

OSAWATOMIE CITY COUNCIL

AGENDA

August 25, 2016

6:30 p.m., Memorial Hall

1. Call to order
2. Roll Call
3. Pledge of Allegiance
4. Invocation –
5. Consent Agenda
 - Consent Agenda items will be acted upon by one motion unless a Council member requests an item be removed for discussion and separate action.*
 - A. August 25 Agenda
6. Comments from the Public
 - Citizen participation will be limited to 5 minutes. Please stand & be recognized by the Mayor.*
7. Presentations & Proclamations
8. Public Hearings
 - A. Hearing on Proposed 2017 Budget and 5-Year CIP
9. Unfinished Business
 - A. Proposed 2017 Budget and 5-Year Capital Improvements Program (CIP)
 - B. Resolution – Tax Levy for 2017 Budget
 - C. Resolutions – Budget Appropriations for 2016
 - D. Resolutions – Budget Appropriations for 2017
 - E. Change Order #2 – Main Street Phase I – Kansas Heavy Construction
 - F. Pay App #5 – Kansas Heavy Construction – CDBG Main Street Phase I
 - G. Pay App #2 – Kansas Heavy Construction – CDBG Special Round Sidewalk Improvements
 - H. Pay App #6 – Nowak Construction – Main Street Water Line Project
10. New Business
 - A. Osawatombie Tree Inventory
 - B. Draft Ordinance – Parks & Tree Committee
 - C. Purchase – Golf Course Mower
11. Council Report
12. Mayor’s Report
13. City Manager & Staff Reports
14. Executive Session
15. Other Discussion/Motions
16. Adjourn

NEXT REGULAR MEETING – September 8, 2016

RESOLUTION NO. ____

A RESOLUTION EXPRESSING THE PROPERTY TAXATION POLICY OF THE GOVERNING BODY OF THE CITY OF OSAWATOMIE WITH RESPECT TO FINANCING THE ANNUAL BUDGET FOR 2017.

WHEREAS, K.S.A. 79-2925b, as amended, provides that a levy of property taxes to finance the 2017 budget of the City of Osawatomie, exceeding the amount levied to finance the 2016 b budget of the City of Osawatomie, as adjusted to reflect changes in the Consumer Price Index for All Urban Consumers for calendar year 2015, be authorized by a resolution adopted in advance of the adoption of a budget supported by such levy; and

WHEREAS, K.S.A. 79-2925b, as amended, also provides that current year revenue that is produced and attributable to the taxation of (1) new improvements, (2) increased personal property valuation other than increased valuation of oil and gas leaseholds and mobile homes, (3) property located within added jurisdictional territory, and (4) property which has changed in use shall not be considered when determining whether revenue produced from property tax has increased from the preceding year; and

WHEREAS, the City of Osawatomie must continue to provide services to protect the health, safety, and welfare of the citizens of this community; and

WHEREAS, the cost of providing essential services to the citizens of this city continues to increase and the City again experienced a further decrease in the valuation, a drop of \$223,727 for the 2016 valuation or a 1.0 percent decrease; and

NOW, THEREFORE, BE IT RESOLVED by the Governing Body of the City of Osawatomie, that a levy of property taxes in support of the 2017 budget exceeding the amount levied in 2016, as adjusted pursuant to K.S.A. 79-2925b, as amended, is hereby approved.

PASSED AND ADOPTED by the Governing Body of the City of Osawatomie, Kansas this 25th day of August, 2016, a majority being in favor thereof.

APPROVED AND SIGNED by the Mayor.

L. Mark Govea, Mayor

(SEAL)

ATTEST:

Tammy Seamands, City Clerk

RESOLUTION NO. ____

A RESOLUTION PROVIDING FOR THE APPROPRIATION, BY FUND, OF THE BUDGET OF THE CITY OF OSAWATOMIE FOR THE YEAR BEGINNING JANUARY 1, 2016; AND APPROPRIATING MONEY FROM THE VARIOUS FUNDS TO PAY PAYROLLS AND CLAIMS AGAINST THE CITY OF OSAWATOMIE FOR THE CALENDAR YEAR 2016.

WHEREAS, on August 27, 2015, the City of Osawatomie, Kansas approved the annual budget as shown on official State of Kansas budget forms and subject to notice of hearing and public hearing was approved, adopted and appropriated, by fund as the maximum amounts to be expended for the year starting January 1, 2016; and

NOW, THEREFORE, BE IT RESOLVED by the Governing Body of the City of Osawatomie, Kansas:

SECTION ONE. That the 2016 budget of the City of Osawatomie, as adopted, shall constitute an appropriation of the money so budgeted, and the City Manager shall be authorized to adjust all salaries, including exempt positions, to pay payrolls and claims as provided in said budget of the City of Osawatomie; provided that all such payments made shall be deducted from the accounts so appropriated and that the total of payment made shall not exceed the amount appropriated.

SECTION TWO. That the City Manager shall establish regulations as to the manner of payment of the periodic dates on which payrolls and claims shall be paid, provided, that all employees of the City of Osawatomie shall be paid biweekly and no payroll or claim shall be paid until it has been approved by the City Manager and the City Clerk.

SECTION THREE. That the payment of payrolls and claims shall be by warrant checks as provided by law and such warrant checks shall be signed by two of the following; the City Manager, the City Clerk, the Assistant City Clerk, or the Mayor. All such warrant checks issued in payment of payrolls and claims shall be delivered to the officers, employees, agents, vendors and other claimants of the City by the City Clerk and that it shall be his/her duty to maintain a record of all warrant checks so delivered.

PASSED AND APPROVED by the Governing Body of the City of Osawatomie, Kansas this 25th day of August, 2016, a majority being in favor thereof.

APPROVED AND SIGNED by the Mayor.

L. Mark Govea, Mayor

(SEAL)

ATTEST:

Tammy Seamands, City Clerk

RESOLUTION NO. ____

A RESOLUTION PROVIDING FOR THE APPROPRIATION, BY FUND, OF THE BUDGET OF THE CITY OF OSAWATOMIE FOR THE YEAR BEGINNING JANUARY 1, 2017; AND APPROPRIATING MONEY FROM THE VARIOUS FUNDS TO PAY PAYROLLS AND CLAIMS AGAINST THE CITY OF OSAWATOMIE FOR THE CALENDAR YEAR 2017.

WHEREAS, on August 25, 2016, the City of Osawatomie, Kansas approved the annual budget as shown on official State of Kansas budget forms and subject to notice of hearing and public hearing was approved, adopted and appropriated, by fund as the maximum amounts to be expended for the year starting January 1, 2017; and

NOW, THEREFORE, BE IT RESOLVED by the Governing Body of the City of Osawatomie, Kansas:

SECTION ONE. That the 2017 budget of the City of Osawatomie, as adopted, shall constitute an appropriation of the money so budgeted, and the City Manager shall be authorized to adjust all salaries, including exempt positions, to pay payrolls and claims as provided in said budget of the City of Osawatomie; provided that all such payments made shall be deducted from the accounts so appropriated and that the total of payment made shall not exceed the amount appropriated.

SECTION TWO. That the City Manager shall establish regulations as to the manner of payment of the periodic dates on which payrolls and claims shall be paid, provided, that all employees of the City of Osawatomie shall be paid biweekly and no payroll or claim shall be paid until it has been approved by the City Manager and the City Clerk.

SECTION THREE. That the payment of payrolls and claims shall be by warrant checks as provided by law and such warrant checks shall be signed by two of the following; the City Manager, the City Clerk, the Assistant City Clerk, or the Mayor. All such warrant checks issued in payment of payrolls and claims shall be delivered to the officers, employees, agents, vendors and other claimants of the City by the City Clerk and that it shall be his/her duty to maintain a record of all warrant checks so delivered.

PASSED AND APPROVED by the Governing Body of the City of Osawatomie, Kansas this 25th day of August, 2016, a majority being in favor thereof.

APPROVED AND SIGNED by the Mayor.

L. Mark Govea, Mayor

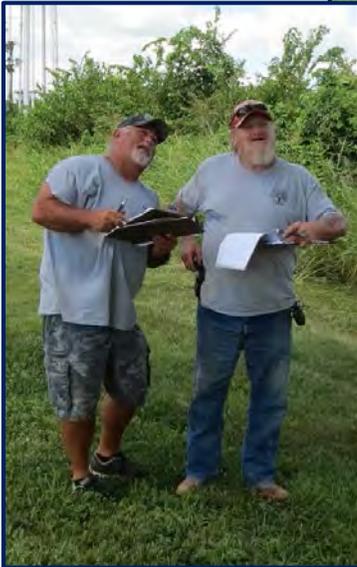
(SEAL)

ATTEST:

Tammy Seamands, City Clerk

COMMUNITY FORESTRY PROGRAM CITY OF OSAWATOMIE, KANSAS

INVENTORY RESULTS AND MANAGEMENT RECOMMENDATIONS Summer - Fall 2015



PREPARED BY:
Kim Bomberger
Community Forester
Kansas Forest Service
2610 Claflin Road
Manhattan, Kansas 66502
785-532-3315
kbomberg@ksu.edu



CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

EXECUTIVE SUMMARY

The community forest of Osawatome represents a considerable economic and environmental asset to city residents and visitors. The inventory analysis and management recommendation that follows is the result of a 100% inventory of street, park, cemetery, golf course, and city lake properties. At the time of the inventory, 2,430 trees were found on Osawatome public properties, estimated in value to be more than \$4.4 million. Sixty-three species of trees are growing on public properties, with four species at or more than the recommended levels for stocking. These four species comprise 37% of the total population of public trees. Condition ratings indicate a community forest that is in significant need of management and investment. Sixteen percent of trees require little or no corrective work, 41% need some corrective pruning or repair, 40% require major repair, renovation, or replacement and 3% of trees are dead or dying. The average diameter of Osawatome's public trees show a resource that is approaching maturity; however, it is encouraging that there are more trees in the diameter categories under 20" than in the categories larger than 20". The development of a progressive, long range community forestry program will provide the foundation for ongoing strategies that will result in a healthier and resilient community forest in Osawatome.

