INTEGRATED ROADSIDE VEGETATION MANAGEMENT PLAN

VERSION 1.0 2016



PREPARED BY:

Tyler Baird

Horticultural Specialist

Parks & Recreation Department

FEBRUARY, 2016

ADDITIONAL CONTRIBUTORS:

Zac Hall, Parks Superintendent

TABLE OF CONTENTS

I. Executive Program Elements

- A. Program History
- B. Goals
- C. IRVM Decision Making Process
- D. Executive Summary
- E. Area Map
- F. Program Type

II. Jurisdictional Recognition and Approval

- A. Management
- B. City Council/Parks and Recreation Commission
- C. Iowa Code and Administrative Rules/State Laws and Regulations
- D. Local Laws and Regulations
- E. Permits

III. Program Organizational Structure

- A. Staff Organization Chart
- B. Staffing Needs

IV. Public Involvement

- A. Partners
- B. Education and Outreach

V. Inventory and Analysis

- A. Natural Resources
 - 1. Tools
 - 2. Vegetation
 - 3. Water Bodies
- B. Equipment

VI. Program Operations

- A. Annual Operations
- B. Work Area Types
- C. Vegetation Types for Specific Uses
- D. Special Projects

VII. Methods

- A. Vegetation Establishment
 - 1. Procedures
 - 2. Site Preparation
 - 3. Seed Mixes and Rates
 - 4. Seeding Techniques
 - 5. Erosion and Sediment Control
 - 6. Vegetation Establishment and Ongoing Maintenance
 - 7. Planting Evaluation and Documentation

VIII. Material Procurement

- A. Sourcing
- B. Material Handling and Storage

IX. Appendices

- A. Area Maps
- B. Prairie in Progress Sign
- C. Tree Inventory
- D. Equipment
- E. Plant List
- F. Seed Mixes
- G. Prescribed Burn Areas Map

I. EXECUTIVE PROGRAM ELEMENTS

Program History

The IRVM (Integrated Roadside Vegetation Management) Program has a short and informal history in the City of Iowa City. Recent attention and program development has resulted from desires to reduce the maintenance requirements and inputs associated with traditional turf right-of-ways. Fiscal year 2016 brought the first funding directed specifically towards IRVM goals in the form of Sustainable Roadside Vegetation Management funds. Past efforts related to IRVM in Iowa City have focused on sections of parks and City landholdings maintained primarily by the Parks Department. While few in numbers, these areas have provided some early lessons on what are and are not successful IRVM applications in our unique urban and suburban context. Forestry maintenance and planting operations have also historically been a cornerstone of City IRVM. A street tree inventory has been conducted within a section of the urban core with the future goal of a comprehensive City tree inventory. In addition to trees, shrubs and perennials also grow in right-of-ways throughout the city with past focus on busy pedestrian areas in the downtown district. Historically, the majority of City right-of-ways have been planted with a relatively low diversity of trees and non-native turf grasses and maintained with regular intensive pruning and mowing. Recently, some right-of-way corridors have been maintained in a no-mow or minimal-mow state.

Goals

The overarching goals of the IRVM Plan are threefold: increase aesthetic appeal, decrease maintenance and inputs, and increase public acceptance and appreciation of native and diversified plantings in the right-of-way.

The supporting goals include: maintaining and improving existing prairie right-of-way plantings, identifying areas for expansion of IRVM plantings throughout the city, establishing a prescribed burn program, forming partnerships with County, State, University, and non-profit right-of-way stakeholders, and providing IRVM educational opportunities for community members.

IRVM Decision Making Process

The day to day operations of the IRVM plan are administered by the Parks Superintendent. Input is provided by the senior maintenance workers within the Parks Department specializing in Horticultural Operations, Forestry, Turf, and Grounds Maintenance. See the <u>City Website</u> for more information on City of Iowa City organizational structure.

Area Map

The IRVM Plan includes right-of-ways and city landholdings directly adjacent to roadways. The appendices include maps showing the City of Iowa City and jurisdictional management zones. The City of Iowa City is uniquely positioned adjacent to State, County, University, and other Municipal neighbors and this situation presents opportunities for collaborative partnerships as our IRVM plan develops and grows. See the appendices for an area map.

Program Type

The City of Iowa City IRVM program is housed within the Parks Department which is part of the larger Department of Parks & Recreation. Furthermore, Parks & Recreation is under the direction of the City Manager's Office and the City Council.

Executive Summary

The purpose of the IRVM plan is to establish guidelines for future management of City right-of-ways. The plan will be referenced during the decision making process when planning future right-of-way improvements and ongoing maintenance. Ultimately, the IRVM Plan will serve as a framework to guide Parks Department and other City Staff in aspects of IRVM. The plan will be evaluated and amended as needed with future versions building off of knowledge gained while implementing previous versions. The plan will borrow elements from the Johnson County IRVM Plan currently being implemented in areas surrounding Iowa City as well as add elements specific to our unique municipal circumstance. The plan is set up for incremental implementation as funding and opportunities for specific portions to be implemented become available. It is a long term approach that includes the following:

- 1. Inventory and evaluation of areas managed.
- 2. Low maintenance, low input development and redevelopment of City right-of-ways.
- 3. Determination of site condition specific plantings.
- 4. Emphasis on self-sustaining, diverse, and visually interesting species especially those native to the region.
- 5. Adherence to traffic engineering safety standards for right-of-ways.
- 6. Vegetative stabilization of right-of-ways and enhancement of desirable vegetative cover.

II. JURISDICTIONAL RECOGNITION AND APPROVAL

Management

Management of the City of Iowa City IRVM Program is under the direction of the Superintendent of Parks and Staff of the Parks Department. The Superintendent of Parks is overseen by the Director of Parks and Recreation, the City Manager's Office and ultimately, the City Council. All positions supporting the implementation of the IRVM Plan have previously established job duties and IRVM supporting activities are in addition to these other duties.

City Council/Parks and Recreation Commission

Members of the City Council are elected officials charged with final approval of annual budgets, development, and guidance of City affairs. The City Manager's Office reports to the City Council and is in charge of the daily operations of the City. All City departments, including Parks & Recreation report to the City Manager's Office. In addition, Parks & Recreation is under the guidance of the Parks and Recreation Commission which is comprised of appointed community members tasked with guidance of the department's goals.

Iowa Code and Administrative Rules/State Laws and Regulations

- 1. Iowa Code Chapter 314 Administrative Provisions for Highways
- 2. Iowa Code Chapter 317 Iowa Noxious Weed Law

Local Laws and Regulations

- 1. Johnson County Noxious Weed Policy
- 2. Johnson County Resolution Stigmatizing Noxious Weeds
- 3. <u>City of Iowa City Weed Ordinance</u>
- 4. <u>City of Iowa City Nuisances (</u>Title 6, Chapter 1)
- 5. <u>City of Iowa City Weed Control</u> (Title 6, Chapter 3)
- 6. <u>City of Iowa City Trees and Plant Materials</u> (Title 10, Chapter 8)

III. PROGRAM ORGANIZATIONAL STRUCTURE

Staff Organization Chart

The IRVM Program is housed in the Parks Department under the management of the Superintendent of Parks. The Parks Department includes Senior Maintenance Worker, Maintenance Worker II, Maintenance Worker I, and Seasonal Maintenance Worker positions in the areas of parks maintenance, forestry, horticulture, and turf management. These positions include a total of 18 fulltime positions and a variable number of temporary positions.

Staffing Needs

Current implementation of the IRVM Plan is administered by individuals within the Parks Department with additional support available from other departments as needed. Current staffing levels are limited with staff preforming IRVM work in addition to previously established duties for each position. Current staffing is adequate to maintain areas presently managed with IRVM principles and additional areas could be added as traditional right-of-way maintenance inputs are replaced by IRVM duties. A substantial increase in acreage of IRVM areas would require additional staffing and/or collaboration across City departments and local partnerships.

Within the Parks Department seven employees hold pesticide applicator certifications in category 3OT. These seven applicators are more than adequate to cover the current limited amount of pesticide and herbicide application in areas managed by the Parks Department. Six Parks employees hold S-130/S-190 fire certifications and assistance from the Fire Department fulfills the current needs of our prescribed burn team. Two Parks Department employees are Certified Arborists with one possessing the additional distinction of Municipal Specialist from the International Society of Arboriculture. Individuals with other relevant IRVM training such as stormwater certifications are available for consultation within various City Departments.

IV. PUBLIC INVOLVEMENT

Partners

As the City of Iowa City increases its IRVM Program there is opportunity for collaboration with a host of partners locally and regionally. Potential and/or current partners include: Johnson County IRVM Program, University of Iowa, Project Green, Johnson County Master Gardeners, Trees Forever, Bur Oak Land Trust, other County IRVM Programs, Iowa DNR, Iowa DOT, etc.

Education and Outreach

The City of Iowa City currently uses many forms of media to communicate, educate, and reach out to the community. The Communications Department as well as public relations staff positions coordinate the messages broadcast to the community through newsprint, radio, television, the <u>City Website</u>, and official City <u>Social Media</u> sites. Additionally, <u>public meetings</u> are used as a forum for delivering information and receiving feedback from the community. Parks employees regularly present talks and workshops at conferences and for community groups to help educate peers and community members. The City of Iowa City also has a presence at many local functions such as the annual Prairie Preview and the Project Green plant sale where work of the IRVM Program has the potential to be highlighted. Onsite communication mechanisms could include signage similar to the prairie in progress signs (see appendices) we currently use, interpretative display boards at appropriate high traffic sites, or simple signs like those used to identify monarch waystations.

IRVM education and outreach opportunities could be paired with current volunteer opportunities the City offers. Thirty-three volunteer events were held in 2015 where volunteers assisted with stormwater and parks clean-up and maintenance. A portion of the 3,000+ hours these volunteers donated could easily be coordinated with IRVM projects in the future.

V. INVENTORY AND ANALYSIS

Natural Resources

Tools

The City of Iowa City utilizes many tools to inventory and analyze its natural resources. All types of mapping, from paper records to AutoCAD and GIS/GPS, are utilized. Being situated in Johnson County also provides access to the public database of GIS data and GIS viewer the County maintains. Onsite inventory is possible through Trimble GPS unit data collection and photography.

Vegetation

To date, a comprehensive roadside vegetation inventory has not been completed. A street tree inventory of a portion of the downtown core was completed in 2014 and is included in the Appendices. Additional efforts are being made to move forward with an inventory of all City owned street and park trees.

