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Pear Trees on Pear Avenue

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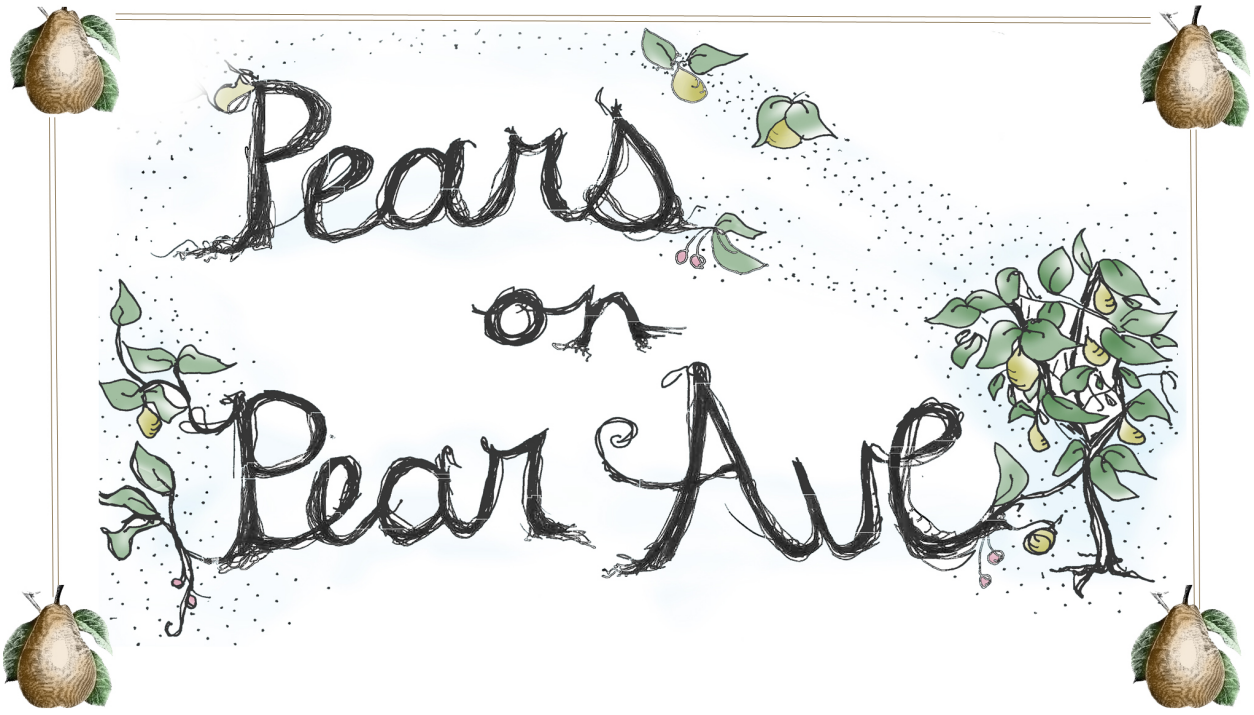

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Abstract

Residents of the EcoVillage, an area of Cleveland, OH's Detroit Shoreway neighborhood, requested fragrant fruit trees to be planted in their neighborhood. Pear Avenue, a street within the EcoVillage, was selected as a target area and mapped to determine the health of the street tree canopy and assess if fruit trees can be planted on tree lawns. Through research, other examples of public fruit were retrieved and public participation practices were analyzed.

Acknowledgments

I would like to thank Dr. Zingale for quickly responding to my questions and helping me relate my research to public administration. Thanks to Lilah Zautner for being my guide, assisting with the selection of a target area, and for being a supportive and amazing boss. Thanks to Bobbi Reichtell for being a visionary leader in the Cleveland community and providing citizen contacts. Thanks to Colby Sattler, the arborist, for lending me his expertise and friendship. Last but not least, I would like to thank the Detroit Shoreway residents Nicole McGee, Sasha Ottoson-Deal, and Dave Roswurm, for taking the time to meet with me, answer my questions, and support the project.

Executive Summary

Residents in Cleveland, Ohio's EcoVillage, an area of the Detroit Shoreway neighborhood, have requested fruit trees to be planted in their neighborhood. Much of the urban landscape is on the brink of a major transition due to the emerald ash borer beetle. This transition proposes an opportunity. The goal is to address citizens' desires and investigate the feasibility of planting fruit trees in tree lawns. The purpose of this paper is to argue that fruit trees can be planted in public spaces, granted there is a strong community support system in place.

Current street landscapes can be problematic. Many of the urban trees planted in Ohio are deteriorating. The emerald ash borer has killed approximately 100 million trees since 2002. The impact will be much larger, as there are 7.5 billion ash trees in the U.S.

Community programs focused on forestry bring benefits to homeowners at a relatively small cost. With the devastation caused by the emerald ash borer to the treescape, property values are expected to decrease. Planting new trees is an important element to improving or stabilizing property values, enhancing the environment, and responding to the requests of the citizens.

To ensure that the tree investment is long-term, unbuildable lots and tree lawns are the focus. Due to the nature of fruit trees and the location, this is a form of urban forestry and a community garden. To retrieve information, government officials were contacted regarding policies, neighbors were interviewed to assess their needs, best practices were recorded, and community-organizing literature was analyzed.

Cities all over the world are embracing fruit trees in public spaces. Ashville, NC has an edible park with over 40 fruit and nut tree varieties. The Boston Tree Party in Boston, MA organized the planting of heirloom apple trees around the city. Vancouver, Canada has about 600 street trees that produce fruits and nuts with an additional 425 fruit trees located in city parks and community gardens (Berg, 2012). Unley, South Australia planted more than sixty fruit trees in a public park, and residents with dead or dying street trees can apply to have them replaced with fruit trees. San Francisco, CA's

Department of the Environment planted 200 fruit trees in one day. A recent study of almond trees that were planted in highly contaminated soil found that "the nuts were found to be completely contaminant-free, safe for consumption" (CUESA, n.d., p. 1).

To assess where the need for trees are, a survey of Pear Avenue was conducted with a certified arborist. The site survey found thirteen vacant tree lawns. Three lots, 6009, 6017, and 6105 Pear Ave., have overhead wires. According to James Lassiter, from the Cleveland Urban Forestry Department, the parcels with overhead utilities would be the best suited for fruit trees, which are typically shorter than typical street trees and would not interfere with the wires. Residents at the addresses should be contacted to assess their interest in the community project. Soil specifics will need to be determined before a species can be recommended. With the help of an arborist, the citizens can pick the tree varieties they wish to have planted on the three sites, and send the proposal to the City for approval.[1]

Ten parcels have no overhead utilities: 5908, 5910, 6000, 6005, 6018, 6022, 6100, 6104, 6106 and 6206 Pear Ave. Through the recommendation of the city, it is suggested the largest trees possible be planted where wires do not restrict growth. In addition, behind Nicole McGee's house, a resident of Pear Avenue, are railroad tracks. There is an unbuildable lot owned by the railroad company that would be a good place to put an orchard. A similar project has taken place ten blocks away. Dave Roswurm, a resident of the Detroit Shoreway Neighborhood, is an urban farmer who leases land from the railroad company and grows an orchard on the site. Pear Avenue residents could do the same.

Of the forty-five tree lawns on Pear Avenue, thirteen are vacant, fifteen are in poor condition, and nine trees are in fair condition. Only eight trees are in good condition. Of the thirty-two parcels with trees, fifteen trees are in poor condition and need to be removed. If no action is taken, 82 percent of the tree lawns could be vacant.

Residents interested in planting fruit trees should test the soil and research which tree varieties they are interested in to make sure it matches the site specifications. They must be willing to dedicate time for pruning, watering, and harvesting. Residents who are interested in becoming tree stewards should research or receive training on pruning practices and harvesting techniques. Residents need to determine the goals of the fruit trees, what the fruit will be used for, and the "dos and don'ts" regarding fertilizers and chemical treatments (Summer Sprouts, n.d.). Budgets should be generated annually and should incorporate costs for fertilizers, tools, and watering. Prior to consumption, a sample of the fruit should be tested for contaminants as a precautionary measure.

[1] A list of fruit trees has been generated and is located in the table *Fruit Tree Suggestions and Stark Brother's Pricing,* p. 48

Introduction and problem statement

Residents in Cleveland, Ohio's EcoVillage, an area of the Detroit Shoreway neighborhood, have requested fruit trees to be planted in their neighborhood opposed to other ornamental trees. The urban landscape is on the brink of a major transition due to the emerald ash borer and due to aging trees that have been planted over the centuries. This transition proposes an opportunity. The goal is to address citizens' desires and investigate the feasibility of planting fruit trees in public spaces, in particular, tree lawns.

The first step to this exploratory analysis is to investigate implementation barriers. If research shows the goal is feasible, the findings would facilitate landscaping practices that would produce greater functionality within an urban environment. Though there is much research about the benefits of trees and of local food access, there is little research on the planting and outcomes of fruit trees on city properties. Much of the information that does exist is specific to the Pacific coast of the United States or overseas.

Through research, engaging with experts, and residential outreach, this examination intends to evaluate the feasibility of planting fruit trees in public spaces and to provide a detailed description of the implementation process using the EcoVillage community as a case study. The research hopes to outline specific criteria that may serve as a guide to residents, city planners, landscape architects, and non-profit organizations as to what planting practices and policy adaptations are needed to have fruit-bearing trees in Cleveland's urban landscape. The purpose of this examination is to assess if fruit trees can be planted in public spaces when there is a strong community support system in place.

The structure of the remainder of the paper concerns background on the following issue and associated topics such as the benefits of urban trees and fruit trees; the current landscape problems;

local food; and community involvement. The methods of discovery section include personal communications with city officials, worldwide best practices for public fruit trees, an overview of the target area, and a list of variables from the area assessment. The method of analysis section evaluates the value of street trees as well as the public perception of trees; funding opportunities; residential engagement and community involvement findings; barriers to implementation; Pear Avenue recommendations; and a public administration reflection.

Trees treat the Earth

The benefits of urban forests are well understood and documented in detail (Kenny, Wassenaer, & Satel, 2011). Urban trees are an asset to cities and citizens and improve urban air quality, attenuate storm-water flooding, provide the mitigation of carbon pollution, conserve energy, and reduce noise (Roy Byrne, & Pickering, 2012). According to Roy et al. (2012), urban trees provide economic, social, medical, psychological, and aesthetic benefits. Trees are an important part of any community's infrastructure and provide positive returns on investments and tangible benefits to urban residents (Kenny et al., 2011). The diversity of species and age classes of the urban forest provides a wider range of long-term benefits (Kenny et al., 2011).

Trees help people and the planet. Coolen and Meesters (2012) states, "having green public spaces close by residential dwellings contributes positively to a sense of nature, [and adds] to the livability of the neighborhood" (p. 60). Planting urban trees are inexpensive measures that reduce summertime temperatures and CO_2 (Akbari, Pomerantz, & Taha, 2001). Through photosynthesis, each tree directly sequesters carbon from the atmosphere. Trees indirectly decrease power plants' emissions by reducing the demand for cooling energy (Akbari et al., 2001).

Let fruit be the foundation

Trees shade the city, comfort the community, improve air quality, and reduce energy consumption. Western Lands and Communities (2012) states, "fruit and nut trees sequester more carbon emissions than the softwood trees typically planted for carbon offsets" (p. 1). They continue, Orchards are hearty for an urban setting, require less maintenance than vegetable gardens, and help establish agriculture as a permanent part of the city's culture, environment, and the economy.

Fruit trees are beneficial because they produce fruit. Fruits are low in calories and fats, and are essential for optimal health (Nutrition and you, 2013). Because of fruit's richness in vitamins, minerals, and anti-oxidants, the beneficial properties help the body prevent aging and prolong life (Nutrition and you, 2013). Each season, a semi-dwarf apple tree can produce up to 500 apples (Fruit trees, n.d.). Planting fruit trees can create greater access to healthy food, and increased biodiversity in the food supply. In addition, fruit trees can produce stronger connection to the growth of food, be the foundation of community gathering and cohesion, and establish a multitude of opportunities for experiential learning (Why Plant Fruit Trees, 2011).

