Developing a Community Gardening Apple Tree Protocol & Pilot Project: St. Paul Parks & Recreation Department

The City of Saint Paul has a vibrant Community Gardening Program stretching back decades. In recent years, as food security, the slow food movement, and a deep recession persists, there are more Community Gardeners. In places around the US many long-term Community Gardens are bringing woody perennial Apple Trees into their gardens, along with the more typical annual vegetables. This issue of Apple Trees has given the St. Paul Parks & Recreation Department the opportunity to test the idea of how well this might work in the long term. This Pilot Project has a 5 year committement from the city. This Protocol document is being led by Extension Community Forestry Professor Gary Johnson PhD.in Forest Resources at the University of Minnesota. University students in Professor Johnson's class FR4501/5501 have assembled this document in partial fulfillment of this class' requirements, and as a community service to the City of St. Paul.

Developing a Community Gardening Apple Tree Protocol & Pilot Project for the Parks & Recreation Department of St. Paul MN

May 2013

University of Minnesota Forest Resources Department Team Lead: Professor Gary Johnson PhD.

Produced by FR4501/5501 Students: Dustin Ellis, Scott Ferris, Justin Hagen, Mark Kruse, Benjamin Whelan, Peter MacDonagh

Developing a Community Gardening Apple Tree Protocol and Pilot Project for the City of Saint Paul

May 2013

Submitted by:

Department of Forest Resources

University of Minnesota

Forest Resources 4501/5501

Students:

Dustin Ellis

Scott Ferris

Justin Hagen

Mark Kruse

Benjamin Whelan

L. Peter MacDonagh

Section 1.0

Recommendations: Policy, Planning, Practices and Precedents

Section 1.0

Recommendations: Policy, Planning, Practices and Precedents

Policy:

Recommendations for St. Paul Park and Recreation 5-Year Fruit Tree Pilot Program

It is our recommendation that St. Paul Park and Recreation Department implement a 5-year pilot project to include fruit bearing trees in public spaces, such as parks or urban gardens. Many public citizens have voiced a desire to include fruit bearing trees in their urban garden. This pilot project presents the opportunity to provide clear insight into fruit tree production on public property. Through monitoring, a framework for effective policies and practices can be established that will guide potential inclusion of fruit bearing trees in the future. Below are our recommendations for the 5-year pilot project:

Participants

We recommend that the West Side Growing Garden Club take on this Apple Tree pilot project. Our decision was made via email, phone calls, and attendance at their monthly garden club meeting. This garden club has been the most outspoken in their desire to include fruit bearing apple trees in their community gardens. They are a registered garden club and are very likely to be successful.

Application Form

The West Side Garden Club will need to fill out an application form and read the policies and practices that are set forth by St. Paul Parks and Recreation Department. A signature of understanding between both parties, and a copy of policies and practices on file will properly memorialize this agreement. An application form is included within the Selected Community Section 2.0 of this report.

Clean-Up and Site Maintenance

A critical condition of preceding with this pilot project, and potentially other apple trees in future community gardens on Saint Paul Parks and Recreation lands, is the need for apple orchard hygiene. In fact, it is this one issue which has generated the most resistance for apple trees on public lands from municipal staff. Therefore the pilot project will be suspended if after the 5 year term, apple orchard hygiene is neglected. Clean-Up items are: removal of all fruit from the orchard coincidental with ripening, collection and removal of all pruning's and branch trimmings to proper chipping or composting facility, raking and removal of all leaves from orchard to proper composting facility. Lastly, no apple maintenance equipment should be left in the area when there is no work being done on or around the apple trees.

Planning

Site

Within the West Side Growing garden club area of west Saint Paul are two sites that supplied the physical needs of the apple trees (sun, shade, water, etc.). Both sites are located near or in Cherokee Park, on the west side of Saint Paul. There is full sun, water access, and safe working conditions. There is one on the South West corner of the park and one on the East side of the park. Maps of Cherokee Park with the recommended plots are attached and can be found in Section 3.0 Site Selection.

Water Access

Access to water to keep fruit bearing trees healthy is mandatory and the access point should be no greater than 100 yards away. Water may be transported to the site but may not exceed 100 yards if carried to water the trees. This is to provide safe access and working conditions.

Site One (1) has a fire hydrant where water access may be rented by Growing West Side Garden Club from the City of Saint Paul Water Department, this rental is on a year to year basis, and it is $80 dollars a year. On Site Two (2), there is water access from the back or west wall of the Cherokee Pavilion. A hose can be run to the apple trees, which is less than 100 feet distant. See Section 3.0 Site Selection maps for precise location of two selected sites.

Number of Trees

A minimum of 5 trees should be selected for the pilot project to be successful. This will allow enough fruit to be harvested at different times of the season to see where potential problems lie. But not so much fruit that it will be a problem from the start.

Maximum Height

It is recommended that fruit bearing trees be no higher than 20’ to avoid dangerous pruning and fruit collection circumstances. This can eliminate hazardous trimming, spraying and harvesting practices that may need to be performed if trees exceed this height restriction. The recommended root stock options helps control the maximum height of the trees and only allows them to grow to the targeted maximum height of 20’.

Spacing Between Trees

Fruit bearing trees should be spaced at least 15’ apart to provide clear working and walking lanes and encourage tree health.

Tree Species

The tree species that would best perform at these sites are Honey Crisp, Harralson, Snow Sweet, Red Free, and Fireside. Each is resistant to fire blight and holds fruit tightly to the branches, with Honey Crisp being the most fire blight resistant.

These attributes can require less intensive care, and cleanup than other tree species available. However, from an ease of information transfer, we recommend Honey Crisp in particular, as it is perhaps the most popular eating apple in America.

Root Stock

Dwarf root stocks are the best option for these apple tree varieties. The dwarfed root stock lends tree species disease resistance, survivability on tough sites, and height control. The type of root stock we would recommend is B9, M26, and M7. B9 grows 6-7 Ft tall but needs permanent support, such as staking. M26 grows 8-10 Ft tall and has fruit trees that grow to heights of 50% of non-dwarfed varieties. M7 grows 15 Ft tall and is most readily available at any nursery. M7 fruit grows to 65% of non-dwarfed varieties.

Under Planting

Planting herbaceous plants such as “Walkers Grow Low” Mint under the canopy of these apple trees can attract beneficial insects. In spring, these mint flowers bloom before the apple varieties. Insect pollinators will first be attracted to the mint and then move to the apple trees coming into blossom, which aids pollination and fruit set. Other herbs such as Cilantro and Dill provide these same early flowering benefits and their use should also be encouraged near the apple trees.

Practices

Planting

We recommend that St. Paul Parks and Recreation plant the apple trees to ensure that each trees lateral root is planted no greater than 1” deep. If however the P&R Department is unable to plant the apple trees, there is a diagram for apple tree planting can be found in Section 5.0 Apple Tree Planting. This diagram is an illustration of Doctor Gary Watson’s tree planting methodology which has been

formally adopted by the ISA (International Society of Arboriculture) as the Tree Planting standard for arborists.

Mulching

Mulch should be applied annually and maintained all five (5) years, throughout the growing season. A layer of mulch 4”-6” deep, in a five (5’) foot radius around the tree trunk will help retain moisture, suppress weeds, and keep the trees healthy. Suggested mulch that can be used are: leaves, hay, compost, grass clippings, or wood chips. Immediately adjacent to the apple tree trunk, maintain a 6”-12” radius No Mulch Zone. This no mulch zone discourages damage to the base of the tree by voles, and other rodents. 4” to 6” deep mulch provides voles and other rodents visual cover from sight predators. These rodents eat the bark and cambium, essentially girdling the tree, which stops the transfer of sugars to the roots, and moisture and nutrients to the leaves.

Control of Pests and Diseases in Summer and Winter

Summer Protection: Spraying of any kind of fungicide should be voluntary. Spraying should only be applied by a Minnesota state licensed applicator. There are holistic alternatives to spraying fungicide, such as placing plastic bags tightly around the fruit to protect from apple scab. Applying Safer Soap (which does not require an Applicators License), horticulture oil, or Bordeaux mixture will also curb apple diseases. Any chemical treatment should have a sign placed on the premises to warn the public that chemicals were used.

Winter Protection: Each tree trunk should be wrapped with heavy duty hardware mesh, no later than October 15 of each year. This will ensure that each tree is protected throughout the winter months from rabbit, deer, and rodent browsing. The diagram for this trunk wrapping can be found in Section 6.0 Apple Tree Maintenance and Long Term Care.

Harvesting

It is recommended that the West Side Garden Club contact Fruits of the City to communicate potential needs and services for the pilot project, once each, during the pruning, growing, and harvesting season. *Fruits of the City* has agreed to help with these procedures and should be informed of operations. *Fruits of the City* can be reached at (651) 645.6159.

Pruning

Pruning is important for apple trees to encourage the trees to flower on outside buds. Fruits follow the blossoms, so fruit ripening and later picking of the apples is greatly enhanced. The center of the trees are to be kept open, with no crossing branches or branches running from one side of the tree to the other. Here are the rules of pruning for all personnel except those with the City of Saint Paul: no power tools of any kind, both feet to remain on the ground at all times, use Shigo's Natural Target Pruning method. Do not flush cut or damage the branch collar. Maintain side branches to be less than ½ the diameter of the trunk at each branch union (Gilman).

Maintenance

The responsibility of proper maintenance of the apple trees is solely the Growing West Side Garden Club. This includes: watering (purchased or otherwise), mulching, harvesting and keeping apple trees free of pests, diseases and fallen fruit. In summary, Growing West Side Garden Club is to keep the apple trees in overall good health.

Monitoring

Monitoring of the site and of tree health should be conducted by City of Saint Paul. The site should be monitored bi-weekly during the 1st year, and once a month for the following 4 years until the 5 year pilot project is complete. Monitoring for winter protection should be done on the 3rd week of October, which gives the

Growing West Side Garden Club, 1 week past their deadline to have winter protection in place.

Precedents

To determine if this pilot policy for Apple Trees in Community Gardens in Saint Paul Park and Recreation has a likely chance for success, we carried out two activities: a scientific literature search, and a precedent literature search. This purpose of these searches is to move the debate or discussion from one of opinion, to one based on evidence. In this Section, 1.0 Recommendations we only summarize the most pertinent thoughts and ideas. In Section 8.0 Appendix of this document, full reproductions of the cited articles can be found.

In the literature search portion we looked at a series of scientific, peer reviewed articles that observed the behaviors that Community Gardens with fruit trees engendered in people. We selected three articles in particular. These articles include qualitative experiments conducted in a controlled setting, and then quantitively assessed. The three research articles by Twiss et al, and Shinew et al, and Black, examined how people of different groups merged and worked together on these community gardens with fruit trees. Group differences were measured across income, ethnicity, and age. In all three journal cases these community garden settings, where work and responsibilities were shared via consensus; suspicion was reduced, new norms of communication were established, and tree vandalism was greatly reduced.

Scientific Literature Search:

Community Gardens: Lessons Learned From California Healthy Cities and Communities

“The community garden is exceptional in its ability to address an array of public health and livability issues across the (human, sic) lifespan.”(Twiss et. al. 2003). Community Gardens in California have been a way for people living in a community to have healthier diets, and help provide food for those in lower income brackets. Members from communities that contribute to these gardens will often gain much more than just a source of food; i.e. such as a feeling of community involvement, and a knowledge of how to grow and maintain crops. There are many resources for these gardens to thrive that include workshops and

volunteers. The key to having a successful community garden is held by those who use the garden – the community gardeners, and the more effort they place into the garden the better the outcome.

Leisure Spaces as Potential Sites for Interracial Interaction: Community Gardens in Urban Areas

The journal article *Leisure Spaces as Potential Sites for Interracial Interaction: Community Gardens in Urban Areas* (Shinew et al, 2004) looks at the relationship formed between groups from different backgrounds and nationalities. Often, the environment found in a community project that is run by volunteers produces positive relationships between these people from different backgrounds. This setting brings people together that share the same interests, and lends to an environment that is freer of other concerns, such as ethnicity, income or age.

When diverse community members come together with a similar goal and are there willingly to complete this goal strong relationships are formed. Shinew et al article states "Presumably, the garden fosters greater social trust among diverse groups, forms norms of reciprocity, and strengthens social networks within the neighborhood". These projects not only bring the community members together but also bring forth a sense of belonging to the city that the gardens are located in.

Tree Vandalism: Some Solutions

Black's (Black, 1977) seminal article *Tree Vandalism: Some Solutions* from the University of Washington, is a study examining actions taken to stop vandalism to trees. The solutions were categorized in to three groups: physical changes, managerial changes, and long term changes.

The Physical changes mentioned were staking trees in a different fashion. Instead of using two (2) stakes strapped to the tree, the use of one (1) steel stake along the tree trunk, attached at three spots along the stake. This new form of staking reduced tree vandalism greatly in the study.

The Managerial changes were more careful planning. This means conscious planning by planting more robust trees in areas of higher vandalism, and only planting trees where trees are wanted by the public.

Note: West Side Growing's desire to have these fruit trees planted in a Community Garden setting in a public space, solves this Managerial dilemma.

Third, the Long Term change suggests that making the public a part of the planting of the trees reduces vandalism. When people are involved with a project they feel they have ownership and connection with the project and there is less vandalism to trees.

Note: All three of these changes (Physical, Managerial, Long Term) to reduce vandalism are being applied to this Saint Paul Apple Tree Pilot project to implement in a Community Garden in a public park.

Precedent Literature Search:

In our precedent search, we looked at a series of places (Seattle, Los Angeles, Portland, Madison) in the United States where these community garden fruit tree projects were successfully implemented (all articles can be found in Section 8.0 Appendix). This is an efficient way to learn from another community's trial and error. This further helps in formulating policies, planning and practices for successful apple tree fruit growing in Community Gardens for Saint Paul. We start with a piece from a popular magazine which summarizes the authors experience with community gardens across the Unites States, then describe initiatives in Seattle and Los Angeles.

"Gardening in the Margins."

Weston's article discusses community gardens and their benefits. Weston makes a distinction between allotment land that is rented in a communal space for an individual gardener vs. community gardens in public settings which are rent free, and usually managed by a volunteer committee. Community gardens are usually

built on reclaimed land that was mistreated and needs to be restored (old dumping sites, bomb sites, and car parks, (sic)). Weston states that there are many other benefits to community gardens besides the free fresh local fruit, and vegetables they provide. These public orchards are also opportunities to bring together the community and educate people about where their fruit and vegetables come from.

"Seattle Grows an Edible Urban Forest."

This article by Kaiser is about a large scale edible forest landscape in Seattle Washington state. This forest landscape combines community gardens with areas of fruit and nut producing trees, berry bushes and edible ground cover. The goal of the project is to provide access to fresh food and educate people about where their food comes from. This project was started in 2012 (in planning since 2009) by two local permaculture students. There is also an arboretum showcasing fruit trees from other countries. Concerns with the project include the ability to establish so many different types of plants on the site, and the social issue of overharvesting.

"Fallen Fruits" and "Del Aire Fruit Orchard Park" of Los Angeles

Los Angeles has had years of success stories of urban public land fruit harvesting, and more recently the planting of a dedicated fruit tree orchard in an urban park setting. "*Fallen Fruits*", is an arts organization that has been a leader for 8 years in the Los Angeles region, with a mission of stopping hunger in Los Angeles. *"Fallen Fruits"* first task was to map all the fruit trees in the public ROW (parks, trails, municipal grounds), first in Silver Lake, and later in all of Los Angeles County. Since the advent of the public fruit tree map, *"Fallen Fruits"* has conducted harvests for eating, canning and making preserves from these public fruits. Since 2006, the fruit gatherings have gotten larger and larger, with fruit tree tours, and fruit tree planting also added to the activities.

According to David Burns, co-founder of "*Fallen Fruits",* vandalism, and caretaking failures, have not been a major issue at all. This is witnessed by the return from year to year of "*Fallen Fruits"* volunteers to these same locations, to harvest, and maintain these public fruit trees, and add more new fruit trees. The

popular article by Janet O. Driggs from January 2013 can be found at: http://www.kcet.org/arts/artbound/counties/los-angeles/del-aire-fruit-park.html

As in most places, the idea of public fruit trees raised objections in Los Angeles. Comments provoked by Amy Biegelsen's article Should Public Trees Bear Fruit? and Twilight Greenaway's Graft Punk, in 2012, suggested that concerns were centered around fruit harvesting and tree maintenance - ("Will the fruit be left to fall, damaging people and vehicles? Will it rot, encouraging insects and vermin? Could the trees become infected with pathogens and parasites? Who will maintain them)"

Neither Biegelsen or Greenaway's articles had any evidence to support the concerns raised, but gained widespread attention for implying a furtive fruit invasion with dire consequences for Los Angeles. Ironic and noteworthy is that both articles had been written without any contact with "Fallen Fruits" which had been successfully operating a public harvest of fruit from public lands for 7 years.

More recently, but still prior to the negative press, Letitia Fernandez Ivins, the LACAC Assistant Director of Civic Art drove the weaving of cultural, environmental, and public health issues that resulted in *Fallen Fruit's* invitation to design a work for Del Aire. Ivins described the *Del Aire Fruit Park* as "a calculated risk." Once the various stakeholders were persuaded that "fruit is safe" however, and would not create a nuisance, the attitude became "let's take a risk together."

Soon plans for the first large fruit orchard in a public park in California was underway. Called *The Del Aire Community Center and Public Fruit Orchard*, this fruit park was supported by the Los Angeles County Commission, on land made available by L.A. County Department of Parks and Recreation (LACDPR), installed by volunteers, and blessed by the Catholic Church. At the dedication of *The Del Aire Fruit Park*, David Burns stated the park will be "sustained, nurtured and harvested by the public,". This public orchard is entering its second year of operation. At this time, Los Angeles has not suffered any drive-by fruitings, in fact the experience has been most fruitful.

	St. Paul Fruit Tree 5 Year Pilot Project Recommendations									
	Yearly		Bi-annual		One Time Only		As Needed		Monthly/Daily	
Action	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
Mulch							X			
Planting					X	X				
Application					X	X				
Spraying	X									
Pruning	Early	Late					X			
Clean-Up									X	X
Safety									X	X
Watering									X	X
Contacts							**********			

Section 2.0

Selected Pilot Community:

West Side Growing

2.0 Selected Community: West Side Growing Garden Club

Participants

Our team was given a number of community garden group contacts by Saint Paul Parks and Recreation. We followed up with all of the groups via email, phone and club meetings. After gathering our information, our team decided to select West Side Growing Garden Club. We recommend that West Side Growing Garden Club take on this public park apple tree pilot project, because this garden club has been the most outspoken in their desire to include fruit bearing apple trees in their community gardens, and they are a registered garden club with some history. We concluded that West Side Growing has the highest likelihood of success.

Application Form

The West Side Garden Club will need to fill out an application form and read the policies and practices that are set forth by St. Paul Parks and Recreation Department. A signature of understanding between both parties, and a copy of policies and practices on file will properly memorialize this agreement. An application form is included within the Selected Community Section 2.0 of this report.

City of Saint Paul Community Fruit Tree gardening Application

Thank you for submitting a fruit tree gardening application to the city of Saint Paul

Location information

Garden Location_____
Location description_____
_____
Is this a new garden (circle one)? YES NO

Organization information

Name of Organization or Group
_____
Contact Person
_____
Address
_____
City/State/Zip
_____
Home Phone
_____
Work Phone
_____
Email
_____

Volunteer release

I understand that my services are being offered on a voluntary basis without anticipation of financial remuneration. I grant permission for my photo to be used in any promotional materials produced by the City of Saint Paul. I shall indemnify and hold harmless the City of Saint Paul, its Boards and Commissions and their officers, agents and employees from and against all claims, demands, loss of liability of any kind or nature for any possible injury incurred during volunteer service.

Signature of volunteer._____
Date: _____

Signatures of Additional Volunteers (dated next to signature)

Planting Plan

New Gardens:

Please include a sketch of the proposed design along with the list of plants.
This sketch will be shown to our maintenance crew and to the Landscape Architect for their feedback.

Returning Gardens:
Please include a sketch of any proposed CHANGES to your design.

Maintenance Plan

City of Saint Paul requires all volunteers to do ALL of the required maintenance of the Fruit trees. This includes but is not limited to: site preparation, planting, watering, weeding, mulching, pruning, fallen fruit cleanup, and litter removal. If the proposed site does not have a water source near it, the volunteer is responsible for hauling water to the garden.

If volunteers need to discontinue their volunteer commitment, they are encouraged to find replacement volunteers for this garden. If none are found, the City of Saint Paul may need to remove the garden and replace it with turf.

See attached Policies handout

Volunteer has read and understands all the requirements as is prepared to adhere to the policies set forth by the city of Saint Paul

Signature of volunteer._____
Date: _____

Signatures of Additional Volunteers (dated next to signature)

Susan Mitzel

From: Dustin Ellis [ellis554@umn.edu]
Sent: Monday, March 25, 2013 3:34 PM
To: Peter MacDonagh
Subject: Fwd: Orchard Project

---------- Forwarded message ----------
From: **Tina Harstad** <tmkharstad@gmail.com>
Date: Fri, Mar 15, 2013 at 5:29 PM
Subject: Re: Orchard Project
To: Dustin Ellis <ellis554@umn.edu>
Cc: Grow ingwestside <growingwestside@gmail.com>, "mason@wsco.org" <mason@wsco.org>

Dustin -
Thank you so much for the update. We're very excited that you're still looking at and planning on locating an orchard on the West Side!

The espalier method of planting looks very interesting... I've been reading about it this afternoon - I'm totally intrigued!

Dustin asked me if Baker Park was being considered... I know it's not one of the sites that Maureen suggested to you - have you looked there? It's by Baker Community Center where Youth Farm (are you familiar with that program?) has a greenhouse. I think they have a garden located there too. There should be water access... Anyway, just wanted to mention it.

We look forward to further updates and working on this project with you! :-)

Tina Harstad
Growing West Side
West Side Orchard Committee

On Thursday, March 14, 2013, Dustin Ellis wrote:

> Hello all,
>
> Our group has been looking for spots on the West Side that are suitable. We have found a couple of possible places that may work. We are in the process of putting together our recommendations to the City of St. Paul. We really wanted this project to be placed in the West Side solely because of your group's enthusiasm. With that said, we won't even know what the City will end up deciding as far as the site is concerned but it will be in the West Side. I have also been in contact with Jared concerning workshops on pruning and different growing techniques. We would like to possibly see if some of the trees may be espaliered. I have attached a link that explains the growing technique. I hope this answers some of your questions that you may have. When have a little more concrete information I will be sure to send it along.

http://en.wikipedia.org/wiki/Espalier

Thank you.

Dustin Ellis

On Thu, Mar 14, 2013 at 1:12 PM, Tina Harstad <tmkharstad@gmail.com> wrote:

> Hello Dustin -
>
> My name is Tina Harstad and I'm with Growing West Side. You've previously been in contact with Maureen Hark regarding an orchard project that you're working on.
>
> It's our understanding that you are unable to use any of the sites that Maureen suggested as they don't meet any of your criteria. We're wondering if you could share with us what your criteria is besides the understandable need for the availability of water?
>
> We want to express to you that we're still very interested in partnering with you and locating an orchard in our community, no matter where that location may be. There's been so much excitement about the idea of planting apples in our community that we've organized an Orchard Project Committee. We've even started thinking of ways to plant apple trees/small orchards on our own if helping you with the project your working on should fall through.
>
> Martha and I met with Mason at West Side Community Organization (WSCO) yesterday and they are very much in favor of helping & supporting us in either partnering with your project, or in our own efforts to get apple trees planted in the West Side Neighborhood. You'll likely be hearing from Mason soon :-)
>
> We've also been in contact with Jared from Fruits of the city to see what a partnership with them may look like in conjunction with your project and/or our own project. They also are very excited in supporting our efforts to locate fruit trees in our neighborhood. They can offer support all the way from help planting, to training on pruning, education on care & maintenance, to gleaning the fruit, and everything in between depending on our needs and if we're partnering with you or attempting something on our own.
>
> We look forward to hearing from you soon regarding the possibility of partnering with you and what progress you've made on finding a suitable location.
>
> Sincerely,
> Tina Harstad
> Growing West Side
> Orchard Project Committee

Section 3.0

Site Selection:

Rationale and Maps

3.0 Site Selection: Rationale and Maps

Site Suitability

Throughout the project area we investigated, and visited numerous sites. We also talked to numerous community garden groups about the fruit tree pilot project. In selecting, and recommending the proper site for the project, we were looking for a number of qualities. The obvious things we wanted in a site were its physical characteristics like access to water, parking, location, spacing for the trees so they would have plenty of sun light and soil volume, and finally good soil. There were also some not so obvious characteristics that we were looking for. We tried to find sites that wouldn't interrupt potential future projects. We wanted the project to be located in a community that would get the most benefit from the fruit trees. One of the most important things we wanted was a dedicated, excited community group nearby that would help this project succeed. We didn't test the soil on any of these sites, due to frozen ground. However, we used the vigor of adjacent plant growth as a proxy for quality soil. We recommend that before moving forward at the selected site, a soil test be conducted. This will remove any doubt about that site's suitability.

