

Metlakatla Indian Community Alaska



Community Forestry Management Plan

2016 – 2020

Metlakatla Indian Community Annette Island, Alaska Community Forestry Management Plan 2016 – 2020



**Metlakatla Indian Community
Genelle Winter, Parks and Facilities Director
P.O. Box 8
Metlakatla Alaska 99926
907-886-5401
miclandscaping@gmail.com**

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Metlakatla Indian Community

Metlakatla is located on Annette Island near the southern end of the Alexander Archipelago, a chain of hundreds of glacially carved islands with deep fjords and protected passages. It is in the Inside Passage, 15 miles southwest of Ketchikan. Seattle is 600 miles to the south and Skagway is 600 miles to the north. Metlakatla is in the Prince of Wales-Hyder Census Area and can be reached by ferry or airplane from Ketchikan.

Annette Island covers approximately 136 square miles of mostly mountainous terrain, rising from sea level to over 3,500 feet. This limits settlement to 24 square miles on the Metlakatla Peninsula located on the southwest part of the island. On the peninsula the topography is fairly gentle, seldom exceeding 100 feet in elevation except for Yellow Hill. The town of Metlakatla is located at the north end of the peninsula on the shore of Port Chester, a deep water port. Farther south is the residential area and the former Coast Guard Air Station and adjoining facilities.

The Metlakatla Tsimshian have lived on Annette Island since 1887 when they moved from their original homeland in British Columbia. The United States Congress granted recognition to the new community of Metlakatla in 1891 by creating the Annette Island Reserve, a federal Indian reservation. Today it is the only reservation in Alaska. The community has 1,405 residents and jurisdiction over 130 square miles. It is governed by an elected 12-member tribal council, a mayor, a secretary and a treasurer. Several committees and boards assist elected officials in managing facilities and services.

Annette Island is in a temperate rain forest where common tree species are western hemlock, Sitka spruce, shore pine, red and yellow cedar and alder. The maritime climate is mild by Alaska standards. In winter temperatures rarely dip below freezing and summer temperatures are generally in the mid-60s. The annual mean temperature is 46.6 F. The annual average precipitation, including snow, is 109 inches. Most precipitation falls as rain. Snow deeper than a foot is rare and snow cover seldom lasts for more than a week or two.

Benefits of Trees and Forests

Metlakatla residents value and enjoy a high quality of life and have a deep respect for the natural environment. Trees are essential to the health, sustainability and culture of the community, protecting the watershed, salt marshes and salmon spawning grounds, improving air quality, providing critical habitat for wildlife and valuable wood products for residents.

Other benefits of Metlakatla's trees are improved water quality and a reduction of stormwater runoff. Trees and other plants are nature's filters. As stormwater flows over surfaces it picks up pollutants in its path and carries these to surface waters. Community trees intercept rainfall, control and filter surface water runoff, and assist in ground water recharge. Tree roots hold soil in place to reduce soil erosion and sediment pollution.





Community Forestry in Metlakatla

Mission: *The Metlakatla Indian Community values and will sustainably protect, preserve, maintain and expand a community forest that improves the quality of life and sense of community for residents.*

We will manage our community forest to ensure its long term safety, health and viability and to maximize the environmental, economic, social, and aesthetic benefits trees can provide.

Organization: The Metlakatla Indian Community Parks and Recreation Department is responsible for tree planting and maintenance. The Parks and Facilities Director supervises two employees who manage the trees in addition to a variety of other duties. About 10% of staff time is allocated to community forestry over the course of a year; about 20% during the summer but less in winter. As is common in small towns, the limited resources impact the community's ability to maintain and expand the community forest. A small staff and budget must be stretched to provide many important services.

History: Over the past 20 years maintaining and planting new trees has become a higher priority for the community. The Alaska Department of Natural Resources Community Forestry Program provided grants for tree planting in 1996, 2006 and

2007 and grants for inventories in 2008 and 2015. The grants were generously matched by businesses, organizations, volunteers and the Metlakatla Indian Community. The trees that beautify the community today are truly a gift from many residents.

In 1996, Metlakatla celebrated Arbor Day by planting six arborvitae, three dogwoods, and one mugo pine at the Senior Citizens Housing complex. In 1999 MIC began a memorial tree program to recognize and honor community members and also beautify the town. The first memorial trees were planted in wooden planters around the Russell Hayward Memorial Park. In 2001 MIC added more memorial trees to the same area. Most of these trees are Japanese maples or plums and they are still doing well more than 15 years later.