Not only are Osawatome's public trees valuable from a landscape standpoint, they provide \$385,217 in annual ecosystem services. It's easier to see the aesthetic value of these community trees, but with news of ground-level ozone exceeding thresholds, global warming, cities monitoring their stormwater discharges, and rising utility costs, there is now science-based data proving that community trees belong in a city's toolbox for addressing environmental and economic concerns and issues. By protecting against the harshness of an urban environment, healthy tree canopies make a difference between an unhealthy city and one where human health and well-being are bolstered.

The development of goals and objectives and annual plans of work will improve and enhance the community forest in Osawatome. Examples of goals are: 1) increase species diversity; 2) increase the number of good condition trees while reducing the number of fair, poor, and dead/dying trees; 3) develop an emerald ash borer preparedness and response plan; 4) create a communications strategy for public education; and/or 5) diversify funding opportunities by engaging charitable and civic organizations, commercial interests, and community members. Annual plans of work could be developed for individual properties, such as the city cemetery, John Brown Park, the golf course, and even individual street quadrants.

This inventory analysis and management recommendation highlights resource trends and management needs that can guide the development of realistic budgetary forecasts and long-term management that, over time, will benefit all who live in or visit Osawatome.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

INTRODUCTION

An inventory of street, park, cemetery, golf course, and city lake trees owned and managed by the City of Osawatome was conducted during the summer and late fall of 2015. This is the first 100% public tree inventory for the city. In this inventory, all publicly-owned trees were recorded as to their species, size, and condition class, defined as:

GOOD: Healthy vigorous tree with no apparent signs of disease or mechanical injury. The tree is representative of its species and requires little or no corrective work.

FAIR: Tree of average condition and vigor for the area, with minor insect injury, disease, or physiological problems. May lack desirable form characteristics of the species, and require some corrective pruning or repair.

POOR: Tree is in general state of decline and may show severe mechanical, insect or disease damage, but death is not imminent. May require major repair, renovation, or replacement.

DEAD/DYING: Dead or death imminent from Dutch elm disease, emerald ash borer, drought, or other causes.

Grateful acknowledgment is given to City of Osawatome staff: Eric Draper, Austin Harper, Trenton Riley, Donnie Blackman, Mike Gorman, Dave Arbuckle, Danny Govea, and Terry Upshaw for their assistance and support in the completion of this project.

The purpose of this report is to provide information to the City of Osawatome to aid in the continued development of a community forestry planting and management program. Ideally, a program should include:

1. A mission statement.
2. Goals developed on the mission statement that target specific problem areas. Goals could be to implement an annual planting program, implement an annual pruning program, or develop specific plans for high use areas.
3. Objectives based upon the goals. Objectives should contain 4 components: (1) *results* to be achieved, (2) *criteria* by which results will be measured (often a number or percent), (3) *time frame* for completing the objective, and (4) *specific target* for which the objective is directed.
4. An annual plan of work, developed from the objectives, should include the activities, projects, and budget request.

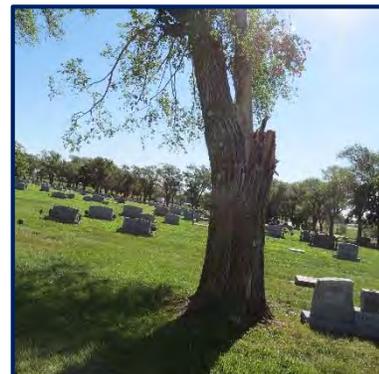
The appendices of this report contain information relevant to the selection, planting, and care of trees. This information is included in support of this report as well as with future technical needs. The report binder is broken down into the following subject areas: Inventory Results, Tree Value, Species Composition, Condition Classes, and General Recommendations.



A community forestry program should address management of the public tree resource.



Healthy trees may be the first opportunity to provide a favorable impression to Osawatome citizens and visitors.



Well-trained city staff should monitor and address trees in poor or declining health.

INVENTORY RESULTS

At the time of the inventory, there were 2,430 street, park, cemetery, golf course, and lake trees located on Osawatome public grounds, representing approximately 63 different species. Street trees included all trees in the right-of-way. Park trees included those in John Brown Park and the trees in Elmdale, Oakwood, and Osawatome cemeteries. All trees in maintained areas of the city golf course and city lake were included. Siberian elm comprises 10% of the total population with sugar maple, green ash, and silver maple each at 9% of the total. Eastern redcedar follows at 7% of the population.

In the Osawatome area, where a large variety of tree species will grow well, no single species should comprise more than 10% of the total number of trees. Overpopulation by a single species can make a community vulnerable to losing a large number of trees to a single insect or disease. Dutch elm disease in American elms and emerald ash borer in ash are examples. Siberian elm is at the recommended stocking rate of 10% with sugar maple, silver maple, and green ash approaching that threshold. These four species should be strongly discouraged for future planting on a large scale.

The condition and health of the species is an important consideration. At the time of the inventory, the summarized field data shows that 16% of all trees are reported to be in good condition, followed by 41% in fair, and 40% in poor condition. Approximately 63 (3%) dead and dying trees were identified. This reflects similar condition ratings that we would expect to find in Kansas communities that are in the early stages of implementing an active community forestry program. Such categories help to easily identify future management needs. For example, based on the breakdown of condition classes 16% (383 trees) have no specific management needs, 41% (1,004 trees) require minor pruning, maintenance, or insect and disease controls, and 40% (980 trees) require more intensive management intervention. All dead and dying trees should be removed as quickly as is possible.



Healthy trees provide many benefits for the entire community, such as improved water and air quality, carbon dioxide storage, energy savings and aesthetic values.

Sugar maple and silver maple alone comprise 18% of the total population. All maples account for 20% of the total population – at the recommended level of 20% for any genus. Oaks are approaching this threshold at 16% and elms at 14%. Some tree insects and pests don't attack an entire genus or family, but as emerald ash borer has shown, all *Fraxinus* in this country are vulnerable.

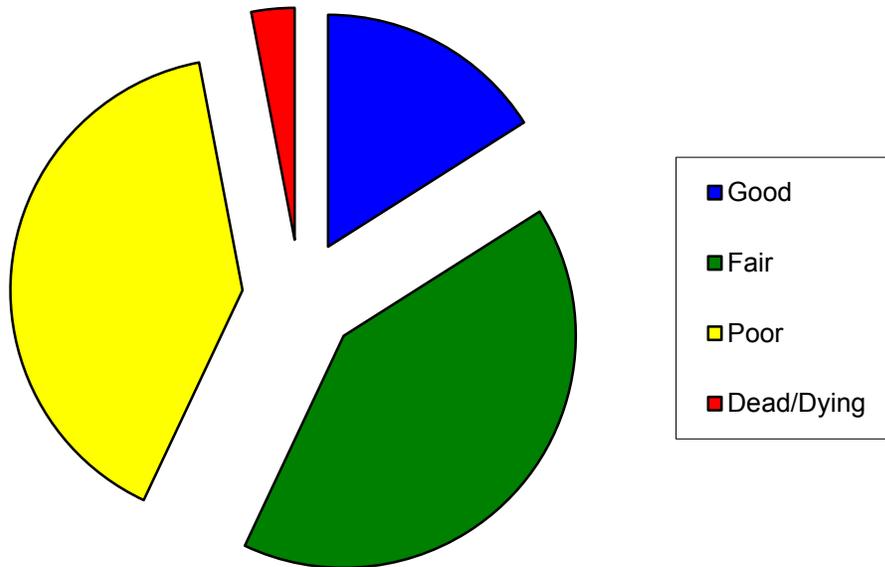


Mature tree care often requires the work of professional arborists.

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

2015 Condition Classes by Percent



- GOOD:** Healthy vigorous tree with no apparent signs of disease or mechanical injury. The tree is representative of its species and requires little or no corrective work.
- FAIR:** Tree of average condition and vigor for the area, with minor insect injury, disease, or physiological problems. May lack desirable form characteristics of the species and require some corrective pruning or repair.
- POOR:** Tree is in general state of decline and may show severe mechanical, insect, or disease damage but death is not imminent. May require major repair, renovation or replacement.
- DEAD AND DYING:** Dead or death imminent from Dutch elm disease, emerald ash borer, drought, or other causes.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

TREE VALUE

Trees provide many services to the community and environment. Trees add beauty and create an environment beneficial to our well-being by:

- Adding and defining natural character to our cities and towns.
- Providing us with colors, flowers, forms and textures.
- Screening undesirable views and softening the harsh lines of masonry, metal and glass.
- Reduce and cut noise pollution by acting as sound barriers.
- Defining space and providing landscape interest and continuity.

