

Urban Community Gardens and Orchards: A Maintenance Guide for Dudley Neighbors Inc.



Field Projects
Spring 2004

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Dudley Neighbors Inc.
Trish Settles, Director
Nicole Flynt, Environmental Organizer

Team:
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Table of Contents

	Page
<u>Section I: Introduction and Findings</u>	
1.1 Executive Summary	4
1.2 Introduction	6
The Client and Stakeholders	
Project Goals and Methods	
1.3 Neighborhood History: Spatial and Social Contexts	9
Agricultural History of Roxbury	
Social History and Present Day Neighborhood	
1.4 Successful Models of Community Gardens and Orchards:	11
Values and Benefits	
Local Community Gardens and Orchards	
<u>Section II: Recommended Maintenance Plan</u>	
2.1 Garden Development Plans	18
Dennis Street Garden	
Lewis Place Orchard	
2.2 Best Practices: Maintaining Successful Gardens and Orchards	21
2.3 Capital Needs.....	23
2.4 Governance and Organization of Community Gardens	26
and Orchards	
Roles of Gardeners	
Role of the Garden Coordinator or Steering Committee	
Role of DNI	
Special Considerations for Community Orchards	
2.5 Implementing the Maintenance Plan.....	35
2.6 Conclusion	37

Section III: Resource Guide for Gardeners

3.1 Resources Available for Community Gardeners 38

Section IV: References and Appendices

References 41

Appendix A: Maintenance Activities Schedule

Appendix B: Unit Cost Itemization

Appendix C: Best Practices for Orchard Maintenance

Appendix D: Gardener Agreement

Appendix E: Memorandum of Understanding

Section I: Introduction and Findings



1.1 Executive Summary

Maintaining a flourishing community garden or orchard depends on many factors, most of which are subject to perpetual variation: available funding, communities in flux, gardeners' capacity for commitment, even changing weather conditions and patterns. As such, the successful maintenance of a community garden or orchard requires careful planning undertaken with a holistic orientation; the plan must be flexible enough to allow not only for such aforementioned variables, but also to allow gardeners and orchard stewards the room to adapt goals and rules as they learn from experience what works best for their garden or orchard.

Regardless of these variations, every successful garden or orchard employs a number of best practices, on technical and organizational levels, that have proven time and again to be solid building blocks for success. Our Tufts Field Projects Team has researched and analyzed an array of community gardens and orchards both locally and nationally in order to produce a recommended garden and orchard maintenance plan for Dudley Neighbors Inc., a community land trust located in Roxbury, Massachusetts. This maintenance plan draws heavily from an assortment of best practices and is meant to serve as a starting point for DNI's long-term plans to develop some of its many vacant parcels into usable community green space.

Best practices for maintaining gardens and orchards fall generally into three categories: secure capital infrastructure, community leadership and stewardship, and continuing resource development. The Tufts Team has produced a maintenance plan for DNI that outlines the basic "rules of thumb" for all of these maintenance categories. These maintenance goals and activities are based on a community stewardship model of gardening, in which the gardeners or orchard stewards not only steer timely maintenance activities but also the long-term community benefits of the garden or orchard. With gardeners and orchard stewards in this pivotal leadership role, DNI plays a supporting role as landowner and community agency, responsible for capital needs as well as facilitators of resource development.

The lines between these maintenance categories are not impermeable; for example, capital needs such as repair and replacement are clearly the responsibility of DNI as the owner of the land. However, without community governance of the garden or orchard in place, such as an active garden coordinator, DNI can not be made aware of nor arrange for the repair or replacement of items in a timely manner. Once something falls into disrepair, from a water line to a compost bin, the consequent costs and time taken to repair extended damage can cause a disruptive ripple effect for both gardeners/stewards and DNI alike. This example illustrates the interwoven nature of responsibility in the overall maintenance of the garden or orchard. It is critical that both community members and DNI alike understand the true partnership requisite to the stewardship model of maintenance recommended in this report.

In Section I, the Team has assembled introductory information on the client, the project goals and methods, as well as a brief introduction to the relevant social and spatial context of Roxbury's history. We then look in depth at the values and benefits of community gardening through successful models of gardens and orchards in the Boston Area. Section II begins with a description of DNI's development plans for the Lewis Place and Dennis Street lots. The maintenance plan outlines best practices, capital needs, governance and organization, and recommendations for implementing the plan and facilitating resource development. A Resource Guide for Gardeners, located in Section III, can steer interested parties in the right direction for more information on gardening and orchard stewardship generally, as well as towards good resources for gardens and orchards in the Boston area. Finally, the appendices in Section IV contain practical information and checklists, such as a year-round maintenance activity calendar, a repair and replacement itemization check sheet, and a sample gardener agreement form. All of these materials serve as examples of how the Dennis Street Garden and Lewis Place Orchard might be maintained in partnership between DNI and the gardeners/stewards. For long-term success, well-rounded governance and organization are the ultimate resource for and measure of the sustainability of community gardens and orchards.

1.2 Introduction

The Tufts Dudley Street Team has produced an operational maintenance plan for two adjoining lots, "Dennis Street Community Garden" and "Lewis Place Orchard," owned by Dudley Neighbors, Inc, both of which are slated to be developed during Spring 2004 into a community garden and a community orchard. Though specific to these two lots, the maintenance plan will provide guidance in the leadership and maintenance of successful gardens throughout the Dudley Street neighborhood. What follows in this introduction is a brief background of the client, the community, and the scope of work for this project.

DNI and the Dudley Street Community

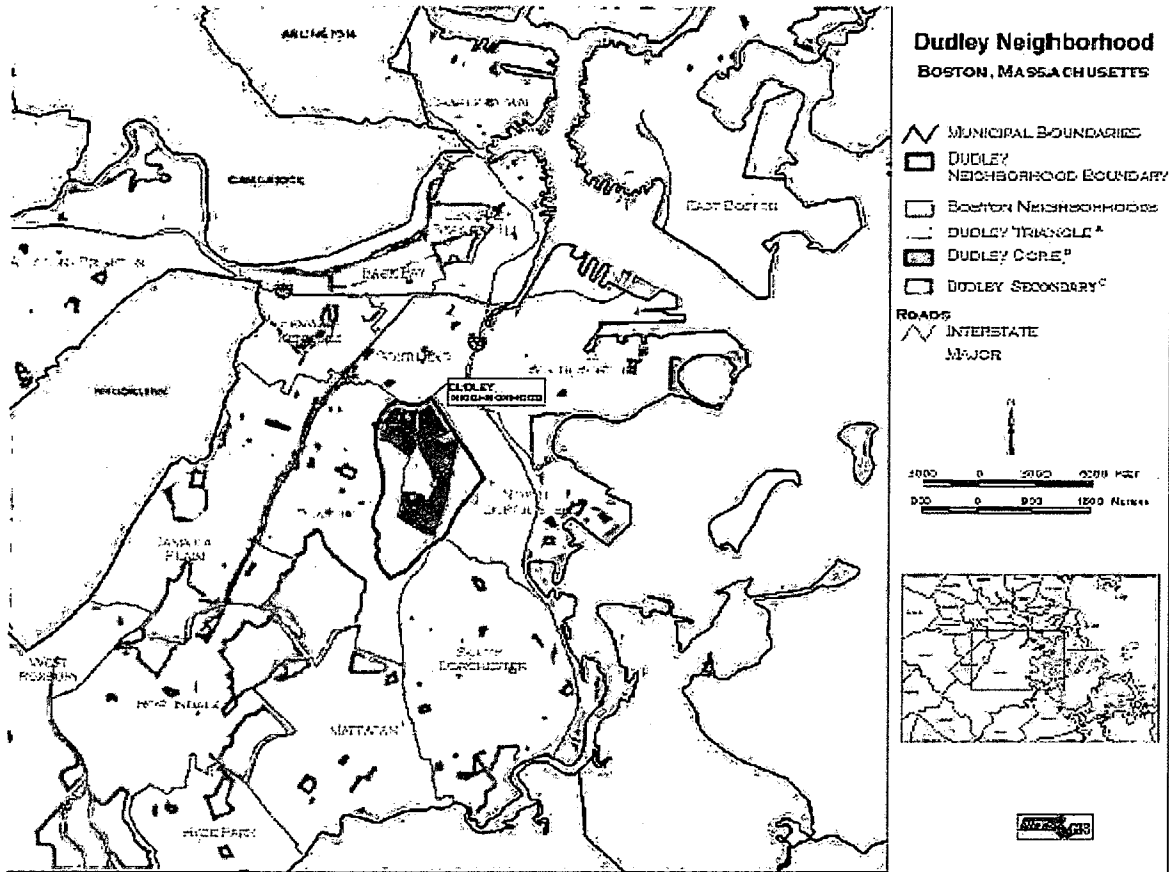
Dudley Street Neighborhood Initiative (DSNI) is one of the most well-known community development groups in the country. Renowned for winning the power of eminent domain to rehabilitate a neighborhood greatly damaged by arson and illegal trash dumping, DSNI recently celebrated its 20th anniversary. From its web site:

DSNI works to implement resident-driven plans with partners including Community Development Corporations (CDCs), other nonprofit organizations and religious institutions serving the neighborhood, banks, government agencies, businesses and foundations. The Dudley Street Neighborhood Initiative has grown into a collaborative effort of over 2,700 resident members, businesses, non-profits and religious institutions concerned with revitalizing this culturally diverse neighborhood of 24,000 people and maintaining its character and affordability.

DSNI is governed by a resident-led Board of Directors that reflects the racial and ethnic diversity of the neighborhood itself.

Dudley Neighbors Incorporated (DNI) is a subsidiary group that operates as a Community Land Trust in close cooperation with DSNI. The main focus of DNI is the development of affordable housing for the Dudley Street Neighborhood. Since its inception in 1988, DNI has built a total of 144 new homes¹. The group is increasing its emphasis on bolstering home ownership rates and sustaining ownership opportunities for future generations. In addition to its housing work, DNI is also responsible for overseeing the open space management of the neighborhood. Within their open space management plan, a high priority has been set on the development of community gardens.

¹ www.dsni.org/dni



Source: *Dudley Neighborhood Profile Report*, www.dsni.org

Dudley Street is a neighborhood located in Roxbury and northern Dorchester, just south of downtown Boston, Massachusetts. Often referred to as the "Dudley Street Triangle," the neighborhood is bordered by Dudley Street, Blue Hill Avenue, Brookford Street, Hartford Street, Robin Hood Street, Folsom Street, Woodward Park Street, and Howard Avenue. The neighborhood has long since been home to a diverse group of recent immigrants, from Irish and Italian communities in the early 1900s onward. Today's Dudley Street is a diverse community comprised of African American (37%), Latino (29%), Cape Verdean (25%) and White (7%) residents; it is also one of the poorest neighborhoods in Boston, with a per capita income of \$7,600 compared to nearly \$16,000 for the City of Boston as a whole. The median family income for the area is \$20,848. The unemployment rate is around 16%, and approximately 32% of the area's population falls below the poverty level. The vacant land within the Dudley Triangle accounts for approximately 21% of the entire neighborhood.²

Despite these many challenges, Dudley Street is also a neighborhood that does much to harness and grow its community assets. Dudley Street is home to a high

² www.dsni.org

number of informal community groups and formal 501(c)(3) nonprofit groups beyond DNI and DSNI, including La Alianza Hispana, Nuestra Comunidad, ACT Roxbury, The Food Project, Madison Park Development Corporation, and many more. The depth and diversity of the neighborhood's nonprofit sector is a strong indicator of commitment to community development. Both DSNI and DNI are key players in the sustained efforts to protect and revitalize the neighborhood. Between 1990 and 2000, owner occupancy rates increased as did high school graduation rates.³

The Project Goals and Methods

The scope of work outlined in the Memorandum of Understanding between the Tufts Dudley Street Team and DNI calls for the deliverable of a maintenance plan for the Lewis Place Orchard and the Dennis Street Community Garden. This maintenance plan focuses not only on capital needs (such as repair and replacement of physical aspects of the garden and orchard) but also on the social capital requisite to garden and orchard organization and governance. A secondary deliverable is the Gardener's Resource Guide (included at the end of this report) which can be made available by DNI to interested gardeners.

The Tufts Team researched local and national models of successful community gardens and orchards to determine best practices of how to sustain community gardens as vibrant, clean, and useful assets to the neighborhood. These best practices are concentrated in two general areas: capital needs (costs and schedules related to the establishment and upkeep of the garden and orchard) and suggested approaches to community governance and organization to ensure long-term success. The Tufts Team researched and assembled information on each maintenance topic, focusing on a clear articulation of both DNI's role and the gardeners'/stewards' roles in maintaining the garden and orchard. Cost estimates for capital needs and suggested schedules of maintenance activities are also outlined for the client in the appendices.