In 2006, MIC planted 25 Japanese maples of two species in larger planter boxes at the Frank Hayward Memorial Breakwater. The following year, 20 additional Japanese maples of two different species were added in a row further inland from the breakwater.

Management Plan

The purpose of the Metlakatla Community Forest Management Plan is to set goals that will help decision-makers and MIC employees continue to provide a healthy, safe and pleasant environment for residents and visitors. The plan was prepared after a review of current community forestry standards and procedures, an assessment of financial resources, an analysis of tree inventory data and discussions with staff and community members.

The plan is a guide to support the ongoing commitment to maintaining, enhancing, and preserving public trees along streets, in parks, and around public facilities. An annual operating plan with a timeline and budget will direct the day-to-day details on planting, pruning, removals, inspections, plant health care and maintenance of the inventory.

Trees create a more interesting and attractive environment for residents, as well as tourists and other visitors. Landscape plantings improve the community's appearance and complement the natural beauty of the island. However, trees in communities require special planning and care to thrive due to conditions altered by development. While it costs money to maintain the health and safety of community trees, the investment can yield a variety of environmental, economic and social benefits. This plan specifies a number of actions Metlakatla can take to maximize these benefits.



Tree Inventory

A tree inventory is the foundation of an effective tree management program. It allows a community to acquire and retain information about the condition of its trees and identify current and potential problems. The data supplies objective and quantitative information that can be used to plan budgets for personnel, equipment and plants.

Using and regularly updating the inventory can save MIC time and money because it helps staff better plan and prioritize plantings, maintenance and tree removals. Having an inventory also improves the chances of receiving grants and other assistance by documenting the community's commitment to healthy public trees.

In 2008, MIC Parks & Recreation employees completed an inventory and recorded the data in an Excel file. The department found this to be a useful way to learn about the trees in their care and began the maintenance tasks they identified,

such as removing stakes and ties. However, staff recognized a need for a system to maintain current information, develop a work plan, and track changes and the results of actions over time.

The Alaska Department of Natural Resources Community Forestry Program (DNR) responded to a request for assistance in developing a more efficient way to manage public trees. DNR purchased TreeWorks™ for MIC in 2015. This software stores inventory data and creates reports and charts on all the data collected.

The DNR Community Assistance Forester provided training and assistance to Parks and Recreation employees to complete an inventory of public trees on July 21-23, 2015. They identified species, recorded trunk diameter and height, noted structural problems and/or hazards (such as conflict with power lines), and rated the overall tree condition, health, and appraised value of each tree. The inventory team also identified memorial or other special trees.

The team inventoried 160 trees that Parks & Recreation maintains along streets and on the grounds of the Annette Island Services Unit, Duncan Cottage Museum, Russell Hayward Memorial Park, Frank Hayward Sr. Memorial Harbor, town hall, and clinic housing. The GPS points were collected for every tree and added to the MIC Geographic Information System. The data is integrated with asset management software, which enables MIC to manage trees in the same way it manages other public assets. MIC staff can create work orders for specific trees and update the tree maintenance, condition, and other attributes continuously. They can also produce maps showing the location and attributes of the trees.



Inventory Findings

The inventory contains the common and botanical name of 160 trees with each tree's diameter and height, condition, defects, damage, maintenance needs, appraised value and risk level.

The total **appraised value of the trees inventoried is \$78,290**. Trees range in value from a high of \$9,300 for a large Sitka spruce to a low of zero for dead trees. The median value is \$390.

The condition of the trees was fairly good; **64.2% are in either excellent or good condition**. Only 14.2% were in poor or very poor condition and three were dead.

The 160 trees inventoried represent **18 species and 10 genera**. There are 119 maples, which is 73.5% of the trees. Japanese maples alone make up 50% of the total number of trees.

Most of the trees, **73.8%, measured from one to three inches in caliper**. Another 18.1% were four to six inches measured at breast height (DBH). Thirteen trees were larger than seven inches DBH and the largest tree was 22 inches in diameter.

The **most common problem identified was exposed roots**. This is mainly the Japanese maples in the wooden planters where the soil has washed off over time and trees and roots have gotten much larger. Nearly half the trees, 74, are in planter boxes. Adding topsoil and mulch to the 46 trees that need this will remedy the problem.

