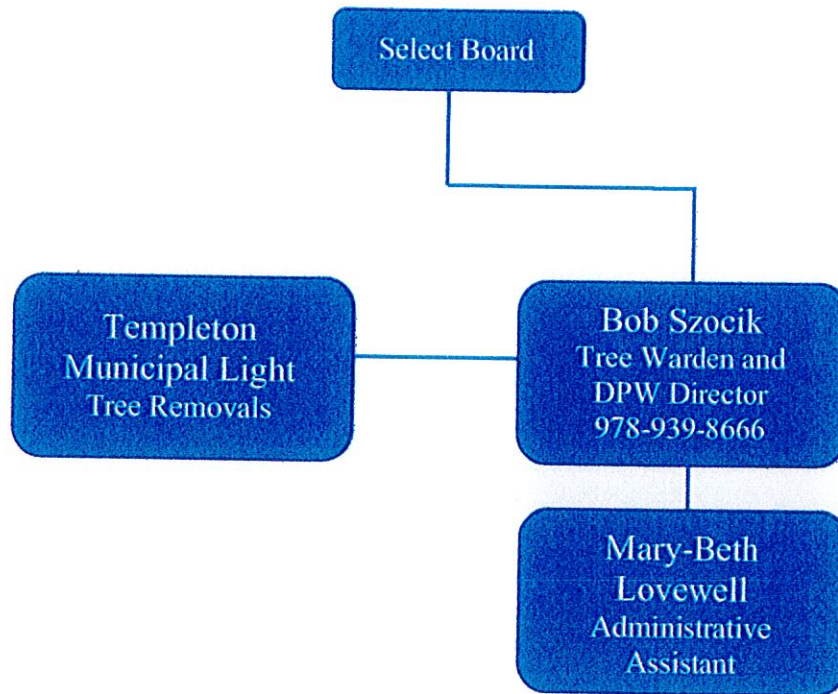
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Templeton, MA

Worcester County



Section 1: Introduction
Municipal Flow Chart



Section 1.1: Templeton MA

Founded in 1764

Current Population: 8153 individuals

Municipal Road Miles: 99.69 miles

Heritage Tree Laws: N/A

Tree City USA: N/A

Land Use Type	Total Acreage	% of Total Land Area
Residential	1,799.62	7.7%
Temporarily Protected & Agricultural (Chapter 61)	1,214.32	5.5%
Commercial	189.55	1%
Industrial	528.65	2.1%
Forest	16624.26	78.20%
Government / Open Space	3,849.75	5.5%
Total	20,586.90	100.00%

Sources: Templeton Land Use Tax Base Study 2007 and MRPC Environmental and Development Characteristics Analysis for the Town of Templeton, December 2013.

Section 1.2: Town History

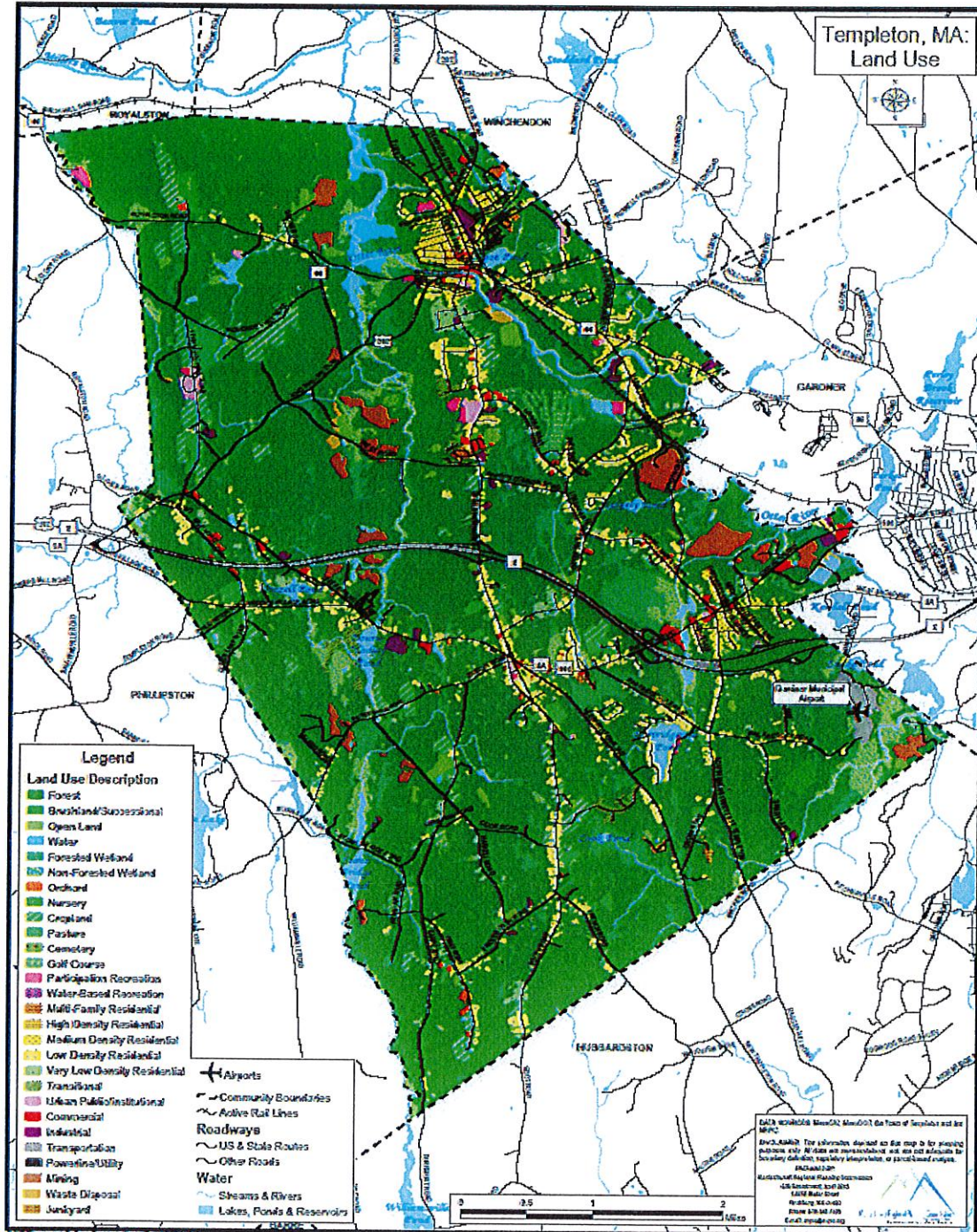
As of 1620 the land which has since become the town of Templeton, MA was occupied by the Nipmuck and Agawam tribes (2). The native population, however, was decimated as English traders brought disease and colonizers sought to take hold of the land (1). The Town of Templeton was first colonized in 1733 by military soldiers who were promised the land by the New England Confederation after the battle against the Narragansett tribe in King Philips War (3,4). Though the war ended in 1675, it was not for 50 more years before the land was settled (4). The township saw its first framed house in 1760 and the land was incorporated as