Current landscape problems

Current street landscapes can be problematic and many of the current trees planted in Ohio tree lawns are deteriorating. Ash trees (*Fraxinus*) are under attack by *Agrilus planipennis*, commonly called the emerald ash borer (Subburayalu & Sydnor, 2012). The emerald ash borer is a phloem-feeding borer native to East Asia (Donovan, Butry, Michael, Prestemon, Liebhold, Gatziolis, & Mao, 2013). Since it was first detected in the U.S. in 2002, the beetle has killed approximately 100 million trees. The impact will be much larger as there are 22 species of ash trees, amounting to 7.5 billion trees, in the U.S.

Sydnor, Bumgardner, and Todd (2007), investigated the potential economic impacts of emerald ash borer on Ohio communities. The authors made the prediction that there will be a complete loss of ash trees due to the emerald ash borer. With the absence of these trees, landscape values in Ohio communities were estimated to decrease between $0.8 billion and $3.4 billion and the cost of tree removal would range between $0.7 billion and $2.9 billion "based on reported medians and means, respectively" (Sydnor, Bumgardner, & Todd, 2007, p. 48). In addition to the deterioration of the ash trees, many other street trees are invasive species and short-lived.

The callery pear, an ornamental tree commonly planted in urban landscapes, can also be problematic. Many of its favorable characteristics such as rapid growth, abundant flowering, and wide environmental tolerance, are typical of a weed (Culley & Hardiman, 2007). Reaching heights of 30 to 66 feet with dense upward growth, the narrow angles of the branches eventually cause the trees to split under their own weight after fifteen to twenty years.[2] In order to counteract the disvalue of the dying ash and breakage prone callery, new trees will be planted. Why not plant fruit trees?

Local food

The demand for locally grown, sustainable food is increasing. Over the past decade, the number of farmers markets in U.S. has more than doubled, with over 160,000 outlets supplied by more than 100,000 growers (Hamerschlag, 2012). The number of Northeast Ohio farmers' markets has also doubled, from one in 2005 to eleven in 2010 (CCCFPC, 2010).

Local food can positively impact healthy eating habits. According to the Cleveland-Cuyahoga County Food Policy Coalition (CCCFPC), "fast food is four-and-a-half times more accessible than larger-scale supermarkets throughout Cleveland, and three times more accessible throughout the county" (Cleveland-Cuyahoga County Food Policy Coalition (CCCFPC), 2010, p. 1). Only 21

[2] See appendix on callery pears for more details, p. 52

percent of Cleveland adults report adequate daily fruit and vegetable intake. At the same time, healthy food has become less available and more expensive. Researchers hypothesize that if fresh food were as accessible and affordable as fast food, consumers may change their eating habits (CCCFPC, 2010).

In an attempt to test that assumption, urban farms and markets have flourished. Cuyahoga County's community gardens cover over fifty-five acres and produce up to $3 million worth of fresh produce annually. In just 2009, over thirty-five community gardens were created by Cleveland residents and provide thousands of pounds of fresh produce to the city. Eighty-nine percent of Ohioans indicated they occasionally or frequently purchase locally grown foods. Thirty-seven percent of Cleveland residents say it is "important or very important" that their food be grown locally (CCCFPC, 2010, p. 1). Northeast Ohioans spend $9.2 billion on food purchases and only a few of these dollars, 1 to 5 percent, support regional, local food businesses. There are over 20,000 lots (over 3,500 acres) of vacant land in Cleveland. The number is expected to rise due to a dramatic increase in the demolitions of neglected, dilapidated houses caused by the foreclosure crisis. With the abundance of vacant land there are opportunities to expand the local food efforts. The potential impact from a shift to locally grown food is significant (CCCFPC, 2010).

Food connects communities. Because of that connection there is an opportunity to transform the regional economy through policies and programs that promote the creation of a local and sustainable food system. As community resources from foundations and nonprofits become scarcer, it is essential to establish strategies that are economically feasible and locally sustainable (CCCFPC, 2010).

Community involvement

The definition of a community garden is a piece of land where groups of people tend to it. The proposed idea of fruit trees on tree lawns is a form of community gardening. Within the boundaries of

Cuyahoga County, there are over 200 gardens with 4,000 residents that care for them (Summer Sprouts, n.d.). Guitart, Pickering, and Byrne (2012) analyzed eighty-seven academic papers on community gardens. Eighty-six percent of the papers reported that the motivation for gardens is to consume fresh food; to improve health among members; and to make or save money by eating or selling the from the garden (Guitart, Pickering, & Byrne, 2012). Commonly demonstrated benefits were social development such as community building social interaction, and cultural exchange. Other benefits included: education, enhanced health, access to fresh foods, reduced crime and increased safety, environmental sustainability, life satisfaction, environmental equity, and increased biodiversity.

Methods of discovery

This research looks to investigate fruit tree plantings in public spaces. Due to the nature of fruit trees and the proposed location, this is a form of urban forestry and is a community garden. The research seeks to evaluate land that cannot be used for other projects outside of tree planting. To ensure the investment is long-term, unbuildable lots and tree lawns are the focus.

One of the first steps to this research was to contact government officials to retrieve policies, procedures, and professional suggestions. James Lassiter from Cleveland Urban Forestry department and Alan Siewert, the regional urban forester from the Ohio Department of Natural Resources (ODNR) was interviewed. Best practices regarding public fruit trees from around the world were retrieved. A target area was selected and assessed.

The objective of Cleveland's Urban Forestry Program is to "provide a safe and hazard-free urban forest while striving to preserve its natural beauty" (Department of Finance, 2012, p. 346). Lassiter, the manager at the Department of Public Works in the Urban Forest Section, was contacted in regards to the permit process for tree lawns. Lassiter explained that, for larger tree plantings, there is no formal

paperwork, and it is dealt with on a case-to-case basis (Personal communication, February 22, 2013). The project coordinator should submit a proposal, the addresses of the tree lawns, and an area plan with species recommendations. His department determines which species are appropriate and the applicant gets a yes or no answer. Lassiter noted that smaller tree lawns with telephone wires above will be more appropriate for fruit trees (Personal communication, February 22, 2013). If there is a tree lawn with no overhead wires, that site is more ideal for a taller tree (Personal communication, February 22, 2013)

Individual residents who wish to plant on their tree lawn have a slightly different process. Residents are instructed to call the Urban Forest office and can request to be placed on the tree planting list or can request to plant their own tree. The department has to approve the species, and a contractor, such as a licensed arborist or landscaper, has to install the tree. There is no fee for a planting permit (J. Lassiter, personal communication, February 22, 2013).

Regarding the utilities, Lassiter stated, "the only thing you have to consider is the area you want the trees planted ...I will send an inspector out to make sure the site is viable for planting, and we will determine the species. Hopefully we can accommodate the species you are requesting" (Personal communication, February 28, 2013). Once the aforementioned steps are completed and it is determined that the site is viable, the contractor selected to plant the trees must contact the Ohio Utilities Protection Service (OUPS). OUPS acts as a communication link between utility companies and individuals planning any digging activity (J. Lassiter, personal communication, February 28, 2013). First the research must assess the targeted tree lawns, then the City conducts further evaluation prior to approval, and finally the contractor contacts OUPS.

Urban Forestry is a cost-effective way to improve the economic, environmental, and social health of a community (Ohio Department of Natural Resources (ODNR, 2012). Cities that have an urban

forestry program in place can involve citizens in many ways. Residents can "support and volunteer for projects like tree planting, pruning, and litter clean up" (ODNR, 2012, p. 1). ODNR's website states, "if you're interested in starting or improving a local urban forestry program, contact your local urban forester" (ODNR, 2012, p. 1). Soon after reading that statement, Alan Siewert, an Urban Forester at ODNR, responsible for the region that encompasses Cleveland, was contacted.

Before Siewert can recommend a tree species when he knows three things: the soil specifics on the site, if overhead utilities are present, and the tree species in the surrounding areas (Personal communication, March 13, 2013). Siewert stated, "diversity is important for these publicly owned trees" (Personal communication, March 13, 2013). Siewert stated that urban agriculture is a great use for some public land, but "the tree lawn is a buffer between public and private" (Personal communication, March 13, 2013). Siewert did not suggest planting fruit trees on tree lawns, felt fruit trees would be counterproductive, and claimed, "you want to keep the fruit trees small and shaped to produce fruit, and street trees need to be shaped so they do not obstruct the sidewalk" (Personal communication, March 13, 2013). Siewert also felt that pollution from the street would be problematic. When asked his opinion on replacing the ash trees, Siewert stated, "I would plant the biggest tree that would fit there for shade" (Personal communication, March 13, 2013).

Siewert was responsive but was apathetic regarding public participation and did not favor fruit trees.[3] Siewert's professional suggestions will be carefully considered but an orchard enthusiast will also be consulted, on account of Siewert's academic training in urban forestry rather than horticulture. The question remains, if residents were provided the correct information, educated on the maintenance, and other funding could be found, are fruit trees in tree lawns feasible.

[3] See Siewert appendix for full interview, p. 54

Best practices

The following section analyses creative projects cities are conducting that encourage urban agriculture with a focus on fruit trees. Best practices, implementation procedures, characteristics of community engagement, changes in public policies, and barriers are noted.

Asheville, NC


Ashville, NC. Source: Barkslip (2009)

In 1998, the George Washington Carver Edible Park, a food forest garden, was planted in downtown Asheville, NC (Barkslip, 2009). The site is an acre in size, was "piled up with fill from a demolished high school," and the contamination was found to have no negative effect on the species planted (Barkslip, 2009, p. 42). Barkslip (2009) came to care for the park in 2005. The well-intentioned founders had since floundered in their follow-up care and the years of neglect had left it overgrown, diseased, and littered. Barkslip (2009) organized volunteer work parties and claims, "the park is clean, the trees are pruned, diseased wood is under control, the plants are laden with fruit, and the project is gaining notoriety in our community" (p. 42). There are more than forty varieties of fruit and nut trees such as apples, Asian pears, pecans, paw paws, bush cherries, and figs (Barkslip, 2009).

Barkslip (2009) states, "as the economy changes, people are getting more interested in community, growing their own food, and becoming less concerned with material wealth" (p. 43). There are four unofficial edible parks in Asheville. He and his associates have been able to donate many fruit trees to schools and low-income housing project and garden programs, through fundraising from their "Fruit School" (Barkslip, 2009, p. 43). Students are asked to pay a $10 donation; all proceeds are used to buy additional fruit and nut trees for the parks (Barkslip, 2009). The Fruit School teaches volunteers

how to plant and care for fruit trees, and the people are willing to travel to outside locations to complete a weekend workshops on tree care and grafting.

Boston, MA

The Boston Tree Party organizes the planting of pairs of heirloom apple trees around the City of Boston, MA in the hopes of forming a patchwork of free fruit and community engagement (Mihalik, 2012). Lisa Gross, project founder, stated, "our motto is civic fruit, and we call for the planting of fruit trees in civic space" (Mihalik, 2012, p. 1). She continued, "you can plant fruit trees in areas where you couldn't grow other kinds of vegetables — areas with medium levels of lead because the lead goes to the bark and leaves and not the fruit. And [trees] can help to remediate the soil that way too" (Mihalik, 2012, p. 1). Dozens of apple trees have been planted around the city, at schools, parks, daycares, nature centers, and hospitals. Gross stated, "The thing is, we're not trying to get permission to just plant trees anywhere. We're starting with communities who want to plan and care for these trees" (Mihalik, 2012, p. 1). Part of their structure is finding stewards to care for the trees. The Boston Tree Party works with communities to help them learn the necessary skills. Once the trees start producing fruit, the organization will hold workshops on how to harvest and use the apples.

City of Vancouver, Canada

Vancouver, Canada
Source: http://vancouver.ca/green-vancouver/a-bright-green-future.aspx

The City of Vancouver located in British Columbia, Canada is in the process of adding more fruit- and nut bearing trees to its urban tree inventory (Berg, 2012). The city is working to make food-producing trees a major part of a plan to plant more than 150,000 trees by 2020 (Berg, 2012). The city has an inventory of about 600 street trees that produce fruits and nuts with an additional 425 fruit trees located in city parks and community gardens (Berg, 2012).

Unley, South Australia

Unley, South Australia, planted more than sixty fruit trees in Morrie Harrell Reserve Park (Griffiths, 2012). Peter Croft, a member of the Unley Community Sustainability Advisory Group, claims the orchard would provide local food and would help build a sense of community. The project is one of twenty-one orchard sites, and is meant to encourage residents to grow fruit in their backyards. Griffiths (2012) stated, “Under the trial, residents with dead or dying street trees can also apply to the council to have them replaced with fruit trees” (p. 1).