The next two most common types of damage noted can be eliminated by a change in planting and maintenance practices. There was **lawnmower damage on the trunks of 33 trees** and the **root collars were too deep on 29 trees**. This means the tree was planted too deeply or soil was added at some point. Most of the remaining problems were structural defects, some of which can be corrected or improved by pruning. Structural defects can be avoided in the future through careful selection and planting of trees with good form and sound structure.

The most common maintenance need is for mulch; **100% of the trees need mulch**. The next highest maintenance task is pruning; **117 trees should be pruned, 20 removed and 15 replanted**. The trees to be removed are dead, in very poor condition or pose a risk.

Due to the relatively small size and young age of public trees, there were only **two identified as at possible risks of failing** and causing damage to people or property. The trees are in a forested area near a trail and, although the risk was assessed as low, they are scheduled to be removed.



Summary of Trees Inventoried

<u>Botanic Name</u>	<u>Common Name</u>	<u>Avg. Condition</u>	<u># of Trees</u>	<u>% of Species</u>
<i>Acer palmatum</i>	Japanese maple	80	80	50.0
<i>Acer platanoides</i>	Norway maple	66	20	12.5
<i>Acer platanoides</i>	Norway maple 'Crimson King'	49	10	6.2
<i>Sorbus aucuparia</i>	European mountain ash	68	9	5.6
<i>Prunus cerasifera</i>	cherry plum "Thundercloud"	77	6	3.8
<i>Prunus cerasus</i>	sour cherry	58	5	3.1
<i>Tilia americana</i>	American linden	78	5	3.1
<i>Cupressus nootkatensis</i>	Alaska yellow cedar	90	4	2.5
<i>Cupressus x leylandii</i>	Leyland cypress	90	4	2.5
<i>Acer circinatum</i>	vine maple	80	4	2.5
<i>Acer griseum</i>	paperbark maple	33	3	1.9
<i>Betula papyrifera</i>	paper birch	75	2	1.3
<i>Tsuga heterophylla</i>	western hemlock	15	2	1.3
<i>Acer tataricum</i>	Tatarian maple	30	2	1.3
<i>Malus</i>	apple	80	1	0.6
<i>Cornus</i>	dogwood	70	1	0.6
<i>Prunus</i>	plum/cherry species	30	1	0.6
<i>Picea sitchensis</i>	Sitka spruce	80	1	0.6
		72	160	100

Appraised Value

TreeWorks calculated the appraised value of the tree using the data collected and the Council of Tree & Landscape Appraisers Guidelines. The total appraised value of the 160 trees is **\$78,290**. Trees range in value from a high of \$9,300 for a large Sitka spruce to a low of zero for the three dead trees. Most trees have a value of less than \$1,000 and the median value is \$390.

As the average size of trees increases and the condition improves, the value will also increase. Having an appraised value for trees is useful in the case of an insurance claim for a tree that is destroyed or damaged.

Tree Species Diversity

Diversity is an important measure of a forest's resilience and it is important to maintain a diverse population of tree genera to avoid loss of a large number of trees to one pest or event. A more diverse forest is better able to adapt to environmental changes as well as to disease and insect infestations. Different species will respond differently to storms and weather extremes and insect and disease pests. Climate change is another consideration when selecting species; some will adapt, some will benefit from the changes, and others will not survive.

When a few species dominate the tree population, these changes or infestations may significantly impact the entire population. There are many examples of devastation caused by planting monocultures – chestnut blight, Dutch elm disease, bark beetles, and emerald ash borer. Imagine the devastation and cost to Metlakatla if maples, which comprise 73.5% of the tree population, were all killed by a pest.

A common guideline for maintaining species diversity in urban areas is the 10-20-30 rule. That is, no one species should make up more than 10 percent of the trees in a population, no more than 20 percent of any one genus, and no more than 30 percent of one family.

Some experts recommend no more than 10 percent of any one genus because pests often attack all species within one genus. Maples, for example, are a popular target of a range of pests because there are so many species of maples and they are found growing around the world.

Diameter Distribution

A well distributed age class helps maintain a stable canopy cover over time. If all the trees within a neighborhood are about the same age they will mature and decline more or less at the same time, leaving that area with a deficient forest canopy. In Metlakatla, young trees of similar age class dominate some landscapes.