³ Ibid.

1.3 Neighborhood History: Spatial and Social Contexts

Historical Context

Like many other neighborhoods in Boston, the racial and ethnic composition of Roxbury has changed throughout its three hundred year history, from English, Irish, and German settlers, to a Jewish community, to its currently diverse African-American, Hispanic, Cape Verdean, and White population. Initially, the Dudley Street neighborhood of Roxbury was founded in 1630 as one of six independent communities settled by a group of English colonists. Settlers were drawn to Roxbury because of its location along the only land route into Boston, an orientation that gave the town a strategic and military importance. Despite the rocky hills that define the landscape, farming was the basis of Roxbury's economy during the 17th and 18th centuries.⁴ Roxbury was "famous for its fruit trees, and noted varieties were developed on local farms – including the Roxbury Russet apple, particularly prized for cider."⁵ In addition to open farmland, Roxbury provided the early settlers with timber and stone for their construction projects.

During the early 1800s, changes in the economy and innovations in mass transportation allowed many city dwellers to pursue the new suburban ideal of living outside of the city. Roxbury was close enough to the city to make it a perfect location for this first wave of suburbanization. Soon, farmland was being subdivided into lots for single-family dwellings, as a horse-drawn bus line was established along Washington Street in the 1820s, and a railroad to Providence was constructed in 1835.⁶ The pace of development accelerated throughout the 1800s, spurred on to even greater intensity by electric trolley service that began in 1887. The influx of urban families into the developing countryside created a pressing need for all varieties of housing stock, including single-family, row houses, and Boston's trademark triple-deckers.⁷

This increasing population elevated the demand for municipal services; in 1868, residents of Roxbury voted to annex the town as part of the city of Boston. Despite the burgeoning population, Roxbury still had enough open land available in 1885 to construct the city's largest park, Franklin Park. Designed by renowned landscape architect Frederick Law Olmsted, this open space is the final "jewel" in his seven mile Emerald Necklace of parks and open spaces through the city of Boston.⁸ With 527 acres, this space was meant to be a retreat from the urban environment. Even at this early stage of development, Roxbury residents were suffering from the stresses of high population density.

⁴ www.boston-online.com/roxhist.html, p. 1.

⁵ Ibid.

⁶ Ibid, p.2.

⁷ Ibid.

⁸ Ibid, p. 4-5.

The habitation and construction trends of the 1800s continued through until the 1960s and 1970s, when urban renewal and other social and political forces resulting from the movement of commercial and recreational activities to suburban locations conspired to cause neighborhood disinvestment. During the 1980s, the Massachusetts Bay Transportation Authority (MBTA) demolished the old elevated Orange Line, further isolating Roxbury from the economic center of downtown Boston. The unemployment rate crept upward, along with the crime rate and elevated drug use, and economic disinvestment and deterioration resulted in empty lots and abandoned buildings. From its highly concentrated commercial, industrial, and residential developments of the first half of the 20th century, by 1980, 32% by the land in Roxbury was vacant.⁹

This highly visible deterioration led many residents to come together in various community groups, charged with the goal of turning their neighborhood around. Their calls for change were heeded by the city in "Roxbury's Strategic Master Plan: Building a 21st Century Community" in 2003. The foreword of this plan outlines the importance of open space and aesthetics for the community:

The Plan outlines a planning agenda that will serve as a strategic framework to guide change and economic growth for the next ten to twenty years. While the Plan is primarily about land use, it recognizes the direct relationship between land use decisions and quality of life. It builds upon Roxbury's considerable assets to provide a high quality physical environment that is attractive, safe and convenient for residents, businesses and visitors.¹⁰

Specifically, the Plan recognizes that "well-maintained and varied open spaces can enhance the neighborhood's image and increase its viability as a desirable residential community and attractive environment for economic development."¹¹ The plan goes on to list a series of recommendations for achieving the community's land use goals, including the completion of a vacant lot analysis to determine best uses for vacant parcels. "An analysis of the current pattern of vacant lots should be initiated and recommendations made regarding the incorporation of some of these underutilized parcels into the dedicated open space system, including interim or long-term use as community gardens."¹²

The community of Roxbury needs to strike a delicate balance between the infrastructure needs of the residents and appropriate and efficient use of the vacant lots that dot the landscape. Community gardens and orchards will return some of the land in Roxbury back to its original usage at the time of the first European settlers and provide current residents with many potential benefits.

⁹ "A profile of Roxbury," BRA, 1985.

¹⁰ Roxbury Strategic Master Plan: Building a 21st Century Community, p.4.

¹¹ Ibid, p. 18.

¹² Ibid, p. 19.

1.4 Successful Models of Community Gardens and Orchards: Values and Benefits

In researching successful community gardens and orchards within the Boston area, The Tufts Team identified common values and benefits of the gardens and orchards in all of the case studies noted below. A brief summary of these local resources and the services they offer to the community follows. We encourage DNI to investigate possible partnerships with these organizations, all of which have a great deal of local knowledge in the maintenance of successful gardens and orchards.

Local Nonprofit Organizations

The Food Project (www.thefoodproject.org) is a nonprofit organization in the Boston area that works to create “personal and social change through sustainable agriculture.” They bring together youth workers and adult volunteers to learn about agriculture and grow organic vegetables for the local communities. The Food Project owns and operates a 21-acre farm in Lincoln as well as two urban garden lots in Dorchester and Roxbury. They grow food to be donated to local homeless shelters, to be sold at urban farmers markets, and as shares of a Community Supported Agriculture (CSA) program. The Food Project began in 1992 and now over ten years later, employs 100 young people and 16 full-time staff, and in 2001 grew 209,000 pounds of organically-grown food.

In addition to youth development programs, they also operate The Food Project Institute, a program that provides seminars and training to organizations nationwide who are interested in The Food Project's model. In 2002, The Food Project was awarded the President's Community Volunteer Award, the most prestigious national award given for volunteer community service. They have published a series of books, toolkits, manuals and videos available for sale on their website.

The Food Project runs the farmers market at Dudley Town Commons from June through October on Thursdays from 4-7pm. Local residents and community gardeners are encouraged to sell their extra produce at the market and interact with other gardeners to share tips and advice about growing.

Boston Natural Areas Network (www.bostonnatural.org) is a city-wide nonprofit organization that, “works to preserve, expand and improve urban open space through community organizing, acquisition, ownership, programming, development and management of special kinds of urban land.” BNAN's work is described as “community building through greening.” Their programs are guided by local citizens, all of whom are acting to preserve open space in their own communities. BNAN works with several types of open spaces in urban environments. To date, they have protected 646 acres of Urban Wilds within the City of Boston that are untouched natural areas such as woods, meadows, wetlands and shorelines. BNAN also developed the Greenways to Boston

Harbor program to physically link urban wilds, parks and other green spaces. And finally, BNAN coordinates activities for all of the Boston area's 250 community and school gardens in partnership with many other non-profit organizations and government agencies.

BNAN views community gardening as, "an effective community-building strategy that contributes to neighborhood renewal, preservation, and stabilization." BNAN helps communities plan for gardens, acquires property, manages capital improvements and renovations of its gardens, and oversees ongoing management. They currently own and assist 40 community gardens by conducting workshops and providing garden service projects. BNAN also offers a Master Urban Gardener (MUG) program; an intensive course on urban community gardening horticulture and management. In 1996, after three years of extensive research, BNAN published a report entitled, "Garden Futures" which is still today an invaluable resource for community gardens in Boston.

BNAN recently began City Natives, a native plant nursery and horticultural learning center in Mattapan that provides services to the residents of Boston and beyond. Until this year, BNAN had coordinated the order and delivery of compost and soil to Boston community gardens, a service which is now provided by the City of Boston. Each year at their annual gardener's meeting, BNAN distributes free seeds to community gardeners.

EarthWorks (<http://urbanorchards.earthworksboston.org>) is a nonprofit organization located in Roxbury which was founded in 1990 to, "reclaim neglected urban space and organize neighborhood groups around public fruit tree plantings." To date, EarthWorks has created and planted 60 orchards in predominantly low-income urban neighborhoods of Boston and has enabled residents to connect with their environment and take ownership of open spaces in their neighborhood. Through the Orchard Care Program they provide on-going care at many of the 60 sites, and through the Outdoor Classroom Program they use the orchards in 7 Boston public school-yards to help students learn about nature and science. The Urban Orchards program strives to increase community involvement, environmental understanding, and stewardship of reclaimed community space. EarthWorks offers educational programs to teach residents and volunteers about natural food growing, harvesting, plant life cycles, and ecosystems.

Founded in 1984, **Boston GreenSpace Alliance** (www.greenspacealliance.org) is a private, nonprofit organization dedicated to the protection, creation, care and use of Boston's parks and open spaces. The Boston GreenSpace Alliance helps to ensure the continued improvement and expansion of Boston's green and open spaces through outreach, education and advocacy work with state and local officials. The Parks Action Resource Center (PARC) Program provides support for community organizing, leadership development and neighborhood capacity building for city residents working on parks and open space issues.

Local Community Gardens and Orchards

The Jardin del Amistad on Dudley Street in Roxbury is a very successful community garden owned by BNAN and run by residents. The mission of this “friendship garden” is to, “empower residents and agencies in the community to continue building the beauty of Roxbury through collaboration and communication.” The garden was rebuilt in 1997 and contains 20 garden plots and a small children’s play area. The garden has a mix of Portuguese-, Spanish- and English-speaking families, many growing foods native to their homelands. In 2001, the Boston GreenSpace Alliance honored Teresa Montanez and Carmen Nieves, volunteer stewards of the Jardin for 15 years, with their annual award recognizing “the unsung heroes of Boston’s parks and open spaces.”

The Berkeley Street Community Garden is run by The South End/Lower Roxbury Open Space Land Trust, a community based non-profit organization that was formed in 1990 to protect, own, improve and maintain community gardens and pocket parks in the South End and Lower Roxbury. The Berkeley Street Community Garden (BSCG) was first started in the early 1970’s and is located in the South End adjacent to Chinatown. Over half of the garden plots are used by Asian gardeners, and over the past year, the South End/Lower Roxbury Open Space Land Trust and the Asian Community Development Corporation (ACDC) have built a strong collaborative relationship to make improvements to the garden. For many of the gardeners, particularly the elderly, “spending time in these garden plots is a vital element of their emotional and physical well being and the food they grow contributes to their and their families’ nutritional security” (www.asiancdc.org). The garden is a successful model of a community group run garden.

Values and Benefits

Community gardens and orchards provide a multitude of economic, environmental, social and nutritional benefits to individuals and their communities. Community gardening allows individuals to engage in an activity that they enjoy and thus provides a sense of personal fulfillment and an increase in self-esteem. As individuals spend more time at the garden, invariably a “sense of place” develops where a spiritual connection is established to that particular parcel of land and to nature. Not surprisingly, once a connection to the land is established, it becomes a place that is better maintained overall. For example, in Montreal, garden plot renewal rates are nearly 100% while roughly one quarter of gardeners have been members for five years or longer.¹³

¹³ Cook, C.D. 1996. “Montreal’s Other Great Pastime.” *Community Greening Review*. American Community Gardening Association, Vol. 6. pp.16-22.

Economic Benefits

Community gardens and orchards provide access to affordable fresh fruits, vegetables and flowers for personal or familial consumption or for sale at the local farmers market. This produce provides an affordable alternative to the cost of traveling to a supermarket, which in many cases is neither close by nor affordable for many low-income families. In fact, according to research conducted by the UCLA Urban Planning Department, shoppers at inner-city supermarkets can pay \$300 more per year for a basic market basket than shoppers in a suburban market.¹⁴ Furthermore, a study evaluating the overall contributions of the Philadelphia Urban Gardening Project, one of the country's largest urban gardening programs, revealed that gardeners ate fresh produce from their gardens 5 months out of the year and gardeners were realizing an average net of \$160 from their plots.¹⁵

When maintained successfully, an attractive community garden or orchard can help produce a ripple effect of increased neighborhood beautification. Consequently, property values may increase as the community becomes a more aesthetically pleasing and coveted place to live.¹⁶ Furthermore, as the aesthetics of the community improve and property values increase, entrepreneurs realize a greater incentive to start or maintain local businesses. As well-maintained community green space contributes to local business development and sustainability, the city realizes greater tax revenue that can, in turn, lead to a more prosperous community overall.