Steven Faulkner, Unley’s general manager stated, "For a relatively small establishment cost, and given food security and the rising costs of fresh produce are topical, this is considered an innovative trial" (Griffiths, 2012, p. 1). This idea for the trial was “borne from community-minded individuals thinking outside the square" (City of Unley, 2012, p. 1). Council will monitor the success of the trial. The city will work with the community to increase awareness of food security issues and to build local stewards for the fruit and nut trees (City of Unley, 2012)

San Francisco, CA

In 2009, Mayor Newsom of San Francisco (now the Lieutenant Governor of California) ordered all city departments "to conduct an audit of unused land--including empty lots, rooftops, windowsills and median strips--that could be turned into community gardens or farms" (Harkinson, 2009, p. 1). In January 2013, the San Francisco Department of the Environment (SFE), Friends of the Urban Forest (FUF), as well as hundreds of volunteers, planted 200 fruit trees as part of the city’s Urban Orchards program (AsianWeek, 2013). The project assists neighborhood-based organizations with “planting and maintenance of publicly accessible fruit trees” (Center for Urban Education about

Sustainable Agriculture (CUESA), n.d., p. 1). Fruit trees have been planted in several locations, including Golden Gate Park (CUESA, n.d.).

Grants, private donations, and the money from the San Francisco's Carbon Fund finance the program. FUF will provide tree care for the first five years until the trees are established. Each of the twenty-three locations has a tree steward who handles regular tree care such as watering, and who "will harvest, eat, and share the fruit within the neighborhood" (AsianWeek, 2013, p. 1). The fruit trees are part of the city's food security plans. SFE's tree stewards donate the excess fruit to food pantries.

Melanie Nutter, Director of SFE stated, "Each fruit tree planted represents almost half a ton of carbon removed from our atmosphere," she continued, "By diversifying urban agriculture in San Francisco and expanding the number of urban orchards, we are taking steps forward to agricultural independence, while also mitigating our carbon emissions" (AsianWeek, 2013, p. 1). Dan Flanagan, executive director of FUF stated, "Every time San Franciscans plant trees, they make the city a more sustainable, livable and beautiful place. When the trees also serve as a community food source, we really win big" (AsianWeek, 2013, p. 1). Once established, tree crops are easier to care for than vegetables (CUESA, n.d.). Fruit and nut trees require annual pruning, fertilizing, and harvesting. Trees also provide a crucial buffer between toxic compounds that exist in urban soils and consumers. Mei Ling Hui, the Urban Forest Coordinator at SFE, spoke of a recent study of highly contaminated soil where almond trees had been planted. Hui stated, "the nuts were found to be completely contaminant-free, safe for consumption" (CUESA, n.d., p. 1).

Pacific coastal region

Some cities have adapted their zoning ordinances to encourage residents to grow food and allow agricultural in non-traditional spaces (Sonoran Institute, 2012). As a result of three years of community

pressure, the City of Sacramento, CA allows vegetables and fruits to be grown in front yards.[4] The ordinance specifies that the yard must be "landscaped, irrigated, and maintained" but has no restrictions on the amount or type of edibles that are planted (Sonoran Institute, 2012, p. 1). Some of these plantings require less water than lawns. This ordinance is evidence of Sacramento's commitment to become a more sustainable city.


Pear tree in Seattle, WA

The City of Seattle, WA, "is encouraging residents to integrate urban agriculture on their property in any space available, even the parking strip [tree lawns]" (Sonoran Institute, 2012, p. 1). The regulation changes allow property owners to cultivate vegetable gardens between the sidewalk and road. These changes were inspired by the adoption of the City of Seattle's Local Food Action Initiative[5]. The initiative's goals include "improving the local food system through advancing the city of Seattle's interrelated goals of race and social justice, environmental sustainability, economic development, and emergency preparedness" (Sonoran Institute, 2012, p. 1).

Other urban tree programs

New York, NY, in its goal to plant one million trees over ten years, found budget cuts to be the major setback of the tree planting initiative (Young, 2011). In response they have shifted the stewardship responsibilities to contractors and volunteers. The city launched a Stewardship Corps to build neighborhood capacity, which partnered with non-profits to offer free tree steward workshops. The city requires the first two years of tree maintenance to be carried out by the contracted organizations (Young, 2011).

[4] Front Yard Landscape Ordinance 17.68.010
[5] Seattle, WA, Local Food Action Initiative is Resolution 31019

Baltimore, MD desired to increase their tree canopy from 20 percent to 40 percent over a thirty-year period, and implemented a public awareness plan for their tree-planting program. Baltimore interviewees claimed a link between effectiveness and proximity. Their "broad spectrum outreach" was described a diverse, grassroots, neighborhood-based approach that included yard signs, community events, door-to-door canvassing, as well as public advertisements on transit stops, lamp posts, and in local publications (Young, 2011). The door-to-door campaign targeted certain neighborhoods, promoted urban reforestation, and "trained people to go out into the neighborhoods with free literature; this was successful way of reaching out to citizens and getting them involved and requesting trees" (Young, 2011, p. 377). The contacts allowed community networking and identifying "green" people who wanted to be more involved. Between 2006 and 2010, Baltimore has planted 28,000 trees.

According to the Sonoran Institute (2012), easing restrictions on landscape requirements on the parking strips and on front yards, provides flexibility to residents who may not have space or adequate sunlight in the backyard. Increasing the growth of food within the city limits creates a more secure the food system for the future. Cities like Cleveland are in the unique position to lead the local food movement.

Advisors

Without the assistance of advisors, this research would be difficult to complete. Bobbi Reichtell, Executive Director of Campus District, and a Detriot Shoreway resident assisted me with neighborhood and national contacts. Lilah Zautner, Director of Urban Greening and Sustainability at Neighborhood Progress, Inc. (NPI), assisted with site and target area identification, funding ideas, and professional feedback. Zautner is my supervisor at NPI.

Target area

EcoVillage describes a, "community of people creating a way of living that sustains healthy ecological relationships" (Detroit Shoreway, n.d., p. 1). Cleveland's EcoVillage, created in the mid 1990s, is "an urban redevelopment project that aims to create an economically and ecologically sustainable community" (Cleveland Historical, 2013, p. 1). EcoVillage's boundaries are from Lorain Avenue to Bridge Avenue and from West 54th to West 65th Street, a fifteen-minute walk from the nearest rapid station (K. Lott, personal communication, February 12, 2013). Led by the efforts of EcoCity Cleveland, the City of Cleveland, the Regional Transit Authority (RTA), private developers, neighborhood residents, and the Detroit Shoreway Community Development Organization (DSCDO), this project was conceived to combat urban sprawl and the "outmigration from the city's core by creating an attractive, healthy living space" (Cleveland Historical, 2013, p. 1). It is one of a few EcoVillage projects successfully implemented in an urban environment.

Cleveland's EcoVillage is a celebrated and recognized on a national level and showcases best practice projects in transit-oriented design, urban agriculture, societal inter-dependence, and green building. The neighborhood is diverse and pedestrian-friendly. The area has a mix of older and newer homes and some of the city's finest examples of green buildings (Detroit Shoreway, n.d.). Cleveland was recently ranked first out of the nation's fifty largest cities for access to healthy, locally grown food partially because of the urban agriculture activity within the EcoVillage (Detroit Shoreway, n.d.).

Katherine Lott, the EcoVillage Coordinator at DSCDO was interviewed regarding resident requests. An assessment of the Detroit Shoreway neighbors' needs was conducted two years ago. Residents requested fragrant fruit trees be planted in their community, but because of staff turnover, the names of the residents who made the request were not retrievable (K. Lott, personal

communication, February 12, 2013). Due to this issue, EcoVillage residents active in the local food movement were sought.

Pear Avenue runs east to west from West 65 Street to West 58 Street, just north of Madison Avenue. On the south side of Pear Avenue, between West 64 and West 61 Streets, there is a food-producing garden maintained by local residents that has around fifty chickens (D. Roswurm, personal communication, March 5, 2013). Pear Avenue was selected as the target area for a number of reasons: (1) it is located within the EcoVillage, (2) there is an active citizen base passionate about local food, (3) many of the current trees are dead or dying ash trees, (4) there are treeless tree lawns and a need for additional trees to be planted, (5) it is not a main street and does not experience heavy traffic congestion, and (6) the name Pear Avenue is most fitting for fruit tree planting. Fruit trees on Pear Avenue have brand potential and marketability.

On March 6, 2013, two residents of Pear Avenue were interviewed: Sasha Ottoson-Deal and Nicole McGee. Sasha Ottoson-Deal has been a resident of the neighborhood for nearly nine years. She resides with her family on the 6200 block of Pear Avenue. Ottoson-Deal is also the Development Specialist at DSCDO, an organizer by profession, and an advocate for local food. She recently planted two paw paw trees, the only native fruit to Ohio, in her backyard. McGee lives on the 6200 block of Pear Ave. with her husband and new baby, Harvest. She is the creative entrepreneur behind Plenty Underfoot llc., "a small business that transforms leftover materials into jewelry, flowers, handcrafted gifts and art" (Plenty Underfoot llc, n.d., p. 1).

The ladies were enthusiastic about fruit trees potentially being planted on their street. McGee was confident there would be at least five people interested in participating (Personal communication, March 6, 2013). Ottoson-Deal added, "Anyone would be excited to have creative projects to add

EcoVillage brand" (Personal communication, March 6, 2013). She continued, "Fruit trees would create more definition in the EcoDistrict and give it a meaning. It is a public amenity for everyone and people would say, 'you know, EcoVillage, where they have all the fruit trees'" (Personal communication, March 6, 2013). The ideas flowed from there: "Pear Fair" to celebrate the annual Garden Walk and harvest, involve and educate the neighboring elementary and middle schools, and use the trees as a way to reenergize the block club.

McGee mentioned having conversation with her neighbors about throwing a street party for Garden Walk, an annual self–guided tour of Cleveland's urban gardens and farms. McGee brainstormed an EcoVillage party, Pear Fair, which could be used as a tool to organize the residents to care for the fruit trees. Metro Catholic, a neighboring school, is interested in sustainability education, and has a community garden. McGee proclaimed excitedly, "We could do an EcoVillage Tree bingo with the school" (Personal communication, March 6, 2013).

Fruit trees could strengthen the neighborhood by regenerating and reorganizing the block club. Ottoson-Deal stated, "The block club is kind of floundering. Instead of meeting monthly, they could have events around the trees" she paused, "A harvest event in July and we could prune in March" (Personal communication, March 6, 2013). Their excitement was contagious. Ottoson-Deal and McGee suggested looking into other locations as well, such as a buildable space on the corner of West 58 Street, and land near the railroad tracks behind MeGee's property.

Nearby, an orchard is planted on an unbuildable plot of land by the same railroad tracks. Dave Roswurm is an urban farmer and has an orchard directly behind his home on the railroad company's property by West 78 Street and Wakefield Avenue (Personal communication, March 5, 2013). Roswurm feels having functional landscape, like fruit trees on public spaces, is a great idea. Roswurm

stated that, when looking at existing fruit trees, the plants are always bare in the areas within arm's reach because people pick the fruit. When asked if he would be willing to be a community leader and assist in harvesting, training, or educational outreach, Roswurm agreed (Personal communication, March 5, 2013). He lives on the 7900 block of Franklin Avenue and is a member of the Franklyn Boulevard block club. Roswurm and five others tend to the area fruit trees that have been neglected, and prune in March to help harvest better summer crops.

Pear trees to be planted on Pear Avenue were the first idea; however, Roswurm's professional opinion was consulted. Roswurm has only one variety of pears (bartletts) in his orchard. When asked why he did not plant more pears, Roswurm said, "There are so many pears in the neighborhood, we decided against it" (Personal communication, March 5, 2013).

When asked what tree variety is doing the best, Roswurm said, "my redheaven peaches are doing awesome" (Personal communication, March 5, 2013). When asked if he had any problems with pests on his redhaven peaches Roswurm mentioned raccoons love the ripe fruit and that he had to spray last year with fungicide for leaf curl, but the peaches are doing fine. Other varieties that Roswurm successfully planted are goldcot apricots and yellow shiro plums. Roswurm suggested to plant at least three of each kind of tree to insure proper pollination. There needs to be a minimum of two trees and the third serves as a buffer in case of death or damage. When the orchard was initiated, he purchased and planted thirty, two year-old bare root trees. Some have grown to eighteen feet within the three years of their growth (D. Roswurm, personal communication, March 5, 2013). Roswurm did not think road salt would harm the fruit trees.