Direct and measurable benefits of trees are also very significant. Properly selected and planted trees can:

- Reduce air pollution by trapping and holding particulate pollutants and absorbing carbon dioxide and other dangerous gasses.
- Conserve water and reduce soil erosion.
- Save energy by reducing glare and providing cooling shade in the sunny hotter months and windbreaks during the cold winter months.
- Increase property values from 7% to 15%.

The values in the following tables were computed using an equation developed by the International Shade Tree Conference which takes into consideration intrinsic values such as shade and beauty. The estimated value of all inventoried trees is in excess of \$4 million dollars.

The above figure is used only as an estimate based on currently accepted calculations. Inventory values and data are pertinent to the determination of adequate yearly budget levels needed to improve and maintain the public tree resource.



Trees add measurable values to our communities.

The 2015 value of inventoried public property trees in Osawatomie is \$4,400,199.

Trees provide many environmental services that can now be quantified through i-Tree Streets, a street tree resource analysis tool for community forest managers. See Appendix A for specific ecosystem services and other benefits provided by Osawatomie's public trees.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

SPECIES COMPOSITION

PUBLIC TREE RESOURCE - City of Osawatomie, Kansas Summer-Fall 2015 Percent of Inventory Total								
SPECIES	No. of Trees	Avg. Dia.	% Good	% Fair	% Poor	% Dead & Dying	% of Total Trees	Value
Siberian elm	249	22"	2%	32%	62%	4%	10%	\$169,713
Sugar maple	225	15"	17%	46%	35%	2%	9%	\$421,937
Green ash	224	17"	5%	25%	68%	2%	9%	\$219,757
Silver maple	222	19"	12%	58%	28%	2%	9%	\$240,738
Eastern redcedar	172	17"	27%	40%	33%	0%	7%	\$427,892
Common hackberry	133	18"	7%	54%	37%	2%	5%	\$207,293
Pin oak	128	22"	25%	46%	24%	5%	5%	\$521,805
Osage-orange	105	20"	0%	11%	88%	1%	4%	\$191,608
American elm	89	19"	6%	36%	54%	4%	4%	\$108,131
Post oak	89	22"	19%	60%	15%	6%	4%	\$217,557
Black walnut	76	15"	14%	42%	43%	1%	3%	\$146,565
Eastern redbud	70	6"	13%	56%	26%	6%	3%	\$22,443
Bur oak	68	20"	37%	50%	7%	6%	3%	\$327,614
Orn/Bradford pear	63	9"	14%	63%	21%	2%	3%	\$40,419
Northern red oak	62	16"	42%	43%	15%	0%	3%	\$230,802
Chinkapin oak	39	23"	8%	56%	36%	0%	2%	\$189,423
Miscellaneous*	416	14"	27%	35%	36%	2%	17%	\$743,502
TOTAL	2,430	17"	16%	41%	40%	3%	100%	\$4,400,199

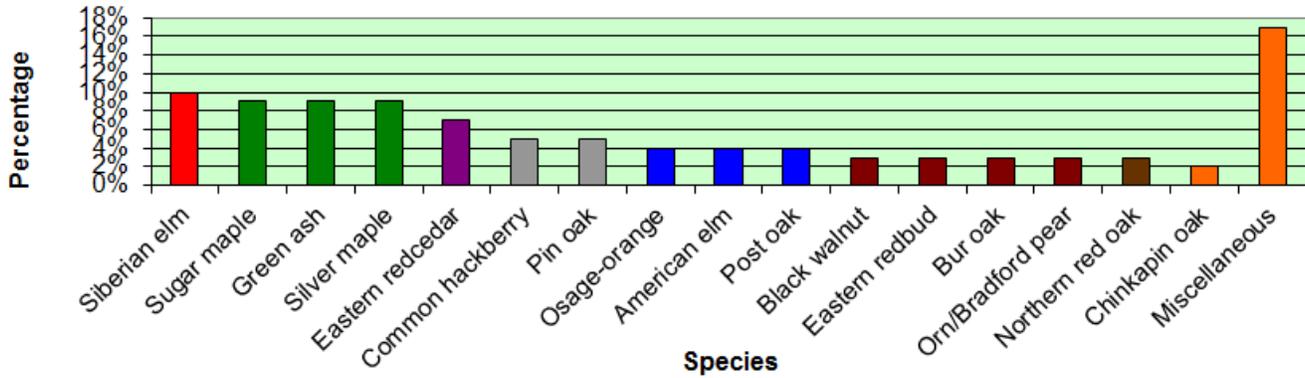
***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried public tree population):

Arborvitae, white ash, baldcypress, river birch, boxelder, northern catalpa; black and ornamental cherry; common chokecherry, Kentucky coffeetree, eastern cottonwood, crabapple, flowering dogwood, fruit species, goldenraintree, sugar hackberry; shagbark and shellbark hickory; honeylocust; American and littleleaf linden; black locust; saucer, southern and other magnolia; freeman, Japanese, Norway, and red maple; mimosa; red and white mulberry; English, shingle, and white oak; Russian olive, pecan, common persimmon; Austrian and eastern white pine; purpleleaf plum, common smoketree, Colorado blue spruce, staghorn sumac, sweetgum, American sycamore, Tree-of-Heaven, an unknown, and willow.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

2015 Public Tree Species Composition



***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried public tree population):

Arborvitae, white ash, baldcypress, river birch, boxelder, northern catalpa; black and ornamental cherry; common chokecherry, Kentucky coffeetree, eastern cottonwood, crabapple, flowering dogwood, fruit species, goldenraintree, sugar hackberry; shagbark and shellbark hickory; honeylocust; American and littleleaf linden; black locust; saucer, southern and other magnolia; freeman, Japanese, Norway, and red maple; mimosa; red and white mulberry; English, shingle, and white oak; Russian olive, pecan, common persimmon; Austrian and eastern white pine; purpleleaf plum, common smoketree, Colorado blue spruce, staghorn sumac, sweetgum, American sycamore, Tree-of-Heaven, an unknown, and willow.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

PARK and CEMETERY TREE RESOURCE - City of Osawatome, Kansas Summer-Fall 2015 Percent of Inventory Total

SPECIES	No. of Trees	Avg. Dia.	% Good	% Fair	% Poor	% Dead & Dying	% of Total Trees	Value
Siberian elm	138	24"	0%	19%	75%	6%	23%	\$91,396
Eastern redcedar	74	21"	26%	61%	13%	0%	12%	\$296,260
Post oak	68	23"	19%	60%	15%	6%	11%	\$174,851
Common hackberry	40	20"	5%	70%	22%	3%	7%	\$73,874
Chinkapin oak	32	23"	9%	63%	28%	0%	5%	\$159,686
Bur oak	30	26"	17%	57%	13%	13%	5%	\$194,287
Sugar maple	24	18"	29%	38%	25%	8%	4%	\$65,812
Orn/Bradford pear	22	11"	0%	86%	14%	0%	4%	\$21,406
Pin oak	20	16"	10%	55%	5%	30%	3%	\$51,362
Eastern redbud	18	5"	11%	78%	11%	0%	3%	\$3,927
Black walnut	17	23"	12%	53%	29%	6%	3%	\$67,510
Green ash	14	22"	7%	64%	29%	0%	2%	\$28,156
Shagbark hickory	14	23"	72%	14%	7%	7%	2%	\$73,269
Arborvitae	12	6"	75%	25%	0%	0%	2%	\$4,776
Northern red oak	12	9"	25%	67%	8%	0%	2%	\$25,658
Miscellaneous*	68	15"	7%	68%	20%	5%	12%	\$158,022
TOTAL	603	20"	15%	50%	30%	5%	100%	\$1,490,252

***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried park/cemetery tree population): White ash, river birch, northern catalpa, cottonwood, crabapple, American elm, goldenraintree; bitternut and shellbark hickory; honeylocust, American linden, black locust; saucer, southern, and misc. magnolia; Japanese, red, and silver maple; white mulberry; English, shingle, and white oak; Osage-orange, pecan, common persimmon, American sycamore, and Tree-of-Heaven.

Park and Cemetery Overview:

Siberian elm is the dominate species in this data set, largely due to a very high population at Osawatome City Cemetery. Most of those trees are in poor condition, suffering from storm and other damage. A planting and maintenance plan should be developed and implemented for that cemetery in tandem with the removals that are needed. John Brown Park, Elmdale and Oakwood cemeteries have several native trees that are approaching a mature age, so the establishment of trees on those properties will be needed to maintain their appeal. With the historical significance of the park, Elmdale and Oakwood cemeteries, an opportunity exists to reestablish trees with a historical context to the plan.

Other species with populations more than the recommended levels of 10% include eastern redcedar and post oak. Seven percent of the population is hackberry, a decay-prone species. Nine of the species in the table above have average diameters 20 inches and more, indicating maturing to over-mature populations. Seventy-five percent of the Siberian elm population is in poor condition, indicating intensive management needed in the short term. Attention should also be paid to the eastern redcedar, post oak, common hackberry, chinkapin oak, bur oak, ornamental/Bradford pear, pin oak, eastern redbud, black walnut, green ash, and the northern red oak that have fair populations more than 50%, indicating a distinct need for pruning, repair and other maintenance.