Water Bodies

Important water bodies in the City of Iowa City include the Iowa River (and the Coralville Reservoir north of the city) as well as Ralston Creek which feeds into the Iowa River. Seasonal flooding occurs on a regular basis and major flooding along Ralston Creek and the Iowa River has been relatively common in recent years.

Equipment

Currently, all Parks Department equipment has the secondary purpose of IRVM management. Examples include mowing equipment, forestry equipment, turf equipment, trucks, and prescribed fire gear. Supplemental equipment is available on a limited basis from City departments outside of the Parks Department. See the appendices for a complete list of Parks Department equipment including the model year and condition of each piece of equipment.

IRVM equipment the Parks Department would like to add in the future include: hydroseeder, brush cutter attachment for skid steers, flail shredder, grapple truck with dump bed, aerial lift for F-550, and OHV with fire suppression kit.

VI. PROGRAM OPERATIONS

Annual Operations

Annual work schedules are weather, workforce, and budget dependent. While the schedule can vary there are certain elements which occur seasonally. A general schedule of IRVM activities follows:

January-March – Attend training and workshops, review and revise IRVM Plan, organize volunteer opportunities for the growing season, maintain equipment, frost seed when snow cover is optimal, research and apply for grants, prune and remove trees, design new planting areas, and research new trees, shrubs, and perennials.

April-October – Mow roadsides as needed for optimal establishment, invasive control, safety, and aesthetic appeal. Plant trees, shrubs, perennials, and grass seed as weather conditions permit. Conduct prescribed burns in early spring or late fall, mow areas to maintain safe visibility standards, help lead volunteer activities, and address noxious weed problems. Prune and remove trees, shrubs, and perennials and water first and second year plantings as necessary.

November-December – Complete final fall mowing and removal of undesirable woody species, winterize equipment, begin to frost seed as snow cover is optimal, structure prune trees, and design new plantings.

Work Area Types

The City of Iowa City manages right-of-ways in urban and suburban areas within the City limits. Surrounding land use is highly variable and falls across the spectrum from natural to manmade. Aside from traditional street tree plantings, current IRVM has occurred primarily in areas toward the edges of the city. Future expansion has been discussed for road medians and locations closer to the city core. The gateways to the city also offer potential for expansion of IRVM plantings and present the opportunity to brand the City of Iowa City as a regional IRVM hub.

Vegetation Types for Specific Uses

Appropriate native grass species are specified to match the site characteristics on a case by case basis. Traditionally, an urban DOT seed mix has been used almost exclusively. Moving forward more native grasses or no-mow grass mixes will be used to replace the urban seed mix where appropriate. Native grass medians are being considered for the initial stage of IRVM establishment throughout the city. Specific native mixes are discussed further in the following section. Plant diversity has been a recent area of emphasis and a diversified mix of trees, shrubs and perennials will be the focus of future plantings both large and small. A current species list of trees, shrubs, and perennials is included in the appendices.

Special Projects

Preparations are currently underway to establish a test plot of Buffalo Grass (*Bouteloua dactyloides*) and Blue Grama Grass (*Bouteloua gracilis*) to determine their viability as a low maintenance urban IRVM alternative to traditional non-native seed mixes.

New perennial plantings have been installed in three distinct right-of-way circumstances following the principles of New Perennial design and are in the process of being evaluated for performance, aesthetics, and ease of maintenance over the next three years.

VII. METHODS

Vegetation Establishment

Procedures

Each site will present its unique challenges and opportunities in regards to vegetation establishment. Plant selection for hydric, mesic, and xeric soil conditions will be taken into account along with other factors such as light levels, planting season, slope, and available planting techniques.

Site Preparation

Typical site preparation may include mowing, brush clearing, spraying, disking, soil amending, and cultipacking.

Seed Mixes and Rates

Seed mixes and rates will vary depending on location and desired aesthetic. High visibility areas will generally receive a mix more highly concentrated with colorful forbs. Areas with visibility constraints will receive a short grass prairie mix or a more traditional urban turf treatment. The remainder of areas might be suitable for a tall grass mix, tree and shrub plantings, or a no-mow grass application. The important thing to remember is no two sites or the entirety of one site will likely require the exact same mix or rate. In addition to seed mixes and rates the City has found successful in the past, outside

knowledge will be sought from the surrounding county IRVM programs and industry professionals. A tall grass, short grass, and forb mix currently used can be found in the appendices.

Seeding and Planting Techniques

Seeding techniques are limited to those performed by the equipment we have access to on hand, through rental, or through contracted service providers. Past techniques have included drilling and once initial establishment has occurred the technique of choice has been frost/snow seeding by hand. Hydroseeding would be the ideal technique used in many situations if access to a hydroseeder becomes available.

Tree planting techniques include following industry standards for planting of containerized, balled and burlapped, and bare root stock. In-house planting generally utilizes containerized and bare root stock while contracted plantings commonly utilize balled and burlapped stock. A limited number of trees are also transplanted with a tree spade each spring. Large planting projects especially those tied to larger construction projects are planted by landscape contractors. Memorial tree plantings as well as some annual infill plantings are handled in-house while select infill plantings are contracted.

Perennial planting utilizes multiply pot sizes with a preference toward plugs for larger planting projects. Transplanting and dividing of established stock is also common as plantings mature and as areas are redeveloped. All perennial plantings not tied to contracted construction projects are handled in-house as well as some post construction project plantings. Many in-house planting projects utilize various volunteer groups including City employees, Master Gardeners, school groups, corporations and others. Large contracted construction projects typically include a landscape contractor for installation of perennials.

Erosion and Sediment Control

Erosion and sediment control are evaluated on a site by site basis. The ideal control measure is quick vegetation establishment on any bare ground with any supplemental controls such as filter socks, silt fence, erosion control blankets, or a nurse crop being used as needed.

Vegetation Establishment and Ongoing Maintenance

Vegetation is monitored during establishment for any signs of invasive or noxious weeds, disease, structural problems, and water and nutrient needs. Mowing or manual weed removal is used at intervals to eliminate the seed heads or entire structures of invasive species before they fully develop. Mowing and weeding continue after establishment as necessary to remove any brush and invasive species starting to get a foothold. Spraying is used only when absolutely necessary and largely limited to those weeds designated as noxious. Overseeding is a common technique used to boost or supplement the establishment of prairie and grass areas recently planted.

Once prairie establishment has begun, prescribed burning can be implemented on a site rotation schedule with burns ideally occurring on a 3-5 year interval for each prairie site. Burning will preferably occur in early spring before the spring greening and occasionally during late fall to optimize the benefits of both burn seasons. Past right-of-way prescribed burn events have been limited and largely undocumented. Prescribed burns have occurred at the Mormon Trek Boulevard medians, the sand prairie hillside adjacent to South Gilbert Street, and a small handful of other sites not associated with right-of-ways. Prescribed

burning will become more of a focus moving forward. Additional staff training and certification has recently been completed in order to begin an expanded in-house burn regimen. The initial area of focus will be the prairie areas at Terry Trueblood Recreation Area which are largely situated in the right-of-way or visible from South Gilbert Street/Sand Road and McCollister Boulevard (See Appendices for location map).

Conventional turf grass areas are generally mowed every one to two weeks. No fertilizer or pesticide is used on turf areas with the exception of fertilizing sports turf areas.

Herbaceous perennial plantings are cutback in late fall or early spring and mulched to limit competition of weeds. Areas planted with the New Perennial design style are mowed with a mulching mower in early spring and allowed to grow up through their own debris which doubles as a mulch layer.

Structural issues with trees are identified and addressed while the trees are still young. Structural pruning occurs throughout the late fall and winter seasons. Newly planted trees are watered for the first one or two growing seasons, especially in more extreme urban conditions. New trees are also generally staked for two years, especially in high pedestrian areas. Older trees are pruned or removed as necessary for structural, sight, safety, and utility hazards.

Planting Evaluation and Documentation

Each IRVM site will be evaluated on a yearly basis and documented for successes and failures. Documentation in the form of drawings, lists, and or photographs will be performed. Documentation will help to guide future IRVM planning and maintenance. Vegetation species lists will be evaluated and edited as needed to achieve the best establishment and aesthetics possible. The plant list found in the appendices will be edited to reflect successes and failures of diversity boosting species.

VIII. MATERIAL PROCUREMENT

Sourcing

Currently, our prairie seed comes from independent Iowa suppliers which source from within Iowa and the Midwest. We have used a few different suppliers and have contacted others in regards to potential future orders. Pending on success of our Buffalo and Blue Grama Grass trials we will need to find reliable suppliers for these seeds as well.

We source our trees, shrubs, and perennials from local garden centers and Midwest wholesale providers.

Local rental companies and contractors are a source for necessary equipment we do not have access to inhouse or across City departments.

Material Handling and Storage

Seed is purchased annually and briefly stored until the conditions are optimal for planting. Seed is stored at the Parks Department building. However, there is limited space and no climate controlled storage

options with the exception of a small amount of freezer space reserved for packets of the most expensive forb species.

Trees, shrubs, and perennials are briefly stored in secure fenced in lots near the Parks Department building. Orders are placed so delivery occurs just before the plants are installed to limit the storage requirements. A small number of trees are also planted in a nursery area until they can be moved to their final location with a tree spade. In recent years the size of the nursery has been greatly reduced in favor of ordering plants as they can be installed.

Herbicide and pesticide are stored in a secure climate controlled structure near the Parks Department building.

Vehicles and specialized equipment are mainly stored in one of four buildings, two of which are heated. Some large equipment is stored outside in secure fenced lots for at least a portion of the year.

IX. Appendices





City of Iowa City Zoning Map

For a digital map click <u>here</u>.



City of Iowa City Future Land Use Map



B. Prairie in Progress Sign



Prairie in progress

This area is being developed as a native prairie, where wildflowers and grasses will provide a diverse habitat for pollinators, birds, and



other wildlife. A native prairie planting takes years to develop and requires maintenance for plants to establish. This may include mowing, weed management, and prescribed burning.

