TOWN OF GRAND CHUTE
COMMUNITY FORESTRY STRATEGY

SEPTEMBER 2012

CONTENTS

TOWN BOARD OF SUPERVISORS *approved on September 4, 2012*	**PLAN COMMISSION** *recommended approval on August 21, 2012*	**PARK COMMISSION** *approved on July 2, 2012*
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This report was authored by Kevin J. Vonck, Special Projects Coordinator, with assistance from Mark Heling, Street Superintendent (Urban Forester); Thomas Marquardt, Director of Public Works; and Robert Buckingham, Community Development Director.

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INTRODUCTION

0.1 | PURPOSE AND SCOPE

The Town of Grand Chute *Community Forestry Strategy* describes how to develop and maintain a healthy forest within our Town. Trees in urban and suburban settings require purposeful intervention to survive and thrive, so it is important to provide strategic direction for both public and private actions.

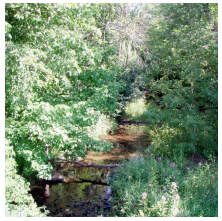
To understand where we are, this document is an attempt at assessing existing forestry-related policies and actions (both formal and informal), fiscal and human resources dedicated towards forestry activities, and the size and condition of our community forest. To clarify where we want to go, this document provides clearly-defined goals, objectives, and policies – based on research of best practices – that will support Town decisions, especially in aligning budgets and departmental actions.

Staff should briefly review this plan annually to document progress and conduct a more comprehensive review in four years to make revisions for an updated *Community Forestry Strategy*.

0.2 | ABOUT GRAND CHUTE

With 21,050 residents, Grand Chute is the largest Town in Wisconsin. We are one of nineteen communities in the "Fox Cities" metropolitan area, with over 370,000 residents. 700,000 people live within a forty-minute drive and 1.3 million live within the eighteen-county New North region. The 1.2 million square-foot Fox River Mall anchors a major regional shopping center that is surrounded by hotels, restaurants, and entertainment facilities. Several other businesses offer health care and professional services. Industrial firms are involved in manufacturing, distribution, and wholesale trade activities. The presence of these things raises our daytime population to over 70,000. We are also home to the Gordon Bubolz Nature Preserve, a 775-acre non-profit wildlife preserve education facility, and Plamann Park, a 257-acre county park. Fox Cities Stadium hosts the Wisconsin Timber Rattlers, a Class A minor-league baseball affiliate of the Milwaukee Brewers. Our aggregate assessed value is just over $2.3 million. Town Government employs over 80 full-time staff, owns over 310 acres of land, manages 160,000 square feet of building space, and maintains over 120 miles of streets and 10 miles of paved trails. We have two community parks and three neighborhood parks totaling over sixty-seven acres.

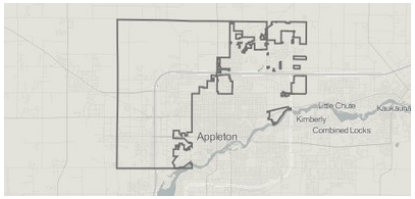







Town of Grand Chute
Municipal Boundary

Town of Grand Chute
Locator maps



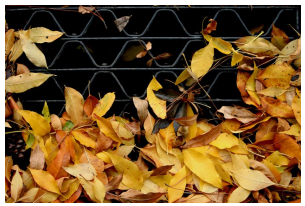
0.3 | THE IMPORTANCE OF TREES

The Town should take an interest in planting and maintaining trees because of the positive impact they have on residents, visitors, and adjacent communities. An extensive body of literature documents the array of direct and indirect benefits trees provide.

PARAMETER	EXAMPLE	PRIMARY BENEFITS	SECONDARY BENEFITS
AESTHETIC		Help shape community identity. Provide a connection to the natural environment in urban settings. Create a sense of "enclosed space" along street corridors.	Enhance quality of life. Moderate stress. Provide opportunities to learn about nature and urban ecosystems. Make high-traffic thoroughfares more safe and pleasant.
ECONOMIC		Increase property values.	Attract tourists, residents, and business investments.
RECREATION		Provide opportunities for passive recreation like photography and bird watching.	Make active recreational activities like walking and bicycling more pleasant.
UTILITARIAN		Provide privacy between structures. Screen refuse unsightly areas, like loading docks and refuse containers.	Increase property values.
AIR		Purify air. Absorb carbon dioxide and convert it into oxygen through photosynthesis. Filter sulphur dioxide, nitrogen oxide, carbon monoxide, and lead from the air.	Fewer breathing problems for children, the elderly, and other sensitive populations.
BIOLOGY		Provide habitat for a variety of flora and fauna, especially birds. Serve as a critical part of migratory bird routes. Serve as wildlife corridors along linear infrastructure.	Increased bird populations can keep populations of other pests (like insects and rodents) in check.

PARAMETER	EXAMPLE	PRIMARY BENEFITS	SECONDARY BENEFITS
LAND		Moderate the impact of heavy raindrops. Roots on hillsides and streambanks stabilize soils and minimize erosion.	Reduced sediment, nutrient, and toxicity levels in waterways provide more opportunities for swimming and fishing.
WATER QUALITY		Purify water. Tree roots filter excess nutrients, fertilizers, and other pollutants (salts, oils, metals, toxics) from runoff.	Reduce expenses of treating water for drinking. Create more opportunities for swimming and fishing in waterways. Comply with environmental regulations and permits.
WATER QUANTITY		Minimize flooding. Tree roots absorb precipitation, reducing the volume of runoff after a storm event.	Reduce personal injury and property damage from flash flooding events. Reduce the size of detention and retention ponds (and the purchase of land to accommodate them).
MATERIAL		Provide wood and sap resources needed to make a variety of food and household products.	Increase property values. Provide owners with additional opportunities for generating income.
NOISE		Muffle urban noise (most notably automobile and truck traffic).	Enhance quality of life. Diminish the psychological effects of noise pollution by visually concealing the source.
RADIATION		Reduce the impact of ultraviolet rays from the sun.	Protect against skin cancer. Minimize color fading on materials.
TEMPERATURE		Shade and evapotranspiration from trees reduce ground-level temperatures in the summer. Trees that block wind moderate cold temperatures in winter.	Reduce the amount of energy (and associated costs) needed to heat and cool buildings.

There are times, however, that trees in urban and suburban settings can pose problems if not planted or maintained properly.

PARAMETER	EXAMPLE	POTENTIAL PROBLEMS
LIMBS		Hanging limbs can obstruct sight lines for pedestrians, bicyclists, and motorists. Other excessive growth can encroach on necessary “clear zones” around overhead utilities or other structures. Weak or broken limbs can endanger life and property.
ROOTS: SURFACE		Trees growing too close to roads, sidewalks, trails, or other paved surfaces can cause heaving or cracking, especially when compounded by the impacts of frost, which can pose a tripping hazard for pedestrians. Other exposed roots can damage lawn mower blades.
ROOTS: SUBSURFACE		Trees on dikes or embankments can impair their integrity. Deep roots can invade older water, sanitary sewer, and stormwater sewer pipes, causing blockage and backups into homes. They can also penetrate cracks in foundations, causing additional cracking and water infiltration.
LEAVES		Leaves can clog storm sewer inlets, grates, and catch basins, causing flooding. Leaves that settle at the bottom of waterways can add extra nutrients, reducing water quality.

