Glenwood Children's Park Urban Forest Management Plan

2013 Amended Version

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FOREWORD

In 2008 the DMNA requested a detailed tree inventory and a seven year time frame to achieve the goals prioritized in the 2009 publication of Glenwood Children's Park Urban Forest Management Plan. The strategies proved too aggressive for public acceptance and implementation became challenging due to limited funding and city resources. The original chapters 7, 8 and 9 have been moved to appendix E for reference, and these updated chapters address timing, process for improvements and continuing maintenance.

The goal of these changes is to gain wider acceptance of this plan, a clearer plan for the ongoing maintenance that is needed, and its approval by the Madison Parks Commission as policy for Glenwood's future management. The updates will implement different strategies, in different timeframes, throughout the park.

1. Executive Summary

This document was prepared as a management plan for one of Madison's historical landmarks: the Glenwood Children's Park. The Park is a 3.5 acre wooded ravine in the Dudgeon Monroe Neighborhood on the near west side of Madison, Wisconsin. The site is located two blocks northwest of Monroe Street and bound by Glenway Street to the east. A canopy of invasive black locust trees, many of which have major structural issues, has overtaken the park. Steep slopes pose erosion problems for the park, and invasive species challenge the establishment of native Wisconsin plants in the understory.

The immediate focus of this effort was to create a tree inventory and analyze current site conditions so further action can be taken towards managing the park for tree health and public safety. This plan assesses the current status of the park and recommends actions to achieve community agreed upon goals in a seven-year time span with an understanding that native, strong, and healthy trees will mean less maintenance and tree health problems in the park. The current plan focuses on the management of existing trees and controlling invasive species. This plan has been adapted to include an intermediate, cost efficient planting plan of species that will hold soil in place and help to control exotic species while a more extensive planting plan is decided upon by the Dudgeon Monroe Neighborhood Association (DMNA).

This plan also addresses the invasive black locust trees that have overtaken the park since the original design by renowned landscape architect Jens Jensen. Controlling and eventually eliminating the black locust population in the park will help the community to recreate the much-desired historical features of the park.

The tree inventory was completed in September and October of 2009. This inventory provides total number of trees, species, diameter at breast height (DBH), height, percent deadwood, condition of trees, maintenance and priority. This data was used to create the Tree Inventory Data Sheet and this Management Plan. The inventory provides a baseline for the beginnings of the park's forestry planning, landscaping, and maintenance guidelines. Progress in achieving the management goals will be evaluated, and modifications and updates to the Management Plan will be addressed on a yearly basis.

Priority 1 removals (health and safety) were completed in 2012, but there was public concern over the speed of additional black locust removals called for in the original plan. Chapters 7-11 were amended into the Plan in 2013.

2. Purpose and Scope

The purpose of the Glenwood Children's Park Urban Forest Management Plan is to create a current and accurate tree inventory, to make recommendations on how to manage the current resources, and improve the quality of trees for the park. A diverse set of literature exists depicting past efforts to implement planning and design in the park; the most famous and prominent plan being the historical work of Jens Jensen. The purpose of this Management Plan will take Jen Jensen's work into account when possible, however this document remains a tree management plan, and not a landscape design effort. Times, humans and nature have changed the park, in both content and space. The plan is created for the listed goals given the existing park resources, terrain and features. As these goals are being met, a more comprehensive, collaborative vision and design will be required for the gradual landscaping and enhancement of the park.

The scope of this Management Plan is to meet the following goals of the Dudgeon Monroe Neighborhood Association:

Goal 1:	Tree health and safety
Goal 2:	Control of black locust in the park, working towards elimination
Goal 3:	Invasive understory control in a safe and effective manner
Goal 4:	Planting of desired, appropriate and diverse tree species

The DMNA has amended the time frame to achieve these goals for the Management Plan from seven years (2009), to a more flexible time frame for the future.

3. Historical Background

History as Glenwood Quarry

In the 1850's, the site was named Glenwood Quarry. Some literature claims it provided sandstone used in the state capitol, as well as the North and South halls of the University of Wisconsin campus. The quarry was abandoned in the late 1920's, and was said to be used by neighborhood children as a playground (DMNA, 1999).

History as Glenwood Park

Shortly after the quarry was abandoned, several prominent citizens began to take interest in the area due to its unique terrain. Among these citizens were Michael Olbrich and William Longernecker, who began a chain of persuasion from Joseph W. Jackson to his friend Louis Gardner Sr. that this site would be valuable as a park. The area became Glenwood Park upon the purchase and donation of the land by Louis Gardner to the City of Madison in 1943 (Christy, 1975).

History as Glenwood Children's Park

Earlier, in 1942, landscape architect Jens Jensen had been invited by Joseph Jackson to visit the site. Jens Jensen, known as the "dean of American Landscape Architects", saw great potential to transform the quarry into a children's park. There are many facets of literature describing Jensen's extraordinary career. Jensen was internationally renowned for his park and private estate designs using native plants, as well as efforts to set aside natural areas in the Midwest.

After his visit, Jensen volunteered his time and efforts to draw up a plan for the park. Jensen intended the park to be a place "for children to enjoy nature at its best." Jensen's original plans called for trees and rocks to form natural play spaces -- he envisioned a grassy "Mother's Circle" and a "Sing Ring" - and the construction of a stone council ring, a circular stone bench designed for gatherings and contemplation (Capitol Times, 2009).

The work was delayed by the onset of World War II until 1947. His involvement in the design for the transformation of Glenwood Quarry into Glenwood Children's Park would prove to be his last major project (Christy, 1975). Jensen's goals for the park were to establish an understory of sugar maple and ironwood, ultimately planting natives and letting nature take its course. Accent plants such as plum, cherries, shadbush, hawthorn and sumac would be added later. Jensen's plan did incorporate some grade changes, as well as the removal of many trees to create areas of contrast between light and darkness (a Jensen signature). Jensen also created a council ring (stone benches

surrounding a central fire ring) in the upper area of the park. In 1949 Jensen worked with volunteers to plant and create open spaces, outdoor rings, a playground, a softball field and croquet space (DMNA, 1999). His original plans also included a small pond at the bottom of the canyon on the west side of the park, which was never realized.

There is only one rough sketch of Jensen's design that exists today, and it is held at the Morton Arboretum society. A reproduction provided by Peter Nause and Tom McClintock is shown below.

Figure 3-1: Jens Jensen's sketch plan for the Glenwood Children's Park

As nature, both human and wild, took its course, the park took a turn for the worse after Jensen's passing in 1951. The ecological decline was largely due to invasive species overtaking the park. A small amount of black locust trees allowed to be part of Jensen's plan out-competed other species, and began their reign as the dominant species in the park canopy. The bella honeysuckle in the understory also began to choke out other species. Many of the original plantings declined due to the increase in shade, and the slopes became muddy as the understory disappeared. Erosion began to take place on the steep slopes. The council ring crumbled, and runoff became increasingly worse. Efforts to repair the park included:

1974 Alderman Nino Amato obtained funds to install a large grate and earthen berm at the lower end of the park to control water overflow.

1975 Professor Darrel Morrison and Steven Christy of the University of Wisconsin started restoration efforts, general cleanup, and the planting of more shade tolerant species.

1976 The DMNA sponsored continued cleanup efforts and planting.

Despite these efforts, the park continued to decline due to invasives and erosion, and the black locust continued to form a thick shade canopy. Runoff and newly introduced mountain biking contributed to erosion problems. Buckthorn, honeysuckle and garlic mustard continued to prevail in the understory.

1989 Jon Kollitz created a restoration/planting plan for the park as part of a senior project.

1997 The DMNA capitol fund drive project is used to restore the council ring.

1999 Adams-Kollitz's plan is revised. Simon Widstrand of the City of Madison Parks Department indicated selected black locust and other trees to be cut to open up the canopy of the park. A City of Madison Parks grant along with DMNA contributions funded planting to realize the Adams-Kollitz re-design, and removal of garlic mustard.

4. Current Site Evaluation

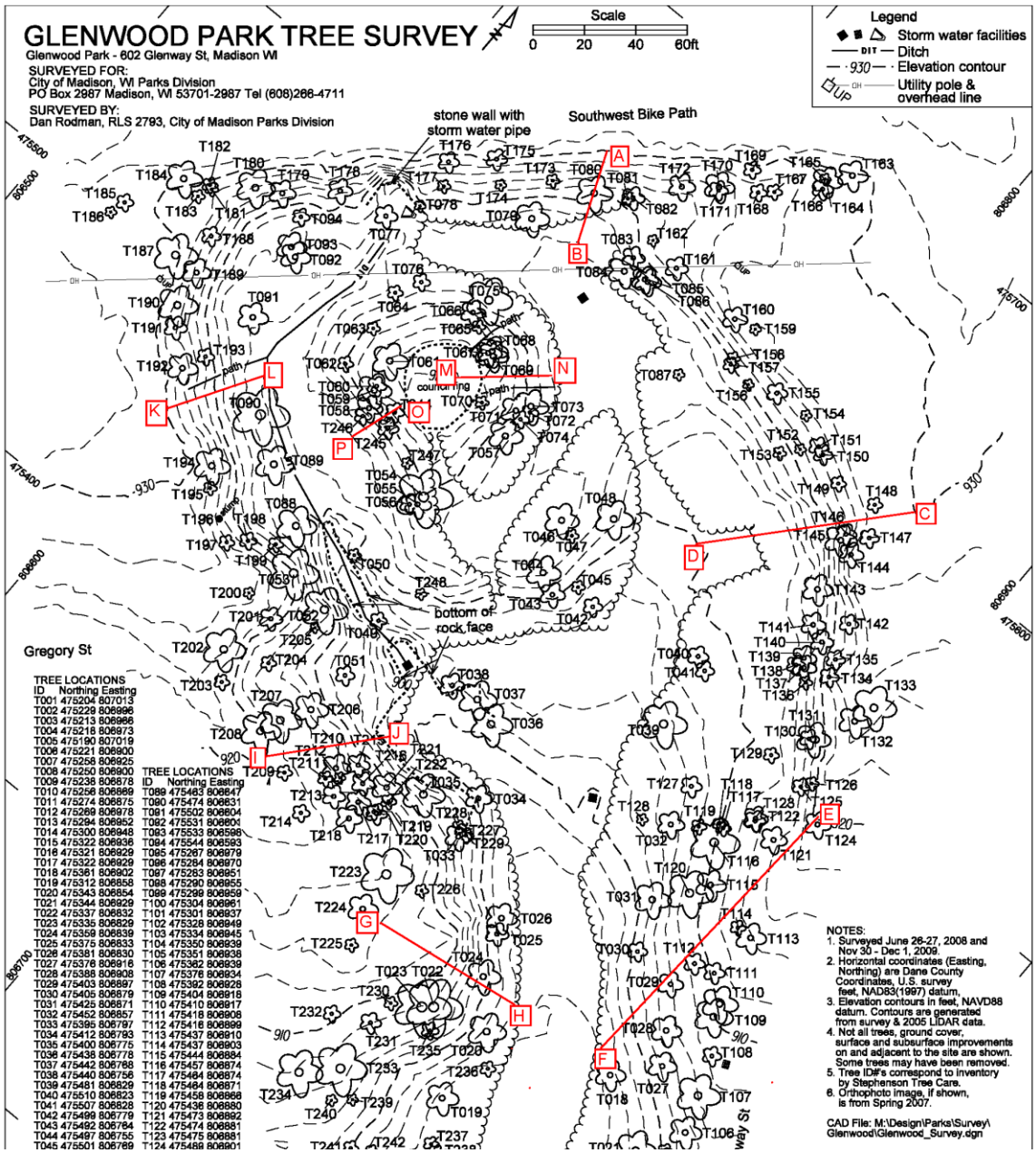
Slope and Soils

The soils have large amounts of exposed and eroded sandstone in the upper area of the park and eroded silt loam in the lower areas. In his examination of the City of Madison Parks files, Jon Kollitz, (Kollitz, 1989) indicated soil movement/grading in the park to be minimal. Dirt had been moved from a pile on the north and west side of the right-of-way and used to grade the area where the council ring was constructed. The file also showed that James Marshall, Madison's Parks Superintendent in the 1940s, had also done grading in various areas of the park. The Dane County Soil Survey lists the soils found in the area before the quarrying operations and grading as Dodge Silt Loam and McHenry Silt Loam. The exposed Madison Sandstone was also listed on the survey maps (Soil, 1978). The sandstone is further eroded today, and with soil depth reaching 14" or less in some areas, the site exhibits low tree quality, compacted and eroded soils. The stone channel running down the western portion of the site continues to erode, as well as the steep side slopes.

Slopes are significant and reach up to 24% in some areas. (Slopes of 25% or greater are difficult to walk or climb up). Examples of the gradient of slopes in various areas of the park are expressed as percentages below. The example slopes are labeled on topography lines from the 2009 Glenwood Park Tree Survey Map (Appendix D) and are shown in red below (Fig 4-1). An examination of the topography shows that most trees are located on slopes greater than 11%. All tree management activities must consider the role these slopes have on erosion, drainage and vegetation in the park.

LINE	ΔY(feet)	ΔX(feet)	SLOPE	SLOPE %
AB	14	40	.35	19
CD	20	100	.2	11.3
EF	26	130	.2	11.3
GH	26	80	.32	18
IJ	20	60	.33	18.26
KL	20	45	.44	24
MN	12	50	.24	13.5
OP	14	35	.4	21

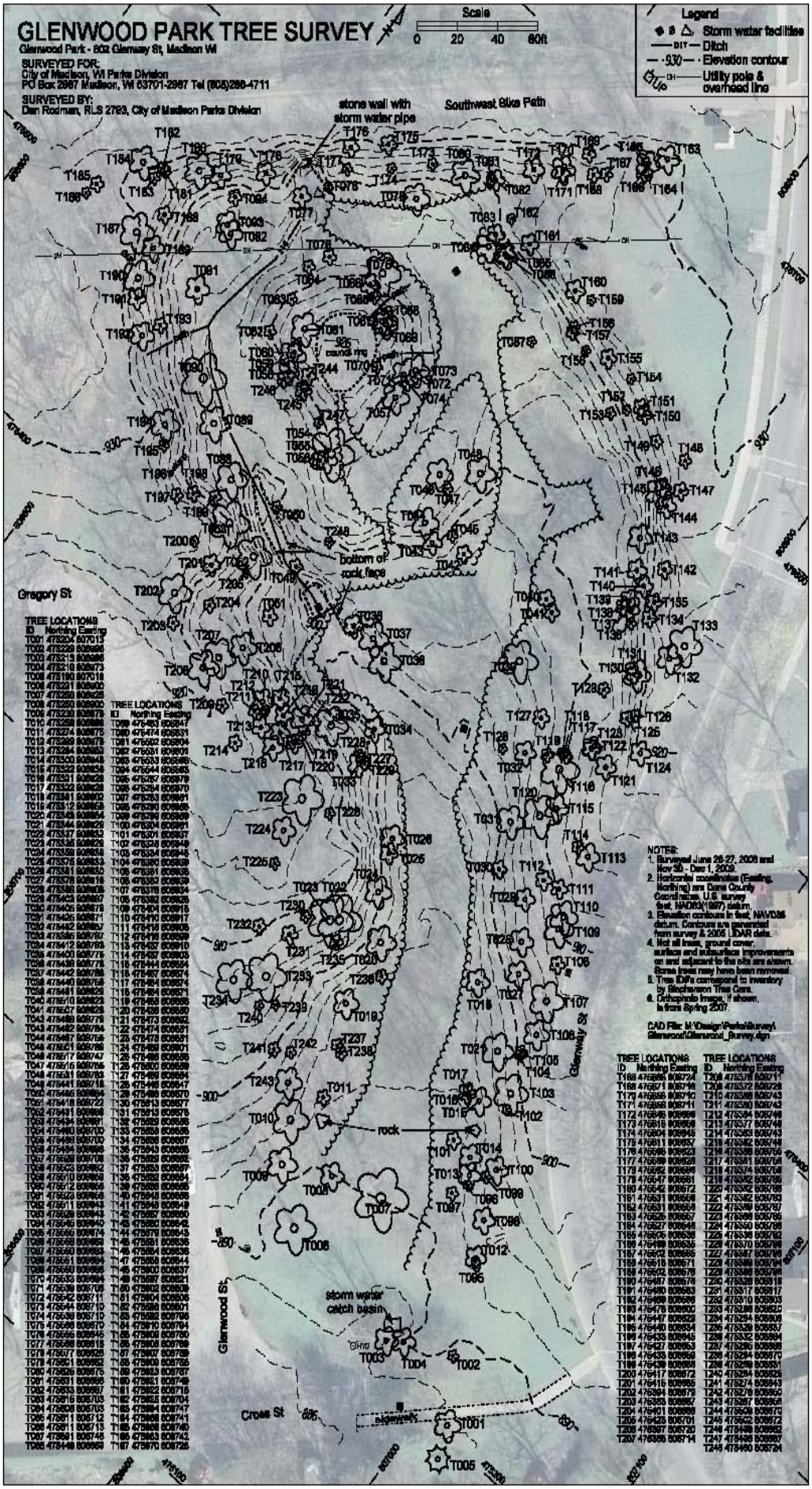
% Slope is calculated using the following formula:
% SLOPE = INV TAN (ΔY/ΔX)
where SLOPE=ΔY/ΔX



Vegetation

A tree inventory of all standing trees above 6" diameter at breast height (DBH) was completed in October of 2009 by the staff at Stephenson Tree Care, Inc. Trees were measured and analyzed for DBH, height, percentage of deadwood, condition rating, maintenance needs and priority of action. The inventory can be found in Appendix A. All trees were tagged during the inventory process, and Dan Rodman, of the City of Madison Parks Department, used the information to locate and map all trees (Fig 4.2).

