

2002

Aligning San Jose's community gardens with city plans and policies

Michele K. Young
San Jose State University

Follow this and additional works at: https://scholarworks.sjsu.edu/etd_theses

Recommended Citation

Young, Michele K., "Aligning San Jose's community gardens with city plans and policies" (2002). *Master's Theses*. 2307.
DOI: <https://doi.org/10.31979/etd.exhq-f2fc>
https://scholarworks.sjsu.edu/etd_theses/2307

This Thesis is brought to you for free and open access by the Master's Theses and Graduate Research at SJSU ScholarWorks. It has been accepted for inclusion in Master's Theses by an authorized administrator of SJSU ScholarWorks. For more information, please contact scholarworks@sjsu.edu.

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

**ProQuest Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600**

UMI[®]

**ALIGNING SAN JOSE'S COMMUNITY GARDENS
WITH CITY PLANS AND POLICIES**

A Thesis

Presented to

The Faculty of the Department of Environmental Studies

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

by

Michele K. Young

January 2002

UMI Number: 1408824

UMI[®]

UMI Microform 1408824

Copyright 2002 by ProQuest Information and Learning Company.
All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

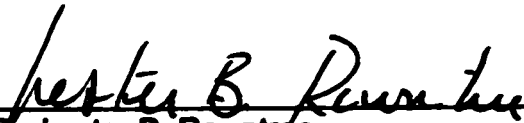
ProQuest Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

© 2002

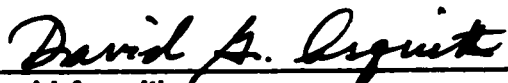
Michele K. Young

ALL RIGHTS RESERVED


APPROVED FOR THE DEPARTMENT OF ENVIRONMENTAL STUDIES



Dr. Lester B. Rowntree
Professor of Environmental Studies



Dr. David Asquith
Associate Professor of Sociology



John Dotter, City of San Jose
Community Garden Program Director

APPROVED FOR THE UNIVERSITY



ABSTRACT

ALIGNING SAN JOSE'S COMMUNITY GARDENS WITH CITY PLANS AND POLICIES: AN ANALYSIS OF RESOURCE MANAGEMENT AND COMMUNITY PARTICIPATION

by Michele K. Young

Urban land use and open space have become increasingly critical in rapidly growing cities such as San Jose. Community gardens must therefore justify and add value to their use of public land. San Jose's 16 community gardens have been in sustained use for the past 24 years, yet remain vulnerable to land loss and diminishing resources. Research determines how San Jose's community gardens compare to the city's adopted plans for resource use, land management, and community participation. A multi-method approach combines qualitative analysis of garden resources, land management, and planning documents, with quantitative analysis of survey and demographic data about community gardeners. Comparing data to city planning objectives determines whether the community gardens should be a permanent use of urban open space in San Jose. Research provides data for decision makers to assess the potential of community gardens in San Jose's plans and policies.

TABLE OF CONTENTS

	Page
LIST OF TABLES	xii
Chapter	
1. INTRODUCTION	1
Background and Problems	1
Increasing Demands for Urban Land	1
Lack of Objectives and Measurements	2
Limited Garden Program Expansion	3
Neighborhood and Community Identity in San Jose	4
Limited Working Definition of Sustainability	5
Importance	7
Generality	8
Focus	8
Research Objectives	9
2. METHODOLOGY	11
Research Design	11
Research Questions	11
Information and Data to be Collected	12
Qualitative Assessment	12
Quantitative Analysis	13
Survey Design and Implementation	14

Chapter	Page
Population and Sample	15
Limitations	15
Non-response	16
Bias	16
Data Types	17
Analysis	17
Qualitative Analysis.....	17
Quantitative Analysis	17
Measures of Association	18
3. POLICY AND PLANNING CONTEXT	20
Urban Planning	20
San Jose’s Planning Environment	20
Natural Resources	20
Land Use	22
Land Use for Public Parks and Open Space	24
Demographics	25
Policies and Plans	26
General Plan	26
Growth Management	27
Urban Conservation	27
The Greenline/Urban Growth Boundary	28

Chapter	Page
Riparian Corridor Policy	28
Sustainable City	28
Parks Greenprint	29
Core Values	30
Strategies	30
Strong Neighborhoods Initiative	33
Initiative Components	33
SNI Objectives	34
Community Gardens	34
Benefits of Gardens	35
Recreation and Relaxation	36
Educational Opportunities	37
Stimulating Social Interaction	39
Producing Nutritious Food	40
Developing Urban Open Space	41
Encouraging Self-Reliance	41
Conserving Natural Resources	42
Beautifying Neighborhoods	43
History of Community Gardening	43
In Europe	43
In the United States	44

Chapter	Page
San Jose Community Gardens	46
History	46
Resources	47
4. DATA COLLECTION AND ANALYSIS	51
Objective 1 – Resource Assessment	51
Garden Resources	52
Land and Water Use	52
Plot Use	52
Residents Served	52
Department and Agency Support	58
Parks Department	61
Steering Committee	64
Parks Commission	65
Neighborhood Impacts	66
Outside Agencies	67
Gardener Support	68
Gardener Contributions.....	68
Reasons for Participation	70
Program Effectiveness	71
Objective 2 – Demographic Analysis	72

Chapter	Page
San Jose Demographics	72
Garden Survey Analysis	76
Survey Design and Distribution	77
Survey Returns	78
Descriptive Statistics	79
Open-Ended Comments	79
Comparing Gardens	82
Garden Neighborhoods	85
Correlation Studies	89
Relationships	96
Objective 3 – Plans and Policies	107
Benefits of Community Gardens	107
Recreation and Relaxation	107
Educational Opportunities	108
Stimulating Social Interaction	109
Producing Nutritious Food	110
Developing Urban Open Space	110
Encouraging Self-Reliance	111
Conserving Natural Resources	111
Planning Documents	112
General Plan	112

Chapter	Page
Greenprint	113
Strong Neighborhood Initiative (SNI)	116
Summary of Planning Goals	117
5. CONCLUSIONS AND RECOMMENDATIONS	120
Conclusions	120
Efficient Use of Resources	120
Gardener Participation	121
Coordinated Support	121
Satisfaction Rates	122
Services for Diverse Users	123
Gardeners Represent San Jose's Diversity	124
Gardens as Neighborhood Resources	124
Divergent Trends in Garden Use	125
Recommendations	126
Program Recommendations	126
Future Research	128
REFERENCES	129
APPENDIXES	134
A – Survey Instrument	134
B – Approval Letter	139
C – 2002 Rules and Regulations and Gardener Agreement	141

Appendix	Page
D – Community Garden Registration Form	148
E – Map of Needed Council Acreage	150
F – Foreign Language Survey	152
G – Letter of Introduction	160
H – Open-Ended Survey Comments	163
I – Garden Locations	171

LIST OF TABLES

Table	Page
1. Neighborhood/Community Parkland Available Per 1,000 People	2
2. San Jose's Community Gardens Land Use	3
3. Survey Variables	19
4. General Plan Designations for Development of Remaining Undeveloped Land	23
5. Housing Stock in San Jose	23
6. San Jose's Community Gardens	49
7. Land and Water Use	53
8. Garden Use Patterns	55
9. Additional Help in Plot	56
10. Residents Served by Garden	57
11. Residents on Waiting List	59
12. Plot Requests to the Parks Department	60
13. Program Promotion	61
14. Community Garden Program Budget	63
15. Distribution of Excess Produce	67
16. Gardener Contributions to Garden Program	69
17. Garden and Community Contributions	70
18. Main Reason Gardeners Use Community Gardens	71
19. Measures of Effectiveness	72

Table	Page
20. San Jose Demographics	74
21. Survey Returns by Language	78
22. Demographic Comparisons	80
23. Summary – Open-Ended Survey Comments	83
24. Comparing Community Gardens	86
25. Comparing Garden Neighborhoods	90
26. Measures of Association	97
27. Survey Variable Relationships	101

CHAPTER 1

INTRODUCTION

Background and Problems

Increasing Demands for Urban Land

San Jose is one of the fastest-growing cities in the United States.

Increases in economic activity and the urban population are leading to a rapid land conversion rate as the city develops unused land for commercial and residential use. As land is converted, access to open space becomes more limited, and the land being used for San Jose's community gardens is more vulnerable to development objectives and competing needs for development.

The National Park and Recreation Association standard for neighborhood/community parks is 6.25 acres to 10.5 acres per 1,000 population (City of San Jose, 2000). San Jose uses 3.5 acres of parkland per 1,000 residents as a minimum service level in the city's master plan. Current shortfalls in developing land already held by the city, and future trends toward population growth and limited available land for development, threaten to make the minimum service level difficult to attain in the future (City of San Jose, 1994). A comparison of available parkland in six large cities shows San Jose with the lowest rate of parkland per 1,000 population. Table 1 summarizes the amount of neighborhood/community parkland available in comparable cities. According to the Trust For Public Land, land availability and land security are two of the biggest challenges faced by Bay Area community gardens (Trust For

Public Land, 1995). All of San Jose's community gardens utilize publicly owned land, which is divided up according to Table 2. As most of the community garden land is city-owned, aligning the community gardens with the city's plans will streamline program management and allow gardens to be considered as a permanent feature in each city planning cycle.

Table 1

Neighborhood/Community Parkland Available Per 1,000 People

City	Acres
San Diego	28.33
Phoenix	26.13
Portland	18.24
Seattle	11.99
Sacramento	7.59
San Jose	4.1

Lack of Objectives and Measurements

The San Jose community gardening program was first established in 1976 as an interim use of undeveloped public land. The gardens are now part of the Parks Recreation and Neighborhood Services Program. J. Dotter has been the Community Garden Program Director for 24 years. He explains that the gardens have been sustained with limited resources, objectives, and program evaluation (J. Dotter, personal communication, March 15, 2000). Without program goals or

Table 2

San Jose's Community Gardens Land Use

Owner	Number of acres
City-owned	23.1
School district	3.3
Water district	1.2

measurements that position the gardens among competing city priorities, decision makers cannot support the gardens effectively or establish them permanently in the planning scheme. Determining program measures and collecting data about existing programming will allow for better decisions to be made about the viability of gardens for recreational land use.