Emerald ash borer is a nearby threat to the 15 green and white ash trees. The 17 black walnuts could be threatened by thousand cankers disease of black walnut, a disease not yet detected in Kansas, but found in states to the east and west. Also in the United States, but not detected in Kansas, is the Asian longhorned beetle, an insect that can attack multiple species of trees.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

NORTHWEST STREET TREE RESOURCE - City of Osawatome, Kansas Summer-Fall 2015 Percent of Inventory Total

SPECIES	No. of Trees	Avg. Dia.	% Good	% Fair	% Poor	% Dead & Dying	% of Total Trees	Value
Silver maple	32	18"	25%	56%	16%	3%	13%	\$38,233
Pin oak	31	21"	30%	35%	35%	0%	13%	\$118,386
Sugar maple	30	15"	20%	27%	53%	0%	12%	\$55,770
Green ash	15	18"	13%	67%	20%	0%	6%	\$20,499
Eastern redbud	15	7"	7%	46%	27%	20%	6%	\$3,555
Baldcypress	13	3"	53%	31%	8%	8%	5%	\$1,888
Siberian elm	13	24"	0%	31%	61%	8%	5%	\$9,551
Orn/Bradford pear	12	9"	15%	50%	17%	8%	5%	\$9,107
American elm	10	20"	0%	70%	30%	0%	4%	\$15,706
Eastern redcedar	9	11"	11%	11%	78%	0%	4%	\$6,368
Common hackberry	7	18"	0%	57%	43%	0%	3%	\$11,028
Goldenraintree	6	11"	17%	66%	17%	0%	2%	\$7,745
Bur oak	5	18"	40%	40%	20%	0%	2%	\$21,937
Northern red oak	5	14"	80%	0%	20%	0%	2%	\$17,552
American sycamore	5	30"	100%	0%	0%	0%	2%	\$42,054
Eastern white pine	4	2"	0%	0%	100%	0%	2%	\$72
Sweetgum	4	19"	50%	25%	25%	0%	2%	\$19,995
Miscellaneous*	25	13"	32%	36%	24%	8%	12%	\$21,116
TOTAL	241	15"	24%	40%	32%	4%	100%	\$420,562

***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried NW street tree population): White ash, northern catalpa, common chokecherry, cottonwood, crabapple, honeylocust, Norway maple, mimosa; red and white mulberry; white oak, Colorado blue spruce, and black walnut.

NW Street Tree Overview:

Silver maple, pin oak, and sugar maple exceed the maximum recommended level of 10% for species diversity. As trees within these species decline and require removal, other species should be replanted in their place to increase the overall diversity of the city and especially this quadrant. Green ash and eastern redbud are approaching a level of overstocking and should be discouraged from large planting.

The pin oak, Siberian elm, American elm, and sycamore average diameters indicate that these species are approaching a maturing to over-mature size and issues related to age, storm damage, and other environmental stresses should be expected. Sugar maple, Siberian elm, eastern redcedar, and eastern white pine have 50% or more of their population in poor condition. These trees may require removal in the next few years, especially if drought and other environmental factors stress these trees.

Emerald ash borer is a nearby threat to the 16 green and white ash trees. The potential impact of thousand cankers disease will be minimal in this quadrant. However, Asian longhorned beetle (ALB) would feast on the 25% silver and sugar maple trees that dominate in the quadrant.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

SOUTHWEST STREET TREE RESOURCE - City of Osawatome, Kansas Summer-Fall 2015 Percent of Inventory Total

SPECIES	No. of Trees	Avg. Dia.	% Good	% Fair	% Poor	% Dead & Dying	% of Total Trees	Value
Sugar maple	82	14"	10%	52%	37%	1%	22%	\$129,901
Siberian elm	43	18"	5%	53%	40%	2%	11%	\$28,631
Silver maple	42	18"	17%	59%	24%	0%	11%	\$45,310
Pin oak	27	23"	7%	56%	33%	4%	7%	\$102,011
Green ash	21	18"	14%	29%	52%	5%	6%	\$24,730
American elm	19	14"	6%	47%	47%	0%	5%	\$18,295
Common hackberry	15	19"	0%	80%	20%	0%	4%	\$31,919
Eastern redbud	15	7"	20%	60%	13%	7%	4%	\$10,377
Red maple	14	6"	2%	36%	50%	0%	3%	\$1,779
Eastern white pine	11	4"	91%	0%	9%	0%	3%	\$2,733
Northern red oak	10	12"	80%	20%	0%	0%	3%	\$25,551
Northern catalpa	8	18"	0%	38%	62%	0%	2%	\$11,527
Miscellaneous*	70	10"	36%	44%	17%	3%	19%	\$83,817
TOTAL	377	14"	19%	48%	31%	2%	100%	\$516,581

***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried SW street tree population): Baldcypress, boxelder; black and ornamental cherry; Kentucky coffeetree, cottonwood, crabapple, flowering dogwood, goldenraintree, shagbark hickory, honeylocust, black locust, magnolia, mimosa; bur, post, and white oak; ornamental/Bradford pear, pecan, common persimmon, purpleleaf plum, eastern redcedar, common smoketree, sweetgum, Tree-of-Heaven, black walnut, and willow.

SW Street Tree Overview:

Sugar maple is overly abundant with 22% of the total species diversity. Siberian elm and silver maple each contribute 11% to the overall population and that is too high of a number for trees that are fast-growing, weak-wooded, decay-prone, and storm-prone. A planting program could establish trees in vacant street locations in the next few years and as trees decline and require removal, several other species need to be replanted to increase the overall diversity in the quadrant.

Species like silver maple, Siberian elm, green ash, and hackberry tend to become high risk trees as they mature. Sugar maple, Siberian elm, pin oak, green ash, American elm, red maple, and the catalpa all have 25% or more of trees in poor condition and many of the trees in the above table have more than 50% of their species in fair condition.

The quadrant has several large pin oak over 20" in diameter with Siberian elm, silver maple, green ash, hackberry, and northern catalpa approaching a mature size. Large trees in the quadrant should be expected to have issues related to age, storm damage, accelerated decline and environmental stresses.

Some or all of the 19 American elm could be affected yet by Dutch elm disease and emerald ash borer is a nearby threat to the 6% green ash. If a pattern of drought continues, several public trees, regardless of age and condition, will likely decline and die over the next several years. Not just in this quadrant but throughout the city. Asian longhorned beetle, if detected in Kansas, would be a threat to the 3 most abundant species (44%).

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

SOUTHEAST STREET TREE RESOURCE - City of Osawatome, Kansas								
Summer-Fall 2015								
Percent of Inventory Total								
SPECIES	No. of Trees	Avg. Dia.	% Good	% Fair	% Poor	% Dead & Dying	% of Total Trees	Value
Silver maple	81	17"	9%	64%	25%	2%	22%	\$76,161
Sugar maple	49	12"	21%	57%	20%	2%	13%	\$79,037
Green ash	38	20"	8%	55%	37%	0%	10%	\$62,970
Siberian elm	38	20"	3%	47%	50%	0%	10%	\$24,182
Pin oak	20	25"	20%	65%	15%	0%	5%	\$104,024
Common hackberry	17	13"	24%	52%	24%	0%	5%	\$17,390
Eastern redbud	15	5"	7%	33%	60%	0%	4%	\$3,442
Black walnut	12	13"	33%	59%	8%	0%	3%	\$22,566
Northern catalpa	11	20"	0%	36%	64%	0%	3%	\$26,109
American elm	11	17"	0%	27%	64%	9%	3%	\$7,687
Orn/Bradford pear	10	7"	30%	50%	20%	0%	3%	\$4,122
Pecan	9	17"	33%	45%	22%	0%	2%	\$29,731
Red maple	8	16"	0%	25%	75%	0%	2%	\$3,971
Eastern cottonwood	6	22"	17%	50%	17%	17%	2%	\$13,318
Bur oak	6	19"	50%	50%	0%	0%	2%	\$29,899
Miscellaneous*	44	13"	32%	36%	27%	5%	11%	\$70,378
TOTAL	375	16"	16%	51%	32%	2%	100%	\$574,987

***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried SE street tree population): Baldcypress, river birch, boxelder, crabapple, fruit species, goldenrain tree; American and littleleaf linden; magnolia; freeman and Norway maple; mimosa; red and white mulberry, northern red oak, Osage-orange, purpleleaf plum, Austrian pine, eastern redcedar, staghorn sumac, sweetgum, American sycamore, Tree-of-Heaven, and willow.

SE Street Tree Overview:

Silver maple, a species with a very high failure profile, continues to be overly abundant along Osawatome streets. Sugar and silver maple comprise 35% of the total quadrant population, which is more than the recommended level of 20% for a genus. With 2% red maple, 37% of the quadrant's canopy would be at risk if Asian longhorned beetle found its way to Kansas and Miami County. Green ash and Siberian elm each are at 10% of the population. Four of the top six species are prone to storm damage and development of decay – 47% of the quadrant's population.

Green ash, Siberian elm, pin oak, northern catalpa, and eastern cottonwood average diameters are at or over 20 inches, indicating that there are some very large trees within those species along the streets that will likely be prone to storm damage, age-related issues and environmental impacts. The Siberian elm, eastern redbud, catalpa, American elm, and red maple all have 50% or more of their species in poor condition, and nearly all of the species above have higher percentages of fair condition trees, indicating an elevated need for pruning and routine maintenance. Many of the fair condition trees will continue to worsen in condition due to their propensity for storm damage and decay.