the Town of Templeton in 1764 (4). The population was 348 individuals in 1765 and as of 2022 has 8,153 residents. Templeton, MA is a part of Worcester County and has a total area of 32.4 square miles. There are presently four parks in Templeton: Gilman Waite Field located off Michael's Lane in Baldwinville, Houghton Park located at 9 Main Street, Otter River; East Templeton Ballfield located on Cottage Lane in East Templeton; and Templeton Center Playground located at Templeton Center School between South Road and Wellington Road, Templeton (6). According to Templeton Bylaws 4141-4143, parks may be erected for playground or recreational purposes, or for providing light and air (7). Parks also may not include land deemed unsuitable for recreational purposes—such as wetlands (7). As for land deemed government or open space, Templeton has 3,849.75 acres (8). Community members are passionate about access to open space and a limit on new developments (8).

Section 1.3: Urban Forest Activities

Urban forestry in Templeton, MA has been managed under Bob Szocik, who is a certified Tree Warden, for the past four years. Mr. Szocik oversees approximately fifteen to twenty tree removals and ten to fifteen tree plantings each year. Urban forestry in Templeton is moving towards developing and enacting a management plan as it presently has very few resources and limited funding. The

budget currently provides enough funding for tree removals and limited plantings. Templeton community members are passionate about their town, and Bod Szocik utilizes the community to have organized tree planting days in an effort to plant more trees and spread forestry awareness. Urban forestry utility partners currently include Templeton Municipal Light who perform tree removals. Should a community member or developer seek to remove a Town tree they must go through the tree warden. This is also the case if a community member or developer wishes to plant on public-use or government owned lands.



Map 1: Land Use in Templeton, MA

This map was retrieved from the 2017 Templeton, MA Master Plan Document (8). It depicts the variety of land uses in Templeton

Section 2: Tree Inventory

Section 2.1 Background

A partial tree inventory was performed on April 30th by Madeleine Zygmunt in Templeton, MA. The partial inventory included one hundred trees across eleven tree species. The inventory was performed within three types of zoning:

Commercial, Village District, and Residential. A tree inventory is a valuable tool for assessing the health and quality of a town's tree population. It is also useful in determining new plantings and removals. An inventory can also be an asset to public safety as it can indicate which trees pose as potential hazards. For the purposes of this partial inventory, DBH, relative condition, necessity of pruning, and location of planting were chosen as the assessors of the urban forest. Relative condition is broken down into four categories which are outlined in Table 2.

Necessity of pruning was indicated as Yes (Y) or No (N) and was indicated as Y if there were visible dead branches, or branches encroaching on power lines and utility poles. Diameter at breast height (DBH) was measured with a diameter tape and measured in inches. Location of plantings are listed in Table 3.

Section 2.2: Relevant Keys

Table 1: Tree Species Key

<i>Acer Rubrum</i>	AR	Red Maple
<i>Acer Saccharum</i>	AS	Sugar Maple
<i>Betula lenta</i>	BL	Black Birch
<i>Crataegus mollis</i>	CM	Downy Hawthorne
<i>Picea abies</i>	PA	Norway Spruce
<i>Pinus resinosa</i>	PR	Red Pine
<i>Pinus strobus</i>	PS	White Pine
<i>Quercus rubra</i>	QR	Red Oak
<i>Quercus velutina</i>	QV	Black Oak
<i>Tsuga cadesis</i>	TC	Eastern Hemlock
<i>Ulmus americana</i>	UC	American Elm

Table 2: Tree Condition Key

Condition	Abbreviation	Percentage of Healthy Wood
Good	G	70% or greater
Fair	F	50 – 69%
Poor	P	30 -49%

Dead	D	29% or less
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Table 3: Tree Location Key

Location	Abbreviation
Road	RD
Park	PK
School	SC
Yard	YD
Cemetery	CY

Section 2.3 Tree Inventory

Tree ID	Species Code	DBH (in)	Pruning (yes/no)	Condition	Site Type
1	QR	20.34	Y	G	RD
2	QR	23.79	Y	F	RD
3	QR	10.94	Y	F	RD
4	AS	19.27	Y	G	RD
5	AS	11.59	N	F	RD
6	AS	17.45	Y	P	RD
7	AS	11.55	N	F	RD
8	AS	14.1	N	F	RD
9	AS	18.05	Y	P	RD
10	TC	13.57	N	F	RD
11	TC	10.85	N	P	RD
12	AS	14.75	N	F	RD
13	PS	33.69	Y	P	RD