According to Throwbrige (2012), dwarf trees make growing fruit trees a possibility for urban and suburban gardeners. She continues, "Dwarf apple trees and sour cherry trees grow to about 10 feet,

can live for up to 15 years, begin bearing fruit in their second or third year and can yield 75 to 100 pounds of fruit per tree each season" (Throwbridge, 2012, p. 1). However, dwarf peach, pear, or plum trees are not recommended due to their short life span. Instead, OSU Extension suggests to plant "full-size trees and prune them heavily each year to keep them small" (Throwbridge, 2012, p. 1). Pruning serves multiple purposes: it removes dead and damaged wood, allows sunlight to filter through the tree, and trains the tree to grow into a stable form (Throwbridge, 2012).

Assessing the area

On March 21, 2013, Pear Avenue was surveyed. Colby Sattler, an International Society of Arboriculture (ISA) Certified Arborist, assisted in tree identification and measurements. Sattler has been consulted as a utility forester in numerous states and has worked on silvicultural research projects throughout the Pacific Northwest.

Variables included tree genus, condition, size, visible infrastructure, and depth of tree lawn. Tree genera included the ash tree (*Fraxinus*), maple (*Acer*), sycamore (*Platanus occidentalis*), and an unknown variety. Condition of the tree was rated as either (1) good, indicating the tree is healthy and thriving, (2) fair, where the tree is alive but is not in ideal shape, and (3) poor, which includes dead or dying trees. Sizes evaluated height and includes (1) small, any trees less than 24 feet, (2) medium, trees between 25 and 50 feet, and (3) large trees, anything 50 feet and above. Due to the categories' broad size range, a visual inspection of the trees' height was felt to be sufficient. However, the height was estimated without the use of tools and may be inaccurate.

The girth of the tree was determined using a tape measure at the circumference of the tree around chest height (5 feet). Infrastructure was noted using visual inspection of the tree lawns. Water meters, gas lines and flags, sewer drains, and fire hydrants were observed and accurately noted. Overhead

utilities, including power and telephone lines, were assessed using a visual inspection and were noted for each parcel. Measuring where the sidewalk ends to the curb determined the depth of the tree lawn. The frontage of each parcel was previously retrieved.

When investigating the empty lots on the corner of West 58 Street and Pear Avenue it was discovered that the lots were prepared for new housing. The funding fell through and the project was paused; however, since they are buildable lots, it is not suggested that an orchard be planted. Non-buildable parcels and other public properties were felt to be the best. The longevity of the trees is not put at risk, and the land is used for what it is best fit for. The most commonly discussed challenge to community gardening was the insecurity of future land access (Guitart et al., 2012). Land tenure is an issue and some gardens are shut down or demolished for land development (Guitart et al., 2012). Looking at land that is unable to be developed is a way to avoid that problem. Tree lawns and lots deemed unbuildable may be a great place for fruit trees.

The plot of land near the railroad tracks is promising for an orchard site. Sattler determined that the trees on the parcel are in poor condition, past the point of trimming, and need to be removed (Personal communication, March 21, 2013). Many of the trees are ash trees and numerous trees were resting on distribution power lines.[6] Aronson, Wallis, O'Campo, and Schafer (2007) look at the benefits to neighborhood mapping and evaluation in regards to policy implementation. Mapping can be an important tool that helps implement and plan programs, and can identify neighborhood characteristics (Aronson, Wallis, O'Campo, & Schafer, 2007).[7]

[6] Cleveland Public Power was notified that the trees were resting on the power lines

[7] A map of Pear Avenue that showcase the variables can be found on p. 51

Method of analysis: Value and public perception

Roy et al. (2012) composed a quantitative review of 115 urban tree studies across different climate zones. Of the 115 articles, 29.6 percent demonstrated and provided evidence that showed urban trees provide a cost benefit within the urban landscape. Orland, Vining, and Ebreo (1992) investigated the effects of street trees on perceived values of residential properties in Campaign-Urbana, Illinois. The study took photos of residential real-estate listings and had public groups evaluate the perceived attractiveness and value, which was then correlated with the recorded sales price of the multiple listing service (MLS) (Orland, Vining, & Ebreo, 1992). Trees increased the perceived value. For more expensive properties there was a slight increase in value for the addition of smaller trees, but a decrease associated with larger trees (Orland, Vining, & Ebreo, 1992, p. 298). However, this could be due to the association of smaller trees to newer properties. Akbari et al. (2001) examined research that estimated the potential benefit of trees. Akbari et al. (2001) reported that the 1998 direct savings to a homeowner who plants shade trees would have a direct energy savings of $68 per tree, the indirect value savings of $24 per tree, and smog savings was $120 per tree. The total 1998 value of all benefits was per $210 tree. The adjusted 1998 value for 2013 is $269.68 per tree (Bureau of Labor Statistics, n.d.).

Zhang and Zheng (2011) surveyed citizens in Alabama, investigating their attitudes on urban trees and their willingness to support urban tree programs. The research found that across all genders, ages, races, incomes, and other family backgrounds, people preferred trees on their property and within their community (Zhang & Zheng, 2011). From 2004 to 2005 the survey was randomly assigned to 3,500 random home addresses from ten major cities in Alabama. They received 480 complete responses. This is a significant sample size, but only 20 percent of the total sent. Zhang and Zheng (2011) acknowledge there may be some limitations.

The survey used a likert scale: 1-2 was rated very important, 3-5 was median important, and 6 and 7 were considered not important. The results indicate the most important perceived benefits of trees were, "improve the appearance of the community" and "improvement in air quality" at 76.81 percent and 70.78 percent, respectively (Zhang & Zheng, 2011, p. 120). Respondents who felt that trees increase property values responded with 65.75 percent rating it very important, and that 97.89 percent feeling that it was very to median important. Eight-five percent of the respondents claimed that having a tree on the property is important and 90 percent said that it is important to have trees in the community. The statistical significance if the study was found to be 1 percent confidence level with 12 degrees of freedom (Zhang & Zheng, 2011).

Funding

There is not a magical formula for funding community forest programs due to the varying needs and potential opportunities (Johnson et al., 1990). Current information about the financial sources for community tree planting programs is lacking due to the mixture of funds (public and private) cost avoidance, reduction, and recovery, and changing organization involvement (Zhang & Zheng, 2011). Zhang and Zheng (2011) found that 60 percent of the respondents thought that local government support was important in regards to funding the urban tree program. Fifty percent of the respondents felt that the state government was an important source (Zhang & Zheng, 2011). Over 94 percent responded that private donations were a very to median important funding source for urban tree programs; however, only 20 percent indicated that they were "very likely" to donate time and money to an urban tree program (Zhang & Zheng, 2011, p. 122). Financial support of urban tree programs did

not match the growing demand (Zhang & Zheng, 2011). There may be numerous funding opportunities for this fruit tree-planting project.[8]

Although the proposed project is not a part of a non-profit organization, there is potential for non-profits to become a part of the Pear Avenue fruit tree planting. NPI has organized over 120 urban greening projects, many which are maintained by residential leaders. NPI received the grants and works with a wide variety of partners to help implement the projects. Sahsa Ottoson-Deal, one of the residents of Pear Ave. is a community organizer by trade and is employed at the local community development corporation. They have assisted neighbors with receiving grants.

Residential engagement and community involvement findings

The core functions of public administration, such as public service and efficiency through program implementation, are the basis of this capstone paper. Meyers, Durlak, and Wandersman (2012), state that implementation framework describes reports that focus on the "how-to" of implementation (p. 465). Phase one involves initial considerations regarding the host site, such as fostering a supportive climate and building capacity. Phase two involves creating a structure or plan for implementation. Phase three involves beginning implantation, and the fourth and final phase involves improving future applications by learning from experiences (Meyers et al., 2012).

Community gardens can be a perfect mechanism to engage citizens with government efforts that address a variety of social ills. However, according to Henderson and Hartsfield (2009), "without certain pieces in place, such gardens will not increase citizen participation; they might instead discourage it" (p. 12). Five elements must be present in the city in order to engage citizens in local government initiatives:

[8] A comprehensive summary of possible funding opportunities can be found in the appendix, p. 53

> (1) The community garden must meet a clear public need, (2) the …design must align with the municipality's capacity for implementing and sustaining it, (3) there must be strong political and administrative support throughout the city government for the …program, (4) sufficient public land must be available to be set aside for the gardens, and (5) the city must be prepared to make a multiyear commitment of public funds to the garden program (Henderson & Hartsfield, 2009, p. 13).

Johnson et al. (1990) states, successful tree management can be attributed to the response and cooperation of city leaders to the requests of citizens. Henderson and Hartsfield (2009) state that there are three primary ways municipalities can implement community gardens: "(1) allocate resources to existing community gardens run by third parties, (2) collaborate with other government agencies and nonprofit organizations… or (3) create gardens "in house" that are run solely by municipal government agencies" (p. 14). Many community gardens within Cleveland are supported through a partnership between the city and a third party non-profit organization such as the Cleveland Botanical Gardens, NPI's ReImaginging Cleveland, and Summer Sprouts. Other non-profit organizations or groups of community members often manage the individual greening project.

Citizen involvement is critical for the "continued vitality of urban forests" (Zhang & Zheng, 2011, p. 118). From 1997 to 2002, the number of community-based tree programs has increased annually by 2.1 percent (Zhang & Zheng, 2011). To secure citizen involvement the most effective activities are financial assistance, public awareness, and volunteer training. It is important to obtain information regarding public preference and support for urban tree programs prior to implementation. To gain support, educating the public on urban tree programs is important (Johnson et al., 1990). The media,

urban planners, tree agencies, and non-profit organizations can carry out citizen education and galvanize public interest.

Johnson et al. (1990) found that having a tree commission may be the most important element of all regarding foundation building. The advisory board must provide continuity in order to sustain the program over a period of time. According to Johnson et al. (1990) traditionally, tree commissions and supporting volunteer organizations have been responsible for establishing short and long range goals, selecting project sites, budgeting, program promotion, surveying resident interest, generating tree lists, and planning Arbor Day programs (p. 3).[9]

Bragd, Bridge, den Hond, and Jose (1997) explain that, "different stakeholders have specific knowledge bases, beliefs, and assumptions" (p. 183). As a consequence, "poor interaction between stakeholders can lead to the formation of 'islands of knowledge' with significant knowledge gaps between them" (Bragd, Bridge, den Hond & Jose, 1997, p. 183). Networks of learning are a potential solution. These networks are trust-based relationships, "inclusive forums for learning and change," that promote learning among different groups and may potentially overcome knowledge and language gaps "through the formation of communities of practice and the creation of spaces for learning" (Bragd et al., 1997, p. 183). There are numerous nonprofits in the Cleveland area that could assist the community with its tree-planting program. Operational and financial support could be sought through NPI, OSU Extension, Cleveland Botanical Gardens, and DSCDO.

Interested local citizens are the driving forces to starting a community forestry program (Johnson et al., 1990). In order to organize a grassroots effort, a logical process is required. Forestry programs need to involve citizen coordination and participation plans (Johnson et al., 1990, p. 2). To keep the process

[9] Information on Cleveland's Tree Commission can be found in the Tree Commission appendix, p. 55

going, citizen and community leaders' involvement, technical assistance from government agencies, universities, and private consultants, are required (Johnson et al., 1990).

Johnson et al. (1990) prescribes four elements for successful grassroots community forestry: foundation building, data collection, analysis and evaluation, and implementation (p. 3). For the first element, foundation building, a responsible support person interested in municipal tree care should be identified. Awareness, enthusiasm, and commitment are important characteristics of citizen involvement. The second element, data collection, informs the public and promotes awareness. Johnson et al. (1990) suggests mapping community patterns such as land use, street features, and landscape characteristics; to "assess current public tree care's equipment, policy, and personal" and a tree survey that indicates the size, condition, location, and need (p. 3). The third element, analysis and evaluations, is completed by examining the "community pattern maps, current program assessments, and tree inventories; establishing long and short term goals, and developing the community forest plan map and report" (p. 3). The fourth element of implementation is comprised of six sub-parts:

> Analyzing the visual, biological, and functional site conditions that influence tree selection; select and properly plant trees suited to site conditions; develop an annual maintenance schedule and work plans; maintain and improve the community forest using recommended practices, including education and outreach to citizens; provide awards and recognition on a continuing basis; [and] update the forest plan periodically (p. 3).

