

Public Tree Inventory Report and Management Plan



City of Burlington



Project Background & Scope of Services

- Recognizing benefits a properly maintained Urban Forest Provides
 - Quality of life
 - Air pollution reduction
 - Energy conservation
 - Increased property values
 - Reduced maintenance cost over time





Project Background & Scope of Services

- Develop a system to increase these benefits through effective management
 - Contract with an Urban Forestry consultant
 - Conduct a Street and Park/Public Property (PP) Tree Inventory
 - Develop a Management Plan



Project Background & Scope of Services

- Wachtel Tree Science scope
 - Public Tree Inventory – Summer 2013
 - Customized GIS tree software program by Kapur & Associates
 - Inventory Report & Urban Forest Management Plan
 - Review City ordinances related to forestry
 - Employee Training

Project Background & Scope of Services

- Project Funding
 - Urban Forestry Grant from WDNR
 - Matching funds from the City of Burlington



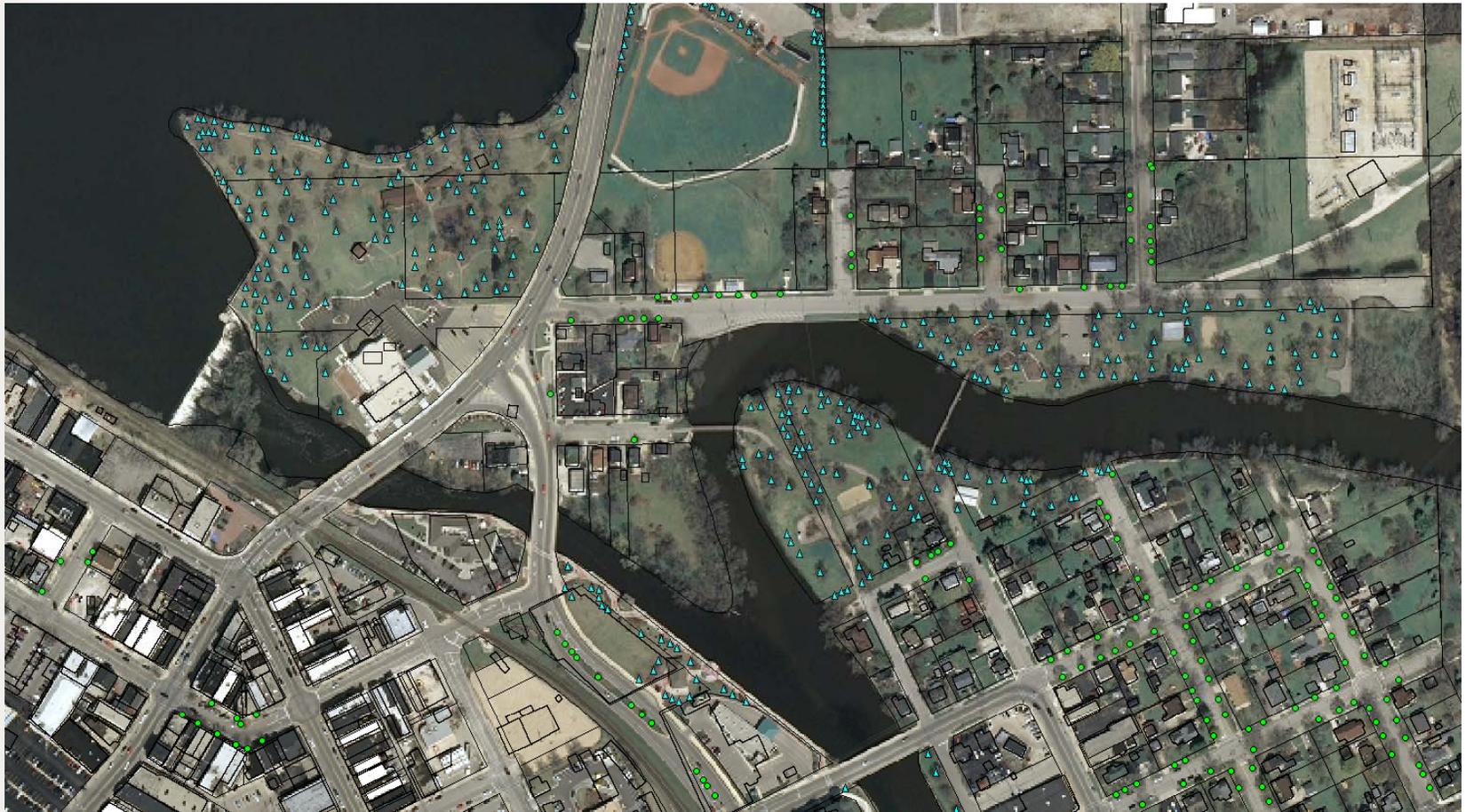
Inventory Report

Inventory Methodology

- Site & Tree Information collected



Inventory Report GIS Mapping





Inventory Report

Inventory Results & Discussion

- Inventoried area included:
 - 3,393 Existing Street Trees; 9 Stumps
 - 398 Potential Street Planting Sites
 - 1,073 Existing Park/PP Trees
- Potential Street Planting Sites
 - 89.5% of Inventoried Sites have trees
 - Higher than average Stocking Level

Inventory Report

Inventory Results & Discussion

- Species Frequency
 - Three Species comprise 62% of Street population (Norway Maple, all Ash and Honeylocust)
 - Species Diversity is important