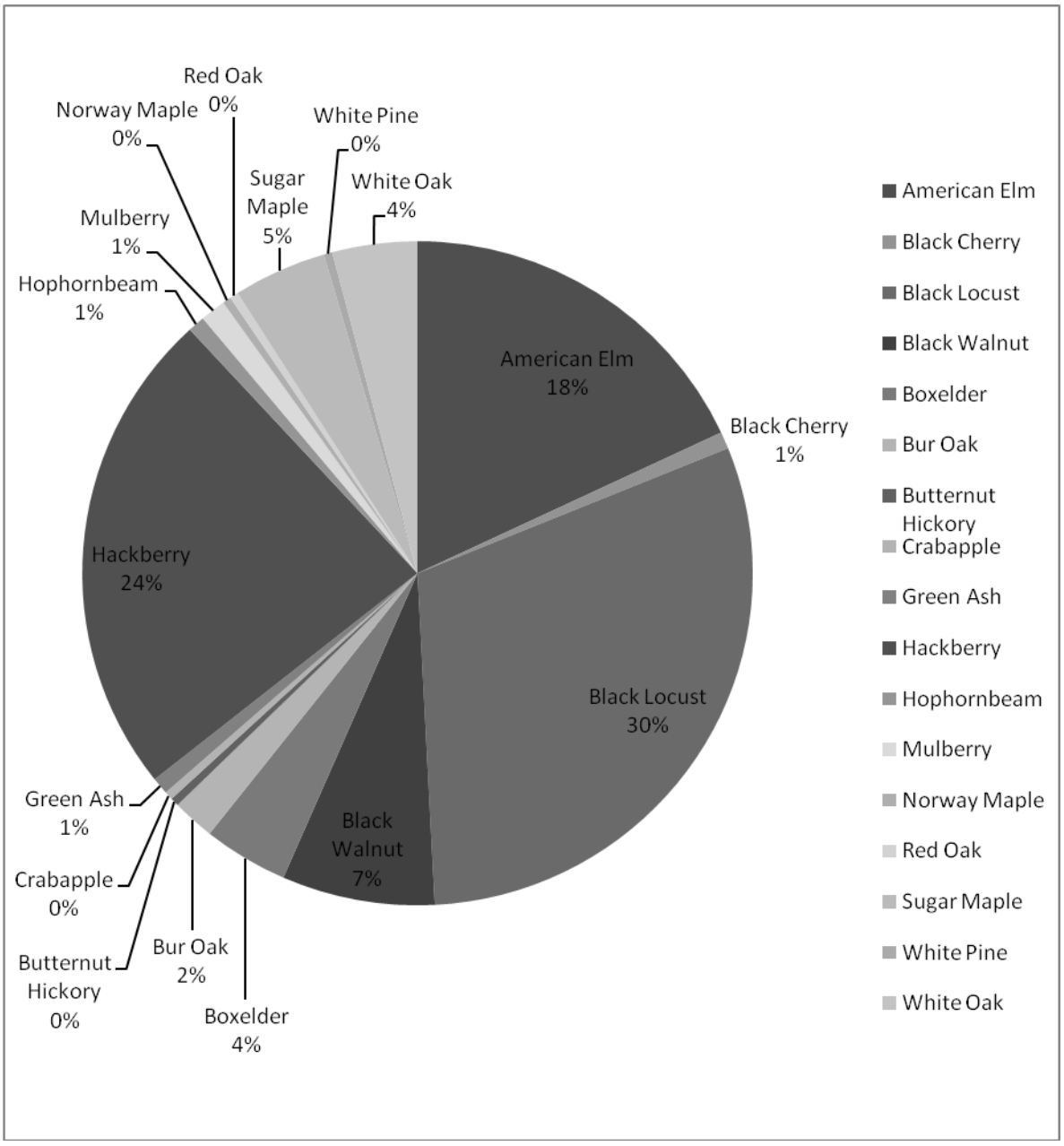
Figure 4-2


GLENWOOD PARK TREE SURVEY
Glenwood Park - 802 Glenway St, Madison WI
SURVEYED FOR:
City of Madison, WI Parks Division
PO Box 2987 Madison, WI 53701-2987 Tel (608)266-4711
SURVEYED BY:
Dan Rodman, R.L.S 2763, City of Madison Parks Division
Scale
0 20 40 80ft
Legend
Storm water facilities
Ditch
930 Elevation contour
Utility pole & overhead line
stone wall with storm water pipe
Southwest Bike Path
bottom of rock face
Gregory St
Glenwood St
Cross St
Glenway St
storm water catch basin
rock
930 round ring
TREE LOCATIONS
ID Northing Easting
NOTES:
1. Surveyed June 26-27, 2008 and Nov 30 - Dec 1, 2009.
2. Horizontal coordinates (Easting, Northing) are Dane County Coord Feet, U.S. survey feet, NAD83(1997) datum.
3. Elevation contours in feet, NAVD88 datum. Contours are generated from survey & 2005 LIDAR data.
4. Not all trees, ground cover, surface and subsurface improvements on and adjacent to the site are shown. Some trees may have been removed.
5. Tree ID#s correspond to inventory by Bleckenson Tree Care.
6. Orthophoto image, if shown, is from Spring 2007.
CAD File: M:\Design\Parks\Survey\Glenwood\Glenwood_Survey.dgn

Canopy:

In 2009 the 3.5 acres of Glenwood Children's Park has a dense canopy comprised of mainly even aged black locust (30%), hackberry (24%), elm (18%) and black walnut (7%). Other noted species were black cherry, box elder, bur oak, white oak, crabapple, green ash, hickory, mulberry, sugar maple and hop hornbeam. The tree total for the 3.5-acre park was 244 trees. 248 trees were tagged, however 4 have been removed. See Figure 4-3 for a species composition summary.

Figure 4-3: Percent Species Composition by Number of Trees 6" DBH and Greater



Understory and Groundcover:
A basic understory plant inventory was completed in October 2009, and occurred too late in the season to identify all plants. The understory was sparse throughout the year, and is still threatened by invasives. Invasive plants such as garlic mustard will continue to be a problem in the park, and the park will also need to be monitored for buckthorn. Creeping Charlie is prominent in the lower areas of the park, as well as grapevine. Norway maple and box elder were also found as small saplings in the understory.

Other non-invasive plants in the understory included: wood violets, geranium, false Solomon's seal, redbud, hackberry (small saplings), sugar maple (small saplings), pagoda dogwood, and wild ginger.

Margaret Nelson of the DMNA has provided a list of herbaceous understory plants found in the park in recent years (Appendix C). Also, in 2009, Peter Nause of the DMNA planted desired inventory in the understory (Appendix B). The locations of the plants installed under the supervision of Nause are also located in the Glenwood Tree Management Phases Map (shown under the management section and Appendix D).

Special Circumstances

Another site condition to be considered in this plan will be the possible replacement of storm water conduits through the middle of the park. The expected replacement will be in the next 2-5 years, and will require significant excavation in this area. Major planting efforts in this vicinity should be avoided until the project is complete.

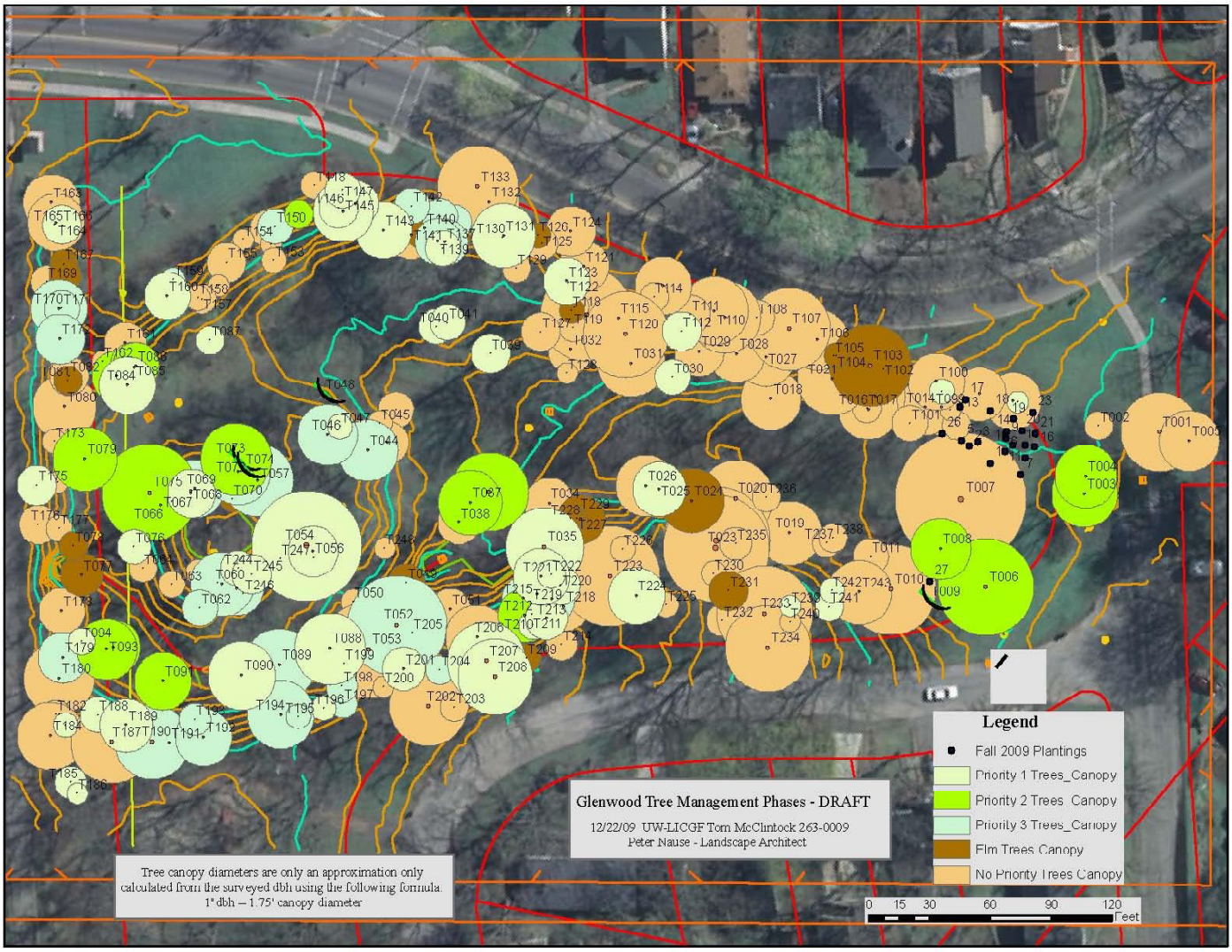
5. Management Activities to Accomplish DMNA Goals

Goal 1: Tree Health and Safety Issues:

All maintenance is listed in the inventory data sheets (Appendix A) and given a priority code. Priority trees are defined below and depicted in a layered map by Peter Nause and Tom McClintock. The map with all trees in the park (all layers visible) can be viewed below. This map was created using the inventory data listed in Appendix A. A larger version of the map can be examined in Appendix D.

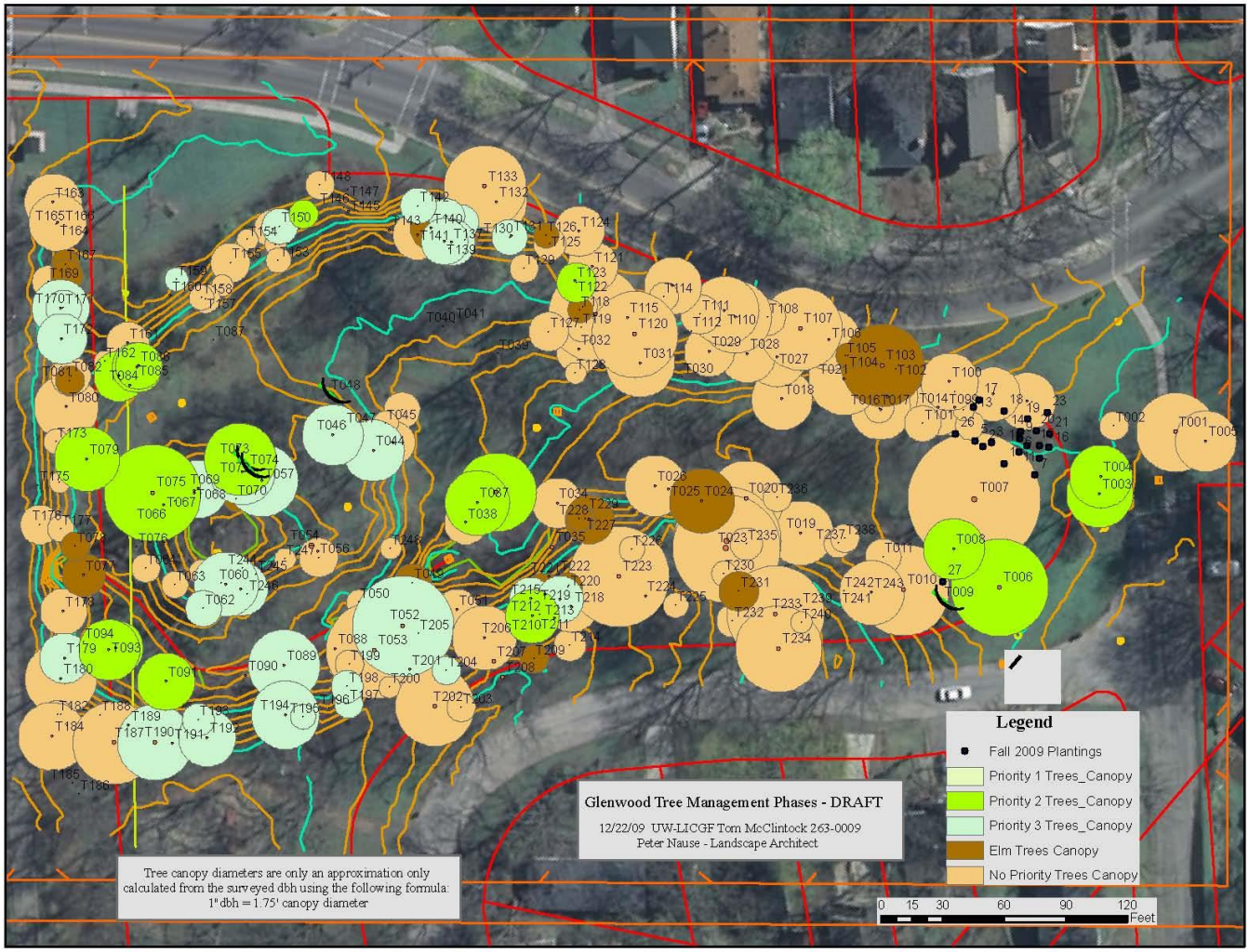
Updated maps reflecting actual removals after 2009 are depicted in section 8 (2013 Amendment)

Figure 5-1: Glenwood Tree Management Phases Map: All Trees


Glenwood Tree Management Phases - DRAFT
12/22/09 UW-LICGF Tom McClintock 263-0009
Peter Nause - Landscape Architect
Tree canopy diameters are only an approximation only calculated from the surveyed dbh using the following formula.
1" dbh = 1.75' canopy diameter
Legend
Fall 2009 Plantings
Priority 1 Trees_Canopy
Priority 2 Trees_Canopy
Priority 3 Trees_Canopy
Elm Trees Canopy
No Priority Trees Canopy
0 15 30 60 90 120
Feet

Priority One Trees: Tree work that is critical and necessary to ensure public health and safety. Priority One trees are standing dead, have severe hollows, large cracks, compromised buttress roots, extensive rot or extensive lean over a high traffic area. Elms currently infected with Dutch elm disease are also listed. As of 2013, the majority of critical and necessary tree work been completed. Trees that become a safety concern in the future will be evaluated as needed.