Research demonstrates, however, that these costs do not exceed the benefits that trees provide. Almost all of these negative impacts can be minimized through proactive and preemptive actions described in this document.

0.4 | GOALS, OBJECTIVES, AND POLICIES

From a governance perspective, this document seeks to optimize the use of limited financial and personnel resources, increase the knowledge level of staff, better coordinate activities among departments, and promote better private tree care. From a biological perspective, it seeks to increase the number and diversity of tree species found within the Town, offset tree removal with new plantings, increase the proportion of trees of large stature, and increase the compatibility between planting sites and paved surfaces.

The *Community Forestry Strategy* for the Town of Grand Chute is constructed around four goals:

1: OUR COMMUNITY WILL BETTER UNDERSTAND OUR TREE RESOURCES	2: OUR COMMUNITY WILL CARE FOR EXISTING TREES	3: OUR COMMUNITY WILL PLANT NEW TREES	4: OUR COMMUNITY WILL REMOVE HAZARDOUS TREES
			
The Town seeks to collect information on the number and condition of public trees. The Town will educate its residents on the importance of trees.	The Town will ensure that existing trees are properly maintained and protected from injury. The Town will conserve existing patches and corridors.	The Town will increase the number of trees in the community. The Town will plant appropriate trees in appropriate conditions.	The Town will address all threats to life and property that trees cause.

Each chapter focuses on one of these four goals. Each provides information on policies the Town has already adopted and activities in which the Town is already engaged. Each also suggests what the Town should do and what course of action it should pursue to achieve it.

1 | OUR COMMUNITY WILL BETTER UNDERSTAND OUR TREE RESOURCES

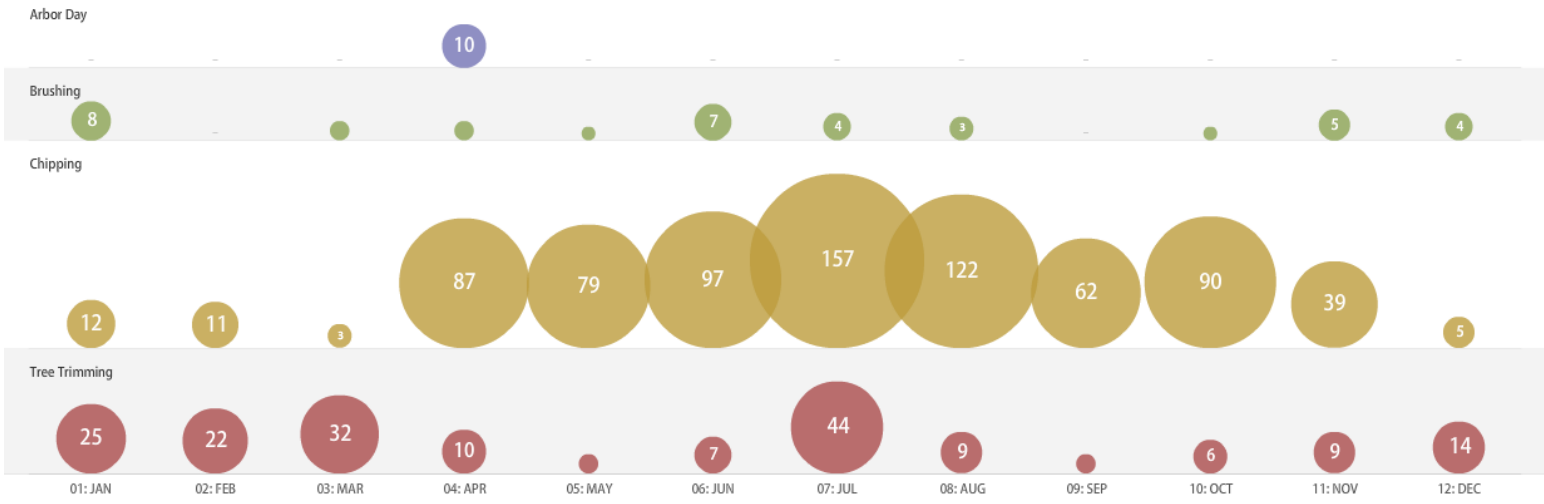
1.1 | WE WILL ANALYZE THE RESOURCES WE DEDICATE TOWARDS FORESTRY

Purpose. Better knowledge of forestry activities will help the Town board and staff make more informed decisions about how to allocate limited financial and personnel resources.

Existing conditions. In early 2012, Town staff analyzed the workload of the public works department to better understand the time employees spent on particular activities and the labor costs incurred with each activity. Using data collected from September 2007 though August 2011, the report analyzed ninety-seven distinct activities. Four were grouped together into a "forestry" program area:

FORESTRY ACTIVITY	ANNUAL HOURS	HOURS RANK (OF 97)	% ANNUAL HOURS	AVERAGE JOB LENGTH	ANNUAL LABOR COST	COST RANK (OF 97)	% ANNUAL COST	AVERAGE HOURLY RATE
Arbor Day	10	78	0.04	2.7 hours	$185	78	0.03	$18.25
Brushing	36	62	0.13	3.0 hours	$660	64	0.11	$18.24
Chipping	763	10	2.70	5.5 hours	$12,412	13	2.03	$16.28
Tree Trimming	180	35	0.64	4.4 hours	$3,531	37	0.58	$19.58

The bubble matrix shows how forestry work hours are distributed throughout the year by Activity (vertical axis) and month (horizontal axis). The larger the bubble, the more hours spent (on average) in that Activity that month.



Several other activities may include forestry-related work like tree maintenance, pruning, planting, and removal, but they are not explicitly separated from other activities like lawn mowing and maintenance.

FORESTRY ACTIVITY	ANNUAL HOURS	HOURS RANK (OF 97)	% ANNUAL HOURS	AVERAGE JOB LENGTH	ANNUAL LABOR COST	COST RANK (OF 97)	% ANNUAL COST	AVERAGE HOURLY RATE
Street Landscape	184	34	0.95	3.9	$3,682	34	0.60	$20.00
TH/FD Greenscape	291	28 to 73	0.06 to 0.88	1.8 to 4.8	$4,257	36 to 73	0.04 to 0.59	$14.50 to $16.17
Parks Greenscape	746	30 to 52	0.22 to 0.82	2.0 to 3.6	$10,410	38 to 57	0.14 to 0.54	$13.52 to $14.26

Recommendations. The Town should create activity categories that better capture work directly related to the community forest.

Future actions. The Town will take the following actions to analyze the resources we dedicate towards forestry.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Install Pub Works (work order software)	January 2012	March 2012	completed	Public Works	$20,000	Town (CIP)
Prepare annual labor report for review and analysis in budget process	June annually	August annually	8 hours	Public Works Administration	staff time	Town (operating)
Prepare annual activities report for review and analysis in budget process	June annually	August annually	8 hours	Public Works Administration	staff time	Town (operating)
Use annual report to track implementation progress of Comprehensive Plan	September annually	September annually	8 hours	Community Dev. Administration	staff time	Town (operating)

1.2 | WE WILL BECOME MORE KNOWLEDGEABLE ABOUT URBAN FORESTRY

Purpose. Our efforts will be more effective if staff remain current on new forestry procedures, new management and maintenance equipment, emerging or imminent threats to community forests, and new opportunities for partnerships or funding.