Environmental Health

As land throughout the country becomes increasingly paved over and built upon, open space within urban communities has become an increasingly scarce commodity. Community gardens and orchards offer one of the strongest antidotes to this problem. One of the most significant benefits that community green space provides is its contribution to soil regeneration, along with the prevention of stormwater runoff via increased percolation. This, in turn, has broad implications regarding water infiltration and recharge to the local water table and regional aquifer.

In looking specifically at community orchards, trees have proven to be very effective at removing both solid and gaseous particulates from the air including pollutants such as: ozone, chlorine, fluorine, sulfur dioxide, and others. In one

¹⁴ Cook, C.D. 1996. "The Simple Power of Multicultural Community Gardening." *Community Greening Review*. American Community Gardening Association, Vol. 6. pp.2-11.

¹⁵ Blair, D., Carol C. Giesecke, and Sandra Sherma. 1991. "A Dietary, Social and Economic Evaluation of the Philadelphia Urban Gardening Project." *The Journal of Nutrition Education*, July/Aug [www.cityfarmer.org/nutritionstudy.html].

¹⁶ Vu, P. 1999. *Tree Tenders Handbook*. The Pennsylvania Horticultural Society. Philadelphia, PA. p. 10.

study, stands of trees reduced particulates by 9 to 13 percent, and the amount of dust reaching the ground was 27 to 42 percent less under a stand of trees than in an open area.¹⁷ Trees also cut energy consumption by providing shade.

According to a report by the World Forestry Center in Portland, OR, three well-placed trees can cut air conditioning costs by ten to fifteen percent.¹⁸

Furthermore, a garden's vegetables, fruits, flowers, and an orchard's trees act as "lungs" for the city and thus improve airflow and ventilation, leading to improved air quality in and around the community. Garden vegetation also absorbs heat resulting in a reduction of the 'heat-island effect' often associated with increased temperatures in urban areas. As a result, by offering shade and less heat absorption, community gardens and orchards can provide a cool and comfortable respite during the summer months.

Additional, smaller-scale benefits to the environment include: reducing the need for transporting produce and in turn a reduced use of fossil fuels by trucks, ships, storage and refrigeration; a decrease in packaging materials, and a resulting overall improvement in air and water quality. Furthermore, because of the proximity of community gardens, local citizens need not drive or rely on public transportation for some foods. Another often overlooked environmental benefit that a community garden provides is wildlife habitat for plants, small mammals, birds, and insects such as bees and butterflies.

Social Benefits: Community Building, Multicultural Integration, Crime Prevention

A community garden or orchard, by design, facilitates personal interaction and human contact. As such, community green space can serve as the vehicle for many social benefits, both to gardeners individually and to the neighborhood as a whole. An aesthetically pleasing garden or orchard can act as a neighborhood showplace that fosters community pride and empowerment. In this sense, gardens and orchards foster community building across the borders of race, religion, ethnicity, nationality, gender, and age. The garden provides a place to share ideas, seeds, and recipes while helping to break down the barriers of communication between cultures and generations. In addition, as multicultural gardens share characteristic features of their respective cultures, the act of sharing seeds from foreign lands promotes genetic diversity within the gardens themselves (assuming invasive, non-native species are not introduced).

Multicultural gardening also facilitates the integration of immigrants and other disenfranchised people into the social landscape of America while allowing people from foreign countries to showcase their local expertise by incorporating native practices of gardening into the community. For example, in Seattle, a

¹⁷ U.S. Department of Agriculture. 1993. A technical guide to urban and community forestry. World Forestry Center, Portland, Oregon. p. 3.

¹⁸ Ibid.

group of immigrants surrounded their garden with bamboo and cultivated familiar foods from seeds brought from their home communities.¹⁹ In the Jardin del Amistad in Roxbury, residents from several different countries, speaking several languages come together to garden, socialize and build lasting relationships with community members.

Interaction within the garden fosters citizen empowerment by which neighbors are able to join together to push for other changes in their community. Community gardening also fosters the development of neighborhood community leaders. As a result of the Philadelphia Urban Gardening Project, research has documented that community gardeners were more likely than non-gardeners to engage in neighborhood events and volunteerism.²⁰ In Oakland, California, following a neighborhood tree planting program, residents continued working together with “paint-up-fix-up parties”, neighborhood protective organizations, and community gardens.²¹

By encouraging civic engagement, gardens generate more presence on the street and thus deter malicious behavior. Regarding orchards, studies have shown that being near trees lowers violence among residents of public housing in Chicago, prison inmates, and Alzheimer’s patients in nursing homes.²² Gardens can also provide a positive experience for youth-at-risk. When children or adolescents partake in gardening activities whether with their families in a recreational manner or by required community service, it has been shown that gardening builds self-esteem, bolsters confidence and encourages more learning and growth. Because gardening is tangible and potentially rewarding, it can also serve as a therapeutic activity for children and young adults. Even a small garden plot can provide people with a sense of ownership and responsibility.

Nutritional Benefits

According to the Community Food Security Coalition, a not-for-profit organization active in developing federal agriculture and food policy, “Food security is all persons in a community having access to culturally acceptable, nutritionally adequate food through local, non-emergency sources at all times.”²³ However, the economic structure of the current food system in the United States and throughout the world allows for there to be hunger in the midst of plenty. Again,

¹⁹ Cook, C.D. 1996. “The Simple Power of Multicultural Community Gardening.” *Community Greening Review*. American Community Gardening Association, Vol. 6. pp.2-11.

²⁰ Blair, D., Carol C. Giesecke, and Sandra Sherma. 1991. “A Dietary, Social and Economic Evaluation of the Philadelphia Urban Gardening Project.” *The Journal of Nutrition Education*, July/Aug [www.cityfarmer.org/nutritionstudy.html].

²¹ U.S. Department of Agriculture. 1993. A technical guide to urban and community forestry. World Forestry Center, Portland, Oregon. p. 2.

²² Vu, P. 1999. *Tree Tenders Handbook*. The Pennsylvania Horticultural Society. Philadelphia, PA. p. 10.

²³ Community Food Security Coalition. <http://www.foodsecurity.org>

community gardens address this issue directly by providing ample food grown locally and without reliance on exterior market forces that are beyond an individual's or community's control.

Community orchards help to revive an interest in fruit growing which encourages a healthier diet and awareness of locally and organically grown food. Furthermore, when food is grown locally to provide for those people within the community, a closer connection to the entire food production process is established whereby local citizens know precisely where the food that they are eating comes from and how it was produced. Consequently, individuals and communities exercise great control over the quality and abundance of the food they consume.

Summary

These issues represent a sampling of the economic, social, environmental, and nutritional benefits that DNI can help provide to the Dudley Street neighborhood through the successful maintenance of its community gardens and orchards. In a time when urban communities are becoming further and further removed from access to green space, it is well documented that community gardens have much to offer. Gardens and orchards provide both direct and indirect benefits to social, built, and natural environments, including increased community and multicultural interaction, improved nutrition, reduction in crime, an increase in soil, air, and water quality, an increase in economic development, and innumerable other social benefits. If gardeners/stewards are interested in pursuing these or others of the many values and benefits of community gardens and orchards, it is important that DNI be prepared to assist and support them in their efforts.

Section II: Recommended Maintenance Plan



2.1 Garden Development Plans

Dudley Neighbors Inc., as the community land trust for the Dudley neighborhood, owns many parcels of vacant land that it has acquired through eminent domain or otherwise. While many of the lots have been slated for redevelopment into new housing, community centers or commercial buildings, a significant number are undevelopable due to size or other constraints. The neighborhood has an abundance of open space (i.e. vacant lots), but very little of it is currently utilized or maintained as community assets. DNI recognizes the need to develop aesthetically pleasing and useful open space as part of the overall development plan for the neighborhood, such as parks, playgrounds, and community gardens and orchards. In addition, DNI recognizes the need for additional community garden plots as those that currently exist are in high demand, with a long list of neighborhood residents waiting for a plot.



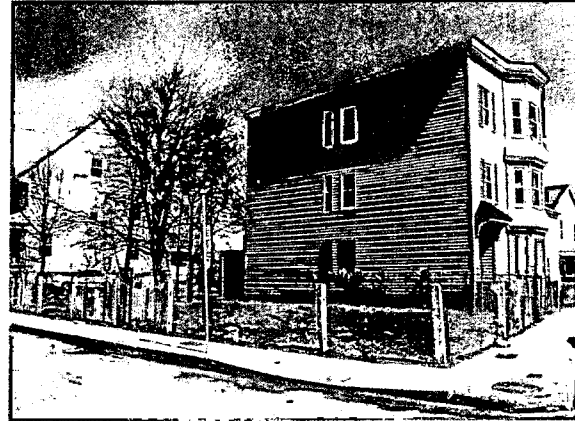
Location map of the two parcels in Dudley Neighborhood

Dudley Neighbors Inc. is currently in the process of developing two vacant lots in the Dudley Street Neighborhood into productive community spaces, a garden and an orchard. Designs have been completed for both parcels by landscape architects, Paul Simon & Associates, and construction is scheduled to begin this spring. DNI is the owner of both parcels and will oversee the community activities, and the City of Boston Department of Neighborhood Development has provided some of the funding for the projects. These two lots will hopefully be

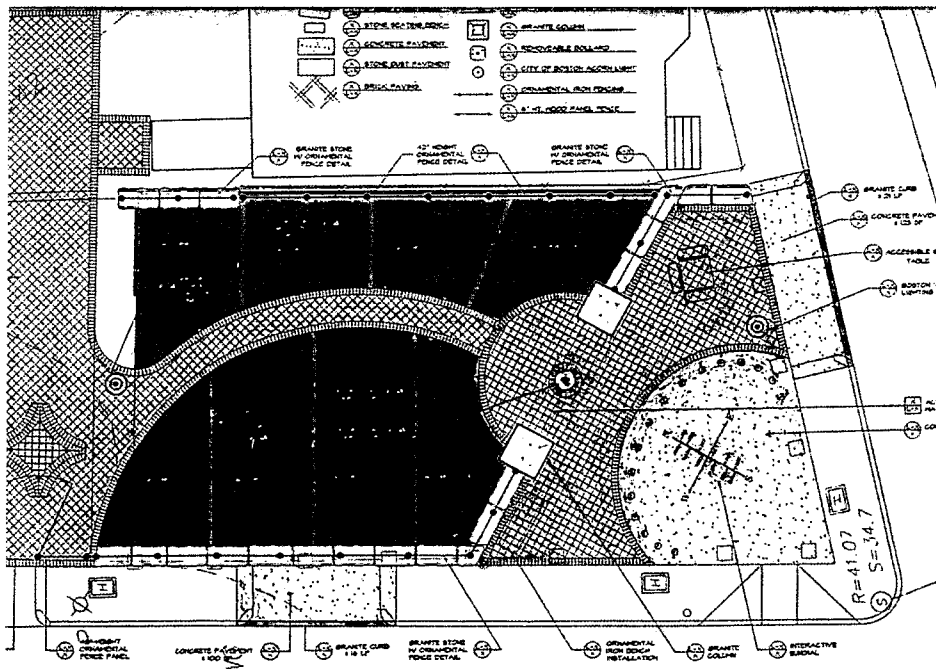
the foundation for a program to develop more community gardens and orchards that DNI will own and maintain.

Dennis Street Garden

Photo by Michelle Mondazzi



The Dennis Street lot is a corner parcel of 3,616 square feet which will be developed into a community garden. The lot has great southern exposure and is not significantly shaded by any adjacent buildings which will allow for great gardening conditions. The plan illustrates that the corner entrance to the garden is open and welcoming to the entire community with permanent benches and tables provided, and an interactive sundial has been designed into the paving. Granite columns mark the entrance to the eight garden plots with a central serpentine walkway connecting the front and rear paving areas. A granite and ornamental metal fence surrounds the lot but security will be ensured by adequate lighting rather than with a gate and lock. The rear of the garden connects by a brick path to the rear of the orchard lot to create a sense of continuity between the spaces and invite passers-by to walk through and enjoy the public open spaces.