Figure 5-2: Glenwood Tree Management Phases Map with Priority One trees removed



Priority Two Trees: Tree work that is high priority and necessary to improve resources and eliminate potential safety issues in the park. Priority Two trees have some deadwood or minor structural issues, are invasive with a lower condition rating, are near power lines, or are hindering the growth of more desirable species. Priority two trees will be pruned and/or removed upon city staff's final determination.

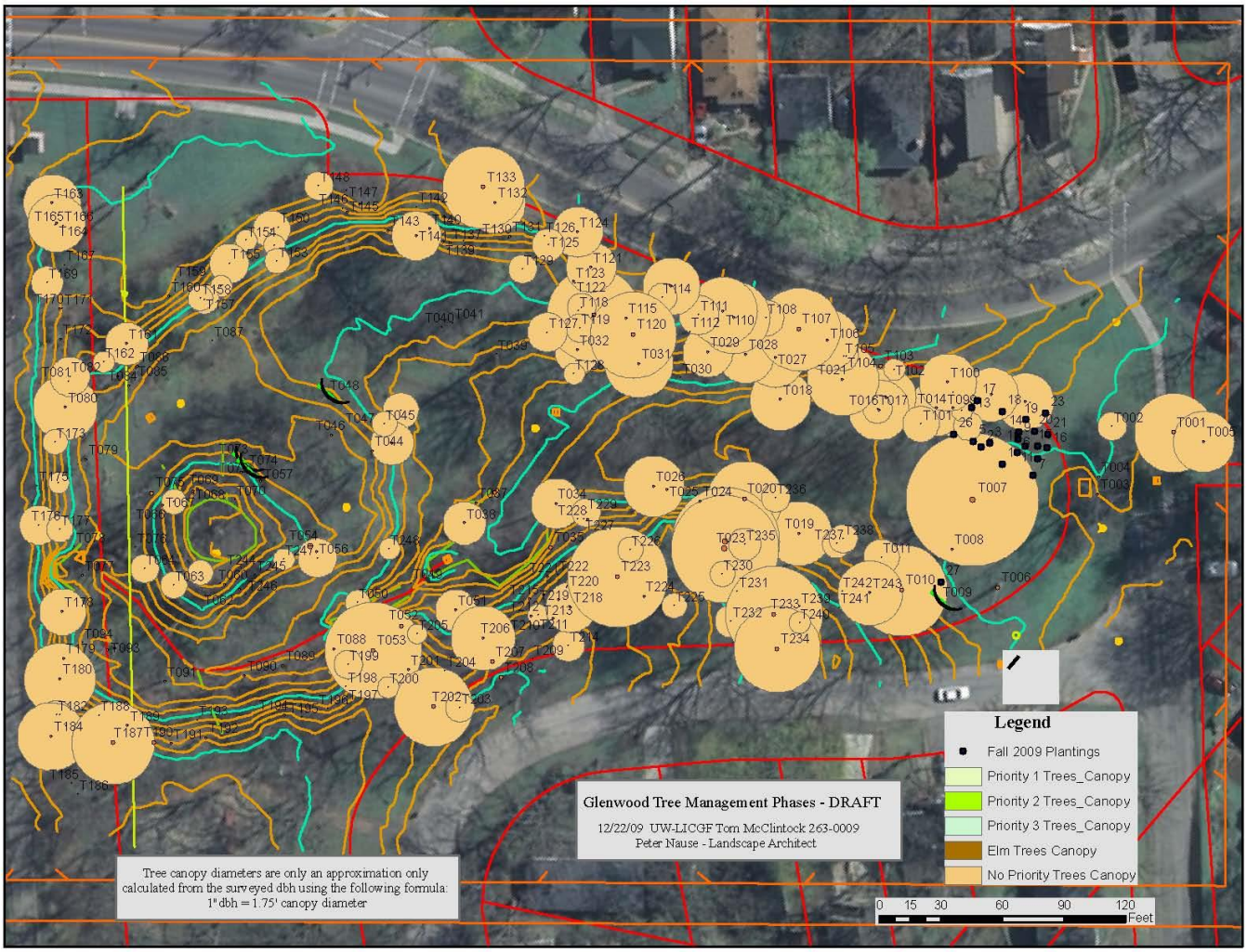
Priority Three Trees: These trees are last priority. This work is important for enhancing public use and the natural resources of the park, and would aspire to black locust elimination over the next 50 years. Priority Three tree work includes trees that are invasive but in acceptable condition, have minor deadwood or small defects not yet affecting the overall health or structure of the tree.

Elm trees are listed in a separate category. There is high pressure of Dutch elm disease in the park, and if left alone, these currently healthy trees are likely to become infected and require removal. Treatment for Dutch elm disease is available, but is generally not recommended by city officials due to labor, cost and efficacy issues. High value elm trees could be treated with a macro injection of Arbortect® Fungicide administered by a certified pesticide applicator. Costs of treatment will be reviewed in the budget tables under the Staff and Cost section (Appendix E) of this plan. New volunteer elms will be removed.

Two green ash trees were identified in the inventory, tree #11 and tree #111, and may be considered for preventative treatment for Emerald Ash Borer if the insect should be discovered within a 10-12 mile radius of Dane county. Both trees are healthy candidates for treatment, with less than 10% canopy dieback. The economics of treatment will need to be discussed in order to determine if benefits outweigh the costs of treatment. Estimated costs will be located in the budget tables under the Staff and Costs section. There are several insecticide products labeled to treat EAB. Among the most effective is a trunk injection of emamectin benzoate. This is the only product tested to be effective for more than one year, and provides a higher level of control than other treatments. This treatment will need to be administered by a professional. It is recommended that the DMNA be aware of EAB status, and can view EAB populations at www.emeraldashborer.info (North Central IPM Center, 2009).

The map depicted in Figure 5-5 shows all removals listed in Appendix E completed. As the timeframe for the removals has been amended, this map can give a general idea of mature specimens as the DMNA works towards the Plan goals.

Figure 5-5: Glenwood Tree Management Phases Map with Priority One, Two, Three and elm trees removed



Inventory Criteria:

For a complete list of trees and assigned priority, please see the inventory data sheets (Appendix A). Trees were assigned priority based on the above criteria and condition reports. Condition ratings were listed for each tree using the Council of Tree and Landscapers Guide for Plant Appraisal (9th Edition) approach. The condition ratings are created by assigning a score of 1 to 4 to each of five categories: Roots, Trunk, Scaffold Branches, Small Branches and Twigs and Foliage/Buds. Three of these categories are rated twice, once for structure and again for health. Small Branches and Twigs and

Foliage/Buds are rated only once for health. A score of 1 means there are extreme problems, a score of 2 indicates major problems, 3 equals minor problems and 4 is no apparent problems. The totals are added together, divided by the total points possible (32) and multiplied by 100 to give a condition rating. This rating is the number listed in the inventory data sheets (Appendix A).

Goal 2: Control of Black Locust in the Park, Working Towards Elimination:

The eventual elimination of black locust will be strategized in sections 9 and 10. Figure 5-5b shows an updated map of existing black locust in 2013.

Natural regeneration of black locust is most common by vegetative means of root suckering and stump sprouting. These sprouts will become more prolific in sunny areas, as well as loamy soils. The open gaps created by removals and the soils present in this site may promote re-sprouting, and prove to be a continuous maintenance issue for the park. Most black locust will re-sprout if the roots are not completely removed, and stump grinding is not recommended in this plan due to cost control and site disturbance (recommended by Russ Hefty, City of Madison Parks). Instead, stumps will be cut as low as possible, and the cuts will be followed by a herbicide treatment. If herbicide is not applied, re-sprouts can be cut until the food supplies are depleted, but this may take numerous cuttings and many years. A chainsaw is more efficient for larger stems (8-10 inches and up) Follow-up herbicide treatments will still be needed.

There has been some debate on the classification of black locust as a non native species to Wisconsin. Black locust is classified as non native in the DNR NR 40 Assessment, and this classification is assumed for the management strategies outlined below. Appendix F includes the NR 40 on black locust for further reference.

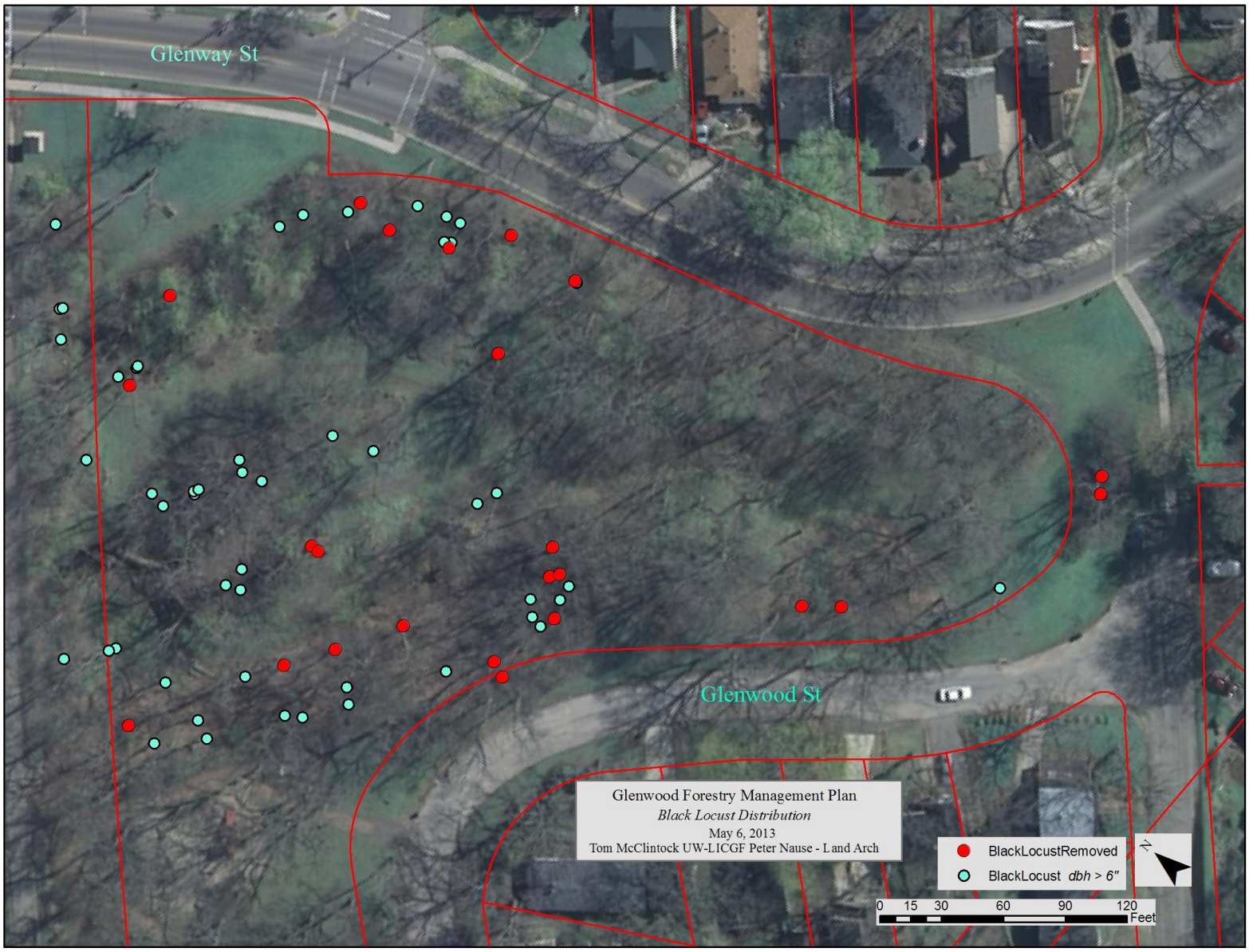


Figure 5-5b: 2013 Black Locust Distribution

Goal 3: Invasive Understory Control in a Safe and Effective Manner

Known invasives in the park such as buckthorn, ragweed, garlic mustard, and honeysuckle can quickly out compete and replace many native species. Removal priority should be given to these species whose inhabitancy pose the greatest threats by replacing desired species, reducing diversity and persisting indefinitely as sizable, spreading populations. Vigilant monitoring is necessary for early detection of new occurrences or increases in invasive species. Margaret Nelson lists plants of major invasive potential and locations they have been found in the park in her plant list in Appendix B. As removals take place and light gaps open, consistent monitoring and control will be an important yearly management strategy.

Chemical control may be justified when invasive species are pervasive and persistent in the natural community, and when effective non-chemical control methods do not adequately control invasive species populations. Herbicides should be applied by certified pesticide applicators, following label directions. Most annual or biennial broadleaf plants can be cut near ground level at or near the time of flowering but before seed or fruit develops. Cut stems must be removed from the site if flowers on the stem threaten to produce viable seeds.

Goal 4: Planting of Desired, Appropriate and Diverse Tree Species

Following each stage of tree removal, plantings will be required to prevent erosion and for aesthetic quality. A number of plants will be suitable in the gaps of light, and it is recommended that the DMNA collaborate on a more comprehensive landscape design. There is still discussion among the association as to how precisely historical design should be restored or incorporated. The following lists of plants are appropriate to achieve the immediate goals set forth by the DMNA. The shrub and groundcover lists are native plants that can be used to prevent erosion and invasives in the intermittent time period.

Recommended tree species:

- Swamp White x Bur Oak *Quercus x schuettei*
  This is a naturally occurring hybrid oak that transplants better than other species, is insect and disease resistant, tolerant of more alkaline soils, long-lived and very durable once it is established. This tree is shade intolerant and would be planted in a large light gap created by removals, or an existing open space in the park.

- White x Bur Oak *Quercus x bebbiana*
  This is a naturally occurring hybrid oak that transplants better than other species, is insect and disease resistant, tolerant of more alkaline soils, long-lived and very durable once it is established. This tree is shade intolerant and would be planted in a large light gap created by removals, or an existing open space in the park. This species is more suited to well drained and dry areas in the park (slopes and banks).

- Chinkapin Oak *Quercus muehlenbergii*
  This is also a Wisconsin native oak. It can also tolerate alkaline soils as well as very poor soils. This adds variety to the area, and is also very attractive to wildlife due to its small acorns. This tree is also shade intolerant.

- Ironwood* *Ostrya virginiana*
  This smaller tree is native to the understory in Wisconsin oak woodlands. It tolerates a variety of light conditions from full sun to shade, adds diversity and is insect and disease resistant. This tree should be planted on the interior of the park, away from streets and sidewalks due to its salt intolerance.

- American plum *Prunus Americana*
  This small native tree tolerates partial sun and is widely adaptable to soils in Wisconsin. This tree adds visual and biological diversity to the park.

- Shagbark or Butternut Hickory *Carya Ovata, Carya cordiformis*

Hickory trees are also a durable native. The shagbark will be more tolerant of partial shade, while the butternut will need full sun. The butternut is a slightly smaller tree, but is also faster growing. These trees have more of an upright canopy and can be stocked in smaller light gaps than oaks.

- *Musclewood** *Carpinus carolinianum*
  This is a smaller native tree that is tolerant of sun and shady conditions. It is an attractive species, and adds diversity for understory trees and layers.