Existing conditions. Staff in the Streets Division of the Public Works Department spend about 60 hours annually on training. It is not known how much of this is related to forestry-related education.

Recommendations. The Town should provide some type of training opportunities on an annual basis. It should explore opportunities to partner with other communities and academic institutions for cost savings.

Future actions. The Town will take the following actions to become more knowledgeable about urban forestry.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Hold training session(s)	annually		4 hours annually	Public Works Academic Partner	$0 to $500 per session	Town (operating); grants
Calculate economic value of trees within the Town	March 2014	May 2014	24 hours	Academic Partner Administration Community Dev.	staff time	Town (operating)
Help an existing staff member become a certified arborist	to be determined		to be determined	Public Works Administration	staff time + $500 to $1,500	Town (operating)
Create position or reclassify when vacant to include arborist or forestry skills	to be determined		to be determined	Public Works Administration	staff time	Town (operating)

1.3 | WE WILL CONDUCT PUBLIC OUTREACH TO INCREASE AWARENESS AND STIMULATE INVOLVEMENT IN FORESTRY

Purpose. Residents who are more informed about the benefits of trees will be more inclined to support Town policies and take action on their own property.

Existing conditions. The Town works to educate and inform the public about forestry through an annual Arbor Day Celebration and maintenance of Tree City U.S.A. certification.

Recommendations. Instead of attempting to create stand-alone programs or new materials, the Town should leverage existing programs and resources from organizations and academic institutions that specialize in urban forestry.

Future actions. The Town will take the following actions to increase awareness and stimulate involvement in forestry.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Hold annual Arbor Day celebration in partnership with elementary schools	February annually	April annually	16 hours	Public Works	staff time + $800 to $1,000	Town (operating); private donations
Maintain Tree City U.S.A. certification	December annually	December annually	8 hours	Public Works	staff time	Town (operating)
Create list of forestry-related volunteer opportunities for business or civic groups	March annually	March annually	8 hours	Public Works Park Commission	staff time	Town (operating)
Create urban forestry section on Town website with info on Town activities and relevant links	September 2013	November 2013	8 hours	Administration	staff time	Town (operating)

1.4 | WE WILL CREATE A TOWN-WIDE DATABASE OF TREES

Purpose. A database of trees will help the Town make better decisions about planting, maintaining, and removing trees. The process will help the Town identify areas that have the potential to be connected to others, areas with significant ecological functions and conservation values, and areas occupied by rare plant and animal species, and areas with reforestation and restoration potential.

Existing conditions. The Town owns over 235 acres of land, of which approximately 40 acres are forested, based on estimates from 2010 aerial photography. The Town has limited information on what trees are planted in these areas.

PLACE	PHOTO	LOCATION	PARCEL ACRES	FORESTED ACRES	AMENITIES
Arrowhead Park		5000 W. Aster Lane	13	3	pavilion, grills, picnic tables, playground, tennis court, basketball court, volleyball court, baseball diamond, horseshoe pit, small winter sledding hill, off-street parking
Carter Woods Park		840 S. Bluemound Drive	17	4	pavilion, grills, picnic tables, playground, basketball half-court, volleyball court, soccer field, two softball/little league diamonds (fenced, lighted, bleachers), two tennis courts (lighted), hiking trails, parking lot (100 vehicles)
Lions Park		3155 W. Longwood Lane	3	0	pavilion, fully-accessible site, grills, picnic tables, playground, tennis court (fenced and lighted), basketball half-court, two volleyball courts (lighted), parking lot (40 vehicles)
Patriot Park		2950 W. Darling Street	9	< 1	pavilion, grills, picnic tables, playground, basketball half-court, softball/little league diamond (fenced, lighted with bleachers), volleyball court, soccer field (with bleachers), roller hockey rink, tennis court (lighted), off-street parking (80 vehicles)
Prairie Hill Park		2901 N. Abendroth Street	25	0	year-round pavilion, picnic tables, playground, winter sledding hill, walking trails, large open space, catch-and-release fishing (handicapped accessible), off-street parking

PLACE	PHOTO	LOCATION	PARCEL ACRES	FORESTED ACRES	AMENITIES
Town Hall / Fire Station #1		1900/2250 W. Grand Chute Boulevard	60	0	Town Hall is a 95,000 square-foot building that houses all departments except for Fire, adjacent 25,000 square foot storage garage houses vehicles and equipment, Fire Station #1 is a 26,500 square-foot building, open space has served as WestFest grounds
Fire Station #2		2920 W. Highview Drive	5	2	14,800 square-foot building that was opened in 1975 and received major additions in 1992 and 1995
Pioneer Cemetery		600 W. Evergreen Drive	5	0	Small cemetery contains about 90 internments, including many original Town settlers
McCarthy Road Parcel		2300 N. McCarthy Road	60	4	former agricultural property currently for sale by the Town; zoned AGD and RMF
Lecker Park (future)		North terminus of Gillett Street	42	32	undeveloped, area includes 10-acre open-mound sealed landfill
Brookview Park (future)		W. Brookview Drive	3	0	undeveloped, area borders stream, potential to expand to 5 acres
Northwest Park (future)		N. McCarthy Road and W. Cobble Creek Drive	1	0	undeveloped, potential to expand with future subdivisions

The Town is responsible for maintaining about 121 miles of local roads. About 41% (about 50 miles) are urban sections with curb (standard or mountable) and gutter. The Town has limited information on what trees are planted in these areas. Within the Town limits, Outagamie County maintains about 19 miles of County Trunk Highway, 8 miles of State Trunk Highway, and 7 miles of Federal Highway (USH 41).

There are a variety of public, private, and non-government organizations who own large parcels in the Town, of which approximately 826 acres are forested, based on estimates from 2010 aerial photography. The Town has limited information about trees on these parcels.