<u>Diameter Class (inches)</u>	<u>Percent</u>	<u>Count</u>
1 to 4	84.4	135
5 to 12	13.1	21
13 to 18	1.9	3
19 to 24	0.6	1
Total		160

Following is a comparison between standards established by western cities for desired age structure and the structure of Metlakatla's trees:

<u>Standard Tree Class Distribution</u>	<u>Metlakatla Tree Class Distribution</u>
40% young or small, < 6 inch DBH	91.9% young or small, < 7 inch DBH
30% maturing, 6 – 12 inch DBH	5.6% maturing, 7 – 12 inch DBH
20% mature, 12 – 24 inch DBH	2.5% mature, 13 – 24 inch DBH
10% old, > 24 inch DBH	0% old, > 24 inch DBH

The small diameter of trees in Metlakatla could indicate that trees are not surviving to reach maturity, however it is more likely due to the many small ornamental trees that will never reach a large diameter that have been planted. Currently, there are 44 trees (27.5%) that will be considered large at maturity. There are 25 trees (15.6%) that will be considered medium trees at maturity. The remaining 69 (56.9%) will remain small in size even at maturity.

Looking at the broader landscape, Metlakatla is surrounded by a forest of large trees, especially conifers, so planting smaller deciduous trees with colorful foliage and flowers increases interest and diversity. However, there are medium-sized and large trees that could add this diversity while also providing greater services such as reducing stormwater runoff, filtering air pollutants and storing carbon.

How trees were measured: Trees were measured four inches above ground if four inches or less in diameter. Trees larger than four inches were measured at breast height, 4.5 feet above ground. Some trees, such as the Japanese maples, have more than one trunk. In this case each stem was measured and the diameter recorded as the sum of the stems; for example a tree with three stems each measuring two inches was recorded as having a diameter of six inches.

Tree Condition

The inventory team visually inspected each tree and evaluated its crown development, trunk condition, major branch structure, twig growth rate, presence of insects or diseases, root condition, and planting depth. Each tree was assigned a condition rating: 0% (dead,) 30% (very poor), 50% (poor), 70% (fair), 80% (good), 90% (excellent).

Some trees showed signs of decline, such as die-back and slower annual growth rate than in past years. This may be due to lack of adequate soil volume for continued root expansion. The condition of trees in the Metlakatla inventory is as follows:

<u>Condition</u>	<u>Tree Count</u>	<u>Percent</u>
Excellent	36	22.5
Good	68	42.5
Fair	30	18.8
Poor	8	5.0
Very Poor	15	9.4
Dead	3	1.9
Total	160	100

<u>Defect/Damage*</u>	<u># of defects</u>	<u>% of defects/damage</u>
Exposed roots	46	23.23
Lawnmower damage	33	16.67
Root collar buried	29	14.65
Included bark	23	11.62
Lean	19	9.60
Trunk scar	13	6.57
Dead top	9	4.55
Co-dominant stems	6	3.03
Trunk girdled by root	5	2.53
Branch architecture	3	1.52
Broken branch	3	1.52
Vandalism	3	1.52
Decline	2	1.01
Basal scar	1	0.51
Dead branches	1	0.51
One-sided	1	0.51
Animal damage	1	0.51
Total defects	198	

*Some trees have more than one defect and some have none so the total is not equal to the total number of trees.



Tree Maintenance Tasks

Healthy trees confer many benefits, yet poorly maintained trees may pose a risk. Careful observation and maintenance allows staff to predict, detect, and prevent problems and risks. Excluding immediate problems such as blow downs, pest outbreaks, and extreme vandalism, trees should be inspected, and pruned as needed, on a two- to five-year cycle based on the department's budget and staffing.

The following tasks were identified in the inventory:

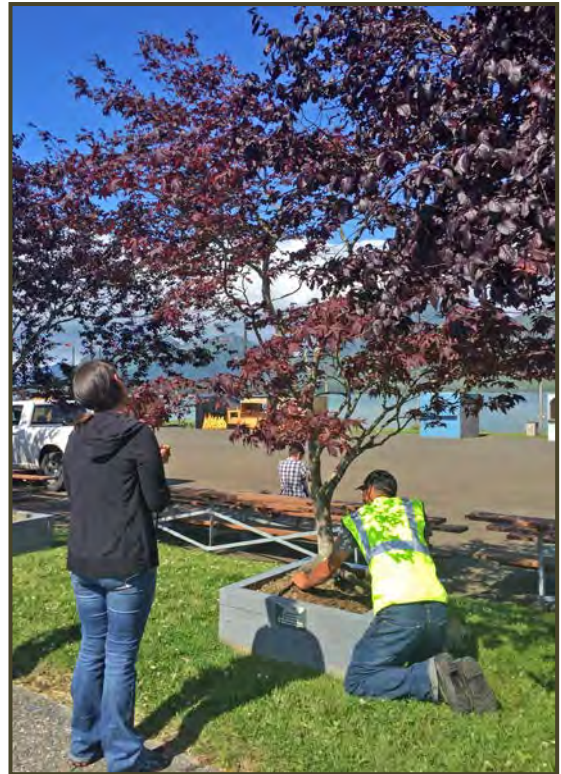
<u>Task*</u>	<u># of trees</u>
Mulch	160
Prune	117
Remove	20
Replant	15
Excavate root collar	2
<u>Remove stakes</u>	<u>2</u>
Total tasks	316