Emerald ash borer is a nearby threat to the 10% green ash. The 12 black walnut trees (3%) could be at risk to thousand cankers disease of walnut and the 11 American elm could yet be infected with Dutch elm disease. Three of the top 4 species of trees are preferred hosts for the Asian longhorned beetle.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

NORTHEAST STREET TREE RESOURCE - City of Osawatome, Kansas Summer-Fall 2015 Percent of Inventory Total

SPECIES	No. of Trees	Avg. Dia.	% Good	% Fair	% Poor	% Dead & Dying	% of Total Trees	Value
Silver maple	21	24"	10%	66%	24%	0%	17%	\$34,496
Sugar maple	21	14"	29%	29%	38%	5%	17%	\$34,996
Siberian elm	16	21"	12%	44%	44%	0%	13%	\$14,594
Orn/Bradford pear	9	6"	23%	33%	44%	0%	7%	\$2,590
Green ash	8	16"	13%	63%	13%	13%	7%	\$6,731
Common hackberry	5	12"	20%	60%	0%	20%	4%	\$4,674
American elm	4	24"	0%	50%	25%	25%	3%	\$5,557
Pecan	4	19"	0%	100%	0%	0%	3%	\$14,042
Eastern redcedar	4	9"	100%	0%	0%	0%	3%	\$6,755
Crabapple	3	10"	0%	33%	67%	0%	2%	\$2,388
Honeylocust	2	25"	0%	50%	50%	0%	2%	\$5,883
Black locust	2	12"	0%	50%	0%	50%	2%	\$28
White mulberry	2	16"	0%	50%	50%	0%	2%	\$1,826
Pin oak	2	26"	50%	50%	0%	0%	2%	\$13,592
Purpleleaf plum	2	2"	50%	0%	50%	0%	2%	\$32
Eastern redbud	2	4"	0%	50%	50%	0%	2%	\$306
Sweetgum	2	10"	50%	50%	0%	0%	2%	\$2,262
Miscellaneous*	13	10"	23%	62%	15%	0%	11%	\$18,672
TOTAL	122	16"	20%	48%	28%	4%	100%	\$169,424

***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried NE street tree population): Boxelder, eastern cottonwood, goldenrain tree, shagbark hickory, littleleaf linden; Norway and red maple; bur, northern red, and shingle oak; American sycamore, Tree-of-Heaven, and black walnut.

NE Street Tree Overview:

Silver maple and sugar maple continue to dominate the species diversity along Osawatome streets, comprising 34% of the total quadrant population. It is very problematic to have a fast-growing and weak-wooded tree along so many streets and sugar maple, while not considered as brittle, has a higher population of poor condition trees. Overly abundant is Siberian elm at 13% of the quadrant population – it is also a brittle tree that has had very high populations in several management zones. Approaching the maximum threshold for species diversity is the ornamental/Bradford pear and green ash. Neither species should be encouraged for planting in any great number. All management zones need an increase of species diversity through proactive planting programs.

Species with larger average diameters include silver maple, Siberian elm, American elm, honeylocust, and pin oak. This group of trees should be monitored for age and environmental-related impacts, especially the poor condition trees within these species. It should be noted that 66% of the silver maple is in fair condition and if no management is given to these trees, the condition of the species will likely erode and likely elevate risk in the public rights-of-way. Attention should also be given to the green ash, hackberry, American elm, pecan, honeylocust, black locust, white mulberry, pin oak, eastern redbud, and sweetgum that have 50% or more trees in fair condition.

The 7% of green ash is at risk to the nearby emerald ash borer. The 3 most abundant species (47%) in this quadrant are preferred by the Asian longhorned beetle.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

GOLF COURSE TREE RESOURCE - City of Osawatomie, Kansas Summer-Fall 2015 Percent of Inventory Total

SPECIES	No. of Trees	Avg. Dia.	% Good	% Fair	% Poor	% Dead & Dying	% of Total Trees	Value
Green ash	123	16"	2%	4%	92%	2%	27%	\$72,706
Eastern redcedar	71	14"	24%	22%	54%	0%	15%	\$93,433
Silver maple	41	21"	5%	41%	54%	0%	9%	\$43,124
Common hackberry	39	19"	5%	31%	64%	0%	8%	\$52,172
Northern red oak	31	20"	36%	45%	19%	0%	7%	\$127,531
Pin oak	27	23"	48%	26%	26%	0%	6%	\$126,591
American elm	26	19"	4%	8%	88%	0%	6%	\$27,552
Bur oak	21	14"	57%	43%	0%	0%	5%	\$58,349
Sugar maple	15	19"	6%	47%	47%	0%	3%	\$42,125
Osage-orange	13	26"	0%	8%	84%	8%	3%	\$31,458
Austrian pine	9	14"	11%	11%	78%	0%	2%	\$11,092
Honeylocust	8	26"	0%	0%	100%	0%	2%	\$19,692
Miscellaneous*	40	15"	18%	45%	37%	0%	8%	\$69,735
TOTAL	464	17"	15%	24%	61%	0%	100%	\$775,560

***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried golf course tree population): Northern catalpa, Kentucky coffeetree, eastern cottonwood, Siberian elm, sugar hackberry, shagbark hickory, red maple, chinkapin oak, Russian olive, ornamental/Bradford pear, common persimmon, eastern redbud, American sycamore, black walnut, and an unknown.

Golf Course Overview:

An ash management plan is needed for all public trees and in particular for the golf course. With 27% of the golf course tree population ash and 94% (115 trees) of those in poor and dead/dying condition, the impact of the emerald ash borer will be profound in this management zone. Eastern redcedar exceeds the recommended level of stocking with silver maple, common hackberry, and northern red oak approaching the 10% threshold.

Average diameters of the silver maple, northern red oak, pin ok, Osage-orange, and honeylocust are at or larger than 20", indicating mature to over-mature trees within these species. Green ash, eastern redcedar, silver maple, common hackberry, American elm, Osage-orange, Austrian pine, and honeylocust have 50% or more of their populations in poor condition, indicating a need for intensive management. Attention should be paid to the fair condition silver maple, northern red oak, common hackberry, bur oak, and sugar maple trees to slow their decline to poor condition.

Pine wilt will be a threat to the 9 Austrian pines. Potential threats are the Asian longhorned beetle to the 86 maples and American elms and thousand cankers disease to the 5 black walnuts.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

CITY LAKE TREE RESOURCE - City of Osawatomie, Kansas Summer-Fall 2015 Percent of Inventory Total								
SPECIES	No. of Trees	Avg. Dia.	% Good	% Fair	% Poor	% Dead & Dying	% of Total Trees	Value
Osage-orange	89	19"	0%	9%	91%	0%	36%	\$138,532
Black walnut	37	13"	5%	27%	68%	0%	15%	\$44,443
Post oak	16	21"	6%	75%	19%	0%	6%	\$40,113
Willow	16	15"	0%	0%	100%	0%	6%	\$10,906
American elm	13	23"	23%	38%	31%	8%	5%	\$23,563
Honeylocust	13	21"	0%	8%	92%	0%	5%	\$23,154
Cottonwood	12	27"	0%	42%	58%	0%	5%	\$25,286
American sycamore	12	22"	17%	58%	25%	0%	5%	\$42,416
Common hackberry	10	17"	0%	50%	50%	0%	4%	\$16,236
Eastern redcedar	9	12"	45%	33%	22%	0%	4%	\$13,961
Green ash	5	19"	0%	0%	100%	0%	2%	\$3,965
Sugar maple	4	23"	0%	50%	50%	0%	2%	\$14,296
Chinkapin oak	4	30"	0%	0%	100%	0%	2%	\$18,216
Miscellaneous*	8	23"	13%	74%	13%	0%	3%	\$37,746
TOTAL	248	19"	5%	26%	69%	0%	100%	\$452,833

***Miscellaneous:** (Tree species that represent 1% or less of the total inventoried city lake tree population):
Fruit species, sugar hackberry; bur, English, northern red, and pin oak.

City Lake Overview:

Most of the trees on city lake properties are from native stands or natural regeneration. Osage-orange is the dominant species with 36% of the total population. Black walnut accounts for 15% of the total population.

Post oak, American elm, honeylocust, cottonwood, American sycamore, sugar maple, and chinkapin oak all have average diameters 20 inches or more, indicating mature to over-mature trees within those species.

There is a high percentage of poor condition trees in this management zone. Osage-orange, black walnut, willow, honeylocust, cottonwood, common hackberry, green ash, sugar maple, and the chinkapin oak all have 50% or more of their species in poor condition, indicating a need for intensive management or expect a continued decline in condition. Attention should be paid to the post oak, American sycamore, common hackberry, and sugar maple that have 50% or more trees in fair condition.

Emerald ash borer is a nearby threat to the 5 green ashes. The 37 black walnuts could be threatened by thousand cankers disease of walnut and Asian longhorned beetle a potential threat to the 17 maple and elm trees.

CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

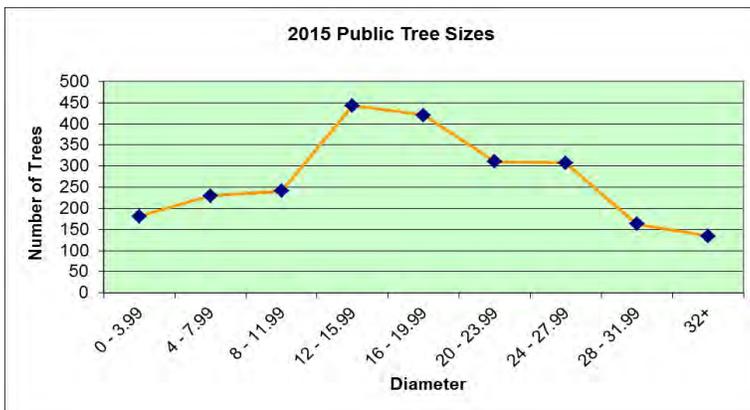
TREE SIZE AND CONDITION

The below graph shows the size class of all public trees inventoried. Sixty-two percent (62%) of the inventoried trees are in the diameter categories less than 20 inches. That is a good trend and I would encourage the city to further increase the number of young trees in public areas. A population of smaller trees is more likely to overcome severe weather events as opposed to large mature and over-mature trees. A high population of large diameter trees can indicate an over-mature population with potentially very high maintenance and removal needs.

The chart below highlights the age and condition of the older public tree resource:

Avg. Diameter	20"+	Avg. Diameter	32"+	Poor Condition	20"+	Poor Condition	32"+
Total Trees:	915	Total Trees:	134	Total Trees:	403	Total Trees:	60
Siberian elm	165	Silver maple	17	Siberian elm	123	Green ash	9
Silver maple	94	Green ash	15	Green ash	42	Siberian elm	9
Pin oak	79	Siberian elm	15	Osage-orange	41	Silver maple	8
Green ash	73	Pin oak	15	Silver maple	28	American elm	6
Post oak	56	American elm	11	Pin oak	23	Osage-orange	5
Hackberry	52	Bur oak	11	Hackberry	22	Cottonwood	4
Osage-orange	49	Osage-orange	10	American elm	20	Pin oak	4
Eastern redcedar	49	Cottonwood	6	Sugar maple	15	Honeylocust	3
American elm	41	Hackberry	6	Honeylocust	14	Northern red oak	3
Bur oak	34	Sycamore	5	Cottonwood	12	Hackberry	2
Sugar maple	32	<i>Less than 5 trees:</i>		Eastern redcedar	12	Chinkapin oak	2
Chinkapin oak	26	Honeylocust,		Chinkapin oak	10	Sugar maple	1
Northern red oak	23	sugar maple; red		Northern catalpa	8	Red mulberry	1
Cottonwood	21	and white		Northern red oak	7	White mulberry	1
Black walnut	20	mulberry;		Post oak	6	Bur oak	1
Honeylocust	19	chinkapin,		Black walnut	6	Post oak	1
American sycamore	18	English, northern		White mulberry	4		
Northern catalpa	16	red, and post oak;		Bur oak	4		
Pecan	13	pecan, eastern		Boxelder	1		
Shagbark hickory	11	redcedar, and		Shagbark hickory	1		
Miscellaneous*	23	Tree-of-Heaven.		American linden	1		
				Red mulberry	1		
				Sweetgum	1		
				Unknown	1		

The city should familiarize themselves with where these trees are to be able to monitor them as they age and decline. See the enclosed inventory reports for specific specie information regarding all sizes and conditions.



Cottonwood, hackberry, Siberian elm, Tree-of-Heaven, boxelder, silver maple, Bradford pear, poplar, and willow are species with very high species hazard indices. Refer to the enclosed draft publication *Guidelines for Assessing Failure Potential Associated with Tree Defects* for specific species information.

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

PLANTING TRENDS

The City of Osawatome tree planting trends were developed by examining all trees less than four inches in diameter. One hundred eighty-one (181) young trees were found in public areas in Osawatome. These newly planted trees represent 7% of the total tree population and have a total value of \$5,326. The majority of these young trees are in good to fair condition. There is a fair diversity of species being planted in Osawatome public areas overall; however, the city should research and plant new species in public areas to increase the species diversity within the city. ***An objective could be to increase the number of species present on public properties from 63 to 80 within the next 10 years.***

PLANTING TRENDS			
Species	# of Trees under 4"	% of Total Trees Under 4"	Value
Eastern redbud	27	15%	\$784
Ornamental pear	13	7%	\$364
Baldcypress	12	7%	\$560
Northern red oak	11	6%	\$468
Siberian elm	10	6%	\$76
Eastern white pine	10	6%	\$360
Silver maple	8	4%	\$120
American elm	7	4%	\$104
Red maple	7	4%	\$66
Green ash	6	3%	\$112
Goldenraintree	6	3%	\$252
Eastern redcedar	6	3%	\$272
Sugar maple	5	3%	\$216
Purpleleaf plum	5	3%	\$96
Crabapple	4	2%	\$162
Common hackberry	4	2%	\$80
Common chokecherry	3	2%	\$126
Freeman maple	3	2%	\$42
Miscellaneous*	34	18%	\$1,066
YOUNG TREE TOTAL**	181	7% Of All Trees	\$5,326

***Miscellaneous:** (Tree species with 2 trees or less under 4 inches in diameter):

White ash, river birch, boxelder, ornamental cherry, Kentucky coffeetree, cottonwood, flowering dogwood, honeylocust, black locust; magnolia species, saucer and southern magnolia; Japanese and Norway maple; mimosa, red mulberry; bur, pin, shingle, and white oak; common smoketree, Colorado blue spruce, staghorn sumac, Tree-of-Heaven, black walnut, and willow.

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

General Recommendations Planting and Selection

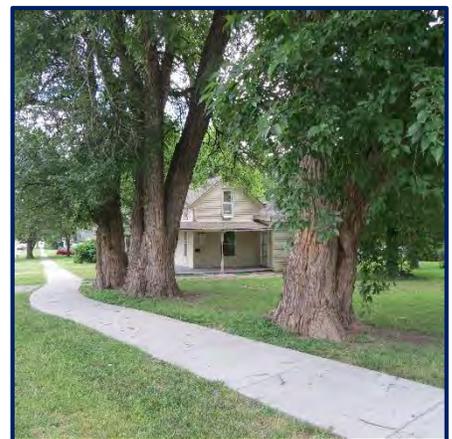
Planting is the most important aspect of most programs. This facet generally has the most appeal for, and most support by, the public and governing administration. Consideration should be given not only to the planting of trees, but for the **establishment** of trees. In other words, all losses should be replanted until a 100 percent survival is achieved. I would also recommend that the City of Osawatomie consider the following specific recommendations in regards to planting:

The city should budget money for the planting and establishment of a certain number of desirable and recommended species of trees each year. Osawatomie could lose *45% or more* of its canopy in the next 10 to 15 years. Sixty-three trees (3%) were identified as dead or dying and these trees should be removed in a prompt manner. Forty percent (40%) of the total tree population is in poor condition, with many trees in that category at higher potential for accelerated decline in health due to potential storm damage, cavity development and other structural decline. Some of the fair condition trees, especially those more prone to storm damage, poor compartmentalizers of decay, and susceptible to other sources of decline, may need to be replaced; especially those populations comprised of Siberian elm, silver maple, hackberry, redbud, green ash, cottonwood, catalpa, willow, honeylocust, and Tree-of-Heaven. Emerald ash borer is a nearby threat to ash, thousand cankers disease could threaten black walnut, pine wilt will continue to impact pines, and Dutch elm disease is still present in many communities, placing the American elm at risk.

Some species of trees need to be monitored due to their propensity to develop structural defects and to be damaged by environmental stresses, commonly leading to failure. The following species of trees found in the inventory are generally rated with high and very high species hazard indices: *ash, hickory, Kentucky coffeetree, black locust, honeylocust, ornamental and Bradford pear, pecan, eastern white pine, Colorado blue spruce, black walnut, Tree of Heaven, boxelder, cottonwood, Siberian elm, hackberry, silver maple, and willow*. Trees rated as fair within these species could worsen in condition if damaged by severe weather events or experience increased defect formation. This data can be found in the table on page 6 of this report and within the enclosed data sheets to identify the percentages of fair condition trees with high and very high hazard indices.

A tree's diameter can be used as an indicator of age. Species with large average diameters should be monitored closely. Their condition will help determine the necessary level of management. Larger trees should also be monitored for decline from natural causes or stress-induced causes. See the table on page 15 for a detailed list of species with larger diameters.

Some poor condition trees may be managed back to improved condition with some fair condition, large diameter trees continuing to mature and decline in health. ***An objective should be to decrease the number of dead and dying, poor and fair condition trees while increasing the number of good condition trees on Osawatomie public properties.***



Large diameter trees are susceptible to age-related and environmental stresses.

The draft publication *Guidelines for Assessing Failure Potential Associated with Tree Defects* is included as a reference to provide detailed information concerning severe and critical defects, failure profiles of common Kansas trees and Kansas species hazard indices.

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

Based on the current findings of this inventory, coupled with known insect and disease problems of certain species, I would discourage any future planting or promotion of the following species:

Species	Reason	Alternative
Siberian elm Sugar maple Green ash Silver maple	Overstocked	Ginkgo (Male) American linden Baldcypress Kentucky coffeetree
Green and white ash	Borers – ash/lilac, emerald ash borer; ash yellows disease	Goldenraintree American yellowwood Western soapberry
Eastern redcedar	Overstocking potential	Bosnian pine Black Hills spruce
Green ash Willow Siberian elm Cottonwood Hackberry Boxelder Silver maple Tree-of-Heaven	Hazard tree potential	Shantung maple Chinkapin oak Japanese pagodatree London planetree
Scotch and Austrian pine	Pine Wilt disease Needle diseases	Limber or pinyon pine Norway spruce Upright Chinese juniper
Red Oak species	Oak Wilt disease	Baldcypress Dawn redwood
Honeylocust	Thyronectria canker Honeylocust complex	American hophornbeam Littleleaf linden

The publication *Tree and Shrub Problems in Kansas: Diseases, Insects, and Environmental Stresses* details many problems of woody plants in Kansas.