PLACE	PHOTO	LOCATION	PARCEL ACRES	FORESTED ACRES	AMENITIES
American Legion Park		3320 W. College Avenue	8	0	full-service ball diamond with press box, concession stand, and seating for 200 spectators; small shelter and picnic tables
Appleton Alliance Park (future)		2693 W. Grand Chute Boulevard	10	0	future park will contain playground, soccer fields, and ball diamonds constructed by church
Badger Elementary School		501 S. Bluemound Drive	4	0	hard surface play area, playground equipment, basketball courts, baseball/softball backstop, small open play field
Brewster Village		3300 W. Brewster Street	60	21	short-term rehabilitation and long-term care facility operated by Outagamie County
Butte Des Morts Country Club		3600 W. Prospect Avenue	145	10	private 18-hole golf course with driving range and putting greens, clubhouse, tennis courts, swimming pool
Forest Park Estates Preserve		5000 W. Grand Meadows Drive	7	4	outlot preserving wetlands
Fox Cities Stadium		2400 N. Casaloma Drive	40	1	5,500-seat stadium hosts the Wisconsin Timber Rattlers, a Class A minor-league baseball affiliate of the Milwaukee Brewers

PLACE	PHOTO	LOCATION	PARCEL ACRES	FORESTED ACRES	AMENITIES
Fox Valley Technical College		1825 N. Bluemound Drive	144	3	mix of natural and landscaped open space, 10 miles of trails, outdoor classroom
Gordon Bubolz Nature Preserve		4815 N. Lynndale Drive	775	690	private foundation lands open to the public with over 10 miles of interpretive hiking trails, nature center, Girl Scout regional offices
Houdini Elementary School		2305 W. Capitol Drive	14	0	hard surface play area, playground equipment, basketball courts, tetherball, baseball/softball backstop, soccer goals, open play field
Oneida Association Park		W. Sioux Drive	3	0	privately-owned and maintained park with playground equipment and an open play field for subdivision residents
Outagamie County Pet Exercise Area		French Road and CTH OO	17	3	a place owners can take their dogs for exercise off-leash and socialize them in a safe and secure environment
Outagamie County Land		Casaloma Drive and STH 15	60	30	forested area with wetlands and gravel trail
Outagamie County Plamann Park		1375 E. Broadway Drive	257	55	disc golf course, pavilions, children's farm, swimming lake, ball diamonds, volleyball courts, tennis courts, and 10 miles of trails
Pine Court Preserve		Pine Court	7	7	outlot preserving stream corridor and floodplain area
St. Mary's Cemetery		2121 W. Prospect Avenue	9	2	Catholic parish cemetery with prayer chapel; 3 additional acres located in Town of Menasha

Recommendations**.** The Town should create and maintain a tree database. During the initial survey, important parameters to identify include location, species, diameter, and condition. More specific details that would be helpful include maintenance needs, insect and disease problems, proximity to other fixed objects, and street/sidewalk/trail damage. It could also identify potential planting sites.

For large patches of forest on parcels owned by other public, private, and non-government organizations, the Town should collect more general data about the parcel, rather than information on individual trees.

Future actions. The Town will take the following actions to create a town-wide database of trees.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Conduct "windshield survey" to identify Town streets and public areas with trees	September 2012	November 2012	16 hours	Administration Community Dev. Public Works	staff time	Town (operating)
Create GIS database of all trees on Town-owned parcels	March 2013	August 2013	to be determined	Outside Consultant Public Works Community Dev.	$10,000 to $20,000	Town (CIP), grants, Sanitary District #3
Create GIS database of all trees on Town-owned right-of-way	March 2013	August 2013	to be determined	Outside Consultant Public Works Community Dev.	$10,000 to $20,000	Town (CIP), grants, Sanitary District #3
Update and maintain tree database (iTree)	September annually	November annually	20 hours	Administration Community Dev. Public Works	staff time	Town (operating)

2 | OUR COMMUNITY WILL CARE FOR EXISTING TREES

2.1 | WE WILL MAINTAIN TREES IN A PROFESSIONAL MANNER

Purpose. Employing best practices helps the Town use its resources in the most efficient manner. It also facilitates trees reaching their full growth and lifespan potential.

Existing conditions. According to our municipal code, the Street Superintendent is the designated Town Forester. Currently, public works employees perform informal, as-needed maintenance to trees on Town property.

Recommendations. The Town and its residents should follow well-established best practices, summarized below.

ELEMENT	PUBLIC ACTIONS ON PUBLIC PROPERTY	PRIVATE ACTIONS ON PUBLIC PROPERTY	PRIVATE ACTIONS ON PRIVATE PROPERTY
MULCH	The Town will place a 4” thick layer of shredded bark mulch around the base of newly-planted trees in a doughnut shape (mulch should not touch the tree).	Residents add an additional layer of organic mulch around the base of newly-planted trees in a doughnut shape (mulch should not touch the tree). The use of stone or other inorganic material is prohibited.	Residents should place a layer of organic mulch around the base of newly-planted trees in a doughnut shape (mulch should not touch the tree) to retain soil moisture and limit weed growth.
WATER	The Town will only water newly-planted trees during extended dry periods.	Residents may water trees during extended dry periods, especially those that are newly-planted.	Residents should water trees during extended dry periods, especially those that are newly-planted.
SUPPORT	The Town may attach rust-resistant cables about two-thirds (2/3) of the distance between the crotch and tops of the branch ends if to ensure survival of the tree. The Town will remove them when no longer needed.	Residents shall not attach cables and/or braces to trees on public property. Those concerned about the structural integrity of a particular tree should contact the Town.	Residents may attach rust-resistant cables about two-thirds (2/3) of the distance between the crotch and tops of the branch ends. Never wrap a cable around a branch; use thimbles and lags instead.

ELEMENT	PUBLIC ACTIONS ON PUBLIC PROPERTY	PRIVATE ACTIONS ON PUBLIC PROPERTY	PRIVATE ACTIONS ON PRIVATE PROPERTY
FERTILIZER	The Town may consider targeted fertilizer applications to treat trees exhibiting symptoms of chlorosis (yellowing leaves) due to high soil pH.	Residents shall not apply fertilizers or any other chemicals to trees on public property. Those concerned about the health of a particular tree should contact the Town.	Proper drainage and soil moisture are far more important to a tree than fertilizer. Residents should only use targeted applications to address specific problems.
PESTICIDES	The Town may consider targeted pesticide applications to control specific diseases or insects. All applications shall conform to applicable state and federal regulations. The Town shall notify all adjacent property owners of the activity in advance.	Residents shall not apply pesticides, or any other chemicals to trees on public property. Those concerned about the health of a particular tree should contact the Town.	Residents should only use targeted applications to address specific problems. Use commercial contractors licensed by the Wisconsin Department of Agriculture, Trade, and Consumer Protection to ensure proper application.

Future actions. The Town will take the following actions to maintain trees in a professional manner.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Provide links to maintenance guidelines for residents	September 2012	November 2012	4 hours	Administration Public Works	staff time	Town (operating)
Develop maintenance guidelines for Town employees	March 2013	May 2013	16 hours	Public Works Administration	staff time	Town (operating)
Develop annual work plan based on tree inventory	September annually	November annually	4 hours	Public Works Community Dev.	staff time	Town (operating)
Review and update maintenance guidelines	March annually	May annually	4 hours	Public Works Administration	staff time	Town (operating)

2.2 | WE WILL PRUNE TREES IN A PROFESSIONAL MANNER

Purpose. Employing best practices helps the Town use its resources in the most efficient manner. It also prevents limbs from becoming a hazard that can threaten people or property.

Existing conditions. The Town does not have an established pruning schedule; it prunes trees on an as-needed basis, mostly through citizen or staff-generated requests. A number of ordinances regulate tree pruning.