Recommended shrubs for erosion control:

- Nannyberry* *Viburnum lentago*
- Ninebark *Physocarpus opulifolius*
- Dogwood spp. *Cornus spp.*
- Witchazel** *Hamamelis virginiana*

These plants are listed due to their prolific rooting structure and ability to adapt well to slopes and provide erosion control. This list is a starting point, meant to give some simple suggestions of plants that may fill areas in danger of site degradation due to removals or removal/pruning operations. There are many Wisconsin native shrubs that could be used in a landscape design plan for the park.

Recommended ground cover/perennials for erosion control:

- Canada Wild Ginger *Asarum canadense*
- Aster *Aster spp.*
- Prairie Smoke*** *Geum triflorum*
- Butterflyweed*** *Asclepias tuberose*
- Red Milkweed*** *Asclepias incarnata*
- Big Bluestem *Andropogon gerardii*
- Wild Bergamont *Monarda fistulosa*
- Virginia Wild Rye *Elymus virginicus*
- Woodland Brome Grass *Bromus purgans*
- Nodding Fescue *Fescue obtuse*

There are endless combinations of native Wisconsin perennials that can be incorporated into the groundcover. This list is emphasized for known erosion control on slopes.

Recommended sedges and grasses:

There are many native grass and sedge species suitable for woodland restoration. Most are available as seeds or mixtures of seeds and can be purchased from local nurseries. Seeding of sedges and grasses is recommended as cost effective way of controlling erosion, as seed is relatively inexpensive to purchase and can be spread by volunteers. Container plants can also be planted as close as a foot apart. A recommended reference to use while choosing plants is Landscaping with Native Plants of Wisconsin by Lynn M. Steiner

- Pennsylvania Sedge *Carex pensylvanica*
- Bottlebrush Grass *Hystrix patula*
- Big Bluestem *Andropogon gerardii*
- Side-oats Grama *Bouteloua curtipendula*

- Nodding Wild Rye *Elymus canadensis*
- Indian Grass Sorghastrum nutans
- Hairy Wood Rush *Luzula acuminate*
- American Millet Grass *Millium effusum*

*Plants tolerant of partial shade
**Plants tolerant of heavy shade
*** Plants good for ground cover, but not appropriate for erosion control
Suggestions added by Russ Hefty and Johnson's Nursery

6. Strategy

Pruning and Removals:

The trees of highest concern, trees with the lowest condition ratings and invasives outlined in the management sections are considered for removals first. Pruning of oak and elm trees are to take place no earlier than October 15th and no later than April 15th of any year. Removals of invasive trees under 6" will require minimal equipment.

Heavy equipment needed for removals and supplied by contractors:

- Chip truck
- 14-18" DBH brush chipper
- Bob Cat loader with grapple
- 35-45 ton off road crane
- 50-60' aerial boom truck

Equipment volunteers may use:

- Chainsaw: may be rented by the DMNA
- Climbing equipment: supplied by a trained/certified volunteer previously involved in tree care
- Handsaws and pruners: can be purchased by DMNA

Some trees will be able to be felled and cleaned up from the ground. If trees cannot be felled, they will be removed by climbers and bucket truck with possible crane assist.

Herbicide Treatments:

Immediately following black locust removals apply a cut-surface application of Garlon 3A, a selective translocated herbicide. Undiluted or diluted Garlon 3A (50% water) can be sprayed using a hand sprayer or painted on the stump using a brush or sponge applicator. Care must be taken to avoid drift or any run-off onto the ground, as other species may be harmed. Russ Hefty of the City of Madison Parks Department recommends Transline, a selective broad leaf herbicide, for controlling re-sprouts and seedlings. This herbicide would allow for seeding of some broad leaf plants as well as grasses and sedges (a cost efficient way to hold soil after black locust removals).

Equipment to be purchased by the DMNA:

- 5 gallon backpack sprayer
- Sponge Applicators
- Gloves and safety glasses

Planting:

A specific tree planting plan has not been developed for this plan. The DMNA has not decided if they want the park restocked with trees after removals. New landscape design may call for an open canopy, and it is not appropriate to recommend specific planting sites at this time. When/if the DMNA begins planting trees, examples of maintenance are added into the timeline, staff and cost sections below.

Before planting, the DMNA must consider the types of nursery stock available. Bare root trees are easily damaged due to weather extremes and drying out. It is best to transplant them prior to bud break. Their overall chance of survival is less than balled and burlapped stock, but they are less costly. Balled and burlapped stock will be heartier, but certain precautions must be made when choosing stock. Avoid all stock with damaged root balls, make sure at least two roots emerge from within 1 to 3 inches of the soil surface, and always maneuver the tree by the root ball and not the stem. Certified arborists generally recommend removing the burlap and at least 1/3 of the wire basket before planting (Watson G., Himelick, E.B., 2005). Container trees are also an option, but care must be taken to straighten roots that have curled around the sides of the container. Container trees will need to be watered frequently before planting.

In the meantime, open areas should be planted with a shrub layer and groundcover to prevent erosion and site degradation. Russ Hefty has recommended an adaptive restoration approach to invasive control and planting. This approach will refrain from planting large quantities of trees and shrubs until exotics are controlled in a given area; planting native grasses, sedges and groundcover instead to hold the soil and suppress invasives. Advantages include lower cost, eliminating the difficulty in controlling invasives with new trees and shrubs in the area, allowing time to develop a landscape design for the park, and fast establishment with low maintenance.

Suggested species are listed in the Management section above. Planting and/or seeding should immediately follow the groups of removals. If herbicide treatments are used, planting may have to be delayed in the area for the time specified on the product label. The severity of invasive/exotic pressure will remain unknown until removals begin and the canopy is opened.

Grasses should be planted after all danger of frost has passed, and will need to be watered well after planting. Grasses and sedges should require little maintenance once established. Container plants can be planted as close as 1 foot apart.

Wood Disposal:

Options for wood disposal, other than a hired contractor disposing of the wood, will have to be approved by the City of Madison Parks Administration. Some suggestions include:

- Allowing a portable sawmill to mill the wood into useable lumber for benches or other park structures (i.e. bridges, shelters and signs).
- Wood chips for path development
- Firewood to be used in the park

Public Awareness:

Public awareness and education will be important for all activities proposed in the Management Plan. Below is a list of outreach activities to inform the public of planned management activities:

- DNMA Parks Committee to post signs at park entrances with an explanation of the activity, times and dates of the activity and contact number for more information. Signs should be posted at least one week in advance.
- Update DMNA website frequently.
- Make announcements at the April annual meeting for work being done that year.
- Hold one community meeting at least one month ahead of time for all activities.
- Park updates to be posted in The Hornblower.

7. Implementation Strategies: Amended in 2013

Implementation strategies incorporate a basic level of management for the southeast and southwest sections of the park as typical southern Wisconsin woodland. There is a focus on maintaining and preserving high value trees and offering minimal maintenance strategies to control invasive woody plants. Strategies to be detailed will include:

- Identifying high value trees and managing the competing resources near them.
- Elimination of seed-bearing invasives through both chemical and mechanical means.
- Establishing a longer-term policy for continuing to maintain and restore the park beyond the original 7-year Plan timeframe.
- To briefly address how the forest management actions integrate with possible actions for historic preservation, restoration and landscape maintenance.
- To address landscape maintenance and restoration issues that are not specifically "forest management".
- To consider what the park will look like in 5, 25, 50 years

8. Forest Management Units and Recommendations

Although the park is small, in order to detail management strategies, the north section of the park must be distinguished from the south. The south section of the park is wooded, with a promising understory of desirable trees. The management strategies below have been designed to preserve woodland character, and enhance species diversity in future years.
The diverse topography and vegetation of the north section of the park lends itself to a more detailed level of management. This area can be sectioned off into smaller management units, where removals and subsequent landscaping can take place over time. A map of the units is shown in Figure 5-7
A flexible schedule of improvement and a basic level of maintenance will be outlined for each section to preserve work completed, with actual schedules depending on resource availability.
The majority of critical and necessary tree work (as listed in section 5 of the original plan) has been completed. Trees that become a safety concern in the future will be evaluated as needed. All other locust trees will no longer be classified as priority removals, rather, will be managed using the strategies listed under each management unit below. This will allow for a more flexible timeline that coincides with resources available to complete the work, and public acceptance. All potential hazard trees, in all sections, are recommended for removal based on City Forestry final determination. The park should be evaluated by a qualified professional as potential tree hazard situations arise.

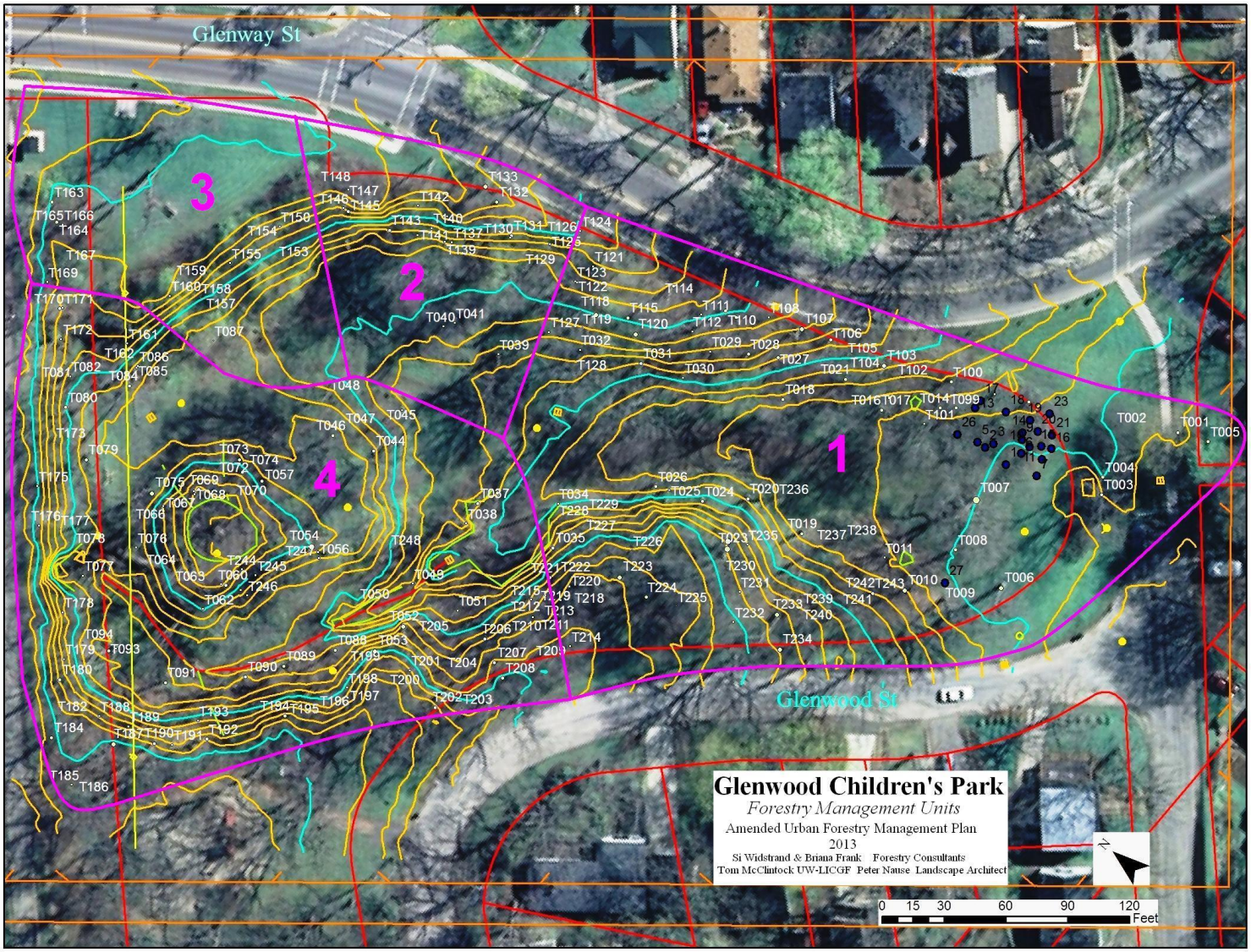


Figure 5-7: Forestry Management Units

Unit 1

Description: This unit comprises the Southeast and Southwest oak woodland of Glenwood Children's Park. The area has quality understory trees and plants, and the strategy outlined below aims to maintain woodland character while continually managing for invasives and improving species diversity.

Strategy: Eradicate the few remaining locusts (except specimen #006). Remove other invasives within 3 years and work to improve the shrub and wildflower layers. Use herbicide on the cut stumps of all invasives removed in eradication areas.

Replanting is not necessary for erosion control, however it will benefit diversity and forest health. Suggested species include:

Shrub layer:	Serviceberry (sun to partial shade)	
	Dogwood (partial shade tolerant)	
	Chokecherry (sun to shade)	
	Musclewood (partial shade)	
	Witchhazel (shade tolerant)	
Wildflower layer:	See Appendix C and pages 17-19 for complete lists of suggested trees, shrubs and groundcovers.	

Tree Removals:	Tag 217	13” locust	crowding oak #223 and maple #218
	Tag 220	11” locust	crowding oak and maple
	Tag 33	14”elm	crowding oak #223
	Tag 219	8” elm	crowding maple #218
	Tag 226	7” hackberry	crowding oak #223
	Tag 227	6” elm	crowding oak #223

Schedule:

2013

- Cut and treat with herbicide all inventoried locusts (except #6), all smaller locusts and re-sprouts
- Remove three 6-14” diameter elms that are crowding mature oaks and maples.
- Cut and treat all seed-bearing invasives (honeysuckle, buckthorn, norway maple, female box elder and mulberry)
- Cut and treat all invasives under 6" diameter.

2014

- Remove all non-future-canopy trees under 6" diameter (elm, ash, box elder and mulberry), treating stumps of all removals except those within 30' of known root-grafters that are being preserved.
- Add tree, shrub and wildflower plantings to enhance future diversity.

2015 and on

- Remove 6-12" diameter non-future-canopy trees when they significantly shade better future canopy trees.
- Continue to control all invasive species.
- Continue to add plantings.

Units 2 and 3

Description: Units 2 and 3 comprise the North third of the East edge. This area is divided into two units because, although they share the same strategy, they will have different schedules. Unit 2 is the south half. Unit 3 is the north half.

Strategy: Eradicate locusts and other invasives in stages over 2-5 years and replant slopes and other areas with natives trees, shrubs and wildflowers. This unit has the highest light levels in the park and has some steep slopes. There are few large canopy trees to be retained, but there are numerous small trees, shrubs and earlier plantings that can be incorporated into new planting plans. The goal here will be a Jensen style planting. Desirable natives will be preserved, including 2009 plantings shown in Figure 5-5 and any other natives found in the understory. Cover crops of Virginia Wild Rye and Brown Eyed Susan will be seeded in immediately following the removals of trees 10" in diameter and above. Detailed planting plans will require final approval by City staff. The plans should consider design, erosion control, planting, schedule, follow-up maintenance, etc.

Unit 2 Removals:

Tag 148	8" mulberry	remove 2013 if seed-bearing
Tag 122	11" locust	
Tag 134	10" locust	
Tag135	10" locust	
No tag	12" locust	15' north of 135
Tag 137	13" locust	
Tag 139	13" locust	
Tag 149	8" locust	
Tag 150	10" locust	

Unit 2 Schedule:

2013

- Cut and treat with herbicide all inventoried locusts, all smaller locusts and re-sprouts.
- Cut and treat all seed-bearing invasives (honeysuckle, buckthorn, female box elder and mulberry).
- Cut and treat all invasives under 6" diameter.
- Control all invasives on the bank and other areas planned for replanting
- Plant native rye grass for erosion-control and covercrop on any bare soil on the bank.

2014

- Selectively remove some non-future-canopy trees under 6" diameter (elm, ash, box elder and mulberry) to allow sufficient light to reach all areas of the bank planting.
- Leave enough live trees, shrubs and dead roots to stabilize the bank, and construct erosion control measures.
- Construct erosion control measures.
- Control invasives, plant the permanent groundcover and use erosion control matting.
- Add tree and shrub plantings on top of the bank to enhance future diversity (Units 2 and 3 are the only unit that have enough light for oaks.

- Do careful maintenance of new plantings to remove invasives and ensure survival of the plantings.

2015 to 2016

- Add shrub and wildflower plantings on the steep slope, with careful maintenance.

2016 and on

- Remove 6-12" diameter non-future-canopy trees when they significantly shade better future canopy trees.
- Continue to control all invasive species.
- Continue to add plantings.