Plan for Dennis Street Garden by Paul Simon & Associates

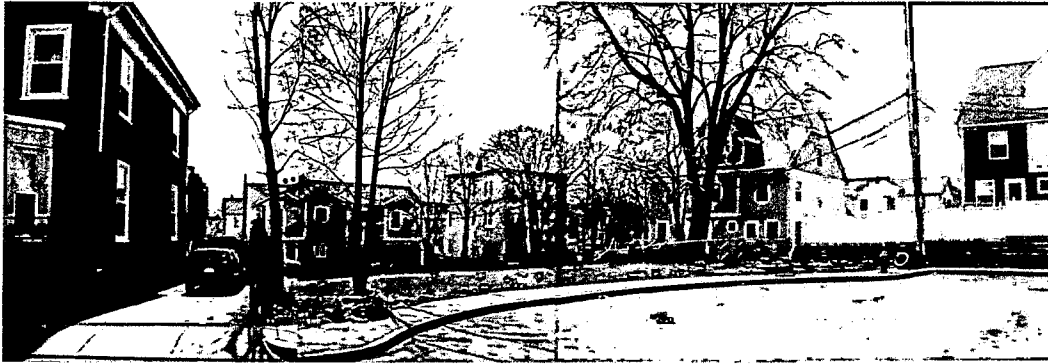
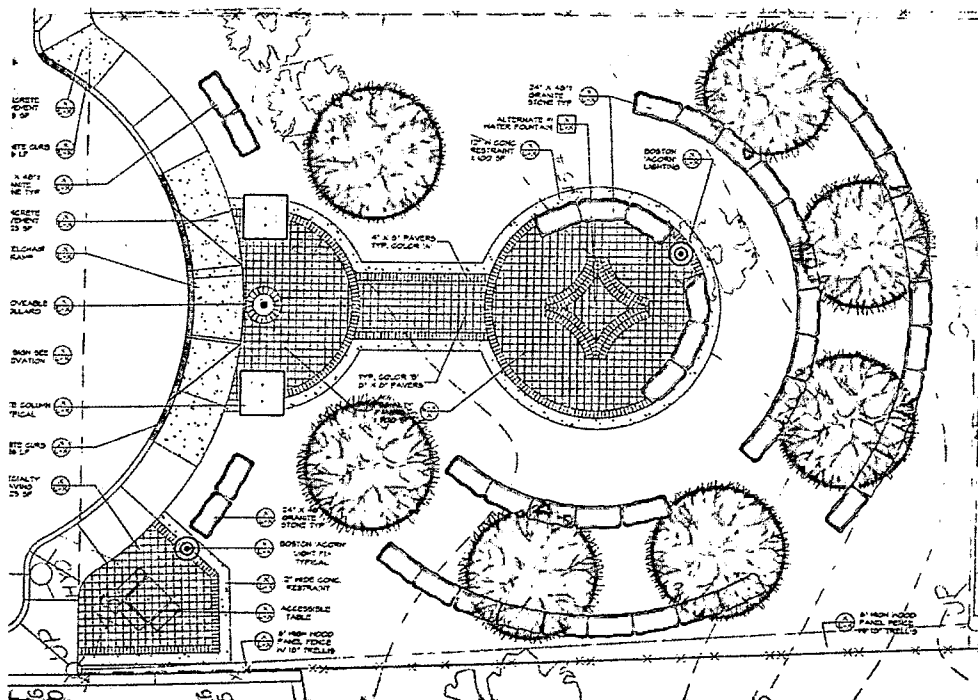


Photo by Michelle Mondazzi

Lewis Place Orchard

The Lewis Place parcel contains 5,279 square feet with a small amount of frontage on the street. The lot will be developed into a community orchard with seven apple and pear trees as well as a grape arbor. The plan calls for the same brick paving and low granite block walls here to create a visual similarity between the sites, and again the openness welcomes the community into the common areas. At the center of the orchard is a circular paving area with a small water sculpture surrounded by granite block benches, creating a pleasant sitting area for neighborhood residents or school groups.



Plan for Lewis Place Orchard by Paul Simon & Associates

2.2 Best Practices: Maintaining Successful Gardens and Orchards

The strength and success of a community green space comes from a combination of key factors. First, an array of capital needs ranging from safe soil to an updated bulletin board must be provided by the land owner, as detailed in Section 2.3. Once such initial provisions are in place, the gardeners' or stewards' personal investment in the collective success of the garden or orchard is far and away the largest contributing factor to the space's vitality and sustainability. The most successful community gardens and orchards are governed by the community members themselves; many self-organize to take responsibility not just for their personal plots, but for the upkeep of the site as a whole. This governance, detailed in Section 2.4, is most often facilitated by a garden coordinator, sometimes in conjunction with a garden steering committee, who plays a pivotal role in the overall upkeep of the community garden. Boston Natural Areas Network (BNAN) refers to this method as the "garden self-management model," wherein community stewardship of the garden is the main goal to ensure sustainability. Gardeners organize and run the operations of the garden, with the owner of the land playing a supporting role, particularly in the realms of establishing capital needs and major or specialized maintenance, as well as providing gardeners with access to training and educational information.

The organization and maintenance of urban orchards varies slightly from that of community gardens because of the communal nature of orchards. There are no plot subdivisions within an orchard like there are within a community garden. Without this obvious division of property and responsibilities, a somewhat different structure of organization and governance must be put into place. This unique situation presents DNI with the opportunity to be creative and flexible in their governance model, allowing for a standard community stewardship model or cultivating an orchard-school partnership. These options will be explored further in Sections 2.4 and 2.5. Many of our maintenance and governance recommendations are based on the practices of Earthworks, a Boston area nonprofit, and their Urban Orchards program. Despite the minor differences between gardens and orchards, though, the overall model of stewardship recommended for community gardens is largely applicable to community orchards.

Our garden recommendations are based on our survey of existing local and national literature on best practices for maintaining successful community gardens. "GARDEN FUTURES," a major three-year research effort led by Valerie Burns of Boston Natural Areas Network (BNAN) and consultant Paula Cortés, provided us with a great deal of researched findings on Boston-area successes and missteps. It is our intention in making these recommendations that DNI will work together with the community members to adapt these guidelines as they see fit. What follows is a compilation of best practices and common mistakes that we have culled from local and national community garden models.

The elements of what makes a community garden successful and sustainable in the short- and long-term are numerous. Community leadership and stewardship of the common space is a key ingredient in building a sustainable garden or orchard. Without significant buy-in and leadership from the community, the green space will not be sustainable. In this sense, community green space provides a real opportunity for leadership development at the community and neighborhood level. DNI can play a pivotal role in nurturing and supporting further community leadership, one of the hallmarks of the DSNI approach to community revitalization.

In addition to leadership development, other key factors leading to sustainable, well-managed gardens include resource development, such as enabling gardeners to enroll in gardening workshops and programs. BNAN runs a Master Urban Gardener program, for example, that is offered free of charge to Boston-area gardeners. Having at least one of the gardeners, ideally the garden coordinator, possessing this level of knowledge will do much to ensure the success of the garden overall. Resource development topics also include providing gardeners with access to information on gardening as well as social networks of other gardeners in the Boston area; BNAN can function as an invaluable resource to DNI in this respect.

Leadership development and resource development are the most important activities DNI itself can undertake towards ensuring an effective community garden.

2.3 Capital Needs

Capital needs relate to the physical conditions of gardens and orchards and their ongoing maintenance. In order for a garden/orchard to be well maintained, aesthetically pleasing, and thus have long-term sustainability, it is important to identify the key elements of that community garden/orchard—those elements essential to a high-quality, well-functioning garden capable of yielding good produce for the gardeners, as well as contributing to the aesthetics and social fabric of the neighborhood.

In identifying the key elements of gardens/orchards, it is important to note that each particular garden and/or orchard has its own distinct character that is influenced by gardeners, neighbors, neighborhood, history of the garden, history of the community, etc. These character parameters are all integral components of each site that play an important role in the overall function of the garden. Furthermore, the key elements of a garden/orchard can be broken down into two categories; essential elements and discretionary elements.

Essential elements are those elements of paramount importance that each garden should have in order to be both productive (in short term and long term) as a garden and be an inviting place that is regarded as an asset to the community. The following are essential elements for which DNI will have primary oversight:

Soil is the most important element to the long-term viability and productivity of a community garden. Ideal soil should be well drained; have a deep rooting zone; good water-holding capacity and balanced nutrient supply; be easily penetrated by air, water, and roots; and resist erosion. Understanding how soil nurtures plants in the growth process is vital to maintaining healthy plants and high yields. As soil structure comprises a complex set of interactions of several living and dead organisms, it is critical that organic matter be added to the garden on a regular basis. Organic matter bonds to sand, silt, and clay particles that allow for the soil to maintain its tilling properties. Rich organic soil also provides nourishment for earthworms, considered to be essential to the health of the soil.²⁴

In urban settings and on sites previously developed, lead contamination is an issue of great importance that must be dealt with above all. Lead in the soil can infiltrate into the vegetables grown there and create a danger for lead poisoning when consumed. The soil must be tested for lead levels, and if contaminated, must be remediated either by sealing off the soil below and gardening in raised beds or by removing all existing soil and replacing it with new.

Understanding and controlling **water usage** is essential for plants to produce reliable yields while also promoting water conservation. The irrigation system and water faucets must be tended to on a regular basis to ensure reliable flow

²⁴ Kirschbaum, Pamela R., Editor. *Community Greening Review*. American Community Gardening Association, Volume 11, 2002.

rates and monitoring of overuse. An effective water conservation strategy along with the added assurance of water availability is to implement a rainwater collection system. Stormwater runoff from roofs and other structures can be diverted into a large cistern (i.e., 5000 gal.) and then used at will with the operation of an on/off valve. The water system and infrastructure must meet all applicable city codes, and preferably be located underground to withstand the winter freeze and thaw cycle.²⁵

Composting should be practiced at every garden site. Composting is necessary because it is created on site and thus reduces the amount of waste material that must be taken away, in many cases to a landfill. Compost can be left on the surface as mulch around garden plants. This is essentially the same as a 'top dressing' application, but mulches are typically meant to cover all of the soil around the plants that get mulched. Mulches protect the soil from erosion and also save water by shielding soil from the drying effect of the wind and sun. Compost provides an effective alternative to using synthetic fertilizers which should be discouraged.

Space should be designated for a compost bin that can be built or purchased for a nominal cost. [Note: A very inexpensive bin can be made using wooden pallets. These bins cost almost nothing and you re-use pallets that would eventually end up in the landfill. They can also be expanded on a needed basis.] It is important to get the compost system started promptly along with brief training for the gardeners on how to use it. Furthermore, gardeners need to commit to composting and maintaining the compost bin to make it work.²⁶

Notice Boards provide a convenient medium for gardeners and non-gardeners to stay abreast of the current events and regulations in the garden.²⁷ Notice boards should have clear plexiglass doors to facilitate easy access and provide protection from the elements.

Common area plantings contribute to a well-maintained common area, which makes for an attractive and inviting space that is more likely to be regarded as a community asset. Therefore, gardeners need to commit to maintaining common areas within the garden on a year-round schedule, especially during the winter months when garden appearance is often barren and unpleasing.²⁸

Again, not all gardens share the same characteristics such as size, nature of the neighborhood, etc. so each garden will have its own needs that will be revealed over time. However, in addition to the aforementioned "essential" elements, the following "discretionary" elements should be considered for their contribution to a sustainable garden:

²⁵ Ibid.

²⁶ Interview with Matt Gasborro, Mystic Riverbend Park Community Garden.

²⁷ Ibid.

²⁸ Interview with Valerie Burns, President, Boston Natural Areas Network.

Common gathering space can facilitate a community atmosphere among gardeners and promote active participation within the garden and the surrounding community. Again, to be successful, gardeners must commit to maintaining this space for it to be effective.

A **Tool shed** can provide gardeners with convenient access to tools for effective and affordable gardening. Use of a universal (combination) lock ensures that the tools remain on site. If space does not allow for a shed, a tool checkout system can be arranged with the main office of DNI or use of a tool bank available to community gardeners provided by the Boston Parks and Recreation Department.

Community orchards need much of the same infrastructural support that community gardens do, including proper soil and water. A benefit to DNI undertaking the creation and/or maintenance of community orchards and gardens at the same time is that the capital needs of the two are so similar. Perhaps the largest and most unique capital investment with regards to community orchards is the purchase and planting of the trees themselves.

Although the elements essential to the productive function of community gardens also apply to community orchards, it is important to note some of particular importance to orchards. Water, organic soil, sunlight, sufficient space (for rooting), pruning needs, fertilizer (green manure), and pest management all play a critical role in the health and productivity of a community garden.

Additional Capital Maintenance Recommendations

Regular maintenance can lower repair and replacement costs significantly in both the short term and in the long term. Therefore, instruction in proper maintenance practices must be made available to the gardeners, and gardeners and/or coordinators should perform most of the maintenance activities themselves. March, April, May, October, and November are important months for annual maintenance tasks (See Appendix A for maintenance schedule).