The implementation phase accomplishes the goals and objectives of the forest plan.

Community empowerment has been defined as "enhancing the capacity of individuals to undertake projects that will promote social and economic development in their community" (Attree, 2004, p. 156). Attree (2004) reviewed the government initiative Sure Start Program, in Lancaster UK, that

aimed at "reducing health inequalities and combating poverty amongst families" (p. 155). The program sought to involve local families in building community capacity. Training courses were provided to prepare individuals to deliver different types of family support as community support workers. The article drew on qualitative data to explore stakeholders' experiences of the project. One respondent stated the program "helped him to see his community from a different perspective" (Attree, 2004, p. 158). Interviewees claimed participating in the project was empowering; one stated, "now I feel as though I'm part of the community" (Attree, 2004, p. 156). By facilitating local participation at a neighborhood level, community support initiatives can create an environment that encourages social cohesion.

Community gardens require an investment of time and resources. A well-grounded garden begins with the assessment of the skills and talents on the individuals already involved. According to Summer Sprouts (n.d.), another step the community needs to take is to determine what type of garden is desired and to define the purpose, vision, and mission. In other words, what does the community want to do with the fruit? Summer sprouts suggests the community list three reasons why it wants a garden. For example, one of its goals may be "To produce fresh and nutritious food for our families and neighbors" (Summer Sprouts, n.d., p. 1). The community members may determine that they want to sell some of the fruit to raise funds for other projects within the community. In addition, leadership is crucial to a community garden. Tasks need to be delegated and citizens need to be trained of the proper way to plant and cultivate. Setting guidlines for garden "dos and don'ts" is important, such as if the garden will use chemical fertilizers. The mission is up to the community.

Barriers to implementation

This research could not identify non-visible public utilities on Pear Avenue. Overhead utilities could be identified by sight and were noted in the research findings. A level of expertise is required to identify many utilities. As stated by Lassiter, OUPS representatives must make a site visit to determine if plantings can take place. However, many of the vacant tree lawns have ground indentations, indicating that previous tree plantings were located there.

Another barrier is that not all of the current trees on Pear Avenue and the surrounding areas could be identified. Due to some of the trees' height, a branch to evaluate the buds could not be reached. There are four trees on Pear Avenue that were not identified. In the surrounding streets, Wakefield Avenue, north of Pear Avenue and Madison Avenue, south of Pear Avenue, there were: eleven maples, eight hawthorns, seven ash, two crab apples, one sweetgum, and one oak tree. Eleven could not be identified and are a variety of species. If all the trees need to be identified, trees left unidentified should be evaluated in the summer when the trees' leaves can be analyzed.

The political barriers are not completely clear. There seems to be a slight apathy towards community engagement and public recommendations; however, the project may be feasible. The Urban Forestry permit process involves submitting a proposal. Lassiter's recommendations were carefully considered. Seiwert seemed to be opposed to fruit trees in public spaces but he is not involved in the decision making process. The resources ODNR offers are being utilized. Another community member and I are attending the Tree Academy to learn how to properly care for young trees. By showing Seiwert that we are serious and competent citizens, his opinion about public participation in tree plantings may

be altered.[10] If political legitimacy is not secured, perhaps the Cleveland Tree Commissions could be contacted for political leverage, funding sources, and educational opportunities.[11]

Pear Avenue recommendations, justifications, and action plan

According to Henderson and Hartsfield (2009), five elements must be present in the city in order to engage citizens in local government initiatives. EcoVillage requested the trees, demonstrating the need. There is strong political support throughout Cleveland for community garden programs, and the vacant tree lawns are the public land that is available for planting. Two elements are unclear, "design must align with the municipality's capacity for implementing and sustaining it" and the city must be prepared to make a multiyear commitment of public funds to the garden program (Henderson and Hartsfield, 2009, p. 13). Since the City's tree planting application is an open-ended proposal and alternative funding many be provided, those factors may substitute a strong city commitment. Johnson et al. (1990) claims community garden projects can be carried out by third party non-profits.

The site survey found thirteen vacant tree lawns. Three lots, 6009, 6017, and 6105 Pear Ave., have overhead wires. According to Lassiter, the parcels with overhead wires would be best suited for fruit trees. Three trees are perfect for pollination and to test if citizens can properly maintain them. Residents at the addresses should be contacted to assess their interest in the community project. Soil specifics will need to be determined before a species can be recommended. With the help of an arborist, the citizens can pick the tree varieties they wish to have planted on the three sites.[12]

Ten parcels have no overhead wires: 5908, 5910, 6000, 6005, 6018, 6022, 6100, 6104, 6106, and 6206 Pear Ave. Through the recommendation of the city it is suggested that on the ten lots without trees, the largest trees possible be planted. Soil specifics will need to be determined before a species can

[10] More information on the Tree Academy classes can be found on p. 54
[11] More information on the Cleveland Tree Commission can be found in the appendix on p. 55
[12] A list of fruit trees can be found on p. 48, table titled, *Fruit Tree Suggestions and Stark Brother's Pricing*

be recommended; however a list of possible replacements has been generated. Suggested varieties include the Northern Catalpa, American Sycamore, Thornless Honeylocust, Swamp White Oak, and Silver Maple[13] (Sydnor, Smith, & Heiligmann, 2005). Siewert suggested to plant sycamores on tree lawns eight feet or larger (Personal communication, March 13, 2013). All tree lawns on Pear Avenue have a depth of nine to ten feet.[14]

Of the thirty-two parcels with trees, fifteen trees are in poor condition and need to be removed. Thirteen are ash trees, one is a maple, and the remaining is an unknown species.[15] Of the fifteen tree lawns with trees in poor condition, six have overhead utilities and seven do not. If the first three fruit tree plantings are successful, when the six trees in poor condition with overhead wires are removed, more fruit trees can be planted. Of the forty-five tree lawns on Pear Avenue, thirteen are vacant, fifteen have trees in poor condition, and nine have trees in fair condition. Only eight trees are in good condition, six of which are small maples and two are medium to large sycamores. If no action is taken, there is the potential for 82 percent of the tree lawns to be vacant.

Networks of learning: Community engagement

The term community garden refers to an open space "managed and operated by members of the local community in which food or flowers are cultivated" (Guitart, Pickering, & Byrne, 2012, p. 364). Planting Fruit trees on tree lawns is a type of community garden that requires less care than other garden crops but needs citizen support. Recruitment postcards and door-to-door canvassing is a way to get more citizens engaged (Summer Sprouts, n.d.).

Another way to get citizens involved is to utilize already existing local food networking sites. Local Food Cleveland is a social media site with over 2,500 members. The site is "an action network for

[13] Table titled, *Ash replacements for urban and woodland plantings*, can be found on p. 49
[14] List of measurements can be found on p. 47, table titled, *Pear Avenue Tree Lawn Evaluation*
[15] Tree species should be reevaluated in the summer

everyone who is passionate about growing a thriving local food economy and culture around Cleveland" (Local Food Cleveland, n.d., p. 1). Members can create groups to discuss their interests. For example, a group titled the Detroit Shoreway Community Orchard Committee has forty-eight members, and Cleveland Fruit Shares has one hundred and twelve members (Local Food Cleveland, n.d.). The City of Cleveland's Office of Sustainability declared 2012 as the year of local food. As a leader of the local food movement, Cleveland could incorporate best practices of other towns and allow fruit trees in public spaces when a tree steward is present.

There are numerous online and local resources residents can use to learn more about pruning and tree care. The OSU Extension office offers hands-on workshops free to the public on numerous topics. For example, the organization offered a pruning mature fruit trees workshop and a small fruit grower's educational series. A full list of courses can be found on the event page (OSU Extension-Cuyahoga County, n.d.). [16] OSU Extension offers online resources specific to fruit trees grown in Ohio.[17] Resources include planting and pruning best practices, a plethora of disease and pest control advice, harvesting tips, and advice for storing and serving Ohio fruits (Ohio State University College of Food, Agricultural, and Environmental Sciences, n.d.).

The main argument against fruit trees on tree lawns is the extra maintenance. If left unattended, the fruit falls to the ground and rots, creating a mess and a slipping hazard on sidewalks. Animals taking the fruit are another complaint. "No tree left behind" is the nickname Siewert has given the Tree Commission Academy, a series of four classes taught by ODNR. Siewert developed the program to teach volunteers how to assist their community and manage the urban forest. Each of the four classes is two days long and costs $35.00, which covers educational materials and lunch. Depending on demand,

[16] OSU's event calendar can be found at www.cuyahoga.osu.edu/events/collections/county-events/events.html
[17] Ohio State's fact sheets for fruit trees can be found at http://ohioline.osu.edu/lines/fruit.html

the classes are offered once a year and the location moves around Northeast Ohio. This year's class is in Painesville and Timberlake, Ohio (Personal communication, March 14, 2013). NPI agreed to pay for myself and one other community member to attend the classes. An email was sent to the community members on March 29, 2013 asking their availability.

Community harvesting

There are examples worldwide of organizing projects that harvest excess fruit from trees. Fruit sharing is a type of community development (Solid Ground, 2009). Seattle, Washington-based Solid Ground (2009) started the Community Fruit Tree Harvest and gathered five hundred pounds of fruit in the first year. Three years later the program expanded citywide and volunteers gathered 15,000 pounds of fruit and distributed it to a variety of organizations. Solid Ground (2009) created a handbook to respond to the question: "How do we start a fruit harvest in our own neighborhood?" (p. 2). The handbook states that "all urban harvests must address three key questions: Where is the fruit? Who will pick it? How will the harvested fruit be used?" (Solid Ground, 2009, p. 4). The handbook also describes how to set up a harvest that relies primarily on volunteers.[18]

Public Administration

Moore's (1995) strategic triangle is a tool administrators can use to critically measure findings of a problem based on if it is substantive valuable, politically sustainable, and operationally and administratively feasible. The goals of this project are to re-green and reforest Pear Avenue, which in return would improve the appearance of the community, improve air quality, reduce pollution, stormwater runoff, and energy consumption (Zhang & Zheng, 2011). Planting trees on bare tree lawns will increase property values, as well as provide an outlet for community engagement (Akbari et al., 2001). Fruit trees have substantive value. They utilize land that is meant to harbor trees and reduce

[18] More information can be found in the community-harvesting appendix on p. 52

more pollution than other softwoods (Western Lands and Communities, 2012). Fruit trees grow to shorter heights than other urban trees, making them a great pilot project for tree lawns with overhead wires. The trees will produce fruit and provide food to the community. The plantings will please the residents' requests, and would create authentic citizen participation in public administration.

It is hypothesized that the plan is legitimate and politically sustainable. The enterprise will continually attract both authority and money from the political authorizing environment (Moore, 1995). It is thought the fruit trees could strengthen the block club. DSCDO may become a partner and the city appears to be open to the idea. The suggestions from Lassiter were carefully considered in this plan. His professional opinion and advice was respected. In return, because it is a proposal, and outside funding would be sought for the initial planting, the city would not spend money on the trees being installed. The city will choose its role in the fruit tree plantings and, ideally, would assist in long-term care and for the fruit trees (for instance, if severe storm damage devastated a tree and it needed to be removed). This plan is operationally and administratively feasible because it can be accomplished by organizations and citizen support. Community rather than the municipality would tend to the trees.

Conclusion

Planting fruit trees on three tree lawns of Pear Avenue could reduce pollution, stabilize property values, strengthen the community block club, and add to the image of the EcoVillage. Supporting the planting of fruit trees on the tree lawns is a way for the City to meet citizens' demands and remain a national leader of the local food movement. According to the Sonoran Institute (2012) by "easing restrictions on landscaping requirements in the parking strip and front yard provide flexibility to residents who may not have space or adequate sunlight in the backyard" (p. 1). Increasing the growth of food within the city limits creates a more secure the food system (Sonoran Institute, 2012).