ORDINANCE	REQUIRES
57-2	The Town may assess property owners special charges for tree care.
497-4	The Town and private property owners must prune all trees and shrubs to allow for a clearance of at least 14' over automobile infrastructure and 8' over pedestrian and bicycle transportation infrastructure.
497-5	A private property owner must prune any tree or shrub on their parcel to provide a minimum standard of visibility in the vision control area for operators of motor vehicles. The vision control area is defined by a triangle with 25' legs extending back from the corner where a current or future sidewalk intersects. A person must prune trees and shrubs in order to maintain unobstructed vision from 2½' to 10' above the center line of the abutting pavement. The Town shall have the right to take corrective action and charge a special assessment should the property owner fail to comply.
497-8	The Town will conduct a brush disposal program for residents to properly dispose of pruned materials.

Recommendations. The Town and residents should prune trees to improve their appearance by maintaining the shape and symmetry of crowns typical for their species and age. The Town will not prune trees the first two years after planting. Residents shall not prune trees on public property.

ELEMENT	RECOMMENDATION
CUTS	Make all final “collar cuts” as close as possible to the parent limb or trunk without cutting into it. Cuts shall be clean, circular (not oval) in form, and not leave a protruding stub. Cut in a manner that prevents any ripping or tearing of wood. Lower limbs to the ground in a safe manner that does not damage any public or private property.
WOUND DRESSING	Do not apply wound dressings or pruning paints to cuts, as they may interfere with the natural healing response (gums and resins) of a tree. In order to prevent the spread of disease, exceptions may apply for oaks and elms during the growing season.

ELEMENT	RECOMMENDATION
CROWN CLEANING	Remove all dead, dying, diseased, crowded, weakly-attached, and low-vigor branches. Remove crossed or rubbing branches where practical. Remove “trunk suckers” and “water sprouts” from the bottom half of the tree.
CROWN THINNING	Remove and cut back branches (to large laterals) to increase light penetration and air movement. Strive to balance weight and foliage throughout the crown, while removing no more than one-quarter of all branches.
CROWN RAISING	Remove and cut back branches to allow for a clearance of at least 14' over automobile transportation infrastructure and 8' over pedestrian and bicycle transportation infrastructure.
CLEARANCE PRUNING	Remove and cut back branches to provide a clear line of sight when approaching street intersections and traffic control devices. Remove and cut back branches to allow for a clearance of at least 15' over rooftops.
TOPPING	Do not indiscriminately cut back branches simply to reduce tree height, as this will cause more excessive growth and extensive decay in the long run.
DEBRIS	Place debris in the terrace area so that does not obstruct pedestrian, bicycle, or vehicular movement. Residents may place up to 480 cubic feet of debris per pick-up. Branches cannot be shorter than 3' in length, must be less than 12” in diameter, and cannot exceed 75 pounds. Root balls, stumps, and construction material are prohibited. Professional service providers must remove their own materials.

Future actions. The Town will take the following actions to prune trees in a professional manner.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Conduct high-priority training pruning	December 2013	February 2014	to be determined	Private Vendor or Public Works	$20/tree or staff time	Town (operating)
Conduct high-priority routine pruning	December 2013	February 2014	to be determined	Private Vendor or Public Works	$50/tree or staff time	Town (operating)
Establish neighborhood-based pruning cycle for Town trees	June 2014	August 2014	to be determined	Public Works	staff time	Town (operating)
Conduct regular training and routine pruning	December 2014 +	February 2014 +	to be determined	Private Vendor or Public Works	$50/tree or staff time	Town (operating)

2.3 | WE WILL PROTECT EXISTING TREES FROM HARM

Purpose. Reduce or eliminate activities that could lead to the death of trees.

Existing conditions. A number of ordinances protect existing trees.

ORDINANCE	REQUIRES
220-17	A person moving a structure through the Town shall not damage any tree.
497-6 (A)	No person shall do the following to a tree, without the consent of the Town Forester (public trees) or property owner (private trees): • break, injure, mutilate, deface, kill, or destroy • permit any toxic chemical, gas, smoke, oil or other injurious substance to seep, drain or be emptied upon • cause or facilitate any fire • secure, fasten, or run any guy wire, cable, rope, nails, screws, unprotected electrical installation or other device or material • remove any guard, stake or other device or material intended for protection • attach any sign, poster, notice • place cement or other solid substance around the base that restricts access of air, water, and fertilizer
497-6 (B)	A person must sufficiently guard all public trees from excavation and/or construction work. No person shall excavate any ditches, tunnels or trenches or install pavement within a radius of 10' from any public tree without a permit from the Town Forester.

Recommendations. The Town should continue to monitor active construction sites for compliance with existing ordinances.

Future actions. The Town will take the following actions to protect existing trees from harm.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Adopt ordinance to prohibit pruning of oak trees between April 1 and October 15	December 2012	February 2013	8 hours	Administration Community Dev.	staff time	Town (operating)
Develop tree compensation policy for damaging public trees	June 2013	August 2013	24 hours	Administration Public Works Community Dev.	staff time	Town (operating)

2.4 | WE WILL PROTECT EXISTING TREES DURING DEVELOPMENT

Purpose. It is more efficient to protect existing trees than it is to plant new ones.

Existing conditions. The Community Development Director works on a case-by-case basis to preserve trees where possible during the site plan review process. A number of Town Ordinances preserve existing trees during development.

ORDINANCE	REQUIRES
475-21 (A)	A person subdividing land shall attempt to preserve all natural features, including trees, of the parcel being subdivided.
535-40 (E)	A person developing land in a Planned Development District (PDD) shall preserve existing trees whenever possible.

Outagamie County Chapter 16, Shoreland-Floodplain-Wetland Ordinance, regulates shoreland use and development within 300' of the ordinary high water mark of navigable rivers of streams of to the "landward side of the floodplain, whichever distance is greater" and shoreland use and development within 1,000' of the ordinary high water mark of navigable lakes, ponds, or flowages.

Recommendations. The Town should preserve existing trees, especially those of large stature, when practical and possible.

Future actions. The Town will take the following actions to protect existing trees during development.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Develop incentive-based policy instruments for preserving existing trees	September 2013	November 2013	40 hours	Administration Community Dev.	staff time	Town (operating)
Contact organizations to see if they have any interest in forested lands within Town	September 2014	November 2014	8 hours	Administration Community Dev.	staff time	Town (operating)

3 | OUR COMMUNITY WILL PLANT NEW TREES

3.1 | WE WILL PLANT TREES ON TOWN PROPERTY

Purpose. Given their ability to improve the health, safety, and welfare of the community, the Town should take an active role in increasing the number of trees on its property.

Existing conditions. The Town usually plants a small grove of six to eight trees on Town property every Arbor Day. The Town infrequently (every few years) plants trees along streets in urbanized subdivisions; it is not a regularly budgeted item. It requires developers to install trees in the terrace area along new public streets in an approved manner.

ORDINANCE	REQUIRES
475-15 (E)	A person subdividing land must install at least one tree in the terrace area for every lot frontage along public streets.
475-39	A person subdividing land must show the location, age, and species of all required trees in the terrace area along public streets in a plan that is approved by Town Board before any construction or installation of improvements can commence.

Recommendations. The Town should establish a regular program of planting trees on Town-owned parcels.

The Town should establish tree planting standards for streets with different functions.