Unit 3 Removals: 6 box elders; 6-10" remove seed-bearing trees in 2013
remove others later when they crowd better trees

Unit 3 Schedule:

2013

- Cut and treat with herbicide all inventoried locusts, all smaller locusts and re-sprouts
- Plant native rye grass for erosion-control and covercrop on any bare soil on the bank.

- Remove all seed-bearing invasives (honeysuckle, buckthorn, female box elder and mulberry) to prevent them from seeding into the restoration area in Unit 2.
- Leave other trees for screening while Unit 2 is being restored.

2014

- Control herbaceous invasives in preparation for future restoration planting.
- Plant oaks and hickories to create a mowed grove in the mowed area around the two big locusts along Glenway Street. The new oaks will add diversity and provide trees when the two big locusts eventually die.

2015

- Control herbaceous invasives in preparation for future restoration planting.

2016 (or later, after restoration of Unit 2 is completed)

- Control all invasives on the bank and other areas planned for replanting

2017

- Remove all non-future-canopy trees under 6" diameter (elm, ash, box elder and mulberry).
- Construct erosion control measures.
- Control invasives, plant the permanent groundcover and use erosion control matting.

- Do careful maintenance of new plantings to remove invasives and ensure survival of the plantings.

2018-2019

- Add shrub and wildflower plantings on the steep slope, with careful maintenance.

2018 and On

- Remove 6-12" diameter non-future-canopy trees when they significantly shade better future canopy trees.
- Continue to control all invasive species.
- Continue to add plantings.

Unit 4

Description: Locust grove in NE corner, including council ring and edge along bike path.

Strategy: Most of this area is very steep, and it includes the highest concentration of large locusts in the park. To efficiently restore and maintain other sun-loving landscape materials that Jensen originally proposed would require extensive locust removal and a site that was all able to be mowed, without the steep slopes. Well-adapted trees for this site are sun-loving black locusts (invasive) and shade-tolerant hackberry (native). The plan recognizes a naturally-occurring change in canopy from this generation of locusts to a next generation of hackberries and other natives. Allow the canopy locust to remain until they are eliminated through attrition (50 years?) The goal will be to allow canopy locusts to remain, but to promote a different sub-canopy that will eventually become dominant. A protocol is suggested for which locusts could be selectively removed through this period.

Tree Removals: Trees deemed hazardous by city staff.

Schedule:

2013

- Hazardous trees should be removed, but all other locusts will remain.
- Cut and treat other seed-bearing invasives (honeysuckle, buckthorn, female box elder and mulberry) adjacent to Unit 2.

2014

- Remove all seed-bearing invasives (honeysuckle, buckthorn, Norway maple, female box elder and mulberry), treating stumps of all removals here and below, except those within 30' of known root-grafters that are being preserved.
- Remove all invasives under 6" diameter.

2015

- Remove all non-future-canopy trees under 6" diameter including locusts (also elm, ash, box elder and mulberry).
- Add tree, shrub and wildflower plantings to enhance future diversity.

2016 and On

- Remove 6-12" diameter locusts and non-future-canopy trees when they significantly shade better future canopy trees.
- Continue to control all invasive species except the large locusts.
- Continue to add plantings.

Summary of Work for Each Year by Unit

2013

- Cut and treat with herbicide all inventoried locusts (except #6), all smaller locusts and resprouts in Units 1, 2, 3. This includes 10 locusts from 8-13" diameter.
- Remove three 6-14" diameter elms and a 7" hackberry that are crowding mature oaks and maples in Unit 1.
- Cut and treat all seed-bearing invasives (honeysuckle, buckthorn, norway maple, female box elder and mulberry), except locusts being preserved, in units 1, 2, 3, 4. There are 6 box elders and 2 mulberries from 6-11" diameter in Units 2-3. Seed-bearing ones will be removed in 2013. Others will be removed later when they crowd better plantings.
- Cut and treat all invasives under 6" diameter in Units 1, 2.
- Control all invasives on the bank and other areas planned for replanting in Unit 2.

2014

- Remove all non-future-canopy trees under 6" diameter (locust, elm, ash, box elder and mulberry), treating stumps of all removals except those within 30' of known root-grafters that are being preserved in Units 1, 2, 4.
- Add tree, shrub and wildflower plantings to enhance future diversity in Unit 1.
- Construct erosion control measures in Unit 2.
- Control invasives, plant the permanent groundcover and use erosion control matting in Unit 2.
- Add tree and shrub plantings on top of the bank to enhance future diversity in Units 2 and 3 (the only units that have enough light for oaks.)
- Do careful maintenance of new plantings to remove invasives and ensure survival of the plantings in Unit 2.
- Control herbaceous invasives in preparation for future restoration planting in Unit 3.

2015

- Remove 6-12" diameter non-future-canopy trees when they significantly shade

better future canopy trees in Units 1, 2, 4.
- Continue to control all invasive species in Units 1, 2, 4.
- Continue to add plantings in Units 1, 2, 4.
- Control herbaceous invasives in preparation for future restoration planting in Unit 3.

2016
- Remove 6-12" diameter non-future-canopy trees when they significantly shade better future canopy trees in Units 1, 2, 4.
- Continue to control all invasive species in Units 1, 2, 4.
- Continue to add plantings in Units 1, 2, 4.

2017
- Remove all non-future-canopy trees under 6" diameter (elm, ash, box elder and mulberry) in Unit 3.
- Construct erosion control measures in Unit 3.
- Control invasives, plant the permanent groundcover and use erosion control matting in Unit 3.
- Remove 6-12" diameter non-future-canopy trees when they significantly shade better future canopy trees in Units 1, 2, 4.
- Continue to control all invasive species in Units 1, 2, 4.
- Continue to add plantings in Units 1, 2, 4.

2018 and On
- Add shrub and wildflower plantings on the steep slope in Unit 3, with careful maintenance.
- Remove 6-12" diameter non-future-canopy trees when they significantly shade better future canopy trees in Units 1, 2, 3, 4.
- Continue to control all invasive species in Units 1, 2, 3, 4.
- Continue to add plantings in Units 1, 2, 3. 4.

9. Continuing Maintenance/Long Term Policy

This section aims to establish a long term policy for continuing maintenance in the park, including volunteer and neighborhood support. Volunteers are needed for the short term implementation of the Plan goals, as well as for long-term maintenance of plantings and controlling the non-native species that will continue to invade. In addition to work that can be completed by volunteers, there will sometimes be work done by City staff or by contractors, paid by City and/or neighborhood or donated funds.

Short Term Maintenance Guidelines

Short term maintenance will focus on project implementation, and will vary as projects change. For example, the project to restore native vegetation to the slope behind the redbud circle will include the following:

1. Cut woody invasives and treat stumps with herbicides
2. Remove herbaceous invasives and deplete the invasive seed bank by repeated removal of seedlings (manually or with herbicides).
3. Build and maintain erosion control structures on steep slopes
4. Plant a mix of native seeds
5. Install and maintain an erosion control mat that will be stable until seed is established
6. Manually remove weeds on a regular basis until the native seeding is well established

Long Term General Maintenance Guidelines

Long term maintenance will focus on preserving past progress while allowing for future progress on a flexible schedule. Basic guidelines include the following:

1. Thin small trees as necessary to promote a diverse future canopy.
2. Continue the removal of invasive trees, shrubs and groundcovers, except for the large locusts identified for preservation.
3. Continue planting where there are opportunities to add to species diversity.
4. Maintenance of the park, such as litter, trail maintenance, erosion control, etc.
5. Monitor the park for user conflict and control issues.

Maintenance will be guided by the Jensen concept plan (although specific details might change) to utilize and promote native plants, and within the management concepts approved by the Park Commission. Implementation details cannot all be known now. They will be developed over the years to incorporate the Jensen plan concepts, and will adapt to changing conditions of the forest and landscape. City staff will coordinate with the neighborhood and volunteers, and will review and approve the details of volunteer work and small grant improvements.

10. Historic Preservation and Landscape Maintenance

The management plan recognizes the design features of the historic Jensen Plan. It also recognizes that the environmental context has changed since Jensen's time, requiring adjustment of the detailed implementation. Jensen's plan was created for an open sunny site in the north half of the park. Today and into the future we have a shadier forest setting for most of the park, requiring adjustment of some of the species and other details from Jensen's plans. For example, the sun-loving crabapple circle has been reconstituted as the shade-tolerant redbud circle.

Within the forest context, we hope there are future opportunities to maintain and improve the Jensen features or other specific landscape features. It may also be possible to establish a few "wildflower garden" locations which display collections of native plants in appropriate settings. Over time, small project areas will be identified, with implementation plans developed in conjunction with the neighborhood association and park volunteer support group. Approval by City staff will be required before installing a specific landscape plan. The first project will likely be the redbud back slope. A later year might include plantings in the maple circle, etc. These specific design treatments will occur periodically in addition to the ongoing program of maintaining the whole park (removing invasives, adding appropriate native plants from the approved lists, etc.)

11. Glenwood Children's Park in 5, 25 and 50 Years

What will the park look like in 5, 25, 50 years? As detailed in Chapter 9, the park will be divided into four management units that will be managed differently. The goal of eventual elimination of black locust will be reached in different timeframes for different units, but the canopied woodland character of the site will remain. Locusts may be eradicated in the first year in some units where there are few left. Eradication may take 50 years around the council ring where they will only be eliminated through attrition. Throughout the park, if invasive control and wildflower plantings are continued for 50 years, the park will develop a striking woodland character more typical of the steep valleys of the Drift-less Area.

The most notable and attractive change will be Units 2-3 in the bowl around the redbud circle. This area currently contains many small and re-sprouting invasives, bare soil on steep slopes and few large canopy trees to be retained. In 5 years, selective removals and replanting will be underway. In 25 years it will be well-vegetated with native plantings in the Jensen style. In 50 years, it will have a more canopied woodland character due to tree growth, but it will remain the sunniest opening in the park interior.

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Peter Nause and Tom McClintock generously donated time towards creating the layered maps for this project.

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Appendix A

Tree Inventory Data, Stephenson Tree Care, Inc. 2009

ID #	Date	Species	DBH	Ht.	% Dead-wood	Condition Rating	Maint.	Priority	NOTES
1	9/3/09	Norway Maple - Acer platanoides	22"	50'	5	81.2	N/A	N/A	
2	9/3/09	Crabapple - Malus spp.	8"	20'	5	96.9	N/A	N/A	
3	9/3/09	Black Locust - Robinia pseudoacacia	18.5"	65'	8	71.9	Remove	2	Invasive, provides some aesthetic qualities
4	9/3/09	Black Locust - Robinia pseudoacacia	17.5"	65'	5	59.4	Remove	2	Invasive, provides some aesthetic qualities
5	9/3/09	White Pine - Pinus strobus	17"	60'	3	96.9	N/A	N/A	
6	9/3/2009	Black Locust - Robinia pseudoacacia	27"	90'	5	68.8	Remove	N/A	
7	9/3/2009	Hackberry - Celtis occidentalis	37"	95'	5	84.4	Major Prune	1	Co-dominant leader has severe wound, and hollow, must be removed or heavily subordinated.
8	9/3/2009	White Oak - Quercus alba	17"	30'	10	68.8	Remove	2	Bacterial pockets, declining health, high-traffic area
9	9/3/2009	Removed	N/A	N/A	N/A	0	N/A	N/A	Previously removed
10	9/3/2009	White Oak - Quercus alba	25.5"	80'	10	81.3	Minor Prune	1	Dead wood over path, high traffic

11	9/3/2009	Green Ash - Fraxinus pennsylvanica	10"	50'	8	96.9	Minor Prune	3	Structure
12	9/3/2009	Black Walnut - Juglens nigra	16"	50'	3	93.8	N/A	N/A	
13	9/3/2009	Hackberry - Celtis occidentalis	15.5"	55'	3	93.8	N/A	N/A	
14	9/3/2009	Hackberry - Celtis occidentalis	15.5"	55'	3	93.8	N/A	N/A	
15	9/3/2009	Sugar Maple - Acer saccharum	16.5"	65'	3	96.9	N/A	N/A	
16	9/3/2009	Hackberry - Celtis occidentalis	16, 8"	60'	3	71.9	Major Prune	1	Remove 8" co dominant stem
17	9/3/2009	American Elm - Ulmus americana	8"	50'	5	87.5	Treat/ Remove	3	
18	9/3/2009	White Oak - Quercus alba	17"	60'	7	68.8	Minor Prune	3	Dead wood, desirable species
19	9/3/2009	Black Walnut - Juglens nigra	18"	85'	10	93.8	N/A	N/A	
20	9/3/2009	Burr Oak - Quercus	21"	55'	15	62.5	Remove	1	Large crack in stem/ leader
21	9/3/2009	Sugar Maple - Acer saccharum	20"	75'	3	96.9	N/A	N/A	

22	9/3/2009	Hackberry - Celtis occidentalis	30"	90'	5	87.5	N/A	N/A	
23	9/3/2009	Hackberry - Celtis occidentalis	30"	90'	10	93.8	Minor Prune	3	Dead wood
24	9/3/2009	American Elm - Ulmus americana	18"	55'	3	93.8	Treat/ Remove	2	
25	9/3/2009	Black Walnut - Juglens nigra	15"	50'	100	0	Remove	1	Standing dead
26	9/3/2009	Black Walnut - Juglens nigra	17"	85'	15	81.3	N/A	N/A	
27	9/3/2009	Sugar Maple - Acer saccharum	16.5"	55'	3	96.9	N/A	N/A	
28	9/3/2009	Sugar Maple - Acer saccharum	16"	60'	3	93.4	N/A	N/A	
29	9/3/2009	Sugar Maple - Acer saccharum	14"	55'	3	96.9	Minor Prune	3	Subordination of co dominant stem
30	9/3/2009	Black Walnut - Juglens nigra	10"	50'	5	78.1	Remove	1	
31	9/3/2009	Hackberry - Celtis occidentalis	19"	55'	5	90.6	N/A	N/A	
32	9/3/2009	Hackberry - Celtis occidentalis	13"	55'	10	93.8	N/A	N/A	

33	9/3/2009	American Elm - Ulmus americana	13.5"	55'	5	87.5	Treat/ Remove	2	
34	9/3/2009	Hackberry - Celtis occidentalis	14"	60'	2	96.9	N/A	N/A	
35	9/3/2009	Black Locust - Robinia pseudoacacia	22"	90'	10	43.8	Remove	1	Invasive
36	9/3/2009	Black Locust - Robinia pseudoacacia	22"	85'	5	75	Remove	2	
37	9/3/2009	Black Locust - Robinia pseudoacacia	18"	80'	10	75	Remove	2	Remove hackberry as well
38	9/8/2009	Hackberry - Celtis occidentalis	12"	60'	10	84.4	N/A	N/A	
39	9/3/2009	Black Locust - Robinia pseudoacacia	11"	55'	15	0	Remove	1	Invasive
40	9/3/2009	Hackberry - Celtis occidentalis	10"	50'	10	0	Remove	1	Compromised root flair
41	9/3/2009	Hackberry - Celtis occidentalis	10"	40'	10	0	Remove	1	
42	9/8/2009	Hackberry - Celtis occidentalis	10"	30'	2	84.4	N/A	N/A	

43	9/8/2009	Hackberry - Celtis occidentalis	12"	50'	5	90.6	N/A	N/A	
44	9/8/2009	Black Locust - Robinia pseudoacacia	17, 18"	80'	15	75	Remove	3	Co dominance may compromise structural integrity
45	9/8/2009	Hackberry - Celtis occidentalis	7"	30'	10	90.6	N/A	N/A	
46	9/8/2009	Black Locust - Robinia pseudoacacia	17"	70'	15	93.8	Remove	3	Invasive, provides erosion control
47	9/8/2009	American Elm - Ulmus americana	7"	30'	100	0	Remove	1	Standing Dead
48	9/8/2009	American Elm - Ulmus americana	N/A	N/A	N/A	0	N/A	N/A	Previously removed
49	9/8/2009	American Elm - Ulmus americana	10.5"	30'	15	75	Minor Prune, Treat	2	Remove vine, Dead wood
50	9/8/2009	American Elm - Ulmus americana	7"	30'	3	84.4	Monitor	3	Compromised root flair
51	9/8/2009	Hackberry - Celtis occidentalis	11.5"	50'	10	84.4	Monitor	3	Trunk Wound
52	9/8/2009	Black Locust - Robinia pseudoacacia	28"	90'	15	53.1	Remove	3	Invasive, dominant tree