Creating networks of learning by connecting non-profit and public resources can help harbor active citizens (Bragd et al., 1997). Encouraging local participation at a neighborhood level can create social cohesion and empowered citizens (Attree, 2004). Successful grassroots community forestry needs four elements: foundation building, data collection, analysis and evaluation, and implementation (Johnson et al., 1990). This research completed portions of each steps. The process of foundation building has begun, data and mapping have been completed, and the area has been evaluated. There is still much to complete: soil testing, city approval, OPUS, comprehensive community engagement, goal setting, determining types of hardwoods and fruit trees, creating a planting and site plan, securing funding, conducting community training, planting and maintaining the trees, and finally, evaluating the program.[19]

Residents interested in planting fruit trees should research which variety they are interested in to make sure it is ideal for the location. Prior to planting, they must determine the goals of the trees, what the fruit will be used for, and the "dos and don'ts" regarding fertilizers and chemical treatments (Summer Sprouts, n.d.). Residents must be willing to dedicate time for pruning, watering, and harvesting. In addition, residents who are interested in becoming tree stewards should research or receive training on pruning practices and harvesting techniques. Soil testing should be completed to determine contamination and what varieties would thrive best in the spaces provided. Budgets should be generated annually and should incorporate fertilizers, tools, and watering such as rain barrels or hydrant permits. However, most of the tree planting will have a front-heavy cost when the trees are first planted. Johnson et al. (1990) states, "Community forest programs bring benefits to homeowners at a relatively small cost" (p. 33). With the devastation caused by the emerald ash borer to the treescapes,

[19] A table of tasks can be found on p. 50

property values are expected to decrease. Investing and planting new trees is an important element in improving or stabilizing property values and in enhancing the environment.

Lessons learned from the MPA Program

It was through Cleveland State University (CSU) that I first became active in the local food movement. Though I had been passionate about local food issues, I had yet to practice professionally. As the Campbell Steinbacher Endowed Fellow through CSU, I was placed at NPI as the Sustainability Fellow. Shortly after I started, I worked with urban farmers, planned educational field trips around urban agriculture, and helped various greening projects take root in Cleveland, including a few orchards. Through the MPA program at CSU, I have continued my work at NPI as a graduate assistant. The organization works closely with City officials and has taught me firsthand about many of the theories learned at CSU. The Neighborhood Stabilization Program through the Federal government funded much of the projects. The allocated funds are meant to stabilize communities that were debilitated by the foreclosure crisis.

As a student, I learned the importance of critically analyzing information, adhering to deadlines, and producing quality work with credible sources. I learned research methods, budgeting practices, statistical analysis, ethics, economic and development theories, as well as the values and challenges that accompany public participation. Although government officials and public administrators are members of the public population, they have power many citizens cannot match. It is the duty of the public administrator and servants to educate the citizenry and seek out public perception.

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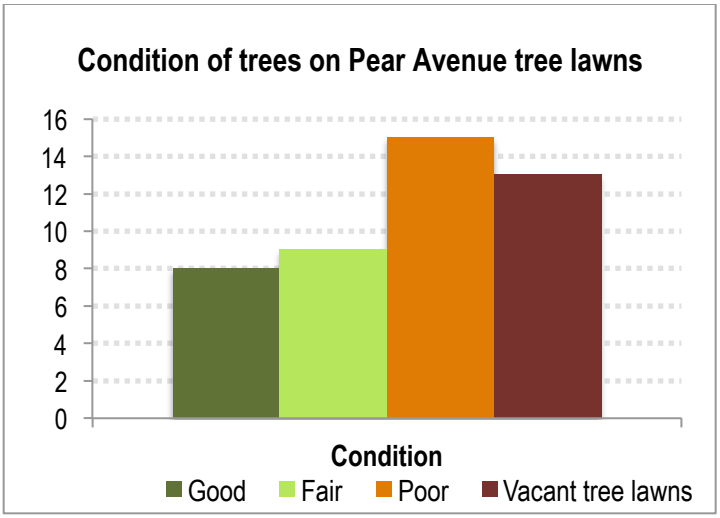
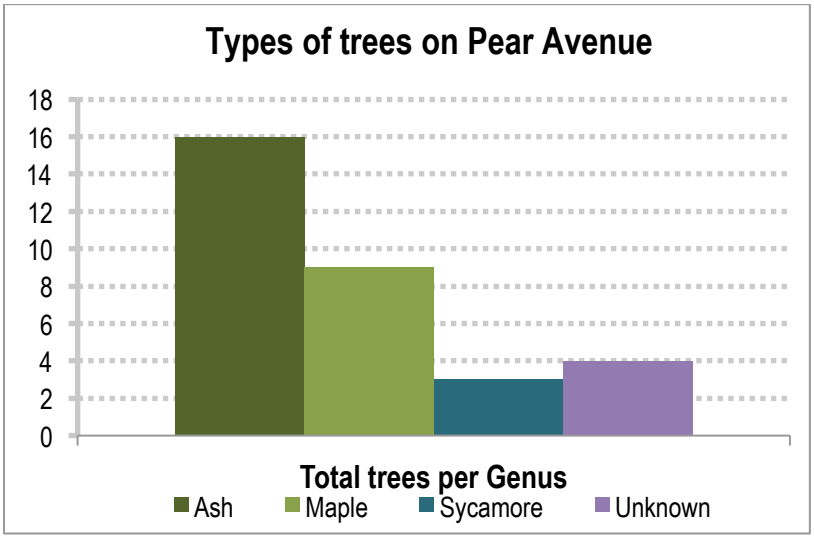
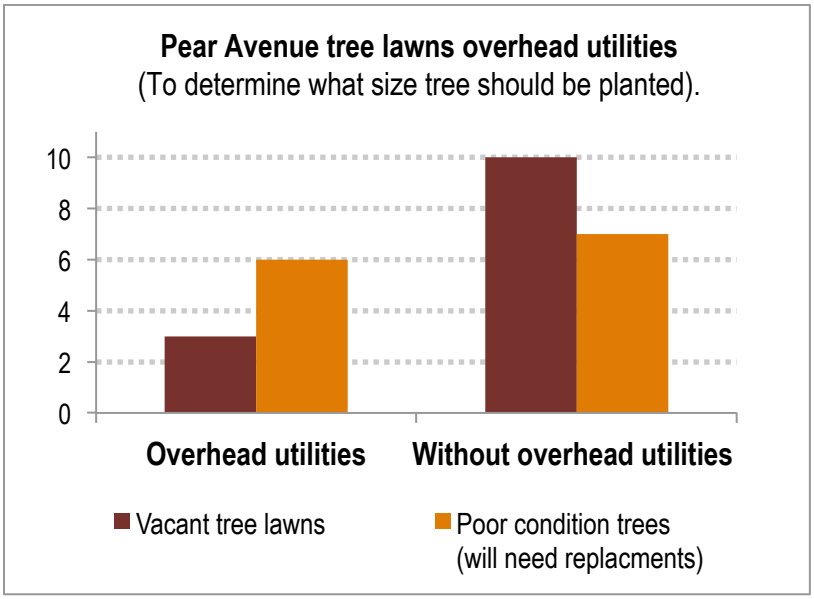
Pear Avenue tree lawns
Tree planted
No tree planted


Condition of trees on Pear Avenue tree lawns
16
14
12
10
8
6
4
2
0
Condition
Good
Fair
Poor
Vacant tree lawns


Types of trees on Pear Avenue
18
16
14
12
10
8
6
4
2
0
Total trees per Genus
Ash
Maple
Sycamore
Unknown


Pear Avenue tree lawns overhead utilities
(To determine what size tree should be planted).
10
8
6
4
2
0
Overhead utilities
Without overhead utilities
Vacant tree lawns
Poor condition trees
(will need replacments)

Pear Avenue tree lawn evaluation. Cleveland, OH. March 21, 2013

Parcel	House Number	Street	Side of the street	Tree?	Tree genus	condition of tree	Size of tree	girth of tree (inches)	Depth of tree lawn (Inches)	Overhead utilities	Fire hydrant	Sewer drain	Water meter	gas line
002-28-059	6021/23	PEAR AVE	0	1	1	3	2	63.50	115	1	0	0	1	0
002-28-109	6405	PEAR AVE	0	1	4	2	2	65.50	120	1	0	0	1	0
002-28-049	6216	PEAR AVE	1	1	1	2	3	89.50	113	1	0	0	1	0
002-28-050	6215	PEAR AVE	0	1	1	3	2	77.00	114	1	0	0	1	0
002-28-048	6212	PEAR AVE	1	1	1	3	2	74.00	113	1	0	0	1	0
002-28-051	6211	PEAR AVE	0	1	1	3	2	43.75	120	1	0	0	0	0
002-28-047	6210	PEAR AVE	1	1	2	1	1	10.00	113	0	0	0	1	0
002-28-052	6209	PEAR AVE	0	1	1	3	2	92.00	114	1	0	1	1	0
002-28-053	6207	PEAR AVE	0	1	1	2	2	44.25	114	1	0	0	0	0
002-28-046	6206	PEAR AVE	1	0	0	0	0	0.00	113	0	0	0	0	1
002-28-045	6202	PEAR AVE	1	1	4	1	1	6.00	113	1	0	0	1	1
002-28-054	6201	PEAR AVE	0	1	2	1	1	9.00	114	1	0	0	0	0
002-28-100	6110	PEAR AVE	1	1	1	3	3	73.25	113	0	0	0	0	1
002-28-044	6106	PEAR AVE	1	0	0	0	0	0.00	113	0	0	0	1	1
002-28-056	6105	PEAR AVE	0	0	0	0	0	0.00	114	1	0	0	0	1
002-28-043	6104	PEAR AVE	1	0	0	0	0	0.00	113	0	0	0	0	1
002-28-057	6103	PEAR AVE	0	1	2	1	1	8.00	114	1	0	0	0	0
002-28-042	6100	PEAR AVE	1	0	0	0	0	0.00	113	0	0	0	0	1
002-28-041	6028	PEAR AVE	1	1	2	2	1	5.00	113	1	1	0	1	0
002-28-058	6025	PEAR AVE	0	1	1	2	2	28.50	114	1	0	0	1	0
002-28-040	6022	PEAR AVE	1	0	0	0	0	0.00	113	0	0	0	1	0
002-28-039	6018	PEAR AVE	1	0	0	0	0	0.00	113	0	0	0	0	0
002-28-060	6017	PEAR AVE	0	0	0	0	0	0.00	115	1	0	0	0	0
002-28-038	6014	PEAR AVE	1	1	3	1	3	109.00	113	0	0	0	1	0
002-28-061	6013	PEAR AVE	0	1	3	2	2	46.00	115	1	0	0	1	0
002-28-037	6010	PEAR AVE	1	1	1	3	3	78.25	113	0	0	0	1	0
002-28-062	6009	PEAR AVE	0	0	0	0	0	0.00	115	1	0	0	1	0
002-28-036	6006	PEAR AVE	1	1	1	3	3	85.00	113	0	0	0	1	0
002-28-036	6006	PEAR AVE	1	1	2	2	1	7.00	113	0	0	0	1	0
002-28-063	6005	PEAR AVE	0	0	0	0	0	0.00	115	0	0	0	0	0
002-28-064	6001	PEAR AVE	0	1	1	3	2	53.75	115	0	0	0	0	0
002-28-064	6001	PEAR AVE	0	1	2	3	1	5.00	115	0	0	0	0	0
002-28-035	6000	PEAR AVE	1	0	0	0	0	0.00	115	0	1	0	0	0
002-28-034	5910	PEAR AVE	1	0	0	0	0	0.00	115	0	0	0	1	0
002-28-065	5909	PEAR AVE	0	1	2	2	1	10.00	115	0	0	0	0	0
002-28-032	5908	PEAR AVE	1	0	0	0	0	0.00	113	0	0	0	1	0
002-28-067	5901	PEAR AVE	0	1	1	3	2	34.00	115	0	0	0	0	0
002-28-099	5901	PEAR AVE	0	1	2	1	1	9.00	115	1	0	0	0	0
002-28-068	5809	PEAR AVE	0	1	1	3	2	20.75	114	0	0	0	0	0
002-28-070	5809	PEAR AVE	0	1	2	1	1	5.25	115	1	0	0	0	0
002-28-001	1967	W 65	0	1	1	3	2	39.50	120	1	0	1	0	0
002-28-031	1962	W 58	1	1	1	3	3	87.00	115	0	0	0	0	0
002-28-002	1945	W 65	1	1	3	1	2	56.50	115	1	0	0	0	0
002-28-002	1945	W 65	1	1	4	2	2	62.75	115	1	0	0	0	0
002-28-002	1945	W 65	1	1	4	3	2	15.00	115	1	1	0	0	0