- Major (arterial and collector) streets: At least two different species of trees shall be planted on every block or street segment. To create a visually cohesive corridor, trees from the same genus may be used, although no genus shall be exclusive for a distance greater than 1,000'.
- Minor (local) streets: At least two different genera of trees shall be planted on every block or street segment. To reduce the potential for spreading disease via root grafting, no more than three trees of the same genus shall planted consecutively.

The Town should also establish tree planting standards for streets depending on development phase.

- Existing streets:
  - On "urbanized" streets, the Town shall plant trees where none currently exist.
  - On streets without curb, gutter, and/or stormwater sewers, no trees shall be planted in the road right-of-way.
- Reconstructed streets: The Town will budget the cost of installing street trees in the cost of the project.
- Future streets: After building permits have been issued for at least 50% of the available fronting parcels along a block or street segment, the developer shall be responsible for planting trees in the next (spring or autumn) planting period.

The Town should plant street trees the proper distance apart.

- 20' between small trees
- 30' between medium trees
- 40' between large trees

The Town should plant street trees the proper distance from other objects or hazards.

- 2' from the street curb, sidewalk, trail, or other paved surface
- 5' from electric, gas, water, sewer, telecommunication, and other underground utility valves
- 10' from the front side of signs, driveways, fire hydrants, handicap ramps, and storm sewer inlets
- 20' from street lights
- 25' from intersections on the departing side
- 40' from intersections on the approaching side

Future actions. The Town will take the following actions to plant trees on Town property.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Develop planting policy for parks and other Town properties	September 2013	November 2013	24 hours	Public Works Park Commission Community Dev.	staff time	Town (operating)
Develop street tree planting policy for existing streets	December 2013	February 2014	24 hours	Public Works Park Commission Community Dev.	staff time	Town (operating)
Plant trees in parks and other Town properties	March 2014 +	May 2014 +	to be determined	Public Works or Private Vendor	$200 to $300 per tree	Town (operating), Sanitary District #3
Plant trees on existing streets; one-hundred (100) trees per mile	September 2014 +	November 2014 +	to be determined	Public Works or Private Vendor	$200 to $300 per tree	Town (operating), Sanitary District #3

3.2 | WE WILL PLANT TREES ON PRIVATE PROPERTY

Purpose. Given their ability to improve the health, safety, and welfare of the community, the Town should take an active role in increasing the number of trees on private property.

Existing conditions. In some zoning districts, the Town requires a minimum percentage of each parcel to be landscaped with trees and/or other vegetation (other than turf grass).

ZONING	R-3	R-4	R-5	RMF	C-1	C-2	CL	CR
LAND USE	Single-Family Attached Residence	Multi-Family Residence	Multi-Family Residence	Multi-Family Residence	Neighbor-hood Commercial	Office Commercial	Local Commercial	Regional Commercial
PERCENTAGE	30%	30%	20%	30%	15%	15%	25%	25%
ORDINANCE	535-28	535-29	535-30	535-31	535-32	535-33	535-36	535-37

In 2011, the Town created Ordinance 535-52, with more specific landscape and screening standards for frontage, perimeter, interior, and buffer areas of a parcel. These rules apply to all of the zoning districts in the table above, as well as CP, (Planned Commercial), IND (Industrial), PDD (Planned Development District), and any commercial or institutional use in any residential or agricultural zone.

The Town requires all plant materials to be equal to or better in quality than the standards of the American Association of Nurserymen. The minimum size of plant materials that will satisfy the requirements of this ordinance are:

- Shade tree: 2½” in caliper, specimen grade with single central leader
- Ornamental tree: 1½” in caliper
- Evergreen tree: 5' in height
- Deciduous or evergreen shrub: 18” to 24” in height or spread

To meet unique site conditions or to overcome obstructions or conflicts, the Community Development Director may approve substitutions:

- Two ornamental trees may be substituted in place of one shade tree
- Two evergreen trees may be substituted in place of one shade tree
- One evergreen tree may be substituted in place of five shrubs
- One shade tree may be substituted in place of ten shrubs

The Town has a few additional ordinances that shape planting on private property, noted in the following table.

ORDINANCE	REQUIRES
475-15 (E)	A person subdividing land must install trees and/or other landscaping as determined appropriate by the Plan Commission and approved by the Town Board.
475-21 (A)	A person subdividing land shall include plantings and/or buffering easements between parcels and high-volume highways or railroad lines as well as residential parcels and commercial or industrial parcels.
475-21 (B)	A person subdividing land shall include a 15' planting easement between parcels and limited-access highways or railroad lines.
475-21 (B)	A person shall not plant trees or shrubs taller than 3' in the vision control area defined by a triangle with legs extending back from the corner where the centerline of two streets intersect. The length of these legs shall depend on the type of street: 250' for federal and state highways, 150' for arterial streets, 75' for collector streets and minor streets.

Recommendations. The Town should continue to research and develop new policy instruments for planting trees on private property.

Future actions. The Town should take the following actions to plant trees on private property.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Review and revise ordinances to include stipulations for trees	June 2014	August 2014	40 hours	Community Dev. Administration Public Works	staff time	Town (operating)
Investigate options for including trees as part of stormwater management plan for parcel	December 2014	February 2015	40 hours	Public Works Community Dev. Administration	staff time	Town (operating), Sanitary District #3
Investigate tree replacement ordinance; mitigation policy for those who cannot comply on site	June 2015	August 2015	40 hours	Community Dev. Administration Public Works	staff time	Town (operating)
Establish fund to assist existing businesses with tree planting and landscaping	December 2015	February 2016	40 hours	Community Dev. Administration	staff time	Town (operating), Sanitary District #3

3.3 | WE WILL PLANT THE RIGHT TREES IN THE RIGHT ENVIRONMENT

Purpose. Planting trees that are compatible with area soils and climate increases their chances of long-term growth and survival. Planting trees that are compatible with structures and other uses of a parcel reduces risk of injury and property damage. Planting a variety of tree species makes the forest more resilient to diseases and pests (both existing and future).

Existing conditions. The Town generally plants maple, honey locust, linden, and crab apple species.

Recommendations. The Town should work to achieve a balance of different-sized trees in its forest: 20% small-size trees; 60% medium-size trees, and 20% large-size trees.

To increase the resiliency of the urban forest to insects, pests, disease, blight, or other problems:

- no single tree *species* should exceed 10% of the entire population
- no single tree *genus* should exceed 20% of the entire population
- no single tree *family* should exceed 30% of the entire population

The Town should not plant the following species in street terrace areas because of safety or maintenance issues:

- littering fruit: Ash: Mountain (*Sorbus americana*), Catalpa (*Catalpa* spp.), Mulberry (*Morus* spp.), Pear: Common (*Pyrus communis*)
- weak wood: Box Elder (*Acer negundo*), Elm: Siberian (*Ulmus pumilia*)
- shallow roots: Locust: Black (*Robina* spp.)
- iron chlorosis: Oak: Pin (*Quercus paulstris*)

Future actions. The Town will take the following actions to plant the right trees in the right environment.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Review and refine planting matrix	September 2013	February 2014	40 hours	Public Works Administration Community Dev.	staff time	Town (operating)

3.4 | WE WILL PLANT TREES IN A PROFESSIONAL MANNER

Purpose. Ensure trees live long, prosperous lives.