14	QR	26.38	Y	F	RD
15	TC	11.63	N	G	RD
16	QR	12.02	Y	D	RD
17	PS	25.03	Y	D	RD
18	PR	28.34	Y	G	CY
19	PR	18.2	Y	G	CY
20	PR	30.98	Y	G	CY
21	PR	30.68	Y	G	CY
22	PR	26.92	Y	G	CY
23	PA	40.07	N	G	CY
24	AR	9.35	N	G	CY
25	AS	14.55	N	G	CY
26	PR	16.93	Y	P	CY
27	PR	15.81	Y	P	CY
28	PR	18.82	Y	P	CY
29	PR	23.28	Y	F	CY
30	PR	20.34	Y	P	CY
31	QV	14.93	N	G	CY
32	QV	4.87	N	G	CY
33	AR	15.24	N	G	CY
34	QV	18.51	N	G	CY
35	PS	1.44	Y	G	CY
36	PS	35.94	Y	G	CY
37	QR	33.31	Y	F	CY
38	FR	12.16	Y	F	CY
39	FR	10.04	Y	F	CY
40	PS	26.9	Y	F	CY
41	QV	12.78	Y	G	CY
42	PS	32.04	Y	F	CY
43	PS	29.15	Y	F	CY
44	PS	14.52	Y	F	CY
45	TC	9.97	N	G	CY
46	BL	6	N	G	CY
47	BL	4.25	N	G	CY
48	AR	15.7	Y	F	CY
49	TC	9.25	N	G	CY
50	QR	4.22	N	F	CY
51	AR	2.33	N	G	SC
52	AR	2.3	N	G	SC

53	AR	2.2	N	G	SC
54	AR	2.02	N	G	SC
55	AR	2.2	N	G	SC
56	AR	2.43	N	G	SC
57	AR	2.24	N	G	SC
58	AR	2.22	N	G	SC
59	AR	2.32	N	G	SC
60	AR	2.38	N	G	SC
61	AR	2.53	N	G	SC
62	AR	2.13	N	G	SC
63	AR	2.29	N	G	SC
64	AR	2.31	N	G	SC
65	AR	2.38	N	G	SC
66	AR	2.4	N	G	SC
67	AR	2.27	N	G	SC
68	AR	2.46	N	G	SC
69	QV	17.11	Y	G	YD
70	QV	17.91	Y	G	YD
71	QV	25.73	Y	G	YD
72	AR	2.34	Y	G	SC
73	CM	2.41	Y	G	SC
74	CM	2.43	Y	G	SC
75	CM	2.28	Y	F	SC
76	CM	2.83	Y	F	SC
77	CM	2.84	Y	F	SC
78	BL	2.8	Y	D	PK
79	AS	21.05	N	G	PK
80	QR	18.93	N	G	PK
81	AS	10.51	N	G	PK
82	AR	20.04	N	G	PK
83	AS	27.1	Y	G	PK
84	QV	23.9	N	G	PK
85	AR	9.14	N	G	PK
86	AS	23.23	Y	F	PK
87	AS	14.37	Y	G	PK
88	QV	25.96	Y	G	PK
89	QV	24.62	Y	G	PK
90	QV	9.88	Y	F	PK
91	QV	1.58	N	G	YD

92	AS	18.4	N	G	YD
93	AS	16.37	N	G	YD
94	AS	15.33	N	G	YD
95	AS	13.52	N	G	YD
96	AS	9.65	N	G	YD
97	AS	17.76	N	G	YD
98	AS	12.49	N	G	YD
99	UA	19.45	Y	F	YD
100	UA	20.11	Y	G	YD



Image 1: This image depicts the geographical location of trees #51-100 marked within the red areas that are superimposed on the map. Map image taken from Apple Maps. The tree data was collected within two zones, as indicated in Map 1 of the appendix. These two zones included Residential-Agriculture 2, and Village District.



Image 2: This image depicts the geographical location of trees #18-50 marked within the red areas that are superimposed on the map. Map image taken from Apple Maps. The tree data was collected in Pine Grove Cemetery which is zoned as Residential-Agriculture 2, as indicated in Map 1 of the appendix.



Image 3: This image depicts the geographical location of trees #1-17 marked within the red areas that are superimposed on the map. Map image taken from Apple Maps. The tree data was collected along Otter River Rd which is zoned as Residential-Agriculture 1, as indicated in Map 1 of the appendix.

Section 2.4: Risk Assessment

Performed in accordance with ISA: Tree Risk Best Management Practices

Tree #6, Otter River Rd

Inspector: Madeleine Zygmunt

Date inspected: April 30, 2022

- Tree Characteristics
 - Species: *Acer saccharum*
 - DBH: 17.45 in
 - Condition: Poor
- Tree Condition
 - Large, hollow cavity in larger of two main leaders
 - Appears to be living above cavity
 - Second leader appears healthy
 - Additional, dead limbs within tree
- Potential Targets
 - Electric Wires
 - The unhealthy leader spreads above a live electrical wire
 - Impact with the wire is highly probable should the leader fall
 - Occupied Vehicles
 - The overhang of the injured portion also encroaches on a street that sees a consistent flow of traffic
 - Should branches fall, the probability of it striking an occupied vehicle is possible but low
 - Pedestrians
 - The tree is not located in proximity to any sidewalks or walking trails, but pedestrians were witnessed to be walking within the median under the damaged branches
 - Should branches fall, the probability of it striking a pedestrian is possible but low
- Risk Rating
 - Likelihood of Failure: Probable
 - Likelihood of Impact: Low
 - Consequences of failure: Significant
- Maintenance Recommendations
 - Removal of injured leader and inspection of the rest of the tree