2.4 Governance and Organization of Community Gardens and Orchards

Community Gardens

The organizational structure of a community garden is essential to its viability and success because clear organization makes the gardens accessible to potential gardeners, provides services and resources for gardeners, aids in the resolution of disputes, and invites participation. This structure is important not only within the garden itself, but is part of the critical link between the gardeners and DNI, acting as the landowner. A number of studies have been conducted to determine various governance styles that exist in community gardens, and have found results ranging from dictatorial to absentee landlord. The most effective style, advocated by the Boston Natural Areas Network, is the stewardship model, in which the gardeners have a sense of ownership of and commitment to the land, even if DNI is in fact the legal owner of the property. In this model, DNI would serve as support to the gardeners, but recognize them as the primary voice in both the policy implementation and daily functions of the gardens. It is vital that each participant in the community garden venture, from DNI, through a garden coordinator and steering committee, to each gardener, understands and agrees to their role within the larger framework of organization. Clarity of organization discourages conflict and misunderstanding while fostering community and accessibility. This clarity is achieved through specific definitions of the roles of individual gardeners, coordinators and steering committees, and DNI.

Role of the Gardeners

Gardeners are the backbone of any community garden. Their participation and commitment to the garden is directly proportional to the success that the garden will experience. The Dudley Square neighborhood has many active community gardens with waiting lists for people to be assigned plots, indicating there will be great interest in the community gardens which DNI has planned. Despite the evident demand for more community gardening space, accessibility to and involvement with the gardens are crucial elements in attracting and maintaining active gardeners. This accessibility and involvement are facilitated by a clear definition of gardener responsibilities.

There are many successful models upon which DNI can base gardener responsibilities, such as the Mystic Riverbend Park Community Garden, located in Medford. The following list of gardener rights and responsibilities is adapted from their 2003 Rules:²⁹

During each season each gardener will be assigned only **one** plot, as defined by a circulated plot map, which will be permanently posted within the garden. The right to plant assigned individual garden plots will be retained by gardeners from year to year, so long as the gardener is in good standing. Only after this gardener in good standing has passed on the option to continue gardening this

²⁹ Mystic Riverbend Park Community Garden 2003 Rules, p. 1-2

plot will it be offered to the next gardener on the waiting list. Plots cannot be subdivided or reassigned by individual gardeners. As a gardener, each person will:

1. be a resident of Roxbury
2. be eligible to hold any office associated with their community garden
3. be eligible to run for any of the leadership positions of their community garden
4. be eligible to vote for the candidates for the leadership positions of their community garden
5. have sole authority to approve amendments to the garden rules, which will be done by majority vote and only at the annual meeting
6. pay an annual fee (if one is assessed by DNI) before or during the annual meeting
7. keep his/her children under control and pets on a leash, and take full responsibility for any damage they may inflict on the community garden
8. have the right to receive one written warning from the Steering Committee (or other appropriate designated agent) for violating garden rules before facing disciplinary action, which can include ejection from the community garden
9. cultivate his/her own garden plot by a designated date, maintain the garden consistently, and arrange for its upkeep in the event of an extended absence
10. maintain a neat garden and remove weeds, rocks and wandering plants from adjacent paths
11. refrain from using toxic chemicals and minimize or eliminate the use of pesticides and fungicides
12. promptly remove diseased, infested, or otherwise unhealthy plants from his/her garden plot and place them in the garbage
13. remove from his/her garden all plants that have ceased to bear
14. follow compost rules and place all refuse in proper containers
15. make a conscious effort to conserve water by turning off faucets after using them, heeding water restrictions, utilizing mulch, and minimizing midday waterings
16. refrain from harvesting other gardeners' plots
17. report immediately to the Garden Coordinator any damage or vandalism to the community garden
18. clean his/her garden in preparation for the winter
19. inform the Garden Coordinator of his/her inability to be in the garden for periods of more than one week
20. notify the Garden Coordinator of any change of address or phone number within one week of any change

This list of rules is adaptable and should be modified to the needs of each community garden. Once established and agreed to, these rights and responsibilities must be uniform within each garden and be taken very seriously in order to accomplish a successful and smoothly-run garden. The enforcement of these responsibilities should fall to the Garden Coordinator and the Steering

Committee. If the gardeners violate the rules agreed to, DNI reserves the right to revoke garden plot renewal.

Role of the Garden Coordinator

The Garden Coordinator is the point person of the community garden. He or she may act as the liaison between individual gardeners and DNI and coordinate: "maintenance, oversight, administration, mediation, contact and communication, troubleshooting, and enforcement – often all at the same time."³⁰ Garden Coordinators have a tendency to take on too much of the responsibility and quickly become burned out. This situation could be alleviated by a specific definition of what their function within the community garden is and a scheduled rotation of coordinator duties. Coordinator duties may vary from garden to garden, as larger gardens tend to have a more formal structure and smaller gardens are more ad hoc, but broadly include: "a lot of administrative duties, such as keeping track of plots, calling meetings and running them, delegating work, coordinating people, and providing garden services."³¹

Again, the Mystic Riverbend Park Community Garden Rules 2003 provides a working model of what the responsibilities and duties of a Garden Coordinator are:³²

This position will be filled by a minimum of one person and a maximum of two people acting as a team. The responsibilities of the Garden Coordinator are:

1. organize and attend an annual garden meeting
2. maintain updated lists and contact information of gardeners and of people waiting for the plot
3. initiate recruiting programs for new gardeners, with special attention to the surrounding neighborhood
4. organize and facilitate, with the Steering Committee, a meeting of the general membership, at which time members will inspect the garden and be informed of pending organizational developments, upcoming alterations to the garden area, etc.
5. coordinate with outside resources to meet physical needs that cannot be met independently
6. convene a minimum of one Steering Committee meeting a month during the gardening season
7. prepare an agenda for the Steering Committee meeting
8. monitor the garden site at least three times a week and report damage and vandalism to the Steering Committee and DNI
9. consistently assess the condition of the garden and oversee all workday activities
10. obtain check signing authority (if appropriate to funding structure)

³⁰ King, Patricia and Judy Lieberman and Julie Watts. "Garden Futures: Task 2: Organization and Governance Assessment." 1996, p. 25.

³¹ Ibid, p. 25.

³² Mystic Riverbend Park Community Garden 2003 Rules, p. 2.

11. assign vacant lots either to the gardener with the most seniority who wishes to switch plots or to the next gardener on the waiting list

Like the gardener rules, this itemization is meant to be flexible and will most likely evolve according to the specifics of each garden.

Role of the Steering Committee³³

The Steering Committee should consist of a minimum of two and maximum of three members (for the Dennis Street community garden), excluding the Garden Coordinator. A Recording Secretary should be selected from the Steering Committee and take notes at each subsequent meeting and post them in the garden. The responsibilities of the Steering Committee are:

1. discuss and vote on all garden expenditures
2. serve as the decision-making body on the topic of pesticide and fungicide use in the garden
3. hold sole authority to issue warning letters to garden members and to eject by majority vote any gardener or office holder for violation of garden rules
4. maintain an ongoing file of minutes and a journal of all garden developments
5. convene Steering Committee and community meetings in emergency situations

Just as important as each of these roles are, it is equally important that there be transparency and fairness in the mechanism that determines how each of these roles is filled.

Selection of Garden Coordinator and Steering Committee³⁴

To be eligible for the position of Garden Coordinator, the gardener must live within a fifteen minute walk of the garden and accept the responsibilities as outlined above. He or she will be elected by a majority hand vote of the gardeners in each community garden at the annual garden meeting. The duration of the position will be until the next annual garden meeting. All interested parties must make their intentions known at the annual meeting, and, if there is more than one candidate, a secret ballot will be taken. It is the responsibility of the outgoing Garden Coordinator to familiarize the incoming Coordinator with record keeping and internal organization.

Gardeners interested in being on the Steering Committee, and who accept the responsibilities outlined above, can volunteer to become members. All interested parties must make their intentions known at the annual meeting. If there are more volunteers than seats available on the Committee (as previously

³³ Ibid, p. 2.

³⁴ Ibid, p. 2-3.

determined), seniority within the garden will determine who is on the Committee. In the case that seniority is an insufficient means to select Committee members, names will be drawn from a hat until all available positions are filled. The duration of the Steering Committee position will be until the next annual garden meeting.

Role of DNI

Strong organization and governance are essential to any successful, attractive, participatory garden. DNI must realize their role in supporting the gardeners in order to bring about this reality over the long run. A broad survey of community garden owners has revealed a number of reoccurring points that have helped them to manage successful community gardens:³⁵

- Owner organizations can play a strong and positive role in supporting and strengthening community garden organizations even though each community garden should function autonomously, choosing the organization model that works best, and managing the day-to-day operations of gardening independently.
- Owners can provide support and reinforcement for the garden coordinator, and owners/organizations might play a role in the revitalization of organizationally troubled gardens (much like those which require physical renovation), and the organization of new gardens.
- Owners should continue to assist gardens with resources and services, as has been their traditional roles. Variation between groups occurs mostly in the component of this multifaceted strategy which they emphasize, and the degree to which they are involved with the gardens under their umbrella.

Essentially, DNI must have an active and interested role in the garden, but as a support system for the gardeners themselves rather than as a decision-making and governing body for the garden. Among the broad array of responsibilities and duties, the owners should:

1. advocate for and help develop support for the human and material needs of all gardens
2. describe clearly, in writing, the responsibilities and relationship between the owner and garden organization
3. encourage interactive owner/gardener and organization/community relationships
4. be accessible to gardeners and coordinators, and coordinators should feel free to contact owners to resolve problems, facilitate resources, etc.

³⁵ King, Patricia and Judy Lieberman and Julie Watts. "Garden Futures: Task 2: Organization and Governance Assessment." 1996, p.41.

5. have garden representatives who keep in touch with their respective gardens³⁶

Essentially, successful organization and governance is essential to achieve an attractive, productive, and cohesive community garden that encourages community participation. The following list is an overview of what has been found to work well and not work well within current community gardens and provides a valuable starting place for DNI to start fleshing out its role as the owner.³⁷

What works well:

- An active group of gardener participants; a caretaker(s)
- A coordinator or committed gardener who is effective at getting resources for the garden
- An attractive garden, well-maintained all year round
- Equitable and fair handling of all issues (from plot assignment to enforcement of capital improvements)
- A garden that is well-integrated into the overall activities of the neighborhood, improves or beautifies the neighborhood, and integrates neighbors into garden activities
- Easy access to the garden or park during the day by all who wish to use it for legitimate purposes

What to avoid:

- An absentee coordinator
- A dictatorial type coordinator
- Not having a good plan for coordinator succession
- Coordinator burnout
- A coordinator unclear on jurisdiction
- Unresolved tensions or disputes
- Unequal distribution of work
- Perception of inequality or unfairness
- Unclear rules
- Rules not enforced consistently or equitably
- Loss of the reason for the creation of the garden
- Negative/illegal activities in the garden
- Bad neighbor relations
- Low demand
- Lack of resources or capital
- Land insecurity
- Competing neighborhood uses for that space

³⁶ Ibid, p. 8-9.

³⁷ Ibid, p. 9.

Special Considerations for Community Orchards

The Tufts Team has identified two approaches to orchard maintenance that have been proven effective: the stewardship model akin to the model for gardens described above, and the school partnership model. Both models require community involvement and commitment to sustain the orchard over the long-term.

Earthworks, through its extensive experience with urban orchards, has found a model that effectively manages and sustains the orchard while incorporating all interested neighbors. The *Urban Orchards Ongoing Team Jobs* is a structure that has been used at EarthWorks and has been found to be effective for organizing volunteers:

Job	Brief Description and Typical Time Commitment per site
Community Outreach	Spread the word about activities at a specific site or sites (events, care, classes), coordinate a Friends Group at your site. May include postering, phoning, door-to-door flyering or face-to-face contact while spending time at your site. Time: 2-4 hrs/month.
Site Tender:	A 2 Person Team can share these tasks: <ul style="list-style-type: none">• Check on plants, keep a log of observations, and discuss with one another each month or as needed. Time: 2-4 hrs/month.• Perform basic care (watering, weeding, mulching), optionally fertilize, prune, and do non-toxic pest and disease control. Time: 2-5 hrs/month.
New Planting Organizer	Coordinate specific planting days at new sites. Time: March-April, September-October – initial calls plus 3-6 hrs per session.
Educator/Teaching Aide	Help at schools and other public places to help teach children and adults how to plant & care for fruit and nut trees and shrubs. Time: 2-4 hrs/session.
Volunteer Caller	Contact volunteers, volunteer service organizations, or interested employers about activities, events, and tasks. Maintain list of volunteers, report changes to project director. Time: 1-5 hrs/month.
Public Relations	Help widely publicize Urban Orchards work using personal contacts, print, electronic, etc. media.