Apple Tree Location Suitability Table:

Location	Space for trees	Volunteer group	Water access	Low income area	Parking lot	Current community garden	Recommended site
Cherokee Park	X	X	X		X		X
Dunedin Towers	X	X	/	X	X	X	X
High Bridge Park	X	X	X				X
Triangle Park		X					

Table Key:

X = present **/ = not observed**

At the end of our search, we narrowed the list of prospective sites down to the list shown above. The above sites are the best ones that we found for the project. We narrowed the list down even further to sites located on the West Side Growing garden club area of Saint Paul.

We then evaluated four potential locations for sites for West Side Growing, two of them, suggested by West Side Growing: Triangle Park, and High Bridge Park.

Triangle Park Site: Not Recommended

This tiny park was nicely embedded within a neighborhood. However, it wsa missing to essentials: adequate sun and water. It's site specific drawbacks were: no public access to water, and very heavy high canopy shade.

High Bridge Park Site: Not Recommended

This site had good potential as a location. It has plenty of space, and there is public water access via an adjacent fire hydrant. Parking access is easy. There aren't other trees growing on the site, so it has plenty of sun access. However, it is on the hill east of the high bridge with low public visibility. More importantly the site has high wind exposure, which makes the apple blossoms vulnerable to cold and wind, and particularly a challenging site for pollinators to reach.

Dunedin Tower Site: Not Recommended

This site had potential as a home for the project. It is a very prominent location. There is a useable parking lot at the site. However, no public water access was visible, and no hydrant or water spigots were located. There was an existing community garden on the site that appears to be doing well. This existing garden may be watered, perhaps under an informal arrangement. But as this is a pilot project, an uneven water source is a big risk to the project's success. This site, like

the Triangle Park site is small, with barely enough space to meet the minimum recommended size for the project. There are other trees on the site, not causing shade issues, but these trees are very poorly maintained, this is a red flag for the potential care of the apple trees.

Cherokee Park Site/s: Recommended

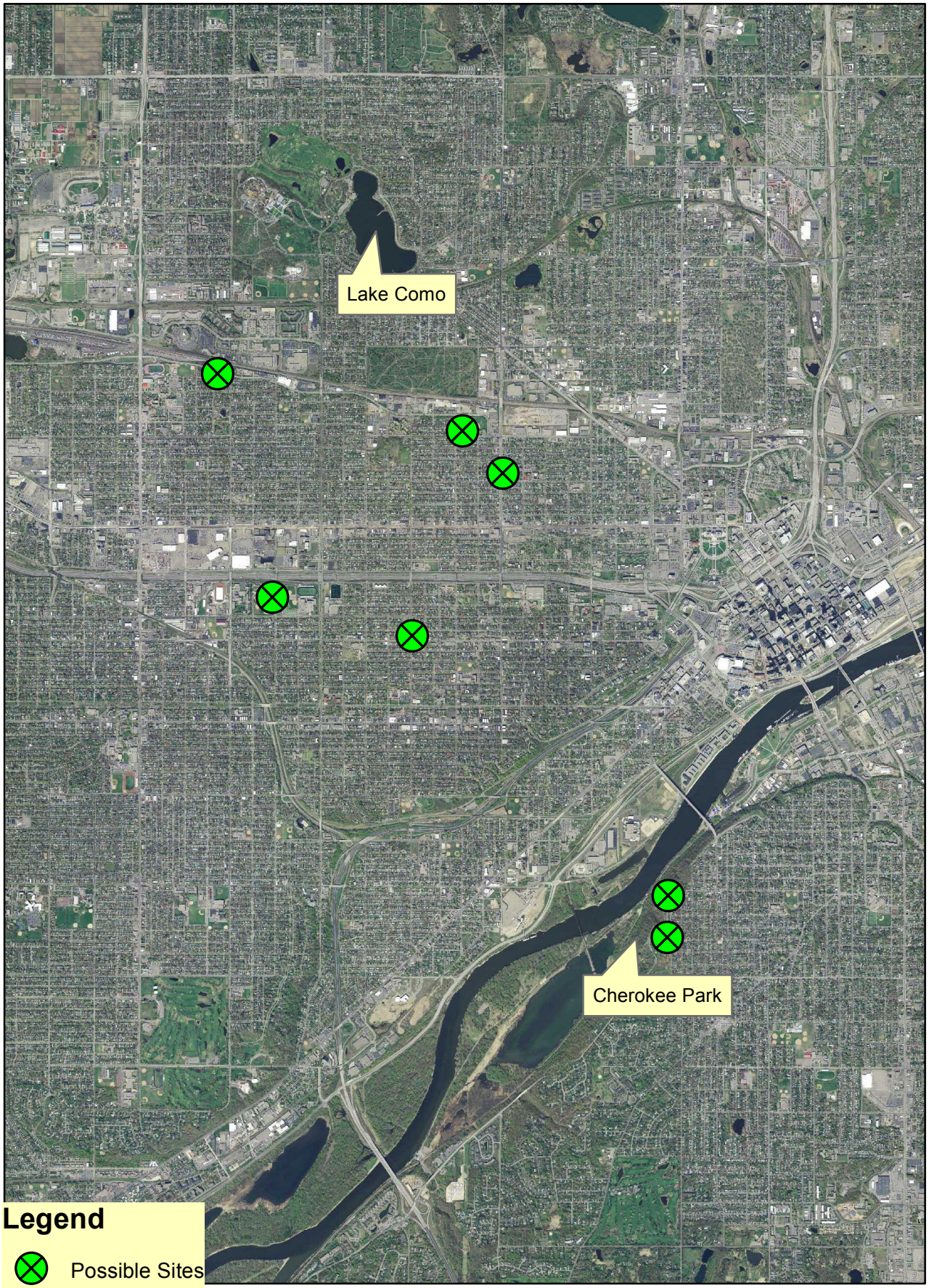
Cherokee Park is within the support area of West Side Growing, this is a visible public site, and a very busy park. A pilot project at this large park could have exposure to a broad spectrum of the community. With large visitor-ship, patterns of potential or absent vandalism could be studied. There are a great many houses ringing the park, which appear to be in excellent condition.

There are numerous large canopy trees in very good condition, but there are enough open spaces that sunlight availability does not appear to be an issue. There are multiple locations with plenty of space for the pilot project apple trees. There are two clear candidate sites at Cherokee Park. There is easy access to public water at both of the Cherokee Park sites. There are other crab apples on site that are performing well, a helpful signal of appropriate moisture, soils and light levels. These existing crab apples will attract large numbers of pollinators, offering the benefit of potential cross pollination. There is plenty of space for on street parking. These are our recommended site/s.

The first choice is adjacent the Cherokee Park Bluff Trail on Chippewa Ave. (640 S) & the Baker Street intersection (510 W). The bluff is adjacent to the north, but it is covered in mature trees, providing lots of wind protection, and the ability of cold air to run downhill during apple blossom flowering and fruit set. Because of the open road corridor to the south, there is a very strong southern aspect: (30 degrees SE). There is a reliable public water source, in the form of a fire hydrant on the same side of the street. However, there is a concrete trail (10' wide) between the apple trees and the hydrant, so that hoses for watering can only temporarily run across the trail. Additionally the trail is new, and there is some soil disturbance, and perhaps compaction, a soil test here would be wise.

The second choice is north of the Cherokee Park Community Center at Chippewa Ave. (777 S. Chippewa Avenue) intersecting Curtice Street (520 W). There is a 200' wide opening in a grove of mature (>20” DBH) burr oaks, with a strong southern aspect (235 degrees SW). There is a slight hill allowing cold air to flow away from the apple tree blossoms in the spring. There is an accessible public water source in the form of a lockable water bib at the back of the Community Center, with no paths or parking lots in between the apple tree site and the water source. Based on the size of the oak trees, the distance to the parking lot and community center, soil disturbance and compaction is likely at a minimum. The biggest drawback may be that this location is surrounded by turf grass. Soccer and Frisbee may be a regular occurrence here, and weekly lawn mowings probably make these trees vulnerable to accidents, a surrounding fence may be necessary.

Possible Sites For Pilot Project



Preferred Sites For Pilot Project

Section 4.0

Apple Selection:

Rationale for Selected Cultivars and Root Stocks

4.0 Apple Selection Rationale: Cultivars and Root Stocks

The following are excerpts in quotes from an interview by Benjamin Whelan with apple tree expert David Bedford:

“Apple trees grown in Minnesota have the same requirements as those grown in other places: full sun, well-drained soil, a temperate climate that permits dormancy and fulfills the buds’ chilling requirement to break dormancy, and adequate soil moisture, whether from rainfall or irrigation. In addition, apple trees benefit from being planted on slopes, so that cold air can drain away downhill, while warmer air floats back uphill.”

“Rows should be oriented north-south wherever possible for best light interception, leading to superior fruit quality.”

“Supplemental irrigation is particularly helpful in the first year or two after planting. Normal Minnesota weather usually brings enough rain during the growing season for trees to grow and produce good fruit, but on sandy soils, irrigation for the life of the planting may be essential. Even on moisture-retentive soils, irrigation can be very useful during periodic summer dry spells.”

“Mulch using wood chips or similar materials, applied in the tree row, can also help keep the trees’ root zones cool and moist. Although wood chip mulch will not entirely control weeds, it will suppress them.”

Apple fruit species recommendations are based on resistance to apple scab*. These selections are the upper portion of the graft or scion, which are grafted to the root stock. The root stock confers vigor and controls tree height. The scion is the result of huge amounts of cross-breeding to select the very best varieties.
Honeycrisp (most resistant)
Intermediate resistance:
- Harrolson
- Snowsweet
- Fireside
- Red Free

Crabapple Selections, these crabapples are being offered as a potential optional supplemental apple tree planting, but are not part of the official pilot project:

- Chestnut Crab
- Centennial Crab

*Again no species is completely resistant to apple scab.

All apple tree species may benefit with some sort of spray or Alternative management for insects, that are most commonly harmful to apples. There are many pests of apples, but the ones below most affect human consumption. As stated previously, spraying is voluntary, and offered in the spirit of full disclosure. However, any spraying is at the sole discretion of the garden club members. Alternate non-chemical treatments are also listed, and are quite effective, but require more careful observation and management. Apple diseases on fruit are cosmetic, and do not affect edibility.

1. **Apple Maggot**
    a. Small Larvae deforms fruit.
    b. Can affect 90% of the fruit if any Apple Maggots infect the apple tree.
    c. Traps are made for capture, but are not 100% effective (Alternate Control).
    d. Spraying tends to have the highest efficacy.
2. **Codling Moth**
    a. One insect per apple fruit.
    b. The Coddling Moth is not as damaging as Apple Maggot.
    c. Pheromones can be set out to disrupt insects breeding patterns, this is an insect hormone, not a pesticide (Alternate Control).

Espelairing

Espaliering is possible with certain root stocks, this is a time intensive technique and is only offered as an alternate in very tight growing conditions.

http://fruit.cfans.umn.edu/apples/apple-varieties/mid-season-varieties/

Honeycrisp™

Origin: Macoun x Honeygold, UM, 1991.

Harvest Period: Late September.

Fruit Characteristics: Medium to large size, red with dappled yellow background. Extremely crisp and juicy. Well-balanced flavor. Flesh is slow to turn brown when cut.

Uses: Fresh eating, cooking, salad. Slices hold their shape in pies.

Storage Life: September to April

Honeycrisp maintains its crispness and flavor for six to seven months after harvest.

Hardiness Zones: 4b, 4a, 3b

Tree Characteristics: Tree has low to medium vigor and good scab resistance. Consumers prefer this apple's texture and juiciness over any other. Honeycrisp commands a premium price on farm, wholesale, and in grocery stores. Honeycrisp™ is worth growing for its excellent eating qualities, and in commercial settings, for the higher prices it can bring. It can be a challenging apple to produce. Bitter pit, soft scald, biennial bearing and poor color are troubles experienced by some growers of Honeycrisp™.

Root Stock	Size in feet	Details and Recommendation (X: good; XX: very good)
B-9	6-7	Needs permanent support, and more maintenance. X
M-26	8-10	50% of full size apple tree, and will need some support. XX
M-7	15	65% of full size apple, and is the most readily available root stock. X

Variety	Flavor	Uses				
Viking	Tart	Eating	Pie (cooks down)	Baking, Sauce		Freeze
Paula Red	Mildly Tart	Eating	Pie (cooks down = saucy)	Sauce, Baking	Caramel	Freeze
Wealthy	Mildly Tart	Eating	Pie (cooks down)	Sauce, Baking	Caramel	Jelly,Freeze
McIntosh	Mildly Tart	Eating	Pie (cooks down = saucy)	Sauce, Baking	Caramel	Jelly,Freeze
Cortland	Mildly Tart	Eating	Pie (cooks down)	Sauce, Baking	Salad	Jelly,Freeze
*Honeycrisp	Sweet	Eating		Desserts	Salad	
Regent	Sweet	Eating	Pie (holds slice)	Sauce, Baking	Salad	Jelly,Freeze
Haralson	Tart	Eating	Pie (holds slice)	Sauce, Baking	Caramel	Jelly,Freeze
Fireside	Sweet	Eating	Pie (holds slice = chunky)	Baking, Sauce	Salad	Freeze

http://www.minnesotaapple.org/minnesota_apples_varieties.shtml
http://fruit.cfans.umn.edu/garden/garden.htm

Section 5.0

Apple Tree Planting:

Best Practices

Apple Tree Understory

5.0 Apple Tree Planting: Best Practices

Apple Tree Planting

We recommend that St. Paul Parks and Recreation plant the apple trees to ensure that each trees lateral roots are planted no greater than 1” deep. If however the Saint Paul P&R Department is unable to plant the apple trees, these diagrams below are based on Doctor Gary Watson’s tree planting methodology which has been formally adopted by the ISA (International Society of Arboriculture) as the Tree Planting standard for arborists. The operative phrase is tree planting “saucer” not tree planting “hole”. Dr. Watson’s methodology is derived from years of tree planting field trials at the Morton Arboretum, Lisle IL.

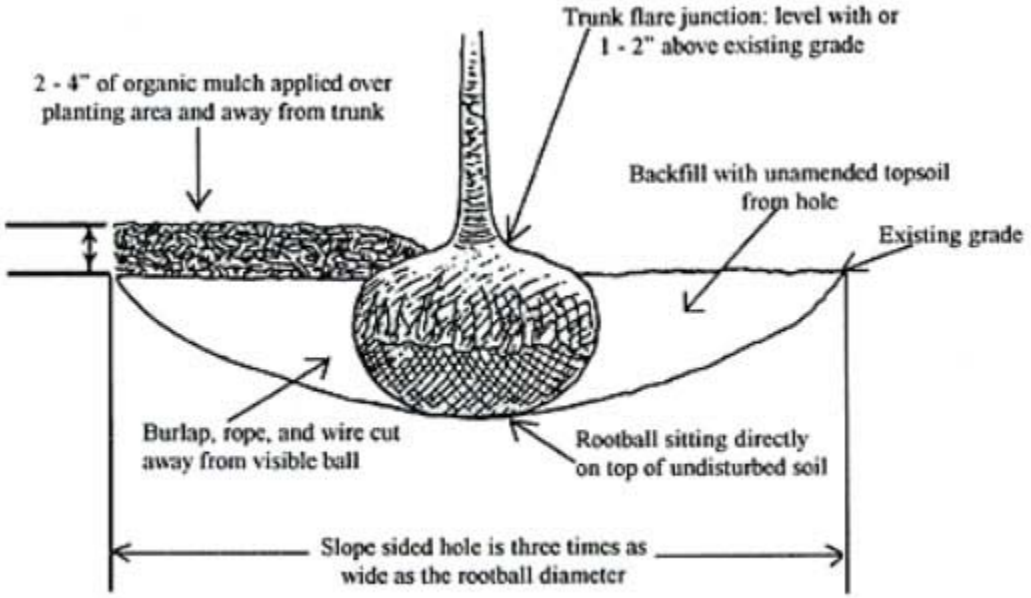
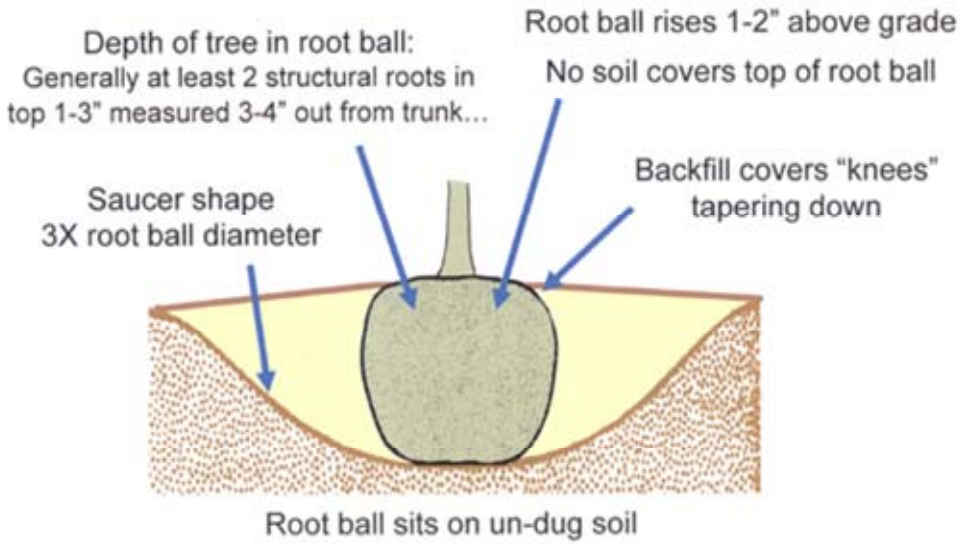
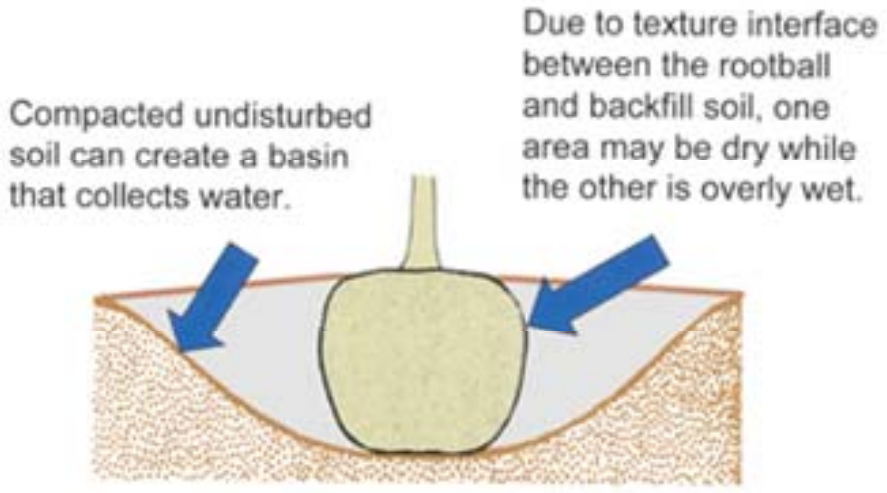


Diagram illustrating proper planting procedure for a tree or shrub.

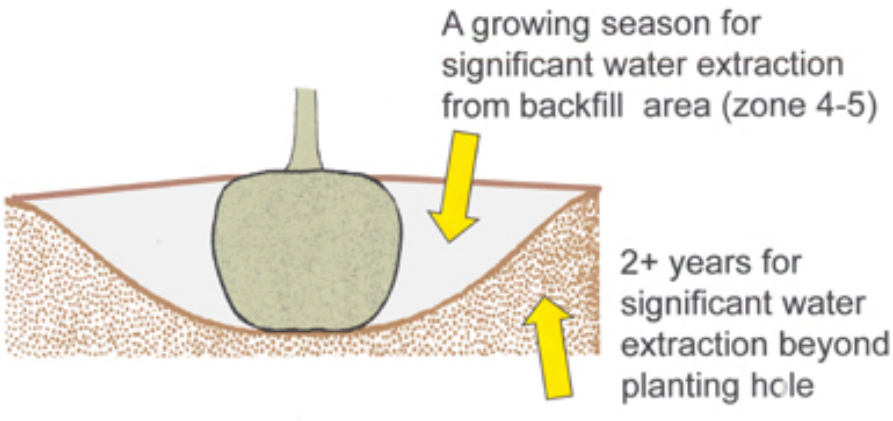
www.extension.umass.edu



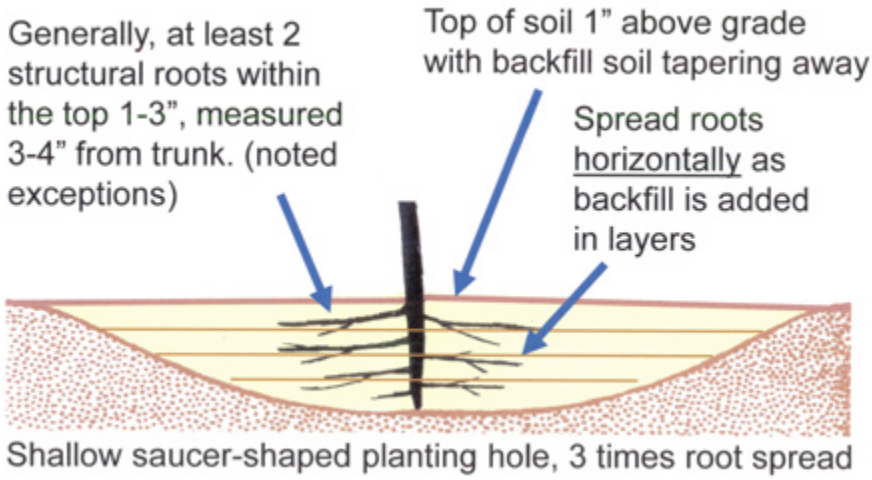
www.cmg.colostate.edu



www.cmg.colostate.edu



www.cmg.colostate.edu



www.cmg.colostate.edu

Apple Tree Understory

Secondary Apple Tree Understory

- It is recommended to have a secondary understory within the drip line of the fruit trees. This understory is very beneficial for the apple tree's livelihood. There are three basic understory types that can be implemented depending on desire of the gardening group taking care of the trees.
    1. **Simplest Secondary Understory**- Apply Mulch within the drip line of the tree to increase organic matter to the soil and retain moisture. Suggested mulch would be compost, leaves, or hay.
    2. **Moderate Secondary Understory**- Apply mulch similar to the simplest secondary understory and also implement other plants under the drip line. Chives can be planted at the base of the trunk to discourage animals biting the bark. Daikon radishes or daffodils can be planted around the drip line of the tree also to discourage animals from getting to the tree trunk. With in the drip line plants like dill, bee balm, cilantro, yarrow, and plants from the mint family can be planted to promote beneficial creatures like bees and birds.
    3. **Intensive Secondary Understory**- This would consist of researching the growing conditions of the area and planting specific plants that will be beneficial for each other and the tree. This is more of a permaculture concept when deciding what to plant. Some options would be to find plants that early in the season and often during pollination time. This approve requires people who are committed and very knowledge able about permaculture and beneficial plants.