Side of the street	Tree?	Tree genus	condition of tree	Size of tree	girth of tree (inches)	Depth of tree lawn (Inches)	Overhead utilities	Fire hydrant	Sewer drain	Water meter	gas line
1=North; 0=South	1=yes; 0=no	1=ash; 2=maple; 3=sycamore; 4=unknown	1=good; 2=fair; 3=poor	1=small 10'-24'; 2=medium 25-50'; 3=large 50'+	inches	average inches	1=yes; 0=no	1=yes; 0=no	1=yes; 0=no	1=yes; - 0=no	1=yes; 0=no

Evaluation was conducted by Christina Ebert of Cleveland State University and Colby Sattler, ISA Certified Arborist, on March 21, 2013. c.e.ebert@csuohio.edu

Other source: Northeast Ohio Community and Neighborhood Data for Organizing (NEO CANDO) (2012). Case Western Reserve University. Retrieved March 6, 2013, from http://neocando.case.edu/

Tree inventory Pear Avenue					
		Number of trees per condition**			
Tree size (feet)	Average girth (inches)*	Good (1)	Fair (2)	Poor (3)	Total trees
Small 10'-24'	7.43	6	3	1	10
Medium 25'-50'	51.05	1	5	10	16
Large 50'+	87.00	1	1	4	6
Total	48.49	**8**	**9**	**15**	**32**

**The condition was determined by an ISA Certified Arborist on a scale of 1-3. 1 is good, 2 is fair, and 3 is poor.
*Girth was measured at chest height

Planting plan for Pear Avenue			
Current planting possibilities		**Future planting possibilities**	
Tree lawns without trees	# of tree lawns	Ash trees in poor condition	# of tree lawns
Overhead wires (smaller trees)	3	Overhead wires (smaller trees)	6
Without wires (larger trees)	10	Without wires (larger trees)	7

Fruit Tree Suggestions and Stark Brother's Pricing

Tree	Variety	Sizes 	Pollination	Price	Harvest time	Description
Almond	All-In-One-Almond	matures to 12-15'	self pollinating	$27.99	Early September	Bears in 3-4 years
	Hall's Hardy	matures to 15-20'	self pollinating	$27.99	Late September	"Pretty and Productive" with lovely pink flowers in the spring
Apple	Double Delicious	semi-dwarf	self pollinating	$27.99	Late September	Has Red Delicious and Golden Delicious on one tree
Apricot	Goldcot	Dwarf to supreme standard	self pollinating	$19.99 to $27.99	Early July	Withstands cold winters
Cherry	2-N-1	semi-dwarf	self pollinating	$29.99	Mid June	Has Van sweet cherries and Stark Gold cherries on one tree
	Starkrimson	semi-dwarf	self pollinating	$24.99	Late June	
Paw paw	Sunflower	EZ start Pot	other variety	$19.99	Late September	bears fruit in 2-3 years
	J Seedling	EZ start Pot	other variety	$17.99	late September	Needs another variety for pollination. Best to plant in neutral soil
Peach	RedHaven	Dwarf to supreme standard	self pollinating	$19.99 to $23.99	Late July	Needs another variety for pollination. Heavy bearing and cold tolerant
	Reliance	Dwarf to supreme standard	self pollinating	$19.99 to $27.99	Late August	Stark's most cold tolerant peach
Pear	Starkling Delicious	Dwarf to supreme standard	other variety	$19.99 to $23.99	Late August	Needs another variety for pollination. Moonglow is best pollinator
	Moonglow	Dwarf to supreme standard	other variety	$19.99 to $27.99		Needs another variety for pollination. Starkling is best pollinator
Plum	Yellow Shiro	Dwarf to supreme standard	other variety	$19.99 to $28.99	Late July	Needs another variety for pollination Redheart is best pollinator
	2-N-1	semi-dwarf	self pollinating	$28.99	Late July & August	Has Shiro and Redheart plums on one tree

Source: Stark Brother's Spring 2013 Nursery Catalog
Created 4/11/2013 by Christina Ebert, c.e.ebert@csuohio.edu

Ash tree replacements recommended on tree lawns			
Common name	**Scientific name**	**Site selection**	**Mature height**
Northern Catalpa	*Catalpa speciosa*	Grows on fine sandy to silty clay loam textured soils Soil pH from low 6's to high 7's shade intolerant Intermediate flood tolerance Insect and disease problems usually cosmetic A well adapted urban tree often found in inner city locations, having survived with minimal care for a long time Rapid growth rate, similar to ash	50-100'
Sycamore	*Platanus occidentalis*	Tolerates broad range of soil textures from fine sandy to clayey Tolerant of very acid (mid 4s) to alkaline (8.0+) soils Moderately tolerant to drought Intermediary shade tolerance One of the fasted growing trees Insect and disease problems usually cosmetic flood tolerant	98-130'
Thornless Honeylocust	*Gleditsia triacanthos intermis*	Grows in a wide range of soils textures from fine sands to clay Grows in moderately acid (5.5) to alkaline (8.0+) soils Drought resistant Shade intolerant Restricted root space will stunt growth Insect and disease problems usually cosmetic Flood tolerant Medium to rapid growth rate	66–100'
Swamp White Oak	*Quercus bicolor*	Soil textures ranging from sandy to clayey Tolerant of acid soils (4.5) to neutral or slightly alkaline (7.2) Intermediate shade tolerance and flood tolerance Historically swamp oaks have displaced ash Urban adapted Slow to medium growth rate	65–80'
Silver Maple	*Acer saccharinum*	Grows on soil textured from sandy to clayey. Insect and disease problems usually cosmetic Grows well in soils with ph <7.2 Shade and flood tolerant Rapid growth rate	50–80'

Source: Sydnor, T., Smith, K., & Heiligmann, R. (2005). Ash replacements for urban and woodland plantings. Columbus, OH: Ohio State University.

Created by Christina Ebert, March 26, 2013. c.e.ebert@csuohio.edu

Budget for Pear Avenue Project				
Cost estimates	**Cost per unit**	**Units**	**Total cost**	**Notes**
Arborist	$48 to $71/hr	8	$476.00	Units may very and cheaper alternatives may be availble
Compost	$20/cu. yd.	TBD	TBD	
Mulch	$35/cu. yd.	2	$70.00	
Soil testing	$15	14	$210.00	Calculated for vacant tree lawns and railroad tracks parcel
Soil	$20/cu. Yd.	TBD	TBD	
Fruit trees*	$25	17	$425.00	
Materials and labor total			*$1,181.00*	
Treegator	$16	17	$272.00	20 gallon slow release watering bags
Rain Barrel 48 gallon	$70	2	$140.00	
10' Orchard ladder	$249.50	1	$249.50	
Fruit picker	$39.97	3	$119.91	
Tree trimming equiptment	$39.99	3	$119.97	Craftsman 14 ft. Tree Pruner
Mailings	$0.46 piece of mail	90	$41.40	2 mailings. USPS. Door-to-door would be free alternative
Printing	TBD	TBD	$100.00	For mailings or flyers
Hose	$40	TBD	$120.00	
Hydrant permit**	$90 per year	1	$90.00	
Community resources total			*$1,252.78*	
Subtotal			**$2,433.78**	
Additional costs				
Shade street trees***	$182.50	10	$1,825.00	City suggests planting trees with 2 ½" - 3" caliper
Fencing	$10 per ft	150'	$1,500.00	
Total all trees and fencing			**$4,258.78**	

*Number of trees was calculated by the number of tree lawns that could have fruit trees and using another orchard as an example. The other orchard was 34,000 sq. ft. and had 42 fruit trees. The land by the railroad track is 10,175 sq. ft. with a potential to be 14,919 sq. ft., if the land bank lot is included.

**Hydrants are not near the tree planting sites. Perhaps residents could use their own water and hoses as an alternative

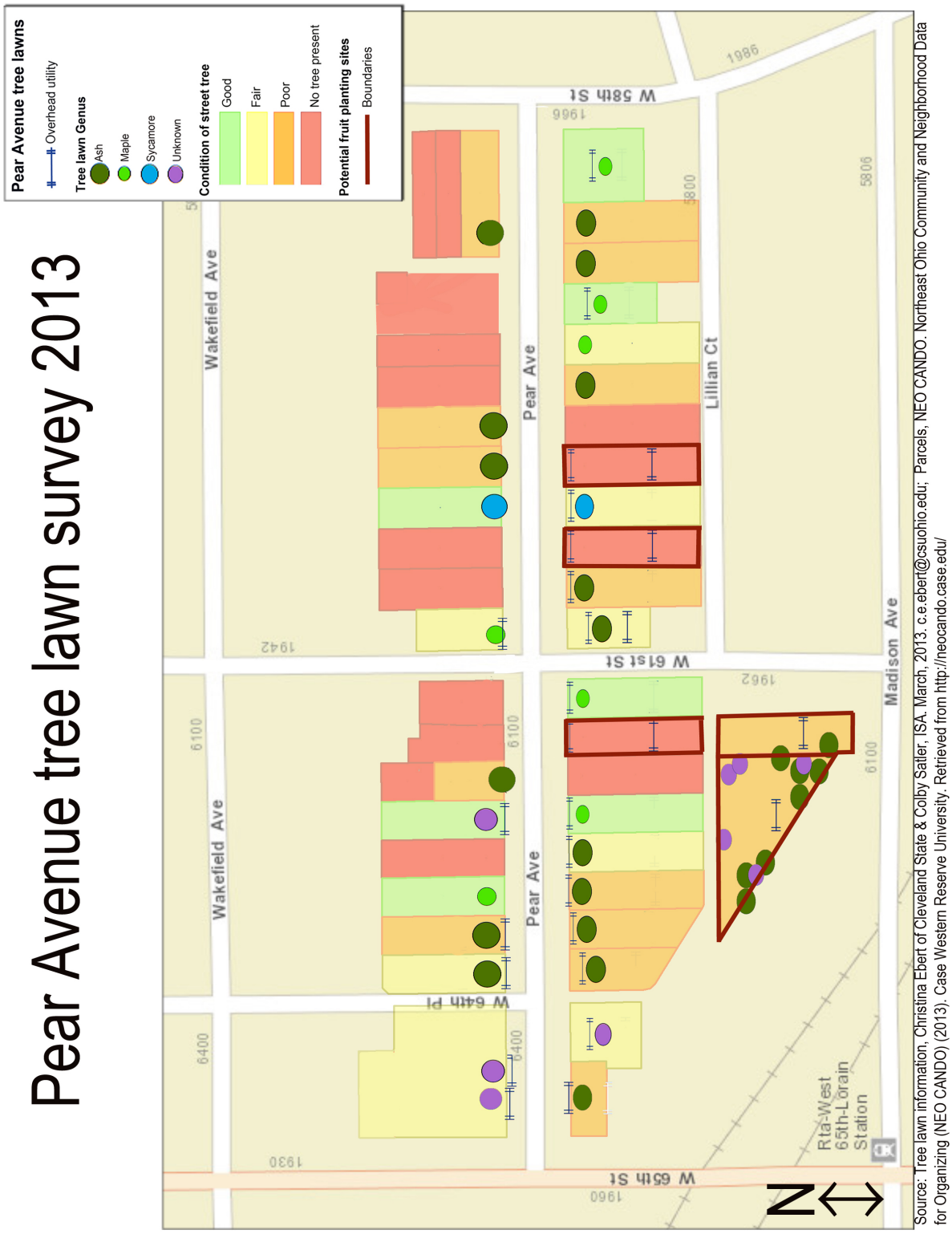
***Price calculated by average price of suggested tree list & Klyn's 2011 nursery book

* Tree removal costs were not included and could be substantial.