Limited Garden Program Expansion

Over its 25-year history, the San Jose community gardening program has not expanded to meet the increasing demand for plot space or the growing population of the city. The number of community gardens has increased to 16 since the program's inception in 1976, but the program resources to support these gardens have actually decreased. There are currently over 50 residents on waiting lists to receive gardening plots. J. Dotter (personal communication, March 15, 2000) explains that "the program has never been publicized citywide, because we have not had the staff or garden space to meet the demand." Data about how gardens can fit into the city's recreation and community development

agenda could create a priority for more gardens to be developed to meet ongoing demand.

In a study of San Jose's urban services, city officials found that the city was close to meeting its level of service goals for streets, sewers, and storm drains, but was finding it difficult to meet its goals for parks and recreation facilities (City of San Jose, 1994). This is due to the fact that the cost of developing land for recreational use has allowed only 80% of the land held by the city to be developed for use. As a result, the city is currently utilizing less than 3.5 acres per 1,000 residents. Of this, a minimum of 1.5 acres should be neighborhood, community, or local, serving regional/citywide parkland. Development of more community gardens could address the residents waiting for a space to garden, as well as helping to meet the city's service goals for parks.

Neighborhood and Community Identity in San Jose

The city's goals and policies for neighborhoods and communities reflect a concern for the quality of life and the livability of San Jose. According to the city's general plan (City of San Jose, 1994), neighborhoods and communities are enhanced when the city does the following:

1. Fosters the participation of residents in the social, cultural, and recreational activities of the community.
2. Equally distributes city facilities and services throughout the community.

3. Includes places for interaction among residents such as parks, community centers, and other gathering points.

Residential land use policies reflect the city's objective to promote higher density development while providing onsite open space and recreational opportunities to adequately supplement the city's limited park space (City of San Jose, 1994). Community gardens can meet all these objectives by creating recreational and community development opportunities in high-density areas.

Limited Working Definition of Sustainability

As early as the 1960s, social scientists and environmentalists have been aware that methods of assessment were needed to more realistically evaluate the effects of growth and development. These early conversations began to develop measures of sustainability to compare with previous measures of Gross Domestic Product (GDP) and Gross National Product (GNP) (Henderson, 1994). Since that time, major cities around the world, including San Jose, have incorporated sustainability into their comprehensive plans (Maclaren, 1996). In addition to the sustainable city strategy, San Jose has adopted resource management policies regarding growth management, urban conservation, the greenline, and the riparian corridor, which all seek to protect resources for future generations.

The challenge in defining or identifying sustainable systems, explains Hillary Hillier, Head of Environmental Statistics in Britain, is that the process of narrowing down all of the possible indicators to a few that encapsulate

sustainable development is only quasi-scientific, and is likely to miss some major impacts on the environment. The results are often media-friendly, but make statisticians uneasy about unproven methodology (Ghazi, 1998).

The most widely used definition of sustainability comes from the 1987 report of the World Commission, where sustainability was identified by the delegation as development that meets the needs of the present without compromising the ability of future generations to meet both short-term economic and social goals and long-term ecological stability (Corson, 1994). Researchers suggest because each community is likely to have different concepts of urban sustainability (Calthorpe, 1993), local government regulation and societal pressure play a critical role in defining the objectives and measures of sustainability (Milbraith, 1994).

In order to improve the use of sustainability indicators, researchers continue to suggest combinations and test them out in various scenarios (Corson, 1994; Henderson, 1994; Maclaren, 1996). Corson, with the Global Tomorrow Coalition in Washington D.C., provides some indicators of sustainability that could be utilized in San Jose:

1. Percent of food produced locally.
2. Rate of rural to urban land conversion.
3. Percent of city area in parks, gardens, and open space.
4. Public park area per 1,000 people.
5. Average number of persons per room in housing units.

6. Percent of the population over age 25 with a high school education.
7. Income ratio of the highest 20% of households to the lowest 20%.
8. Percent of the population registered to vote.
9. Percent of the population voting in elections.

These measures could be assessed in San Jose communities for a snapshot of sustainability. As these measurements would mean little on their own, they should be tracked over time to determine whether the trends in a community meet the objectives that the community is committed to (Maclaren, 1996). Data collected on these indicators in community garden communities provides a baseline for comparison over time.

Importance

Resource protection through growth management planning is critical in cities that are growing as fast as San Jose. Decisions to develop land for various uses are based on competing needs in the community. Measuring the benefits of the gardens in terms of city objectives allows for a more informed comparison between competing demands.

Research in urban development shows that in response to the increasing pressures of urbanization, community gardens can address critical priorities for physical and social stability, including the following:

1. Fostering community development.
2. Developing urban green space.
3. Access to nature and living systems.

4. Localizing food production.
5. Providing training and education for neighborhood populations.
6. Beautifying urban neighborhoods.
7. Creating opportunities for neighborhood recreation.
8. Protecting unpaved areas for water percolation.
9. Creating a habitat for animals.
10. Improving urban air quality.
11. Managing an urban waste stream.

If these potential benefits can be translated into measurable characteristics of the garden, over time, those measures can help to express the value of the gardens in the community.

Generality

Community gardens are a viable option for urban open space management in San Jose, providing benefits to gardeners and the community, including (a) recreation, (b) open space, (c) resource conservation, (d) efficient land management, and (e) community participation. If the features of community gardens are assessed, their alignment with city plans and development policies can be determined.

Focus

Research was focused on determining the current uses of the gardens and the features of the gardens that make them a viable part of San Jose's planning agenda. This planning level study provides localized data for city

officials and community planners to improve utilization of the community gardening program as a part of a sustainable city plan that addresses the needs of community development as well as preservation of natural resources.

Research Objectives

To identify resource utilization and current use patterns in San Jose's community gardens, this research project will build upon previous research on community gardens and sustainable urban land use by generating local data which could improve the utilization of San Jose's limited urban open space:

1. Define current use patterns in all 16 San Jose community gardens.
 - a. Summarize data about resource use, including land, water, equipment, facilities, and staff resources through onsite garden assessments, including interviews with garden managers.
 - b. Determine how the garden program is supported through agency and department coordination.
 - c. Define garden use patterns from program documents, staff interviews, and self-reporting surveys completed by the gardeners.
2. Compare the demographics of community garden users with surrounding neighborhood populations and the residents of San Jose.
 - a. Determine San Jose and neighborhood demographics using census data.
 - b. Compare gardener demographics through analysis of the plotholder survey.
3. Determine whether the San Jose community gardens meet the criteria of the city's general plan and planning policies.

- a. Discuss the benefits of community gardens in San Jose.
 - b. Compare community garden use to city plans and documents.
4. Make policy recommendations that can improve utilization of current garden resources as well as increasing the sustainability of urban open space development.

CHAPTER 2
METHODOLOGY
Research Design

This research aims to address the city's objectives by collecting data about who is currently using the community garden program and how the gardens compare to the criteria of the city's planning agenda. Primary data collection included the design and quantitative analysis of a survey to determine who is currently using the community gardening program. This survey serves to provide localized information about garden use in San Jose and how the gardeners represent garden neighborhoods and the city population as a whole. Qualitative site assessments were carried out to determine land use, resource utilization, and community participation in all of the San Jose community gardens.

Secondary data collection included government documents and historical accounts of the gardens as well as relevant literature. Census data for each garden neighborhood was compiled to compare members of the community surrounding the gardens with the garden user demographics determined from a mail survey.

Research Questions

The following questions were addressed through primary and secondary research:

1. Who is currently using the San Jose community gardens?

2. How does the garden population compare to that of adjacent neighborhoods?
3. What goals and directives are outlined in city plans and policies?
4. How well do San Jose community gardens fit these guidelines?

Information and Data to be Collected

Research objectives were met through a multi-method approach utilizing both qualitative and quantitative methods.

Qualitative Assessment

Program resources. Resource use in the community gardening program were measured in terms of land use, water and soil conservation, budgets, and staffing. Secondary data from city documents as well as program and gardener surveys were analyzed to make these assessments.

Criteria of city planning initiatives. City guidelines from the San Jose 2020 General Plan, the City Greenprint, the Sustainable City Strategy, Land Use and Management Plan, Strong Neighborhood Initiative, and Parks and Recreation Leisure and Life 2000 provided the framework of objectives and performance measures with which to compare the garden program.

Site analysis. All 16 community garden sites were assessed to determine available resources. This determination was made through site maps, visual assessment, and interviews with volunteer garden management. Garden maps record perimeter lines as well as permanent structures such as buildings, fencing, plot layout, etc.

Background on community gardens. Secondary data was compiled through a literature search for applicable documents and previous research, which provide data on historical and current community garden use and the potential for community involvement. All of the San Jose gardens are government facilities; therefore, government documents and interviews will provide the background about the San Jose program.

Quantitative Analysis

Resource effectiveness. Several baseline measurements were generated from collected data in order to create a baseline for resource efficiency in the community gardens. Examples of these measurements include the following:

1. Acres maintained per program dollar.
2. Attendance (use) days per program dollar.
3. Households served.
4. Participants satisfied with the service.

Surveys. Surveys were designed and administered to collect primary data for the study. A reply-mail questionnaire was chosen to allow for standardized questions that make large samples, such as the study survey, feasible. Surveys also provide the best possibility of making a refined descriptive assertion about a large population such as the San Jose gardeners (Babbie, 1995). Seven hundred fifty-five gardeners participating in the San Jose community garden program were surveyed to determine their demographics, patterns of garden use, and contributions to San Jose's recreational open space.

Demographics. Demographic data was obtained to assess demographics of the garden neighborhoods in order to compare them with gardener populations. Demographic data was compiled for each garden neighborhood for criteria including (a) ethnicity, (b) family income, (c) education level, (d) languages spoken, (e) housing type, and (f) residents per household. Where there is no updated data available from the 2000 census, information will be used from the most recent source.

Survey Design and Implementation

Survey questions were designed to operationalize each of the variables chosen to determine who is currently using the community gardens. The survey is divided into three categories including (a) demographic information, (b) gardening experience, and (c) participation in the garden and the community. Demographic questions were modeled after census questions for comparison to San Jose census data. Garden experience and participation questions were designed to further describe who the gardeners are and how they compare to other members of the community.

The survey was reviewed by the Human Subjects-Institutional Review Board and approved for distribution. The survey instrument and the approval letter can be found in Appendixes A and B.