*Some trees require more than one task and some require none so the total is not equal to the total number of trees.

Tree Risk

Most public tree species planted in Metlakatla will remain small or are young and have not reached their mature size so pose little risk. However, it is still prudent to manage risk and monitor large trees in the natural forest around town, along trails and in active use areas. High risk trees or large limbs have the potential to damage property and cause injuries or even death.

Two trees were identified as at possible risk of failing and causing damage to people or property. The trees are in a forested area near a trail and, although the risk was assessed as low, they will be removed due to their location.



Community Forestry Program Goals and Actions

- A. Strengthen the public tree planting program.
 - a. Identify and prioritize sites to plant trees;
 - b. Plant a sufficient number of trees to offset tree removal and keep pace with community growth (5-8 trees per year);
 - c. Increase species, age, and size diversity to improve long term community forest health;
 - d. Follow guidelines for selecting and planting trees in:
 - i. Plant a Tree: An Alaskan Guide to Tree Selection, Planting and Care, a booklet produced by the Alaska Community Forestry Program
 - ii. International Society of Arboriculture Best Management Practices
 - iii. ANSI Z60.1 (Nursery Stock Standards)
 - iv. ANSI A300 Part 6 (planting and transplanting)
 - e. Establish a community orchard for fruit and nut trees and berries.
 - f. Plant tree species known to be successful in Metlakatla and try new species that are likely to thrive. See Potential Trees for Metlakatla on page 15.
- B. Increase species diversity.
 - a. Attain a community forest with no more than 10% of any one non-native species.
 - b. When planting trees select approximately 50% from species that have proven successful and 50% from species on the Potential Trees for Metlakatla list.
 - c. Plant no *Acer* (maples) for the next five years.
 - d. Plant trees with a variety of forms and traits such as flowers, fall color, and fruit.
 - e. Engage the community in planting more fruit trees and berry plants on appropriate sites.
 - f. Be cautious of species that are invasive in other locations or that have invasive characteristics. Plant a variety of species and observe over time. Consider sterile or male cultivars for species of concern for spreading.
 - g. Re-evaluate the tree species composition in 2020 and set new goals based on the evaluation.
- C. Increase age and diameter diversity
 - a. Attain a tree diameter distribution that better reflects current industry standards as in the chart on page 6.
 - b. Plant more trees that will reach a diameter greater than 12 inches DBH and 40 feet in height at maturity.
 - c. Improve maintenance so that more trees reach a mature size.
- D. Improve overall condition rating
 - a. Attain an overall condition rating of good or excellent for 75% of the tree population.
 - b. Remove and replace trees that are dead or in very poor condition.
 - c. Improve the maintenance program to improve condition of individual trees.
 - d. Prune to improve form and structure, recognizing that some damage and structural problems cannot be repaired.
 - e. Protect trees from lawnmower and weed whip damage by improving landscape maintenance practices and installing mulch and/or tree trunk protectors.
 - f. Experiment with ways to provide larger soil volumes to allow roots to spread into native soil in a larger area. Options include: make larger planting beds, combine beds for multiple trees so they share rooting space, create large mounds rather than boxes, incorporate soil into large areas of the limited native soil rather than creating growing beds above grade.
- E. Develop and implement a tree maintenance program that will improve tree health and sustainability. Use the tree maintenance data in the inventory to prioritize tasks.
 - a. Routine Inspections
 - i. Maintain the tree inventory and record dates of inspections, pruning and other maintenance.