Other Opportunities: pruning, hauling (pickup trucks or bike trailers), fundraising, office work. Project directors will train & assist volunteers. Horticultural consultants provide technical support.

The following short-term tasks are appropriate for people who would like to get involved with the orchard, but want to try something out before taking on one of the larger jobs above.

1. Volunteer Calling – Contact employers, volunteer service groups, and/or individuals about specific activities.
2. Sign Creation – Design and create signs for use at Urban Orchard sites.
3. Signing – Post signs at sites.
4. Poster Creation – Create attractive posters announcing events or classes at sites.
5. Postering – Put up posters at libraries, garden centers, hardware stores, laundromats, copy shops, coffee shops, ice cream parlors, and others with public bulletin boards.
6. Fruit Directory – Find new locations of publicly accessible fruit, nut, and berry plantings.
7. Stock – Seek donations/throwaway plantings from nurseries. Edible fruit, nut, berry varieties or native, wildlife plants only.
8. Curriculum – Develop, edit, propose curriculum for schoolyard orchards.
9. Teacher Aide – Assist teacher at schoolyard activities. September-June.
10. Cook – Use urban orchards fruit to make preserves, chutneys, dried fruit, etc. for sponsoring organization events. June-November.
11. Planters – Work with residents to plant at sites. April, May, October, November.
12. Pruners – Prune trees, shrubs, and vines during busy late February-early April pruning season.

Partnering with local elementary schools is an excellent way to get neighborhood children involved with the community orchards and provides a hands-on method of teaching science that they simply could not experience inside of a classroom. School-orchard partnerships, “aid classroom teachers in their science curriculum and create confident, engaged and inquisitive learners.”³⁸ Rather than burdening teachers with extra work and the students with non-topical information, school involvement with community orchards allows teachers to more directly and relevantly address the very information that is mandated by state and federal

³⁸ www.earthworks.org

requirements.³⁹ Also, the orchards represent a permanent and committed investment to the science curriculum of the neighborhood children.

There are a number of schools that have partnered with Earthworks in tending to urban orchards, including Curley Middle School and Hennigan Elementary School in Jamaica Plain, Holland Elementary School in Dorchester, and O'Donnell Middle School in East Boston. Each of these ventures could provide a model to DNI as to how to appropriately implement a school-orchard partnership.

Earthworks has identified through experience the best maintenance plan for these school-orchard partnerships:

- A good maintenance plan is one of the most important, and most overlooked, elements of a successful program. It is best to start planning how the space will be maintained early in the process. Determining who will be responsible for maintenance and setting a regular maintenance schedule will influence the design of the space. In New England, school is not in session during most of the growing season. As a result, EarthWorks' gardens and orchards largely feature plants that bloom in early spring and in the fall. Their gardens and orchards are mulched each summer to minimize weeding and watering needs, and each site is maintained during the long school vacation. Similar steps will ensure a healthy garden or orchard and will generate good will toward the program.
- Including summer and afterschool programs in the outdoor classroom program can be an important part of the maintenance plan. School programs need to follow the curriculum standards for each grade, which often means that the classes do not have time to do much orchard maintenance themselves. Because afterschool and summer programs don't have such stringent requirements, children in these programs can do much of the needed maintenance.
- Adults might find maintenance tasks tedious, but children often relish the work – especially if they can use tools. Trusting a child with tools engages him or her in the task, and children rise to this responsibility. Providing children with clear guidelines, jobs that are small enough not to be overwhelming, and the option to switch tasks often also ensures the work is enjoyed.⁴⁰

School-orchard partnerships are not only a way for kids to learn more about science, they are a way for these children to take pride in their community and develop a sense of stewardship towards the land around them. Starting this education and involvement at a young age will lay the foundation for a lifetime of participation in building and maintaining sustainable communities.

³⁹ Ibid.

⁴⁰ www.earthworks.org

2.5 Implementing the Maintenance Plan

Garden Orientation

Upon the completion of garden construction, DNI should host an orientation to the gardeners on the waiting list of garden plots. The purpose of this orientation will be to familiarize the community members with this maintenance plan and to discuss the division of responsibility between DNI as land owner and the community members and gardeners as stewards of the garden overall.

This orientation will function as DNI's first step in resource development. Establishing the governance of the garden is an important and decisive moment, as the gardeners themselves represent the most important resource to the sustainability of the garden. Clarity and partnership are the key elements of success for this first meeting.

Some general recommendations for the orientation are:

- It is essential that a tone of true partnership between DNI and the prospective gardeners be set at this first meeting.
- A clear articulation of roles and expectations is a primary objective of the meeting.
- Familiarize the gardeners with the maintenance plan, the resource guide, and the maintenance activities schedules in the appendices of this report.
- Read through and amend/sign the gardener agreement form. Be sure that the gardeners are aware of the responsibility that are undertaking and also that if they breach the agreement their plot will be revoked.
- Ask the group to elect a garden coordinator once everyone fully understands the importance and commitment of the role.
- Ask the group to determine the utility of a Steering Committee; if determined useful, set dates for annual or bi-annual meetings of the Committee.
- Decide the division of plots; anonymous selection, i.e. a lottery system, is suggested.
- Outline DNI's role and be open to questions. If you don't have the answer, turn to BNAN for support. Encourage gardeners to take advantage of the tremendous resources that BNAN provides free of charge.

Orchard Orientation

There are two possible recommendations with regards to implementing a maintenance plan for the Lewis Place Orchard. If DNI elects to pursue the community-based stewardship model, it will need to first assess community interest in participating as well as DNI's own organizational capacity to maintain the orchard. If additional resources are needed, we recommend that DNI contract with Earthworks for initial consultation and technical services.

Alternatively, the Tufts Team recommends that DNI pursue the school partnership model. Specifically, contact should be made with the nearby Emerson School to determine which teachers are most interested in getting involved and can make at least a 2-year commitment to class stewardship of the orchard. Because of the proximity of the school to the orchard site, the fact that many children in the school live in the surrounding neighborhood, and DNI's existing relationship with the school, this model will provide optimum community engagement and will no doubt be successful.

2.6 Conclusion

DNI is undertaking a major new initiative with the proposed development of the Dennis Street community garden and Lewis Place orchard lots as pilots that will test the waters of the organization's future garden and orchard development. As a community land trust with the goal of "providing residents with a way to control the development process in the neighborhood,"⁴¹ the development of these parcels into community-organized green space affords DNI an exceptional opportunity to put its mission into practice. The community stewardship maintenance model is by far the approach that is most in sync with DNI's mission and strategy for community empowerment.

It is important that DNI remain attentive to the evolving needs of the garden and orchard in this first year of their implementation. The guidelines and recommendations put forth in this report will work best if used as a starting point for both DNI and the gardeners/stewards, but new questions and better approaches will naturally arise from the cumulative knowledge and experience of those involved at each parcel. Gardener agreements, cost itemization, and maintenance schedules will all need to be adapted when and if new issues are brought to bear on orchard and garden practices. Toward this end, the Tufts Team will provide DNI with an electronic copy of this document to be kept on file for such future adaptations and revisions.

The maintenance and flourishing of this garden and orchard are truly of neighborhood-wide importance, as their viability or failure can influence future open space development for DNI in particular and the Dudley neighborhood overall. If successful, the launch of these two new green spaces can inspire renewed community interest in reclaiming the undeveloped parcels that still loom large on the Dudley Street landscape.

⁴¹ www.dsni.org/DNI

Section III: Resource Guide for Dudley Street Neighborhood Community Gardeners



3.1 Resources Available for Community Gardeners⁴²

General Information Websites:

- American Community Gardening Association: 877.275.2242 or www.communitygarden.org
- www.cityfarmer.org
- www.hcs.ohio-state.edu/webgarden
- www.windowbox.com
- www.gardenmosaics.cornell.edu
- www.ppplants.com

Workshops, Classes, and Information:

- Master Urban Gardener (MUG) class at BNAN: eight Saturdays of classes beginning in January; emphasizes horticultural and organizational aspects of a community garden; 617.542.7696
- BNAN's "Seed, Sow & Grow" horticultural series; classes held March through October; pre-registration required; 617.542.7696
- Arnold Arboretum, Jamaica Plain; 617.524.1718 or www.arboretum.harvard.edu for a list of classes
- New England Wildflower Society; 508.877.7630 or www.newfs.org
- Massachusetts Horticultural Society; 617.933.4900 or www.masshort.org; plant hotline operates from 10 a.m. to 2 p.m. Monday, Wednesday, Friday from May through September; 617.933.4929
- Possible courses offered from:
 - Boston Center for Adult Education: 617.267.4430, www.bcae.org
 - Cambridge Center for Adult Education: 617.547.6789, www.ccae.org
 - Brookline Adult Education: 617.730.2700, www.brooklineadulted.org
 - Local adult education programs

Compost, Soil, and Mulch:

- Greenleaf Composting Company: 617.542.4477, www.greenleafcomposting.com
- City Soil and Greenhouse Company: 617.469.8164
- MA Department of Environmental Composting Program: Ann McGovern, 617.292.5834, www.state.ma.us/dep/recycle; offers workshops and discounted compost bins
- Boston Building Materials Coop: 617.442.2262; offers discounted compost bins
- City of Boston Home Composting Line: 617.780.8266; workshops and discounted composting bins

⁴² Adapted from BNAN's website: www.bostonnatural.org

Horse Manure:

- Check on availability of horse manure for 2004 through the Boston Parks Rangers at Franklin Park at 617.635.7583; as of 31 March 2004, horse manure will be available seven days a week from 10 a.m. to 5 p.m.; sign in at office as you enter the yard
- Golden Spur Farm, 704 Randolph Ave., Milton, MA, 617.698.9507; need truck and loader
- Revere-Saugus Riding Academy, 122 Morris, Revere, MA, 781.322.7788
- Belliveau Stables, 1244 Randolph Ave., Milton, MA 617.698.9637

Rototilling:

- Mike Roberson, 617.282.3976, for a fee

Tools for Loan:

- Boston Parks and Recreation Department has flat shovels, brooms, and racks, except during July and August; Mike Vardaro, 617.635.7275

Organic Soil Amendments:

- BNAN/Community Garden Council's bulk purchasing program offers organic soil amendments; ordering for 2004 has been completed, but check the website of BNAN this fall for info on bulk orders for the 2005 season
- Boston Building Materials Coop; offers organic soil amendments

Plants and Seeds:

- BNAN holds a spring and fall perennial divide at City Natives Nursery in Mattapan Square; bring perennial divisions, bulbs, etc. and take home plants; select New England native plants available for purchase; call 617.542.7696
- Re-Vision House offers vegetables, herbs, and flower seedlings for sale; call 617.825.8642
- American the Beautiful fund offers seeds for community projects; small processing fee; go to www.america-the-beautiful.org
- BNAN provides free seeds to Boston Area community gardens; seeds must be pre-ordered in January and are distributed at the Annual Gardeners Gathering; call 617.542.7696

Farmer's Market:

- The Food Project makes produce available to the community through their farmer's market; call 617.442.1322 or www.thefoodproject.org

Other Community Garden/Orchard Models

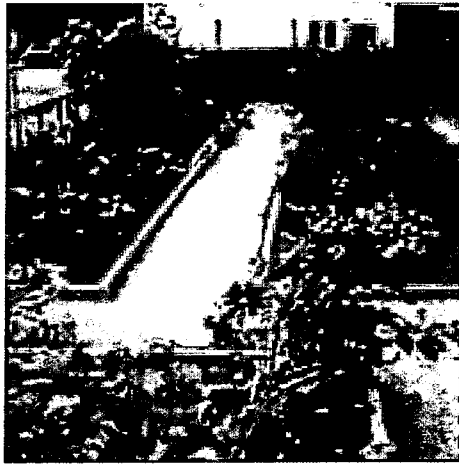
TreeFolks, Austin, TX: www.treefolks.org

TreeFolks grows the urban forest through tree planting, education and community partnerships” and offer several programs to accomplish this goal. The City Shade program is a large scale planting program for public parks and public lands that gives citizens the opportunity to participate in public tree plantings. CommuniTrees is a grant program that offers trees to individuals or groups planning tree planting projects on public land, and also provides expertise for the long term care of the trees. The Urban Orchard Project places fruit and nut trees in public spaces in low income neighborhoods. Participants take part in a training program that teaches them the basics of organic fruit and nut tree care, pruning and harvesting techniques. Treefolks also runs a training course on the care and maintenance of urban trees.