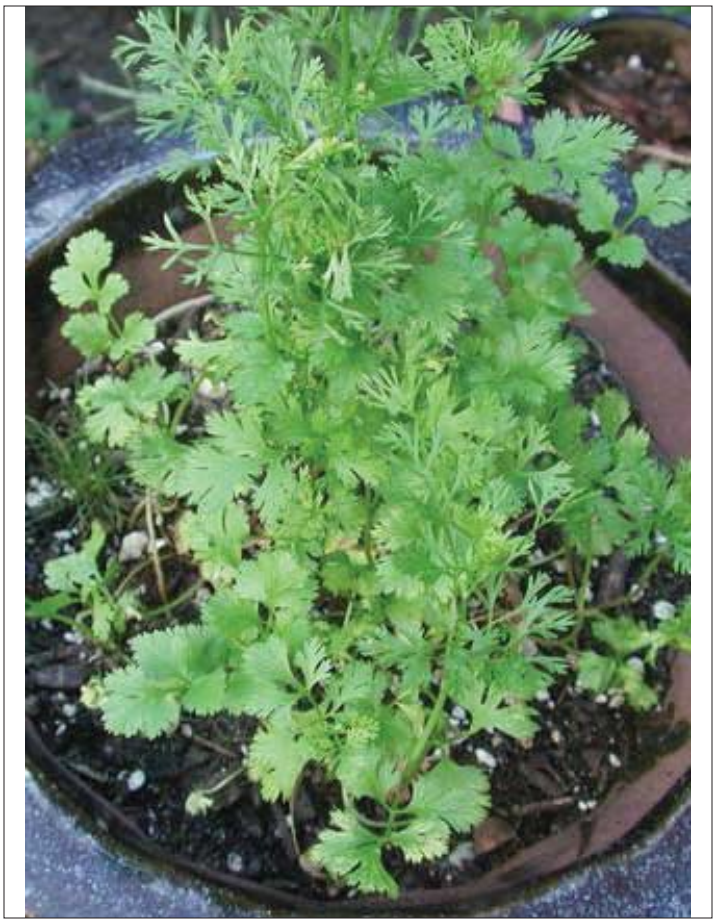
Bee Balm (Monard fitulosa) - Perennial

Daffodil - Perennial Bulbs

Radish - Daikon - Annual

Apple Tree with Mulch Ring

Chives - Perennial Bulbs

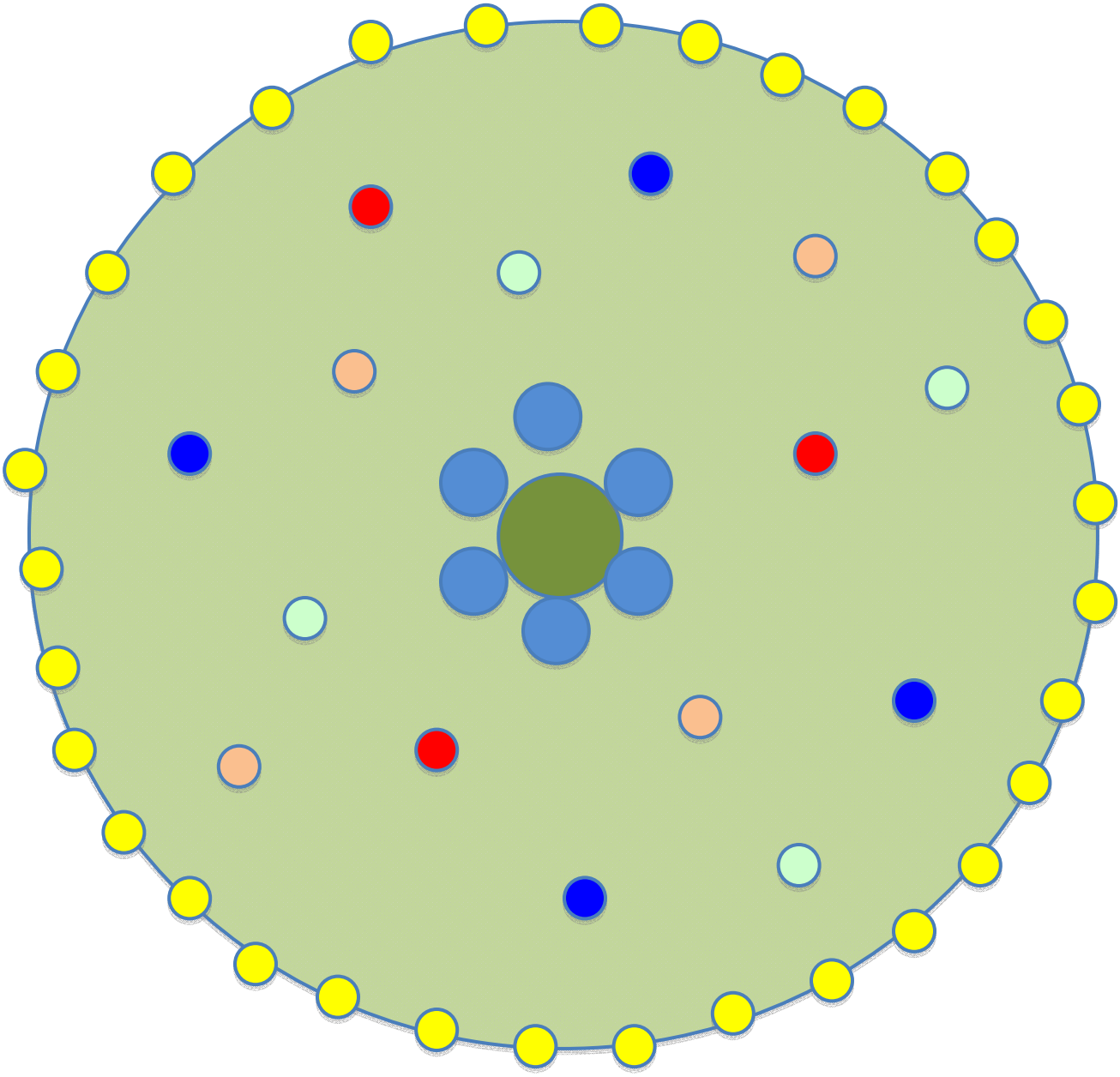


Cilantro - Annuals

Dill - Annuals

Yarrow (Achillea millefolium) - Perennial

Possible planting guide



Apple Tree Trunk
Chives
Dill
Cilantro
Bee Balm
Yarrow
Daikon Radish

Section 6.0

Apple Tree Maintenance and Long Term Care:

Checklist

Watering

Controlling Pests and Diseases

Harvesting

Clean-Up

Monitoring

6.0 Apple Tree Maintenance and Long Term Care: Watering, Pruning, Controlling Pests and Diseases, Harvesting

Watering

Water Access: Access to water to keep fruit bearing trees healthy is mandatory and the access point should be no greater than 100 yards away. Water may be transported to the site but may not exceed 100 yards if carried to water the trees. This is to provide safe access and working conditions. The two Cherokee Park sites provide a very high level of water access.

Site One (1), on Chippewa Avenue and Baker Street, has a fire hydrant where water access may be rented by the Growing West Side Garden Club. Rental of hydrant water use is from the City of Saint Paul Water Department (SPWD), Regional Water Services (1900 Rice Street, St. Paul), this rental is on a year to year basis, and rental was $81 dollars in 2012. SPWD will issue a Garden Use Hydrant Permit for the club. The person to contact about using water from fire hydrants is David Marruffo, 651-266-6813.

On Site Two (2), near the intersection of Chippewa Avenue and Curtice Street, there is water access from the back or west wall of the Cherokee Community Center. A hose can be run to the apple trees, which is less than 150 feet distant, see Section 3.0 Site Selection maps for precise location of two selected sites.

Lastly, it is strongly recommended that each of the pilot apple trees have a “Gator” watering bag installed at their base (see image below) for at least the first growing season, and subsequent drought years. These water bags meter water out into the soil at a slow rate, preventing sheet runoff and bypass that can happen with a high velocity hose on dry soils. Each of these “Gator” bags hold up to 20 gallons, and is typically priced at less than $30. “Gator” bags typically drain out in less than 12 hours. The bags come with a heavy duty zipper, that can be removed from the apple trees, and brought in for the winter. These “Gator” bags can re-used for several seasons if protected from winter freeze/thaw cycles.

Pruning

Pruning is important for apple trees to encourage the trees to flower on outside buds. Fruits follow blossoms, so fruit ripening and later picking of the apples is greatly enhanced. The center of the trees need to be kept open, with no crossing branches or branches running from one side of the tree to the other.

In summary, here are the rules of pruning except for authorized personnel with the City of Saint Paul Parks and Recreation Department: no power tools of any kind, both feet to remain on the ground at all times. Use Shigo's Natural Target Pruning method, do not flush cut or damage the branch collar. Maintain side branches at less than ½ the diameter of the trunk at each branch union (Gilman). This Section 6.0 contains much more detailed pruning notes.

Controlling Pests and Diseases

Summer: Spraying of any kind fungicide should be voluntary. Spraying should only be applied by a Minnesota state licensed applicator. There are holistic alternatives to spraying fungicide, such as placing plastic bags tightly around the fruit to protect from apple scab. Applying Safer Soap (which does not require an Applicators License), horticulture oil, or Bordeaux mixture will also curb apple diseases. Any chemical treatment should have a sign placed at the spray location of the premises, to warn the public that chemicals were used.

Winter Protection: Each tree trunk should be wrapped with heavy duty hardware mesh, no later than October 15 of each year. This will ensure that each tree is protected throughout the winter months from rabbit, deer, and rodent browsing. The diagram for this trunk wrapping can be found in this Section 6.0.

Harvesting

The primary idea behind this Saint Paul fruit tree pilot project is to determine whether Community Gardeners can maintain apple trees through all of their seasons. This is no less true for the harvesting time of the year over the next half decade of this pilot project. Picking apples means carefully detaching the apple stem from the small spur branch on which it is attached. When fruit are ready for picking, they will detach easily. Of course, mature fruits on the ground are a clear indication that ripening has occurred and the apples need immediate picking. Ripe fruits should never be left on the ground as they rapidly attract wasps and become as many in the anti-public fruit tree group would describe as an “attractive nuisance”. Complaints from the public about “attractive nuisances”, typically signals very bad news. This two word phrase is probably the death knell for this idea as a possible future in the Saint Paul Parks and Recreation properties.

Upon installation of the apple trees at West Side Growing’s community garden it is imperative to contact *Fruits of the City* to register these apple trees. A short discussion with *Fruits of the City* to communicate future needs and services three times during the season should be considered an imperative: once during the flowering, once at the start of the harvesting season, and once at pruning . *Fruits of the City* has agreed to help with these procedures for public apple trees in the Twin Cities, but must be informed of activities. *Fruits of the City* can be reached at (651) 645.6159.

Further Notes on Controlling Pests, Pruning and Harvesting

Caring for Apple Trees in a Community Garden

When it comes to planting and growing any tree for the production of fruit, they require considerable care to get the desired results - high quality fruit yields. Apple trees need to be pruned, and trained on a yearly basis to keep the tree healthy while at the same time producing quality apples. Bringing these trees into a garden setting also means we want apple trees to have aesthetic value for the members of the garden and community. Pruning and training with these methods will keep the tree(s) healthy, long-lived, and producing quality fruit.

Pruning and Training for Fruit Production

Pruning and Training start from the time the apple tree is planted and continue on for the life of the tree. However, proper pruning and training when the apple tree is young will create a higher likelihood of having to spend less time pruning when the tree is mature (Roper). The most important parts of pruning and training when a tree is young are developing a central leader, and creating a scaffolding structure to optimize support and fruit production. When pruning, we also want to open up the crown. Opening the crown increases air flow which will help reduce problems with disease and ease pest management (Roper). This will also increase the amount of energy that is created by the maximum number of leaves exposed to sunlight, optimizing fruit production. T.R. Roper's pruning cycle from *Training and Pruning Apple Trees* is an excellent guide on how to create proper structure in a young apple tree.

How to Prune

All pruning and training that is done on apple trees needs to be done properly, and with care. Improper pruning cuts can lead to disease, decay and compromised structural integrity of the tree. Any pruning work that is done on apples should be in the dormant season, usually late winter, to prevent the spread of pathogens. Cuts should be executed with sharp hand pruners or loppers, or a sharp saw (again, no power tools of any kind may be used). Tools should be cleaned between pruning each tree with rubbing alcohol or its equivalent. When cuts are made, refrain from creating any unwanted wounds or tearing of the bark. Extra attention should be paid to keeping all cuts outside of the branch collar – often referred to as the Shigo Natural Pruning method.

Time of planting

"If you plant an un-branched whip tree, cut off the top leaving the tree 30-45 inches tall. Side branches will grow just below this cut. You control the location (height) of the new limbs by the height of the cut. If you've purchased branched trees, remove limbs that are broken, damaged, poorly positioned, or that are too low on the trunk." (Roper)

Year One

"During the first summer choose four or five good branches for the lowest tier of scaffolds. The lowest scaffold limb should be at least 24 inches above the ground and can be as high as 36 inches in a landscape where flowers or bushes under the trees are desired. Limbs growing closer to the ground make it difficult to work around the tree. Select well-spaced branches growing within 18 inches of the lowest branch that are growing neither exactly opposite nor directly above one another. For the first dormant pruning in late spring, remove weak or poorly positioned limbs that will not become scaffolds." (Roper)

Year 2-3

"After two or three years, select a second tier of scaffold limbs. Again, choose or create branches with wide crotch angles. The lowest branch of the second tier should be at least 24 inches above the top branch of the lower tier. This 24-inch gap allows light to penetrate into the canopy and to strike the lower tier of branches. The upper branches must be kept shorter than the lower branches to keep them from being shaded - this will create a "Christmas tree" shape. For dwarf trees, two tiers will be sufficient; for semi-dwarf trees, repeat the process to create a third set of scaffolds near the top of the tree." (Roper)

Yearly Maintenance

"The central leader must remain the tallest part of the tree. The highest point in the tree is dominant and most vigorous. If a side branch is becoming nearly as tall as the leader, bend it lower o prune it back into 2-year-old or older wood.

Once the central leader reaches the height you want (usually 8-10 feet high for dwarf; 12-16 feet high for semi-dwarf) you can adjust the vigor in one of two ways. Take the top, supple part of the leader, bend it in an arc and tie it to the support post or the stronger part of the tree. As new branches begin to grow on the arc, remove the ties and allow the leader to return to the vertical position. Alternatively, cut of the leader just above a weak side branch. Both techniques reduce the vigor of the top of the central leader. To maintain the tree height, follow one of these techniques every year for the life of the tree.

Remove all dead and broken branches annually, as well as suckers, water sprouts, and branches forming narrow angles. By the fifth year, trees should be well established with two tiers of scaffolds. Spurs should be developing throughout the tree to provide annual fruiting."(Roper)

Thinning Fruit

The best way to create better quality apples is by thinning the fruit crop while on the tree, after it blooms. Thinning the amount of fruits that a tree produces will enable the tree to allocate more of its resources into fewer fruits, instead of using these resources for the production of many smaller fruits. The crop should be thinned about a month after the tree has bloomed and the fruits have started to become visible as clusters on the tree. A good rule of thumb for thinning is to leave one apple for every cluster and keep the fruit to the outer portion of the tree, and out of the shade (Foulk). This does eliminate many apples that the tree could produce, but the apples left behind will be much larger, than if all the apples were allowed to mature.

Pests and Disease

Insects and disease are a major issue in apples and many other fruit bearing plants. When insects and diseases infect an apple tree, it will lead to deformation and undesired fruits. Usually diseases will only affect how an apple looks and the fruit is still edible and insects will effect if a fruit is edible or not (See David Bedford interview). Foulk provides a list of the major pests and diseases affecting apples:

Diseases

- Apple scab
- Fireblight

Pests

- Apple Maggot

- Plum Curcolio
- Codling Moth

Controlling Pests and Diseases

"Growing clean fruit requires a careful program of sanitation and, often, spraying chemical pesticides." Douglas Foulk, University of Minnesota

Controlling insects and diseases on apples is a complicated process and involves close monitoring to keep your trees and fruits free of infection or pests. Sanitation pruning is the most effective way to stop a disease from infecting an apple tree and ruining the fruit. Sanitation pruning is the practice of removing small infections immediately. Close attention must be paid to ensure that there are no signs or symptoms of Apple Scab or Fireblight. These symptoms include browning and wilting of leaves, which are easy to spot. If symptoms are found and are localized to a single branch, that branch can be removed to stop the infection from spreading. Be sure to use different tools on other infected parts of the tree to stop the spread of infection. Carefully cleaning tools with rubbing alcohol or Lysol or other antibacterial products, will remove the offending disease from tools.

Other prevention measures to the spread of disease, include cleaning up leaves underneath the trees. Spores can overwinter on these fallen leaves, and re-infect the tree the following spring. Also, there are disease resistant varieties of apples that cannot be infected by these diseases (Foulk). Options for controlling insects on apple trees are more limited. The most common option is spraying pesticides on the tree to stop insects from infesting the crop. Chemicals include Phosmet and Carbaryl. As mentioned earlier, this spraying is optional as alternative controls exist, and is considered completely voluntary. Only a State of Minnesota Licensed Applicator can spray pesticides.

Most community garden apple growers do not condone this method as they would rather have their fruit organically grown. Methods include traps or pheromones placed near the trees, that will draw insects away from the fruits (see David Bedford interview). There is also Safer Soap. Another method involves wrapping the apples in plastic bags when they are young to keep maggots from entering the fruit. This allows the apple to mature (Foulk). While this is an extremely time consuming method in a commercial setting, it may be just the treatment community gardeners would rather use.

Harvesting

Apples need to be picked as they begin to ripen. Do not allow the fruits to ripen on the tree. The appropriate time to pick an apple, is when the green color of the growing season, turns to a greenish yellow. Tasting apples as they ripen will aid in timing of the harvest (Foulk). Harvesting of the apples should not be done from ladders, under any condition. Hand tools can be purchased, to assist in harvesting apples from the ground. Always have both feet firmly planted on the ground.

Espaliering

Espaliering: “A tree or shrub that is trained to grow in a flat plane against a wall, often in a symmetrical pattern” (thefreedictionary). This method for growing trees is often used when space is very constrained. If apple trees are desired and the amount of space needed for growth is small, then apple trees can be trained against a wall or fence. All the care and maintenance methods described above will apply to an espaliered apple tree, the only difference being when the tree is first trained. Instead of developing scaffold branching per a typical planting, develop branches on two sides of the tree only, and at 180 degrees to each other. Space the branches evenly and symmetrically, tying each branch separately to the fence or trellis. The tree height will be determined by the vigor of the root stock (see Section 4.0).

Reducing Vandalism to Fruit Trees

All three (Physical, Managerial, Long Term) of Black’s suggested changes to reduce vandalism (see below) are being applied to this Saint Paul P&R Community Garden Apple Tree Pilot Project for a public park. The community gardeners of West Side Growing and their desire to have these fruit trees planted in a public space, under their community’s care, solves this Managerial dilemma nicely.

Tree Vandalism: Some Solutions

Black’s (Black, 1977) seminal article *Tree Vandalism: Some Solutions* from the University of Washington, is a study examining actions taken to stop vandalism to public trees. The solutions were categorized into three groups: Physical changes, Managerial changes, and Long Term changes.

The Physical changes mentioned were staking trees differently. Instead of using two (2) stakes strapped to the tree, the use of one (1) steel stake along the tree trunk, attached at three spots along the stake. This new form of staking greatly reduced tree vandalism in the study.

The Managerial changes could be summed up simply, as more careful planning. This means conscious planning in planting more robust tree stock in areas of higher vandalism, and only planting trees where trees are wanted by the public (in this case West Side Growing).

Third, the Long Term change suggests that making the public a part of the planting of the trees reduces vandalism. When people are involved with a project they feel they have ownership and connection with the project and there is less vandalism to trees (again this is the process of community connection with West Side Growing).

Monitoring Checklist:

Every two weeks check the following throughout the first growing season. The following growing seasons check monthly.

Watering:

Diseases:

Pests:

Animal Browse:

Mulch:

Vandalism:

Fruit:

Pruning:

Site condition:

(Cleanliness? Fruit on the ground? Fruit being thrown? Wasps?)

Overall Condition:

Additional comments:

At the beginning of each growing season check and record to see if the Winter Protection has been removed or damaged, repair as necessary. Before the middle of October check to see if Winter Protection has been installed properly.

CITY fruit

Pruning Fruit Trees

Online Information

City Fruit provides info about pruning at www.cityfruit.org (see "Grow Fruit") and has trained volunteers who are willing to help prune residential fruit trees.
Contact: info@cityfruit.org

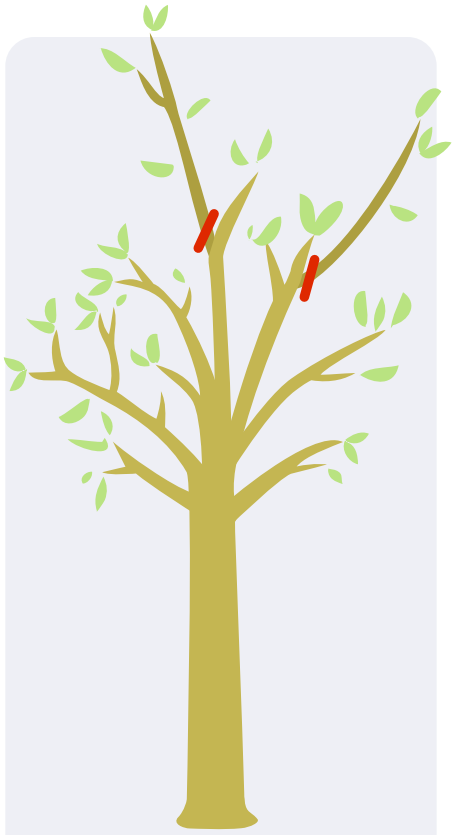
Fruit trees are trees!

In most respects, fruit trees are pruned like other trees, for health and good looks. Special techniques can also be used to encourage fruit production.

Pruning Basics

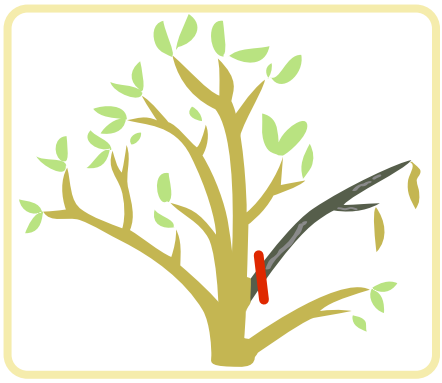
In addition to improving the tree's appearance, pruning a fruit tree increases light penetration and thus improves fruit quality. Pruning also increases air circulation, helping to reduce disease.

Start out by looking at your tree and remove the following branches first. Remember to remove each branch about a 1/2" above the place where it joins with a larger branch (don't cut inito the branch 'collar').



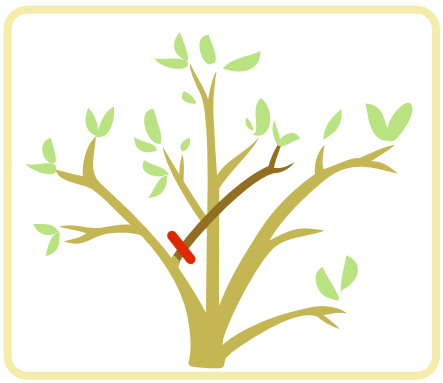
Higher Branches

Thin back a few branches (even larger ones) toward the top, especially if they shade lower branches. This helps ripen fruit and keeps the tree from getting too big too fast.



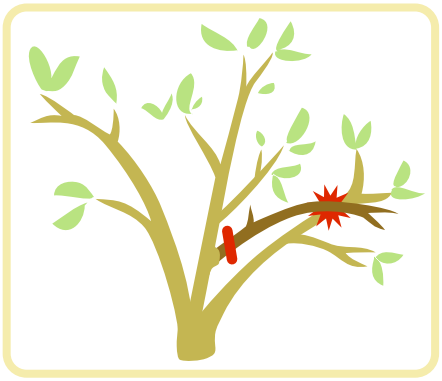
Dead wood

Remove all dead and diseased branches.



Interior Branches

Take out branches that grow inward, toward the center of the tree.



Rubbing Branches

Remove branches that cross or rub against other branches.

Suckers

Remove some, but not all, of the suckers (branches that grow vertically, often in a clump.) If you remove them all, they will come back.

CITY fruit

Pruning Fruit Trees

Resources

The Plant Amnesty Referral Service provides referrals to landscape professionals with the necessary skills and experience. Call 206-783-9813 and say you have a fruit tree.

The Home Orchard Society in Portland, Oregon has online series of articles on pruning fruit trees at www.homeorchardsociety.org .

Sustainable Gardening: The Oregon-Washington Master Gardener Handbook (WSU and OSU extension services, 2003) includes a chapter about pruning fruit trees, with diagrams and descriptions. (Not online, $30)

When hiring an expert

Make sure the person you hire understands how to prune fruit trees. Many general yard care companies, especially those that trim hedges and radically cut back trees, don't necessarily know about fruit trees. Even some arborists aren't experienced with fruit trees.

⚠ Overpruning

Don't prune too much – no more than a quarter of the total leaf surface in any one year. And don't try to fix a tree in one year; if the tree needs a lot of work, do it over several years.

The following is excerpted from ***Fruit Trees*** by Cass Turnbull and published by Plant Amnesty. For copies of the original, see www.plantamnesty.org

Pruning to Produce Fruit

As branches get older, they stiffen into a more horizontal position. Buds growing along the branch form little side branches, called laterals, and on them are tiny ¼ -inch branches, called spurs. The spurs have fat flower buds (or fruiting buds) instead of skinny leaf buds. A fruit grower wants to promote these laterals and spurs.

Branches situated in a not-too-horizontal position will make more fruit buds, or spurs, than branches that are vertical or those that are completely horizontal (or those growing downward). You can pull or push new branches into a slightly horizontal position, or you can cut out the ones that aren't in the right position and leave the ones that are.

You can also encourage some, but not all, of the laterals to make spurs by heading them back (also called tipping back) to two or three buds. This works on pears and apples, but not on cherries. New dwarf varieties of apples, called 'spur type,' don't need to be pruned to set up spurs. They do it themselves.

Pruning Errors

Topping is bad for any tree, including fruit trees. The suckers that shoot back up from a topped fruit tree are not only ugly, but they produce leaves instead of fruit.