- ii. Monitor trees annually for structural or cultural problems, e.g. lawnmower damage, and insects and disease; record new conditions or needed tasks in inventory database.
 - iii. Begin a routine 3-year inspection cycle for each tree. Schedule pruning or other maintenance according to needs identified in the inspection. In a 3-year cycle about 54 trees will be inspected each year based on the current total of 160 trees. Set a schedule for which trees will be inspected in years 1, 2, and 3.
 - b. High Priority Maintenance Tasks
 - i. Add soil and/or compost to cover exposed roots, leaving root collar above grade.
 - ii. Excavate the root collars of trees that are planted too deeply or dig and replant small or newly planted trees so that the root collar is at or just above grade.
 - iii. Add 3 to 4 inches of mulch to all trees, extending 2 to 3 feet from the trunk. Keep mulch 6-8 inches away from the trunk. Mulch will conserve and improve soil fertility, increase soil volume over time, reduce compaction, retain moisture, and moderate temperatures. Mulch creates a grass free area around trees that protects trunks from lawn equipment.
 - iv. Remove boxes from trees with the greatest need for additional space for the roots and provide soil needed for expansion.
 - v. Compost green waste and use compost for planted trees.
 - c. Pruning Tasks
 - i. Prune the 117 trees identified in the inventory.
 - ii. Prune to improve tree condition and/or to repair damage or defects.
 - iii. Prune young trees before they develop weak branch structure, crossing branches, or co-dominant leaders. Small trees are easier to prune, the pruning wounds are smaller, and there is less debris to remove.
 - iv. Prune to ensure healthy, aesthetically pleasing trees and to reduce the risk of tree failure that could cause damage or injury. Broken branches can fall, especially during inclement weather, and may cause damage or injury.
 - v. Prune trees that block sight lines or street signs.
 - vi. MIC staff or trained volunteers should prune small trees that can be pruned from the ground. Trees with diameters larger than 16 inches DBH or that require climbing should be pruned by a Certified Arborist who has the training and equipment to safely prune large trees.
 - d. References and Standards to Guide Tree Maintenance
 - i. ANSI A300 Part 1 (Pruning),
 - ii. ANSI A300 part 5 (Management of trees and shrubs during site planning, development and construction)
 - iii. ANSI Z133 (Arboriculture Safety Standard)
 - iv. Plant a Tree: An Alaskan Guide to Tree Selection, Planting and Care by Alaska Division of Forestry Community Forestry Program
 - v. International Society of Arboriculture Best Management Practices for maintenance
- F. Develop best management practices for MIC staff to follow and as a resource for other land managers. A Best Management Practices Manual may refer to this Community Forestry Management Plan and publications from the Alaska Community Forestry Program, International Society of Arboriculture and other sources. Consider the following for inclusion in the manual:
- a. Specifications for trees being purchased;
 - b. Site selection and planting guidelines;
 - c. Guidelines for pruning and other maintenance;
 - d. Procedures for updating the tree inventory;
 - e. Guidelines to improve soil quality and increase soil quantity (e.g. producing compost);
 - f. Tree removal decision process;

- g. Tree risk assessment and mitigation procedures;
 - h. Standards for designating and managing landmark, memorial, or other special trees;
 - i. Guidance for preserving native trees and forests;
 - j. Policies for invasive species prevention and control;
 - k. Techniques for using trees and other vegetation to manage stormwater, protect water quality and recharge groundwater;
 - l. Process for coordination between MIC units or departments on issues of tree planting, care, and removal.
- G. Develop a process for identifying and mitigating risk.
- a. Evaluate trees exhibiting high-risk features such as cracks; splits; trunk, root or crown decay; included bark and other weak branch unions; poor tree architecture; and major crown die-back and mitigate risk before the tree or parts of the tree fail.
 - b. Have public trees inspected by an ISA Qualified Tree Risk Assessor every five years or when there is concern about the safety of a tree or trees.
 - c. Remove trees or tree branches identified as hazardous or high risk or take immediate action to mitigate risk.
 - d. Situations in which tree removal may be appropriate:
 - i. The tree is dead;
 - ii. The tree is irreversibly affected by disease or insects;
 - iii. The tree is in significant decline;
 - iv. The entire tree or large tree parts present a risk of failing.
 - v. The tree is in conflict with utilities and/or construction that cannot be avoided or mitigated.
 - e. Maintain visual clearance for intersections, traffic signs, and signals.
 - f. Respond promptly to requests from city departments, property owners, and others.
 - g. Implement a 3-year cycle for tree inspection and maintenance tasks identified.
 - h. Train MIC personnel in safe arboriculture procedures, first aid, and safe equipment use.
 - i. Enable a staff member to become an International Society of Arboriculture Certified Arborist and a Qualified Tree Risk Assessor upon meeting eligibility requirements.
 - j. Use the following references to guide the tree risk program:
 - i. ANSI A300 Part 9 (Tree Risk Assessment)
 - ii. International Society of Arboriculture Best Management Practices related to risk management
- H. Protect native plant communities, including groundcovers, understory plants, shrubs, and trees. These plant communities have evolved over many thousands of years to form compatible plant associations. They have adapted to the climate, geography and animal populations of the island. Conserving the native forest retains habitat and food for mammals, birds, and fish; maintains clean air and water, and provides local forest products.
- a. Identify and conserve high priority sites within or near the Metlakatla Indian Community.
 - b. Adopt tree protection and construction impact practices including tree root zone protection.
 - c. Continue to identify, remove, and avoid introduction of harmful invasive species.
- I. Develop and maintain an effective and sustainable community forestry program.
- a. Periodically review inventory data, program accomplishments and goals, and the forest condition and revise the Community Forestry Management Plan and policies to address changing or emerging conditions and needs.
 - b. Review the 2008 inventory data and compare to 2015 data to identify trends, positive and negative changes over time, and evidence of successful or unsuccessful species and practices.
 - c. Provide training and education opportunities for employees to ensure high quality tree care.
 - i. Support ISA arborist certification for at least one employee.
 - d. Increase public awareness of the values and benefits of trees and the investment required to maintain that value.