C. Tree Inventory

Iowa City Tree Assessment By: Gary Johnson June 2, 2014

GENUS MAP 5

Tree NumberDetailed Information001Fraxinus pennsylvanica12.5" d.b.h.Root plate measured 6'x6', open.Condition. Canopy: Only a small amount of dieback, reduce by .25.Stem: There was asmall opening just beneath the first set of branches with a small area of decay into thetrunk. No other defects were apparent.As with trees 001, 002, 003, 004, 006 and 008,root expansion into the lawn area to the west is likely.Any construction activities mustacknowledge that any excavation that occurs in that direction will render the trees lessstable and more likely to fail during wind loading events, especially those eventsapproaching or exceeding 60 mph...from any direction.

149 Ginkgo biloba REMOVED

- OO2 Fraxinus pennsylvanica 9.75" d.b.h. Root plate measured 6'x6', open. Condition. Canopy: 40% LCR; asymmetrical, reduce by .25. Stem: 4/4. No other defects were apparent.
- 150 Ginkgo biloba REMOVED
- Fraxinus pennsylvanica. 10.8" d.b.h. Root plate measured 6'x6', open.
 Condition. Canopy: 50% LCR; >50% dieback; asymmetrical, reduce by .25. Stem: 4/4.
 There were codominant leaders (2) @ 10'; SGR @ 25% of stem circumference. The canopy is in conflict with a street light.
- 004 Fraxinus pennsylvanica. 11.4" d.b.h. Root plate measured 6'x6', open. Condition. Canopy: 4/4. Stem: 4/4. Codominant @ 8'.
- 005 Fraxinus pennsylvanica.
 6.4" d.b.h. Root plate is 3'x9', grated.
 Condition. Canopy: asymmetrical, .25 points; Stem: 4/4.
 Significant graft incompatibility low on trunk; canopy is sparse and very stunted.
- D06 Fraxinus pennsylvanica. 10.25" d.b.h. Root plate is 6'x6', open.
 Condition. Canopy: 50% LCR; .25 off for dieback; slightly asymmetrical, subtract .25.
 Stem: 10% cambium missing. Codominant @ 8'.
- 007 Fraxinus pennsylvanica. 4.9" d.b.h. Root plate is 3'x9', grated.

Condition. Canopy: asymmetrical, .25 points. Stem: 4/4. Electrical outlet at base. Canopy has very few leaves. Very prominent graft union.

- 008 Fraxinus pennsylvanica. 12.3" d.b.h. Root plate is 6'x6', open. Condition. Canopy: asymmetrical, .25 points. Stem: 4/4. Codominant at 10'. Conflict with street light.
- 609 Fraxinus pennsylvanica.
 11.0" d.b.h. Root plate is a planting bed, 32'x8', mulched with understory shrubs, perennials.
 Condition. Canopy: 10% dieback; 50% LCR; asymmetrical, .25 points. Stem: 4.0.
- 010 Fraxinus pennsylvanica. 12.9" d.b.h. Root plate shares same planting bed as with tree 009.

Condition. Canopy: 40% LCR; asymmetrical, .5 points. Stem: small hole @ 6' with some decay. Tree has been topped.

- 011 Tilia cordata.
 13.4" d.b.h. Root plate in planting bed.
 Condition. Canopy: 10% dieback; asymmetrical, .25 points. Stem: small hole and decay.
 Planting bed has electrical box near tree. No flare to tree trunk. Codominants with inclusion at 10'.
- 012Tilia cordata.16.65" d.b.h.Root plate in planting bed.Condition. Canopy: asymmetrical, .25 points.Stem: One hole with little decay; crackon west side.Flat trunk on west side.Three scaffold branches with inclusion.
- O13 Fraxinus pennsylvanica.
 Condition. Canopy: 4/4. Stem: 15% of circumference missing bark/cambium.
 Three codominants @8'. Utility box at base of tree. Electrical service box in middle of planting bed.
- 014 Tilia cordata.
 15.7" d.b.h. Root plate bed but no mulch.
 Condition. Canopy: 20% dieback. Stem: Little trunk decay; crack from ground to 7 feet.
 Severe canopy stunt. Canopy barely leafed out. Water main in planting bed. Paired tree in planting bed died.
- 015 Fraxinus pennsylvanica. 13.9" d.b.h. Root plate in 8'x16' bed, mulched with shrubs.

Condition. Canopy: 40% LCR; asymmetrical, .25 points. Trunk: 4/4. Four codominants @8'. Graft incompatibility.

O16 Fraxinus pennsylvanica.
 13.25" d.b.h. Root plate is 4'x4' sidewalk cut-out, bare.
 Condition. Canopy: 50% LCR; ,10% dieback. Stem: 4/4. Codominant @ 8'. Severe graft incompatibility.

- O17 Ginkgo biloba.
 9.9" d.b.h. Root plate is 8.5'x10'x24" high, raised planter, mulched, shrubs, perennials.
 Condition. Canopy: .25 deduct for asymmetrical canopy. Stem: 4/4.
- 018 Ginkgo biloba 15.1" d.b.h. Root plate is 10'x12' raised bed, mulched, perennials.

Condition. Canopy: .50 for asymmetrical canopy. Stem: 4/4. Electrical outlet box in bed. Street light competition.

- O19 Ginkgo biloba
 6.1" d.b.h. Root plate is 4'x4' grated cut-out in brick sidewalk. Grate lifting on east side. Electrical box in planting area.
 Condition. Canopy: LCR=50%; .50 deduct for asymmetrical canopy. Stem: .25 deduct for missing area of cambium.
- O20 Ginkgo biloba
 6.45" d.b.h. Root plate is 4'x4' grated cut-out in brick sidewalk.
 Condition. Canopy: 20% dieback; .50 deduct for asymmetrical canopy. Severe stunt. Stem: 4/4.
- O21 Fraxinus pennsylvanica 10.9" d.b.h. Root plate is 4'x4' sidewalk cut-out, bare. Condition. Canopy: 30% LCR; .50 deduct for asymmetrical canopy; codominant @ 8'; very thin canopy. Stem: .25 off for small area of cambium missing; severe graft incompatibility.
- O22 Fraxinus pennsylvanica. 13.9" d.b.h. Root plate is 4'x4' sidewalk cut-out, bare. Condition. Canopy: 20% dieback; .25 points deduct for lack of symmetry; 3 codominants @ 8'. Stem: 50% cambium gone; evidence of SGR, bulbous at base, bark missing, borer holes.
- O23 Acer saccharinum/rubrum 9.5" d.b.h. Root plate 8'x50' planting bed, mulched with understory plants.
 Condition. Canopy: >50% dieback; 50% LCR; .25 off for asymmetrical canopy. Stem: 4/4.
- O24 Acer saccharinum/rubrum 12.8" d.b.h. Root plate shared with tree 023.
 Condition. Canopy: 20% dieback; .5 point deducted for asymmetrical canopy Stem: .25 deducted for small codominant but no inclusion. Blocking light.
- 025Acer freemani4.5" d.b.h.Root plate 8'x70' bed mulched.Condition. Canopy: 4/4. Stem: 4/4.
- 026 Fraxinus pennsylvanica 16.6" d.b.h. Shared planting bed with 025 and 028. Condition. Canopy: 4/4. Stem: 4/4.

- 027 Gleditsia triacanthos inermis 5.0" d.b.h. Root plate is 8'x50' planting bed, mulched. Condition. Canopy: 4/4. Stem: 4/4. Light conflict.
- O28 Fraxinus pennsylvanica 20.75" d.b.h. Shared planting bed with 025 and 026. Condition. Canopy: 4/4. Stem: .25 deducted for suckers/sprouts. Light conflict. Electrical outlet box in bed.

GENUS MAP 1

- 029 Ginkgo biloba 5.5" d.b.h. Root plate is a 5'x5' grated pit in dry-laid brick walkway. Condition is very good, both canopy and stem. There is an electrical box near to the tree trunk which is likely to cause some additional damage to the tree when construction starts. Bricks are lifting in the area adjacent to the pit, which suggests there are some shallow roots growing under the bricks.
- 030 Ginkgo biloba 6.0" d.b.h. Root plate is a 5'x5' grated pit in dry-laid brick walkway. Condition of both canopy and stem good. This tree is about 10' from a street light, and it's a young tree. Bricks are lifting near the pit, as above.
- O31 Phellodendron amurense 14.8" d.b.h. Root plate is 5'x5' grated in brick walkway. Bricks lifting considerably, so there is likely to be an extensive root system under the paving. Note the points taken off for canopy and stem condition in the spread sheet. Also, the tree has very sparse foliage and there is no flare to the trunk, which are common symptoms for tree decline due to excess soil over the roots and/or stem girdling roots (SGR) below grade. Also, the grate has not been monitored carefully and is pressing against 40% of the trunk's circumference.

I'm suspicious of this tree. Amur corktree has a reputation of being a "junk-yard dog," very tolerant of tough conditions. The ped mall is hardly the toughest of conditions. It must be acknowledged that the assessment was conducted in mid-May, 2014, after a very harsh winter. This tree's canopy may look completely different by early July.

- 032 Ginkgo biloba 11.4" d.b.h. Root plate is 5'x5' grated in brick walkway. The condition is good, but the grate has not been closely monitored and is pressing against 20% of the trunk circumference. Bricks are lifting in the area to a distance at least 10 feet away.
- O33 Acer platanoides
 2.95" d.b.h. Root plate is 5'x5' grated in brick walkway. The tree appears to be a columnar variety. The condition of the canopy and stem good. There is an electrical box 12 inches from the tree's trunk, which could add to construction injury. Bricks are heaving 3-10 feet away from the pit, which is not unusual for a Norway maple.