Old Trees

Old trees can be invigorated by heavy pruning to produce new wood and spur systems. There may be a temporary drop in fruit production. Don't try to fix a tree in one year. An older tree takes several years – and often professional help – to rehabilitate.

Young Trees

Young trees (under six years) are pruned to develop strong, low framework branches. Go easy in the early years.

Suckers

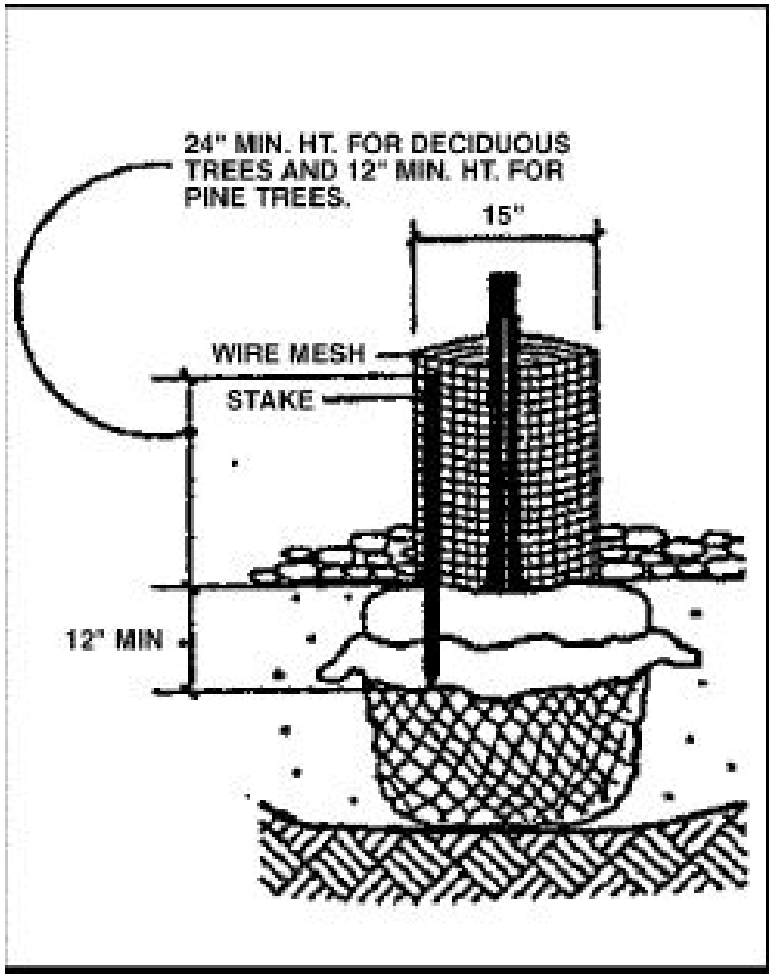
You may have a forest of suckers that are the result of previous bad pruning. If you remove all of them, they all come back. Leave some, shorten some to create a second story in the tree, and thin out the rest. (Remember: cut them back to almost where they join a larger branch.)

When to Prune

Pruning is often done in winter, when the tree is dormant and the leaves are gone. It's easier to see the structure of the tree at that time. Summer pruning is also fine if the tree is vigorous and well-watered. Summer pruning is useful for spotting dead wood (no leaves) and can reduce the spread of fungal diseases. Summer pruning is harder on the tree, however, so go easy and don't prune during a drought.

This publication made possible through a grant from the City of Seattle Department of Neighborhoods.

	St. Paul Fruit Tree 5 Year Pilot Project Recommendations									
	Yearly		Bi-annual		One Time Only		As Needed		Monthly/Daily	
Action	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
Mulch							X			
Planting					X	X				
Application					X	X				
Spraying	X									
Pruning	Early	Late					X			
Clean-Up									X	X
Safety									X	X
Watering									X	X
Contacts							**********			



Pest & Disease Control
Herbivore (Rabbit, Vole)
Trunk Protection

Kids planting fruit trees at an Elementary School in Madison, Wisconsin

Image Credit:
http://host.madison.com/news/local/advocates-envision-free-fruit-and-nuts-for-madison-parks/article_3a129588-1014-54ef-8950-caec44b996ca.html

Gator™ 20 Gallon Watering System

Pest & Disease Treatment

Image Credit: http://www.mysafetysign.com/Safety-Signs/Landscape-Treated-By-Pesticide-Signs/SKU-S-4959.aspx

Image is of Portland community orchard.

Image credit: http://portlandfruit.org/community-orchards

Image is of harvest at one of Portland's community orchards.

Image credit: http://portlandfruit.org/harvest-programs/

Fruits of the City - Minnesota

Image credit: http://www.mnproject.org/food-FruitsOfTheCity.html

Section 7.0

References and Citations

7.0 References and Citations

Print:

-Aue, John et. al., 2007, *Integrated Pest Management Manual for Minnesota Apple Orchards*, Minnesota Department of Agriculture, Print.

-Black, Marvin E., 1978, *Tree Vandalism: Some Solutions*, Journal of Arboriculture, Print.

-Kaiser, Libby. "*Seattle Grows an Edible Urban Forest*." Planning. August-September (2012): n. page. Print.

-Roper, Teryl R. *Training and Pruning Apple Trees*. University of Wisconsin--Extension, Cooperative Extension, 1997. Print.

Shigo Alex L., 1991. *Modern Arboriculture, A Systems Approach to the Care of Trees and Their Associates*. Shigo and Trees, Associates; Durham NH.

Shinew, Kimberly J, Troy D Glover and Diana C. Parry. "*Leisure Spaces as Potential Sites for Interracial*." Journal of Leisure Research 36.3 (2004): 336-355. Print.

-Turnbull, Cass. "Pruning Fruit Trees." *City Fruit*. City of Seattle Department of Neighborhoods. Web. 28 Apr 2013. <www.cityfruit.org>.

-Twiss, Joan, et al., 2003, "*Community Gardens: Lessons Learned From*

California Healthy Cities and Communities", American Journal of Public Health, Vol 93, No. 9, Print.

-Watson Gary W., Himelick E.B. 1997. *Principles and Practice of Planting Trees and Shrubs*. International Society of Arboriculture.

-Weston, Anna. "Gardening in the Margins." *New Internationalist*. Dec 2011: 56. Print.

Websites:

-*"Fallen Fruits" & "Del Aire Fruit Tree Orchard Park";* Los Angeles CA

: http://www.kcet.org/arts/artbound/counties/los-angeles/del-aire-fruit-park.html

-*Fruit City UK;* London UK

http://fruitcity.co.uk/about-2/

-*Fruit Tree Planting Foundation*

http://www.ftpf.org/resources.htm

-*Madison Fruit and Nuts;* Madison WI

http://madisonfruitsandnuts.org/

-"*Kickstarter*" Funding

http://www.kickstarter.com/projects/290256474/helpyourself-public-gardens-and-fruit-trees-in-nor

-*Pruning Fruit Trees;* Seattle WA

www.cityfruit.org

Turnbull, Cass. "*Pruning Fruit Trees*." City Fruit. City of Seattle Department of Neighborhoods. Website. 28 Apr 2013. <www.cityfruit.org>.

-*Portland Fruit;* Portland OR

http://portlandfruit.org/

http://www.thefreedictionary.com/espalier

Foulk, Douglas- http://www.extension.umn.edu/distribution/horticulture/M1157.html

Roper, T.R.- http://learningstore.uwex.edu/assets/pdfs/A1959.pdf

http://www.minnesotaapple.org/minnesota_apples_varieties.shtml

http://fruit.cfans.umn.edu/garden/garden.htm

www.extension.umass.edu

www.cmg.colostate.edu

Interviews:

Bedford, David, 2013; *Apple Pests and Diseases Interview*; Personal Communication with Benjamin Whelan

Section 8.0

Appendix:

A, B, C, D, E

8.0 Appendix:

A. West Side Growing Garden Club Newsletter

Susan Mitzel

From: Dustin Ellis [ellis554@umn.edu]
Sent: Monday, March 25, 2013 3:24 PM
To: Peter MacDonagh
Subject: Fwd: GROWING WEST SIDE NEWSLETTER

---------- Forwarded message ----------
From: **Growing Westside** <growingwestside@gmail.com>
Date: Fri, Mar 15, 2013 at 1:33 PM
Subject: GROWING WEST SIDE NEWSLETTER
To: allen027@umn.edu, Mary.Altman@ci.minneapolis.mn.us, Martha Alvarado <marfiesnowflake@gmail.com>, yangchiv@yahoo.com, Sammie Ardito Rivera <shinaabikwe@gmail.com>, saslanian68@yahoo.com, rvauradkar@gmail.com, jbasques@comcast.net, Dan Beers <dbeers@visi.com>, barndog123@gmail.com, Gjerry Berquist <Gjerry@q.com>, "Tyler@youthfarm.net" <Tyler@youthfarm.net>, Jennifer Anjin Billig <jlbillig@yahoo.com>, Pat Black <patoitextiles@gmail.com>, annabotz@yahoo.com, tjbouwens@gmail.com, JBratulich@nacelopendoor.org, Emily Brennan <emilymbrennan@gmail.com>, drmg39@comcast.net, Monica Bryand <Monica@headwatersfoundation.org>, jimbuk@q.com, chip.burkitt@orderingchaos.com, Armando Camacho <acamacho@neighb.org>, Roberta Casey <caseyconery@gmail.com>, "Cavalier, Meghan" <mcavalier@reamn.org>, Angela Columb <angela.columb@gmail.com>, sarasensei@hotmail.com, Jen Crea <jencrea@yahoo.com>, artdavidii@yahoo.com, spps.thomas.delaney@gmail.com, mdittrichjewelry@visi.com, Nina Eagin <ninaeagin@gmail.com>, dedminst@travelers.com, Dustin Ellis <ellis554@umn.edu>, absolutesarah@hotmail.com, jfarnham3@msn.com, Jenel Farrell <Jenelmail@gmail.com>, Christina Newby Fiebich <christina@fiebich.org>, flahertyx@comcast.net, barnfolk@gmail.com, Paula Foreman <encoreforeman@gmail.com>, feefee17@hotmail.com, Elena Gaarder <elena@wsco.org>, meredith gear <meredithgear@gmail.com>, gebbengreen@gmail.com, Jane Gilbert <janegilbert@comcast.net>, Jim Gilbert <jimgilbert@edinarealty.com>, sgupta@ceed.org, HumboldtVolunteer@bhshealth.org, mary@stpaulpublishing.com, harder.carol@yahoo.com, Maureen Hark <jalapeno@usfamily.net>, Jim Harstad <JamesLHarstad@gmail.com>, Tina Harstad <tmkharstad@gmail.com>, liteupyourlife@earthlink.net, eunice628@msn.com, sharon.hendrix@spps.org, DeAnn Herringshaw <de.herringshaw@gmail.com>, lisa.himmelstrup@spps.org, randy@randyhockert.com, hunter_karen@comcast.net, Ruth Janisch Lake <arctic.ruth@gmail.com>, "johnsod1@augsburg.edu" <johnsod1@augsburg.edu>, emily smith <emilymcj@gmail.com>, cpuc@usfamily.net, Jon Kerr <jon@oldmanriver.com>, julie.ketterling@spps.org, solshinek@hotmail.com, Jay.Krienitz@state.mn.us, Klandy77@gmail.com, jolenelaur@comcast.net, tatianaleiv@gmail.com, roselentz@earthlink.net, daniel.liljedahl@spps.org, Patricia Lindgren <patricia.lindgren@ci.stpaul.mn.us>, logsdon.marylou@gmail.com, Katy Lowery <KATY.LOWERY@gmail.com>, peggylynch@visi.com, Kathryn Malody <katmalody@gmail.com>, sarah.mapellentz@me.com, Jennifer Marcus Newton <fidhlear@gmail.com>, Caritza M <caritza.mariani@gmail.com>, "C.J. Marsh" <carrie.a.marsh@gmail.com>, imartin@ceed.org, lc.mrtn@gmail.com, mandymartinmm@yahoo.com, vmcb@pro-ns.net, pmacdonagh@tkdg.net, l.m.mcguire@comcast.net, eliannemiller@comcast.net, Maria McNamara <mmcnamara1954@gmail.com>, gmendez@nedahome.org, gmerriam@nedahome.org,

cmiller@neighb.org, peersupport@earthlink.net, ellen.miller@mnhs.org, Michael Moore <mmoore883@gmail.com>, Leah Morgan <lealt77@yahoo.com>, Calla Morrissey <electriccalla@gmail.com>, Tom Murphy <tmmurphymn@gmail.com>, elizabeth651@yahoo.com, Brandon Newton <brandon.newton82@gmail.com>, Chris Newton <milkmaid@gmail.com>, Pamela Nippolt <nippolt@umn.edu>, nalco@qwestoffice.net, r.njaa@mac.com, Hilary Novacek Bundt <hilarymichelle@gmail.com>, Jaime Nymann <jsnymann@gmail.com>, Don Oberdorfer <doberdorfer@dodgenaturecenter.org>, jolene.olson@co.ramsey.mn.us, lolson4@macalester.edu, Lois P <LA4Pace2012@gmail.com>, tusentackfarm@gmail.com, Alejandra Orcutt <santaleja@gmail.com>, maureen.elwell.peltier@comcast.net, melissa.pfeiffer@ilcm.org, Molly Phipps <molly.phipps@gmail.com>, ralphhb@gmail.com, Kathi Polley <polleypeper@comcast.net>, Karen Reid <kreid@nedahome.org>, Alice.rhines@spps.org, mrichardson@visi.com, krivard@gmail.com, Barb Rose <barb.rose@earthlink.net>, pompe sanz <icycup.63@hotmail.com>, chandra.sather@gmail.com, Sarah Sawyer <sunnyplants@gmail.com>, wolfcus@gmail.com, "Sharma, Mangala" <mangala.sharma@commonbond.org>, tomas@elburritomercado.com, Joy Sorensen Navarre <sorensennavarre@gmail.com>, csoutter@usfamily.net, info@jerabeks.com, rstevens@visi.com, aguasuu@hotmail.com, "westbridgetownhome@gmail.com" <westbridgetownhome@gmail.com>, Anne Street <astreetoz@gmail.com>, olov@swedishcraftsman.com, Helen Sullinger <hbsulling@gmail.com>, Stacey Supina <ssupina@gmail.com>, Carol Swenson <carol_swenson@msn.com>, darcyjst@yahoo.com, Jo Ann Tesar <jo36@msn.com>, andykateruby@yahoo.com, ella thayer <ella.thayer@gmail.com>, Mark Shepherd-Thomas <msthomas42854@gmail.com>, dave.thune@ci.stpaul.mn.us, jtokach@comcast.net, naratopp@comcast.net, Mark van der Linden <Markrvdl@gmail.com>, "Bee.Vang@stpha.org" <Bee.Vang@stpha.org>, svang@neighb.org, dv002i@gmail.com, jbarbwagner@juno.com, Mason Wells <mason@wsco.org>, Athelgra Williams <william7@augsburg.edu>, Laurie Witzkowski <barefootmuse@gmail.com>, Sophea Woolner <sopheawoolner@gmail.com>, Roxanne Young <thatgirlhiding@gmail.com>, sherilyn.young@msn.com, Grit Youngquist <grit@oldmanriver.com>, Amber ZF <amber.zumski@gmail.com>, ja9son@yahoo.com, katherinemoos22@gmail.com, Gina Vermilyea <ginamariev22@aol.com>, bluffparkhomes@tcgmanagement.net

GROWING WEST SIDE (NEWSLETTER*)

IN THIS ISSUE

- Growing West Side Meeting Notice
- Upcoming West Side Classes and Events
- West 7th/West Side Resource Hub
- Get Involved!

MEETING NOTICE

The next GROWING WEST SIDE meeting will be March 23 at 10 am at Jerabeks Coffee House on the corner of Winifred and Stryker.

- Quick Update on Growing West Side Projects
- Resource Hub Membership Info and Sign Up (see info below)
- Basic Fruit Tree Pruning Class immediately follows (10:30)

UPCOMING CLASSES/EVENTS

We will be updating this weekly as things unfold!

Starting Vegetables from Seeds, Indoors and Out

Wednesday, March 20 6:30 – 8 pm

Bluff Park Homes Community Room 328 Cesar Chavez

Get ready for planting your vegetable garden this spring by joining us for a workshop on SEEDS. Learn which seeds need to be started early indoors and which are planted directly in the garden. We will show you how to start seeds inside your home and care for them as they grow. In addition, we will cover winter sowing an easy method of starting seeds out doors in recycled containers. Participants will go home with seeds, growing medium and container everything you need to get growing!

Basic Fruit Tree Pruning

Saturday March 23rd, immediately following the Growing West Side

meeting at Jerabeks Coffee House, Corner of Winifred and Stryker

Grab a cup of coffee or a bite to eat and join Ellen Parker of Tusen Tack CSA as she walks us through basic fruit tree pruning techniques. After words we will walk down the street for a pruning demonstration. Bring your boots and your questions!

Resource Hub Seed Disbursement Event

April 2, 6:30-8pm at Rivers Edge Academy

(see info below)

Mother Earth Festival

April 20th 9am to 5 pm, Wellstone Center

Mother Earth Fest 2013 is a day of celebration that will inspire people of all ages to take action for a healthy and sustainable Mother Earth. For more information http://motherearthfest.org/

Riverview Garden Club's 9th Annual

West Side FREE Plant Exchange

Saturday May 11, 10:00 to 12:00 am

Stryker Community Garden, Corner of Stryker and Elizabeth

Bring your extra vegetable starts, divided plants from your garden, seeds, garden tools and yard art and friends and share with your West Side neighbors. Have no plants to offer? Don't let that get in the way of coming there is always plenty for everyone!

WEST 7TH/WEST SIDE RESOURCE HUB

What is the Gardening Matters Resource Hub? The West 7th and the West Side neighborhoods have come together to form a Resource Hub. The Hub is a community based network of residents, organizations, and businesses supporting each other to grow, cook, and preserve fruits and vegetables and increase health and access to fresh food. By becoming a member, we can become part of a network of people building a vibrant and inclusive local food system. Through out the year our neighborhoods will come together and share what resources and knowledge we have. The kick off event is April 2nd. *But, more about that later….*

How do you Join the Hub? To join, individuals or organizations pay a small membership fee and choose the garden package of seeds and seedlings that best suits their needs. The suggested membership fees are lower than the actual costs, to make memberships available to everyone. If you can contribute more, you provide critical funds for operating costs. To sign up, go to the Gardening Matters Resource Hubs page (http://www.gardeningmatters.org/hubs) and select "sign up now", or come to the next GROWING WEST SIDE MEETING Saturday March 23rd at the Riverview Library and sign up there OR at the Seed Disbursement Event on April 2nd.

These are the Garden Seed/Seedling Packages you can sign up for:

Small Garden Package Suitable for a small plot, raised bed garden or container garden. 10 packets of seeds and 12 seedlings. Suggested membership fee $10 to $20. (approximate retail value $45)

Medium Garden Package Suitable for a 12' x 12' garden. 20 packets of seeds and 20 seedlings. Suggested membership fee $25 to $40. (approximate retail value $85)

Large Garden Package Suitable for a very large garden or community garden. 40 packets of seeds and 72 seedlings. Suggested membership fee $50 to $100 (approximate retail value $225)

You can also become a member by making a donation, and not receiving seeds.

In Addition to Purchasing Seeds members will be able to purchase strawberry and raspberry bare root plants at a very good price through this program. Demos and classes will be available to help you grow fruit. Look on the Gardening Matters resource Hubs page for information on ordering. PLANTS MUST BE PRE-ORDERED BY APRIL 19TH.

The Seed Disbursement Kick Off Event! This is the event where the seed packages you have signed up for are distributed. Rivers Edge Academy has invited our Resource Hub to their Community Event on April 2nd from 6:30 to 8pm. There will be food, gardening demonstrations, information about River's Edge programming, and of course the SEED DISBURSEMENT!

Volunteers Are Needed! The event is being planned right now! Contact growingwestside@gmail.com if you are interested in helping.

GET INVOLVED!

- Work on the Seed Disbursement Event
- Start vegetable seedlings indoors to bring to the Riverview Garden Club's 9th Annual West Side Plant Exchange on May 11
- Volunteer with Beans on the Boulevard (contact Maureen at jalapeno@usfamily.net)
- Join a Growing West Side project committee:

Farmers Market
West Side Orchard
Educational Programming
Resource Hub

- ***Come up with a clever name for the Growing West Side newsletter!**

Contact growingwestside@gmail.com for More Information

8.0 Appendix:

B. Community Benefits: Popular and Journal Article

-"Gardening in the Margins"

-"Community Gardens: Lessons Learned From California Healthy Cities and Communities

Gardening in the margins

Derelict inner-city sites are being transformed by green-fingered volunteers, writes ANNA WESTON.

Community gardens grow from a need for such shared spaces, brought into being by a group of people working together for the free enjoyment of all. While allotment gardens are formed by dividing up land for individuals to use in return for a fee, a community garden includes shared areas as well as small plots available for individual users to garden rent-free.

Bringing urban gardeners together in Washington DC.

tedeytan Under a CC Licence

The land used is often reclaimed from derelict sites in the centre of the community. A group of volunteers come together to clear the site, committed to providing a green environment in what are often inner-city areas. From the Culpepper and Phoenix Gardens in London to the Clinton Gardens in Hells Kitchen, New York, what used to be rubbish dumps, car parks and bomb sites are now thriving gardens producing flowers, vegetables and fruit, and providing urban homes for wildlife. The gardens are run by management committees formed by local people, usually working on a voluntary basis, and the emphasis is on co-operation and the sharing of labour, experience and responsibility, as well as the produce.

A community garden not only enables people to reconnect with how food is produced, it also brings urban gardeners together and provides a safe place for people to meet. It is a valuable educational resource, often encouraging links with local schools and community groups and encouraging all age groups to learn about growing and eating their own fresh food.

Unfortunately, the future of individual gardens can be precarious, with management committees often paying for short or temporary leases on what was previously derelict land. As such, they are easy targets for developers and many community garden committees have had to run publicity and fundraising campaigns to stay open.

Such initiatives do much to provide city communities with precious green spaces: they are a perfect example of people taking positive action to improve their environment. ■

The Federation of City Farms & Community Gardens – **farmgarden.org.uk**
Australian City Farms and Community Gardens Network – **communitygarden.org.au**
Community Gardening in the US and Canada – **communitygarden.org**

Anna is office manager at **New Internationalist** in Oxford, and our gardening guru.

The warm, green glow

Fire was humanity's most significant early discovery. Since harnessing the flame during the Early Stone Age, we have been powered by it, created with it, cooked on it, warmed our toes by it. But as the world heats up, is there a glimmer of guilt over your love of a log fire?

The facts aren't that hot. With the steady demise of native forests around the world, logging for domestic use plays a significant part in habitat destruction and soil erosion. Air pollution is also an issue: carbon dioxide from burning wood is released into the atmosphere at a far more concentrated rate than if the wood was left to decompose in soil.

Loimere Under a CC Licence

But there is a way to stay cosy without your green credentials going up in smoke.

Several companies are now producing a range of eco-logs, which offer a bright alternative to traditional wood. The logs are made from discarded rapeseed or rice husks which, when compressed into briquettes, burn up to three times as long as wood with up to twice the heat.

They are cheaper to buy and release far fewer emissions; a study by the US Environmental Protection Agency shows that the carbon monoxide emission rate is around 75 per cent less than real wood.

They're perfect for BBQs and campfires and, because seed husks contain very little fibrous material, the eco-logs won't soot up your chimney. Santa Claus will thank you. ■

Libby Powell

Contact the Alternatives team on: alternatives@newint.org

Community Gardens: Lessons Learned From California Healthy Cities and Communities

Joan Twiss, MA, Joy Dickinson, BS, CHES, Shirley Duma, MA, Tanya Kleinman, BA, Heather Paulsen, MS, and Liz Rilveria, MPA

Community gardens enhance nutrition and physical activity and promote the role of public health in improving quality of life. Opportunities to organize around other issues and build social capital also emerge through community gardens.

California Healthy Cities and Communities (CHCC) promotes an inclusionary and systems approach to improving community health. CHCC has funded community-based nutrition and physical activity programs in several cities. Successful community gardens were developed by many cities incorporating local leadership and resources, volunteers and community partners, and skills-building opportunities for participants.

Through community garden initiatives, cities have enacted policies for interim land and complimentary water use, improved access to produce, elevated public consciousness about public health, created culturally appropriate educational and training materials, and strengthened community building skills.

THE COMMUNITY GARDEN IS exceptional in its ability to address an array of public health and livability issues across the lifespan.[1] Community gardens began at the turn of the 20th century and had a renaissance during the world wars in response to food shortages.[2] Today, community gardens appeal to newly arrived immigrants, who use them to help maintain cultural traditions, and to those committed to sustainability and to personal and family health. Populations with health disparities, who do not always have access to nutritious-food outlets (e.g., grocery stores, farmers' markets) owing to limited financial and community resources and inconvenient transportation systems, can usually access these gardens, since they often are located within neighborhoods and on public property.