- e. Provide information to the public on best management practices for good tree health.
 - f. Provide opportunities for volunteers, community organizations, and businesses to plant and maintain community trees.
- J. Attain Tree City USA status by 2018. Join eight other Alaska communities that have made this commitment. The Tree City USA program provides direction, assistance and national recognition for your community. It is the framework for a healthy and sustainable community forestry program. Applications are due in December each year. Four standards are required to achieve Tree City USA status.

Standard 1: A Tree Board or Department

Someone must be legally responsible for the care of all trees on property owned by the town. By delegating tree care decisions to a professional forester, arborist, department, citizen-led tree board or some combination, city leaders determine who will perform necessary tree work. The public will also know who is accountable for decisions that impact community trees. Many towns have both professional staff and an advisory tree board. Involving residents creates awareness of what trees do for the community and provides broad support for better tree care.

Standard 2: A Tree Care Ordinance

A basic public tree care ordinance forms the foundation of a city's tree care program. A key section is one that establishes the body responsible for public tree care (as reflected in Standard 1). It should also assign the task of crafting and implementing a plan of work and for documenting annual tree care activities. The ordinance should be flexible enough to fit the needs and circumstances of the community.

Ideally, the ordinance will also provide clear guidance for planting, maintaining and removing trees from public spaces. The Community Forestry Management Plan can be the basis for the ordinance that sets the standard of care for the community forest.

Standard 3: A Community Forestry Program with an Annual Budget of at Least \$2 Per Capita

City trees provide many benefits but they require an investment to remain healthy and sustainable. By providing support at or above the \$2 per capita minimum, a community demonstrates its commitment to these valuable public assets. To meet this standard the community must document at least \$2 per capita toward the planting, care and removal of city trees and the planning efforts to make those things happen. The budget may include grants, volunteer time and in-kind donations. For MIC this is \$2,810 per year based on a population of 1,405.

Standard 4: An Arbor Day Observance and Proclamation

An effective program for community trees would not be complete without an annual Arbor Day ceremony where citizens join together to celebrate the benefits of community trees. By passing and reciting an official Arbor Day proclamation, public officials demonstrate their support for the community tree program and complete the requirements for becoming a Tree City USA.

An Arbor Day celebration can be simple and brief or an all-day or all-week observation that includes tree planting and tree care or other educational activities. Arbor Day is an opportunity for publicity and to provide education about planting the right tree in the right place and providing proper care.

More information is available on the Arbor Day Foundation website:

<http://www.arborday.org/programs/treecityusa/>.

Tree Planting in Metlakatla

Frank Hayward Memorial Breakwater 2006, 2007 and 2008



Breakwater 2008, 2011 and 2015



Russell Hayward Memorial Park 2006, 2008 and 2015





Damaged trees that will benefit from maintenance and improved practices



Potential Plants for Metlakatla

The plant list below includes many species not currently growing in Metlakatla. These trees are likely hardy for the area based on their requirements and other places where they are successful.