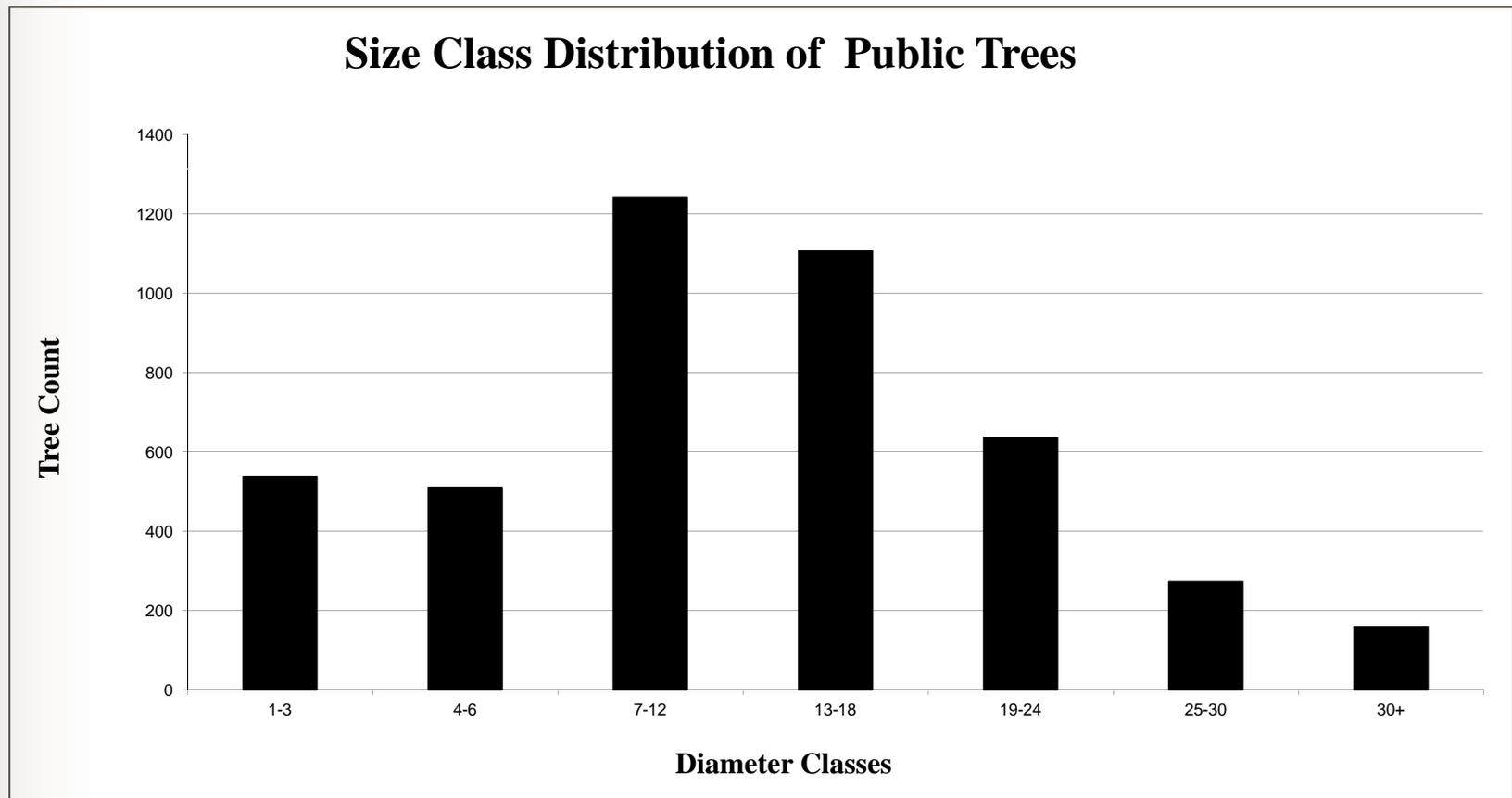
Inventory Report

Inventory Results & Discussion

- Size Class Distribution
 - Moderately aged Urban Forest
 - 52% of trees in the 7 - 12" and 13 -18" Diameter Class
 - Distribution of size classes is close to the desired "bell-shaped" curve for an urban tree population

Inventory Report

Inventory Results & Discussion

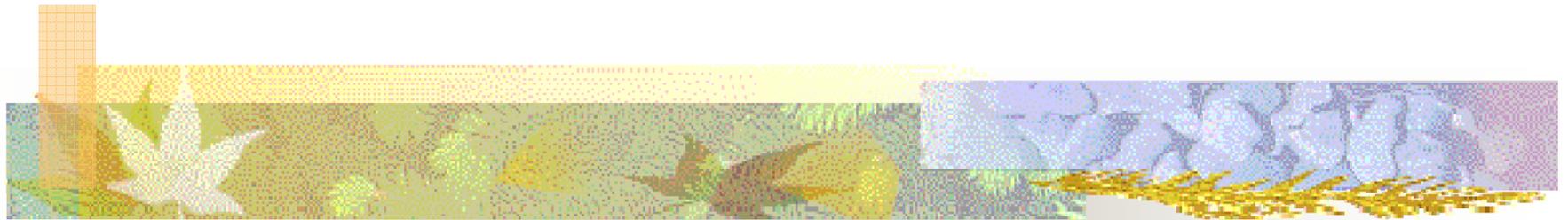


Inventory Report

Inventory Results & Discussion

- Condition & Maintenance
 - Young Trees (1-12" in diameter)
 - 81% are in the top 3 Condition Classes (above 70%)







Inventory Report

Inventory Results & Discussion

- Tree Value - All Public Trees
 - Total Tree Value for inventoried areas - **\$5,301,539.95**
 - Average Value per Tree - \$1,187.09
 - Given slightly higher condition class ratings and 5 – 10 years of growth, the value would increase significantly

Inventory Report

Inventory Results & Discussion

- Planting
 - Proper Species Selection
 - Early care





Urban Forest Management Plan

- Purpose

“Build upon the foundation of the public tree inventory by developing a comprehensive urban forestry program and to reprioritize field operations with policies and procedures to enhance the management of the urban tree resource”



Urban Forest Management Plan

- Scope

“Provide an outline of goals and strategies for community decision makers and staff to achieve these goals. Create a timetable and estimated costs to achieve the identified goals.”



Urban Forest Management Plan

■ Mission Statement

“Where appropriate street terrace widths are present and suitable planting sites exist in parks/municipal properties, create an aesthetic atmosphere in the City through maintaining a diversity of high quality healthy young, intermediate and mature trees. By providing quality tree care on a low cost regular basis, public trees will continue to be a significant asset to the City. Quality care of public trees will also inspire and educate residents to properly care for trees on private property.”