Community gardens build and nurture community capacity, which Mayer defines as "the sum total of commitment, resources, and skills that a community can mobilize and deploy to address community problems and strengthen community assets."[3] Strong community capacity increases the effectiveness and quality of community health interventions.

Public health professionals often lament the fact that much of their work is out of the public eye. Community gardens are a tangible way to demonstrate public health efforts through organized community-centered activities that link many disciplines. Professionals outside of mainstream public health often become new allies as a result of their involvement. Community gardening fosters neighborhood ownership and civic pride, which in turn build a constituent base for a broader policy agenda.

Since 1988, California Healthy Cities and Communities (CHCC) has supported over 65 communities with developing, implementing, and evaluating programs, policies, and plans that address the environmental, social, and economic determinants of health. Consistent with the Healthy Cities and Communities Model, CHCC program participation requires the convening and ongoing support of a broad-based collaborative, including the public, nonprofit, business, and resident sectors; development of a work plan with community-driven priorities and strategies; and the commitment of the municipality, demonstrated by a council resolution and the dedication of staff time and other resources.[4,5] Several cities have established community gardens, often building on past healthy community initiatives.

In general, participating California Healthy Cities (Table 1) that established community gardens responded to a request for proposals to improve community nutrition and physical activity, or to enhance food security. Each city's approach is unique to its circumstances. Funding is provided through grants from CHCC (a program of the Center for Civic Partnerships/Public Health Institute) (Table 2). Significant technical assistance is also provided to local coordinators and collaboratives by CHCC staff and its partners.

TABLE 1—Demographics of Cities That Received Grants From California Healthy Cities and Communities for Community Garden Programs

City (County)	Population[a]	Race/Ethnicity,[a] %	Median Household Income,[a] $
Berkeley (Alameda)	102 743	White, 55.2 Asian/Pacific Islander, 16.4 African American, 13.3 Hispanic/Latino, 9.7 Native American, 0.3 Other, 0.6	44 485
Escondido (San Diego)	133 559	White, 51.9 Hispanic/Latino, 38.7 Asian/Pacific Islander, 4.6 African American, 2.0 Native American, 0.6 Other, 0.1	42 567
Loma Linda (San Bernardino)	18 681	White, 47.1 Asian/Pacific Islander, 24.5 Hispanic/Latino, 16.3 African American, 7.0 Native American, 0.3 Other, 0.2	38 204
Oceanside (San Diego)	161 029	White, 53.6 Hispanic/Latino, 30.2 Asian/Pacific Islander, 6.6 African American, 5.9 Native American, 0.4 Other, 0.1	46 301
San Bernardino (San Bernardino)	185 401	Hispanic/Latino, 47.5 White, 28.9 African American, 16.0 Asian/Pacific Islander, 4.4 Native American, 0.6 Other, 0.2	31 140
West Hollywood (Los Angeles)	35 716	White, 81.4 Hispanic/Latino, 8.8 Asian/Pacific Islander, 3.8 African American, 2.9 Native American, 0.2 Other, 0.2	38 914
California	33 871 648	White, 46.7 Hispanic/Latino, 32.4 Asian/Pacific Islander, 10.9 African American, 6.7 Native American, 1.0 Other, 16.8	47 493

[a]Based on 2000 census data.

KEY ELEMENTS FOR SUCCESS

While each city's approach was unique, the following key elements were integral to their efforts: commitment of local leadership and staffing, involvement of volunteers and community partners, and availability of skill-building opportunities for participants.

Local Leadership and Staffing

A city's commitment of staff, financial, and in-kind resources is critical to the success of community gardens. City councils in each of 2 cities purchased land valued at $70 000 or more for gardens, one using funds from the Community Development Block Grant, the other using money from the city's general fund. Both provide staffing on an ongoing basis.

Volunteers and Community Partners

The participation and support of diverse community members help a community garden to thrive. These members include residents, partner institutions (e.g., schools, county health departments, universities), and volunteers (e.g., businesses, civic associations). The inclusiveness of gardens allows individuals and groups to contribute their knowledge, skills, and experience. The business community contributes tools and lends equipment. Residents and volunteers often identify innovative strategies to leverage resources, such as the interim use of property and volunteer stipends as an alternative to hiring staff.

Skill-Building Opportunities

Gardening workshops provide opportunities for residents, staff, and volunteers of all ages to develop skills in leadership, community organizing, cultural competency, and program planning, implementation, and evaluation. Leadership development is enhanced through experiential learning, which includes intergenerational and peer-to-peer mentoring and train-the-trainer models. Volunteers and staff lead workshops, organize taste-testing events, facilitate discussions, advocate for the garden, and develop culturally appropriate resources (e.g., training materials, cookbooks, newsletters, Web sites). These ongoing, interactive learning opportunities help to sustain momentum for the garden.

RESULTS AND DISCUSSION

Community improvements resulting from gardening efforts can range from knowledge and skill enhancement to behavioral and systems change. California Healthy Cities with community gardens have experienced a wide variety of results (Table 2). For instance, the city of West Hollywood complemented its school gardening program with nutrition and physical activity education. Self-reported survey results demonstrated that participants (n= 338) increased the number of physical activity sessions from 4.9 to 5.2 times per week (6%) and increased consumption of fruits and vegetables from 3.44 to 3.78 servings per day (10%). In the city of San Bernardino, the number of students that began gardening at home after participating in the school gardening program increased from 62 to75 (20%).

The city of Berkeley passed the Berkeley Food and Nutrition Policy, which supports small-scale sustainable agriculture (e.g., community gardens, local farms). In

TABLE 2—Characteristics of Community Garden Programs Funded by California Healthy Cities and Communities (CHCC)

City	Lead Department	CHCC Support, $	Funding Sources[a]	Priority Population	Results
Berkeley	Public Health	134 000 (over 5 years)	FFA, Network, TCWF	Youth, ethnically diverse	Established 1 school garden and 1 day care center garden; supported 2 existing school gardens; provided supplies to 3000 gardeners; opened a Farmer's Market in West Berkeley; provided nutrition or physical activity education (or both) to 1800 residents; passed the Berkeley Food and Nutrition Policy.
Escondido	Community Development Block Grant (CDBG)	75 000 (over 3 years)	Network	Ethnically diverse	Established 2 gardens with 218 garden plots involving 600 gardeners; opened a greenhouse to support year-round gardening; passed the "Adopt-A-Lot" policy to encourage the interim use of vacant land for gardens; approved a no-cost water policy for gardens on city property.
Loma Linda	City Manager	38 000 (over 2 years)	DHS	Ethnically diverse	Established 1 garden with 52 plots involving over 40 gardeners. Increased average consumption of fruits and vegetables among 35% of gardeners from 3 to 3.71 servings per day.
Oceanside	Housing and Neighborhood Services	75 000 (over 3 years)	Network	Ethnically diverse	Established 2 gardens involving 85 households; started 2 school gardens involving 115 student gardeners; added 10 plots to a garden serving seniors. Of the 228 residents receiving nutrition education, 86% indicated an intent to improve eating habits.
San Bernardino	Public Services	25 000 (over 1 year)	FFA	Youth, intergenerational, ethnically diverse	Established 3 school gardens involving 127 students; increased the number of students gardening at home by 20%; approved the Vacant Lot Beautification Program that allows public use of private land and city-owned vacant lots to establish gardens or pocket parks.
West Hollywood	Human Services	75 000 (over 3 years)	Network	Youth, intergenerational, ethnically diverse	Established 5 school gardens involving 460 students; designated 2 plots at 2 community gardens for school use; started container gardening programs at 3 schools; increased weekly physical activity sessions from 4.9 to 5.2 times per week and increased consumption of fruits and vegetables from 3.44 to 3.78 servings per day among 338 students participating in gardening and educational workshops.

[a]FFA = Food For All; Network = California Nutrition Network for Healthy Active Families, California Department of Health Services; TCWF = The California Wellness Foundation; DHS = Preventative Health and Health Services Block Grant, California Department of Health Services.

addition, the city of Escondido approved the "Adopt-A-Lot" policy, which allows for the interim use of public and private property for community benefit. This policy provides a special no-fee city permit and an expedited land use approval process that allows normal zoning regulations and requirements (e.g., those concerning parking) to be waived. The policy contributes to city beautification, decreases code violations, and increases space for community gardens.

While each city experienced a variety of results, there were several common lessons learned about the importance of the following:

- ongoing training, mentoring, and leadership development for gardeners and staff;
- building on successful community-based programs through partnerships;
- public awareness of the benefits of community gardens; and
- experiential work (e.g., classes in gardening, exercise, or cooking), which often led to municipal codes and administrative policies.

LOOKING AHEAD

Educating Stakeholders

Informing decisionmakers about the benefits of community gardens can be time-intensive. Changes in leadership can slow momentum. Communicating the benefits beyond the traditional leadership to the community at large can mitigate those challenges, help build a broad-based constituency, and provide long-term, consistent support of community gardening as a norm. Publications, electronic networks, and convenings can support learning across communities.

Integrating Community Gardens Into Development

While the benefits of community gardens are many, land and housing shortages may compete for gardening space. Because community gardens are flexible in their design (e.g., containers on patios and rooftops as options to ground planting), they can be incorporated harmoniously into new structures or into existing facilities (e.g., school campuses, parks, community centers).

Supporting Research

The dearth of data on the positive impacts of community gardens hinders the ability to make a convincing argument when resources (e.g., funding, land, water) are at stake. Anecdotal evidence abounds, but important outcomes such as the physical benefits of gardening and com-

West Hollywood residents tending their garden.

munity connectedness are difficult to measure. User-friendly, multilingual, and adaptable evaluation tools are urgently needed given the diversity of participants and disciplines. The development of strategies to measure the benefits of community gardens would sustain and promote this activity within an active living agenda.

Investing for the Long Term

Given the opportunities and challenges inherent in this work, long-term investments—policymaking, funding, staffing, and acquiring in-kind resources—are needed to support planning, implementation, and evaluation. Community visioning and strategic planning processes are additional opportunities to integrate this work. ■

About the Authors

The authors are with the Center for Civic Partnerships, Sacramento, Calif.

Requests for reprints should be sent to Joan M. Twiss, Center for Civic Partnerships, 1851 Heritage La, Suite 250, Sacramento, CA 95815 (e-mail: jtwiss@civicpartnerships. org).

This report was accepted May 9, 2003.

Contributors

J. Twiss, S. Duma, and T. Kleinman drafted the original report. J. Dickinson contributed to the original report, researched and contributed to the Results section, developed the tables, and selected the photographs. H. Paulsen drafted the abstract and researched the recommended resources. L. Rilveria researched and formatted the references and resources and contributed to the tables and identification of the photograph. All authors conceptualized and edited the report.

Acknowledgments

Support and resources for this field action report and the local programs of California healthy cities discussed herein were provided by the Public Health Institute; *The California Nutrition Network for Healthy, Active Families* through funding from The California Endowment and the United States Department of Agriculture; the California Department of Health Services, through funding from the Preventive Health and Health Services Block Grant; and Food For All. We are grateful to the California healthy cities for conducting the work described in this report, and for partnering with California Healthy Cities and Communities, a program of the Center for Civic Partnerships.

References

1. Goodman R. Report on community gardening. *Natl Gardening.* May/June 2000:46–49, 53.

2. *New York's Community Gardens—A Resource at Risk.* New York, NY: The Trust for Public Land; 2001.

3. Mayer SE. Building community capacity with evaluation activities that empower. In: Fetterman DM, Kaftarian SJ, Wandersman A, eds. *Empowerment Evaluation: Knowledge and Tools for Self-Assessment and Accountability.* Thousand Oaks, Calif: Sage Publications; 1996:332.

4. Hancock T. Healthy cities and communities: past, present and future. *Natl Civic Rev.* 1997;86:11–21.

5. Twiss J, Duma S, Look V, Shaffer GS, Watkins AC. Twelve years and counting: California's experience with a statewide healthy cities and communities program. *Public Health Rep.* 2000; 115:125–133.

Resources

- Armstrong D. A survey of community gardens in upstate New York: implications for health promotion and community development. *Health and Place.* 2000;6:319–327.
- Center for Civic Partnerships. *Fresh Ideas for Community Nutrition and Physical Activity.* Sacramento, Calif: Public Health Institute; 2002.
- Hancock T. People, partnerships and human progress: building community capital. *Health Promot Int.* 2001;16: 275–280.
- Sallis J, Bauman A, Pratt M. Environmental and policy interventions to promote physical activity. *Am J Prev Med.* 1998;15:379–397.
- Active Living by Design. Available at: http://www.activelivingbydesign.org.
- American Community Gardening Association. Available at: http://www.communitygarden.org.
- Center for Civic Partnerships. Available at: http//www.civicpartnerships.org.

8.0 Appendix:

C. Support Organizations:

-Fruit Tree Planting Foundation

-"*Kickstarter*" Alternative Funding Resource for Northampton MA

-*Fruit City UK:*London public fruit tree map

Website #1: *Fruit Tree Planting Foundation*

http://www.ftpf.org/resources.htm

This is the link to the *Fruit Tree Planting Foundation* at this link the group that will be heading up caring for the fruit trees can apply for all sorts of resources including free trees, and maintenance advice

Website #2: *"Kickstarter"*

Funding for Northampton Community Garden Orchards, Northampton MA

http://www.kickstarter.com/projects/290256474/helpyourself-public-gardens-and-fruit-trees-in-nor

- Food is universal to everyone! Growing fruit trees in a public space benefits everyone in the community.
- Anyone can walk by and enjoy the fruit or produce from these gardens. I think this could get people excited to want to find more places to plant fruit trees and be involved.
- This program is completely run by volunteers and donations.
- There is a big emphasis on signage and information at the sites where they planted their orchard gardens to educate the public.

Website 3: *Fruit City UK*, is a London Apple Tree mapping website, a perfect example of a website dedicated to locating public fruit trees in London
http://fruitcity.co.uk/about-2/

- In the long term if this Saint Paul Parks and Recreation pilot project is successful, and multiplies, then a map locating the public fruit gardens can be created. This gets people to the public orchard sites, interested and possibly involved.

8.0 Appendix:

D. Community Fruit Tree Orchard Precedents:

Madison WI – Website Summary

Portland OR – Website Summary

Seattle WA

Los Angeles CA

Four Precedents for public Fruit Tree projects in Community Gardens

Madison Fruit and Nuts, Madison WI

http://madisonfruitsandnuts.org/

- Madison Fruit and Nuts made it happen on three different sites they have also posted on this site examples of the legal documents we could modify and propose!
- Madison Fruit and Nuts recieved three awards for planting from the *Fruit Tree Planting Foundation*! One award for each of their three sites.
- The organization (Madison Fruit and Nuts) tried to get fruit trees planted on 5 public fruit sites, but ended up with 3 public fruit sites.
- The movement started with the City of Madison trying to uproot 6 fruit trees that a local resident planted. It was originally unlawful to have fruit trees on Madison's public land.
  http://host.madison.com/news/local/advocates-envision-free-fruit-and-nuts-for-madison-parks/article_3a129588-1014-54ef-8950-caec44b996ca.html
  Concerns from the city over their project were as follows (taken from above site)
- Ability to move forward with future plans in a park because the fruit trees are planted there.
- Maintenance (Developing guidelines for acceptable plans to plant, maintain and harvest fruit trees is crucial) fruit trees are more work than other trees.
- Some of the fruit trees have been maintained by elementary school students. This is a great educational opportunity for young kids. They learn where their fruit comes from, and how to maintain these trees.
- They have noticed that people walking by the trees everyday really watch the trees, and wait for the fruit to be ripe. Madison has Not had a harvesting problem.
- They focused heavily on getting volunteers on board immediately
  Read more: http://host.madison.com/news/local/advocates-envision-free-fruit-and-nuts-for-madison-parks/article_3a129588-1014-54ef-8950-caec44b996ca.html#ixzz2LrU3FnMS

Madison Fruits and Nuts

...because Madison needs more of both

Madison Fruits and Nuts is a new group that encourages planting and harvesting of fruits and nuts in Madison, Wisconsin. Free, fresh, local food!

Michelle, Jason, and Nicole from Community Action Coalition digging a hole for a fruit tree at Wingra Park, one of the three area sites to win a free orchard.

Congratulations to three area groups which won a free orchard! Madison is the *only* metropolitan area in the US to win at 3 sites; a total of 25 sites were winners in the contest. Having multiple sites diluted our voting, so considering that we won *any* shows there's a strong interest here!

The Fruit Tree Planting Foundation awarded trees for Bock Community Garden, Eagle Heights Community Garden, and Wingra Park.

You can now view and possibly add to a map of fruits and nuts in Madison!

If you have a gmail account, you can add new sites... here's how. Sign in to your account using the "Sign In" link in the upper right part of the window. At that point you should have an "Edit" button next to the map. Click the "Edit" button and you will be able to add place markers to the map and associate a title and description. In the description section include whether the fruit tree or shrub is public or private and, if private, include details of what the owner is offering.

Good news! Volunteers ***will*** be allowed to plant edible landscaping in city parks! Check out the media coverage around mid-July (below) and on our facebook page Yum! Madison Wants Public Fruit Trees.

Please contact us at madisonfruitsandnuts@gmail.com if you would like to be on our email list.

We'll be initiating other fruity/nutty projects. Here are a few ideas:

- Offering orchard planning workshops.
- Offering pruning workshops.
- Providing (or linking to) educational materials about planting, pruning, and caring for a tree organically, likely on this website.

We're looking for help with the above. Contact us if you'd like to help!

Here are some documents of interest to people planning edible landscaping.

- Spreadsheet of Varieties approved at the City's Habitat Stewardship Committee meeting in March, 2010.
- Edible Landscaping Memorandum of Understanding approved at the City's Park Commission meeting in July, 2010.
- Flower and Edible Landscaping Garden Application form suggested by Madison Fruits and Nuts, a modified version of the city's Flower Garden Application form. The highlighted green text was added, and the red text will be removed from the city's form.
- Some examples of Urban Edible Landscaping, Orchards, and Fruiting Street Trees in the U.S.

Here is some media coverage for more background info, most recent first:

- 15-Jul-2010 Channel 3 story entitled "'Edible Landscaping' To Come To Madison Parks".
- 14-Jul-2010 Channel 3 story entitled "City Requirements Might Stall 'Edible Landscaping' At Madison Parks". Video features the Jessica Bullen Orchard.
- 13-Jul-2010 Channel 3 editorial by Neil Heinen declares "Parks Department requirements unnecessary".
- 13-Jul-2010 Cap Times article by Pat Schneider entitled "Will city's red tape, fees bury public fruit trees in Madison?".
- 11-Jul-2010 Wisconsin State Journal article by George Hesselberg about the five sites in the national competition for an orchard.
- 21-Jun-2010 Cap Times opinion column entitled "Remove ridiculous barriers to public fruit trees" by Margaret Krome.
- 7-May-2010 Cap Times article announces the first group to win an orchard.
- 25-Mar-2010 Isthmus article updating folks about Madison Fruits and Nuts.
- 8-Mar-2010 USA Today article about urban fruit, featuring a Madison orchard and Madisonians.
- 8-Feb-2010 Cap Times article that captures the essence of Madison Fruits and Nuts.

Thanks for checking us out. We know interest in this is strong! We've heard from many people, and the pruning workshop we co-sponsored in 2010 filled almost instantly.

P.S. Yes, we're working on a prettier website.

Here are further documents of interest from the *Madison Fruit and Nuts* website .

- **Spreadsheet of Varieties approved at the City's Habitat Stewardship Committee meeting in March, 2010.**
- **Edible Landscaping Memorandum of Understanding approved at the City's Park Commission meeting in July, 2010.**
- **Flower and Edible Landscaping Garden Application form suggested by Madison Fruits and Nuts, a modified version of the city's Flower Garden Application form. The highlighted green text was added, and the red text will be removed from the city's form.**
- **Some examples of Urban Edible Landscaping, Orchards, and Fruiting Street Trees in the U.S.**

Portland Fruit, Portland OR

http://portlandfruit.org/

This is Portland's community fruit tree webpage, with many workshops on fruit trees. Our search did not find an opposition movement to fruit trees or a list of the problems they encountered. This could be that the public fruit tree programs is well established, and the "start-up" challenges information is no longer as well represented.

- *Portland Fruit* has found that the education opportunities using these 3 very large community fruit tree orchards are enormous and growing.
- *Portland Fruit* has numerous winter workshops on the following subjects: pruning, pollinators, fruit selection, espalier pruning and care, grafting, spring care, pest and disease identification and control, fruit thinning, summer pruning, fall tree care.
- In 2011 *Portland Fruit* accomplished the following: harvested over 39,000 pounds of fruit in 63 separate harvesting events, distributed fruit to 4,000 families in need, conducted 21 workshops, and engaged 86 volunteers.

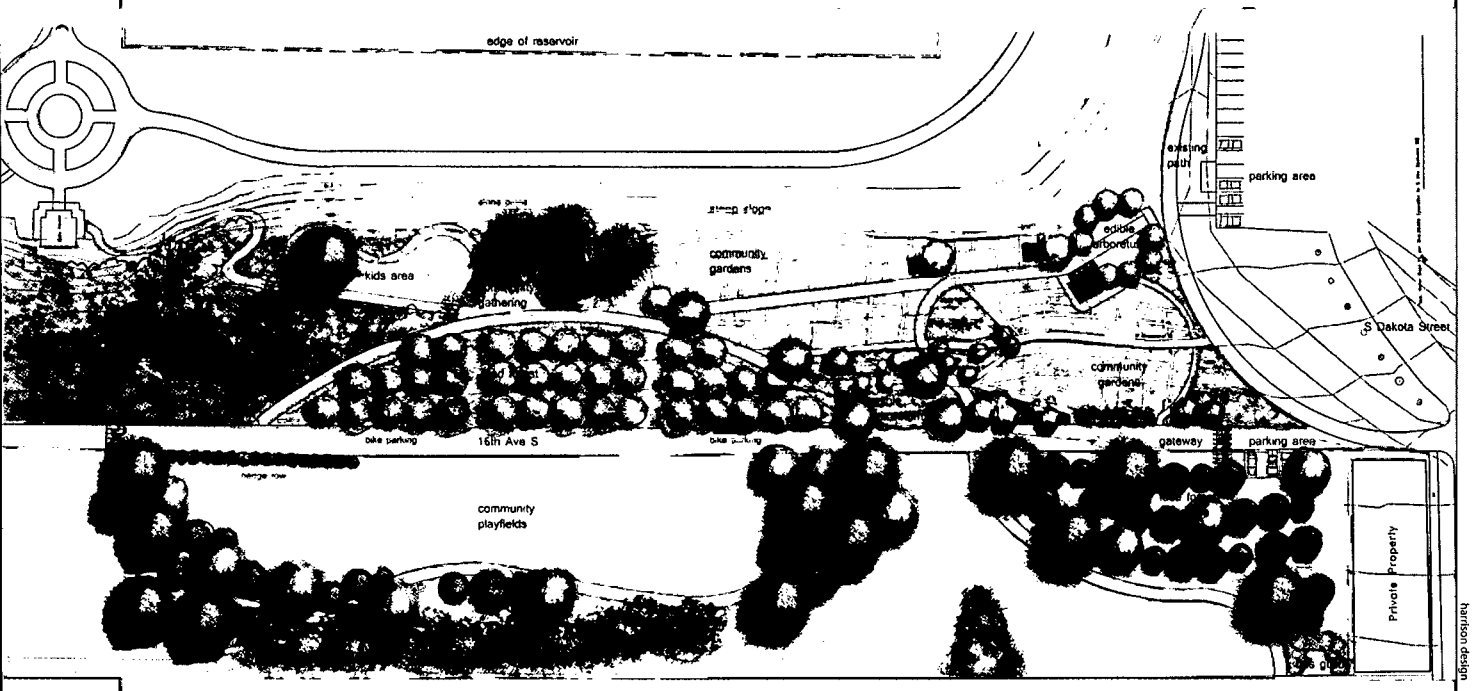
Seattle Grows an Edible Urban Forest

Seattle was expected to begin construction in July on a seven-acre public food forest that will provide free food for area residents and visitors. Three years in the making, the Beacon Food Forest will feature fruit orchards, nut groves, and berry bushes among ground-cover edibles, as well as community gardens.

The forest will help achieve many of the city's food production and access goals, which should be finalized in a long-term action plan this year. "Growing food in the city increases awareness about where food comes from, gets fresh food onto people's plates, and has the additional benefit of building community," says Seattle's food policy advisor Sharon Lerman.

Located in the Beacon Hill neighborhood, the forest could also help feed many low-income residents and recent immigrants with agrarian backgrounds. "A lot of the immigrant communities in Seattle have a strong tie to food production," Lerman says. "They want more land to grow food, and they want to be more engaged in the food production process."

The forest began as an initiative by two permaculture students and snowballed within the greater community. The project is sponsored by the city's department of neighborhoods. Permaculture attempts to mimic natural forest ecosystems to create a self-sustaining food web.