- 034 Quercus rubra 15" d.b.h. Root plate is a raised (24") 9'x9' planting bed, mulched and understory shrubs. Condition of canopy and stem good. There is an electrical box about 18 inches from the trunk, and the bricks are lifting around the planting bed. This tree has a very broad canopy.
- 035 Amelanchier species 2.9" and 3.7" d.b.h. Root plate is a raised (12") 24'x29' planting bed that is mulched, planted with perennials and shared with three other Amelanchier. The condition of the canopy and stem good for this two-stemmed tree. The planting bed also contains an electrical utility meter, an electrical station box (large) and an electrical outlet.
- 036 Amelanchier species 4.3" and 4.2" d.b.h. Root plate is same as Tree 035. Twostemmed, canopy condition is a bit lower than 035 but still a healthy understory component of a mass of Amelanchier.
- 037Amelanchier species3.3", 3.7", 4.2" d.b.h. Root plate is same as Trees 035 and
036 for this three-stemmed Amelanchier. Condition of canopy is lower than Tree 035,
but this tree is still a healthy part of the understory mass.
- 038Amelanchier species2.6" and 3.0" d.b.h.Root plate is same as Trees 035,036,037. Two-stemmed, good canopy and stem condition.
- 039Quercus rubra14" d.b.h. Root plate is a raised (12") planting bed, about
260 square feet, mulched and planted with perennials. Canopy and stem condition
good. An outlet box is 24 inches from trunk. An SGR is compressing about 15% of the
stem circumference. For that reason, this tree should be monitored annually for
condition and stability.
- 040 Quercus rubra 12" d.b.h. Root plate is shared with Tree 039. Condition is good. There is a 9'x9' decking area over the root system. The canopy is very thin, and therefore the tree should be annually monitored for health if it's retained.
- 041 Tilia cordata 14" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Little bit of dieback and the canopy is a bit thin but the concern is the suckering at the base and the lack of trunk taper. This is often associated with the presence of SGRs and/or excessive soil over the first main order roots...both are bad. Bricks are raised from tree roots extending out 10+ feet from the tree pit.
- 042 Gleditsia triacanthos var inermis 10.5" d.b.h. Root plate is raised (12") 38'x14' planting bed, mulched with decking over 75% of the surface. Good canopy and stem condition.

- 043 Gleditsia triacanthos var inermis 10.1" d.b.h. Shared root plate with Tree 042. The canopy is a bit suppressed, hence the deduction for symmetry. Otherwise, good canopy and stem condition.
- O44 Gleditsia triacanthos var inermis 11.75" d.b.h. Shared root plate with Trees 042 and 043. Good canopy and stem conditions. All three trees are doing well, providing important canopy and should be tolerant of changes.
- Acer, likely a freeman.
 7" d.b.h. Root plate is a 5'x5' grated cut-out in brick walkway. Condition of canopy and stem good. Some brick lifting beyond the pit, which is to be expected for a maple. It should be tolerant of changes, including root loss.
- 045 Tilia cordata 14.0" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Condition of canopy is good; stem condition was downgraded due to large codominant leader with included bark at 8" above ground (a.g.). Removing this branch at this time greatly improves the condition rating for this tree. Bricks are lifted for a distance of 10-15'.
- O46 Gleditsia triacanthos var inermis
 6.85" d.b.h. Root plate is a 12" raised planting bed,
 9'x29', mulched with perennials. Canopy and stem condition good. There is a lot of infrastructure in this planting bed: a street light, a gas box and an electrical box.
- O47 Gleditsia triacanthos var inermis
 6.55" d.b.h. Root plate shared with Tree 046.
 Canopy and stem good. There is a codominant leader at 7', but without included bark (inclusion).
- 048Acer, likely a freeman.9.2" d.b.h. Root plate is 5'x5' grated cut-out in
brick walkway. Canopy and stem conditions not very acceptable, plus there is no trunk
flare at the ground line, suggesting SGR and/or excess soil over roots. Very stunted,
very big waste of space.
- O49 Acer, likely a freeman.
 8.9" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Canopy and stem satisfactory condition, but there is an electrical box in the root plate area, the tree is within 10' of a street light, and there is extensive lifting of the brick walkway around the tree pit, suggesting significant rooting under the brick. This tree is not likely to survive a lot of construction activity.
- 050 Acer rubrum 6.0" d.b.h. Root plate is a planting bed of 550 cu.ft., mulched and planted. The condition of the canopy and stem satisfactory, but the tree is severely stunted and chlorotic. It's not likely to be worthy of preservation during construction.

- 051 Malus species 6.5", 4.2", 8.7" and 7.3" d.b.h. Root plate shared with Tree 050. Four leaders. Condition of canopy is good. The stem has inclusion in ¾ leaders, and no flare, suggesting SGR or excess soil over roots. Crabapples are tolerant of change, but structurally, this tree may not be worth preservation efforts.
- 052 Gleditsia triacanthos var. inermis 1.6" d.b.h. Root plate is 5'x5' grated cut-out of brick walkway. Young tree, so still establishing. It's kind of a shady spot for a tree that prefers full sun. Located about 10' from a street light.
- 053 Quercus rubra 17.4" d.b.h. Root plate shared with Tree 050 and 051. Condition of canopy and stem satisfactory, but the foliage is very sparse, very chlorotic. There a water line about 4 feet away, so likely to cause even more construction damage. Red oaks are notoriously sensitive to construction activities and changes and this one is poorly equipped to survive.
- 054Quercus rubra13.9" d.b.h.Root plate shared with Trees 050,051 and 053.Canopy condition is satisfactory; stem is good.However, very thin,chlorotic foliage.For the same reason as Tree 053, this is not likely to survive significantconstruction activities, plus, red oaks are decay-prone, especially when their health iscompromised.
- 055 Gleditsia triacanthos var. inermis 1.55" d.b.h. Root plate is 5'5' grated cut-out in brick walkway. Newly planted tree, not yet established. Again, very shade spot for a full-sun tree.
- 056 Tilia species.
 7.5" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Condition of canopy and stem good, but there is evidence of significant delayed graft incompatibility. Electrical box 6" from the trunk. 10' from a street light.
- 057 Phellodendron amurense 15.0" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Lot of brick lifting, suggesting extensive root system under the walkway. The canopy condition of the tree is poor, even though the stem is good. Overall health is very poor: thin canopy, no trunk flare, small leaves. Not equipped to survive change in this state, and likely to fall suddenly after construction.
- 058 Tilia species. 9.6" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Canopy and stem condition good. Some brick lifting beyond the root plate. No taper to trunk and one flat side, suggesting SGRs and/or excess soil over roots. Electrical box within 6" of trunk.
- 059 Tilia species8.0" d.b.h. Root plate is 5'x5' grated cut-out in
brick walkway. Within three feet of tree trunk is a step up and a step down. Canopy
and stem condition good. Electrical box within 6" and 10' from a light. No trunk flare.

- 060 Fraxinus pennsylvanica 19.2" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Canopy is alive, but barely breaking bud. Stem is okay. Electrical box within 6". This tree's health appears to be very poor and not worthy of preservation.
- 061 Tilia species. 9.75" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. One step up within 4 feet of trunk. Canopy and stem condition good. Little trunk flare.
- 062 Quercus rubra 18.9" Root plate is 230 sq. ft. raised (4') planting bed, mulched and planted. Canopy and stem condition poor to fair. The whole tree is thin, chlorotic, has been stubbed back from building and in poor shape. Not worth preservation efforts.
- O63 Malus species 7.25" d.b.h. DBH is the average of three leaders. Root plate is a 200+ sq.ft. raised (24") planting bed, mulched and planted. Canopy in good condition. Stem has decay in trunk and leaders. Electrical box near trunk. This tree is not likely to fall and cause damage after construction, but isn't really worth preservation efforts.
- 152 Tilia cordata 13" d.b.h. d.b.h. Root plate is 150 sq. ft. planting bed, mulched. Condition of canopy is good; stem has large codominant with inclusion, so lost point. Lack of pronounced trunk flare suggests SGR and/or excess soil over roots.
- 064 Tilia species7.5" d.b.h. Root plate is raised (3') planting bed 24sq.ft., mulched. Condition of canopy is good, but stem has 4 codominants with
inclusion. Electrical box in planter; tree is 10' from street light.
- 065 Tilia species2.4" d.b.h. Root plate is 5'x5' grated, cut-out in
brick walkway. Canopy and stem condition good. Stunted foliage and twig growth rate.
Electrical box <48 inches from trunk. 15' from street light.</th>
- O66 Gleditsia triacanthos var inermis 2.4" d.b.h. Root plate is `5'x5' grated cut-out in brick walkway. Hasn't really established yet, but condition of canopy and stem acceptable, even with the stem wound. 15' from street light.
- 067 Tilia species. 10" d.b.h. @ 30" a.g. Root plate is raised (3.5') planter 24 sq. ft., mulched. Canopy condition is good; stem lost points for 3 scaffold branches with inclusion. No flare; suspect SGR and/or excess soil over roots. Electrical box nearby.

- O68 Gleditsia triacanthos var inermis
 2.4" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Condition of canopy and stem acceptable, although the tree hasn't established yet. It does have the sun exposure necessary for it to excel.
- 069 Tilia species 5.2" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Condition of canopy is good: stem condition is compromised by 2 scaffold branches with included bark attachments. No trunk flare, so suspect SGR and/or excess soil over first roots. Electrical box <6" from trunk. 15' from street light.</p>
- 070 Gleditsia triacanthos var inermis 2.45" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Condition of canopy and stem acceptable given the fact that the tree hasn't established.
- 071 Tilia species3.7" d.b.h. Root plate is 5'x5' grated cut-out in
brick walkway. Canopy condition is good; stem condition has been compromised by
ripped off branches leaving large wounds, a little decay in the trunk, some cambium
loss. Electrical box 12" from trunk 15' from street light.
- 072 Tilia species2.1" d.b.h. Root plate is 5'x5' grated cut-out in
brick walkway. Canopy and stem condition good. Newly planted; guy wires still
attached.
- 073 Tilia species4.1 d.b.h. Root plate is 5'x5' grated cut-out in brick
walkway. Canopy condition is good; stem condition good. No flare, so suspect SGR
and/or excess soil over roots. Electrical box within 6 inches of trunk. 15' from two
street lights.
- 074 Tilia species2.0 d.b.h. Root plate is 5'x5' grated cut-out in brick
walkway. Canopy and stem condition good. Newly planted, healthy.
- 075 Ginkgo biloba 8.8" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Canopy condition is good; stem condition compromised by loss of cambium over a significant area.
- 076 Ginkgo biloba 1.25" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Good canopy and stem condition for newly planted tree. 10 feet from street light.

GENUS MAP 3

077Fraxinus pennsylvanica8.8" d.b.h. Root plate is 7' diameter cut-out in
sidewalk. Condition of canopy and stem good. Very little trunk flare, thin canopy,

stunted growth. Suspect SGR and/or excess soil over roots. Electrical box 12 from trunk.