53	9/8/2009	Hackberry - Celtis occidentalis	27"	80'	10	84.4	N/A	N/A	
54	9/8/2009	Black Locust - Robinia pseudoacacia	31"	80'	20	75	Remove	1	Close to fire ring, Poor trunk taper
55	9/8/2009	Black Locust - Robinia pseudoacacia	14"	60'	15	68.8	Remove	1	Large wound
56	9/8/2009	Hackberry - Celtis occidentalis	11"	50'	5	90.6	N/A	N/A	
57	9/8/2009	Black Locust - Robinia pseudoacacia	20"	60'	15	78.1	Remove	3	Invasive, provides erosion control
58	9/8/2009	Black Locust - Robinia pseudoacacia	15"	50'	15	87.5	Remove	3	Invasive, provides erosion control
59	9/8/2009	Black Locust - Robinia pseudoacacia	18"	50'	20	84.4	Remove	3	Invasive, provides erosion control
60	9/8/2009	American Elm - Ulmus americana	11"	30'	10	93.8	Treat/ Remove	2	
61	9/8/2009	Hackberry - Celtis occidentalis	7"	20'	5	75	N/A	N/A	
62	9/8/2009	Box elder - Acer negundo	10"	30'	15	81.3	Remove	7	Less desirable, minor trunk defects

63	9/8/2009	Hackberry - Celtis occidentalis	7.5"	20'	5	75	N/A	N/A	
64	9/8/2009	American Elm - Ulmus americana	8"	40'	10	0	Monitor	1	Infected tree may be root grafted
65	9/8/2009	Butternut Hickory -	7"	30'	10	40.6	N/A	N/A	
66	9/8/2009	Black Locust - Robinia pseudoacacia	14"	50'	15	87.5	Remove	3	Invasive, erosion control
67	9/8/2009	Black Locust - Robinia pseudoacacia	13.5"	40'	50	56.3	Remove	1	Leans over fire circle, Invasive
68	9/8/2009	Black Locust - Robinia pseudoacacia	14"	60'	10	78.1	Remove	3	Invasive, Provides erosion control
69	9/8/2009	Black Locust - Robinia pseudoacacia	16"	60'	15	87.5	Remove	3	Invasive, provides erosion control
70	9/8/2009	American Elm - Ulmus americana	7"	30'	5	96.9	Treat/ Remove	3	
71	9/8/2009	Black Locust - Robinia pseudoacacia	18"	60'	15	90.6	Remove	3	Invasive, provides erosion control
72	9/8/2009	American Elm - Ulmus americana	Removed	N/A	N/A	0	N/A	N/A	Previously removed

73	9/8/2009	Black Locust - Robinia pseudoacacia	20"	50'	10	87.5	Remove	3	Invasive, provides erosion control
74	9/8/2009	American Elm - Ulmus americana	Removed	N/A	N/A	0	N/A	N/A	Previously removed
75	9/8/2009	Black Locust - Robinia pseudoacacia	27"	90'	15	84.4	Remove	2	Invasive, near communication lines
76	9/8/2009	American Elm - Ulmus americana	9.5"	40'	30	0	Remove	1	Infected with Dutch elm disease
77	9/8/2009	American Elm - Ulmus americana	12"	40'	5	84.4	Treat/ Remove	1	Close proximity to infected elms
78	9/8/2009	American Elm - Ulmus americana	8"	30'	5	75	Treat/ Remove	2	
79	9/8/2009	Black Locust - Robinia pseudoacacia	18"	60'	10	90.6	Remove	2	Invasive
80	9/8/2009	Black Walnut - Juglens nigra	18"	50'	10	87.5	N/A	N/A	
81	9/3/2009	American Elm - Ulmus americana	8"	55'	2	93.8	Treat/ Remove	3	
82	9/3/2009	Black Walnut - Juglens nigra	11"	60'	2	96.9	N/A	N/A	
83	9/3/2009	Black Locust - Robinia pseudoacacia	14"	55'	20	87.5	Remove	2	Invasive

84	9/3/2009	Black Locust - Robinia pseudoacacia	16"	60'	15	71.9	Remove	1	split over path, priority for removal
85	9/3/2009	Black Locust - Robinia pseudoacacia	14"	65'	20	87.5	Remove	2	Invasive
86	9/3/2009	Black Locust - Robinia pseudoacacia	13"	60'	15	90.6	Remove	2	Invasive
87	9/3/2009	Hackberry - Celtis occidentalis	8"	30'	3	96.9	N/A	N/A	
88	9/8/2009	Black Locust - Robinia pseudoacacia	20"	70'	90	31.3	Remove	1	Very poor condition
89	9/8/2009	Black Locust - Robinia pseudoacacia	20"	70'	20	84.4	Remove	3	Invasive
90	9/8/2009	Black Locust - Robinia pseudoacacia	19"	80'	20	31.3	Remove	1	Large wound, priority for removal
91	9/8/2009	Black Locust - Robinia pseudoacacia	16"	80'	15	81.3	Remove	2	Invasive
92	9/8/2009	Black Locust - Robinia pseudoacacia	15"	70'	15	68.8	Remove	2	Invasive
93	9/8/2009	Black Locust - Robinia pseudoacacia	17"	70'	10	68.8	Remove	2	Invasive

94	9/8/2009	American Elm - Ulmus americana	7, 5"	20'	100	0	Remove	1	Standing dead
95	9/17/2009	Hackberry - Celtis occidentalis	6"	25'	3	84.4	Remove	1	Black walnut growth will be compromised
96	9/17/2009	Black Walnut - Juglens nigra	15"	50'	5	93.8	N/A	N/A	
97	9/17/2009	Hackberry - Celtis occidentalis	8"	40'	5	93.8	N/A	N/A	
98	9/17/2009	Hackberry - Celtis occidentalis	6"	30'	5	93.8	N/A	N/A	
99	9/17/2009	Hackberry - Celtis occidentalis	7"	20'	5	81.3	Remove	1	Heavy lateral growth
100	9/17/2009	Hackberry - Celtis occidentalis	16"	55'	5	90.6	N/A	N/A	
101	9/17/2009	Hackberry - Celtis occidentalis	10"	50'	3	93.8	N/A	N/A	
102	9/17/2009	Hackberry - Celtis occidentalis	6"	20'	5	84.4	N/A	N/A	
103	9/17/2009	American Elm - Ulmus americana	23"	60'	5	87.5	Treat/ Remove	1	
104	9/17/2009	American Elm - Ulmus americana	7"	35'	3	84.4	Remove	2	Close proximity to Hop-Hornbeam

105	9/17/2009	Hophornbeam- Ostrya virginiana americana	8"	20'	5	84.4	N/A	N/A	
106	9/17/2009	Sugar Maple - Acer saccharum	17"	65'	80	25	Remove	1	Close to road, may be dead by spring 2010
107	9/17/2009	White Oak - Quercus alba	23"	65'	5	81.3	N/A	N/A	
108	9/17/2009	Hackberry - Celtis occidentalis	10"	40'	3	81.3	N/A	N/A	
109	9/17/2009	Sugar Maple - Acer saccharum	20"	55'	10	50	Major Prune	1	Low co dominant stem with large wound aging over road should be removed, high priority
110	9/17/2009	Hackberry - Celtis occidentalis	19"	60'	5	100	N/A	N/A	
111	9/17/2009	Green Ash - Fraxinus pennsylvanica	11"	60'	8	84.4	N/A	N/A	
112	9/17/2009	Black cherry - Prunus serotina	11"	50'	100	25	Remove	1	Leans over road, extensive rot, could almost be pushed over, high priority
113	9/17/2009	Black Walnut - Juglens nigra	16"	60'	10	96.9	N/A	N/A	
114	9/17/2009	Hackberry - Celtis occidentalis	8"	45'	5	90.6	N/A	N/A	

115	9/17/2009	Sugar Maple - Acer saccharum	16"	60'	5	96.9	N/A	N/A	
116	9/17/2009	Bur Oak - Quercus macrocarpa	26"	60'	10	87.5	N/A	N/A	
117	9/17/2009	Hackberry - Celtis occidentalis	8"	45'	5	93.8	N/A	N/A	
118	9/17/2009	American Elm - Ulmus americana	7"	25'	3	81.3	Treat/ Remove	3	
119	9/17/2009	Hackberry - Celtis occidentalis	8"	40'	3	87.5	N/A	N/A	
120	9/17/2009	Bur Oak - Quercus macrocarpa	24"	55'	10	87.5	N/A	N/A	
121	9/17/2009	Bur Oak - Quercus macrocarpa	14"	45'	8	81.3	N/A	N/A	
122	9/17/2009	Black Locust - Robinia pseudoacacia	11"	60'	10	90.6	Remove	2	Invasive
123	9/17/2009	Black Locust - Robinia pseudoacacia	13"	50'	20	50	Remove	1	10' - 15' crack in trunk high priority for removal
124	9/17/2009	White Oak - Quercus alba	14"	45'	8	90.6	Minor prune	3	Highly desirable tree, structural prune
125	9/17/2009	Black Walnut - Juglens nigra	9"	50'	8	93.8	N/A	N/A	

126	9/17/2009	American Elm - Ulmus americana	7"	45'	3	87.5	Treat/ Remove	2	
127	9/17/2009	Hackberry - Celtis occidentalis	11"	50'	5	93.8	N/A	N/A	
128	9/17/2009	Hackberry - Celtis occidentalis	6"	40'	5	87.5	N/A	N/A	
129	9/17/2009	Hackberry - Celtis occidentalis	8"	45'	5	93.8	N/A	N/A	
130	9/17/2009	Box elder - Acer negundo	10"	30'	12	84.4	Remove	3	Compromised root flair
131	9/17/2009	Black Locust - Robinia pseudoacacia	18"	60'	15	50	Remove	1	Large trunk wound, high priority for removal
132	9/17/2009	White Oak - Quercus alba	17"	60'	5	93.8	N/A	N/A	
133	9/17/2009	White Oak - Quercus alba	23"	60'	8	90.6	N/A	N/A	
134	9/17/2009	Black Locust - Robinia pseudoacacia	10"	55'	5	96.9	Remove	3	Invasive, provides erosion control
135	9/17/2009	Black Locust - Robinia pseudoacacia	10"	35'	25	59.4	Remove	3	Invasive, provides erosion control
136	9/17/2009	American Elm - Ulmus americana	7"	45'	10	81.3	Treat/ Remove	2	Close proximity to infected elms

137	9/17/2009	Black Locust - Robinia pseudoacacia	13"	70'	10	87.5	Remove	3	Invasive, provides erosion control
138	9/17/2009	Black Locust - Robinia pseudoacacia	10"	45'	25	84.4	Remove	1	Invasive, broken top
139	9/17/2009	Black Locust - Robinia pseudoacacia	13"	75'	10	84.4	Remove	3	Invasive, provides erosion control
140	9/17/2009	American Elm - Ulmus americana	12"	60'	10	87.5	Treat/ Remove	2	providing erosion control, close proximity to other elms
141	9/17/2009	Hackberry - Celtis occidentalis	13, 7"	60'	5	87.5	Major prune	3	Remove 7" at base
142	9/17/2009	Black Locust - Robinia pseudoacacia	10"	50'	5	81.3	Remove	3	Invasive, provides erosion control
143	9/17/2009	Black Locust - Robinia pseudoacacia	16"	30'	100	0	Remove	1	Major hanger in tree
144	9/17/2009	Black Locust - Robinia pseudoacacia	13"	50'	10	62.5	Remove	1	Leans toward road, major wound visible
145	9/17/2009	Black Locust - Robinia pseudoacacia	17"	15'	99	53.1	Remove	1	Invasive broken 15' up
146	9/17/2009	American Elm - Ulmus americana	11"	45'	100	0	Remove	1	Near road

147	9/17/2009	American Elm - Ulmus americana	10"	40'	100	0	Remove	1	Leans over road
148	9/17/2009	Mulberry - Morus rubra	8"	40'	10	84.4	Minor prune	2	Remove boxelder and mulberry growing out of base
149	9/17/2009	Black Locust - Robinia pseudoacacia	8"	40'	8	62.5	Remove	2	Invasive, provides erosion control
150	9/17/2009	Black Locust - Robinia pseudoacacia	10"	50'	5	87.5	Remove	3	Invasive, provides erosion control
151	9/17/2009	Box elder - Acer negundo	10, 3"	45'	10	81.3	Minor prune	1	Prune off 3" stem at base
152	9/17/2009	Box elder - Acer negundo	6"	35'	5	75	N/A	N/A	
153	9/17/2009	Mulberry - Morus rubra	7"	40'	5	84.4	N/A	N/A	
154	9/17/2009	Hackberry - Celtis occidentalis	6"	30'	10	87.5	N/A	N/A	
155	9/17/2009	Box elder - Acer negundo	11"	40'	12	68.8	N/A	N/A	
156	9/17/2009	Box elder - Acer negundo	6"	30'	3	87.5	N/A	N/A	
157	9/17/2009	Box elder - Acer negundo	8"	35'	5	90.6	N/A	N/A	

158	9/17/2009	Hackberry - Celtis occidentalis	7"	40'	3	93.8	N/A	N/A	
159	9/17/2009	Box elder - Acer negundo	6, 6"	30'	20	65.6	Remove	3	Declining health
160	9/17/2009	Black Locust - Robinia pseudoacacia	13"	25'	8	37.5	Remove	1	no top
161	9/17/2009	Black Walnut - Juglens nigra	12"	45'	10	84.4	N/A	N/A	
162	9/17/2009	Hackberry - Celtis occidentalis	6"	30'	3	90.6	N/A	N/A	
163	9/17/2009	Black Walnut - Juglens nigra	16"	65'	3	87.5	N/A	N/A	
164	9/17/2009	Black Walnut - Juglens nigra	16"	65'	4	90.6	N/A	N/A	
165	9/17/2009	Black Locust - Robinia pseudoacacia	6"	50'	10	59.4	Remove	1	Hindering growth of black walnut
166	9/17/2009	American Elm - Ulmus americana	11"	40'	100	0	Remove	1	Close proximity to path
167	9/17/2009	American Elm - Ulmus americana	8"	35'	8	84.4	Treat/ Remove	2	Close proximity to infected elms
168	9/17/2009	American Elm - Ulmus americana	9"	40'	5	87.5	Treat/ Remove	2	Close proximity to infected elms
169	9/17/2009	Black Walnut - Juglens nigra	9"	45'	5	78.1	N/A	N/A	

170	9/17/2009	Black Locust - Robinia pseudoacacia	16"	60'	5	78.1	Remove	3	Invasive
171	9/17/2009	Black Locust - Robinia pseudoacacia	10"	60'	10	78.1	Remove	3	Invasive
172	9/17/2009	Black Locust - Robinia pseudoacacia	14"	60'	5	93.8	Remove	3	Invasive
173	9/17/2009	Hackberry - Celtis occidentalis	7"	30'	8	87.5	N/A	N/A	
174	9/17/2009	Hackberry - Celtis occidentalis	6"	30'	3	90.6	N/A	N/A	
175	9/17/2009	American Elm - Ulmus americana	11"	50'	99	0	Remove	1	Has Dutch elm disease, no root space
176	9/17/2009	Hackberry - Celtis occidentalis	11"	45'	3	90.6	N/A	N/A	
177	9/17/2009	Box elder - Acer negundo	7,3, 3"	40'	5	87.5	Minor Prune	2	Remove 2, 3" co-dominant stems
178	9/17/2009	Black Walnut - Juglens nigra	13"	60'	5	93.8	N/A	N/A	
179	9/17/2009	Black Locust - Robinia pseudoacacia	14"	50'	10	78.1	Remove	3	Invasive
180	9/17/2009	Black Walnut - Juglens nigra	20"	65'	8	90.6	N/A	N/A	