Seattle's new permaculture project will be tended by community residents, yielding tree fruits, nuts, berries, and fresh produce.

After the site is prepared this summer, community volunteers will begin planting in the fall and will be responsible for forest maintenance. The first 1.75 acres, which include an edible arboretum with plants from China, Russia, and Mexico, should be finished by the end of this year. If fundraising efforts are successful, the community will complete another two acres next year.

Although humans have foraged in forests for millennia, many experts believe Beacon is the largest public food forest designed to date. "We're in the infancy of learning how to do these kinds of forest garden systems and to do a large-scale public project before we really know what we're doing is risky," says Massachusetts-based permaculture author and designer Dave Jacke. Establishing the plants will be hard, but controlling social behavior will be even harder, Jacke says.

Community residents are concerned that people will harvest more than their fair share of forest fruit, says Margarett Harrison, the project's landscape architecture consultant. "We're just hoping that social etiquette will prevail and they won't be driving their pickup trucks in and harvesting huge bushels of apples." Harrison says. "But who knows?"

—Libby Sky Kaiser

Kaiser is a freelance writer and planner in Denver.

Meghan Stromberg is *Planning*'s news editor. Please send information about possible news stories to mstromberg@planning.org, or call her at 312-786-6385.

City Walk: Los Angeles

Close Slider

Southern California Cultural Journalism

Los Angeles

April 2, 2013

Fallen Fruit and the 'Thin End of the Wedge'

Janet Owen Driggs

Weekly Vote Winner

Artbound's editorial team has reviewed and rated the most compelling weekly articles. After putting two articles up for a vote, the audience chose this article to be made into a short-format documentary.

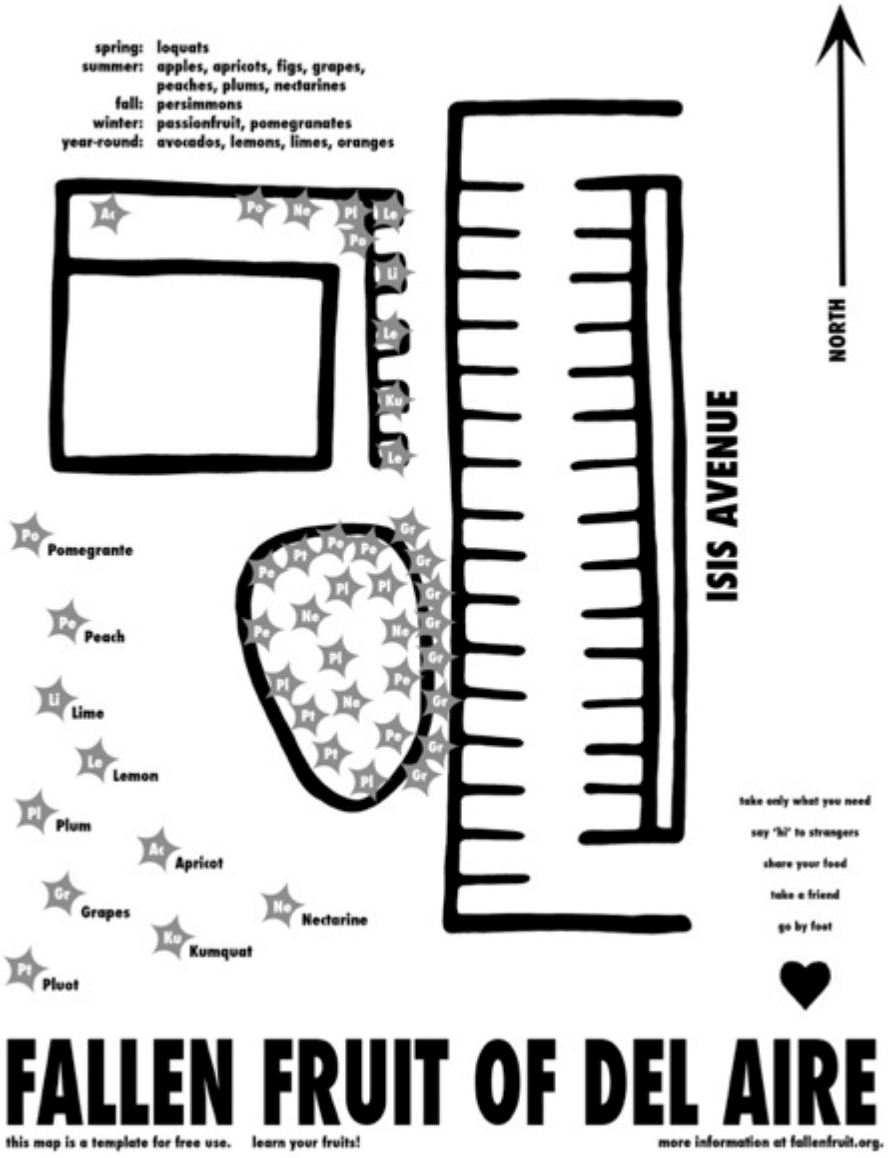
Sounding like the name of a particularly insidious invasive species, the phrase "creeping normalcy" beds down well with such other descriptions of incremental change as "the slippery slope," and "the camel's nose." Sniffing with disapproval, they all imply that the changes to come will ultimately be dramatic, would cause uproar if they happened more quickly, but will, almost unnoticed, slowly become the norm.

Thus it is that common usage positions slow change as a dangerous thing. However, two recent events in L.A. suggest that a new phrase is called for; something with which to identify an action that precipitates beneficial change over time, something that celebrates "the thin end of the wedge."

My Saturday, January 5 began in Del Aire, an unincorporated South Bay community located between Hawthorne and El Segundo, at a dedication ceremony for the Del Aire Park Community Center and Public Fruit Orchard. The LA County Arts Commission (LACAC) commissioned *The Del Aire Fruit Park*, to which I contributed as an advisor, from Fallen Fruit, a collaboration between David Burns, Matias Viegener, and Austin Young. LACAC describes this work of civic art as "an urban orchard that will be sustained, nurtured and harvested by the public." It is also, as Fallen Fruit's striking poster states: The First Public Fruit Park In California.

The early afternoon found me in Soledad Corona's Lincoln Heights front yard, where about 50 people gathered to celebrate her return home after a fraudulent foreclosure and eviction. The party, complete with hot dogs for all and a bouncy castle, was a "thank you" to Occupy Fights Foreclosures (OFF) and everyone else who had supported the Corona family, and a way to spread the word about OFF's willingness to help people in foreclosure crisis.

With one event being an apparent expression of political status quo and the other of grassroots activism, these two occasions may well appear to share little more than free food, happy people, and a blue sky. But the appearance of things is deceptive here, for both celebrate actions that are truly radical.



Fallen Fruit of Del Aire Park, the fruit map. | Image: Courtesy of Fallen Fruit.

To be "radical," says the Oxford English Dictionary, is "to act upon what is essential or fundamental," to form "a root basis or foundation," and to be "thorough." The word became synonymous with a thrust for electoral reform in the late eighteenth century, but it's meaning has since expanded to denote the impetus to change a society's underlying value system, as well as the structures and relations to which that value system gives rise.

By embracing direct democracy and direct action, rejecting existing political institutions, and refusing to issue the formal demands that would bestow validity on those institutions, the Occupy movement manifests a clear relationship to radicality. The radical nature of *The Del Aire Fruit Park* - a County

commission strongly supported by Supervisor Mark Ridley-Thomas, made manifest by the L.A. County Department of Parks and Recreation (LACDPR), and blessed at its dedication by the Catholic Church - requires a little more unlocking.

The key lies somewhere in the project's status as the "First" public fruit park in California, and a recent statement from Fallen Fruit's David Burns: "I want Fallen Fruit to change the law in the State of California, so that...no one in the future can go hungry."

Fruit trees are neither sanctioned for planting in L.A.'s public parks and streets, nor for planting in public land in most cities in the United States. According to LACAC's due diligence and Fallen Fruit's eight-years of research, there is not a definitive law to which one can point here. Certainly there are California State and L.A. laws that regulate produce grown for sale, but public trees - which are by definition owned by us all, and which give of their fruit at no charge - are not specifically addressed.

The legal basis for the prohibition lies instead with the doctrine of attractive nuisance: a tort in common law by which a landowner may be liable for injuries inflicted on an "infant trespasser" by an object or condition appealing to a child, when the landowner could reasonably foresee the potential danger. Examples include: an unfenced swimming pool, a cute-looking dog with a propensity to bite, and, apparently, a fruit-laden tree.

It is beyond question that children must be protected from harm. But the question must also be asked: how much hazard is there, really, in a fruit tree?

A message for the public, Del Aire Park. | Photo: Courtesy of Janet Owen Driggs.

Does a grapefruit offer more danger than, say, the silk floss tree (*ceiba speciasa*), a thorny-trunked kapok-relative that is listed in the City's official "Tree Palette For Inland Parks?" (The silk floss can drop its inedible, papaya-sized fruits from a height of up to fifty feet.) And, if fruit trees are indeed so hazardous, why is it that the Bureau of Street Services for LA City includes bronze loquat, wild plum, date palm, and the olive in its "list of trees...acceptable for planting in public right-of-way?"

In discussing these anomalies with Joe Mendoza - the LACDRP Deputy Director who worked closely with LACAC and Fallen Fruit to implement the *Fruit Park* - a possible reason emerged: unlike the familiar fruit of a citrus or avocado tree, children may not recognize the City-listed items as edible or "attractive," and would be unlikely therefore to endanger themselves by eating the fruit or climbing a tree to pick it.

Which itself begs another question, is a fruit tree inherently more dangerous than any other public tree with an enticingly low branch, or, for that matter, any civic wall that a 5 year-old can mount?

Public fruit trees raise objections. The comments provoked by Amy Biegelsen's article Should Public Trees Bear Fruit? and Twilight Greenaway's Graft Punk, for example, suggest that concern centers round fruit harvesting and tree maintenance. (Will the fruit be left to fall, damaging people and vehicles? Will it rot, encouraging insects and vermin? Could the trees become infected with pathogens and parasites? Who will maintain them?)

In the case of *The Del Aire Fruit Park*, which will be "sustained, nurtured and harvested by the public," many of these questions are already answered. For Joe Mendoza however, he says "the jury is out." While waiting to see how well the trees thrive, his thoughts also turn to harvesting: Will people know when to pick the fruit? Will they want it? Will they know what to do with it?

Mendoza remembers eating fruit from local trees as a boy, but now, he says, "there's a disconnect." His assertion is supported by an array of studies. To mention just three: In 2010 a class of West Virginia six-year olds could not identify a raw tomato. A 2011 report found that 27% of Australian adolescents think that yogurt is a plant product. And a 2012 survey of 2000 U.K. adults found that almost one in three does not know how common fruit and vegetables are grown.

Fallen Fruit began in 2004 in response to a Journal of Aesthetics & Protest call for generative solutions to socio-political issues. In part a response to the aforementioned context of disconnect, in part an effort to couple urban waste and urban need, and in part the result of a desire "to be in a fantastical California resembling the Garden of Eden", the first Fallen Fruit project mapped all of the fruit available to pick from the public rights-of-way in Silver Lake, home to all three collaborators. Shortly thereafter the group began making self-described propaganda materials about "public fruit", hosting ever-popular jam-making sessions, distributing trees for planting, and conducting nocturnal public fruit tours. Commenting on the tours in a 2006 Cabinet article, Matias Viegener notes: "pedestrians are often reluctant to pick food within their grasp because they perceive it to be private property."

An 'Orchard Run' orange crate label, circa 1900-1910.

By identifying the Garden of Eden as an inspiration for their work, Fallen Fruit puts a collective finger on Western mythology's most visionary image of peaceful abundance. They also indicate a potent driver for both the context of disconnect and the prevalent culture of private ownership: the Recovery Narrative. Named by historian and philosopher Carolyn Merchant to describe "the overarching story of modern history," the Recovery Narrative is a tale of redemption in which humanity, having Fallen from Grace after eating the Forbidden Fruit, strives to Master Nature and thereby regain Eden.

California's relationship to the Garden of Eden has a long history. Conflating spiritual progress and literal progression, the nineteenth century concept of Manifest Destiny gave Western expansionism the force of a moral obligation, and positioned California, the Country's western edge, as the end point of a redemptive quest. The state's long growing season, and the real estate-driven advertising campaigns that promoted it in Edenic terms, only enhanced California's perceived role as a second Paradise.

In "Reinventing Eden: The Fate of Nature in Western Culture," Carolyn Merchant describes how early 20th century adverts for Californian produce "featured fruits, such as those found in the Garden of

Eden, waiting invitingly to be plucked by anyone strolling past." Unlike in the biblical Eden though, where one presumes fruit was to be had for the taking, California's bounty cannot be simply "plucked".

As Merchant explains, the overarching theme of the Recovery Narrative is the transition from "natural" to "civilized." "Wild lands and wild people are to be subdued." Human labor will "redeem the souls of men and women," and cultivation will redeem the wilderness. Agriculture and commerce must replace hunting and gathering. In other words, food that is merely gathered is not yet "civilized." It needs to be subdued, even purified, by labor and individual ownership.

I am reminded of an image from Disney's "Snow White" -- the poisoned apple, proffered in a gnarled, sharp-nailed hand. The fruit looks red and enticing, but the watching audience knows that it is deadly.

As David Burns told me: "the West was won by agriculture and mythology." We are still in their thrall. Like Snow White's lethal apple, fruit for which one has not labored - either through direct cultivation or by earning the money for purchase - has absorbed a cauldron of poisons.

Planting day at the Fruit Park. | Photo: Courtesy of Fallen Fruit.

Letitia Fernandez Ivins, the LACAC Assistant Director of Civic Art who drove the weaving of cultural, environmental, and public health issues that resulted in Fallen Fruit's invitation to design a work for Del Aire, described the *Fruit Park* recently as "a calculated risk." Once the various stakeholders were persuaded that "fruit is safe" however, and would not create a nuisance, the attitude became "let's take a risk together."

I very much hope that the *The Del Aire Fruit Park* succeeds. That the trees and vines flourish, that 12 months of outreach has grown deep enough roots for public participation to thrive, that public health and wellbeing outcomes accrue, and that the "calculated risk" pays off for all concerned.

The "First Public Fruit Park In California" has already demonstrated that civic art can be a process of planning that creates an exception to civic policy. Its long-term success will facilitate the planting of other orchards in L.A.'s public spaces, and possibly in the many other cities where a wave of urban agriculture is drumming on the rocks of public policy. Might it also contribute to a change in State law? A lawyer friend tells me that the idea of making public fruit trees an exception to the Attractive Nuisance doctrine is "challenging" but certainly "not ludicrous."

The Del Aire Fruit Park is more than just a policy-oriented "camel's nose" though, welcome and significant as that is. Instead, and in addition, by planting an orchard in public space and inviting us all to tend and gather what is growing, the *Fruit Park* proposes that Edenic abundance already exists; no plastic-wrapped redemption required.

Refusing the overarching trajectory of modern history? De-poisoning fruit that is apparently owned by no one because it is owned by us all? Offering the experience of a non-commodified relationship to the natural world? Now that's what I call radical.

Planting day at the Fruit Park. | Photo: Courtesy of Fallen Fruit.

Dig this story? Vote by hitting the Facebook like button above and tweet it out, and it could be turned into a short video documentary. Also, follow Artbound on Facebook and Twitter.

About the Author

Janet Owen Driggs is a writer, artist and curator who, along with Matthew Owen Driggs, frequently participates in the collective identity “Owen Driggs.” Her interests focus on those physical sites where one meets the other, which ... MORE

Previous Post

Los Angeles + Multi-Disciplinary

MOCAtv: Kipper Kids

Next Post

Los Angeles + Performance

From Inglewood to the Main Stage: The Evolution of Matthew Rushing

RELATED ENTRIES

Feb 4, 2013

Vote Head-to-Head: The Del Aire Fruit Park vs. S.A. Griffin's Poetry Bomb

by Artbound

8.0 Appendix:

E. Supporting Journal Articles:

-Community Harmony and Blending

-Vandalism Reduction

Journal of Leisure Research
2004, Vol. 36, No. 3, pp. 336-355

Leisure Spaces as Potential Sites for Interracial Interaction: Community Gardens in Urban Areas

Kimberly J. Shinew
Department of Leisure Studies
University of Illinois at Urbana-Champaign
Troy D. Glover and Diana C. Parry
Department of Recreation & Leisure Studies
University of Waterloo

Finding ways to alleviate racial tension is an important societal issue. A well-established strategy is to increase positive contact between members of different racial groups, which is hypothesized to lead to improved racial attitudes if the contact takes place under certain conditions. Bridging racial divides, however, has historically been a difficult process. Leisure settings can be ideal environments for interracial interaction to occur due to qualities of free choice and self-determination. This study focuses on a specific type of leisure environment, community gardens located in urban settings. More specifically, the purpose of the study was to examine whether urban community gardens are perceived as spaces in which people of different races can successfully integrate. The study also sought to examine race and its relationship to perceptions, motivations, and benefits of community gardening. The study focused on African American and White gardeners in St. Louis.

KEYWORDS: *Leisure settings, community gardens, race, interracial interaction.*

Introduction

Race relations between Black and White Americans continue to be a serious issue in today's society and some believe after decades of struggle, the racial climate between these two groups has not significantly improved (Kohatsu, Dulay, Lam, Concepcion, Perez, Lopez, & Euler, 2000). Recent events such as racially related deaths, police brutality, and anti-affirmative action proposals have augmented an increasingly visible chasm between the two groups (Kohatsu et al., 2000). Despite these tensions, many White Americans continue to under-estimate the existence of racial disparities (Dovidio, Gaertner, Kawakami, & Hodson, 2002) and endorse the idea that America is a country of equal opportunity for all racial groups (Robinson & Ginter, 1999; Sears, 1998). For example, between 40% and 60% of Whites responding to a recent survey (depending on the question asked) viewed the average

Address correspondence to: Kim Shinew, Department of Leisure Studies, University of Illinois, 104 Huff Hall, 1206 South Fourth Street, Champaign, IL 61820. Phone: 217-333-4410; Fax: 217-244.1935; Email: *shinew@uiuc.edu.*

Author note: Portions of this paper were presented at the 10th Canadian Congress in Edmonton, Alberta. The University of Illinois Research Board supported the research. The authors wish to thank Gateway Greening for their cooperation with the study.

Black American in the United States as faring about as well, and often better, than the average White American (Morin, 2001). Conversely, Dovidio, Gaertner, Kawakami, and Hodson (2002) reported in a recent public poll (Gallup, 2001) that nearly half of African Americans (47%) indicated they were treated unfairly in their own community during the previous month. Further, Sigelman and Welch (1993) found in their examination of interracial contact and levels of hostility that 26% of African Americans, compared to only 5% of Whites, estimated most White Americans share the same racial attitudes as the Ku Klux Klan. More generally, Whites see racism as the providence of "only a tiny portion of the public," whereas African Americans perceive it as "rampant." "Simply stated, Blacks are much more likely than Whites to perceive black-white relations as problematic." (Sigelman & Welch, 1993, p. 792).

Given the magnitudes and persistence of these different views, it is not surprising that current race relations between Black and Whites Americans in the United States could be characterized by racial distance and racial distrust. Given their past treatment, many Black Americans have a deep distrust for the police, the legal system, and "about a third are overtly distrustful of Whites in general" (Dovidio et al., 2002, p. 89). Similarly, Sigelman, Bledsoe, Welch, and Combs (1996) described the racial climate between Blacks and Whites as "hostile and unequal" (p. 1306). Current prejudices shape the perceptions of White and Black Americans in ways that hinder communication and trust, which is critical to developing long-term positive interracial relationships (Dovidio et al., 2002). Further, the different perspectives and experiences of White and Black Americans that can occur on a daily basis can have cumulative effects over time, and contribute to the climate of miscommunication, misperceptions, and distrust (Dovidio et al., 2002; Feagin & Sikes, 1994).

Given these implications, finding ways to improve race relations is an important societal issue. One approach often suggested in the literature is to increase positive contact between members of different racial groups, a strategy hypothesized to lead to improved attitudes and behaviors. Contact theory posits that contact, especially close and sustained contact, with members of different racial groups promotes positive, unprejudiced attitudes (Allport, 1954; Williams, 1964). Proponents of contact theory argue interracial contact provides direct information regarding the values, life-styles, and behaviors of other racial groups. In essence, the theory argues if you bring people together, their contact with one another will demonstrate their negative attitudes are unjustified, which will lead to positive attitudinal and behavioral change. The theory has been supported in the literature (Aberbach & Walker, 1973; Robinson, 1980; Sigelman et al., 1996; Sigelman & Welch, 1993), particularly when people interact under conditions of relative equality (Jackman & Crane, 1986). The contact theory operates under the assumption that attitudes and behaviors are causally connected in that if attitudes are changed, behavioral change will follow, a linkage that has been ques-

tioned in the literature (Clark, 1992; Jackman & Crane, 1986). Nevertheless, both attitudes and behaviors are instrumental in race relations, and thus how they form and change must be better understood.

Bridging racial divides, however, has historically been a difficult process and hence any effort to encourage positive interracial interaction is generally viewed as a favorable initiative. Leisure settings can be ideal environments for interracial interaction to occur due to qualities of free choice and self-determination, which are important because they give individuals the opportunity to freely choose their companions without the restrictions that often exist in work and other formal settings. Thus, interracial interactions that occur in leisure settings have the potential to be more genuine and sincere as compared to the more obligatory interactions that take place in formal settings. However conversely, because no laws have been enacted to ensure racial integration of leisure spaces (Philipp, 2000), they are often racially demarcated (Floyd & Shinew, 1999; Gobster, 2002; Johnson, Bowker, English, & Worthen, 1998; Lee, 1972). For example, Lee (1972) theorized that people often choose settings and activities that are part of a shared scheme of order which exists between people of similar racial identities, allowing certain norms to be taken for granted and resulting in distinct patterns of participation and/or separate leisure settings. This proposition is consistent with Gobster's (2002) finding regarding interracial contact in a Chicago park. He concluded that very little interaction took place between racial groups and a few users reported conflicts occurred when park users tempted to cross-racial boundaries.

This study focuses on a specific type of leisure environment, community gardens located in urban settings. More specifically, the purpose of this study was to examine whether urban community gardens are perceived as spaces in which people of different races can successfully integrate. The study also sought to examine race and its relationship to perceptions, motivations, and benefits of community gardening. The study focused on African Americans and White gardeners in St. Louis and was guided by contact theory (Allport, 1954; Williams, 1964).

Community Gardens

Participation in outdoor gardening has increased in recent years, and projections indicate this trend will likely continue due to the aging population, and the easy access to and low cost of the activity (Kelly & Warnick, 1999). Similarly, community gardening has become increasingly popular in urban areas. Community gardens are often grassroots initiatives aimed at revitalizing low-to-moderate income neighborhoods in urban settings (Landman, 1993; Linn, 1999; Pottharst, 1995). By converting urban spaces into gardens, neighborhood liabilities are transformed into tangible (e.g., fresh produce, sitting gardens for recreation) and intangible (e.g., community cooperation, citizen empowerment) neighborhood assets. Community gardens are often intended to improve the appearance of neighborhoods, reflect the

pride of the participants, and become community focal points and catalysts for neighborhood improvement. Moreover, they serve as a setting for many leisure-related activities.

There are numerous benefits associated with community gardening. As its name suggests, a community garden is meant to foster a sense of community among the residents of the neighborhood in which it is located. In this regard, the garden intermixes residents into a denser network of relations than urban roles ordinarily allow (Glover, 2003). Research indicates that urban life offers special challenges to the process of community building because, although residents have contact with a variety of people during the course of their urban experiences, they generally choose to associate with a small group of people (Lyon, 1999). Conversely, community gardens act as "neighborhood commons" (Linn, 1999) that build social capital by encouraging neighbors to work together and socialize (Glover, in press). While community gardening provides an opportunity for residents to "bond" with others of their own group, it is purported to also serve as a "bridge" among diverse groups (Langhout, et al., 1999; Swezey, 1996).

Because community gardening often occurs in diverse neighborhoods, the "bridging" function of the garden has the potential to be particularly beneficial. By working towards the construction and maintenance of a community garden, residents who belong to different racial, ethnic, and class-based groups address collective concerns, such as crime and urban decline, together (Glover, in press; Linn, 1999). Under this premise, the garden is an inclusive grassroots endeavor that depends upon the collaborative efforts of diverse residents to succeed (Glover, 2003). Presumably, the garden fosters greater social trust among diverse groups, forms norms of reciprocity, and strengthens social networks within the neighborhood.