The survey was tested with 45 Community Gardening Steering Committee members to determine the range of answers and determine potential limitations

due to survey design. The pilot responses were analyzed so that changes can be made in the survey instrument before the surveys are mailed to all gardeners.

Population and Sample

For the gardener survey, the target population was the 755 San Jose community garden ploholders. Surveys were mailed to the entire gardener population to assure that enough responses are returned for the results to be significant.

As there are many languages spoken in the gardens, there was a need to consider translations of the surveys. When the gardeners register for their plots, they have the opportunity to request that information be provided to them in a language other than English. There were no requests in this database, suggesting that gardeners with limited English have someone at home to help them translate, or they are proficient enough in English to complete the correspondence sent to them from the city. The survey was coordinated with the volunteer garden managers in order to determine whether translations are needed by the gardeners. Spanish, Vietnamese, and Bosnian versions of the survey were provided to the gardeners.

Limitations

Although surveys of large populations have the advantage of reliability due to set questions, they are often weak on validity due to the many biases that can affect the survey responses (Babbie, 1995). Direct mail questionnaires were

chosen due to the large sample size. Analysis of the survey data needed to take into consideration the following considerations that can affect data validity.

Non-response

Because the surveys were self-reporting, return mail, a low response rate is a consideration. According to Fowler (1993), "The effect that non-response depends on the percentage not responding, and the extent to which those not responding are biased or systematically different from the entire population" (p. 31).

A consistent bias in mail surveys is that people with a particular interest in the subject matter or research outcomes are more likely to return mail questionnaires than those who are less interested. Because of this, it was expected that the gardeners will have a higher return rate and better representation than a standard random sample survey might have. For example, follow-up postcards and reminder phone calls from the garden managers will also increase the response rate for the gardener survey.

Bias

With San Jose's diverse population, it is possible that non-response was higher for ethnically diverse respondents due to language barriers and the desire for some immigrants to remain anonymous. To address these issues, the gardener survey was available in the three most common languages for the gardeners including Spanish, Vietnamese, and Bosnian. In addition, volunteer

management staff agreed to help promote the survey by explaining its purpose to non-English-speaking gardeners and encouraging them to respond.

Data Types

Data from the 1990 census would be considered dated due to the rate of change in San Jose since the last census. Because 2000 data was not available in all cases, demographic projections were used to estimate 2000 figures.

Analysis

Analysis of primary and secondary data served to provide decision makers information about how community gardens are utilized. Data was compared in several ways based on the qualitative or quantitative nature.

Qualitative Analysis

Qualitative data collected is presented and discussed throughout the document as relevant to the topic. These discussions include reviews of literature, summaries of garden site visits, and interviews with garden officials. As project indicators are identified to address city goals, descriptive analysis discussed the characteristics of the community gardens as compared with San Jose's city plans and policies.

Quantitative Analysis

Demographic data was compared between the gardener surveys and the garden neighborhood census data. Demographics from the neighborhood tracts help to determine if the gardeners are representative of the neighborhood surrounding the gardens. The census data also serves as a baseline to

determine whether the gardeners are representative of San Jose's citywide population. Much of the data is reported using descriptive statistics such as the percentage of gardeners who do not have space to garden at home, or how many hours and dollars the gardeners contribute to maintaining city land.

The direct mail surveys were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) software program. This will allow for various frequency distribution methods to be applied to the data. In order to test relationships between the variables measured, tests of significance such as chi square and measures of association such as the gamma correlation coefficient were utilized.

Chi square allows for a test of significance between expected and observed frequencies in a dataset (Levin, 1997). For example, if we expect that there is no difference between the garden use by age, the greater the difference between this null hypothesis and the observed frequencies from the survey, the more likely it is that there is, in fact, a difference based on that chosen variable. The variables measured in the survey are in Table 3.

Measures of Association

In addition to testing the significance of a hypothesis, data was tested to determine how strong an association exists between the variables. Using a measure of association such as Goodman's and Kruskal's Gamma can determine the relationship between independent and dependent variables (Levin, 1997). This test is valuable for determining how much an effect income,

Table 3

Survey Variables

Independent variables	Dependent variables
Age	Inclusion of family in gardening
Gender	Distance traveled to garden
Ethnic background	Hours spent in garden
Income	Money spent in garden
Education	Ability to feed family
Housing type	Surplus produce
Years gardening	Community involvement
	Reasons for gardening
	Satisfaction with garden

ethnic background, or education has on how much time is spent in the garden, or how much money is invested there.

To further investigate the strength of association between variables, a contingency coefficients such as Spearman's Rho can be used to compare many variables at a time using an extension of the chi square test (Levin, 1997).

CHAPTER 3

POLICY AND PLANNING CONTEXT

Urban Planning

As early as the 1880s, planners realized the importance of integrating green spaces into the urban landscape (Richert & Lapping, 1998). American cities had grown so quickly that they were “less a union, than a collection of neighborhoods with competing needs.” The Landscape Architecture Movement of this period grew out of an expression of people’s connection to plants. Landscape architects learned to plan around the urban grids that had become the adopted urban model in the U.S. The city park thus became the focus as the place to begin reconstructing a way of life lost to urbanization. The lasting significance of the landscape movement’s work are the parks that give Americans a way to deal with urbanization (Miller, 1976).

San Jose’s Planning Environment

Natural Resources

The natural environment in San Jose supports a wide variety of ecosystems ranging from saltwater and freshwater marshes to scrub brush, foothill woodlands, and coniferous forest. The region receives a modest 14 to 15 inches of rainfall per year, and is subject to recurring and often long-lasting droughts. An average of 50% of the county’s water is imported, rising to 90% in times of drought. As a result, San Jose is prioritizing water conservation and increased use of reclaimed water (City of San Jose, 1994).

According to the State of California Important Farmlands Inventory, most of the remaining undeveloped land in San Jose consists of prime soils, which have the ability to produce common cultivated crops. The preservation of all prime soil land however, would mean a virtual halt to urbanization, and this is therefore not a reasonable goal. The goal of the city plan includes avoiding premature conversion of agricultural lands to urban uses and various policies regarding agricultural use in non-urban areas.

Subsidence of soils has occurred on the valley floor as a result of withdrawal of groundwater at a rate faster than it can be replaced. In addition, development over large portions of the valley floor has reduced the percolation capacity of the land, requiring groundwater basins to be augmented with imported water.

The numerous creeks and rivers that flow through the valley are critical to the watershed system, and thus water quality and the riparian ecosystems which must be preserved to maintain overall system integrity. San Jose's efforts with the State and Regional Water Quality Control Board include (a) reducing the flow of fresh water into the bay, (b) protecting groundwater recharge areas, (c) increased use of reclaimed water, and (d) better controlling non-point source pollutants carried by the storm drainage system which flows untreated to the bay (City of San Jose, 1994).

According to the Bay Area Air Quality Management District (BAAQMD), San Jose is at the center of a "non-attainment" area where air pollution exceeds

acceptable levels. In order to minimize the pollution produced by new development, the city proposes many plans including increasing the use of public transit, appropriate land uses, and development of educational programs for residents (City of San Jose, 1994).

Dr. Kim Tripp, Vice President for Horticulture at the New York Botanical Garden, explains that "as wild habitats decrease, and urbanization increases, most people's closest connection to the natural world will be through a managed landscape, or garden of some sort" (Gainer, 1999, p. 50). The use of community gardens to maintain open space in San Jose can develop an appreciation for natural resources through urban access while providing a land use that is beneficial in terms of soil, air, and water quality. In addition, through composting onsite, the gardens can be largely sustainable in terms of solid waste management.

Land Use

San Jose is the largest city in Santa Clara County in both population and area. The urban service area is approximately 89,000 acres, of which 17.5% is vacant or unused (City of San Jose, 1994). General plan designations for development of remaining undeveloped land include several categories outlined in Table 4. Residential use is by far the most prevalent urban land use in San Jose, occupying about 59% of all the city's developed urban land. Almost half of all of the housing stock in the city has been built since 1970, and falls into three categories (see Table 5). Plans for future residential developments will occur

Table 4

General Plan Designations for Development of Remaining Undeveloped Land

Use type	Percent undeveloped land
Single-family housing	35.1
Industrial	29.6
Public park and open space	9.9
Multi-family housing	7.3
Non-urban uses	6.8
Public/quasi-public	5.9
Commercial	3.6
Other	1.8

Table 5

Housing Stock in San Jose

Housing type	Percent of housing stock
Single-family detached	58
Multi-family attached	33
Single-family attached (townhomes, condominiums)	9

almost exclusively on the existing urbanized area on the valley floor, with two-thirds of the new units being built as multi-family dwellings (City of San Jose, 1994).

Land Use for Public Parks and Open Space

San Jose city officials have determined that a sufficient supply of parkland and open space is important to enhance the livability and the social and environmental quality of the city. Environmental benefits such as recreation facilities within walking distance and the provision of heat-reducing green spaces have been identified as objectives in the general plan (City of San Jose, 1994).

The city manages a total of 4,000 acres of city-held open space in neighborhood, district, and citywide parks. Although most is developed for the delivery of recreational activities, the city's limited budget for operations and maintenance costs has not allowed for development of all park sites.

The city has actively pursued parkland acquisition through financing from the Parkland Dedication Ordinance, park impact fees, and the Construction and Conveyance Tax. However, high land costs development patterns and credit provisions have caused the city to be unable to develop sufficient neighborhood-serving parks to meet service level objectives of 3.5 acres per 1,000 population. As a result, the city must look for alternate methods of alleviating parkland deficiencies. One such solution, which has been used in the community garden program, involves the lease of land from the Santa Clara Valley Water District,

PG&E, school districts, and other agencies as well as development support from volunteer gardeners (City of San Jose, 1994).

Drawing upon the general plan, the following policies should be considered in using community gardens as recreational facilities:

1. Parks should be within reasonable walking distance for residents.
2. Parks should be designed to facilitate security and policing.
3. Facilities should be encouraged in high-density residential projects.
4. Development of recreational areas in rural and hillside areas should be low intensity with sensitivity to environmental impacts.
5. Design and maintenance of parks should consider wildlife and plant species.
6. Public agencies and utilities should consider cooperative efforts to allow recreational use of respective properties and right-of-ways.
7. Parks should be designed to allow maximum access to people of all abilities.
8. Priority should be placed on planning and improvement of park facilities in park-deficient areas of the city.