- 078 Ginkgo biloba 11.5" d.b.h. Root plate is 7' diameter cut-out in sidewalk. Condition of canopy and stem poor to fair. Canopy is thin and stunted. Electrical box is 24" from trunk. Street light is 10' away.
- 079 Ginkgo biloba 11.0" d.b.h. Root plate is 7' diameter cut-out in sidewalk. Condition of canopy and stem fair. Canopy is thin and stunted. Electrical box is near the trunk. 10' from street light.
- 080 Tilia species 17.0" d.b.h. Root plate is 7' diameter cut-out in sidewalk, mulched. Condition of canopy and stem fair. Electrical box within 24" of trunk. Lindens have the ability to survive construction activities, but I'm not convinced this tree is worth it.
- 081 Fraxinus pennsylvanica^{*} 5.85" d.b.h. Root plate is mulched planting bed9'x55'. Condition of canopy and stem good. Thin canopy. Light 15' away.
- 082 Tilia species 16.5" d.b.h. Root plate is same as Tree 081.
 Canopy condition is good; stem condition is compromised by decay. Lindens are prone to decay, so this tree doesn't deserve preservation efforts.
- 6.8" d.b.h. Root plate is same as Trees 080 and
 081. Condition of canopy and stem good. Very thin canopy. Water main is 2 feet away.
 20' from street light.
- 084 Fraxinus pennsylvanica 6.8" d.b.h. Root plate is 7' diameter cut-out in sidewalk, mulched. Canopy condition is good; stem is compromised by decay. Light box within 24".
- 085 Tilia species 15.9" d.b.h. Root plate is 9'x20' planting bed, mulched, perennials. Condition of canopy is fair; condition of stem is compromised by column of decay.
- 086Acer rubrum4.8" d.b.h. Root plate is 7' diameter cut-out in
sidewalk, mulched. Canopy condition is poor with stunted leaves. Stem is equally poor
and has an insect borer infestation.
- 087 Tilia species9.2" d.b.h. Root plate is planting bed, 150 sq. ft..Condition of the canopy good, as well as the stem. Fire hydrant in bed.
- 088 Amelanchier species 3" d.b.h. Root plate is 9'x75' planting bed, mulched, planted. Canopy condition is fair. Stem condition is compromised by decay. Very poor specimen.

- O89 Acer ginnala 6.5", 9" and 7" d.b.h. of three stemmed tree. Root plate is 15'x25' mulched planting bed. Canopy condition and stem fair to good. This tree is construction tough but is on the invasive species list, so consider that during the preservation talks.
- 090Acer ginnala6.4" d.b.h. Shared root plate with Tree 089.Condition of both canopy and stem poor. Remove before preservation.
- 091 Fraxinus pennsylvanica 21.45" d.b.h. Root plate is a 6' diameter sidewalk cut-out, mulched. Condition of canopy and stem good. This is a significant tree in terms of canopy cover.
- 092 Fraxinus pennsylvanica 21.65" d.b.h. Root plate is a 6' diameter sidewalk cut-out, mulched. Condition of canopy and stem good. Roots are lifting sidewalk a bit, so care must be taken to maintain stability. This is a significant tree in terms of canopy cover.
- 093 Fraxinus pennsylvanica 16.6" d.b.h. Root plate is a 6.5' diameter sidewalk cut-out, mulched. Condition of canopy and stem good. Electrical box within 6" of trunk. This is a significant tree in terms of canopy cover.
- 094 Fraxinus pennsylvanica 6.9" d.b.h. Root plate is a 6.5'diameter sidewalk cut-out, mulched. Condition of canopy and stem fair to good. Stem has a bulbous base, often associated with SGRs. No trunk flare. Poor condition and health, overall.
- O95 Fraxinus pennsylvanica* 5.1" d.b.h. Root plate is a grated, 4'x9' cut-out in sidewalk. Condition of canopy is good as well as the stem. There is evidence of a little delayed graft incompatibility. Electrical box 12" from trunk.
- O96 Fraxinus pennsylvanica* 5.5" d.b.h. Root plate is 6.5' diameter sidewalk cut-out, mulched. Condition of canopy and stem good, although the canopy is very thin. Evidence of delayed graft incompatibility. 15 feet from light.
- 097 Fraxinus pennsylvanica* 7.7" d.b.h. Root plate is 4'x9' grated sidewalk cutout. Condition of canopy and stem good. The electrical box near it is imbedded in the trunk. Some damage will result when this is attended to.
- 098 Fraxinus pennsylvanica 20.5" d.b.h. Root plate is 6.5' diameter sidewalk cut-out, mulched. Condition of canopy and stem good. 5 feet from street light. Significant tree in terms of canopy cover.
- 099 Fraxinus pennsylvanica 20.2" d.b.h. Root plate is 6.5' diameter sidewalk cut-out, mulched. Condition of canopy and stem good. Electrical box 6" from trunk.

Some sidewalk lifting, so care must be taken to not destabilize this tree during construction. Significant tree in terms of canopy cover.

- Malus species 9.9" d.b.h. Root plate is a 250 sq. ft. boulevard,
 10' wide. Canopy condition is poor to fair; stem condition good. Electrical box 12" from trunk.
- 101 Fraxinus pennsylvanica 15.3" d.b.h. Root plate is 6.5' diameter sidewalk cut-out, mulched. Condition of canopy and stem good. Electric box 6" from trunk. Sidewalk lifting and cracking. Significant tree in terms of canopy cover.

102 Malus species REMOVED

- 103Fraxinus pennsylvanica17.65" d.b.h. Root plate is 6.5' diameter sidewalk
cut-out, mulched. Condition of canopy and stem good. <10 feet from street light.
Significant tree in terms of canopy cover. As one moves to the east, condition declines.
- 104 Fraxinus pennsylvanica cut-out, mulched. Condition of canopy is fair, but thin and chlorotic; stem is good. Declining is health. Significant sidewalk lifting by roots and flare. Preservation tactics not worth it for this tree.

GENUS MAP 2

- 105Tilia species9.2" d.b.h. Root plate is raised (24") 9'x9' planting
bed, mulched and planted. Canopy condition is good; stem condition is compromised
by no taper, suckering which are indicative of SGRs and/or excess soil over roots. Also,
codominant leader with inclusion. 10' from light.
- 106 Ginkgo biloba 5.75" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Condition of canopy and stem good; slow to leaf out compared to other ginkgos in the area.
- 107Ginkgo biloba5.8" d.b.h.Root plate is 5'x5' grated cut-out in
brick walkway.brick walkway.Condition of canopy and stem good.10' from street light.
- 108Quercus rubra11.8" d.b.h. Root plate is raised (24") 9'x9' planting
bed, mulched, perennials. Canopy and stem condition good; foliage is thin, stunted,
chlorotic. Electrical box in bed.

- Syringa reticulata
 6" d.b.h. @ 24" a.g. Root plate is raised (24"0
 9'x6' planting bed, mulched. Condition of canopy and stem good. Tough trees and very adaptable to construction activities.
- 110Syringa reticulata6" d.b.h. @ 30" a.g. Root plate shared with Tree109. Canopy and stem condition good. Electrical box in bed.
- 111Tilia species13.3 d.b.h. Root plate raised bed (24") 9'x9',planted and mulched. Condition of canopy and stem good. Electrical box in bed.
- 112 Ginkgo biloba 12.6" d.b.h. Root plate is 5'x5' grated cut-out in brick walkway. Condition of canopy and stem good. Grate is against the east side of the tree trunk. Some lifting of bricks due to roots.
- 113Ginkgo biloba13.8" d.b.h. Root plate is 5'x5' grated cut-out in
brick walkway. Condition of canopy is fair, stem is good. The top of the tree has died
back. The grate is against the trunk in two places.
- 114Tilia species13.4" d.b.h. Root plate raised (24") planting bed9'x9', mulched and planted. Condition of canopy and stem good. There is a street light
between Trees 114 and 111.
- 115 Malus species 17.5" d.b.h. @ 18" a.g. Root plate is raised (12") bed, 23'x8', mulched and planted. Condition of canopy and stem poor to fair. Extensive decay in trunk at ground line.
- 116Tilia species9.5" d.b.h. Root plate is raised bed (12"), 9'x9',mulched and planted. Condition of canopy and stem good; lots of watersprouts which
may just be typical for Tilia. Electrical box 24 inches away; <10' from street light.</td>
- 117 Acer saccharum 118 and 120; 9'x14' and 9'x19', mulched. Canopy and stem condition good. Foliage is thin, chlorotic, stunted. No trunk flare, which is suspect for SGRs and/or excess soil over roots. 12' from street light.
- 118Malus species13" d.b.h. @12" a.g. Root plate is shared withTrees 117 and 120. Contion of canopy and stem poor. Stem has considerable decay to
ground line.
- 119 Quercus rubra 16.3" d.b.h. Root plate is raised (12") bed, 270 sq. ft., mulched. Condition of canopy is poor; stem is good. Foliage is stunted, thin and chlorotic; some watersprouting which is uncommon for healthy red oaks. Electrical box 24" from trunk.

- 120Acer saccharum10.3" d.b.h. Root plate shared with Trees 117 and
118. Condition of canopy and stem good. No trunk taper, so suspect of SGRs and/or
excess soil over roots. Foliage thin and chlorotic.
- 121Acer saccharum8.0" d.b.h. Root plate is 5'x5' grated cut-out in
brick walkway. Condition of canopy and stem poor; stem with considerable decay and
unstable. Some lifting of bricks outside of cut-out by roots.
- Gleditsia triacanthos var inermis
 12" d.b.h. Root plate is 9'x9' raised (24") planting bed, mulched and planted. Condition of canopy is fair to good; stem condition is good. Fire hydrant and electrical box share the planter space.
- 12.3" d.b.h. Root plate is 5'x5' open and mulched cut-out in brick walkway. Condition of canopy is good; stem is fair due to codominant and inclusion. Also, severe delayed graft incompatibility at ground line. Poor pruning practices employed to prune branches away from building to the east. Bricks lifting due to shallow roots.
- 124 Gleditsia triacanthos var inermis. 11.5" d./b.h. Root plate is 5'x5' grated cut-out in brick walkway. Condition of canopy is good; stem is fair to good due to codominant with inclusion. Brick is lifting in walkway; light is between Trees 123 and 124.
- 125 Ginkgo biloba 15" d.b.h. Root plate is raised (24") mulched planting bed of 110 sq. ft. Condition of canopy and stem good. Electrical box 24" from trunk. Light is 10' away.
- **126** Tilia species 14" d.b.h. Root plate is raised (12") mulched and planted bed 14'x35' and 9'x9', shared with Trees 128 and 129. Condition of canopy is good; stem condition compromised by 3 codominants with inclusion. Street light is 10' away; outlet box is 24" away, electrical junction box 4 feet away. Lots of infrastructure in this planting bed.
- 127 Ginkgo biloba15.65" d.b.h. Root plate raised (24") bed, 400 sq.ft., mulched and planted and shared with Tree 130. Condition of canopy and stem
good. Electrical box 12" away; light is 10' away.
- 128Syringa reticulata6.65" d.b.h. Root plate is shared with Trees 126and 129. Condition of canopy and stem poor due to canopy loss and stem decay.
- Tilia species 17.5" d.b.h. Root plate shared with Trees 126 and 128. Canopy condition good; stem condition lost points due to codominance and inclusion. No taper, suspect SGRs and/or excess soil over roots. Electrical box 12 inches from trunk. 12' from light.