Residents have a variety of motivations for becoming involved in community gardens. Some residents are primarily interested in growing food and consider the garden an economic resource for their families. For many, the food is an important benefit, but their primary motive may be to have a safe environment for outdoor activities. Others may be motivated by a love of gardening, and still others may be motivated primarily by a sense of wanting to improve the neighborhood by bringing some sense of nature into the area (Schmelzkopf, 1996). Oftentimes, residents' motives may be mixed, or even misunderstood among neighbors. Anderson (1990), for instance, described the skepticism demonstrated by African Americans with respect to the motives of their White counterparts who were attempting to "gentrify" their neighborhood. Perhaps not surprisingly, community gardening has been linked to the gentrification of urban neighborhoods (Linn, 1999). Thus, it is conceivable, therefore, that some residents, even though they might participate as gardeners, perceive the outcomes of community gardening differently, maybe even more negatively, than others and that such differences might be a reflection of racial tension. Similarly, Waliczek, Mattson, and Zajicek (1996) conducted a nationwide survey of community gardeners that questioned individuals on the importance of community gardens related

to quality of life perceptions. The results indicated several racial differences regarding the benefits and motivations associated with community gardening.

Although the popular (Black, 1998; Kellum, 1997; Swezey, 1996) and academic (Langhout, et al., 1999; Peters, et al., 1999; Schmelzkopf, 1995) presses proclaim community gardens are effective sources for bringing together racially diverse groups, little empirical work has been conducted to test this assumption. In essence, it has been documented that community gardens offer places where people can gather, network, and identify as residents of a neighborhood (Linn, 1999; Moncrief & Langsenkamp, 1976; Schrieber, 1997), but the interracial bridging that occurs in such settings remains understudied. Given that racial segregation continues to be a problem in society, the potential for interracial bonding in a neighborhood setting is noteworthy and warrants attention.

Residential Patterns and Interracial Interaction

Despite legislative attempts, residential racial concentration has declined very little in the United States. In many metropolitan areas, including St. Louis, at least 80% of African-Americans would have to relocate to achieve a desegregated residential pattern (Massey & Denton, 1993, p. 64). Moreover, Massey and Denton reported that the majority of African Americans do not want to live in "all-Black" neighborhoods; most prefer roughly "half-Black" neighborhoods (p. 89). Similarly, when Sigelman et al., (1996) asked in a 1992 survey whether people would rather live in a neighborhood that is "all black, mostly black, half black and half white, mostly white, or all white," 44% of White Americans answered "mostly white" and 30% said "all white"; whereas 81% of Black Americans answered "half black and half white." Thus, the high concentrations of many Black neighborhoods cannot be explained by the preferences of African Americans. Finally, Sigelman's et al. (1996) found that the frequency of close personal contact (i.e., having neighbors in one's home) between Black and White American neighbors has undergone little change. Commenting on this trend, they noted interracial contact was "Rare in the late 1960s, it remains rare today" (p. 1313).

Residential racial segregation makes bridging between racial groups difficult. In a description of the many "wrongs" of residential segregation, Young (2000) argued "the social and spatial differentiation segregation produces seriously impedes political communication among segregated groups, thus making it difficult to address the wrongs of segregation through democratic political action" (p. 205). She argued that segregation exacerbates prejudicial attitudes that group members may have towards others, making it difficult to engage in productive debate and discussion. Segregation causes groups to have different everyday experiences that may be culturally distinct, and because segregation impedes sensitivity and awareness of these cultural differences, the groups are likely to misunderstand and misrepresent one another. For these reasons, any effort to integrate a neighborhood or bridge its residents through a common leisure activity is presumably beneficial.

Even in fairly segregated neighborhoods, there are some physical sites, such as community gardens, where interracial interaction could occur. As suggested in the literature, physical propinquity is a precursor to positive interracial social interaction. Simply stated, primary relationships, such as friendships, are more likely to form among individuals who have contact with one another (Berscheid & Walster, 1969; Festinger, Schacheter, & Back, 1950; Sigelman et al., 1996), although obviously physical contact does not automatically lead to positive relationships. Nevertheless, racially integrated community gardens at least provide the opportunity for interracial friendships to develop. Accordingly, as neighbors become integrated by race, we would expect some convergence in values, norms, and lifestyles (Bourdieu, 1977, 1984). Understanding and facilitating positive interracial contact is extremely important if we hope to improve race relations.

Contact Theory

Contact theory (Allport, 1954; Williams, 1964) is one of the most prominent theories in the prejudice literature (Jackman & Crane, 1986). It asserts the cleavage between the social lives of White and Black Americans promotes Whites' misconceptions and ignorance about Blacks. This ignorance feeds "erroneous, oversimplified, negative beliefs about blacks, which in turn engender feelings of hostility and discriminatory social and political predispositions towards blacks" (Jackman & Crane, 1996, p. 460). Advocates of the theory believe when information is gained through direct and long-term contact, the information is apt to be relatively accurate and largely favorable in content. This positive first-hand information may then be generalized into a positive perception of the group as a whole. Moreover, interracial contact, especially when it occurs early in life, enhances the likelihood of close cross-race friendships as adults (Ellison & Powers, 1994).

Although several decades of empirical research have produced mixed findings, there is ample evidence that interracial contact can have beneficial effects. The research in this area, however, has received some criticism, notably that there is a dearth of "real-world" studies about the attitudinal impact of interracial contact. Many of the empirical studies have been conducted within carefully orchestrated settings, including racially integrated housing projects, schools, hospitals, military institutions, and laboratory experiments (Ellison & Powers, 1994), rather than in typical neighborhoods, churches, and workplaces. Thus, some critics have asserted that interracial contact may promote positive racial attitudes only under ideal conditions. Based on previous empirical research, Jackman and Crane (1986) summarized the four conditions under which contact should occur:

> First, the contact should not take place within a competitive context. Second, the contact must be sustained rather than episodic. Third, the contact must be personal, informal, and one-to-one. Fourth, the contact should have the approval of any relevant authorities. Finally, the setting in which the contact occurs must confer equal status of both parties rather than duplicate the racial status differential. (p. 461)

Likewise, Cook (1985) concluded that intergroup contact, under conditions similar to those specified by Jackman and Crane, could induce friendly interracial behavior and promote cross-racial respect and liking. Wilner, Walkley, and Cook (1955) observed in their seminal study of racial integration in low-income public housing projects "the more intimate the contact, the more favorable the attitude-without exception" (p. 99). However, most of the time these conditions do not exist, and much of the interracial interaction that does occur is considered insufficient to "remove whites' blinders and allow them to perceive blacks in a fresh light" (Jackman & Crane, 1986, p. 461). The question then arises as to whether limited contact that does not occur under the "right conditions" is enough to positively affect racial attitudes. Interestingly, studies have reached distinctly different conclusions regarding the value of the contact hypothesis. Jackman and Crane (1986) recommended abandoning research on the contact theory in favor of a framework that focuses more directly on racial differentials in power and status, whereas Sigelman and Welch (1993) presented findings supporting the basic premise of the contact hypothesis, particularly as it relates to the racial attitudes of Whites, in that interracial friendships increased Whites' general desire for more interracial interaction. Moreover, "on no occasion" did they witness a "worst-case scenario" of interracial contact leading to more negative racial attitudes (p. 793). Emerson, Kimbro and Yancey (2002) supported an "extended version" of the contact theory, one that expands its focus to include social ties and other behaviors, and found prior racial contact had a significant and independent effect on the racial diversity of respondents' contemporary social groups. In other words, those who had experienced prior interracial contact were more likely to have racially diverse social groups and friendship circles.

Many of the conditions of the contact theory can be applied to community gardening, and thus it could be argued this type of leisure setting has the potential to facilitate positive interracial interaction. As stated earlier, although the popular and academic presses have proclaimed that community gardens are effective sources for bringing together racially diverse groups, no empirical work has been conducted to test this assumption. Moreover, previous research (Glover, in press) has indicated that gardeners may perceive the outcomes and benefits of community gardening differently, and such differences might be a reflection of racial tensions. To assess whether the benefits of community gardening are shared collectively by all of the participants, a detailed focus on race and its relationship to perceptions of community gardening is needed. Thus, the purpose of this study was to examine whether urban community gardening is perceived as a space in which Black and White residents successfully bridge. The study also sought to examine race and its relationship to perceptions, motivations, and benefits of community gardening.

Methods and Results

The study was conducted in partnership with Gateway Greening, a not-for-profit organization that promotes urban gardening in low-to-moderate

income neighborhoods in the Greater St. Louis region. Established in 1984, Gateway Greening has provided tools, training, and material resources to over 150 neighborhood associations with the intent to build or maintain community gardens.

The subjects for the study were gardeners associated with Gateway Greening. Community gardeners were selected randomly from a database maintained by Gateway Greening and asked to participate in a telephone interview. Prior to selection, the gardeners were stratified by zip code to achieve a sample with an adequate representation of Black and White Americans. Telephone interviews, which lasted approximately 25 to 30 minutes, were selected as an appropriate method of data collection given the nature of the research questions. Two research assistants were hired to conduct the interviews. The research assistants reported very few gardeners (less than 5) declined to participate in the telephone interviews. In fact, many of the gardeners were anxious to provide additional information about their gardens, and agreed to participate in follow-up interviews that took place at a later date. The information collected from the follow-up interviews is not included in the analyses that follow.

The telephone interviews were designed to generate information on a wide range of topics including psychological identification with a group (Mael & Tetrick, 1992) and sense of community (Chavis, Hogge, McMillan, & Wandersman, 1986). The actual interview questions were modified from these standardized scales. The interviews also included questions about the gardeners' motivations for involvement, and the socialization, including interracial socialization, that was occurring as a result of the community gardens, and the racial composition of their neighborhoods and gardens.

Telephone interviews were completed with 195 community gardeners, although the analyses for this paper were limited exclusively to the 52 Black Americans and 128 White Americans who participated. A total of 8 people of other races (3 Asian Americans, 1 Hispanic/Latino/Mexican and 4 "other) were dropped from the analyses, and the 7 people did not want to give their race were also excluded from the analyses. Most were female (71%) and the majority (67%) had completed college. Many (48%) worked full-time, while others worked part-time (15%) or were retired (23%). Most (61%) indicated their household income last year was above $35,000. The two racial groups statistically differed on two demographic variables, educational attainment ($X^2 = 34.00$; $p < .01$) and income ($X^2 = 9.39$; $p < .05$). African Americans reported lower levels of both education and income when compared to their White counterparts.

To assess the racial composition of the neighborhoods and the community gardens, we asked participants to respond to the questions, "Out of 100%, what percentage of your *neighbors* are . . . . ," and "Out of 100%, what percentage of the people involved in your *garden* are . . ." Response options for both questions were "Asians," "Hispanic, Latino, or Mexican," "African American," and "White." Their responses were categorized by race and are displayed in Table 1. The percentages for Asian and Hispanic/Latino/Mexican were fairly low for both questions. As supported in the literature, African

TABLE 1
Racial Composition of Neighborhoods and Community Gardens by Race

Racial Groups	Means Black Americans (n = 53)	White Americans (n = 128)
Out of 100%, what percentage of your ***neighborhood*** *is. . .*		
Asian	2.6	4.5
Hispanic/Latino/Mexican	1.5	4.6
African American	79.3	42.9
White	16.2	48.6
Out of 100%, what percentage of your ***garden*** *is. . .*		
Asian	1.3	1.9
Hispanic/Latino/Mexican	0.4	1.6
African American	73.7	23.7
White	23.4	72.4

Americans indicated they lived in predominantly Black neighborhoods (80% black) whereas Whites reported living in mixed neighborhoods (49% White and 43% Black). The results for the racial composition of the community gardens were interesting in that they almost mirrored one another. African Americans reported that 73.7% of the people involved in their gardens were Black, and Whites indicated that 72.4% of their gardeners were White.

For most of the analyses, comparisons were made between the two racial groups. However, given one of the goals of the study, comparisons were also made by level of interracial contact in the community gardens. Respondents were divided into two contact groups (*low* interracial contact and *high* interracial contact) based on their response to the question, "Out of 100%, what percentage of the people involved in your garden are . . ." For Whites, the low interracial contact group (n = 70) was comprised of gardeners who indicated that *20% or less* of the people involved in their garden were Black whereas the high interracial contact group (n = 47) consisted of gardeners who reported that *more than 20%* of the gardeners were Black. The low interracial contact group for Blacks (n = 30) consisted of gardeners who indicated that *20% or less* of those involved with their garden were White, while the high interracial contact group (n = 20) were those who reported that *more than 20%* of the gardeners where White. The 20% mark was selected after carefully examining the data, and matches the percentage Floyd and Shinew (1999) used to represent "racially mixed communities."

To assess the level of trust gardeners felt towards the people in their neighborhood, as well as people of different races, they were asked to respond to the statement, "Since my involvement at my community garden, I trust the people in my neighborhood." A five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree) was used. This question was followed

by, "I trust more of my [*Hispanic/Latino/Mexican, African American, White, Asian*] neighbors." If they had indicated in a previous question that the percentage of one of these groups in their neighborhood was fairly small, the question was not asked for that particular group. The findings are presented in Table 2. The two racial groups did not respond differently to these questions. Overall, their responses were fairly neutral, indicating they did not necessary trust or distrust their neighbors, regardless of race. Comparisons were also made between the two contact groups, and again, no significant differences were found.

To get a sense of how involved the participants were with their garden, they were asked, "During the gardening season, how many hours in a typical week do you spend in your garden?" This question was asked to assess how much opportunity they would have to interact with other gardeners. The two racial groups reported significantly different time commitments ($t = 2.46$; $p < .05$); Black gardeners spent a mean of 6.40 hours per week in their gardens compared to Whites' mean of 4.15 hours. However, there was no significant difference in their response to the question, "In a typical week, about how many times do you talk or visit with other community gardeners from your garden, either face-to-face or over the phone?" The means for both groups were between two to three times weekly.

Respondents were asked to react to four statements regarding their psychological identification with their garden. These questions were adapted from the Identification with a Psychological Group (IDPG) Scale (Mael & Tetrick, 1992) that measures shared experiences and shared characteristics of a group. A five point Likert-type scale was used as the response format (1 = strongly disagree to 5 = strongly agree). Items included: "When someone

TABLE 2
Reported Levels of Trust by Race

Items	Means(SD)* Black Americans	White Americans
Trust people in my neighborhood	3.37(1.03)	3.52(.83)
Trust in African American neighbors	3.08(.98)	3.23(.93)
Trust in White neighbors	3.28(.94)	3.22(.86)
	Means(SD)	
	Low IR Contact	High IR Contact
Trust people in my neighborhood	3.48(.86)	3.40(.98)
Trust in African American neighbors	3.17(.93)	3.10(.98)
Trust in White neighbors	3.20(.87)	3.24(.97)

*Note: Means are based on a five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree).

criticizes my community garden, it feels like a personal insult," "I'm very interested in what others think about my community garden," "When I talk about my community garden, I usually say 'our garden' rather than 'their garden,'" "I am like the people who use my community garden." These items are part of the Shared Experience subscale of the IDPG. MANOVA results indicated there was not a significant difference between the two racial groups on the items. Both groups tended to agree with the statement that they refer to the garden as "our garden" rather than "their garden" (Blacks = 4.33; Whites = 4.38). Their responses were fairly neutral when asked if someone's criticism of the community garden felt like a personal insult (Blacks = 3.37; Whites = 3.34) and whether they felt they were like the people who use their garden (Blacks = 3.88; Whites = 3.55).

An adapted Sense of Community Index (SCI) (Chavis et al., 1986) was used to reflect respondents' identification with their particular neighborhoods (i.e., It is important to me to live in this neighborhood). MANOVA results indicated there was no significant difference between the two racial groups' sense of community. Most gardeners reported a fairly strong sense of community in that they indicated they felt their neighborhood was a good place to live, felt comfortable in their neighborhood, and expected to live there a long time. A summary of the results is presented in Table 3.

TABLE 3
Gardeners' Sense of Community

Items	Means(SD)*	
	Black Americans	White Americans
I think my neighborhood is a good place to live	4.20(.66)	4.27(.77)
My neighbors and I want the same thing from our neighborhood	3.82(.78)	3.77(.89)
I can recognize most of the people who live in my neighborhood	3.91(1.04)	3.55(1.07)
Most neighbors know me	3.87(1.08)	3.70(1.08)
I care about what other neighbors think of what I do	3.60(1.16)	3.53(1.14)
I have influence over what this neighborhood is like	3.91(1.08)	4.14(.90)
If there is a problem in this neighborhood, the people who live here get it solved	3.80(.84)	3.75(.88)
It is important to me to live in this neighborhood	4.04(.85)	4.04(.83)
People in this neighborhood get along with one another	3.82(.81)	3.86(.87)
I feel comfortable in this neighborhood	4.24(.61)	4.15(.78)
I expect to live in this neighborhood a long time	4.13(1.01)	3.94(1.08)

*Note: Means are based on a five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree).

A series of questions were asked regarding sense of belonging to assess how connected respondents felt to their garden and community. More specifically, they were asked to indicate if they "felt connected to" their "neighborhood," "St. Louis", their "community garden," and their "racial group." A dichotomous response format (yes/no) was utilized and in each category, an overwhelming majority responded favorably to these questions. In terms of their neighborhood, 98% of Blacks and 93% of Whites reported they felt connected, and similar results were found for their connection to St. Louis. When asked about their community garden, 98% of Blacks and 94% of Whites responded favorably. The only category where the two groups statistically differed was in their connection to their racial group; Blacks were more likely to indicate a connection with their racial group (Blacks = 92% versus Whites = 76%; $X^2 = 7.38$, $p < .05$).

Gardeners were asked to respond to several questions regarding their motivations for getting involved in community gardening. The items were based on previous research (Schmelzkopf, 1996; Waliczek et al., 1996) regarding gardeners' motivations for involvement. MANOVA results ($F = 3.40$; $p = .002$) indicated there was a significant difference between the two groups. Follow-up univariate analyses indicated both groups responded most favorably to the following motivations: "improve my neighborhood," "enjoy nature," and "relax." After the Bonferroni adjustment, the two groups differed on only one item; Black gardeners were significantly more motivated to "provide food for others." The findings are displayed in Table 4.

Respondents were asked about the socializing associated with community gardening, including the interracial interactions that occurred in the garden. The items were inspired by Putnam (2000) and the Social Capital Community Benchmark Survey (Saguaro Seminar, 2001). MANOVA results indicated there was not a significant difference between the two racial groups

TABLE 4
Gardeners' Motivation for Getting Involved with their Community Gardens

	Means (SD)#	
Motivations	Black Americans	White Americans
I garden to. . .		
Meet my neighbors	2.98(1.18)	2.78(1.04)
Improve my neighborhood	4.06(.83)	4.04(1.88)
Enjoy nature	4.37(.53)	4.26(.60)
Relax	4.27(.79)	4.14(.80)
Socialize with other people	3.96(.91)	3.58(.97)
Feed my family	3.33(1.20)	3.00(1.26)
Provide food for others*	3.85(.94)	3.02(1.19)

#Note: Means are based on a five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree). *Statistically significant after Bonferroni adjustment ($p < .01$)

on the items. The findings are displayed in Table 5. Both groups responded favorably to the statement, "Community gardening brings together people who belong to different racial groups." On a five-point scale (1 = strongly disagree to 5 = strongly agree), Black gardeners had a mean score of 4.04 and White gardeners had a score of 3.91. Gardeners also tended to agree with the statement, "Community gardening brings together people who wouldn't normally socialize together." Comparisons for these items were also

TABLE 5
Socializing Associated with Community Gardening

Items	Means(SD)*	
	Black Americans	White Americans
Community gardening brings together people who belong to different racial groups	4.04(.88)	3.91(.94)
Community gardening brings together people who wouldn't normally socialize together	3.96(.85)	4.03(.68)
Community gardening brings together my family with other families	3.65(1.04)	3.56(1.02)
Community gardening brings together the same groups of people who socialized together before the garden was in place	2.71(1.03)	2.54(1.08)
Community gardening brings together the members of my family	3.31(1.17)	3.10(1.12)
A community garden leads to higher income families pushing out lower income families	2.02(.84)	1.89(.85)
	Means(SD)	
	Low Contact	High Contact
Community gardening brings together people who belong to different racial groups	3.97(.93)	3.88(.85)
Community gardening brings together people who wouldn't normally socialize together	4.13(.60)	3.88(.93)
Community gardening brings together my family with other families	3.62(1.05)	3.67(.94)
Community gardening brings together the same groups of people who socialized together before the garden was in place	2.52(1.09)	2.74(.97)
Community gardening brings together the members of my family	3.15(1.11)	3.27(1.25)
A community garden leads to higher income families pushing out lower income families	1.87(.85)	2.02(.87)

*Note: Means are based on a five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree).

made by level of contact. MANOVA results indicated there was not a significant difference between the two contact groups.

Summary and Conclusions

This study examined whether community gardens are perceived as spaces in which people of different races integrate successfully. As suggested by contact theory, interracial contact is one of the first steps to improving racial attitudes and behaviors. The study also examined whether the perceptions, motivations, and benefits of community gardening varied by race. In general, the findings indicated very few differences by race or by level of contact; however, the study's findings did suggest that in many of the community gardens some level of interracial contact was occurring between the two racial groups. These results contribute to previous research regarding race and leisure settings that have suggested many leisure spaces are racially demarcated (Floyd & Shinew, 1999; Gobster, 2002; Johnson, Bowker, English, & Worthen, 1998). For example, Johnson et al. (1998) concluded in their study of wildland recreation use in the rural south that African Americans used certain areas of the forest, and Whites used others. In their study, conversations with residents suggested that Black and White locals were aware of unspoken rules that made the forest "racially and socially defined places much like the churches, social clubs, youth hang outs, and other places in the community" (p. 116). Conversely, the findings of our study indicated that most gardeners felt connected to their community garden and many believed community gardening brought together people of different races. This discrepancy in findings might be explained, in part, by the more unbiased nature of community gardens as opposed to the historically negative connotations many African Americans associate with wildland recreation places. Further, in community gardens, people must work together to achieve collective aims, whereas wildland recreation is often a more instrumental pursuit. Hemingway (1996), in his article about leisure emancipation, discussed the idea of instrumental leisure as consumption-oriented and therefore something that fails to liberate people.

Results of the racial compositions of the neighborhoods and the community gardens also suggested that some level of interracial contact was occurring. However, some of these findings require further explanation. As often cited in the literature (Masey & Denton, 1993), African Americans reported living in predominantly Black neighborhoods. Yet inconsistent with the literature, Whites indicated that they lived in racially mixed neighborhoods. This finding must be viewed within the framework of the current study. This research was conducted in partnership with Gateway Greening, a not-for-profit organization that promotes urban gardening in low-to-moderate income neighborhoods, and thus the White gardeners interviewed for the study were living in these types of neighborhoods. Residential pattern statistics indicate that "mostly white" neighborhoods are most common in higher-income neighborhoods (Masey & Denton, 1993). This point helps

explain why the low-to-moderate income White gardeners in this study reported living in more racially mixed neighborhoods than is often common among most Whites. The racial composition of most community gardens was also racially mixed. For African Americans, the community gardens were often more racially mixed than were their neighborhoods, giving support to the idea that even in fairly segregated neighborhoods, there are some physical sites, such as community gardens, where interracial interaction may occur.

Physical contact is a precursor to positive interracial social interaction, although as stated earlier, contact only certainly does not ensure positive relationships. However, as suggested in the literature (Berscheild & Walster, 1969; Festinger et al., 1950; Sigelman et al., 1996), interracial friendships are more likely to develop among individuals who have contact with one another. Several of our findings suggest that community gardening is effective in promoting interracial contact. Both African American and White gardeners tended to agree that community gardening brings together people who belong to different racial groups, and that it brings together people who would not normally socialize together. When comparisons were made by level of contact, however, the findings were less convincing. We expected those respondents who came from racially mixed gardens to respond more favorably to these items than those who were from more homogeneous gardens, but this was not the case. Also, we expected the high interracial contact group to report higher levels of trust towards their neighbors of the other race. However, again, the findings did not support our expectation.

One explanation for the lack of significant difference between the two contact groups may be that the level of interracial contact was not measured effectively. Simply asking gardeners for the percentage of the "other" race of individuals who were involved in the garden may not have been a good indicator of interracial contact. It is conceivable that even though there was a mixture of both races involved in the garden, the actual interracial contact may have been minimal. As posited by Jackman and Crane (1986), limited contact that does not occur under the "right conditions" may not be enough to positively affect racial attitudes. However, Sigelman and Welch (1993) reported in their study that on no occasion did interracial contact lead to more negative attitudes, which suggests that *any* level of contact may be worthwhile. Thus, while we did not detect a significantly positive effect as a result of the contact, we also did not find a negative effect. More generally and beyond the scope of our results, casual contact in desegregated leisure settings may have little direct bearing on African Americans' perceptions of a white-dominated society. Such contact, however, is notable for other reasons in that it may facilitate the development of interracial friendships, convey information about racial differences in interactional styles, or counter negative stereotypes. In any event, the potential for interracial friendship is important because these intimate ties can lead to more favorable racial attitudes.