Urban Forest Management Plan

■ Goals & Strategies

- Goal 1 – Maintain Burlington’s urban forest in a cost effective, healthy & safe condition through proper care & maintenance of trees

- Strategies:

- Use 2013 public tree inventory to establish maintenance plan
- Implement maintenance goals through annual review of work plan



Urban Forest Management Plan

- Strategies:
 - Insure safety with regular inspections.
 - Provide public education to residents on importance of tree care & maintenance
 - Establish a “Best Practices Manual” that contains standards and specifications for performing proper tree care

Urban Forest Management Plan

- Strategies:
 - Increase City employee training in proper tree care
 - Update the 2013 inventory to insure maintenance records are current





Urban Forest Management Plan

- Goal 2 – Establish & maintain maximum tree cover, age & species diversity, with proper site and species selection to minimize hazards & maintenance costs
 - Strategies
 - Implement planting goals by establishing a master planting plan, increasing budget for park and street tree planting, & increase plantings in areas identified in the GIS that are lacking street trees

Urban Forest Management Plan

- Strategies
 - Seek out additional sources of funding for planting, I.e. State grants, businesses, developers, & community groups

**TREES
ON THE MOVE^{INC.}**
Wisconsin's Largest Tree Transplanting Specialists.



Urban Forest Management Plan

- Goal 3 – To have an educated public that knows what proper tree care is
 - Strategies:
 - Promote public awareness through publications and special events



Urban Forest Management Plan

- Strategies:
 - Communicate the importance of tree care to City departments, contractors & residents
 - Maintain ***Tree City USA*** status, & strive over time to achieve a ***Tree City USA Growth Award***





Current Status & Recommendations

■ Ordinance Revisions

- Updating of “Approved” and “Prohibited” trees
- Reducing the % of crown removal as being considered a major alteration
- Adding definitions for DBH and clarifying the definition of a tree
- Stating when oak and elm pruning is prohibited
- Expanding public nuisances for oak wilt and Emerald Ash Borer



Current Status & Recommendations

■ Tree Administration

■ City Forester

- Coordinate all tree work of Parks, Public Works & Utilities Depts.
- Consistency and focus in field operations

■ Financial Support

- Critical in moving the Urban Forestry Program forward
- Focus on Management Plan Goals & Objectives



Current Status & Recommendations

- Inventory Summary
 - Distribution of Age & Size Classes
 - Not ideal
 - Typical of moderate size communities
 - Maintenance Practices
 - Have not kept up with major needs:
 - Tree Removal
 - Safety & Clearance Pruning
 - Training Pruning



Current Status & Recommendations

- Inventory Summary
 - Street Tree Planting Program
 - Target 25 trees per year
 - Expand the Street Tree population in selected areas
 - Replace trees that are lost
 - Establish a Species List, Planting Plan, & Planting Policy
 - Increase species diversity

Current Status & Recommendations

- Review of Tree Resource & Discussion
 - Priority goals set with safety being the most important criteria
 - Estimated Costs – Five Year Urban Forest Implementation Schedule