181	9/17/2009	Black cherry - Prunus serotina	7"	33'	5	71.9	N/A	N/A	
182	9/17/2009	Black cherry - Prunus serotina	8"	35'	8	78.1	N/A	N/A	
183	9/17/2009	American Elm - Ulmus americana	7"	35'	10	81.3	Remove	1	Infected with Dutch elm disease
184	9/17/2009	Black Walnut - Juglens nigra	19"	30'	3	90.6	N/A	N/A	
185	9/17/2009	American Elm - Ulmus americana	9"	50'	5	87.5	Treat/ Remove	1	Next to dead elm
186	9/17/2009	American Elm - Ulmus americana	6"	30'	100	0	Remove	1	Near high traffic area
187	9/17/2009	White Oak - Quercus alba	23"	75'	5	90.6	N/A	N/A	
188	9/24/2009	American Elm - Ulmus americana	10"	35'	10	90.6	Remove	1	Infected with Dutch elms disease
189	9/24/2009	Black Locust - Robinia pseudoacacia	15"	40'	50	43.8	Remove	1	Leans over path
190	9/24/2009	Black Locust - Robinia pseudoacacia	21"	70'	10	81.3	Remove	3	Invasive
191	9/24/2009	American Elm - Ulmus americana	12, 7"	45'	10	75	Treat/ Remove	2	Close proximity to infected elms

192	9/24/2009	Black Locust - Robinia pseudoacacia	16"	80'	10	90.6	Remove	3	Invasive, provides erosion control
193	9/24/2009	Black Locust - Robinia pseudoacacia	9"	50'	20	75	Remove	3	Invasive
194	9/24/2009	Black Locust - Robinia pseudoacacia	19"	85'	8	84.4	Remove	3	Invasive, provides erosion control
195	9/24/2009	Black Locust - Robinia pseudoacacia	7"	60'	5	68.8	Remove	3	Invasive, provides erosion control
196	9/24/2009	American Elm - Ulmus americana	7"	50'	100	1	Remove	1	Standing dead
197	9/24/2009	Black Locust - Robinia pseudoacacia	8"	60'	15	78.1	Remove	3	Invasive, provides erosion control
198	9/24/2009	Black Locust - Robinia pseudoacacia	9"	75'	20	59.4	Remove	3	Invasive, provides erosion control
199	9/24/2009	Hackberry - Celtis occidentalis	8"	55'	20	93.8	N/A	N/A	
200	9/24/2009	Hophornbeam- Ostrya virginiana americana	6"	25'	3	93.8	N/A	N/A	
201	9/24/2009	American Elm - Ulmus americana	12"	45'	100	0	Remove	1	Standing dead

202	9/24/2009	White Oak - Quercus alba	22"	70'	5	90.6	Minor Prune	2	Near road
203	9/24/2009	Hackberry - Celtis occidentalis	8"	30'	3	84.4	Major Prune	2	Remove co-dominant stem
204	9/24/2009	Black Locust - Robinia pseudoacacia	8"	55'	10	75	Remove	3	Invasive
205	9/24/2009	Hackberry - Celtis occidentalis	5, 5"	45'	5	78.1	Minor Prune	2	Remove co-dominant stem
206	9/24/2009	Black Walnut - Juglens nigra	18"	80'	5	93.8	N/A	N/A	
207	9/24/2009	Black Locust - Robinia pseudoacacia	22"	85'	20	62.5	Remove	1	Compromised root flair
208	9/24/2009	Black Locust - Robinia pseudoacacia	21"	75'	18	78.1	Remove	1	Compromised root flair
209	9/24/2009	American Elm - Ulmus americana	8"	45'	3	90.6	Treat/ Remove	2	Erosion control
210	9/24/2009	Black Locust - Robinia pseudoacacia	15"	70'	10	84.4	Remove	3	Invasive
211	9/24/2009	Black Locust - Robinia pseudoacacia	8"	60'	15	75	Remove	1	Severely compromised root flair
212	9/24/2009	Hackberry - Celtis occidentalis	6"	40'	5	87.5	N/A	N/A	

213	9/24/2009	Black Locust - Robinia pseudoacacia	12"	75'	15	78.1	Remove	1	Major trunk defect
214	9/24/2009	Hophornbeam- Ostrya virginiana americana	9"	30'	3	90.6	N/A	N/A	
215	9/24/2009	Black Locust - Robinia pseudoacacia	12"	80'	8	84.4	Remove	3	Invasive, provides erosion control
216	9/24/2009	American Elm - Ulmus americana	12"	65'	5	87.5	Treat / Remove	2	providing erosion control
217	9/24/2009	Black Locust - Robinia pseudoacacia	13"	75'	5	87.5	Remove	3	Invasive
218	9/24/2009	Sugar Maple - Acer saccharum	14"	65'	3	93.8	N/A	N/A	
219	9/24/2009	American Elm - Ulmus americana	8"	45'	5	84.4	Treat/ Remove	2	Close proximity to infected elms
220	9/24/2009	Black Locust - Robinia pseudoacacia	11"	65'	10	71.9	Remove	2	
221	9/24/2009	Black Locust - Robinia pseudoacacia	16"	90'	10	78.1	Remove	1	Major trunk defect
222	9/24/2009	Black Locust - Robinia pseudoacacia	8"	60'	90	62.5	Remove	1	

223	9/24/2009	Bur Oak - Quercus macrocarpa	28"	60'	8	90.6	Minor prune	3	Dead wood, desirable species
224	9/24/2009	Sugar Maple - Acer saccharum	16"	25'	95	0	Remove	1	Dead
225	9/24/2009	Hackberry - Celtis occidentalis	7"	25'	5	93.8	N/A	N/A	
226	9/24/2009	Hackberry - Celtis occidentalis	7"	30'	5	93.8	N/A	N/A	
227	9/24/2009	American Elm - Ulmus americana	6"	40'	10	59.4	Treat/ Remove	2	Close proximity to infected elms
228	9/24/2009	American Elm - Ulmus americana	7"	45'	5	87.5	Treat/ Remove	2	Close proximity to infected elms
229	9/24/2009	Hackberry - Celtis occidentalis	8"	45'	8	87.5	N/A	N/A	
230	9/24/2009	American Elm - Ulmus americana	7"	45'	8	87.5	Treat/ Remove	2	Close proximity to infected elms
231	9/24/2009	American Elm - Ulmus americana	11"	55'	10	87.5	Treat/ Remove	2	Close proximity to infected elms
232	9/24/2009	Hophornbeam- Ostrya virginiana americana	9"	30'	3	96.9	N/A	N/A	

233	9/24/2009	Red Oak - Quercus rubra	27"	75'	15	84.4	Treat	1	Preventative treatment for oak wilt
234	9/24/2009	White Oak - Quercus alba	24"	50'	8	90.6	N/A	N/A	
235	9/24/2009	Hackberry - Celtis occidentalis	9"	30'	3	87.5	N/A	N/A	
236	9/24/2009	Hackberry - Celtis occidentalis	8"	50'	3	90.6	N/A	N/A	
237	9/24/2009	Hackberry - Celtis occidentalis	8"	50'	3	87.5	N/A	N/A	
238	9/24/2009	Hackberry - Celtis occidentalis	8"	50'	3	90.6	N/A	N/A	
239	9/24/2009	Black Locust - Robinia pseudoacacia	6"	40'	8	46.9	Remove	2	Invasive
240	9/24/2009	Hackberry - Celtis occidentalis	6"	40'	5	87.5	N/A	N/A	
241	9/24/2009	Black Locust - Robinia pseudoacacia	8"	60'	15	59.4	Remove	1	Compromised root flair
242	9/24/2009	Sugar Maple - Acer saccharum	7"	45'	30	59.4	Remove	1	Dead top
243	9/24/2009	Hackberry - Celtis occidentalis	18"	70'	8	90.6	N/A	N/A	

244	9/24/2009	Black Locust - Robinia pseudoacacia	10"	25'	95	43.8	Remove	1	Very large wound up trunk, leans over rock seating area, high priority removal
245	9/24/2009	Box elder - Acer negundo	11"	25'	8	56.3	Remove	1	Large crack in stem/ leader
246	9/24/2009	American Elm - Ulmus americana	9, 9"	35'	8	68.8	Treat/ Remove	2	Close proximity to infected elms
247	9/24/2009	Mulberry - Morus rubra	6"	15'	15	59.4	N/A	N/A	
248	9/24/2009	Hackberry - Celtis occidentalis	6"	40'	5	87.5	N/A	N/A	

Appendix B

Glenwood Children's Park Native Tree & Shrub Plantings 2009

Botanic Name	Common Name	ID #
Acer saccharum	Sugar Maple	6,9,10,14
Acer saccharum var nigrum	Black Maple	19
Acer spicatum	Mountain Maple	13
Carpinus carolinianum	Musclewood	27
Carya cordiformis	Bitternut Hickory	23
Euonymus atropurpureus	Eastern Wahoo	7
Fagus grandifolia	American Beech	26
Hamamelis virginiana	Witchhazel	1
Hamamelis virginiana	Witchhazel / Existing	3
Ilex verticillata	Winterberry	2
Juglans cinera	Butternut	17
Tilia americana	Basswood	5,18
Viburnum cassinoides	Wild Raisen / Witherod Vib	11,15,16,21
Viburnum prunifolium	Blackhaw Viburnum	20

Peter A. Nause
Landscape Architect
Second Nature Landscapes
Dudgeon-Monroe Neighborhood Association Parks Committee Co-chair

Appendix C

Herbaceous Understory at Glenwood Children's Park by Margaret Nelson

I have included the digit that Black and Judziewicz have given the native flowers in their book *Wildflower of Wisconsin.* The number is based on a scale 0-10 and is inversely related to the probability of finding it in a degraded landscape.

Native numerous:

- Violets—Viola sororia [3] and others
- Wild Geranium—Geranium maculatum [4]
- Sweet Cicily—Osmorhiza claytonia (or possibly longistylis) [5]
- Dutchman's Breeches—Dicentra cucullaria [7]
- Virginia Waterleaf—Hydrophyllum virginianum [4]
- White Snakeroot—Eupatoriium rugosa [1]
- Clearweed—Pilea pumil [3]
- White Aven—Geum canadense [2]
- Bedstraw—Galium aparine [2]
- Jewel Weed—Impatiens capensis [2]
- Common Yellow Wood-Sorrel—Oxalis stricta [0]
- Jumpseed—Persicaria virginiana [7]
- Honewort—Crptotaenia canadensis [4]
- Stickseed—Hackelia virginiana [3]
- Beggars-ticks—Bidens vulgate [1]
- Lamb's Quarters—Chenopodium album [0]
- Jack-in-the-Pulpit—Arisaema triphyllum [5]
- Lopseed—Phryma leptostachya [5]
- Figwort—Scrophularia lanceolata [4]
- Pellitory—parietaria pensylvanica [2[
- Solomon Seal—Polygonatum biflorum [4]
- False Solomon's Seal –Maianthemum racemosum [5]
- Wild-Ginger—Asarum canadense [7]
- Nimblewill Grass—Muhlenbergia schreberi
- Climbing False Buckwheat--Polygonum scandens [3] This is a problem in the rosebed
- Red Baneberry—Actaea rubra [7]
- Giant Ragweed—Ambrosia trifida [0]

Native less-numerous

- Trillium—Trillium grandiflorum [6]
- Toothwort—Cardamine concatenate [6]
- Hepatica—Anemone acutiloba [7]

- Columbine—Aquilegia Canadensis [5]
- Mayapple—Podophyllum peltatum [4]
- Wild Petunia—Ruellia humilia [6]
- Blue-eyed Grass—Sisyrinchium campestre [7]
- Spiderwort—Tradescantia ohiensis [5]
- Ostrich Fern—Matteuccia struthiopteris
- Maidenhair Fern—Adiantum pedatum
- Lady Fern—Athyrium filix
- Poison-Ivy—Toxicodendron rydbergii [2] (Hopefully all removed in 2009—near bikepath at west part of bike and along Glenway Street)
- Stinging Nettles—Urtica dioica [1]
- Wood-Nettle—Laportea canadensis [4]
- Bee Balm—Monarda fistulosa [3]
- Mint--?Agastache scrophulariaefolia [4]
- Wild-Cucumber—Echinocystis lobata [2]
- Pokeweed—Phytolacca americana [1] (one plant in the NW part of the park)
- Merrybells—Uvularia grandiflora [7]
- Virginia Bluebells—Mertensia virginica [4]
- Woodland Phlox—Phlox divaricata [7]
- Meadow-rue—Thalictrum dioicum [7]
- Wild Onion or Leak—Allium ?
- Side-Oats Grama—Bouteloua curtipendula
- Trout lily—Erythronium albidum [7]
- New England Aster—Symphyotrichum novae-angliae [3]
- Brown Eyed Susan—Rudbeckia triloba [4]
- Cut-leaved Coneflower—Rudbeckia laciniata [6]

Alien Herbs of Major Invasive Potential

- Japanese Hedge-Parsley—Torilis japonica (especially in the north part of the park)
- Garlic Mustard—Alliaria petiolata (found throughout the park)
- Dames Rocket—Hesperis matronalis (found primarily in the south of the park)
- Reed Canary Grass—Phalaris arundinacea (found primarily along the bike path)
- Canada Thistle—Cirsium arvense (this is found exclusively in the rose bed)

Aliens with Some Invasive Potential

- Burdock—Arctium minus
- Curly Dock—Rumex crispus (rare)
- Motherwort—Leonurus cardiaca(seems to like the park)
- Creeping Charlie—Glechoma hederacea
- Lily-of-the-Valley—Convallaria majalis (four or five areas)

- Day Lily—Hemerocallis fulva (in several spots)
- Creeping Bellflower—Campanula rapunculoides (especially on the west edge of the park)
- Siberian Squill –Scilla sibirica (this is mainly on the east side of the park)
- Deadly Nightshade—Solanum dulcamara

Aliens of Lesser Concern

- Catnip—Nepeta cataria
- Bladder-Campion—Silene latifolia
- Common Plantain—Plantago major
- Dandilion—Taraxacum officinale
- Lady's Thumb—Persicaria maculata

APPENDIX E: Original Plan Chapters 7, 8 and 9

1. Prioritizing and Operations Timeline

Year 1

1. Priority One tree removals and Priority One pruning in spring or fall. Trees to be removed are:
   #25, 47, 76, 84, 88, 90, 94, 112, 123, 143, 145, 146, 147, 166, 186, 196, 201, 224, 244.
2. Herbicide any necessary stumps after removals.
3. Planting and seeding in gaps.
4. Continual invasive control.
5. Yearly monitoring visit/any changes to plan incorporated.
6. Begin strategic planning for landscaping efforts.
7. Volunteers to begin chainsaw safety training.
8. Monitor Emerald Ash Borer status.
9. Treat high value elms in spring (if DMNA chooses).

Year 2

1. Priority One tree removals and Priority Two pruning in spring or fall. Trees to be removed are:
   #39, 40, 41, 67, 106, 131, 144, 160, 175, 183, 189, 245.
2. Herbicide any necessary stumps.
3. Planting and seeding in gaps.
4. Continual invasive control.
5. Yearly monitoring visit/any changes to plan incorporated.
6. Finish strategic planning for landscaping.

Year 3

1. Priority One tree removals and Priority Three pruning in spring or fall. Trees to be removed are: #20, 35, 55, 188, 211, 213, 221, 222, 241, 242.
2. Herbicide any necessary stumps.
3. Planting and seeding in gaps.
4. Continual invasive control.
5. Yearly monitoring visit/any changes to plan incorporated.
6. Maintain new plantings, refresh mulch if needed.
7. Work to establish trees and understory according to decided upon design plan.

Year 4

1. Priority One tree removals in spring or fall. Trees to be removed are: #54, 165, 207, 208.
2. Maintenance pruning according to monitoring reports.
3. Herbicide any necessary stumps.
4. Planting and seeding in gaps.
5. Continual invasive control.
6. Yearly monitoring visit/any changes to plan incorporated.

7. Maintain new plantings.
8. Do training pruning for any trees planted in year 1 and 2.
9. Work to establish trees and understory according to decided upon design plan.

Year 5

1. Priority One tree removals in spring or fall. Trees to be removed are: #30, 95, 99, 138.
2. Maintenance pruning according to monitoring reports.
3. Herbicide any necessary stumps.
4. Planting and seeding in gaps.
5. Continual invasive control.
6. Yearly monitoring visit/any changes to plan incorporated.
7. Maintain new plantings.
8. Work to establish trees and understory according to decided upon design plan.