Existing conditions. While there is no official policy in place, Public Works staff follows commonly accepted practices of the field.

Recommendations. The Town should plant trees using professional guidelines and standards issued by the International Society of Aboriculture and the Wisconsin Arborist Association. Residents are advised to follow these recommendations.

Only the Town may plant or authorize the planting of trees on Town property or right-of way.

ELEMENT	RECOMMENDATION
BEFORE PLANTING	The Town or any resident shall call Diggers Hotline (811) or submit a request online at least three business days before planting date.
PLANTING PERIOD	The Town shall plant trees in April and May (spring) or October and November (autumn). Some species can only be transplanted during one of the planting periods. The Town will only plant evergreen trees during the spring to ensure enough water is available.
TREE SIZE	The Town shall only plant healthy trees that are at least 1½" caliper measured 6" above the ground.
TREE HEALTH	All trees shall be vigorous and healthy, possessing a relatively straight, single trunk with well-developed leaders and a sufficient root network. All shall be free of visible injuries, disease, and insects (eggs, larvae, or adults)
BALL AND BURLAP	All root systems shall be balled and burlapped to a minimum diameter of 20" and minimum depth of 13½". Tightly-bound, biodegradable burlap shall cover the entire ball.
TRANSPORT	The person or party responsible for transporting trees from the nursery to the planting site shall protect them from drying sun and wind. All plants shall be moved by the root ball.
DIGGING HOLE	Holes shall be at least two to three times the size of the root ball. The ball shall rest in the center of the hole so the root flare shall be at (or slightly above) ground level.
STAKING	The Town may stake a tree with broad, soft strapping that still allows the tree to sway in the wind. The Town will remove all staking material within two years of planting, unless deemed necessary for safety reasons.
MULCH	The Town will place a 4" deep layer of shredded bark mulch around the base of newly-planted trees in a doughnut shape (mulch should not touch the tree).

ELEMENT	RECOMMENDATION
WATER	The Town will only water newly-planted trees during extended dry periods. Residents may water trees during extended dry periods, especially those that are newly-planted.

Residents may place a layer of organic mulch around the base of trees. The use of stone or other inorganic material is prohibited. Residents may water trees during extended dry periods, especially those that are newly-planted.

Future actions. The Town will take the following actions to plant trees in a professional manner.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Locate and publish tree planting procedures for Town staff	March 2013	May 2013	24 hours	Public Works Administration	staff time	Town (operating)
Locate and publish tree planting guidelines for residents	March 2013	May 2013	24 hours	Administration Community Dev. Public Works	staff time	Town (operating)

4 | OUR COMMUNITY WILL REMOVE HAZARDOUS TREES

4.1 | WE WILL IDENTIFY PRIME CANDIDATES FOR REMOVAL

Purpose. This process allows the Town to remove trees before they injure someone or damage property.

Existing conditions. The Town currently removes trees in an informal, as-needed basis, primarily in response to reports of damaged or dangerous trees from staff or residents. Staff schedules removals depending on the nature of the hazard and overall workload.

The Town requires property owners to remove trees that inhibit vision clearance or Town activities in the right-of-way.

ORDINANCE	REQUIRES
468-5 (B)	A private property owner must remove any tree or shrub on their parcel that prevents proper ditch mowing or snow removal. The Town shall have the right to take corrective action and charge a special assessment should the property owner fail to comply.
468-5 (F)	A private property owner must remove any tree or shrub on their parcel that prevents clear and complete vision of any traffic sign, driveway approach, or street intersection. The Town shall have the right to take corrective action and charge a special assessment should the property owner fail to comply.

Recommendations. The Town shall remove trees when they directly and imminently threaten the health, safety, or general welfare of the community. This includes trees that are dead or dying; contain unrepairable structural defects that could cause the tree to fail; or harbor insects or diseases that could seriously harm other trees. It also includes trees that expose the Town to legal or civil liability.

The Town shall not remove trees when they only pose a minor inconvenience. This includes trees that contain structural defects that can be repaired or mitigated; harbor insects that only cause minimal harm; produce undesirable leaves, seeds, or fruit; produce allergens; inhibit turf or other vegetative growth under their canopy; or block sanitary and storm sewers with their root growth.

The Town or any resident shall call Diggers Hotline (811) or submit a request online at least three business days before planting date.

Town staff should adopt the following procedure when making a decision about whether or not to remove a tree.

Step 1: Evaluate tree health. Inspect, crown, stem, and roots (where visible) for signs of injury, disease, or dieback.

HEALTH	CROWN	STEM	ROOT
EXCELLENT	branch attachment, callus growth, decline, dieback, branch structure, crown density, epicormic sprouts, exterior fungal bodies, included bark, deadwood, defects, wounds, live crown ratio, leaf color and size, insects, growth increments, disease	bark intact, callus growth, canker, cavity, cracks, decay, epicormic sprouts, exterior fungal bodies, included bark lean, multiple stems, wounds	root flare, girdling roots, canker, cavity, surface roots, decay, root pruning, exterior fungal bodies, root zone area, basal sprouts, grade change, wounds
GOOD			
FAIR			
POOR			
VERY POOR			

Step 2: Evaluate hazard level. What risks does this tree (or part of tree) pose to people or property?

	LOW HAZARD	MEDIUM HAZARD	HIGH HAZARD
FAILURE POTENTIAL	minor defects	numerous and/or significant defects	severe defects
SIZE OF PART	limbs less than 3” in diameter	limbs greater than 3” in diameter	large sections of crown or entire tree
TARGET	natural areas, passive recreation, or other occasional uses	active recreation, parking, or other intermittent uses	structures, sidewalks, trails, streets, or other frequent uses

Step 3: Make decision on removal. Use the matrix below to make a decision based on health and hazard level.

	LOW HAZARD	MEDIUM HAZARD	HIGH HAZARD
EXCELLENT HEALTH	removal unnecessary	removal unnecessary	re-inspect in two years; take actions to reduce hazard risk in interim
GOOD HEALTH	removal unnecessary	re-inspect in two years; take actions to improve health, reduce hazard risk in interim	re-inspect in one year; take actions to reduce hazard risk in interim
FAIR HEALTH	re-inspect in two years; take actions to improve health in interim	re-inspect in one year; take actions to improve health, reduce hazard risk in interim	removal imminent; schedule within next twelve to twenty-four months
POOR HEALTH	re-inspect in one year; take actions to improve health in interim	removal imminent; schedule within next twelve to twenty-four months	removal imminent; schedule within next twelve months
VERY POOR HEALTH	removal imminent; schedule within next twelve to twenty-four months	removal imminent; schedule within next twelve months	remove immediately

After removal, the Town shall grind the stump to a depth of at least 8” below grade; remove excess stump chips and fill the remaining hole with clean topsoil to create a level grade; and seed or plant vegetation that is consistent with the adjacent landscape. The property owner adjacent to the removal site is responsible for watering and maintaining the new turf or vegetation.