Community Fruit Tree Program Task Table	
Task	**Completed**
Target area identified	x
Mapping	x
Current trees	x
Overhead utilities	x
Other utilities (OUPS)	
City approval	
Community Outreach	x
Community engagement	
Goal setting	
Suggested fruit trees	x
Suggested hardwood trees	x
Types of hardwood trees determined	
Types fruit trees determined	
Planting and site plan created	
Funding identified	x
Funding secured	
Community training opportunities identified	x
Community training conducted	
Planting of the trees	
Maintenance of the trees	
Evaluation	

Created by Christina Ebert, Cleveland State University. March 30, 2013. c.e.ebert@csuohio.edu

Pear Avenue tree lawn survey 2013



Source: Tree lawn information, Christina Ebert of Cleveland State & Colby Satler, ISA. March, 2013. c.e.ebert@csuohio.edu; Parcels, NEO CANDO. Northeast Ohio Community and Neighborhood Data for Organizing (NEO CANDO) (2013). Case Western Reserve University. Retrieved from http://neocando.case.edu/

Appendices

Callery Pear

An ornamental tree that is frequently planted in urban residential and commercial areas is the *Pyrus calleryana Dene*. Also known as callery pear, *Pyrus calleryana* is native to China, Taiwan, Korea, Vietnam, and Japan was initially brought to the U.S. in the early 1900's to combat fire blight in the common pear. Throughout the 1950's and 1960's, the ornamental possibilities were recognized and the tree was available commercially (Culley & Hardiman, 2007). There are many common cultivars: Bradford pear 'Bradford pear' and 'Cleveland Select' to name a few. Prized for its five-petal spring white flowers, rapid growth, as well as disease and environment tolerance it became, "one of the most widely planted boulevard trees in urban areas in the U.S." (Culley & Hardiman, 2007, p. 960). However, as they aged it was found to have structural flaws. Reaching heights of 30 to 66 feet, with dense upward growth, the narrow angles of the branches eventually caused the trees to split under their own weight after fifteen to twenty years (Culley & Hardiman, 2007). Callery's fruit, dense and woody, are eventually softened by frost, after which birds feast upon and later disperse the seeds through their droppings.

Despite their short-lived lives, callery pears remain a favorite. They adapt well to different soils, confined spaces with "restricted root zones, pollution, drought, and heat" (Culley & Hardiman, 2007, p. 962). Many of the characteristics such as: rapid growth, abundant flowering, and wide environmental tolerance, are typical of an ideal weed (Culley & Hardiman, 2007). Seedlings of the callery pear have begun to appear in many natural areas in the eastern United States, the earliest of which were identified in 1964 in eastern Arkansas (Culley & Hardiman, 2007). Wild callery increased over time from 2 percent of "herbarium specimens dated 1964-1979… to 50 percent dated 2000-2003" (Culley & Hardiman, 2007, p. 961) (Vincent 2005). As of 2007, certain callery pears are considered an invasive plant in six states and are on watch lists in four others states (Culley & Hardiman, 2007).

In China, they pears are smaller and widely scattered. Common cultivars planted frequently in the U.S. originate from different regions of China and "represent genotypes that would never encounter one another within the native range" (Culley & Hardiman, 2007, p. 960). Culley and Hardiman (2007) continued, by cloning them in large quantities, "and planting them together in mixed combinations…a situation has been created in which cultivars with different self-in compatibility genotypes can…readily cross with one another and produce fruit" (p. 960). In addition to callery pears being invasive, having short lifespans, and being prone to breakage, the flowers' pollen give off a violating smell similar to "urine," or "fish that has been sitting out too long" (Palumbo, 2010, p.1) (Breslin, 2010, p. 1). Once sniffed, the spring smell alone is reason enough to discontinue planting the callery pear. On Cleveland's planting list, there are over 700 callery pears to be planted.

Community harvesting

Solid Ground (2009) created a handbook to respond to the question: "How do we start a fruit harvest in our own neighborhood?" (p. 2). All urban harvests must address three key questions: "Where is the fruit? Who will pick it? How will the harvested fruit be used?" (Solid Ground, 2009, p. 4). A section of the handbook describes how to set up a harvest that relies primarily on volunteers. The four phase and eleven steps involved in the planning process and implementation of the harvest.

Phase One involves planning: Deciding on the scope such as geographic area and types of fruit as well as setting up a steering committee of five to ten interested individuals. The committee needs to decide how to gather information such as online registration, mapping the trees, or interviewing people in person (Solid Ground, 2009). Phase Two involves laying the groundwork. The recruitment of fruit tree donors can be completed with flyers, canvassing, and the use of social media sites. Equipment such as an eight-foot orchard ladder, fruit picking tools and cardboard boxes will need to be gathered and a storage location should be identified.

Volunteers will be recruited and trained in phase two. Volunteers should be provided the basic logistics of how the harvest works, told what to wear, what to bring, how to use the ladder and fruit picking tool, how to tell if fruit is ready to pick, how to pick fruit, and what fruit not to take (Solid Ground, 2009). The final step of phase two is deciding how to use the fruit. If there is a surplus of fruit, figuring out what organizations are willing to take it, what amount do they need and how often can you bring it are important questions to ask.

Phase Three involves developing a scheduling plan, then harvesting and delivering the fruit. Phase four is a "wrap up" phase where data is retrieved and thanks are given to the appropriate parties. The handbook has sample tree donor applications, volunteer forms, and instructions for other towns to adapt. There are numerous ways to organize the community.

Funding opportunities

Neighborhood Connections provides grants to Cleveland and East Cleveland neighborhood groups to strengthen the social network and to spur small, grassroots community efforts (Neighborhood Connection, 2011). Many of their grants, which range from $500 to $5,000, go to groups facilitating urban gardens. Recipients must secure a dollar-for-dollar match, in the form of cash, volunteer labor, or donated goods or services, equal to the amount requested from Neighborhood Connections (Neighborhood Connection, 2011). Resident-led community groups are eligible to apply but must identify and support documentation from a non-profit fiscal agent. When applying, grant seekers should include "letters of support from community partners whose cooperation or involvement is necessary to the project's success… letters of commitment from governmental agencies or schools should be included when appropriate" (Neighborhood Connection, 2011).

The Cleveland Colectivo, located in Cleveland Heights, OH, gives grants to individuals, nonprofit organizations, and for-profit ventures to help improve the quality of life for the citizens of Cleveland (Foundation Center, 2013). Grants range between $500 and $5,000 and can be used for neighborhood and community development (Foundation Center, 2013). The Haskell Fund, located in Cleveland, OH, gives locally for community services including the environment with an emphasis on natural resources (Foundation Center, 2013). Scotts Miracle-Gro Company Contributions Program makes charitable contributions to nonprofit organizations involved with community gardens and green spaces (Foundation Center, 2013). The Crowe Family Foundation, located in Pepper Pike, OH, gives grants to agriculture and food related projects (Foundation Center, 2013). Although they do not give grants to individuals, there is no application form or deadline. Interested parties should approach the foundation with a letter (Foundation Center, 2013).

Bob Evans Farms' Corporate Giving Program makes contributions to nonprofit organizations involved with education, health and wellness, as well as food and nutrition in Ohio communities

(Foundation Center, 2013). The Grimm Family Foundation, located in Huntington Valley, OH, gives grants for environmental land resources. The Ohio Farm Bureau Foundation in Columbus, OH gives grants ranging from $1,000 to $3,000 (Foundation Center, 2013). Grants are awarded to programs that highlighting agriculture and its impact on the community in one of the following focus areas: "economics, community development, and/or agribusiness development; education, public awareness, and/or community outreach; and environmental issues involving agriculture and its impact on the respective community" (Foundation Center, 2013, p. 1). Recipients are required to provide matching funds or resources.

Various national funders give grants to organizations for urban greening initiatives as well. The Vectren Foundation, Inc. located in Evansville, IN, supports programs designed to promote community development with a special emphasis directed toward programs designed to contribute to sustainable future (Foundation Center, 2013). The Land O'Lakes Foundation's gives donations to sustainable programs involving agriculture across multiple states.

Alan Siewert, ODNR, full interview

Before Siewert could recommend a tree species he has to know three things: The soil specifics on the site has to be known, are their overhead utilities, and what tree species are in the surrounding areas (Personal communication, March 13, 2013). Siewert stated, "Diversity is important for these publicly owned trees" (Personal communication, March 13, 2013).

Siewert stated that urban agriculture is a great use for some public land, but "the tree lawn is a buffer between public and private" (Personal communication, March 13, 2013). Siewert did not suggest planting fruit trees on tree lawns and stated, "Once you start playing in the public eye, education becomes very important. Each citizen will have [his or her] view on how something should be completed, and will say to the other resident, "you're pruning it wrong" (A. Siewert, personal communication, March 13, 2013).

In regards to citizens helping out the City with maintenance, Siewert stated, "What you'll get is volunteers that are big into planting trees, but when it comes to urban forestry, tree planting is the last thing you want to do in cities like Cleveland. The funding priorities are maintenance" (Personal communication, March 13, 2013). According to Siewert, the first priority of Urban Forestry departments is the maintenance of current trees and the removal of dead or dying trees that pose a risk to properties and infrastructure. Mulching around the trees is important and helps retain moisture. The trees that are young need additional attention and "good moisture" ...next in line of priorities is mature tree pruning and crown cleaning; "just a little bit of pruning inside the big trees reduced storm damage" (Personal communication, March 13, 2013). Siewert continued, "Once you have money for big trees, then you can plant new ones" (Personal communication, March 13, 2013). Siewert commented on Cleveland's Urban Forestry Department and stated, "No offense but James [Lassiter] can barely take care of the trees he has, he doesn't need more trees to be planted" (Personal communication, March 13, 2013).

When asked his opinion on replacing the ash trees, Siewert stated, "I would plant the biggest tree that would fit there for shade" (Personal communication, March 13, 2013). He continued and told tales of historical urban landscape where, traditionally, street trees were planted in front that provided large shaded areas and houses had gardens in the back. Residents would sit on their shaded porch and

would communicate across yards. Siewert continued, "Shade trees built the community" (Personal communication, March 13, 2013).

Siewert stated that fruit trees are pruned fairly harshly to cause stress in order to produce more fruit. Siewert shared his opinion that orchards are not attractive (Personal communication, March 13, 2013). When planting street trees, city officials desire the tree to produce an eight-foot clearance over the sidewalk. Siewert felt fruit trees would be counterproductive and claimed, "You want to keep the fruit trees small and shape to produce fruit and street trees need to be shaped so they do not obstruct the sidewalk" (Personal communication, March 13, 2013). Siewert also felt that pollution from the street would be problematic, especially when the snowplows deposit the pollutants onto the tree lawn.

When asked if he could recommend a species of pears that do not have an offensive odor, Siewert said, "it was beyond his expertise" and noted he is an urban forester not an orchardist (Personal communication, March 13, 2013). Siewert said he had no knowledge of peaches and almond trees and inquired about the interested residents, "Are these people who know about peach trees or are they people who like peaches?" (Personal communication, March 13, 2013). Siewert added that people who are offended by the odor of some trees "should get over it" (Personal communication, March 13, 2013).

Though Siewert was helpful and responsive many of his comments were negative regarding public participation. It is speculated that limited resources may cause Siewert's slight apathy towards citizen involvement, however a positive shift of perception of public input is required. Siewert's professional suggestions will be carefully considered but orchard enthusiasts will also be consulted. This is on account of Siewert's academic training in urban forestry rather than horticulture.

Tree Commission

In 1992, Chapter 163.01 of the City of Cleveland code of ordinances established a Cleveland Tree Commission. The Tree Commissions has nineteen members, one of whom is the Commissioner of Park Maintenance and Properties, and the other eighteen members are appointed by the Mayor at the confirmation of Council (Chapter 163, 1992). The duties of the Tree Commission are to:

> Study, plan and recommend to the Director of Parks, Recreation and Properties any action or program which the Commission deems necessary or advisable for the care, preservation, trimming, planting, removal or disposition of trees, shrubs and planting sites in public rights of way, parks or other public grounds owned and controlled by the City. Disseminate to the public information regarding the selection, planting and maintenance of trees within the City; Promote the programs and policies of the Division of Park Maintenance and Properties relating to trees, shrubs and planting sites and recommend improvements thereto; Investigate and make findings and recommendations regarding any special matter involving trees, shrubs or planting sites when so requested by Council or the Administration; [and] Solicit grants or contributions on behalf of the City for use in enhancing the urban forest and educating the public with respect thereto (Chapter 163, 1992, p. 1).

Information about the Tree Commission members or contact information could not be easily retrieved. It is suggested that the Tree Commission members' information be available to the public. Not only to disseminate information regarding urban greening, but allow citizens the opportunity to assist in the process and volunteer opportunities. If the urban forestry department feels they are understaffed they may be able to receive assistance from active, educated residents.