Urban Harvest, Houston, TX: www.urbanharvest.org

The mission of Urban Harvest is to, “help build communities from the ground up by promoting sustainable urban land and horticultural practices to grow food and reduce hunger.” They believe that community gardens encompass the values of building communities, improving nutrition and reducing hunger, helping the environment, providing income, getting physical exercise, and increasing health and pride. Urban Harvest provides those interested in starting community gardens with information on design, construction, fundraising, and organization for a garden plus resources on how to grow, harvest, use and sell their produce. They also provide workshops and classes and offer many publications and books on their website.

Section IV: References and Appendices



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All divider photos used courtesy of Boston Natural Areas Network,
www.bostonnatural.org

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Kirschbaum, Pamela R., Editor. *Community Greening Review*. American Community Gardening Association, Volume 11, 2002.

Mystic Riverbend Park Community Garden, 2003 Rules.

Roxbury Strategic Master Plan: Building a 21st Century Community, August 2002.

U.S. Department of Agriculture. 1993. A technical guide to urban and community forestry. World Forestry Center, Portland, Oregon.

Vu, P. 1999. Tree Tenders Handbook. The Pennsylvania Horticultural Society, Philadelphia, PA.

Websites:

www.bostonnatural.org

www.boston-online.com/roxhist.html

www.dsni.org/dni

www.earthworks.org

www.foodsecurity.org

www.thefoodproject.org

Appendix A: Maintenance Activities Schedule

MAINTENANCE ACTIVITIES SCHEDULE (Source: Boston Natural Areas Network)

AR= As Required S/C= Specialist/Contractor G= Gardeners
 O= Owner C= Coordinator

ITEM	ACTIVITY	BY WHOM	FREQUENCY					MONTH IN WHICH ACTIVITY IS PERFORMED											
			D	W	M	Y	AR	J	F	M	A	M	J	J	A	S	O	N	D
ORGANIZATIONAL ISSUES	Annual plot assignment	C				X				X									
	Rules & task assignment	C				X				X									
	Update gardener contact info	C				X				X									
GENERAL CLEAN-UP	Common areas	G			X			X	X	X	X	X	X	X	X	X	X	X	X
	Individual plots	G		X							X	X	X	X	X	X	X	X	X
	Graffiti removal	S/C					X	X	X	X	X	X	X	X	X	X	X	X	X
	Leaf removal	G					X				X					X	X	X	
	Trash removal	G		X				X	X	X	X	X	X	X	X	X	X	X	X
SIDEWALKS	Trash & weed removal	G		X				X	X	X	X	X	X	X	X	X	X	X	X
	Snow shovel	O,G					X	X	X	X	X							X	X
SOIL	Garden-wide renewal	O					X			X	X							X	X
	Test- lead	O					X			X	X								
	Test- pH	G					X			X	X								
WATER SYSTEM	Inspect functioning	O, S/C, C				X					X								
	<i>Fall shut down:</i>																		
	System blow-out	O, S/C, C					X												X
	Backflow removal/drain	O, S/C, C				X													X
	Meter removal	O, S/C, C				X													X
	<i>Spring start-up:</i>																		
	System turn-on	O, S/C, C				X					X								
	Leak check & repair	S/C, C			X						X	X	X	X	X	X	X	X	X
	Meter operational	O, C				X					X								
BWSC inspections	BWSC				X					X									
FENCES, GATES, & WALLS	General repairs	S/C				X					X	X						X	X
	Carpentry repairs	S/C					X				X	X						X	X
	Masonry repairs	S/C					X				X	X						X	X
	Metalwork repairs	S/C					X				X	X						X	X
	Paint	S/C					X				X	X						X	
	Inspect gates & locks	C, G			X			X	X	X	X	X	X	X	X	X	X	X	X
	Lubricate gates & locks	C, G				X					X	X							
	Maintain universal lock	C			X			X	X	X	X	X	X	X	X	X	X	X	X
RAISED BEDS	Wall & edge inspections	S/C, C				X				X	X								
	Repairs	S/C					X			X	X							X	X
DELIVERY AREA	General clean-up	G			X					X	X	X	X	X	X	X	X	X	X
	Weed	G			X					X	X	X	X	X	X	X	X	X	X
	Surface renewal	S/C, G					X			X									X

MAINTENANCE ACTIVITIES SCHEDULE (Source: Boston Natural Areas Network)

AR= As Required S/C= Specialist/Contractor G= Gardeners
 O= Owner C= Coordinator

COMPOST FACILITY	General clean-up	G		X				X	X	X	X	X	X	X	X	X	
	Compost turning	G		X					X	X	X	X	X	X	X	X	
PATHS	Surface inspection	S/C, C			X			X	X					X	X		
	Surface renewal	S/C, G			X			X	X					X	X		
	Weed	G		X						X	X	X	X	X	X	X	
	Edge	S/C, G			X			X	X	X	X	X	X	X	X		
	Litter & debris pick-up	G		X			X	X	X	X	X	X	X	X	X	X	X
	Rake	G				X			X	X					X	X	
PLOT DIVIDERS	General inspection	C			X			X	X	X						X	
	Repair	S/C			X			X	X	X					X	X	
TREES	General inspection	S/C, C, G			X					X				X			
	Fertilize	S/C, C, G				X		X	X	X							
	Prune	S/C, C, G				X		X	X	X				X	X	X	
	Water	G				X			X	X	X	X	X	X	X		
	Mulch maintenance	G			X			X	X	X							
	Plant replacement	S/C, C, G				X		X	X	X				X	X		
SHRUBS	General inspection	S/C, C, G			X				X					X			
	Fertilize	S/C, C, G				X		X	X	X							
	Prune	S/C, C, G				X		X	X	X				X	X		
	Water	G		X				X	X	X	X	X	X	X	X		
	Mulch maintenance	G				X		X	X	X							
	Plant replacement	S/C, C, G				X		X	X	X				X	X		
FRUIT TREES & BERRIES	General inspection	S/C, C, G			X				X					X			
	Fertilize	S/C, C, G				X		X	X								
	Spray	S/C				X		X	X	X							
	Prune	S/C, C, G				X		X	X	X				X	X		
	Water	G		X				X	X	X	X	X	X	X	X		
	Mulch maintenance	G				X		X	X	X							
	Plant replacement	S/C, C, G				X		X	X	X				X	X		
GROUND COVER	General inspection	S/C, C, G			X				X								
	Weed	G		X					X	X	X	X	X	X	X	X	
	Water	G				X			X	X	X	X	X	X			
	Mulch maintenance	G				X		X	X	X							
	Plant replacement	S/C, C, G				X		X	X	X				X	X		
PERENNIALS	General inspection	S/C, C, G				X			X	X				X	X		
	Weed	G		X					X	X	X	X	X	X	X		
	Divide plants	S/C, C, G				X		X	X					X	X		
	Water	G		X					X	X	X	X	X	X	X		
	Mulch maintenance	G				X			X	X							
	Plant replacement	S/C, C, G				X			X	X				X	X		

MAINTENANCE ACTIVITIES SCHEDULE (Source: Boston Natural Areas Network)

AR= As Required S/C= Specialist/Contractor G= Gardeners
 O= Owner C= Coordinator

ANNUALS	Plant	G			X						X	X							
	General Inspection	S/C, C, G			X						X	X	X	X	X	X			
	Weed	G			X						X	X	X	X	X	X			
	Remove dead plants	G		X							X	X	X	X	X	X	X		
	Water	G		X							X	X	X	X	X	X			
	Mulch maintenance	G				X					X	X							
GRASS	General Inspection	C, G		X						X	X								
	Mow	G		X							X	X	X	X	X	X	X		
	Edge	G				X				X	X	X					X	X	
	Water	G									X	X	X	X	X				
	Weed	G									X	X							
	Fertilize/lime	G				X				X	X					X	X		
	Aerate	S/C, G								X	X	X	X	X	X	X			
	Seed or sod	S/C								X	X					X	X		
PEST & DISEASE CONTROL	Garden plots	G			X						X	X	X	X	X	X			
	Common plantings	S/C, C, G				X					X	X				X	X		
STRUCTURES (eg. gazebo, arbor, artwork, tool shed, bulletin board)	General Inspection	S/C, C, G				X					X	X	X	X	X	X	X	X	
	Metalwork repairs	S/C									X	X	X	X	X	X	X	X	
	Carpentry repairs	S/C									X	X	X	X	X	X	X	X	
	Paint	S/C, G									X	X	X	X	X	X	X		
SITE FURNISHINGS	General Inspection	C, G				X					X	X	X	X	X	X	X	X	
	Metalwork repairs	S/C									X	X	X	X	X	X	X	X	
	Carpentry repairs	S/C									X	X	X	X	X	X	X	X	
	Paint	S/C, G									X	X	X	X	X	X	X		
MAJOR EQUIPMENT	General Inspection	S/C, C, G				X			X	X	X	X	X	X	X	X	X	X	X
	Preventative maintenance	S/C, C, G				X			X	X	X	X	X	X	X	X	X	X	X
	Repairs	S/C, C, G					X		X	X	X	X	X	X	X	X	X	X	X
PLAYGROUND AREA & EQUIPMENT	General Inspection	S/C, C, G		X					X	X	X	X	X	X	X	X	X	X	X
	Safety protocols	S/C		X					X	X	X	X	X	X	X	X	X	X	X
	Repairs	S/C					X		X	X	X	X	X	X	X	X	X	X	X
	Surface clean-up	G		X					X	X	X	X	X	X	X	X	X	X	X
	Surface renewal	G					X				X	X	X	X	X	X	X	X	X
SIGNS	General Inspection	C, G				X			X	X	X	X	X	X	X	X	X	X	X
	Repairs	C, G					X		X	X	X	X	X	X	X	X	X	X	X
OTHER																			

NOTE: This is a listing of standard maintenance activities. Additional activities that gardeners and caretakers are accustomed to doing or are necessary because of specific garden situations should NOT be discontinued and can be added to this schedule.

Appendix B: Unit Cost Itemization

Unit Cost Itemization: Installation/Repair/Replacement				
ITEM	ACTIVITY/ITEM	UNIT	APPROX. UNIT COST	DESCRIPTION/REMARKS
SOIL	Loam	cu.yd.	15.00	varies
	Compost	cu.yd.	22.00	varies (free-\$22/cu.yd.)
WATER SYSTEM	Faucets/fittings	ea.	75.00	
	Hose	ea.	35.00	approx. 75'
	Granite post for hose	ea.	300.00	
SITE FURNISHINGS/STRUCTURES	Fences	l.f.	18.00	black vinyl chain link, 4ft. Height, 9 gauge
	Tool Shed	ea.	600.00	varies
	Universal lock	ea.	17.00	
	Compost bin	ea.	100.00	varies, pallet bin <\$50.00
	Plot dividers	l.f.	4.00	permanent wood
	Tray bed for wheelchair use	ea.	1000.00	estimate
	Wood benches	ea.	500.00	estimate
	Trash receptacle	ea.	600.00	
	Bulletin board	ea.	100.00	garden name, owner, rules, etc.
	Signage	ea.	15.00	
	Wood edging/landscape timber	l.f.	4.00	
	Wheelbarrow	ea.	80.00	
	PATHS/WALKWAYS	Stone dust walks-top course	cu.yd.	22.00
Stone dust-gravel base		cu.yd.	12.00	
Wood chips		cu.yd.	8.00	
COMMON AREA PLANTINGS	Shade Tree	ea.	400.00	varies with species
	Shrubs	ea.	75.00	varies with species
	Perennials	ea.	10.00	
	Ground cover/mulch	cu.yd.	35.00	
TOTAL COST	Depends on area (sq.ft.) of each garden/orchard plot			
Note: These are installed costs that are estimates only. Source: adapted from Garden Futures Cost Analysis, Rooted in Our Neighborhoods: A Sustainable Future for Boston's Community Gardens. Boston. Garden Futures report. 1996				

Appendix C: Best Practices for Orchard Maintenance

Source: EarthWorks, www.earthworks.org

Site Checking Calendar

This brief step-by-step guide is semi-specific to the climate of the Northeast, so you will need to do some additional research to adjust it to your area. It covers some of what you may see at your site, depending on where you are working and what fruit plants are present. Many of the books listed in our resources section will give you a better idea, especially of insects and diseases.

A good project for anyone starting an orchard program is to rewrite this calendar for your area. Doing the research – by observation and then consulting books, growers or websites – will help you learn what you need to grow your project over the years.

The most important activities are watering new plantings (this and last year's), and keeping weeds under control. However, there is much more to discover, starting in midwinter.