Estimated costs for each activity			2014		2015		2016		2017		2018		Five Year Cost
Activity	Diameter Class	Cost/Tree (\$)	# of trees	Total Cost									
TREE REMOVALS	1-5"	33.00	40	1320.00									
	6-10"	63.00	13	819.00									
	11-15"	120.00	28	3360.00									
	16-20"	215.00	19	4085.00									
	21"+	375.00	17	6375.00									
Activity Totals			117	15959.00	(M)	3600.00	(M)	3600.00	(M)	3600.00	(M)	3600.00	27959.00
PRIORITY PRUNING (SAFETY, CLEARANCE, DEADWOOD)	1-5"	12.50	4	50.00	4	50.00							
	6-10"	39.00	14	546.00	14	546.00							
	11-15"	63.00	49	3087.00	48	3024.00							
	16-20"	96.00	59	5664.00	59	5664.00							
	21"+	135.00	109	14715.00	108	14580.00							
Activity Totals			235	24062.00	233	23864.00	(M)	2500.00	(M)	2500.00	(M)	2500.00	55426.00
TRAINING PRUNING	1-5"	21.00	50	1050.00	270	5670.00	320	6720.00	280	5880.00	280	5880.00	
	6-10"	45.00	38	1710.00	60	2700.00	98	4410.00	70	3150.00	70	3150.00	
	11-15"	78.00											
Activity Totals			88	2760.00	330	8370.00	418	11130.00	350	9030.00	350	9030.00	40320.00
ROUTINE PRUNING (MAINTENANCE)	6-10"	57.00	20	1140.00	60	3420.00	80	4560.00	90	5130.00	81	4617.00	
	11-15"	93.00	10	930.00	110	10230.00	160	14880.00	170	15810.00	176	16368.00	
	16-20"	145.00	5	725.00	55	7975.00	125	18125.00	145	21025.00	144	20880.00	
	21"+	205.00	5	1025.00	45	9225.00	105	21525.00	135	27675.00	197	40385.00	
Activity Totals			40	3820.00	270	30850.00	470	59090.00	540	69640.00	598	82250.00	245650.00
TREE PLANTING	Site Prep	16.00	25	400.00	25	400.00	25	400.00	25	400.00	25	400.00	
	Tree Cost	130.00	25	3250.00	25	3250.00	25	3250.00	25	3250.00	25	3250.00	
	Planting	55.00	25	1375.00	25	1375.00	25	1375.00	25	1375.00	25	1375.00	
Activity Totals			25	5025.00	25125.00								
OTHER MAINTENANCE	Stake Removal	8.00	16	128.00	25	200.00	25	200.00	25	200.00	25	200.00	
	Watering (3x)	21.50	50	1075.00	50	1075.00	50	1075.00	50	1075.00	50	1075.00	
	Mulching	11.00	25	275.00	25	275.00	25	275.00	25	275.00	25	275.00	
	Watch	8.00									280	2240.00	
	Stump Removal	4.00/inch	1495"	5980.00	(M)	1000.00	(M)	1000.00	(M)	1000.00	(M)	1000.00	
	Cable&Prune	170.00	4	680.00	5	850.00	(M)	300.00	(M)	300.00	(M)	300.00	
	Girdling Root	140.00	(M)	400.00									
Activity Totals			8338.00	3800.00	3250.00	3250.00	3250.00	3250.00	3250.00	5490.00	5490.00	24328.00	
Totals per Year				60164.00		74909.00		83995.00		92445.00		107295.00	418808.00

(M) = REGULAR MAINTENANCE ITEM REOCCURRING YEARLY OR ON A CYCLE

In House cost based on \$30.15 per hour

Key Needs of the Urban Forest

- Administrative Needs
 - Implementation of Management Plan
 - Update Municipal Tree Ordinance
 - Revenue generating opportunities



Key Needs of the Urban Forest

- Resource Needs
 - Street tree removals
 - Safety & Clearance Pruning
 - Training Pruning
 - Inspection for *Watch* trees
 - Increase street tree planting
 - Proper species selection
 - Proper regular maintenance

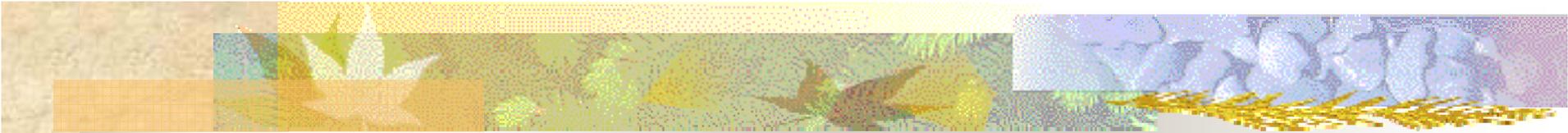


Key Needs of the Urban Forest

- Community Needs
 - Public awareness on policies of tree in the public right-of-way
 - Education – major disease & insect threats
 - Community involvement in funding projects, i.e. tree planting



**Female Gypsy
Moths**



Review of Plan

- Evaluation & implementation of the Management Plan are the keys to the success of the Urban Forestry Program
- Plan is a dynamic document – review the goals, strategies, actions, tasks, and priorities annually

Review of Plan

- Update officials on the accomplishments that are made
- Major review and updating of the Management Plan should take place in 2018
- Perform a complete reinventory in 2018





Summary

“Burlington has a wonderful living, growing resource. The urban Forest needs to be managed to avoid serious problems and to achieve its full potential. When managed properly, the urban forest will increase in value, giving many benefits to the citizens from cleaner air, cooler homes, increased values and just making the City a more beautiful community to visit, work and live in.”

Questions?