Year 6

1. Priority Two tree removals in spring or fall. Trees to be removed are: #4, 8, 6, 75, 92, 93, 104, 149.
2. Maintenance pruning according to monitoring reports.
3. Herbicide any necessary stumps.
4. Planting and seeding in gaps.
5. Continual invasive control.
6. Yearly monitoring visit/any changes to plan incorporated.
7. Maintain new plantings.
8. Do training pruning for any trees planted in year 2 and 3.
9. Work to establish trees and understory according to decided upon design plan.

Year 7

1. Finish Priority Two tree removals in spring or fall. Trees to be removed are: #3, 36, 37, 79, 83, 85, 86, 91, 217.
2. Herbicide any necessary stumps.
3. Planting and seeding in gaps.
4. Continual invasive control.
5. Yearly monitoring visit/any changes to plan incorporated.
6. Maintain new plantings, refresh mulch.
7. Do training pruning for any trees planted in year 4.
8. Work to establish trees and understory according to decided upon design plan.

2. Monitoring

Yearly monitoring must include an assessment of:

- understory invasives and suggestions for better control if control is not adequate.
- any insect and disease pressure in the park.
- any new safety hazards.
- human activities in the park.
- maintenance pruning.

APPENDIX E: Original Plan Chapters 7, 8 and 9

3. Staffing and Costs

The budget table (Figure 9-1) gives estimated yearly costs for the Management Plan. Staffing is assumed as follows:

Removals:

Trees 6" and under can be removed by volunteers. Volunteers using chainsaws must meet City of Madison Parks requirements prior to operation. Trees 7" DBH and above are given estimates for contractor removal. City of Madison Forestry may elect to remove a number of these trees for public safety, in which case the cost would be lower.

Pruning:

Trees less than 6" DBH are estimated to be pruned by volunteers. It is recommended that a professional in the field (i.e. a Certified Arborist) demonstrate proper pruning techniques to volunteers before cuts are made. The DMNA should contact local companies for a demonstration. Trees above 7" DBH are estimated to be pruned by a contractor. All immediate pruning needs are scheduled to take place during the first three years of the plan, but these costs will be added to as unforeseen pruning needs will arise. Years 4-7 of the budget are "to be determined" for added maintenance costs.

Monitoring:

Yearly monitoring of all trees by an accredited and certified arborist is recommended. A contractor consulting fee of $75-$150 per hour can be expected. Monitoring generally involves a visual inspection of each tree, as well as an assessment of newly planted trees and understory.

Tree Health Treatments:

Treatment for the two ash trees in the inventory is listed in the budget table. Cost is for professional treatment and will be $6 to $10 per DBH inch. Treatment is currently effective for two years, but some research shows it may be effective for three. The costs listed in the budget table are for two years.

Although not recommended by city officials, the DMNA has inquired about the cost of preventatively treating larger, high quality American elm trees in the park. Chemical costs are included in the table with the assumption that the DMNA will have a certified arborist train volunteers to do the treatments on a three-year rotation. The DMNA would need to purchase an injection unit, which costs from $300 to $600. Each injection takes from 1.5 to 3 hours. Trees to be treated must be greater than 6" DBH. Trees that are currently good candidates include: #24, 60,103, and #216 for a total DBH of 64".

Herbicide Treatments and Invasive Control:

It is assumed that volunteers will treat black locust stumps, re-sprouts, and other invasives. Chemical costs are included in the budget table. It is recommended that the DMNA certify

two volunteers to be pesticide applicators. Information and materials can be obtained through the UW Horticulture Department. DMNA volunteers will cut invasives in the spring.

New Tree Maintenance:

The budget table below gives estimated yearly costs to have a contractor complete training pruning on 5 trees of 3" DBH or less. Estimated time per tree is 20 minutes. Most contractors will have a minimum site charge, so it is recommended to do training pruning on at least 5 trees at a time.

Volunteers will do the watering and mulching. The time involved will depend on the number of plantings as well as weather conditions. The hours in the budget table are estimates based on hours spent by volunteers in 2009.

NAME OF SPECIES: Robinia pseudoacacia L.	
Synonyms: Robinia pseudo-acacia L., Robinia pseudoacacia L. var. rectissima (L.) Raber	
Common Name: Black locust, false acacia, yellow locust	Cultivars? YES ☒ NO ☐
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES ☒ NO ☐
	2. Abundance: There are over 100 records of naturalized populations of R. pseudoacacia in WI; however, this species is probably under-reported. (1, 2)
	3. Geographic Range: Widespread in southern WI; locally abundant in central and northwestern WI. (1, 2)
	4. Habitat Invaded: In WI, R. pseudoacacia has invaded upland prairies, savannas, roadsides, old fields, pastures, and woodlots. (5, 8) Disturbed Areas ☒ Undisturbed Areas ☒
	5. Historical Status and Rate of Spread in Wisconsin: Black locust trees were planted extensively in the upper Midwest in the early 1900s to prevent soil erosion. (5) The earliest reports of R. pseudoacacia in WI are from 1880. Today this species is reported as escaped or naturalized in 40 counties across WI. (1, 2).
	6. Proportion of potential range occupied: Already widespread in its generalized range within the U.S. (6)
II. Invasive in Similar Climate Zones	1. YES ☒ NO ☐ Where (include trends): Populations of black locust are reported in natural areas and disturbed sites across the Great Lakes region. This species is naturalized throughout the contiguous U.S. and as far north as Nova Scotia. It is widespread in the central and eastern U.S. and is a known invasive in the New England states. (3, 7)
III. Invasive in Which Habitat Types	1. Upland ☒ Wetland ☒ Dune ☒ Prairie ☒ Aquatic ☐ Forest ☒ Grassland ☐ Bog ☐ Fen ☐ Swamp ☐ Marsh ☒ Lake Stream ☒ Other: In the Great Lakes region, black locust populations are reported in secondary hardwood forests, degraded pine barrens, wetlands and floodplains, sand dunes and sand prairies. (14)
IV. Habitat Affected	1. Soil types favored or tolerated: Prefers well-drained rocky, sandy or loamy soils. (5) Does not grow on excessively dry soils or poorly drained, heavy soils. Limestone soils and soils without pronounced subsoil development are favorable. This species can survive on very acid spoil banks. (13)
	2. Conservation significance of threatened habitats: Black locust often occurs in disturbed habitats, but can also invade intact prairie communities. Habitats of high concern are upland forest, prairies and savannas, where R. pseudoacacia could alter plant community structure and long-term ecosystem processes. (6) In WI, upland forests, prairies and savannas are rated between G1-G4. (15)
V. Native Range and Habitat	1. List countries and native habitat types: Native to central and southern Appalachia and the Ozarks. (5, 4) In its native range, this species thrives below 3,500 feet in mixed-mesophytic forests, slope forests and cove forests. It grows at low densities in the forest

	interior but reaches high densities in forest openings and along forest edges. (13, 14)
VI. Legal Classification	1. Listed by government entities? Connecticut: Invasive, not banned Massachusetts: Prohibited (3)
	2. Illegal to sell? YES ☒ NO ☐ Notes: Legal to sell except in MA.
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
I. Life History	1. Type of plant: Annual ☐ Biennial ☐ Monocarpic Perennial ☐ Herbaceous Perennial ☐ Vine ☐ Shrub ☐ Tree ☒
	2. Time to Maturity: Black locust produces its largest seed crops when the tree is 15-40 years old, but some trees will bear seed as early as 6 years or as late as 60 years. This tree lives approximately 90 years. (12, 14)
	3. Length of Seed Viability: Seeds can remain viable in the soil for 10-88 years. (14)
	4. Methods of Reproduction: Asexual ☒ Sexual ☒ Notes: Reproduces by seed, by shoots from rhizomes, and by sprouting from stumps. This species has extensive shallow lateral root systems and forms massive clones by root suckering and stump sprouting. (5) Though it produces many seeds, seedlings are rare. The seeds have a thick impermeable seed coat and do not readily germinate without disturbance. (6, 13) R. pseudoacacia requires open conditions for establishment; it is often found on sites with natural or man-made disturbance. (14)
	5. Hybridization potential: Black locust hybridizes with Kelsey locust (R. kelseyi), New Mexico locust (R. neomexicana), clammy locust (R. viscosa), and bristly locust (R. hispida). (14)
II. Climate	1. Climate restrictions: Hardy in zones 4-9. In its native range this species grows in a humid climate (40-60 inches of annual precipitation). However, it has become naturalized over a large area that includes drier regions. (13)
	2. Effects of potential climate change: Changes in precipitation patterns or temperature could alter the naturalized range of black locust.
III. Dispersal Potential	1. Pathways - Please check all that apply: Unintentional: Bird ☐ Animal ☐ Vehicles/Human ☐ Wind ☒ Water ☐ Other: gravity Intentional: Ornamental ☒ Forage/Erosion control ☒ Medicine/Food: Other: Notes: Black locust trees have limited seed dispersal. The seeds are large and fall close to the parent plant. Long-distance dispersal is rare, but possible. Reproduction by vegetative sprouting is more common than sexual reproduction. (14)
	2. Distinguishing characteristics that aid in its survival and/or inhibit its control: This species exhibits vigorous reproduction via root suckering and stump sprouting. (6) Suckering is stimulated in open areas rather than shady or sheltered areas. (13) Damage

	to roots from fire, wind, cutting or disease stimulates sprouting, suckering, and lateral spread. (5)
IV. Ability to go Undetected	1. HIGH ☐ MEDIUM ☐ LOW ☒ Notes: Adult trees are distinguished by their deeply furrowed bark. Seedlings and sprouts are easily identified by long, paired thorns. (4)
C. DAMAGE POTENTIAL	
I. Competitive Ability	1. Presence of Natural Enemies: R. pseudoacacia is susceptible to the locust borer (Megacyllene robiniae), the locust leaf miner (Odontota dorsalis, Chalepus dorsalis), and the locust twig borer (Ecdytolopha insticiana). Insect attack causes deformed growth and dieback. (5, 13)
	2. Competition with native species: Black locust forms dense stands and shades out native vegetation. (5) It is a shade-intolerant, early successional species, and grows quickly as a juvenile. (14) Black locust does not grow well in competition with grasses, vines and other trees. Seedling growth is inhibited allelopathically by certain herbaceous species including Solidago altissima and Andropogon virginicus. (13) The large, fragrant blossoms of R. pseudoacacia may cause competition with native plants for bee pollination. (6)
	Rate of Spread: -changes in relative dominance over time: -change in acreage over time: HIGH(1-3 yrs) ☐ MEDIUM (4-6 yrs) ☒ LOW (7-10 yrs) ☐ Notes:
II. Environmental Effects	1. Alteration of ecosystem/community composition? YES ☒ NO ☐ Notes: Forms dense single-species stands; can reduce diversity of forest understory species or prairie species. (6) The presence or dominance of black locust may have effects on insect community diversity. One study in Arizona showed that fewer insect species were present in stands of R. pseudoacacia than in stands of the native locust (R. neomexicana). (10) Black locust cavities are used for nesting and roosting by bats and birds, and the foliage provides cover for birds and small mammals. (14)
	2. Alteration of ecosystem/community structure? YES ☒ NO ☐ Notes: Forms dense stands of trees in prairie and savanna habitats, shading out ground vegetation. (6)
	3. Alteration of ecosystem/community functions and processes? YES ☒ NO ☐ Notes: R. pseudoacacia is a nitrogen-fixer. In nutrient-poor environments, it may facilitate invasions by other non-native species by increasing the level of soil nitrogen. The effects of elevated soil nitrogen can continue even after the plants have

	been removed. (6) Fire regimes may be altered because of a lack of fuel where black locust has eliminated ground layer vegetation. (6)
	4. Allelopathic properties? YES ☒ NO ☐ Notes: In an experiment with Japanese grassland communities, allelochemicals from R. pseudoacacia leaf litter inhibited the growth of various weeds and crop species. (9)
D. SOCIO-ECONOMIC EFFECTS	
I. Positive aspects of the species to the economy/society:	Notes: Black locust wood is heavy, strong and durable. In the past it has been used for fence posts and ship-building. (14) It has been planted extensively for erosion-control windbreaks and for nectar production for bees. (7) It has also been widely planted as a street tree or ornamental in the U.S. (14) This species is still used today for erosion control and mine reclamation. (6) Based on the 2011 WNA Economic Impact Survey, the following information was reported for this plant. Out of the 204 nurseries responding, 7 reported selling this plant. 6 reported it comprised <1% of their gross plant sales. 1 reported it comprised 1 – 2.9% of their gross plant sales. The estimated total dollar amount contributed to Wisconsin's economy by this plant is $13,990. It ranks 41st among the 63 taxa surveyed. The estimated wholesale value of plants in production is $3,500 The majority of respondents said it took 6 to 12 months to produce this plant. The trend for the 2011 season was to remain unchanged (16).
II. Potential Socio-Economic Effects of Requiring Controls:	Positive: Negative: Requiring control of black locust would require removal of planted trees on private property in urban and rural areas, as well as the removal of existing black locust populations from natural areas and public lands.
III. Direct and indirect Socio-Economic Effects of Plant :	Notes: The toxic young shoots appear to be desirable to livestock; however the leaves, seeds and bark are toxic to if ingested in sufficient quantities. (5)
IV. Increased Costs to Sectors Caused by the Plant:	Notes:
V. Effects on human health:	Notes: Leaves, seeds and bark are toxic to humans if ingested. (5) In some cases poisoning may be fatal. Humans may also get dermatitis from exposure to black locust wood. The flowers can be cooked and eaten, or used to brew tea. (14)
VI. Potential socio-economic effects of restricting use:	Positive: Negative: Loss of nursery sales; loss of a valuable species for landscaping and particularly for erosion control.
E. CONTROL AND PREVENTION	
I. Costs of Prevention (please be as specific as possible):	Notes:
II. Responsiveness to prevention efforts:	Notes:
III. Effective Control tactics:	Mechanical ☒ Biological ☐ Chemical ☒ Times and uses: No technique is entirely effective. Mechanical: Cutting and girdling are both ineffective at controlling black locust since they do not prevent sucker formation. Mowing

	and burning may temporarily control a population, but mowing may promote seed germination, and burning stimulates sprouting. Annual mowing may be sufficient to control first-year seedlings and prevent spread. (5) <u>Chemical:</u> Basal bark and cut-stump treatments of herbicide can be effective in controlling black locust. Cut-stump treatments work best when applied in late summer or early fall, or in winter when temperatures are above freezing. All stems in a clone must be treated. Foliar spray herbicides have been used with mixed results. For small, isolated plants or patches under 5' in height, a foliar spray can be used from mid-summer to early fall. This treatment works by inhibiting leaf bud growth and flower formation in the early spring. Every branch or stem must be sprayed. (5) The Nature Conservancy in Wisconsin attempted to control black locust by first cutting stems, followed by bulldozing to remove stumps, then treating the remaining stumps with glyphosate. This integrated management approach achieved 95% control. (14)
IV. Costs of Control:	Notes: This species is difficult to control once established. Chemical control is generally required. More than one year of treatment is required, as plants that appear to be killed by herbicide can resprout. (6)
V. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes:
VI. Non-Target Effects of Control:	Notes: There is high potential for non-target damage from foliar sprays; foliar sprays are not appropriate for use in high-quality natural areas. The extensive root system of black locust trees can also spread herbicides over large areas. (8)
VII. Efficacy of monitoring:	Notes:
VIII. Legal and landowner issues:	Notes: There are many plantings on private lands. (6) Cooperation with landowners for management will be necessary.
F. HYBRIDS AND CULTIVARS	
I. Known hybrids? YES ☒ NO ☐	Name of hybrid: Black locust hybridizes with Kelsey locust (R. kelseyi), New Mexico locust (R. neomexicana), clammy locust (R. viscosa), and bristly locust (R. hispida). (14)
	Names of hybrid cultivars:

II. Species cultivars	Names of cultivars: 'Shipmast' [Robinia pseudoacacia var. rectissima]. (13) Twisty Baby (SAG) Freesia (yellow) (SAG) Windy City (used only in Chicago) (SAG) Purple Robe (16) Two respondents to the nursery survey offered conflicting opinions on invasiveness: "Big problem in our ditches in our area. Very invasive and should not be grown or planted here." "In 60+ years have seen little, if any, invasiveness by seed. This is a valuable species - especially on poor sites. Would like to see this dropped from the invasive list." (16)
	Notes:

G. REFERENCES USED:
☒ UW Herbarium
☒ WI DNR
☒ TNC
☒ Native Plant Conservation Alliance
☒ IPANE
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