February 1 - April 15

February:

Potential Pests: Take a magnifying glass and do a tree check, starting at the trunk at the soil level looking for evidence of borers (grass or sawdust around base of trunk), then scanning along the trunk, limbs, branches, leaves and fruit to the tips of the branches. In order to know when you need to be most careful checking, how to identify pests by their eggs, and what to do if you find a pest, you will have to be relatively familiar with local orchard pests and helpers (many insects are not harmful to fruit and nut trees, and several will actually help protect your trees). For this you can start with the information available on our site regarding insect pests and diseases. There are also several books and websites that have this information for different locations, but some of the best are The Organic Almanac (Page), Rodale's Chemical-Free Yard and Garden (Bradley), Diseases of Trees and Shrubs (Sinclair), Diseases of Tree Fruits in the East (Jones).

Avoid removing any potential pests until you are sure of what you are removing. Ensure that someone working on your Urban Orchards project is aware of all potential pest discoveries so patterns of infestation (both temporal and geographic) can be tracked.

Tree Fruit: If your project is in an area with snowy winters, and the snow is more than 10 inches deep, mice may be able to go under the snow and over wire mesh "rodent guards" to get at the sweet bark. If you can't see the rodent guards, it can help to pack down the snow so the mice must risk capture by birds to reach the tree (they tend to tunnel for safety).

March:

Hazelnuts bloom at the beginning of the month. Continue making the same observations as in February.

For several fruits, such as apples, plums, pears, cherries, apricots, grapes, and raspberries, this is the time of year to prune. For other fruits with more delicate wood, such as peaches, you will want to wait longer. Know the pruning schedule of your fruit and schedule pruning with site caretakers (if they are trained in proper pruning techniques) or your horticulturist accordingly.

April:

Check the ground around your plants. If there is no layer of straw, wood chips, or manure/compost, a layer of fertilizer may be needed. You may be able to get some type of fertilizer from organizations in your area, or you may have/want to produce your own.

Note that a thick layer of mulch now may delay soil warming, so it's best to apply a more concentrated material, such as 3-6" of leaf litter now (less if using a more concentrated material, such as wood chips), and wait until May or June to mulch. If a thick mulch is already present, rake it back until the soil has warmed and then replace it in a few weeks.

April 15 - June 1

Bloom (Late April - May):

You may have fruit trees that are pollinated by bees. If you do, this is the time to see the bees carry pollen between the flowers of trees while gathering nectar. If bees emerge late, the fruit yield that year will be lessened, as happened in the Northeast in 1995. Some fruits require the pollen from another variety to fertilize a given variety of the same type of fruit. For more information on this, refer to our information on propagation and grafting.

Just after petals fall (May):

Continue watching out for insects that damage orchard trees, as fruit begins to form on some varieties around this time of year. Pay special attention to holes or scars on newly forming fruit.

Late May - June:

Watering: Check for moisture around the ground near the plants. Do they need water? This year's and last year's plantings generally need a heavy watering twice or once a week, respectively. If rain is scarce, ripening fruit plants need water as well. For more information, see our section on planting and initial care.

Fallen fruit (fruit drop): Check the ground around the trees. Usually by mid to late June (earlier for some, even later for other fruits/varieties) the trees drop up to 75% or more of their tiny, just-formed fruit. This is normal; the tree cannot ripen all of its fertilized fruit. Check the fallen fruit. If it has dark holes or scars on it, break it open. If there are worms or insects inside, remove that fruit and check the tree carefully.

Pests & diseases: This is an important time to continue watching for orchard pests and to check for diseases. As with pests, it is important to have an idea of what diseases you should be on the lookout for in your particular area. It is usually easy to tell if a tree is diseased – watch for discolored leaves/fruit, misshapen twigs, growths on leaves/twigs/bark, or any other sign that your tree may not be at its healthiest. It is often hard to know what can be done about the disease without a proper diagnosis. For this see our information on plant diseases or refer to Diseases of Trees and Shrubs by Wayne A. Sinclair, et al.

June - August

Enjoy fruit that have an early harvest, such as strawberries, pie cherries, raspberries, and juneberries!

This is one of the most active times in the orchard. Try to make sure that your sites are visited a few times this month. Pick up and destroy unripe fruit drop to reduce pest populations.

Also, all of the suggestions about watering and fruit drop over the last few months continue to apply, so keep an eye out. The same is true of suggestions from the last few months regarding pests and diseases, but as fruit matures you will have to check it more carefully and regularly for pests.

To dispose of pest-infected fruit, double-bag it and store it for one year to pickle the pests inside, then add it to your compost pile. If you must dispose of it in the trash, double- or triple-bag it in hopes that larvae don't mature to infest someone else's orchard.

To dispose of diseased fruit one must make a difficult choice - composting is risky, as it may not destroy the particular organism, whereas burning will destroy the organism, but is polluting.

Mulch: Check the area under each tree. Is there a 6" layer of fluffy material there (a mulch, such as wood chips, bark, leaves, hay, or rotted manure)? This layer, when present, supports microbes and larger life forms under it (lift it up and look!). It also suppresses weed growth, keeps the soil moister, and reduces temperature extremes. All in all, it improves tree health and resistance to insects and diseases! Just make sure to keep the ground clear about 6" to 1' away from the trunk to discourage borers.

July 1 - October 31

Harvest: The peak harvest season begins in July, so know how to tell when your fruit is ripe and how it is best harvested.

Watering, fruit drop, pests & diseases: Continue watching all of these carefully, as noted in previous months. Just because your fruit is almost ripe doesn't mean it's any less susceptible! Stop watering by September so the ground can harden for the coming winter.

Weeding and Mulching: What weeds are going to seed? This is a good time to prevent them. They can be laid out around fruit plants (as long as they are not touching the trunk) as extra mulch. Is your mulch thick enough to moderate fall and winter temperature fluctuations? Keep your mulch 1'-2' back from the trunks of your trees to discourage mouse nesting, and place rodent guards around the trees if it snows in your area. These should be 1/4-1/2" mesh at least 1' high to prevent under-snow tunneling and gnawing by mice and other rodents.

Appendix D: Community Gardener Agreement

As a garden member I agree to abide by the following rules, which were approved by the membership of the Lewis Place Community Garden. I understand that if I do not follow these rules, my garden plot will be given to someone else by the Steering Committee. I also understand that if at any point in the season I am unable to meet particular points of the agreement without assistance, I will notify the Garden Coordinator.

1. I will pay an annual fee, based on an assessment of \$20.00 for a single plot, before or during the annual garden meeting.
2. I will contribute *group* work hours during the growing season where I may be required to assist in the general maintenance of the garden (this includes clean-up days, etc.) as seen fit by the Steering Committee.
3. I will keep my children under control and pets either on a leash or at heel, and take full responsibility for any damage they may inflict on the Community Garden.
4. I will cultivate my garden plot by the third Sunday in May, maintain the garden *consistently* and arrange for its upkeep during any extended absence.
5. I will maintain a neat garden and remove weeds, rocks and wandering plants from adjacent paths.
6. I will refrain from using toxic chemicals and minimize the use of pesticides and fungicides, always taking care not to involve my neighbors' gardens in any way.
7. I will promptly remove from my garden plot all diseased, infested or otherwise unhealthy plants and place them in the garbage.
8. I will remove from my garden plot all plants that have ceased to bear.
9. I will abide composting rules and place rocks and all refuse in the proper disposal areas.
10. I will make a conscious effort to conserve water by turning off faucets after using them, heeding water restrictions, utilizing mulch and minimizing midday waterings.
11. I will refrain from harvesting other members' gardens.
12. I will report immediately to the Garden Coordinator any damage or vandalism to the community garden.
13. I will clean my garden plot in preparation for winter.
14. I will help keep the garden secure by scrambling the combination to the gate locks.
15. I will inform the Garden Coordinator of my inability to be in the garden for periods of more than one week.
16. I will notify the Garden Coordinator of any change of address or phone number within one week of any change.
17. I understand that the Steering Committee, by majority vote, has the right to revoke my membership to the Community Garden for violating garden rules, and that I am entitled to only one written warning before such action is taken.

Printed Name

Phone Number

Signature

Date

*** Adapted from the Mystic Riverbend Park Community Garden 2003 Rules*

Appendix E: REVISED MOU

Memorandum of Understanding Dudley Neighbors Inc. and Tufts Dudley Street Team

Intent: This memo outlines the scope of work agreed to by the two designated parties for the completion of an operational maintenance plan for two open space lots in the Dudley Street neighborhood in Roxbury, MA, currently set to be developed into a community garden and a community orchard. This maintenance plan will serve as the foundation for future maintenance guidelines of community gardens operated by DNI.

Client:

Nicole Flynt, Environmental Organizer
Trish Settles, Director, Community
Development
Dudley Neighbors Inc.

Tufts Dudley Street Team:

Kathleen Dunn,
Michelle Mondazzi,

Gary Rennie,
Julia Suprock,

Project Goal

The Tufts Dudley Street Team will produce an operational maintenance plan for the proposed development of community gardens and orchards for two open space lots held by the Dudley Neighbors Inc. (DNI), a community land trust affiliated with the Dudley Street Neighborhood Initiative (DSNI). The Team will focus its work on the following lots:

- Dennis Street Community Garden
- Lewis Place Community Orchard

The maintenance plan developed for these two sites will serve as a model to guide the maintenance planning of additional community gardens and orchards operated by DNI.

Method of Work

Research will be conducted in two phases. Firstly, the Team will contact existing successful groups and agencies that oversee community gardens and orchards in the city of Boston to identify an assortment of best practices in the operation of such open space uses. The Team will then make specific recommendations to DNI on how to implement best operational practices to ensure sustainable maintenance of community gardens and/or community orchards on the lots under consideration. Research will mainly be focused on local resources within the city of Boston, but some national agencies in the field of managing open space will also be consulted.

The Team will meet weekly to analyze research findings and develop a working draft for the final report. Meetings with the client will occur as needed on a bi-monthly basis.

Deliverables

The Team will produce a report that details specific recommendations for implementation and maintenance of community gardens and/or community orchards on the open space lots in question, which will include costs, schedules, staffing and training, and activities to promote community involvement.

Timeline

Date	Activities	Deliverables Due
Week 1: Jan 26 – 30	<ul style="list-style-type: none"> Field Project begins 	
Week 2: Feb 2 – 6	<ul style="list-style-type: none"> Research: DSNI 	IRB form to be submitted ASAP
Week 3: Feb 9 – 13	<ul style="list-style-type: none"> 1st client meeting 	<ul style="list-style-type: none"> Scope of work due: Feb 11 to Ann R. Email to DSNI for edits/approval & signature – 2 originals needed
Week 4: Feb 16 – 20	<ul style="list-style-type: none"> Inventory/Mapping/Assessment of Dudley St open lots 	
Week 5: Feb 23 – 27	<ul style="list-style-type: none"> Research: best practices 2nd Client meeting 	
Week 6: Mar 1 – 5	<ul style="list-style-type: none"> Research: best practices 	<ul style="list-style-type: none"> Report outline due Mar 3 with 15 min. presentation in class
Week 7: Mar 8 – 12	<ul style="list-style-type: none"> Research: best practices 3rd Client meeting 	
Week 8: Mar 15 – 19	<ul style="list-style-type: none"> Develop implementation plan 	
Week 9: Mar 22 – 26	Spring break	
Week 10: Mar 29 – Apr 2	<ul style="list-style-type: none"> Develop implementation plan – report 	<ul style="list-style-type: none"> Draft report due Mar 31
Week 11: Apr 5 – 9	<ul style="list-style-type: none"> Finalize report 4th Client meeting 	
Week 12: Apr 12 – 16	<ul style="list-style-type: none"> Finalize report 	<ul style="list-style-type: none"> Oral presentations: Apr 14
Week 13: Apr 19 – 23		<ul style="list-style-type: none"> Oral presentations: Apr 21
Week 14: Apr 26 – 30		<ul style="list-style-type: none"> Oral presentations: Apr 28 FINAL REPORT DUE: Apr 28

Time and Finances

Members of the Tufts Team agree to spend 8-10 hours per week on the research and development of the operational maintenance plan. DNI will not be billed for any portion of the Tufts Team's work on this project. The Team will manage all associated expenses on the Field Projects stipend (\$100 maximum) provided by the Tufts UEP Department.

The undersigned have read and agreed to the goal, methods, deliverables, timeline, and time and finances conditions outlined in this memo of understanding. This memo can be revised with the agreement of both the Client and the Tufts Team.

Client Signature

Tufts Team Member Signature