Small Trees – up to 25' mature height

Hedge Maple

Acer campestre

Height: 25 – 35'

Spread: 20 – 30'

Amur Maple

Acer ginnala

Height: 20'

Spread: 20'

Miyabe Maple

Acer miyabei

Height: 25

Spread: 20

Pacific Sunset Shantung Maple

Acer truncatum x *A. platanoides*

Height: 25'

Spread: 25'

'Autumn Brilliance' Serviceberry

Amelanchier x *grandiflora*

Height: 20'

Spread: 15'

Cumulus Allegheny Serviceberry

Amelanchier laevis 'Cumulus'

Height: 25'

Spread: 20'

American Hornbeam

Carpinus caroliniana

Height: 25'

Spread: 25'

False Cypress

Chamaecyparis pisifera 'Filifera'

Height: 20'

Spread: 10'

Dogwood

Cornus

Height: 20'

Spread: 10'

Lavalle Hawthorn

Crataegus x *lavallei*

Height: 25'

Spread: 20'

Goldenchain Tree

Laburnum x *watererei*

Height: 20'

Spread: 15'

Galaxy Magnolia

Magnolia x 'Galaxy'

Height: 20 – 25'

Spread: 15'

Royal Star Magnolia

Magnolia stellata

Height: 20'

Spread: 15'

Flowering Crabapples *Malus* species

Height: 15 – 30'

Spread: 10 – 30'

Persian Parrotia

Parrotia persica

Height: 20 – 30'

Spread: 15 – 25'

Dwarf Tanyosho Pine

Pinus densiflora

Height: 20'

Spread: 10'

'Ivory Silk' Lilac

Syringa reticulata

Height: 25'

Spread: 15'

Medium Trees – 30' to 50' mature height

Norway Maple
Acer plantanoides
Height: 40 – 50'
Spread: 30 – 45'

Red Maple
Acer rubrum
Height: 40 – 50'
Spread: 35 – 40'

European Beech
Fagus sylvatica
Height: 40 – 50'
Spread: 15 – 40'

Green Ash
Fraxinus pennsylvanica
Height: 45 – 50'
Spread: 25 – 35'

Maidenhair Tree
Ginkgo biloba
Height: 40 – 55'
Spread: 15 – 35'

Honeylocust
Gleditsia
Height: 35 – 45'
Spread: 35 – 40'

Yulan magnolia
Magnolia denudata
Height: 35'
Spread: 30'

Merrill Loebner Magnolia
Magnolia x loebneri 'Merrill'
Height: 30"
Spread: 30"

Sargent Cherry
Prunus sargentii
Height: 35'
Spread: 15'

Ussurian Pear
Pyrus ussuriensis
Height: 25 – 25'
Spread: 20 – 30'

American Hophornbeam
Ostrya virginiana
Height: 30 – 45'
Spread: 25'

Amur Corktree
Phellodendron amurense
Height: 30 – 45'
Spread: 40 – 50'

Korean Mountainash
Sorbus alnifolia
Height: 40 – 50'
Spread: 20 – 30'

American Linden
Tilia americana
Height: 35 – 50'
Spread: 20 – 35'

Littleleaf Linden
Tilia cordata
Height: 40 – 45'
Spread: 45'

Butternut
Juglans cinerea
Height: 40 – 60'
Spread: 30 –

Large Trees – 50' or larger at mature height

Black Maple

Acer nigrum

Height: 60 – 75'

Spread: 40 – 55'

Sugar Maple

Acer saccharum

Height: 60 – 75'

Spread: 40 – 55'

White Ash

Fraxinus americana

Height: 45 – 60'

Spread: 30 – 40'

Kentucky Coffeetree

Gymnocladus dioicus

Height: 50 – 65'

Spread: 40 – 50'

Tulip Tree

Liriodendron tulipifera

Height: 70 – 90'

Spread: 35 – 50'

Cucumbertree Magnolia

Magnolia acuminata

Height: 50 – 80'

Spread: 40 – 80'

Black Walnut

Juglans nigra

Height: 50 – 75'

Spread: 50 – 75'

Dawn Redwood

Metasequoia glyptostroboides

Height: 60 – 100'

Spread: 25 – 40'

Bloodgood London Planetree

Platanus x acerifolia 'Bloodgood'

Height: 50 – 80'

Spread: 40 – 60'

White Oak

Quercus palustris

Height: 60 – 70'

Spread: 25 – 40