Demographics

Population growth in San Jose has been heavily influenced by migration of new residents from outside the state. It is estimated that over half of San Jose's population increase over the next 10 years will be from migration into the area. In addition to increasing economic activity and the need for services, the most striking change will continue to be the increasing ethnic diversity as new residents move in.

During the '80s, the population in San Jose changed significantly, and there is currently no ethnic group that makes up a majority of the city's population. Between 1980 and 1990, the largest growth rate (178%) occurred in the group who identified themselves as Asian. The Hispanic population increased by 48% during that time, to become 26.6% of the city's total population (City of San Jose, 1994). As the city grows more diverse, there are implications in terms of anticipating the types and nature of services the city's residents will need.

Public gardens in San Jose prove to be common ground where people from diverse backgrounds can connect with one another and with the world of plants. The aim of San Jose's gardens is to foster community pride and goodwill through cross-cultural associations. These partnerships, inside and outside of the garden, between gardeners and grassroots community groups, have contributed to the garden program's viability (J. Dotter, personal communication, March 15, 2000).

Policies and Plans

General Plan

To address issues of rapid urban growth in San Jose, the city adopted "San Jose 2020" as its general plan in 1994. The general plan is the integrated statement of the official land use policy for the City of San Jose. The objectives, principles, and standards of the plan guide development proposals with consideration for social, environmental, and economic dimensions. Annual

review and amendment are designed to ensure that the plan is continually reviewed and revised to meet city objectives.

The major strategies in San Jose's general plan establish the central themes and a framework for planning in San Jose. The strategies relating to open space and the community gardens include growth management, urban conservation, the Greenline/Urban Growth Boundary, and the sustainable city.

Growth Management

Modern growth management programs which regulate the amount, timing, location, and character of development, are becoming an increasingly common feature in city plans. These programs are usually motivated by environmental considerations, the need for manageable land development patterns, community ambiance, and preservation of existing lifestyles (Levy, 1988).

The city's strategy for growth management involves the prudent location of new development to maximize the efficient use of urban facilities and services. As a result, since the 1970s, the growth management strategy has been infill development on the vacant areas of the city (City of San Jose, 1994).

Urban Conservation

In order to conserve the housing and neighborhood resources already in existence, the city feels that residents need to belong to a neighborhood or an area that promotes civic pride and a concern for the community. Therefore, the participation in neighborhood activities is essential to maintaining San Jose's quality of life (City of San Jose, 1994).

The Greenline/Urban Growth Boundary

In 1996, the Greenline/Urban Growth Boundary (UGB) was incorporated into both the San Jose 2020 General Plan and a joint policy statement for the City of San Jose and the County of Santa Clara. The UGB separates those lands planned and reserved for urban uses from those that should remain permanently rural in character. By limiting the area of new urban development, the city ensures developed areas can be efficiently served without draining resources from neighborhood revitalization or destroying environmental conditions.

Riparian Corridor Policy

The Riparian Corridor and Natural Stream Policies provide design guidelines to protect the riparian corridors and habitats without unreasonably limiting the economic and recreational use of adjacent lands. Preserving riparian corridors as passive uses of open space and natural resources maintain these areas for the aesthetic fabric of the community (City of San Jose, 1998).

Sustainable City

The sustainable City Major Strategy is the overarching policy statement designed to help ensure that San Jose is built in a way that provides urban services and maximizes efficient use of existing infrastructure while protecting the natural environment to the maximum extent feasible. According to the plan, sustainability is also reflected through “community participation in decisions about the use of limited resources” (City of San Jose, 1994).

Parks Greenprint

The City of San Jose has determined that recreation and community services are essential to the mental and physical health of residents. Active parks and community centers facilitate health and well-being, both for the individual and for the community. Parks, for example, are considered stress relievers where residents can relax and unwind (City of San Jose, 2000). The city currently maintains 3,748 acres of parkland including neighborhood parks, such as the community gardens (City of San Jose, 1994).

In addition to providing recreational facilities, it is also the role of the city government to work with residents to equitably provide services and facilities that help create sustainable neighborhoods. As a result, the Parks and Recreation Greenprint (City of San Jose, 2000) was designed to offer recreational programs and services that respond to neighborhood needs, strengthen neighborhoods, and encourage healthy lifestyles.

The Greenprint for Parks, Community Facilities, and Programs is a planning tool that was designed with input from residents, parks staff, maintenance workers, and other local officials. The resulting action plan includes the department vision for the upcoming 20 years, core values for direction, goals and strategies, and performance measures from the city's Investing in Results Program to keep the process on track throughout its implementation.

The Greenprint is based on the principle that responsive recreation and neighborhood services should be driven by neighborhood initiatives, in order to promote neighborhood development, health and wellness, youth development, and the well-being of seniors and persons with disabilities.

In order to create a plan with input from all parks stakeholders, a needs assessment process was designed to facilitate data collection from residents, park staff, and local officials. This strategy enabled park staff to determine focus and direction for the 20-year life of the plan.

Core Values

The following features of parks facilities and services were rated highest among San Jose residents:

1. Accessibility
2. Inclusivity
3. Affordability
4. Equity
5. Diversity

Strategies

The Greenprint includes strategies to address development of parks and open space, recreational facilities, public outreach, and resource coordination.

Parks and open spaces. The Greenprint suggests that the City of San Jose should acquire, develop, renovate, modernize, and preserve parks and

open space. Open space should be preserved, including greenbelt areas and urban buffers.

The City of San Jose maintains goals to provide 3.5 acres of neighborhood/community serving parkland per 1,000 people, and provide equal access within a three-quarter-mile radius of residents.

As San Jose's population increases, the city will need an additional 930.64 acres of parkland over the life of the 2020 plan. At this point, it is estimated that the city will be unable to acquire the total acreage needed to achieve this goal due to land pressure and development costs. In addition to improved use of current facilities, innovative ways of meeting park and recreation needs and goals should be pursued through collaboration with the city's school districts and other public and private partnerships. The park master plans should also be reevaluated frequently in order to accommodate new recreation facility types, identify open space opportunities, and expand active recreation services.

Recreation facilities. The Greenprint suggests that the parks program should provide access to various types of recreational facilities for all residents. At a minimum, the city should develop each of the following in every council district:

1. Skateboard park
2. Dog park
3. Community garden

The three council districts that do not currently have community gardens are Districts 8, 9, and 10.

Guadalupe Gardens Master Plan. Implementation of the master plan for the 200-acre Guadalupe River Park and Garden Complex is subject to both council and FAA approval. Once the plan is approved in 2002, garden development will include demonstration gardens with educational themes, such as agricultural or landscaping techniques, as well as community gardens for use by residents and local schools.

Senior centers. Services for seniors, the fastest-growing segment of the population, are provided in collaboration with other agencies at a network of facilities. There are five dedicated senior centers and six senior programs in conjunction with community centers.

City goals for serving San Jose's senior population include:

1. Improving health and wellness.
2. Increasing independent living.
3. Promoting senior volunteerism.
4. Increasing senior access to recreational and support services.

Public outreach. Parks Greenprint recommends an increase in public awareness of parks, recreational facilities, programs, and services.

Resource development. The Parks Department should collaborate with the Redevelopment Agency's Strong Neighborhood Initiative to develop the resources necessary to implement the community vision in redevelopment areas.

Strong Neighborhoods Initiative

The Strong Neighborhoods Initiative (SNI) is a partnership between the City of San Jose's Redevelopment Agency and San Jose communities to build safe and attractive neighborhoods with independent and capable neighborhood associations. The SNI program focuses planning support and services to 22 individual neighborhoods covering 10,050 acres and representing approximately 200,000 residents. SNI neighborhoods were chosen due to their need for resource support. The program hopes to improve services to these areas through coordination between city staff and neighborhood stakeholders.

Initiative Components

The SNI Redevelopment Plan designed by city staff provides a long-range program for the redevelopment and preservation of SNI neighborhoods. As well as many other provisions, the policy allows for the construction of public facilities, including libraries, youth centers, and parks. SNI plans encourage the development of more community-centered places and services where residents can meet, including community centers, recreation centers, and community gardens.

Individual Neighborhood Revitalization Plans are created by each of the 22 neighborhoods who have developed or are in the process of developing plans which (a) identify conditions which detract from quality of life in the neighborhoods, (b) develop a long-term revitalization plan tailored to the needs

of the community, and (c) focus city and community resources toward needed physical or service improvements.

SNI Objectives

The primary objective of the SNI is for the mayor and the city council to coordinate with San Jose communities to strengthen city neighborhoods. The SNI is about creating cleaner, safer neighborhoods, by connecting those neighborhoods to resources and to each other. The proposed SNI Redevelopment Plan intends to:

1. Improve the physical condition of the neighborhoods.
2. Enhance community safety.
3. Expand community services.
4. Develop a stronger sense of community.
5. Strengthen neighborhood associations.
6. Connect neighborhoods to resources and each other.
7. Improve the economic viability of individual neighborhoods.

Community Gardens

The American Community Gardening Association (ACGA) defines community gardens as pieces of land set aside for community members to grow edible or ornamental plants. The land may also include active or passive recreation space or other amenities. In surveys conducted by the ACGA in 1990 and 1991, most community gardens were neighborhood gardens with an

increasing trend toward school, senior center, public housing, and special needs gardens (ACGA, 1991).

Benefits of Gardens

As recreational facilities, community gardens are the sites of a unique combination of activities including food and flower production, recreation, social and cultural exchange, and the development of open space, community spirit, skills, and competence (Naimark, 1982).

Summarizing their research on the psychological benefits of gardening, Kaplan and Kaplan (1989) find three important types of garden benefits. First are the tangible benefits of gardening such as cutting food costs and contributing food to the family. Second is there is the desire to work in the soil and see things grow. Finally, the aspect of sustained interest is critical because people see the garden as a valuable way to spend time and as a diversion from stressful routines.

In 1977, the California Council for Community Gardening (CCCG) stated that community gardens “improve the quality of life for all people” (p. 2). The benefits outlined by the council can be used to discuss the relevant literature:

1. Creating opportunities for recreation and education.
2. Stimulating social interaction.
3. Producing nutritious food.
4. Developing urban open space.
5. Encouraging self-reliance.