We also examined whether African Americans perceived the same level of benefits as a result of their involvement in community gardening as did

Whites. The findings indicated that both groups felt very positive about their involvement in community gardening and furthermore, there did not appear to be a great difference in the potential benefits received by the participants. These findings differ from previous research that examined benefits of community gardening by race (Waliczek et al., 1996). Our findings indicated that both racial groups reported some sense of psychological involvement with their gardens. Both African Americans and Whites indicated they refer to their garden as "our" garden rather than "their" garden. Further, the two racial groups did not statistically differ in their sense of community. Both groups tended to think their neighborhoods were good places to live, and they also reported that they felt comfortable in their neighborhoods, and expect to live there a long time. These findings support previous research that has suggested community gardens foster a sense of community among the residents in which it is located (Schmelzkopf, 1996; Waliczek et al., 1996). For example, Schmelzkopf (1996) commented in her study "over and over, gardeners told of how gardening and the socializing in the gardens make them feel as though they are a part of the community and a part of the land . . ." (p. 373).

This study also examined the motivations of the gardeners. Previous research has suggested that residents become involved in community gardens for various reasons (Anderson, 1990; Schmelzkopf, 1996). The two racial groups responded similarly and positively to many of the motivations (i.e., improve my neighborhood, enjoy nature, relax), with only one racial difference. African Americans were more likely to agree that the garden provided them with the opportunity to "provide food for others." African Americans reported significantly lower income levels than did their White counterparts, which may be why providing food was more important to them. Interestingly, there was not a significant difference in their response to "feed my family." Additionally, we reported earlier that often residents' motives for community gardening might be misunderstood among neighbors. Anderson (1990) described the issues of gentrification that have been linked to urban neighborhoods. However, when we asked respondents if "a community garden leads to higher income families pushing out lower income families," both racial groups and both contact groups tended to disagree with the statement.

Another reported benefit of community gardening for residents is a sense of belonging, and this was supported in our study. Both racial groups reported they felt connected to their neighborhoods, St. Louis, and most relevant to our study, their community garden. This finding is noteworthy given previous research regarding leisure settings and activities. African Americans often perceive leisure activities and spaces unfavorably due to the discrimination that can occur in leisure contexts (Floyd & Shinew, 1999; Gobster, 2002; Hibbler & Shinew, 2002; Johnson, Bowker, English & Worthen, 1998; Philipp, 1999). The finding that community gardens represent a space in which African Americans feel connected, particularly given most of these gardens were comprised of both African American and White gardeners, is encouraging. Not surprisingly given previous research in this area

(Aries et al., 1998; Thompson, 1994), African Americans reported a greater sense of belonging to their racial group compared to their White counterparts. In fact, interviewers for this study reported that White respondents were often confused, or frustrated because they did not think race mattered, when asked if they felt connected to their race, while most African Americans responded to the question with ease. African American gardeners' strong racial connection is consistent with previous studies regarding racial identity (Brookins, 1994; Thompson, 1994).

The findings in this study raised many issues that merit attention in subsequent research. Additional research is needed to further explore whether community gardens foster interracial contact, and whether the perceptions, motivations, and benefits of community gardening vary by race. These preliminary findings, however, contribute to the field of leisure studies in several ways. The findings can be used to evaluate community gardening, a leisure activity, as a potential mechanism for building community and as a potential setting for encouraging positive interracial interaction. Future studies should consider employing more precise measures of interracial contact that directly tap into face-to-face interracial contact as opposed to the more general contact that was measured in this study. Similarly, gardeners' motivations and socialization were measured using items that had been developed for this study. More established measures and/or scales might have produced different results. Further, a longitudinal study that examines whether the interracial contact that occurs in the leisure setting actually results in more positive attitudes and behaviors would be useful. This study examined one type of leisure setting, and thus further research is needed to explore a variety of other types of leisure spaces and activities, such as sports and cultural settings and activities. Our study examined two racial groups, Black and White Americans, and hence additional research is needed on the interracial interaction patterns of additional racial groups. Finally, this type of study lends itself to qualitative data collection methods. For example, an ethnographic account of interracial relationships that began in the garden, or observational data focused on level of contact, would provide a great deal of insight.

To summarize, this study was designed, in part, to gain a clearer picture of urban life within a neighborhood setting and the potential role that leisure could play in bridging diverse groups. Given the current racial climate in society, any effort to encourage positive interracial interaction is generally viewed as favorable. Recent events such as racially related deaths and anti-affirmative action proposals have caused casual Black-White contact to occur under increasingly strained conditions, which may reinforce African Americans' images of negative race relations and may ultimately impede the development of interracial friendship. Many leisure settings offer opportunities for equal-status and cooperative interracial contact, and therefore we should continue to examine leisure settings as potential sites for fostering positive interracial relationships. We hope the findings of this study lead to a broader discussion of the role of leisure in increasing positive interracial interaction and in building a greater sense of community in a diverse society.

References

Aberbach, J., & Walker, J. (1973). *Race in the city.* Boston: Little, Brown.

Allport, G. W. (1954). *The nature of prejudice.* Campbridge, MA: Addison-Wesley.

Anderson, E. (1990). *Street wise: Race, class, and change in an urban community.* Chicago, IL: University of Chicago Press.

Aries, E., Olver, R., Blount, K., Christaldi, K., Fredman, S., & Lee, T. (1998). Race and gender as components of the working self-concept. *The Journal of Social Psychology, 138,* 277-290.

Berscheid, E., & Walster, E. H. (1969). *Interpersonal attraction.* Reading, MA: Addison-Wesley.

Black, C. S. (1998, July). The neighborhood digs in. *Better Homes & Gardens, 76*(7), 141-148.

Bourdieu, P. (1977). Cultural reproduction and social reproduction. In J. Karabel & A. H. Halsey (Eds.), *Power and ideology in education.* New York: Oxford University Press.

Bourdieu, P. (1984). *Distinction: A social critique of the judgment of taste.* Cambridge, MA: Harvard University Press.

Briggs, X, S. (1998). Doing culture up close: Culture, power, and communication in community building. *Journal of Planning Education and Research, 18,* 1-13.

Brookins, C. C. (1994). The relationship between Afrocentric values and racial identity attitudes: Validation of the belief systems analysis scale on African American college students, *Journal of Black Psychology, 20,* 128-142.

Chavis, D. M., Hogge, J., McMillan, D., & Wandersman, A. (1986). Sense of community through Brunswick's lens: A first look. *Journal of Community Psychology, 14,* 24-40.

Clark, W. A. (1992). Residential preferences and residential choices in a multiethnic context. *Demography, 29,* 451-466.

Cook, S. W. (1985). Experimenting on social issues: The case of school desegregation. *American Psychologist, 40,* 452-460.

Dovidio, J. F., Gaertner, S. L., Kawakami, K., Hodson, G. (2002). Why can't we just get along? Interpersonal biases and interracial distrust. *Cultural Diversity and Ethnic Minority Psychology, 8,* 88-102.

Driver, B. L., Brown, P. J., & Peterson, G. L. (eds.) (1991). *Benefits of leisure.* State College, PA: Venture Publishing.

DuBois, D. L., & Hirsch, B. J. (1990). School and neighborhood friendship patterns of blacks and whites in early adolescence. *Child Development, 61,* 524-536.

Ellison, C. G., & Powers, D. A. (1994). The contact hypothesis and racial attitudes among Black Americans. *Social Science Quarterly, 75,* 385-400.

Emerson, M. O., & Smith, C. (2000). Divided by faith: Evangelical religion and the problem of race in America. New York: Oxford University Press.

Emerson, M. O., Kimbro, R. T., & Yancey, G. (2002). Contact theory extended: The effects of prior racial contact on current social ties. *Social Science Quarterly, 83,* 745-761.

Feagin, J. R., & Sikes, M. P. (1994). *Living with racism: The Black middle-class experience.* Boston: Beacon Press.

Festinger, L., Schacter, S., & Back, K. (1950). *Social pressures in informal groups: A study of human factors in housing.* New York: Harper and Brothers.

Floyd, M. F., & Shinew, K. J. (1999). Convergence and divergence in leisure style among Whites and African Americans: Toward an interracial contact hypothesis. *Journal of Leisure Research, 31,* 359-384.

Gallup (2001). *Black-white relations in the United States: 2001 update.* Washing: DC: Gallup Organization.

Gittell, R., & Vidal, A. (1998). *Community organizing: Building social capital as a development strategy.* Thousand Oaks, CA: Sage.

Glover, T. D. (2003). The story of the Queen Anne Memorial Garden: Resisting a dominant cultural narrative. *Journal of Leisure Research, 35,* 190-212.

Glover, T. D. (in press). Social capital in the lived experiences of community gardeners, *Leisure Sciences.*

Gobster, P. H. (2002). Managing urban parks for a racially and ethnically diverse clientele. *Leisure Sciences, 24,* 143-159.

Hemingway, J. L. (1996). Emancipating leisure: The recovery of freedom in leisure. *Journal of Leisure Research, 8,* 27-43.

Hibbler, D. K., & Shinew, K. J. (2002). Interracial couples' experience of leisure: A social construction of a racialized other. *Journal of Leisure Research, 34,* 135-156.

Hynes, H. P. (1996) *A patch of Eden: America's inner city gardens.* White River Junction, VT: Chelsea Green Publishing Company.

Jackman, M. R., & Crane, M. (1986). Some of my best friends are black: Interracial friendships and whites' racial attitudes. *Public Option Quarterly, 50,* 459-486.

Johnson, C. Y., Bowker, J. M., English, D. B., & Worthen, D. (1998). Wildland recreation in the rural south: An examination of marginality and ethnicity theory. *Journal of Leisure Research, 30,* 101-120.

Keating, W. D., & & Smith, J. (1996). Neighborhoods in transition. In W. D. Keating, N. Krumholtz, & P. Star (eds.), *Revitalizing urban neighborhoods.* Lawrence, KA: University Press of Kansas.

Kellum, J. (1997, May). Common ground. *Southern Living, 32*(5), 122-126.

Kelly, J. R., & Warnick, R. B. (1999). *Recreation trends and markets.* Champaign, IL: Sagamore Publishing, Inc.

Kohatsu, E. L., Dulay, M., Lam, C., Concepcion, W., Perez, P. Lopez, C., & Euler, J. (2000). Using racial identity theory to explore racial mistrust and interracial contact among Asian Americans. *Journal of Counseling & Development, 78,* 334-342.

Landman, R. H. (1993). *Creating community in the city: Cooperatives and community gardens in Washington, D.C.* Westport, CT: Bergin & Garvey.

Langhout, R. D., Mitchell, G., Beckett, K. L., Cockrell, F., & Chenail, M. (1999). Community gardening as a tool for community organizing: Building bridges from the ground up. In J. Rappaport & T. Moore (Co-Chairs), *Building bridges in a majority African American neighborhood using school consultation and community collaboration. Can these strategies coexist?* Symposium conducted at the 7th Biennial Conference of the Society for Community Research and Action. New Haven, CT.

Lee, R. G. (1972). The social definition of outdoor recreation places. In W. R. Burch, N. Cheek, & L. Taylor (Eds.), *Social behavior, natural resources, and environment* (pp. 68-84), New York: Harper & Row.

Linn, K. (1999). Reclaiming the sacred commons. *New Village, 1*(1), 42-49.

Lyon, L. (1999). *The community in urban society.* Prospect Heights, IL: Waveland Press.

Mael, F., & Tetrick, L. (1992). Identifying organizational identification. *Educational and Psychological Measurement, 54,* 813-824.

Massey, D. S., & Denton, N. A. (1993). *American apartheid: Segregation and the making of the underclass.* Cambridge, MA: Harvard University Press.

Mannell, R. C., & Kleiber, D. A. (1997). *A Social Psychology of Leisure.* State College, PA: Venture Publishing.

Moncrief, L. W., & Langsenkamp, R. (1976). Cultivating community gardening. *Parks and Recreation, 11*(4), 19-21, 39-42.

Morin, R. (2001, July). Well-being of Blacks inflated by Whites. *Syracuse Post Standard,* pp. A1, A8.

Narayan, D. (1999). *Bonds and bridges: Social Capital and poverty* (Policy Research Working Paper 2167). Washington, D.C.: World Bank.

National Conference of Christians and Jews. (1994). *Taking American's pulse: The full report of the national conference survey on inter-group relations.* New York: National Conference.

Peters, K., Johnson, L., & Irvine, S. (1999). Community gardens and sustainable land use planning: A case study of the Alex Wilson Community Garden. *Local Environment, 4*(1), 35-48.

Philipp, S. F. (1999). Are we welcome? African American racial acceptance in leisure activities and the importance given to children's leisure. *Journal of Leisure Research, 31,* 385-403.

Pottharst, K. (1995). Urban dwellers and vacant lots: Partners in pride. *Parks and Recreation, 30*(9), 94-101

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community.* New York: Simon & Schuster.

Robinson, J. L., (1980). Physical distance and racial attitudes. *Phylon, 41,* 325-332.

Robinson, T. L., & Ginter, E. J. (1999). Introduction to the *Journal of Counseling and Development's* Special Issue on Racism. *Journal of Counseling & Development, 77,* 3.

Saguaro Seminar (2001). *Social Capital Community Benchmark Survey.* Cambridge, MA: John F. Kennedy School of Government, Harvard University. Available Online *www.cfsv.org/communitysurvey/index.html*

Saltman, J. (1990). *A fragile movement: The struggle for neighborhood stabilization.* Westport, CT: Greenwood Press.

Schmelzkopf, K. (1996). Urban community gardens as contested space. *Geographical Review, 85*(3), 364-381.

Schrieber, P. (1998). Community gardening: Design, techniques, and tools. In S. P. Simson, & M. C. Straus (eds.), *Horticulture as therapy: Principles and practice* (pp. 377-397). New York: The Food Products Press/Haworth Press.

Schuller, T., Baron, S., & Field, J. (2000). Social capital: A review and critique. In S. Baron, J. Field, & T. Schuller (eds.), *Social capital: Critical perspectives.* New York: Oxford University Press.

Sears, D. O. (1998). Racism and politics in the United States. In J. L. Eberhardt & S. T. Fiske (Eds.), *Confronting racism: The problem and the response* (pp. 76-100). Thousand Oaks, CA: Sage

Sigelman, L., & Welch, S. (1991). *Black Americans' views of racial inequity: The dream deferred.* New York: Cambridge University Press.

Sigelman, L., & Welch, S. (1993). The contact hypothesis revisited: Black-white interaction and positive racial attitudes. *Social Forces, 71,* 781-795.

Sigelman, L., Bledsoe, T., Welch, S. & Combs, W. (1996). Making contact? Black-white social interaction in an urban setting. *American Journal of Sociology, 101,* 1306-1332.

Sellers, R. M., Rowley, S. A. J., Chavous, T. M., Shelton, N., & Smith, M. A. (1997). Multidimensional inventory of black identity: A preliminary investigation of reliability and construct validity. *Journal of Personality and Social Psychology, 73*(4), 805-815.

Shields, J. J. (1992). Evaluating community organization projects: The development of an empirically based measure. *Social Work Research & Abstracts, 28*(2), 15-20

Swezey, L. B. (1996, October). The world in a garden. *Sunset, 197*(4), 70-73.

Thompson, V. L. (1994). Socialization to race and its relationship to racial identification among African Americans. *Journal of Black Psychology, 20, 175*-188.

Waliczek, T. M., Mattson, R. H., & Zajicek, J. (1996). Benefits of community gardening on quality-of-life issues. *Journal of Environmental Horticulture, 14,* 204-209.

Williams J. A. (1964). Reduction of tension through intergroup contact: A social psychological interpretation. *Pacific Sociological Review, 7,* 81-88.

Wilner, D. M., Walkley, R. P., & Cook, S. W. (1955). *Human relations in interracial housing.* Minneapolis, MN: University of Minnesota Press.

Young, I. M. (2000). *Inclusion and democracy.* New York: Oxford University Press.

TREE VANDALISM: SOME SOLUTIONS [1]

by Marvin E. Black

Abstract. Vandalism is not a modern phenomenon; it is probably as old as man. Ignoring it, and ignorance of it, won't diminish its effect. Only by studying and working with solutions can we lessen vandalism. Seattle is confronting the problem of tree vandalism three ways: 1) immediate physical countermeasures to lower vandalism, 2) a managerial approach to the street tree program that recognizes the reality and extent of vandalism and that seeks to develop maximum local public support for the plantings by being sensitive to neighborhood situations and by exercising a tight "lean" management stewardship of the program, and 3) taking the long view, to reinforce a sense of ownership and awareness in the citizenry, that its territorial pride in its trees will eventually be a dramatic deterrent to vandalism.

Sometimes we like to think we invented vandalism. We treat it as a condition peculiar to our time, another evil brought by fast living, another lack of respect for property, another erosion of our institutions, probably brought on by television, or permissive parents, or the atomic tests or something. And we retire into the shade with a cool drink and think about the good old days when people didn't do these things. *This is nostalgic falsehood.* I can remember some broken trees from my own boyhood, along with overturned outhouses. Oh, we excuse those things in retrospect; we call it "raising hell," chalk it up to boyhood exuberance, and anyway, that was US and we're talking about THEM. The ancient Greek and Egyptian philosophers complained of the vandalism of their youth. And the United States may be the only country in the world where school children hear that the father of their country vandalized a tree when he was a boy. Vandalism is All-American. Vandalism is as ancient, and as human, as aggression.

When I talk to municipal street tree people, I've found another common misconception: DON'T TALK ABOUT IT AND IT WILL GO AWAY. *It's just a fact of life; we can't do anything about it.* Crime doesn't go away if we don't talk about it. Neither does cancer. Granted that there are ways and ways of talking about it, and that the wrong kind of news story may incite even further vandalism. However, the right kind of discussion and study can help. In my state, the Washington Roadside Council and the University of Washington have begun an in-depth series of vandalism workshops, with tremendous response. The first session, planned for 100 people, drew over 250 students, people from all types of governmental units, sociologists, landscape architects, and concerned citizens. Confronting the problem offers a major avenue of reducing it. It isn't simply a fact of life to accept without challenge when the arborist views a newly-vandalized planting. Granted that the frustration and outrage are there: *the "I-can't-do-anything" conclusion is wrong.* In Seattle we became concerned that too much of our street tree maintenance budget was going down a vandalism rathole, and we determined to change that. In the first two years we've reduced our vandalism rate from a 5% tree loss yearly down to less than half that. We're taking action on three fronts.

Physical changes

First, and giving immediate savings, were some physical changes. We abandoned the time-honored staking method of twin stakes flanking the tree, usually with a crossbar between, and with the trees tied to the stakes. This is the classic textbook way to stake a tree. However, it has a major disadvantage, becuase the crossbar, or else the point of the rigid pair of ties between two stout stakes, becomes the fulcrum point at which the tree is readily snapped by vandals. When we abandoned this traditional staking pattern, our tree breakage in some areas dropped from over 10% to less than 1%. We have moved to a single steel reinforcing bar, like that used in concrete work, tied close to the tree with three ties. The wire ties are inside of hose and are looped into a figure-8 conformation to cushion the tree from the steel. The top tie is at least five feet high. It is much harder to exert strength enough to break a tree at that height. We plant

[1] Presented at the ISA Conference in Philadelphia, Pennsylvania in August 1977.

relatively large street trees and leave the stakes on only one season, and the stakes have given no inhibition of trunk development.

Steel bars have advantages over wood stakes. They are reusable almost indefinitely and they can't be snapped off. One tree so staked had two cars drive completely over it, three weeks apart and from different directions. The steel stake took much of the impact, acted as a reinforcing splint, and the tree actually popped back up into place each time in pretty good condition! The stake diameter is small and is easily installed in the ground after the tree is in, with minimal root damage. The ribbing on the steel reinforcing bar grips the ground well enough to hold our trees against 50-mile winds in Northwest winter rainstorms.

If we realize that a particular tree location is vandal-prone we may opt for a larger-caliber tree than standard. And we have on occasion borrowed a San Francisco tree protection method, where the young tree is surrounded by a long tube of heavy wire mesh called hardware cloth. This mesh is formed into the stovepipe-like tube that is stapled to flanking tree stakes, extending as a four-foot collar that begins about 18 inches above the ground. This has worked well at a few particularly tough locations near taverns. Drunks are lazy vandals, and the one that has to fight his way through this sort of cage usually goes away.

Managerial approaches

Our second approach is at the managerial level. We can define and predict certain vandalism patterns. In your city the patterns may not be identical, but you can discover some. We find no link in our city between vandalism and economic status or racial makeup of the neighborhood. This was a surprise and upset some of our preconceptions; some of our strongly "law and order" neighborhoods have our highest vandalism. But we have patterns. Most vandalized Seattle street trees are broken by males aged 17 to 25, mostly in connection with drunkenness or drug trips, and our major vandalism time is right after taverns close at 2:00 a.m., and for the next three hours. *Trees near taverns live on the edge of danger.* Also, trees in plantings with no homes nearby, warehouse areas and the like, where witnesses probably aren't watching behind nearby windows at night. Our designers, recognizing such problem areas, may plan accordingly. Sometimes, if funds are limited, we may choose to bypass such places; other times we may choose larger sized trees, protective devices, and the like. We may even choose a different species, for instance, linden trees snap more easily than do ash trees, and we may save our linden trees for safer areas.

A critical managerial approach is to be highly sensitive to the wishes of the neighborhood. If we force a tree planting into a neighborhood that has higher priorities for other improvements, and that tells us it doesn't want trees, we may have doomed the planting. Similarly, stringing a streetful of trees across a hillside and thereby blocking residential views of our beautiful lakes and mountains for many homeowners often results later in vigilante-type reprisals against the trees, though some neighborhoods have welcomed such trees and like them. But Seattle plantings are increasingly reflections of neighborhood sentiment, and we are learning to listen to more than just the echoes of our own announcements.

Sometimes we forget, those of us who are managers, just who we are. We are not ordained by God. We get into a we/them syndrome, like in our childhood memories. We are the good guys; we make lovely plans for a beautiful world, and we plant trees. They are bad guys who go around destroying. This is fuzzy thinking; actually Pogo summed it up when he declared: "*We have met the enemy and he is US.*" Follow a police car sometime, and see if a cigarette butt doesn't get tossed out the window after a while. See who puts their garbage in the car and dumps it somewhere illegally. Too often, it's us. And when as managers we assume the WE/THEM role in looking at vandalism, we're already in trouble, because we start thinking like pompous asses rather than real-life people.

Nor can we any longer tolerate the luxury of mediocre performance, whether it is mediocre planning and design, mediocre installation, or mediocre maintenance. How often have you

heard the term, "Well, it's just federal money" . . .? Some of our grams got fat and sloppy on federal money. City budgets are leaner now, and our stewardship has to be lean and careful.

The long term approach

I've still not mentioned the major way that we can reduce vandalism, and there is not room in this discussion for much detail. Call it education or awareness (I like the terms involvement and pride of ownership). It is to make the community seize the planting from the beginning with pride as its own, not as something some Great White Planner in City Hall decreed. When the community sees its trees as its own property, it will take care of most of the vandalism problems. To bring this about takes many years, like the growing of a good tree. How can I illustrate it? A Seattle artist gave me an example. He was commissioned to do a mural in a teen-age detention center, a place they put kids in trouble. He found the place depressing; all the walls where the mural was to go were marked up by kids dragging their pencils along the surface. He got together with the kids, told them they were going to paint a mural on a wall, and he'd help them. He showed them the design, together they painted the mural. Afterwards, he said the kids still dragged pencils along those walls, but when they came to the mural, they stopped marking until they got beyond the painting. *It was their mural.* He told me something else interesting because he had worked at a neighborhood sculpture with kids, doing a sculpture in wood. He said wood is the least vandalized of the materials he's worked with. People respect wood; it has life. He told me concrete was the most hated material. He said people will attack concrete with rocks, clubs, with steel bars. It represents something they don't like; something grim, unyielding, non-living. This artist's name is Drex. Drex told me something that made a deep impression. He said, *"You're lucky trees are made of wood. If they were made of steel, people would just beat the bejeezus out of them."*

That's one thing we can develop, people's natural love of trees. And we can over the long run develop involvement and pride of ownership. Philadelphia has one such citizen-involvement program called *Garden Blocks.* Seattle calls another *Green Triangles.* And we have one more bit of magic working for us, people's awe at planting and owning a share of life that will reach far beyond our own into the future. I have great confidence in that magic.

City Arborist
City of Seattle
Seattle, Washington

ABSTRACT

Copley, Kathy. 1977. **Measuring light.** Grounds Maintenance 12(10): 14, 16, 18, 20-21.

Light—whether natural sunlight pouring through a reception area window, or artificial light from banks of fluorescent ceiling fixtures—triggers an important series of plant reactions. Photosynthesis is the best known, most extensively researched of the photo-responses. Three factors affect a plant's ability to use light: the quality of the light itself, its duration, and intensity. An accurate measurement of a plant's appropriateness in a given light level is achieved by measuring the intensity of light in footcandles and selecting plants which perform well in the range of light available. Increasingly, books and catalogs are categorizing plants according to their footcandle light requirement.