Future actions. The Town will take the following actions to identify prime candidate for removals.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Develop checklist / evaluation sheet for Town staff	December 2012	February 2013	16 hours	Public Works Administration Academic Partner	staff time	Town (operating)
Identify high-risk trees as part of tree inventory	March 2013	August 2013	to be determined	Outside Consultant Public Works Community Dev.	staff time	Town (CIP), grants
Establish cycle for Town staff to review trees for removal	June 2014	August 2014	24 hours	Public Works	staff time	Town (operating)

4.2 | WE WILL PREPARE A DISASTER RESPONSE STRATEGY

Purpose. A plan will help the Town deploy resources effectively and efficiently to help residents get safely moving and back to business.

Existing conditions. The Town does not have formal procedures. After storm events, the Town first removes trees with life/safety issues, then opens streets to move traffic, and then deals with issues with private property.

Recommendations. The Town should prepare for the aftermath of acute threats (tornadoes, windstorms, snowstorms) by assigning duties in accordance with recommendations in the *Tree Emergency Manual for Public Officials*.

TECHNICAL RESPONSIBILITIES	ADMINISTRATIVE RESPONSIBILITIES
1 Ensure safety 1.1 identify live electric wires in, on, or under trees 1.2 block public access to these areas 1.3 report downed wires to appropriate utility contacts 2 Restore access, connectivity by pushing debris out of the way 2.1 clear critical transportation networks, including: 2.1.1 arterial, collector, and main local roads 2.1.2 roads and walkways that connect public safety, medical, and other emergency facilities 2.2 clear critical infrastructure, including: 2.2.1 culverts, inlets, or other drainage channels 2.2.2 drinking water and sanitary sewer structures 3 Clean up debris through established methods 3.1 establish temporary collection points if necessary 3.2 remove debris using established routes 4 Conduct tree damage assessment using established methods	1 Communicate 1.1 post and publicize information 1.1.1 on website 1.1.2 press release to local media 1.2 provide information 1.2.1 what safety precautions to take 1.2.2 proper location(s) to place debris 1.2.3 estimated time for cleanup 1.2.4 why to seek professional advice before deciding to remove a tree 2 Record transactions 2.1 complete damage assessment 2.1.1 use predetermined formula 2.1.2 use a random sample of streets if event is large 2.2 keep track of work 2.2.1 obtain data from Public Works 2.2.2 track information from other personnel involved

Future actions. The Town should take the following actions to prepare a disaster response strategy.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	C)OST ESTIMATE	FUNDING SOURCE(S)
Identify critical transportation routes	September 2012	February 2013	8 hours	Public Works Police / Fire Administration	staff time	Town (operating)
Identify critical infrastructure (water, sewer, other utilities)	September 2012	February 2013	8 hours	Public Works Police / Fire Administration	staff time	Town (operating)
Establish temporary debris collection points	September 2012	February 2013	8 hours	Public Works Police / Fire Administration	staff time	Town (operating)
Establish routes and methods for clearing debris, update Emergency Operations Manual	December 2013	February 2014	24 hours	Public Works Police / Fire Administration	staff time	Town (operating)

4.3 | WE WILL PREPARE A DISEASE RESPONSE STRATEGY

Purpose. A plan will help the Town deploy resources effectively and efficiently to prevent disease from spreading through the community.

Existing conditions. The Town does not have a disease response strategy. It does not take any proactive measures to prevent or treat infected trees, though it will take action if something is brought to its attention, which includes the ability to make private property owners take action.

ORDINANCE	REQUIRES
497-7	The Town will take action, or require property owners to take action, to prevent the spread of Dutch Elm disease and other contagious tree diseases from spreading.

Recommendations. The Town should develop a disease response strategy to deal with the following threats:

FUNGUS	SIGNS / SYMPTOMS
Anthracnose	ulcer-like sores, cankering; curled, dead leaves with irregularly-shaped blotches
Cylindrosporium	develops later in season; small, round spots on leaves grow into small black fruits; defoliation
Downy spot	(aka white mold); brown leisons and white powdery coating on underside of leaves
Entomosporium	(aka Fabraea leaf spot) reddish-brown, irregular spots; defoliation
Leaf blister	twisting leaves with round bulges in leaf tissue, fuzzy growth
Leaf blotch	yellow and blotching leaves; defoliation
Monilinia blight	tan, fuzzy growth over surface of leaves
Phyllosticta	small, roundish spots on leaves grow into small black fruits; defoliation
Powdery mildew	white or gray growth over twigs and leaves
Rust	mass of red or orange spores over leaves
Septoria	develops later in season; small, round spots on leaves grow into small black fruits; defoliation

PEST	IMPACT
Emerald Ash Borer	larvae feed on spongy tissue under bark, limiting ability to transport water and nutrients causes decline and eventual death
Gypsy Moth	caterpillars consume leaves (especially birches, crabs, lindens, and oaks); defoliation can weaken and kill trees
Japanese Beetle	beetles consume leaves (especially birches, crabs, and lindens); shredded leaves can lower aesthetic value

Future actions. The Town should take the following actions to prepare a disease response strategy.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Identify infested trees as part of the initial tree inventory	March 2013	August 2013	to be determined	Outside Consultant Public Works	staff time	Town (operating)
Evaluate cost-benefit of treating or removing infected trees	March 2014	May 2014	40 hours	Administration Public Works	staff time	Town (operating)
Apply pesticide treatments to high-priority trees	March 2014	August 2014	to be determined	Public Works or Private Vendor	staff time	Town (operating)
Take appropriate actions: monitor, treat or remove	March 2015 +	August 2015 +	to be determined	Public Works	staff time	Town (operating)

4.4 | WE WILL REMOVE TREES IN A PROFESSIONAL MANNER

Purpose. Ensure that employees and residents remain safe during tree removal. Limit damage to public and private property.

Existing conditions. While there is no official policy in place, Public Works staff follows commonly accepted practices of the field.

Recommendations. The Town should create internal procedures or contract with an experienced private vendor for tree removal.

Future actions. The Town should take the following actions to remove trees in a professional manner.

ACTIVITY	START DATE	FINISH DATE	TIME ESTIMATE	RESPONSIBLE PARTY	COST ESTIMATE	FUNDING SOURCE(S)
Remove trees that pose immediate threats	September 2013	November 2013	to be determined	Public Works or Private Vendor	$600 per tree	Town (operating)
Remove other trees tagged for removal	September annually	March annually	to be determined	Public Works or Private Vendor	$600 per tree	Town (operating)

REFERENCES

City of Muskego, Wisconsin | *Urban Forestry Strategic Plan* | 1999
Cornell Cooperative Extension of Monroe County, New York | *Tree Emergency Manual for Public Officials* | 2000
Town of Dunn, Wisconsin | *Urban Forestry Strategic Plan* | 2008
Town of Grand Chute, Wisconsin | *Comprehensive Plan* | 2009
Town of Grand Chute, Wisconsin | *Emergency Operations Plan* | 2009
Town of Madison, Wisconsin | *Urban Forest Inventory Report and Strategic/Management Plan* | 2007
University of Wisconsin – Extension | *Common Foliage Diseases of Shade Trees in Wisconsin* (A2509) | 1997
Village of Ashwaubenon, Wisconsin | *Aboricultural Specifications Manual* | 2009
Village of Howard, Wisconsin | *Arboricultural Specification Manual* | 2011