6. Conserving natural resources.

7. Beautifying neighborhoods.

Recreation and Relaxation

Gardening has important social and psychological benefits, because it relaxes, teaches, and connects. The act of gardening provides relief from our often abstract and secondhand work. A growing body of empirical research is proving that gardening reduces stress and contributes to wellness (Francis & Hester, 1990).

Over 100 years ago, landscape architect Olmstead (1886) argued that parks benefit humankind, both physically and mentally. His tranquility hypothesis stated that nature employs our minds without fatigue, while blocking out distractions, both exercising and tranquilizing our faculties. Behavioral scientists such as Kaplan and Kaplan, and continue to document proof of this theory by demonstrating the restorative nature of outdoor experiences in high-stress urban environments (Fisher, 1990).

Lewis (1996), a horticulturist and administrator at the Morton Arboretum in Lisle, Illinois, has been studying people/plant relationships for over 20 years. He concludes through his work that there is a close link between plants and the well-being of humans. His work with horticultural therapy exemplifies this positive relationship as people/plant interactions in hospitals, geriatric centers, schools for the mentally disadvantaged, drug rehabilitation centers, and prisons continue to show the ways that plants help patients heal damaged bodies and minds.

A survey of 361 gardeners from community gardens across the United States showed that gardening was meeting quality-of-life issues on the higher levels of self-esteem and self-actualization. These results were especially true for African American and Hispanic gardeners (Waliczek, Mattson, & Zajicek, 1996). In a survey by the American Horticulture Society, it was reported that the main reason homeowners garden is for "peace and tranquility" (Kaplan & Kaplan, 1989).

As pressure in urban areas increases, more residents seek public gardens and green spaces for relaxation, stress reduction, and inspiration. Therefore, garden and green space areas are important services for cities to provide to improve quality of life in urban areas (Bennett & Swasey, 1996).

"Community gardens in San Jose are a place for recreational activity in a neighborhood park setting, which is maintained by the people who garden there," explains T. Capurso, Park Manager (personal communication, March 23, 2000). They are equally *community* and *garden*. "If you want to be part of a community, where you can contribute to others and have them contribute to you, the Community Gardening Program provides a local opportunity to do that."

Educational Opportunities

An affection for nature, developed at a young age, may well be the driving force behind an adult's proactive involvement in conservation and environmentalism. However, factors such as the crime rate, television, and video games increasingly keep kids indoors, away from personal experiences

with nature. Gardens are often the most accessible places for children to learn about nature's fragility and solace. Gardening also shows children that they can bring beauty into the world through their own actions (Heffeman, 1994).

The current crisis in education is not solely a failure of teaching in the classroom, but the failure of the community at large to capture the imagination, involvement, and enthusiasm of young people (Abbott, 1995). With increasingly complex problems to solve, young people need new competencies such as the ability to synthesize, problem solve, deal with uncertainty, and be creative in developing solutions. There is an expanding body of literature that emphasizes the educational relevance and importance of encouraging children to adopt an active, creative role in investigating and caring about real community concerns (National Assessment of Educational Progress, 1988).

At the Institute for Responsiveness Education, key features of successful educational programming can be applied aspects of the community garden experience. Successful learning strategies, they conclude, are (a) working with adult mentors, (b) gaining real-world experience, (c) making genuine contributions to the community, and (d) tailoring projects to needs and priorities of learners (Thompson, 1995). Research is also showing the potential of intergenerational programs to function as solutions to social problems by encouraging meaningful, hands-on interactions that broaden the impact of community development efforts (Ventura-Merkel, Liederman, & Ossofsky, 1989).

Stimulating Social Interaction

Urban garden projects are enhancing the quality of life for participants through enhanced self-esteem and new neighborliness. Gardeners in city programs across the U.S. report sharing their vegetables, flowers, and themselves (Lewis, 1986). The community garden gives a face to fellow residents who may otherwise spend much of their time behind closed doors. Residents begin to feel safer because they recognize their neighbors as community members (Fisher, 1990).

Gardens and gardeners are also bearers of culture and can be bridges of cultural exchange. Immigrants are able to blend traditional crops and practices of cultivation, with new relationships and increased communication and participation in their new communities. Gardeners feel that garden interactions between people from around the world help families and neighbors to learn tolerance and respect for other cultures (Bjornson, 1996).

Research among the Hmong in Eureka, California led to several valuable conclusions. Upon settling in the U.S., many of the Hmong gardeners found it difficult to feel satisfied in their role as head of the household. Traditional practices continue to be important, and gardeners explain that gardens offer a place to teach children about their culture and how to grow traditional foods, herbs, and medicinal plants (Francis & Hester, 1990).

Research by San Jose Garden Coordinator Dotter and visiting ethnobotanist Anderson (1999) focused on the ways in which immigrants

develop a sense of community and a new nationality through their involvement with San Jose gardens. The gardens serve as international neighborhood centers where new immigrants are introduced to U.S. linguistic and cultural practices, while sharing their own traditions of food and gardening. This way, immigrants can confidently adopt a new nationality without endangering ethnic traditions so important to their families.

Producing Nutritious Food

As urban settlements have historically grown in areas of rich farmland, metropolitan areas currently account for 51.7% of the prime agricultural land in the United States. While urban agriculture will not become the main source of food for cities in the future, urban garden projects can provide an important buffer to supplement outside food supplies while enhancing local economic and environmental conditions (Van der Ryn & Calthorpe, 1991).

The U.N. Development Programme claims that urban agriculture produces 15% of the world's food. This number may need to increase, as it is estimated that by 2025, nearly half of the world's population will live in urban areas (Nelson, 1996). In the United States, where 78% of the population already resides in metropolitan areas (Adams, 1994), gardening remains the number one pastime with over 75% of all households reporting that they garden. On average, 31% of all U.S. households grow vegetables with an expected increase of nearly 20% in vegetable gardening by the year 2010 (Dortch, 1996).

Developing Urban Open Space

In 1902, British planner, Howard proposed "Garden Cities" where there would be integration of nature and human settlement (Richert & Lapping, 1998). Unfortunately, according to Spirm (1985), Professor of Landscape Architecture at the University of Pennsylvania, "most of the urban and suburban development inspired by this movement used the previous techniques of land development and building, applying only the trappings of nature such as lawns and trees. Thus, with very few exceptions, cities have failed to use the full potential of nature in creating healthy, economical and beautiful urban environments" (p. 5).

"Existing knowledge about urban nature would be sufficient to produce profound changes in the form of the city, if only it were applied" (Spirm, 1985, p. 5). Developing community gardens is one of the critical ways that American cities are undoing the damage that 50 years of urban planning has done to our farmland, communities, and culture (Lyman, 1997).

Encouraging Self-Reliance

Neighborhood self-reliance is critical in reclaiming neighborhoods from crime and pollution. One neighborhood teacher explains that "building a community around growing things shows kids how to develop a sense of security that cannot come from security systems, guards or guns, but rather from a hard woven fabric of neighborhood" (Nelson, 1996, p. 17). Showing residents how to bolster their food security through gardening, can also highlight the connection

between the judicious use of resources and a bigger picture of the whole region's ecology and stability (Nelson, 1996).

Conserving Natural Resources

Over 50 years ago, Leopold (1949) first advocated a land conservation ethic encompassing soil, water, plants, and animals. He claimed that "A land ethic of course cannot prevent the alteration, management, or use of these resources, but it does affirm their right to continued existence and at least in spots, their continued existence in a natural state" (p. 240). In short, he continues, "A land ethic changes the role of homosapiens from conqueror of the land to plain member and citizen of it. It implies respect for his fellow members, and also respect for the community as a whole" (p. 240).

Cities separate people from nature, giving them the false perception that they live outside the limits imposed by nature. Urban agriculture can bring nature into the cities and help restore this connection (Nelson, 1996). Developing a sense of participation with nature through the garden can expand our understanding of the ecosystem we inhabit, our sense of community, and the value of the earth (Bunn, 1996).

Urban open space can provide numerous resource improvements in urban areas including (a) increased water filtration, (b) reduced impact of urban heat islands, (c) noise buffering, (d) soil enrichment, and (e) an increased habitat for plant and animal communities (Adams, 1994).

Beautifying Neighborhoods

The presence of gardening projects in urban areas around the U.S. has led to improved yards, cleaner neighborhoods, and reduced vandalism (Lewis, 1986).

History of Community Gardening

The practice of community gardening dates back only 200 years. Before that, the majority of people produced their own food. It was during the industrial revolution in the nineteenth century that cities began to specialize in the production of industrial goods and services. As a result, rural areas became the sole providers of food (Murphy, 1999). In its 200-year history, community gardening has gone through distinct phases, responding to a variety of external circumstances (Bassett, 1979).

In Europe

During the Middle Ages, unowned land around villages was available for communal farming. Villagers worked together in unfenced fields utilized for village food production. The village owned the plow, and field labor was shared among residents. Landowners also maintained enclosed orchards, gardens, and animals (Jobb, 1979).

This open-field system worked until the increasing population forced a more controlled food production system. In 1709, the British Parliament passed the first of a series of enclosure acts that fenced fields and closed commons. These acts continued to be mandated for the next 160 years, increasingly

altering the countryside (Jobb, 1979). During the same time, the cities of England boomed with the stimulation of new industrial practices and new factory production (Warner, 1987).

"Both the rural and urban changes denied thousands of people access to land that they had formerly depended upon for food and pleasure" (Warner, 1987, p. 12). In response to these drastic changes, the community gardening movement took root in Britain at the end of the era of the "common field" system (Jobb, 1979). By the early nineteenth century, English cities and towns were required by law to set aside allotment gardens on the edge of towns for poor, unemployed tenant farmers who had lost their right to cultivate property of large landowners (Hynes, 1996). Countries throughout Europe, and later Asia and America followed suit (Jobb, 1979).

In the United States

The economic depression of 1893 to 1897 created the impetus for community gardening in the United States. Detroit, a manufacturing city that had specialized in the building of railroad cars, was one of the cities hardest hit by unemployment. Then-mayor Hazen S. Pingree called for owners of vacant land at the edge of the city to allow unemployed residents to cultivate food to support their families through the upcoming winter months. Following the success of Detroit's program, cities across the nation implemented similar types of projects (Warner, 1987).