- Additional pruning to ensure no other branches threaten wires or roadway



Image 4: Tree #6

Tree #23, Pine Grove Cemetery

Inspector: Madeleine Zygmunt

Date inspected: April 30, 2022

- Tree Characteristics
 - Species: *Picea abies*
 - DBH: 40.08 in
 - Condition: Good
- Tree Condition
 - Excellent, full canopy with even distribution of limbs
 - Soil surrounding base is not compacted or encroached
 - Greater than 70% of tree is healthy with living wood
- Potential Targets
 - Head Stones
 - The canopy entirely covers several headstones, which would be at risk of damage should a limb fall
 - Vehicles
 - The limbs are above a roadway that visitors may park their vehicles on
 - Should branches fall, the probability of it striking a vehicle is possible but very low
 - Pedestrians
 - The tree is located in proximity to grass which people walk on, but few people were in the area
 - Should branches fall, the probability of it striking a pedestrian is possible but very low
- Risk Rating
 - Likelihood of Failure: Improbable
 - Likelihood of Impact: Low
 - Consequences of failure: Minor
- Maintenance Recommendations
 - Routine check-ins on condition of tree to ensure that no limbs need to be removed



Image 5: Tree #23

Tree #98, Wellington Rd

Inspector: Madeleine Zygmunt

Date inspected: April 30, 2022

- Tree Characteristics
 - Species: *Acer saccharum*
 - DBH: 12.49 in
 - Condition: Good
- Tree Condition
 - Excellent, full canopy with even distribution of limbs
 - Soil surrounding base is not compacted or encroached
 - Greater than 70% of tree is healthy with living wood
- Potential Targets
 - Vehicles
 - The limbs are above a roadway that sees steady traffic
 - Should branches fall, the probability of it striking a vehicle is possible but low
 - Pedestrians
 - The tree is located in a sidewalk which people walk on, but it does not have any limbs directly above the sidewalk
 - Should branches fall, the probability of it striking a pedestrian is possible but low
 - Electrical Wires
 - Many large branches are in close proximity to the electrical wires
 - Should a limb fall it is probable that it would fall on a wire
- Risk Rating
 - Likelihood of Failure: Improbable
 - Likelihood of Impact: Low
 - Consequences of failure: Significant
- Maintenance Recommendations
 - Routine check-ins on condition of tree to ensure that no limbs need to be removed and that it does not further encroach on electrical wires

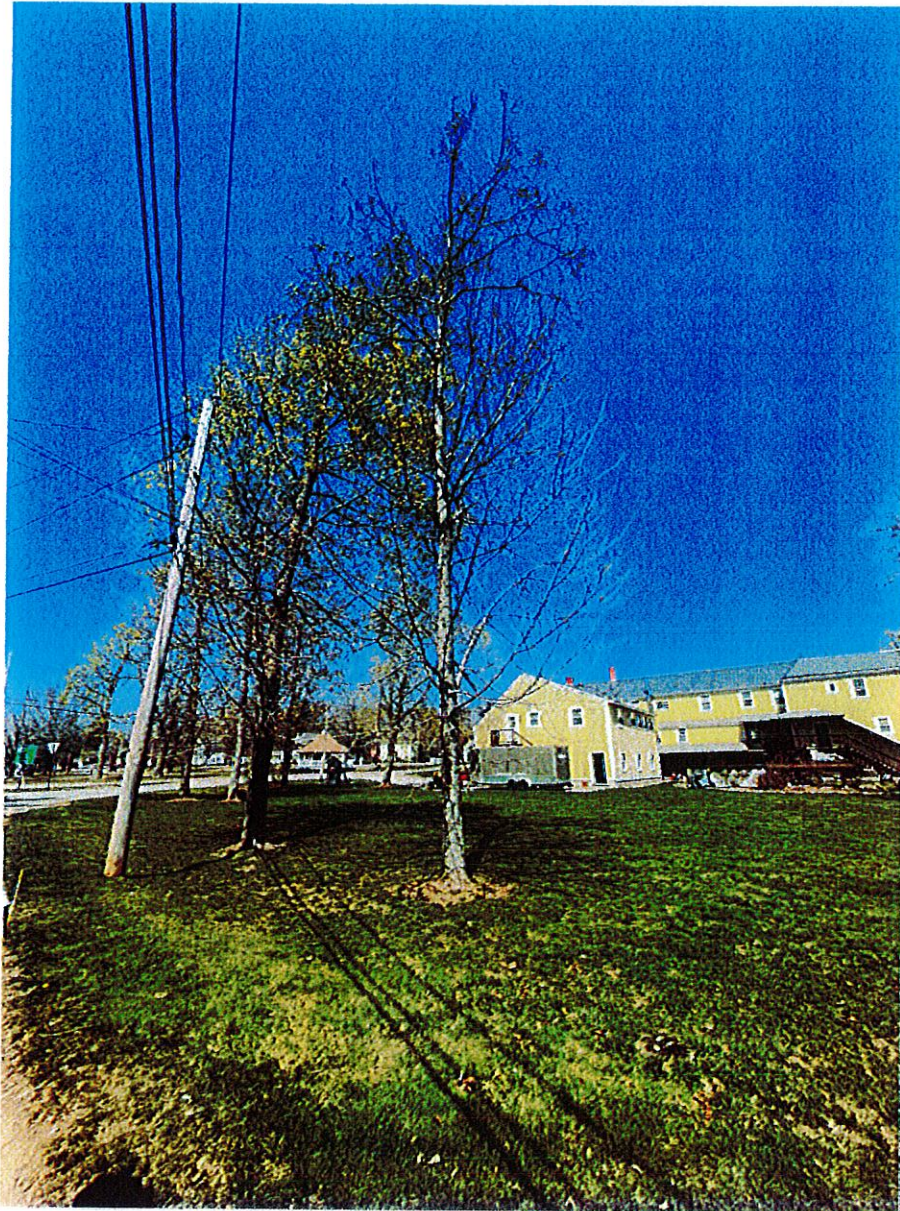


Image 6: Tree #98

Section 2.5: iTree Design

Tree #83

Total Projected Benefits (2022-2027) - Over the next 5 years, based on forecasted tree growth, i-Tree Design projects total benefits worth \$296:

- \$1 of storm runoff savings by avoiding 155 gallons of stormwater runoff (intercepting 5,411 gallons of rainfall)
- \$1 of air quality improvement savings by absorbing and intercepting pollutants such as ozone, sulfur dioxide, nitrogen dioxide, and particulate matter; reducing energy production needs; and lowering air temperature
- \$53 of savings by reducing 2,288 lbs. of atmospheric carbon dioxide through CO₂ sequestration and decreased energy production needs and emissions
- \$128 of summer energy savings by direct shading and air cooling effect through evapotranspiration
- \$112 of winter energy savings by slowing down winds and reducing home heat loss

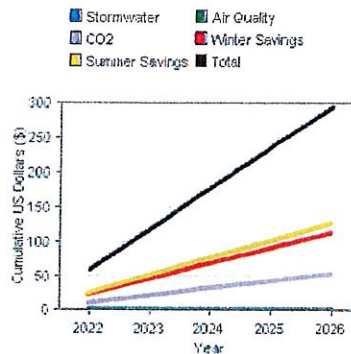


Figure 1. Tree benefit forecast for 5 years

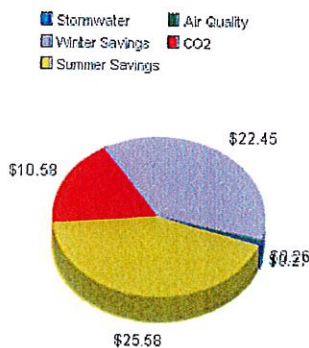


Figure 2. Annual tree benefits for 2022

Current Year - For 2022, i-Tree Design estimates annual tree benefits of \$59.15:

- \$0.27 of stormwater runoff savings by avoiding 31 gallons of stormwater runoff (intercepting 1,072 gallons of rainfall)
- \$0.26 of air quality improvement savings
- \$10.58 of carbon dioxide reduction savings
- \$25.58 of summer energy savings
- \$22.45 of winter energy savings

Individual Tree Benefits							
Tree	DBH (in)	Condition	Location to Structure	Benefits			
				Current Year (2022)	Future Year (2027)	Projected Total (2022-2027)	Total to Date
1. Sugar maple	16.4	Excellent	West (43 ft)	\$59.15	\$59.31	\$296	\$4,241
Total				\$59.15	\$59.31	\$296	\$4,241

DBH: "diameter at breast height" is the standard measurement of tree trunk width at 4.5 feet (1.5 meters) above the ground.

Tree #59

Total Projected Benefits (2022-2027) - Over the next 5 years, based on forecasted tree growth, i-Tree Design projects total benefits worth \$60:

- \$0 of storm runoff savings by avoiding 21 gallons of stormwater runoff (intercepting 723 gallons of rainfall)
- \$0 of air quality improvement savings by absorbing and intercepting pollutants such as ozone, sulfur dioxide, nitrogen dioxide, and particulate matter; reducing energy production needs; and lowering air temperature
- \$8 of savings by reducing 349 lbs. of atmospheric carbon dioxide through CO₂ sequestration and decreased energy production needs and emissions
- \$51 of summer energy savings by direct shading and air cooling effect through evapotranspiration
- \$1 of winter energy savings by slowing down winds and reducing home heat loss

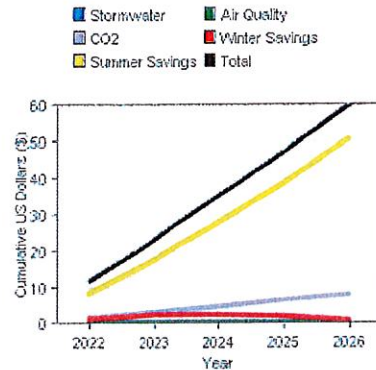


Figure 1. Tree benefit forecast for 5 years

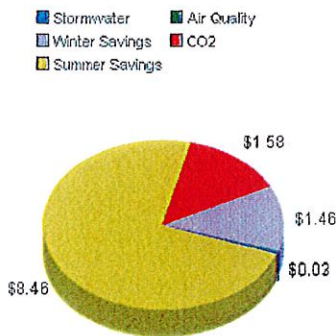


Figure 2. Annual tree benefits for 2022

Current Year - For 2022, i-Tree Design estimates annual tree benefits of \$11.56:

- \$0.03 of stormwater runoff savings by avoiding 4 gallons of stormwater runoff (intercepting 133 gallons of rainfall)
- \$0.02 of air quality improvement savings
- \$1.58 of carbon dioxide reduction savings
- \$8.46 of summer energy savings
- \$1.46 of winter energy savings

Individual Tree Benefits							
Tree	DBH (in)	Condition	Location to Structure	Benefits			
				Current Year (2022)	Future Year (2027)	Projected Total (2022-2027)	Total to Date
1. Red maple	2.4	Excellent	West (31 ft)	\$11.56	\$13.81	\$60	\$55
Total				\$11.56	\$13.81	\$60	\$55

DBH: "diameter at breast height" is the standard measurement of tree trunk width at 4.5 feet (1.5 meters) above the ground.