It can be found online at <http://www.ksre.ksu.edu/bookstore/pubs/MF3132.pdf>.



At Left: Pine wilt has killed thousands of Scotch and Austrian pines in Kansas since 1979. At right: A small ash tree is riddled with the damage of emerald ash borer larvae.



CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

Coupled with the knowledge of what “not” to plant is the identified need of what can be successfully established in Osawatome. I would offer the following recommendations to meet the general planting needs of the city. *I would, however, emphasize that these are general recommendations and planting projects should not be limited by this list.*

Small Trees (under 30 feet at maturity)

- Crabapple (refer to K-State Research and Extension Crabapple publication).
- Amur maple
- Japanese tree lilac
- Common chokecherry
- Serviceberry
- Winterberry euonymous



Serviceberry in spring bloom

Medium Trees (30 - 70 feet at maturity)

- Lacebark elm
- Kentucky coffeetree
- Ginkgo (male)
- European hornbeam
- Shantung maple
- Black tupelo
- American yellowwood
- Osage-orange (thornless/fruitless)
- Western soapberry
- Chinkapin oak
- Sawtooth oak
- Nuttall oak
- Littleleaf linden
- Common persimmon



Ginkgo in fall color

Large Trees (more than 70 feet at maturity)

- Bur oak
- White oak
- Shumard red oak
- Baldcypress
- London planetree
- American linden



Sawtooth oak during winter dormancy

Evergreen Trees

- Upright Chinese junipers
- Black Hills spruce
- Norway spruce
- Pinyon pine
- Limber pine



Norway spruce foliage and cones

Please refer to the enclosed *Preferred Tree List for Northeast Kansas, Trees Worth Trying, and Shade and Ornamental Trees for Kansas* for further details and expanded species recommendations.

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

The proper selection and planting of trees is critical for successful establishment. One of the biggest hurdles that a city can face with tree planting is planting in unprotected areas with poor soils and inadequate moisture. In addition to difficult site conditions, trees continue to be planted incorrectly and continue to be planted with stem girdling or stem encircling roots. When these poorly developed root systems are placed in the landscape, it is likely that the tree will not grow to a mature size. The function of tree roots can be harmed when planted too deeply. Some basic recommendations to remember when selecting and planting trees are:



A successfully established tree on a very poor, heavy clay site.

- Start with selecting high quality nursery stock. See page 1 of this publication: <http://www.ksre.ksu.edu/bookstore/pubs/L870.pdf>.
- Determine if the root flare is at the top of the root ball or at the top of the soil in the container before purchasing the tree. Visit <http://www.ksre.ksu.edu/bookstore/pubs/MF1119.pdf> and the above publication.
- Remove any soil that covers the root flare (where the trunk and first roots meet), dig the hole depth according to the remaining root mass and place the root flare at or slightly above the soil original level.
- Stake trees when environmental conditions could cause the roots to shift and move during the establishment period. See <http://www.ksre.ksu.edu/bookstore/pubs/MF1120.pdf> for proper staking methods.
- Mulch the tree. Do not pile mulch against the tree stem and do not place more than 3 to 4 inches of mulch over tree roots. Excessive mulch can be as damaging as planting too deeply. Visit the following publication for proper mulching techniques http://mdc.mo.gov/sites/default/files/resources/2010/04/3792_1460.pdf.
- Ensure that establishing trees have adequate soil moisture the first three years after planting and any other time then rainfall amounts do not moisten the soil to a depth of twelve inches (12"). Learn how to water newly-planted and established trees by viewing <http://www.ksre.ksu.edu/bookstore/pubs/MF2800.pdf> and <http://www.ksre.ksu.edu/bookstore/pubs/MF2801.pdf>.

Additional Resources to Avoid Tree Planting Problems:

- The University of Minnesota Extension. *A practitioner's guide to stem girdling roots of trees*. Found online at <http://www.extension.umn.edu/garden/yard-garden/trees-shrubs/practitioners-guide-to-stem-girdling-roots>
- Sydnor, T. Davis. *Girdling Roots –A Problem of Shade Trees*. Found online at <http://ohioline.osu.edu/hyg-fact/1000/1139.html>



Excess soil was over the root system of this tree when it was harvested, requiring it to be removed at planting.

Industry Standards and Best Management Practices:

- AmericanHort. *American Standard for Nursery Stock*. ANSI Z60.1-2014. Found online at http://americanhort.org/documents/ANSI_Nursery_Stock_Standards_AmericanHort_2014.pdf
- International Society of Arboriculture. ANSI A300 Standards and Best Management Practices. Found online at <http://www.isa-arbor.com/store/category.aspx?cid=117>

Other tree selection, care, and maintenance topics may be found at <http://www.kansasforests.org/resources>.



Not only was this tree planted too deeply, but a future stem-girdling root would have shortened the life of this tree.

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

Maintenance

Maintenance is the portion of a tree program that is most often overlooked by several communities. Nothing can be more detrimental to citizen support than to waste money on tree plantings which die from neglect due to lack of water, mower injury, poor pruning, or insect and disease. A maintenance schedule should be set up for every planting, and periodic surveys should be made to determine which trees to replace and prune. Pesticide treatments are costly and should be used only on select trees of excellent condition and form. Proper species selection and a good sanitation program (dead tree removal) are much more effective at preventing insect and disease outbreak than pesticide application. In fact, most pesticide applications do not prevent insect and disease problems; rather they focus on control after the problem exists. Appropriate tree selection, planting, and maintenance allows trees to grow at their optimum growth rate, which is the best way to prevent insect and disease problems. Proper pruning, especially when trees are young, can eliminate unnecessary work and labor costs later on and help minimize storm damage. Maintaining mulch zones around the base of younger trees, eliminating grass and weeds in these mulched areas, and the timely delivery of water are critical to the healthy establishment of trees.

Please refer to the enclosed appendices for further information on tree maintenance recommendations.

I would suggest that citizens and city employees learn to identify and implement controls for some of the common problems associated with the following species:

- Austrian Pine:** Tip blight (*Diplodia*), needle blight (*Dothistroma*), pine wilt
- Eastern redcedar:** Kabatina blight, Cercospora blight, bagworms, spider mites
- Ash species:** Emerald ash borer, anthracnose, native ash borers, and ash yellows
- Maple species:** Anthracnose, verticillium wilt, root rot, flatheaded borer, and Asian longhorned beetle
- Oak Species:** Oak wilt, anthracnose, Hypoxylon canker
- American Elm:** Dutch elm disease
- Black walnut:** Thousand cankers disease of walnut

This list represents future, threatening, common, and potentially controllable insect and disease problems associated with several tree species within Osawatome. It is not intended to be a comprehensive list. Please refer to the enclosed insect and disease publications for further details. Further recommendations on species selections, removals and planting innovations are included in the recommendation section of this report. For more topics relating to common plant and tree problems, visit <http://www.hfr.k-state.edu/extension/info-center/plant-pest-problems.html>.



Proper pruning is critical for a strong maintenance program



Poor staking practices can lead to tree decline and death



The health and vigor of most pine species continues to decline in many Kansas communities

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

High Risk and Hazardous Tree Management

In order to remove hazards to life and property, reduce the spread of disease, provide for beautification, and reduce maintenance costs, it is highly recommended that any remaining dead and dying trees be removed as quickly as possible from the Osawatome public properties. The inventory shows that 63 trees were determined to be dead or dying and in need of removal. Depending on specific situations and management requirements, the 980 trees in the poor condition class may also be in need of removal in the near future. With the exception of baldcypress, goldenrain tree, shagbark hickory, bur oak, post oak, northern red oak, pecan, persimmon purpleleaf plum, and sycamore, the remaining species have 20% or more of their species in the poor condition category, totaling about 940 trees from the population of those specific species. Silver maple, cottonwood, hackberry, green ash, ornamental (including Bradford) pear, Siberian elm, and willow are highly prone to storm damage and structural decline, especially as they age. Other large diameter species are susceptible, as well, to damage and decline as those species mature, so the potential for removals certainly could increase due to several trees reaching a mature to over-mature state.



Deadwood can fail unexpectedly and should be removed promptly.

TREE RISK MANAGEMENT

A community tree inventory plays an important role in tree risk management. An inventory provides detailed information about the diversity, health and age of the community forest. This information, in turn, gives forest managers and city leadership necessary information to make informed decisions in developing tree risk management strategies.

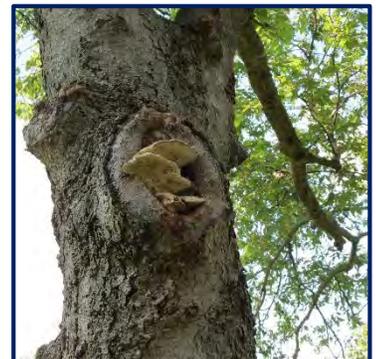
The two guiding principles of tree risk management programs are:

1. Increase public safety
2. Promote tree health and sustainability



Decay weakens branch and stem strength and can increase the risk of failure.