In 1918, during World War I, Americans were asked to join a Liberty Garden Campaign, so that all commercially grown food could be sent overseas to feed the soldiers. The National War Garden Committee, an affiliate of the American Forestry Association, issued press releases and posters to encourage people to grow vegetables—"Sow the Seeds of Victory," "War Gardens Over the Top," and declared, "Every Garden a Munitions Plant" (Hynes, 1996).

During World War II, community gardens—this time called "Victory Gardens"—were again encouraged. In the peak year, 1944, more than 20 million victory gardeners produced 44% of the fresh vegetables consumed in the United States (Hynes, 1996). At the end of the war, landowners reclaimed loaned property, and many gardens disappeared (Warner, 1987).

Increased environmental awareness and the economic motivations of inflation and unemployment in the 1970s influenced the modern community gardening movement. Forty percent of existing community gardens in the U.S. were established in 1975, as food prices rose and the environmental movement reached full swing (Hynes, 1996).

Although the modern community gardening movement has enjoyed more permanence than previous phases, there are several factors that threaten garden sustainability. Only 7% of the gardens surveyed by the ACGA (1998) were using sites that were considered permanent. Nearly all of the gardens claimed that "site security" was a significant issue in their garden programs. In addition, there is an overwhelming lack of funding diversity for gardens

nationwide. Additionally, 68% of the gardens surveyed received more than half of their funding from one source. If these sources become limited or unavailable, the threat to garden programs is obvious.

Another trend jeopardizing the stability of gardening programs across the U.S. is an increasing number of gardens utilizing a limited resource base. In most community gardening programs, the number of gardens is increasing where program resources may not be. The average staff support is approximately one staff person for 20 gardens, with volunteer services augmenting needs for garden planning, maintenance, training, and lobbying for new sites (ACGA, 1998).

San Jose Community Gardens

History

The San Jose community gardening program was established in 1976 in an agreement with Olinder neighborhood residents who became permittees to use as a standard certain city-owned nursery land for community gardening purposes. The program started with 4.3 acres and the use of the building on the property. The original agreement with community members included organic, noncommercial gardening where permittees were responsible for water meters and collecting water fees from users (Ferguson, 1987).

Volunteer staff managed the garden onsite, but the city retained a termination right, which empowered the Superintendent of Parks to decide if the agreement would be terminated. The agreement read, "The City may in its sole

discretion and without liability to permittee, terminate such permission with respect to the permitted area, and reclaim any or all garden plots” (City of San Jose, 1976).

These parameters formed the administrative structure that shapes the current gardening program. Gardens continue to function under signed agreements with each garden user and a set of overarching rules that govern all gardens and gardeners. Volunteer managers in each garden are responsible for registering gardeners, collecting water fees, and facilitating the rules of the program. Garden users must also abide by all program rules and sign a gardener agreement in order to utilize public land for planting crops (see Appendix C – Rules and Regulations and Gardener Agreement). These forms are available in English, Spanish, Vietnamese, and Bosnian, as well as being posted at the gardens in those languages.

Each year the gardeners must also register for continued plot use and pay a fee for water use. As well as the use for volunteer managers, the data from the registration forms can now be added to a database for better tracking of garden participation (see Appendix D – Garden Registration Form).

Resources

The garden program has expanded to include 16 gardens using public land for gardening. Table 6 documents the size of the gardens as well as the source of the land.

Increased land development in San Jose has brought new concerns and the need for action to the gardening program. The closure and relocation of one of San Jose's oldest community gardens, established by the New Conservationists, to allow for parking lot expansion of an ice rink, and the second move to make way for a golf course, have gardeners concerned about the security of their garden sites (J. Dotter, personal communication, March 15, 2000).

In order to address the concerns of the garden users and bring all gardens together for planning and problem solving, the Community Garden Steering Committee was reconvened in 1997. Bimonthly meetings bring garden managers, gardeners, and city staff together to create a unified voice for the garden program. The establishment of this group, which represents nearly 800 gardeners, led to the restoration of a liaison position on the Parks and Recreation Commission, which existed previously from 1976 to 1979. A representative of the steering committee can now take items to the commission and, in turn, provide regular updates to the gardeners (J. Dotter, personal communication, March 15, 2000).

Table 6

San Jose's Community Gardens

Name of garden	Estimated opening date	Council district	Land source	Size (acres)	Number of plots	Annual fees (in dollars)
Alviso	1980	4	San Jose	1.5	24	N/A
Berryessa	1981	4	School	2.0	56 large, 15 mini	60 large; 12 mini; 7 orchard
Calabazas	1981	1	San Jose	0.8	30	.10/sq. ft./yr.
Cornucopia	1984	2	San Jose	1.0	42	75 large; 50 small
Coyote	1994	7	San Jose	1.0	77	30
El Jardin	1982	2	San Jose	3.0	66	--
Green Thumb	1991	1	School	1.3	52	60 full; 30 half

(table continues)

Name of garden	Estimated opening date	Council district	Land source	Size (acres)	Number of plots	Annual fees (in dollars)
Hamline	1980	3	San Jose	0.8	29	.10/sq. ft./yr.
Jesse Frey	1981	6	Water District	1.0	34	.12/sq. ft./yr.
La Colina	1978	2	San Jose	3.0	92	45 + 10 deposit
Laguna Seca	1981	2	Water District	1.25	26	40 (35 early pay)
Las Milpas	1991	3	San Jose	1.15	48	--
Mayfair	1977	5	San Jose	3.5	125	.12/sq. ft./yr.
Nuestra Tierra	1976	7	San Jose	5.0	94	66-176
Wallenburg	1981	6	San Jose	2	80	.10/sq. ft./yr.
Watson	1981	3	San Jose	1.5	35	60-75

CHAPTER 4

DATA COLLECTION AND ANALYSIS

In order to meet the research objectives of this project, several types of data were collected from primary and secondary sources. These data include interviews, surveys, government documents, industry literature, and census data. Each research objective will be addressed with the applicable data collected during the study. Summary of data trends and conclusions will be presented following each objective, with conclusions and recommendations to follow.

Objective 1 - Resource Assessment

To define current use patterns in all 16 San Jose community gardens,

1. Summarize data about resource use, including land, water, equipment, facilities, and staff resources through document analysis, onsite garden assessments, and interviews with garden managers.
2. Determine how the garden program is supported through agency and department coordination.
3. Define garden use patterns from program documents, staff interviews, and self-reporting surveys completed by the gardeners.

An assessment of resources utilized by the community gardening program will help to determine possible areas of focus in garden management, development of new gardens, and staff support necessary to meet gardener needs. The following analysis will serve as a baseline to compare future use patterns and identify program improvements.

Garden Resources

To assess community garden resource use, interviews, government documents, and the gardener survey were used to determine garden inputs, contributions from gardeners and government agencies, and use patterns by different gardener groups.

Land and Water Use

Because each garden was developed at a different time and with the influence of different garden staff, varying practices are reflected in resource use at the different sites. Two indicators that reflect different management practices are land use and water use. Table 7 reflects the variations in resource use at different sites.

Plot Use

Initial data from the garden survey outlines reported uses. This is valuable to staff and managers for better support of gardener needs. Table 8 summarizes some key utilization points reported by gardeners.

Residents Served

To provide more detail about who is being affected by the gardens, family members and community members should also be considered. Gardeners were asked if they worked in their plots alone or with others. The gardener survey shows that 67% of the gardeners work in their plots with others, as identified in Table 9.

Table 7

Land and Water Use

Garden	Plots	Acres	Plots/Acre	2000 Water Fees	Water (ccf)*	Water/Plot (ccf)
Berryessa	60	2.00	30	\$3,140	1,570	26
Calabazas	30	0.80	38	834	417	14
Cornecopia	42	1.00	42	2,019	1,010	24
Coyote	74	1.00	74	1,990	995	13
El Jardin	66	3.00	22	3,580	1,790	27
Green Thumb	52	1.30	40	2,624	1,312	25
Hamline	29	0.80	36	1,584	792	27
Jesse Frey	33	1.00	33	1,116	558	17
La Colina	92	3.00	31	4,420	2,210	24

(table continues)

Garden	Plots	Acres	Plots/Acre	2000 Water Fees	Water (ccf)	Water/Plot (ccf)
Laguna Seca	28	1.25	22	802	401	14
Las Milpas	58	1.15	50	2,347	1,174	20
Mayfair	125	3.50	36	6,000	3,000	24
Nuestra Tierra	93	5.0	18	4,000	2,000	21
Wallenburg	80	2.0	40	1,800	900	11
Watson	35	1.5	23	1,800	900	26

*ccf = 100 cubic feet.

Table 8

Garden Use Patterns

Activity	Average	Comments
Hours spent in garden per week	8 hrs.	
Miles traveled to garden	2.5 mi.	73% of gardeners do not have a garden at home.
Dollars spent on supplies	\$87	24% would have a hard time feeding their family without garden.
Months/year that produce is harvested	7 mos.	68% say they have extra produce to share with others.
Average years gardening	21 yrs.	Average of 6.5 years in community gardens.

Table 9

Additional Help in Plot

Who helps you in your plot?	Percent of gardeners responding
Spouse	44.0%
Children	32.0%
Parents	7.5%
Siblings	5.8%

To estimate the number of residents directly affected by the gardens, the average household size can be used to extrapolate the gardener effect on a wider resident base. The City of San Jose has an average household size of 3.2 residents per household. The gardener survey showed an average of 3.45 members per household. For this study, the residents served by the gardens will be calculated at 3.45 people per plotholder. Table 10 shows the estimated number of residents directly affected by the community gardens.

The Parks Greenprint reports that San Jose currently owns 3,747.9 acres of parkland in the city. The plan also provides an assessment of each council district and its specific needs, including that of additional parkland. The Greenprint identifies the need for an additional 930.64 acres of neighborhood/ community-serving parkland during the term of the plan. These acreages are mapped by council district in Appendix E.