130Ginkgo biloba16.9" d.b.h. Root plate shared with Tree 127.Canopy and stem condition good.

131Acer saccharum7.7" d.b.h. Root plate 5'x5' grated cut-out in brickwalkwaySome lifting of brick in walkwayCondition of canony and stem good

walkway. Some lifting of brick in walkway. Condition of canopy and stem good. Stunted, chlorotic leaves and thin canopy.

132Acer saccharum7.2" d.b.h. Root plate 5'x5' grated cut-out in brick
walkway. Canopy condition poor. Stem condition good. Some lifting of brick in
walkway. Thin, stunted, chlorotic canopy. Stem has one flat side and no taper; suspect
SGRs and/or excess soil over roots. Electrical box against trunk.

133Tilia species12.3" d.b.h. Root plate is 115 sq.ft. raised (12")planting bed shared with Tree 134.Condition of canopy and stem good. 10 from light.

134Tilia species11.5" d.b.h.Root plate is 115 sq.ft. raised (12")planting bed shared with Tree 133.Condition of canopy and stem good.Four feet fromelectrical box.

- 135Acer saccharum8.9" d.b.h. Root plate is 5'x5' grated cut-out in
brick walkway. Condition of canopy is poor; stem is good. Stem has one flat side,
perhaps SGR and/or below ground wound. Electrical box 12" from trunk.
- 136Tilia species15.2" d.b.h. Root plate is raised (48") 250 sq. ft.mulched and planted planting bed, shared with Tree 138. Condition of canopy and stem
good.
- 137 Cercis canadensis 14.9" @18" a.g. Root plate is raised (24") mulched planting bed (9'x16' + 9'x16'). Condition of canopy is good; stem is fair due to codominant leaders and decay in one of them. Leaf-out had not started but this has been characteristic for red buds in the upper Midwest following the winter of 2013-2014, so it should be monitored throughout the season.
- 138Acer ginnala7.7" and 7.9" d.b.h., two stemmed. Root plate is
shared with Tree 136. Condition of the canopy is good; stem compromised by decay
and cambium loss.
- 139Quercus rubra19.5" d.b.h. Root plate is raised (48") planting bed225 sq. ft. Condition of canopy is good; stem is very poor, with decay, cambium loss and
bulbous base. Canopy leaves are stunted and very chlorotic.

GENUS MAP 4

- 140 Ginkgo biloba5.3" d.b.h. Root plate is 5'x5' grated sidewalk cut-
out. Condition of canopy and stem good. Electrical box 6" from trunk.
- 141 Fraxinus pennsylvanica*
 4.25" d.b.h. Root plate is 5'x5' grated sidewalk cutout. Condition of canopy and stem good. Electrical box 6" from trunk.
- 142 Ginkgo biloba 10.4" d.b.h. Root plate is 5'x5' grated sidewalk cutout. Condition of canopy and stem good. Electrical box against trunk. Light 15' away. Roots lifting sidewalk.
- 143 Ginkgo biloba4.4" d.b.h. Root plate is 5'x5' grated sidewalk cut-
out. Condition of canopy is fair; stem is good. Electrical box within 6" of trunk.
- 144 Ginkgo biloba8.65" d.b.h. Root plate is 5'x5' grated sidewalk cut-
out. Condition of canopy is very poor; stem is good. Electrical box within 6"; light within
10'.
- 145Ginkgo biloba4.4" d.b.h. Root plate is 5'x5' grated sidewalk cut-
out. Condition of canopy is very poor; stem is good. Leaves are small, cupped, chlorotic
and scorched. Electrical box within 6" of trunk.
- 146 Ginkgo biloba9.6" d.b.h. Root plate is 5'x5' grated sidewalk cut-
out. Condition of canopy is fair to poor; stem is good. Electrical box within 6" of trunk.
- 147 Ginkgo biloba 6.55" d.b.h. Root plate is 5'x5' grated sidewalk cutout. Condition of canopy and stem are good to fair. Grate compressed about 30% of trunk before it was cut out. Electrical box within 2" of trunk.
- 148 Ginkgo biloba9.7" d.b.h. Root plate is 5'x5' grated sidewalk cut-
out. Condition of canopy is poor; stem is good. Electrical box within 2" of trunk.

*Although the landscape maps indicated these were green ash (Fraxinus pennsylvanica), there was strong evidence that they were either black ash (Fraxinus nigra) or hybrids of black ash. In the end, they are both native ashes, both equally vulnerable to emerald ash borer.

LEGEND:

Canopy/Crown: the portion of the tree from the first scaffold branch closest to the ground to the top of the tree.

Chlorosis: pale green to yellow leaves; signifies a breakdown of chlorophyll.

Codominance: two or more leaders in a tree.

d.b.h./DBH: the diameter of the tree measured at a distance of 4.5 feet above ground.

Flare/aka Trunk Taper: the base of the tree flare's out (enlarges) the closer it is to the ground line. Conversely, as the diameter of the trunk is measured in increments from the ground moving upward, the trunk diameter decreases (tapers).

Inclusion: the presence of included bark in the union of codominant leaders or scaffold branches.

Scaffold Branches: the main, architectural branches of a tree.

Scorch: the edges of the leaves turn brown due to dead leaf cells.

Sparse Canopy: few leaves dispersed throughout the canopy, compared to the characteristic number.

Stem Girdling Roots: (SGR) roots that are formed around the stem of a tree or tangential to the stem of a tree. As the roots and stems expand, tissues of the stem are compressed, retarding the normal flow of water, nutrients and photosynthates throughout the tree.

Stunt: smaller than is characteristic for a tree species: leaves, twig growth, stem diameter growth, height, width.

Thin Canopy: lack of characteristic canopy density/ability of light to pass through.

Tree Stem/Trunk: the portion of the tree from the first scaffold branch closest to the ground to the ground line.

Green Highlights: These trees have the greatest capacity to withstand the changes and stresses associated with construction activities and survive with reasonable care before, during and after the construction activities.

Yellow Highlights: These trees are less resilient yet still have the potential for preservation if their location and species is desired. These trees will need to be cared for more before, during and post construction in order to maintain their health and stability.

Red Highlights: These trees are unlikely to survive the stresses associated with construction activities, or, are too unstable or architecturally deficient to remain as part of the landscapes. These trees should be removed prior to the beginning of the construction activities and replaced as appropriate.



















D. Parks Department Equipment List

Equipment #	Equipment Description	Equipment Condition
412	1997 Ford 3930 Tractor	Good
489	2000 Vermeer TS-44A Spade	Good
490	1996 P&H 2808T Water Trailer	Good
491	2005 Freightliner M2/Altec 50 FT	Good
492	2012 Ford F150	Good
494	2013 Ford F550 XL 4x4 Chipper	Good
495	2007 International 4400 CC Chipper	Good
496	1998 Vermeer 1250BC Chipper	Poor
497	2004 Vermeer BC1400 Chipper	Good
499	2010 Ford F350 4x4 Flatbed	Good
508	2011 Ford F250 XL 4x4	Good
516	2011 Toro Sand Pro 5040	Good
517	1997 John Deere 1200 Groomer	Fair
518	2006 Toro SP3040 Groomer	Good
519	2008 Toro IP3040 Groomer	Good
520	2013 Toro Sand Pro 5040	Good
521	2003 Outlaw Trailer Flatbed	Good
522	2014 Toro 74267 ZTR Mower	Good
524	2011 Toro Workman MD	Good
525	2010 Toro Workman MD	Good
526	2003 Toro Workman 1100	Poor
527	2014 Toro Workman MDX	Good
782	1997 Athens A-55 Disc	Good
871	2003 H&H M-20 Tandem Axel Trailer	Good
873	2007 H&H US-12-1 Single Axel Trailer	Good
875	2008 H&H FD-20-2 Tandem Axel Trailer	Good
876	2002 Progressive TD65-12 Mower	Good
877	1978 Triple D Trailer Pump 500	Good
878	2006 Progressive TD65-17 Mower	Good
879	2006 Progressive TD65-17 Mower	Good
880	1998 H&H Tandem Axel Trailer	Good
881	2016 Chevy Colorado	Good
885	2006 Ford F250 Utility	Good
886	2009 Case IH Farmall 95U 4x4	Good
887	2007 GMC Sierra 2500 HD	Fair
889	2010 FordF250 4x4	Good
890	2010 John Deere CX15 Mower	Good
891	2013 Ford F350 4x4 Flatbed	Good
893	1994 Olympic Trailer 2 Wheel	Good
895	2013 Wiedenmann GXI 6 HD Aerator	Good
896	1997 Bush RTS62-03 Tiller	Good
897	1993 Eager Trailer 4 Wheel	Good
898	1992 Landpride 15-72 Seeder	Good

899	2004 John Deere TC125 Turf Coll	Good
900	2006 John Deer Gator HPX 4x4	Good
903	2014 Toro 4000-D Mower	Good
904	2001 John Deere 4400 4x4 Tractor	Fair
905	2011 John Deere 3520 Tractor	Good
906	John Deere 2320 4x4 Tractor	Good
907	2015 John Deere 3046R 4x4 Tractor	Good
909	1996 Felling Trailer 4 Wheel	Good
910	2008 John Deere Pro Gator 2030	Good
912	2005 Bobcat S130 Skid Loader	Good
913	2014 Bobcat T590 Track Loader	Good
914	2012 Ford F250 4x4	Good
915	2016 Chevy 3500 4x4 Flatbed	Good
916	2015 Ford F250 4x4	Good
917	2013 Ford F350 4x4 Flatbed	Good
919	2010 Ford F250 XL 4x4	Good
920	2016 Chevy 3500 Flatbed	Good
921	1976 Jacobsen Trailer Flatbed	Fair
922	2001 H&H Trailer Flatbed	Good
923	2005 John Deere 310 SG Loader	Good
924	2014 Ford F150 XL 4x4	Good
925	2011 Ford F550 XL NewWay	Good
926	2014 Toro 74267 ZTR Mower	Good
927	2014 Toro 74267 ZTR Mower	Good
929	2010 John Deere 5056M Tractor	Good
933	2009 International 7300	Good
934	1997 GMC C8500 Grapple	Fair
935	2011 Toro Groundsmaster 360	Good
936	2013 Toro 3280D 4x4	Good
940	2010 Toro Groundsmaster 5910D	Good
941	2016 Toro Groundsmaster 5910D	Good
945	2012 Case IH Farmall 65C Str	Good
946	2012 Case IH Farmall 65C Str	Good
954	2010 Dodge Dakota ST XC	Good
956	2012 Ford F150 Extended Cab	Good
912/913		
Attachments	Tree Puller	Good
	Grapple Bucket	Good
	Fork	Good
	Posthole Digger	Good
	Smooth Bucket	Good
	Tooth Bucket	Good
	Snow Bucket	Good