Tree #98

Total Projected Benefits (2022-2027) - Over the next 5 years, based on forecasted tree growth, i-Tree Design projects total benefits worth \$23:

- \$3 of storm runoff savings by avoiding 374 gallons of stormwater runoff (intercepting 13,087 gallons of rainfall)
- \$1 of air quality improvement savings by absorbing and intercepting pollutants such as ozone, sulfur dioxide, nitrogen dioxide, and particulate matter; reducing energy production needs; and lowering air temperature
- \$18 of savings by reducing 793 lbs. of atmospheric carbon dioxide through CO₂ sequestration and decreased energy production needs and emissions
- \$0 of summer energy savings by direct shading and air cooling effect through evapotranspiration
- \$0 of winter energy savings by slowing down winds and reducing home heat loss

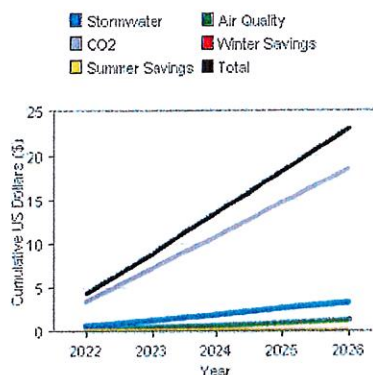


Figure 1. Tree benefit forecast for 5 years

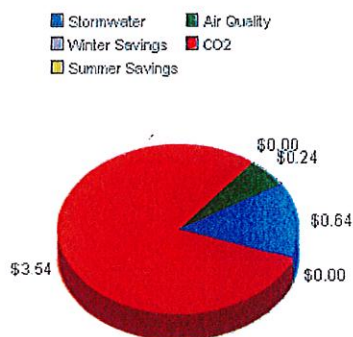


Figure 2. Annual tree benefits for 2022

Current Year - For 2022, i-Tree Design estimates annual tree benefits of \$4.42:

- \$0.64 of stormwater runoff savings by avoiding 72 gallons of stormwater runoff (intercepting 2,522 gallons of rainfall)
- \$0.24 of air quality improvement savings
- \$3.54 of carbon dioxide reduction savings
- \$0.00 of summer energy savings
- \$0.00 of winter energy savings

Individual Tree Benefits							
Tree	DBH (in)	Condition	Location to Structure	Benefits			
				Current Year (2022)	Future Year (2027)	Projected Total (2022-2027)	Total to Date
1. American elm	19.4	Excellent	East (68 ft)	\$4.42	\$4.89	\$23	\$121
Total				\$4.42	\$4.89	\$23	\$121

DBH: "diameter at breast height" is the standard measurement of tree trunk width at 4.5 feet (1.5 meters) above the ground.

Section 3: Master Plan

Section 3.1 Species Composition

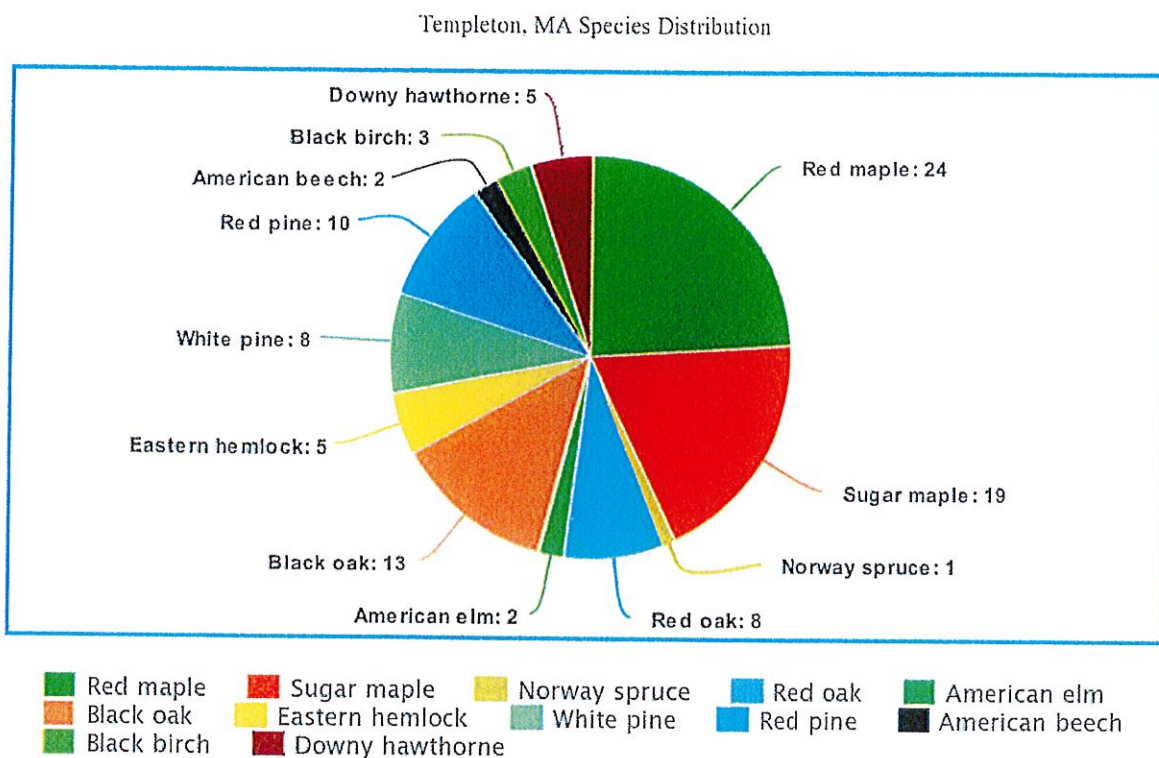


Chart 1: Species composition of Templeton, MA

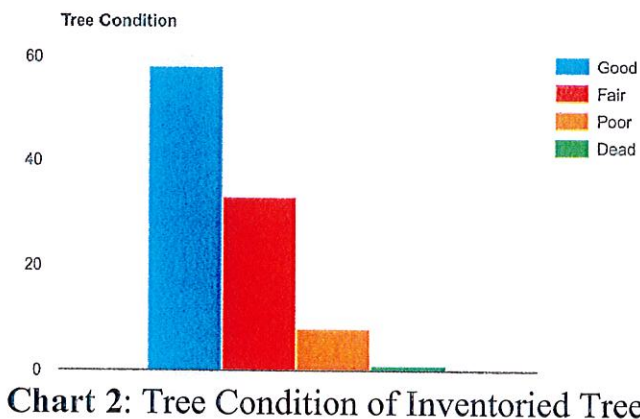
The species composition of Templeton is dominated by two species of Maple, Red Maple and Sugar Maple. Though most trees within these two species were visibly healthy, it is beneficial for an urban forest to be comprised of a more diverse composite of species. Increased species diversity promotes longevity as it makes it more possible for the forest to persevere in the wake of circumstances such as natural disaster and disease.