Table 10
Residents Served by Garden

Garden	Plots	Residents affected^a
Berryessa	60	207.00
Calabazas	30	103.50
Cornecopia	42	144.90
Coyote	74	255.30
El Jardin	66	227.70
Green Thumb	52	179.40
Hamline	29	100.05
Jesse Frey	33	113.85
La Colina	92	317.40
Laguna Seca	28	96.60
Las Milpas	58	200.10
Mayfair	125	431.25
Nuestra Tierra	93	320.85
Wallenburg	80	276.00
Watson	35	120.75
Total	897	3,095.00

^aResidents served based on an average of 3.45 members per household per plotholder.

Most gardens already have waiting lists with an average wait of over one year." As a result of the ongoing demand for garden space, the community gardening program has never been able to advertise" explains A. Sanger (personal communication, October 15, 2001), Community Gardens Coordinator. Table 11 shows the number of residents on waiting lists at each garden. Despite the lack of advertising, continues Sanger, it is clear when residents hear about the gardens. "When a news article or other media lets residents know about the program, the call volume increases above the average of about 4 requests per month." A standard call volume can be seen in Table 12, compared with a higher call volume after a news article ran in the *San Jose Mercury News*.

The survey data also confirms that most gardeners did not learn of the community gardens through city advertising campaigns or promotion. Table 13 uses data from the gardener survey to describe where gardeners learned about the program.

Department and Agency Support

With limited staff resources and budget, the community garden program is able to provide year-round services affecting over 3,000 residents due to their coordination with other departments, agencies, and most importantly with a tremendous amount of monetary and labor support from the gardeners. The following sections will outline the coordination involved in supporting the community gardening program.

Table 11

Residents on Waiting List

Garden	Number of people on waiting list
Berryessa	4
Calabazas	-- ^a
Cornecopia	--
Coyote	--
El Jardin	9
Green Thumb	20
Hamline	2
Jesse Frey	--
La Colina	7
Laguna Seca	3
Las Milpas	4
Mayfair	--
Nuestra Tierra	6
Wallenburg	21
Watson	0
Total	76

^aNumber not available.

Table 12

Plot Requests to the Parks Department

Month and year	Plot requests
January 2000	6
February 2000	2
March 2000	4
April 2000	3
May 2000	6
June 2000	3
July 2000	2
August 2000	5
September 2000	6
October 2000	4
Average for 2000	4 calls per month
January 2001	2
February 2001	6
March 2001	9
April 2001	20
May 2001	7
June 2001	4
July 2001	3

Table 13

Program Promotion

How did you learn about the community garden?	Percent of gardeners
Friend	47.0%
Saw garden	36.0%
Family	15.0%
Media	4.0%
Phone book	.8%
Brochure	.7%

Parks Department

The Parks Recreation and Neighborhood Development Department is responsible for managing the community garden program within the context of the department's mission statement, which endeavors to "support the livability of neighborhoods, offer opportunities for individuals to enjoy life, and strengthen communities of people" (A. Sanger, personal communication, October 15, 2001). For the community gardening program, city staff are responsible for the oversight of both city and leased land, facilities and equipment, and the facilitation of volunteer management and agency coordination.

Budget. The community gardening program functions with a limited budget, primarily based on staff support and some limited facility maintenance. T. Capurso (personal communication, October 16, 2001) explains that "the

annual program budget for the community gardens is not designed to cover capital improvements or major renovations to any of the gardens. Those projects, if necessary, would be funded through the parks capital budget. Each council district has its own budget from which it can prioritize capital expenditures. In these cases, community garden projects would compete with all other parks and recreation center projects for funding priority.” Table 14 outlines the base budget allocated by the City to support the community garden program.

Leases. Although most gardens are on city land, several are on land leased from the water district or school district (see Table 4). Parks Director T. Capurso (personal communication, October 16, 2001) explains that “the leases the garden program has with the water district and school districts are typically for a minimum of 5 years, with the opportunity for extensions. Laguna Seca, for example, is on its third 5-year extension with the Santa Clara Valley Water District. School districts, however, are under a different pressure for land as they need more space for sports fields, portable classrooms, and even teacher housing. This may cause gardens such as Berryessa or Green Thumb to look for alternate sites in the future.”

Facility standardization. The Parks Department has committed to providing standardized permanent features for all of the gardens in order to equalize resources. Facilities that will be provided by the city at all gardens include:

Table 14

Community Garden Program Budget

Item	Amount	Details
Personnel services	\$78,000	Includes full-time garden coordinator and half-time maintenance assistant for approximately 3,000 hours staff time.
Non-personnel expenses	\$27,500	Including \$14,000 for portable toilet maintenance.
Water budget	\$22,500	Payment for gardens with City submeters. Gardens repay the City after fees are collected.
Total	\$128,000	

1. Shade structure for community meetings.
2. Restroom facilities.
3. Permanent message boards.
4. All-season or paved driveways.
5. Concrete pad for green waste collection.
6. Installed irrigation systems.
7. Bender board for plot delineation.

In addition to these basic features, the Parks Department provides some hand tools, bulk purchases of seed, and other garden supplies on an as-needed basis. T. Capurso (personal communication, October 16, 2001) explains that “although the city provides some tools such as rakes and shovels, the gardeners themselves bring most of the materials that they need.”

Department coordination. The Parks Department coordinates directly with other departments in the city in order to provide the services to gardeners. General Services provides park maintenance staff for ongoing garden maintenance needs, as well as purchasing support for the registration documents and other supplies required. The Environmental Services Department provides support through the collection of excess green waste, compost distribution, and coordination for the composting toilet pilot, where four of the community gardens will serve to test the feasibility of using composting toilets in parks uses.

Steering Committee

At its inception, a steering committee was formed to help direct the development of the garden program. The original committee functioned from 1976 to 1979, when it was disbanded. In 1997, a renewed committee was established, and it continues to function as an exchange of information between gardeners and city staff. “Improved communications with the gardens, planning for appropriate programming, and support for the volunteer staff are all benefits

of a renewed steering committee presence in the garden program,” explains J. Dotter (personal communication, July 19, 2001).

In the gardener survey, 8% of the gardeners claimed that they had attended a steering committee meeting. This data collaborates with meeting attendance, which averages 25 garden managers or staff at each of four annual coordination meetings.

“The steering committee meetings have evolved to better encourage planning and involvement from the gardeners,” explains J. Dotter (personal communication, July 19, 2001). “In the past, the gardeners became used to being fed information, and the annual meeting was more of an announcement session for city staff to report out to gardeners. Today, the garden managers are sponsoring meetings at their gardens, bringing ideas and concerns forward, and sharing ideas about successes and challenges with each other,” concludes Dotter.

Steering committee meetings have also proven to be a valuable contact point for agencies that would like to share information with gardeners. Organizations such as local food banks, Master Gardeners, Master Composters, and Adopt a Park have used the meetings to bring information to gardeners and to get ideas from them as well.

Parks Commission

A critical connection between the garden program and the city’s decision makers is the Parks Commission, which is an advisory group of nine

commissioners who contribute to planning for the Parks, Recreation, and Neighborhood Services Department. A liaison position was established in 1997 between the garden steering committee and the parks commission. With this position, a representative chosen by the steering committee can take community garden program information to the commission and, in turn, update the steering committee about the actions of the commission. This open channel of communication has increased the visibility of garden activities and has provided valuable updates to community gardeners.

Neighborhood Impacts

In addition to providing a healthy recreation opportunity for plotholders, the gardens provide a variety of benefits to other residents of surrounding neighborhoods. The gardens are becoming valuable locations for training on garden topics such as tree pruning, soil preparation, water conservation, and composting. Some gardens are also utilizing their common areas to host neighborhood association meetings and socials, including weddings.

Extra food that goes from the gardens to local food banks, churches, and community centers contributes to the health and feeling of support in a community. Survey results show that 68% of the gardeners generated extra produce from their plots. Table 15 shows the distribution of extra produce as reported by the gardeners.

All of the neighborhoods that have completed their Neighborhood Revitalization Plans have requested that community gardens be a part of their

Table 15

Distribution of Excess Produce

Produce distributed to	Percentage of gardeners
Friends and neighbors	65%
Preserve for future use	33%
Food bank	17%
Church or community center	12.5%

resource mix. This will provide an opportunity for city staff and neighborhoods to prioritize aspects of their plans and identify the benefits they hope to receive from a garden.

Outside Agencies

Survey comments reflect requests for more technical support in gardening activities. Due to the demands of administrative and coordinating roles, staff organized for other volunteer and nonprofit agencies such as Master Gardeners, Master Composters, and the Rare Fruit Growers to provide their expertise. Several gardeners who have special skills such as gopher control or fruit tree grafting have provided workshops open to all gardeners. "Although this arrangement has come from necessity," explains A. Sanger (personal communication, October 15, 2001), "the effect has been very positive as we are able to bring in a wider range of expertise than any individual would bring to the job."

Support from corporations in San Jose is an example of coordination that benefits the gardens, communities, and the business itself. Browning Ferris Industries (BFI) is one such example with their compost distribution program. The compost donations from BFI will provide the gardens with a valuable resource for crop production and water conservation, while exposing gardeners to the benefits of their compost products. This is an advantage for BFI, as 77.4% of the gardeners are homeowners who can use the same practices and materials at home.

Gardener Support

Many of the inputs required in the gardens are provided and/or paid for by the gardeners. This creates a cost-effective way to manage urban open spaces, benefiting the gardeners and the city that is responsible for the properties.

Gardener Contributions

Contributions of labor and fees are critical for maintaining the community gardens. Table 16 outlines survey results regarding resources that are provided by the gardeners to supplement the budget and staff allocation from the Parks Department.

Gardeners provide many roles to support the vitality of the community garden program. Critical to the program are 64 volunteer staff members who manage the gardens onsite by carrying out plot registration, fee collection, fund management, and day-to-day garden oversight.

Community gardeners also support a variety of garden projects and show high rates of involvement in other community activities. Table 17 details the roles that gardeners reported in the survey about supporting their gardens and communities.

Table 16

Gardener Contributions to Garden Program

Contributions	Annual Amount
Water fees	\$36,219
Supplies	\$65,685 ^a
Total	\$101,904
Labor	170,000 hours ^b

^aCalculated at an average of \$87/plot/holder for 755 p.h.

^bCalculated at an average of 224 hours/gardener/season for 755 gardeners.

Note that the hours of labor listed are only those of the plot/holders. As 67% of the gardeners work with at least one other person in their plot, it is safe to assume that the number of hours contributed could easily be doubled.