E. Plant List

TREES		
STREET/PARK		
TREE	Latin name	Common Name
PARK	Sambucus canadensis	American Black Elderberry
PARK	Hamamelis vernalis	Vernal Whitchhazel
PARK	Staphylea trifolia	American Bladdernut
PARK	Chionanthus virginicus	Fringe Tree
PARK	Magnolia stellata	Star Magnolia
PARK	Ptelea trifoliata	Hoptree
PARK	Heptacodium miconioides	Seven-son-flower
PARK	Asimina triloba	PawPaw
PARK	Amelanchier canadensis	Service Berry
PARK	Cornus alternifolia	Pagoda Dogwood
PARK	Hamamelis virginiana	Common Whitchhazel
PARK	Cornus kousa	Kousa Dogwood
PARK	Magnolia X soulangeana	Saucer Magnolia
PARK	Parrotia persica	Persian Ironwood
PARK	Crataegus spp.	Hawthorn Species
PARK	Diospyros virginiana	American Persimmon
PARK	Quercus muehlenbergii	Chinkapin Oak
PARK	Castanea mollissima	Chinese Chestnut
PARK	Alnus glutinosa	Black Alder
PARK	Carya illinoinensis	Hardy Pecan
PARK	Picea omorika	Serbian Spruce
PARK	Abies concolor	Concolor Fir
PARK	Tsuga canadensis	Canadian Hemlock
PARK	Quercus bicolor	Swamp White Oak
PARK	Taxodium distichum	Bald Cypress
PARK	Fagus grandifolia	American Beech
PARK	Pinus heldreichii	Bosnian Pine
PARK	Carya cordiformis	Bitternut Hickory
PARK	Prunus serotina	Black Cherry
PARK	Populus deltoides	Eastern Cottonwood
PARK	Magnolia acuminata	Cucumber Magnolia
PARK	Pinus strobus	Eastern White Pine
PARK	Larix decidua	European Larch
PARK	Quercus palustris	Pin Oak
PARK	Carya ovata	Shagbark Hickory
PARK	Carya tomentosa	Mockernut Hickory
PARK	Quercus macrocarpa	Bur Oak

PARK	Platanus occidentalis	American Sycamore
STREET	Syringa reticulata	Japanese Tree Lilac
STREET	Carpinus caroliniana	American Hornbeam
STREET	Maackia amurensis	Amur Maackia
STREET	Cotinus obovatus	American Smoketree
STREET	Cercis canadensis	Eastern Redbud
STREET	Aesculus glabra	Ohio Buckeye
STREET	Ostrya virginiana	American Hophornbeam
STREET	Zelkova serrata	Zelkova
STREET	Ulmus spp. Hybrid	Elm Hybrid
STREET	Koelreuteria paniculata	Golden Raintree
STREET	Phellodendron amurense	Amur Corktree
STREET	Nyssa sylvatica	Black Tupelo
STREET	Cladrastis kentukea	Yellowwood
STREET	Sassafras albidum	Sassafras
STREET	Maclura pomifera 'white shield'	White Shield Osage Orange
STREET	Glidetsia tricanthos 'Skyline'	Skyline Honey Locust
STREET	Corylus colurna	Turkish Filbert
STREET	Robinia psuedoacacia 'Chicago Blues'	Chicago Blues Black Locust
STREET	Celtis occidentalis	Common Hackberry
STREET	Eucommia ulmoides	Rubber Tree
STREET	Catalpa speciosa	Catalpa
STREET	Carpinus betulus	European Hornbeam
STREET	Cercidiphyllum japonicum	Katsura Tree
STREET	Stewartia pseudocamellia	Japanese Stewartia
STREET	Fagus sylvatica	European Beech
STREET	Quercus imbricaria	Shingle Oak
STREET	Quercus velutina	Black Oak
STREET	Sophora japonica	Japanese Pagoda Tree
STREET	Aesculus hippocastanum	Horse-Chestnut
STREET	Quercus alba	White Oak
STREET	Ginko biloba (male)	Ginkgo
STREET	Gymnocladus dioicus	Kentucky Coffeetree
STREET	Liquidambar styraciflua	American Sweetgum
STREET	Quercus rubra	Red Oak
STREET	Tilia americana	American Basswood
STREET	Metasequoia glyptostroboides	Dawn Redwood
STREET	Platanus × acerifolia	London Planetree
STREET	Liriodendron tulipifera	Tulip Poplar
	Maples currently on moratorium	

Columnar		Dakota Pinnacle Birch
Columnar		Slender Silhouette Sweetgum
Columnar		Jack Pear 'Jackzam'
Columnar		Japanese Tree Lilac 'Ivory Pillar'
Columnar		Prairie Sentinal Hackberry
Columnar		Princeton Sentry Ginkgo
Columnar		Musashino Columnar Zelkova
Columnar		Crimson Spire Oak
Columnar		Streetspire Oak
Columnar		Fastigiate Beech
Columnar		City Sprite Zelkova
Columnar		Native Flame American Hornbeam
Columnar		Tulip Popular 'Fastigiatum'
Columnar		Elmerald Sunshine Elm
Columnar		Emerald Avenue Hornbeam
Columnar		Frontier Elm
SHRUBS		
	Latin name	Common Name
	Juniperus horizontalis	Creeping Juniper
	Rhododendron 'Pillow Party'	Pillow Party Rhododendron
	Hypericum kalmianum	St.John's wort
	Fothergilla gardenii	Dwarf fothergilla
	Amorpha canescens	Lead plant
	Symphoricarpos orbiculatus	Coralberry
	Ceanothus americanus	New Jersey tea
	Taxus canadensis	Canadian Yew
	Rhododendron mucronulatum	Korean Rhododendron
	Rhododendron 'Vallya'	Vallya Rhododendron
	Aronia melanocarpa	Black Chokeberry
	Symphoricarpos albus	Common Snowberry
	Cotoneaster apiculatus	Cranberry Cotoneaster
	Juniperus sabina	Spreading Juniper
	Viburnum acerifolium	Mapleleaf Viburnum
	Viburnum carlesii	Koreanspice Viburnum
	Hydrangea quercifolia	Oakleaf Hydrangea
	Syringa meyeri	Korean lilac
	Rhododendron 'P.J.M.'	P.J.M Rhododendron
	Cotoneaster divaricatus	Spreading Cotoneaster
	Rhododendron 'Milestone'	Milestone Azalea
	Physocarpus opulifolius	Common Ninebark

	Myrica pensylvanica	Bayberry
	Viburnum dentatum	Arrowwood Viburnum
	llex glabra	Inkberry
	Weigela florida	Weigela
	Rhododendron catawbiense	Catawba Rhododendron
	Chaenomeles speciosa	Flowering quince
	Cornus amomum	Silky dogwood
	Ilex verticillata	Common winterberry
	Calycanthus floridus	Carolina allspice
	Caragana microphylla	Littleleaf Peashrub
	Kolkwitzia amabilis ' maradco'	Beauty bush
	Vaccinium corymbosum	High-bush blueberry
	Lindera benzoin	Northern spicebush
	Cornus sericea	Redosier Dogwood
	Viburnum trilobum	Am. Cranberrybush Viburnum
	Viburnum opulus	Eur. Cranberrybush Viburnum
	Cotoneaster multiflorus	Many-flowered Cotoneaster
	Aesculus parviflora	Bottlebrush buckeye
	Hibiscus syriacus	Rose of Sharon
	Cotinus coggygria	Smoke Bush
	Cornus racemosa	Gray Dogwood
	Viburnum lantana	Wayfaringtree Viburnum
	Viburnum prunifolium	Blackhaw Viburnum
	Viburnum lentago	Nannyberry Viburnum
	Corylus Americana	American hazelnut
	Cornus mas	Corneliancherry Dogwood
	Chamaecyparis obtusa	Hinoki Falsecypress
PERENNIALS		
	Achillea	Yarrow
	Agastache	Нуѕѕор
	Allium angulosum 'Summer Beauty'	Ornamental onion
	Allium autopurpureum	Ornamental onion
	Allium caeruleum	Ornamental onion
	Allium cristophii	Star of Persia
	Amsonia 'Blue Ice'	Bluestar
	Amsonia hubrichtii	Bluestar
	Amsonia tabernaemontata var. salicifolia	Willow-leaved bluestar
	Anthericum ramosum	St. Bernard's lily
	Asarum canadense	Wild ginger
	Asclepias tuberosa	Butteyfly weed

Aster	Aster
Astilbe	False spirea
Baptisia 'Purple Smoke'	False indigo
Baptisia sphaerocarpa	Yellow false indigo
Calamagrostis x acutiflora 'Karl Foerster'	Karl Foerster grass
Calamintha nepeta	Catmint
Carex brevior	Sedge
Carex bromodies	Sedge
Carex flacca	Blue Sedge
Carex montana	Sedge
Carex pensylvanica	Sedge
Carex shortania	Short's Sedge
Carex sprengelii	Sprengel's sedge
Carex swanii	Swans sedge
Coreopsis palmata	Prairie coreopsis
Coreopsis verticulata	Tickseed
Dalea purpurea	Prairie clover
Dryopteris marginalis	Leatherwood fern
Echinacea purpurea	Coneflower
Eryngium yuccifolium	Rattlesnake master
Eupatorium dubium	Joe pye weed
Euphorbia polychroma 'Bonfire'	Spurge
Geranium sanguineum 'Max Frei'	Geranium
Liatris pycnostachya	Prairie blazing star
Monarda bradburiana	Bee Balm
Nepeta 'Early Bird'	Catmint
Panicum virgatum	Switch grass
Parthenium integrifolium	Wild quinine
Penstemon digitalis	Foxglove beard tongue
Perovskia atripicifolia 'Little Spire'	Russian Sage
Phlox Paniculata	Garden Phlox
Polystichum acrostichoides	Christmas fern
Rudbeckia fulgida	Black-eyed susan
Salvia Nemorosa	Meadow sage
Schizachrium scoparium	Little bluestem
Sesleria autumnalis	Moor grass
Solidago	Goldenrod
Sporobolus heterolepis	Prairie dropseed
Stachys officinalis	Betony
Veronica lettermannii	Ironweed

USDA NRCS

IA - CPA - 4 REV. February-98 (File Code 180-12-12)

Seeding Plan

Name	Short Grass Mix			Date		
Prepared by	Allen Smith-Oser	nbaugh Prairie Seed Farms	Tract No.			
			-	Field No.		
Type of Seeding:	-	Field Area (acres):	9.500	Contract No.		