Section 3.2 Master Plan

The Town of Templeton, MA is a quaint town situated in Central Massachusetts. According to a 2017 drafted Master Plan, community surveys revealed that residents of Templeton value its quaintness and “New England town

character” (7). The surveys modeled individuals choosing to live in Templeton largely due to family ties, affordability, and rural character (7). Residents appreciate new town growth, but overall are passionate about preserving the small-town charm. Because the wooded landscape is what enhances Templeton’s charm, residents also care about maintaining the health of and access to open spaces and farmland. Within the context of this partial inventory, nearly 60% of surveyed trees were in good condition, as modeled in Chart 2. The inventory was composed of many old trees, but there were many newly planted trees surrounding the perimeter of Templeton Elementary— all of which were in excellent condition. To ensure the longevity of the urban forest in Templeton a list of recommended future plantings has been assembled in Table 4. This list was derived from a much larger list composed by the DCR of Massachusetts (9). This list was composed with the intention of advising communities in Massachusetts to plant trees that will have a positive impact on the visual and ecological landscape, as well as withstand New England weather. Suggested trees such as the American elm and the American beech were chosen because the current members of the species in Templeton are in great shape. Other species on the list, such as the Sycamore and White oak, were listed as good trees to be planted in parks and open spaces. The 2017 Templeton Master Plan indicated the intention to expand publicly accessible open spaces, and these species would make great additions. In conversation, Bob Szocik mentioned

that he plans to have a complete urban tree inventory done within Templeton in the near future. A complete inventory would be excellent in developing an in-depth assessment on the health of the urban forest and would allow for pruning to be done on all trees that need it. Bob Szocik's plan to engage the community in tree plantings is also an excellent idea as the Templeton community is seemingly very interested in preserving the Town's natural beauty. The Town presently has allotted enough funding for a surveyor to do a complete urban tree inventory. Once that has been completed the next step would be to acquire funding for new plantings and removals. New plantings would ideally be composed of species that do not already dominate the urban forest and may be chosen from Table 4.



Common Name	Scientific Name	Suggested Location
American beech	<i>Fagus grandifolia</i>	Park
American Sycamore	<i>Platanus occidentalis</i>	Park
White oak	<i>Quercus alba</i>	Park
Sweetgum	<i>Liquidambar styraciflua</i>	Open Space
American elm	<i>Ulmus americana</i>	Open Space
Yellowwood	<i>Maackia amurensis</i>	Near obstructions
Sargent cherry	<i>Prunus sargentii</i>	Near obstructions
Kousa dogwood	<i>Cornus kousa</i>	Small Spaces

Table 4: Recommended Plantings for Templeton, MA (9)

Section 4: Resources

1: A brief history of the Nipmuc

<https://www.nipmucnation.org/history>

2: A brief history of the Neponset

<http://massachusetttribe.org/the-history-of-the-neponset>

3: A brief history of King Philips War

<https://www.history.com/topics/native-american-history/king-philips-war>

4: History of Templeton

<https://www.templetonma.gov/home/slideshows/templeton-center>

5: Templeton, MA demographics

<https://www.massachusetts-demographics.com/templeton-demographics>

6: Templeton, MA list of parks

<https://www.templetonma.gov/cemetery-commission>

7: Templeton, MA Bylaws

<https://ecode360.com/TE3586>








8: 2017 Templeton, MA Master Plan

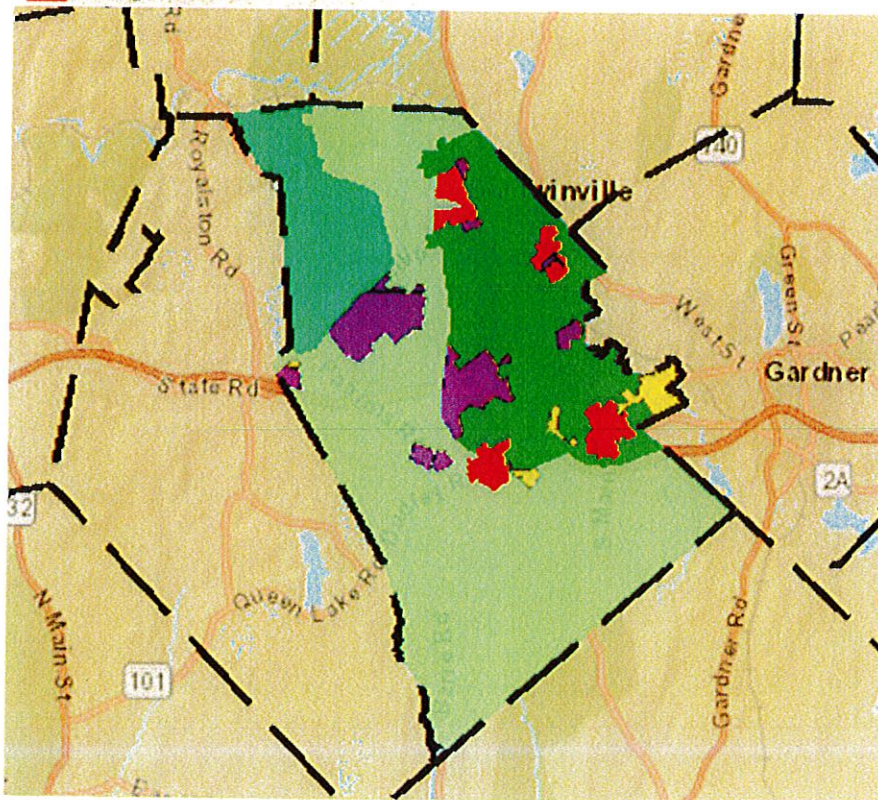
[https://www.templetonma.gov/sites/g/files/vyhlif3911/f/file/file/town of templeton draft master plan .pdf](https://www.templetonma.gov/sites/g/files/vyhlif3911/f/file/file/town%20of%20templeton%20draft%20master%20plan.pdf)