As detailed in *Community Tree Risk Management: Program Planning and Design*, a community forestry program would integrate tree risk management, tree planting, emergency response, and tree pruning and maintenance programs. When a community adopts a proactive approach to public tree management, the result will be a healthier and safer tree resource. *The city of Osawatome should be commended for its commitment to conducting a thorough inventory because it is one of the first steps towards reducing risk.* This extensive publication may be found online at: <http://www.na.fs.fed.us/spfo/pubs/uf/utrm>. It is **strongly recommended** that city staff review and integrate pertinent components from this resource into Osawatome's community tree program.



The presence of fruiting bodies is an indicator of advanced decay.

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

CONCLUSION

Trees are an asset to any community. They modify the urban environment, beautify a community, add property value, and are usually responsible for the first and last impression of a town. The city of Osawatome is taking the steps to make a positive and lasting improvement upon the resource for all to benefit from and enjoy. Based upon the recent inventory results and recommendations I would offer the following highlights and priorities:

- At the time of the inventory, 2,430 public trees were located on public grounds, of which 16% were in good condition, 41% in fair condition and 40% in poor condition. Approximately 63 trees were considered dead and dying – 3% of the population.
- Any remaining dead and dying trees should be removed as soon as possible.
- The 40% of poor trees, 980 trees in all, are in need of intensive management assistance or will need to be removed in the near future.
- The 41% of fair trees, 1,004 trees, have minor maintenance requirements such as pruning or insect and disease control needs.
- Siberian elm comprises the largest percentage of species, followed by sugar maple, green ash, and silver maple, combining for 37% of the total population.
- There are several species with average diameters at or over 20 inches, totaling 915 trees. These species comprise 38% of the total tree population.
- Approximately 63 species are represented in the inventoried areas of Osawatome.
- To charter a future course for the city it is recommended that a mission statement, with desired goals and objectives, be identified for the community. This planning should include targets, time frames, and budgetary commitment that supports achievement. Objectives for the next 10 years could be:
 - *Increase the number of species established to 80.*
 - *Decrease the number of dead and dying trees to 1%.*
 - *Increase the number of good condition trees to 30%.*
 - *Plant and establish 2,200 trees in anticipation of the loss of approximately 1,100 trees that are dead and dying, more than 20" in average diameter, poor condition, threatened by the emerald ash borer, drought and storms.*
- Establish an annual budget and plan of work which targets the needs of planning, planting, maintenance, and removals.
- Due to overstocking, high failure potential, and insect and disease problems it is recommended that the following species not be planted in the future: Siberian elm, sugar and silver maple, eastern redcedar, willow, cottonwood, honeylocust, hackberry, ornamental/Bradford pear, and ash.
- A philosophy of planting and establishment of quality, rather than quantity, is recommended.



16% of Osawatome's public trees are in good condition.



38% of all trees have average diameters 20" or larger.



Tree planting is an investment for our environment and future.

CITY OF OSAWATOMIE, KANSAS

Summer–Fall 2015

APPENDIX A Ecosystem Services of Osawatome's Public Trees

In addition to the many benefits listed on page 5 of this report, trees provide specific environmental services to the community that can now be quantified through use of i-Tree STREETS, a software program that provides community forestry analysis and benefits assessment tools. STREETS quantifies ecosystem services such as energy savings, air quality improvement, carbon dioxide reduction, stormwater runoff reduction, aesthetic and economic improvements. The information from the enclosed STREETS reports may be used for environmental planning and strategies, regional and county planning, sustainability efforts, and to meet stormwater mandates placed by state and federal agencies.

To be able to calculate these benefits, Osawatome's inventory data was imported into the program. It should be pointed out that the two software programs used to prepare this management recommendation are very different and will yield different valuations of the trees. The enclosed STREETS reports reveal *only the total ecosystem benefits of the trees*.

Highlights of the enclosed STREETS reports revealed the following **total annual benefits**:

Ecosystem Service	Resource Unit Quantity	Value of Ecosystem Service
Energy conservation	526.9 MWh, 70,924.7 Therms	\$109,496
Carbon dioxide sequestration	1,866,407 net pounds	\$13,998
CO ² emissions avoided	883,755 pounds	\$6,628
Air pollutant absorption	6,531 pounds	\$18,313
Air pollutant emissions avoided	5,604 pounds	\$15,625
Stormwater reduced flow	5,127,076 gallons	\$138,944
Aesthetic and other benefits		\$104,466
Total Annual Benefits		\$385,217

While not an annual benefit, the public tree resource also stores a considerable amount of carbon dioxide – 18,890,241 pounds - with a calculated benefit of **\$141,677**. *This ecosystem service will be lost if removed trees are chipped and/or burned*. The city should consider building partnerships that would utilize downed public trees that, even when milled as lumber or made into furniture, continue to store carbon dioxide.

Please refer to the enclosed STREETS reports for specific information and values. The *Midwest Community Tree Guide*, the basis for the data and values utilized in STREETS, provides yet more detailed and pertinent information. It may be found online at

http://www.fs.fed.us/psw/publications/documents/psw_gtr199/psw_gtr199.pdf



CITY OF OSAWATOMIE, KANSAS

Summer-Fall 2015

NOTES:

CITY OF OSAWATOMIE



STAFF AGENDA MEMORANDUM

DATE OF MEETING: August 25, 2016

AGENDA ITEM: Golf Course Trim Mower Quotes

PRESENTER: Don Cawby, City Manager

ISSUE SUMMARY: In June of this year, our current 2653A trim mower had to be sent to Van Wall Equipment for diagnostic work. This particular machine is used for mowing greens, tee surrounds, and tee boxes. After a week of being in the shop, Van Wall gave us a repair quote that could exceed \$3,000. Our current machine is a 2005 with approximately 3,400 hours. With such a heavy workload history, the machine is not worth the cost of repairs.

Eric Draper contacted Van Wall and Professional Turf Products (Toro dealer) for other equipment options. Toro sent three different mower options, a John Deere 2653A with 2,304 hours, and two Toro 3100's with 1,442 and 965 hours respectively. All three machines were listed over our \$12,000 budget, have more hours, and are located in Dallas or San Antonio. Since they were not in Olathe the opportunity to demo was not available. We were told, depending on the amount of refurbishment work needed, there was a possibility of negotiating a price within our budget. The 3100 listed with 1,442 hours and was the closest one to our budget.

The machine available from Van Wall is a 2653B, model year 2011, with 808 hours and was originally listed at \$14,500. The actual hours are now closer to 850. After Eric talked with the dealer, they were able to lower the cost to meet our budget of \$12,000. Included in this price is reel sharpening, new bed-knives, all fluids changed and serviced, plus fixing any worn bushings or bearings and anything else the mechanics discover while servicing it. The dealer's goal is to deliver a near new mower. When our machine was sent to the shop, this 2653B was sent to us as a loaner. We were able to mow with it for about 3 weeks before they needed it back. It operates very similar to the 2653A and changing the height of cut is relatively simple.

COUNCIL ACTION NEEDED: Review and discuss.

STAFF RECOMMENDATION TO COUNCIL: Approve purchase of model 2653B for \$12,000 which is included in the revised 2015 CIP budget.

Van Wall Equipment

2011 John Deere 2653B

Advertised Retail \$14,500

Offer Price: \$12,000

Stock #: 175757

Serial #: 1TC2653TTBT050469 WR

Engine Hours: 808 (25 July 2016)

Location: Olathe, KS



Professional Turf Products Listings

John Deere 2635A

Hours: 2,304

Price: \$5,000

Location: Dallas, TX

Serial #: JD2653A TC2653D 131536

Tag- 205-598



Toro 3100 #1

Model Year: 2011

Hours: 1,442

Price: Approximately \$14,500

Location: San Antonio, TX

Serial #: RM3100 03170 31/220

Tag- 204-186



Toro 3,100 #2

Model Year: 2011

Hours: 965

Price: Approximately \$16,500

Location: Dallas, TX

Serial #: RM3100D 03170 311/312

Tag: 4061



Quote Summary

Prepared For:
 Osawatomie Golf Course
 32942 W Lakeside Dr
 Osawatomie, KS 66064
 Business: 913-755-4769

Prepared By:
 Richard Shumate
 Van-Wall Equipment, Inc.
 1362 S Enterprise Street
 Olathe, KS 66061
 Phone: 913-397-6009
 richard.shumate@vanwall.com

Machine will be fully serviced, new bed knives with ground reels, and repaired as needed.

Quote Id: 13892962
Created On: 18 August 2016
Last Modified On: 18 August 2016
Expiration Date: 30 September 2016

Equipment Summary	Selling Price	Qty	Extended
2011 JOHN DEERE 2653B PRECISIONCUT - 1TC2653TTBT050469	\$ 12,000.00 X	1 =	\$ 12,000.00
Equipment Total			\$ 12,000.00

Quote Summary	
Equipment Total	\$ 12,000.00
SubTotal	\$ 12,000.00
Est. Service Agreement Tax	\$ 0.00
Total	\$ 12,000.00
Down Payment	(0.00)
Rental Applied	(0.00)
Balance Due	\$ 12,000.00

Salesperson : X _____

Accepted By : X _____