Seeding Mix Summary

			PLS		
Grasses	Scientific Name	Common Name	Lbs/Acre	PLS Lbs	Estimated Cost
1	Schizachyrium scoparium	Little Bluestem	0.50	4.75	
2	Sporobolus compositus	Composite Dropseed	0.20	1.90	
3	Koeleria macrantha	Prairie Junegrass	0.082	0.78	
4	Pascopyrum smithii	Western Wheatgrass	0.25	2.38	
5	Elymus trachycaulus	Slender Wheatgrass	0.35	3.33	
6	Bouteloua curtipendula	Sideoats Grama	0.050	0.48	
7	Elymus virginicus	Virginia Wildrye	2.50	23.75	
		SUBTOTAL GRASSES	3.93	37.35	
			PLS		
Forbs/Legumes	Scientific Name	Common Name	Lbs/Acre	PLS Lbs	Estimated Cost
1	Heuchera richardsonii	Alumroot	0.0050	0.048	3
2	Rudbeckia hirta	Black-eyed Susan	0.15	1.43	
3	Asclepias tuberosa	Butterfly Milkweed	0.010	0.095	
4	Astragalus canadensis	Canadian Milkvetch	0.020	0.19	
5	Tradescantia ohiensis	Common Spiderwort	0.010	0.095	
6	Symphyotrichum pilosum	Hairy White Oldfield Aster	0.010	0.095	
7	Symphyotrichum laeve	Smooth Blue Aster	0.010	0.095	
8	Echinacea pallida	Pale Coneflower	0.10	0.95	
9	Echinacea purpurea	Purple Coneflower	0.25	2.38	
10	Eupatorium perfoliatum	Boneset	0.0060	0.057	
11	Chamaecrista fasciculata	Partridge Pea	0.20	1.90	
12	Dalea purpurea	Purple Prairie Clover	0 10	0.95	
13	Dalea candida	White Prairie Clover	0.050	0.48	
14	Symphyotrichum	Skyblue Aster	0.020	0.19	
15	Penstemon digitalis	Foxalove Penstemon	0.11	1.05	
16	Potentilla arguta	Prairie Cinquefoil	0.050	0.48	
17	Verbena stricta	Hoary Vervain	0.25	2.38	
18	Achillea millefolium	Western Yarrow	0.060	0.57	
		SUBTOTAL FORBS	1.41	13.40	
			PLS Lbs /		
Woody	Scientific Name	Common Name	Acre	PLS Lbs	Estimated Cost



IA - CPA - 4 REV. February-98 (File Code 180-12-12)

Seeding Plan

Name	Tall Grass Mix		Date	12/16/2014
Prepared by	Allen Smith- Osenbaugh Prairie Seed Farms	_	Tract No.	
	3	-	Field No.	
Type of Seeding:	 Field Area (acres): 	9.000	Contract No.	

Seeding Mix Summary

			PLS		
Grasses	Scientific Name	Common Name	Lbs/Acre	PLS Lbs	Estimated Cost
1	Andropogon gerardii	Big Bluestem	3.00	27.00	
2	Sorghastrum nutans	Indiangrass	0.25	2.25	
3	Elymus canadensis	Canada Wildrye	0.35	3.15	
4	Panicum virgatum	Switchgrass	0.50	4.50	
		SUBTOTAL GRASSES	4.10	36.90	
			PLS		
Forbs/Legumes	Scientific Name	Common Name	Lbs/Acre	PLS Lbs	Estimated Cost
1	Brickellia eupatorioides	False Boneset	0.0030	0.027	
2	Oenothera biennis	Common Evening Primrose	0.22	1.98	
3	Ratibida pinnata	Gray-headed Coneflower	0.35	3.15	
4	Rudbeckia triloba	Brown-eyed Susan	0.060	0.54	
5	Campanula americana	Tall Bellflower	0.0080	0.072	
6	Symphyotrichum novae- angliae	New England Aster	0.032	0.29	
7	Veronicastrum virginicum	Culver's Root	0.0085	0.077	
8	Verbena hastata	Blue Vervain	0.10	0.90	
9	Vernonia fasciculata	Ironweed	0.0050	0.045	
10	Silphium perfoliatum	Cup Plant	0.010	0.090	
11	Silphium laciniatum	Compass Plant	0.0080	0.072	
12	Heliopsis helianthoides	Ox-eye	0.20	1.80	
		SUBTOTAL FORBS	1.00	9.04	
			PLS Lbs /		
Woody	Scientific Name	Common Name	Acre	PLS Lbs	Estimated Cost

USDA NRC Natural Resources Conservation Se	S			IA - CP/ Febri (File Code	A - 4 REV. uary-98 9 180-12-12)
	S	Seeding Plan			
Name	Super Dive	erse Forb Mix		Date _	2/18/2010
Prepared by				I ract No.	
Type of Seeding:		Field Area (acres):	1.000	Contract No.	
	Se	eding Mix Summary	,		
		•		Sds. Per	
Grasses	Scientific Name	Common Name	Lbs / Acre	Sq. Ft.	
and the second large and the second part of the second second	and the factor of the second	SUBTOTAL GRASSES	0.000	0.00	
				Sds. Per	
Forbs/Legumes	Scientific Name	Common Name	Ozs / Acre	Sq. Ft.	
1	Echinacea pallida	Pale purple coneflower	0.500	0.08	
2	Lespedeza capitata	Roundhead lespedeza	0.250	0.06	
3	Eryngium yuccifolium	Rattlesnake master	0.500	0.13	
4	Silphium laciniatum	Compass plant	1.000	0.02	
5	Penstemon digitalis	Foxglove beardedtongue	0.500	1.43	
6	Tradescantia ohiensis	Spiderwort	0.250	0.05	1
7	Aster azureus	Sky blue aster	0.125	0.18	
8	Zizia aurea	Golden alexenders	0.250	0.06	
9	Verbena stricta	Hoary Vervain	0.500	0.45	
10	Coreopsis Lancelata	Lancelear Coreopsis	1.000	0.44	
11	Rudbeckia hirta	Black-eyed susan	0.375	0.01	
12	Chamaecrista fasciculata	Partridge pea	1.750	0.12	
13	Astragalus canadensis	Wilk Vetch	0.250	0.09	
14	Desmantnus Illinoensis	II. Dundle flower	1.500	0.13	
15	Ratibida pinnata	Gray-neaded conenower	0.250	0.52	
10	Deles condida	White prairie clover	1 000	0.52	
17	Solidado rigida	Rigid or Stiff goldenrod	0.125	0.36	
10	Helionsis helianthoides	Ox-eve sunflower (False)	0.500	0.07	
20	Dalea nurnureum	Purple prarie clover	0.750	0.30	
20	Liatris pychostachya	Prairie blazing star	0.125	0.02	
22	Ratibida columnifera	Prairie coneflower	0.125	0.18	
23	Echinacea purpurea	Purple coneflower	1.000	0.17	
24	Liatris asper	Rough blazing star	0.125	0.03	
25	Aster laevis	Smooth blue aster	0.125	0.14	
26	Monarda fistulosa	Wild bergamont or Bee balm	0.250	0.43	
27	Aster novae-angliae	New England aster	0.125	0.23	
28	Amorpha canescnes	Leadplant	0.500	0.08	
29	Helenium autumnale	Sneezeweed	0.250	0.57	
30	Vernonia fasciculata	Ironweed	0.500	0.29	
	and the second	SUBTOTAL FORBS	16.000	9.20	
				Sds. Per	
Woody	Scientific Name	Common Name	Ozs / Acre	Sq. Ft.	
ALL CONTRACTOR AND ADDRESS OF A DESCRIPTION OF A		CURTOTAL MOODY	0.000	0.00	CONCERNING.

G. Prescribed Burn History





Prepared by: Juli Seydell Johnson, 220 S. Gilbert St., Iowa City, IA 52240 (319) 356-5100

RESOLUTION APPROVING IOWA CITY INTEGRATED ROADSIDE VEGETATION MANAGEMENT PLAN

WHEREAS, the City desires to establish native plantings and sustainable maintenance practices in City right of ways; and

WHEREAS, City of Iowa City horticulture staff have worked closely with State of Iowa staff to draft a plan specific to right of ways and conditions within Iowa City; and

WHEREAS, the City of Iowa is committed to establishing and maintaining environmentally friendly and sustainable plantings in many City-owned right of ways; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF IOWA CITY, IOWA, THAT:

- 1. The City of Iowa City Integrated Roadside Vegetation Management Plan is approved.
- 2. The City Manager or a designee is authorized to provide documentation of approval of the City of Iowa City Integrated Roadside Vegetation Management Plan.

· · · · · · · · · · · · · · · · · · ·	
1. 1. 16-	
MAYOR	
Approved by	
ATTEST: Andie Vopenie, Dopution Ester 100	11-15-16
CITY)CLERK City Attorney's Office	;

 Resolution No.
 16-330

 Page
 2

It was moved by <u>Botchway</u> and seconded by <u>Dickens</u> the Resolution be adopted, and upon roll call there were:

AYES:	NAYS:	ABSENT:	ABSTAIN:	
<u> </u>				Botchway
X				Dickens
<u>X</u> X				Mims Tavlor
<u>X</u>				Thomas
			<u> </u>	Throgmorton