9: MA Tree Wardens list of recommended plantings

<https://masstreewardens.org/wp-content/uploads/Tree-Selection-1.pdf>

Section 5: Appendices

-  Commercial - Industrial - A
-  Commercial - Industrial - B
-  Highway Business
-  Residential - Agricultural 1
-  Residential - Agricultural 2
-  Residential - Agricultural 5
-  Village District



Map 1 Appendix: GIS Map of Templeton zoning

Templeton local Bylaws concerning planting

4530. Plantings.

4531. Unpaved areas within the right-of-way which have been stripped by the construction shall be graded to meet the adjoining property with a slope of not more than one (1) foot vertical to two (2) feet horizontal and loamed with at least four (4)

inches of good quality topsoil. These areas shall be thickly seeded with perennial grasses or other planting materials approved by the Board.

4532. If the developer finds it necessary to remove any of the Town's trees, or if the Planning Board so requires, the developer shall replace any and all such trees at his own expense.

4533. Before removing any tree within the existing town right-of-way, the Tree Warden shall be consulted and shall mark all trees that are not to be removed.

4534. Suitable existing trees within the right-of-way, if larger than four (4) inch caliper and located outside the shoulders, shall be preserved. Trees to be retained shall not have grade changed over their root areas more than twelve (12) inches.

4535. Where suitable trees do not exist at intervals of less than forty (40) feet on each side of the street, they shall be provided by the developer.

4536. Trees to be planted shall be well branched, nursery grown stock at least two and one-half (2.5) inch trunk diameter at four (4) feet above ground, and be free of injury, harmful insects, and diseases. They shall be long-lived species adapted to the local environment and approved by the Planning Board.

4537. New plantings shall be guaranteed by the developer for a period of one year from the date of planting.

Dumping Bylaws

LANDFILLS AND OPEN DUMPS

Facilities or parts of facilities for solid waste disposal (excluding transfer facilities) established in accordance with the provisions of 310 CMR 19.006.

§ 230-7 Prohibited activities.

A.

Illegal discharges. No person shall dump, discharge, cause or allow to be discharged any pollutant or non-stormwater discharge into the municipal separate storm sewer system (MS4), into a watercourse, or into the waters of the commonwealth.

B.

Illicit connections. No person shall construct, use, allow, maintain or continue any illicit connection to the municipal storm drain system, regardless of whether

the connection was permissible under applicable law, regulation or custom at the time of connection.

C.

Obstruction of municipal storm drain system. No person shall obstruct or interfere with the normal flow of stormwater into or out of the municipal storm drain system without prior written approval from the Board.

Section 6: Resume

EDUCATION

University of Massachusetts Amherst, College of Natural Sciences	Expected May 2022
<i>Bachelor of Biological Sciences</i>	
<i>Minor: Natural Resource Conservation</i>	

EXPERIENCE

Target	Hadley, MA
<i>Team Member</i>	<i>February 2021 – Present</i>
<ul style="list-style-type: none">• Responsible for fulfilling multiple customer's online orders within an efficient timeframe and training new team members in my department• Enforce proper social distancing and masking per CDC guidelines• Assist in-store customers with questions and locating products	
Wachusett Mountain	Princeton, MA
<i>Ski Instructor</i>	<i>December 2019 – April 2021</i>
<ul style="list-style-type: none">• Established relationships with students of all ages to foster a passion for skiing• Adapt to variable winter conditions, and adjust teaching style to fit the current conditions and to enhance individual student's skills	
Cedardale	Haverhill, MA
<i>Sales Rep, Remote Learning Tutor</i>	<i>May 2019 – December 2020</i>
<ul style="list-style-type: none">• Abided by strict safety guidelines when completing daily upkeep on batting cages and ropes course, received ropes course certification through a written exam and a physical demonstration• Facilitated K-5th graders in their remote schoolwork during Covid-19 pandemic and encouraged a positive learning environment while strictly upholding Covid-19 guidelines	

RESEARCH

American Chestnut Foundation	Massachusetts
<i>Data Collector</i>	<i>September 2020 – Present</i>
<ul style="list-style-type: none">• Located and collected fertilized American chestnuts• Planted and recorded data on chestnuts to aid in rehabilitation of species	
UMass Amherst	Amherst, MA
<i>Field Assistant</i>	<i>May 2021 – July 2021</i>
<ul style="list-style-type: none">• Assisted in observations and testing of Swamp Sparrows in forest and swamp environments under Katie Schroeder• Completed IACUC training for handling of live animals• Traversed fragile climates for long periods of time in ecologically important zones	

The Trustees of Reservations

Newbury, MA

Mosquito Monitor

Jun 2020 – Sept 2020

- Counted mosquito larvae for population research and control purposes
- Responsible for collecting and recording data in salt marshes under variable conditions.

VOLUNTEERING

UMass Disability Services

Amherst, MA

Student Note Taker

Jan 2020 – May 2020

- Supplied extensive lecture notes to registered students in the course
- Responsible for notifying registered students of future exams and deadlines

Partnership for Workplace Education

Amherst, MA

Tutor

Sept 2018 – May 2019

- Assisted in an English language class offered to employees of UMass, and engaged one-on-one with students
- Adjusted teaching methods to include students of many different levels of communication