In addition to these contributions, some gardens also choose to raise funds for additional projects through special fee collections. Two such examples are annual garden fees that are collected above the amount needed for water and fees charged to gardeners who request to have their plot rototilled by the

volunteer management for a fee. In both cases, the money collected is used for communal resources such as tools, seed, or ornamental plants for the community areas of the garden.

Table 17

Garden and Community Contributions

Activity	Percentage of gardeners
Participation in garden cleanup days	75%
Attendance at steering committee meetings	8%
Provide school tours and student programs	5%
Contribute to food bank	17%
Involved in other community activities	38%
Have contacted council member	30%
Registered California voter	74%

Reasons for Participation

When considering the amount of time and money invested by the gardeners, it is important to understand the motives they have for participating in the gardens. When asked about the main reason that residents choose to work in a community garden, fully one-third of the gardeners responded with an answer related to recreation, relaxation, and stress release. Other responses are outlined in Table 18.

Table 18

Main Reason Gardeners Use Community Gardens

Reason	Frequency	Percent of responses
Recreation, relaxation, exercise	92	30.0%
Enjoy gardening	73	23.2%
Fresh vegetables	56	17.8%
Sense of community, meeting people	41	13.0%
Grow organic, chemical-free food	18	5.7%
A great family activity to teach children	14	4.4%
No space or sun at home	11	3.5%
Want to contribute to family	9	2.9%
Total responses	315	100.0%

Program Effectiveness

Program satisfaction is a key indicator in determining the effectiveness of public services (Hatry, 1971). Survey data shows that 65.8% of the gardeners are "highly satisfied" with the program. An additional 25.6% are "satisfied" for a total of 91.4% of the gardeners reporting they are satisfied with the program.

Survey data can also be analyzed to show other relationships and indicators of program effectiveness. These indicators can be used to compare the gardens with other uses for urban open space, as well as comparing the same calculations in future years. Table 19 lists several of the baseline

measures that can be generated from survey data to compare the gardens with other uses of open space.

Table 19

Measures of Effectiveness

Measure	Annual Rate
Program dollars per acre maintained	\$4,714
Program dollars per household	\$170
Program dollars per attendance hour	\$0.75
Satisfaction rate	91.2%

Notes. All calculations based on program budget of \$128,000, 27.15 acres maintained, and 755 households.

Hours of attendance calculated at an average of 8 hours per week for 28 weeks for 755 gardeners. This does not include hours contributed by family members.

Objective 2 - Demographic Analysis

To compare the demographic statistics of community garden users with surrounding neighborhood populations and the residents of San Jose.

1. Determine San Jose and neighborhood demographics using census data.
2. Compare gardener demographics through analysis of the plothead survey.

San Jose Demographics

Data from San Jose's 2000 census will be used to summarize trends in the changing demographic makeup of the city. As city plans are implemented,

they are most effective when they consider the diverse recipients of those services. Comparing San Jose's demographic profile with that of the garden program and individual gardens will help parks and volunteer staff to understand resident use of this urban open space service.

Using the Census of Population and Housing Data (U.S. Census Bureau, 1990), and projections from Claritas, Inc. and the Association of Bay Area Governments (ABAG, February, 2000), the Parks Department identified following demographic trends when creating the Parks Greenprint.

San Jose's population virtually doubled from 1970 to 1998 to an estimated 871,000 residents, without an equal increase in parks, community facilities, and programs. San Jose's current population of 909,062 is projected to be at 1,101,500 in 2020, which represents a slower, continued growth than the previous 20 years. Population density had increased to about 3,148 persons per square mile in 1998, requiring a continued need to balance density with parks and open space to ensure community livability.

San Jose is becoming more diverse, with persons of European descent no longer comprising the majority of residents. By 2020, Hispanics are expected to account for 39% of residents, Whites, 33%, and Asians, 24%.

San Jose has the third highest average household income of the nation's 50 major metropolitan areas, with average incomes expected to increase to over \$100,000 per year by 2020.

San Jose is a city of homeowners. Only 38% of housing units are rentals, which is a very low number for a large city.

Using census and survey data, a baseline can be established for comparison between the city and the garden populations and future community garden assessments. Table 20 summarizes citywide demographics in several categories that will be compared to summary data from the community garden survey.

Table 20

San Jose Demographics

	City of San Jose
Gender	
Male	50.8%
Female	49.2%
Average household size	3.2
Housing tenure	
Owner-occupied	61.8%
Renter-occupied	38.2%
Age	
0-24 years	36.4%
25-34 years	18.0%

(table continues)

	City of San Jose
35-44 years	17.4%
45-54 years	12.4%
55-64 years	7.6%
65-74 years	4.7%
75-84 years	2.7%
85 years and over	.9%
Median age	32.6
Ethnicity	
Hispanic	30.2%
White	36.0%
African American	3.3%
Asian	26.6%
Native American	0.3%
Pacific Islander	0.3%
Born outside the U.S.	26.4%
Language other than English	
spoken at home	35.3%

(table continues)

 City of San Jose

Education

Less than 9 th grade	6.7%
High school equivalent	20.1%
Some college	14.0%
College / university	16.3%
Advanced degree	4.8%

Income

Under \$19,000	10%
\$20,000-\$34,000	9%
\$35,000-\$49,999	11.2%
\$50,000-\$64,999	7.3%
\$65,000-\$69,000	11.3%
More than \$70,000	50.8%

Garden Survey Analysis

The survey presented to the gardeners was the first data collection since the inception of the community garden program. The survey was designed to provide primarily descriptive rather than explanatory data in order to get an overview of the garden users. Once this data is reviewed, future research can focus on specific features or relationships in the community garden use of urban

open space. The data summary tables in this analysis section include descriptive and correlation data analyzed through the Statistical Package for the Social Sciences (SPSS). Raw data from the survey is available through the author or the San Jose Community Garden Program.

Survey Design and Distribution

The survey instrument was designed with stakeholder input from the Parks Department and the garden participants. After the survey instrument's completion, it was thoroughly reviewed by stakeholders and the Human Subjects Committee at San Jose State University before being mailed to the 755 gardeners in the program database. The survey instrument (Appendix A) was divided evenly between questions about gardener demographics and their use of the gardens, in order to get a broad view of this use of land.

Surveys were available to gardeners in English, Spanish, and Bosnian (see Appendix F). Gardens with larger populations of Spanish speakers, including Calabazas, Cornecopia, El Jardin, Las Milpas, Mayfair, Nuestra Tierra, and Watson, received envelopes with both English and Spanish surveys enclosed. Green Thumb gardeners received an envelope with English and Bosnian surveys enclosed.

The letter of introduction accompanying the survey was in both English and Spanish (Appendix G), inviting gardeners to request a Spanish survey if they had not received one. At several of the gardens including Berryessa and

Hamline, bilingual gardeners who spoke other languages such as Chinese, helped gardeners complete the survey in English in order to be represented.

Survey Returns

Table 21 lists the survey returns in English, Spanish, and Bosnian.

Table 21

Survey Returns by Language

Language	Number of returns	Percentage of returns
English	277	80%
Spanish	57	17%
Bosnian	11	3%

Of 755 surveys mailed out, 295 were returned complete and 48 were returned by the post office as nondeliverable. Returned mail was given to the park staff to determine whether the gardener was still in the system or the address was incorrect. Approximately 27 of the returned surveys were readdressed or hand delivered by garden managers, to increase the accuracy of the sample. For the purposes of this study, the 21 surveys that could not be forwarded to a gardener will be removed from the total number in the gardener population. Therefore, of the 755 sent out, 21 were considered undeliverable, making the final population size 734 gardeners.

In the first mail response, there was lower representation from some of the gardens, especially those with larger minority populations. Surveys were

hand delivered to these gardens with the support of garden managers. As a result, 33 additional surveys were collected from Mayfair, El Jardin, Las Milpas, La Colina, and Watson.

The final return rate of 355 surveys represents a 48% return out of 734 mailings. Because the survey was sent to all gardeners registered in the program, the survey can be considered reasonably random as all gardeners had an equal chance to respond. Notices were also posted in each garden in the event that a gardener did not receive a survey and wanted to participate.

Descriptive Statistics

Table 22 provides a summary of descriptive statistics representative of San Jose's community garden participants. For comparison, summary data is also included from the 2000 census for San Jose.

Open-Ended Comments

The gardener survey concluded with an opportunity for an open-ended response. This generated 131 comments addressing issues that the gardeners felt were important. In order to utilize the comments for planning and staff response, the comments were categorized by the type of issue identified. This produced a ranking of the most commonly mentioned topics, many of which were praise for the program and staff. The complete list of all comments can be found in Appendix H. Table 23 presents a summary of survey comments sorted by category and frequency. It is important to note that not all gardeners felt the

need to comment in this section, and therefore the comments are representative of a smaller percentage of the gardeners.

Table 22

Demographic Comparisons

	City of San Jose	San Jose community gardens
Gender		
Male	50.8%	66.9%
Female	49.2%	33.1%
Average household size	3.2	3.6
Housing tenure		
Owner-occupied	61.8%	77.4%
Renter-occupied	38.2%	22.6%
Age		
0-24 years	36.4%	.3%
25-34 years	18.0%	5.4%
35-44 years	17.4%	15.3%
45-54 years	12.4%	24.6%
55-64 years	7.6%	22.6%
65-74 years	4.7%	21.2%

(table continues)

	City of San Jose	San Jose community gardens
75-84 years	2.7%	7.0%
85 years and over	.9%	5.2%
Median age	32.6	56.4
Ethnicity		
Hispanic	30.2%	27.4%
White	36.0%	45.8%
African American	3.3%	3.0%
Asian	26.6%	17.6%
Native American	0.3%	1.2%
Pacific Islander	0.3%	0.3%
Born outside the U.S.	26.4%	49.7%
Language other than English		
spoken at home	35.3%	49.1%
Education		
Less than 9 th grade	6.7%	24.0%
High school equivalent	20.1%	18.6%
Some college	14.0%	20.7%

(table continues)

	City of San Jose	San Jose community gardens
College / university	16.3%	22.5%
Advanced degree	4.8%	13.5%
Income		
Under \$19,000	10%	17.5%
\$20,000-\$34,000	9%	21.3%
\$35,000-\$49,999	11.2%	19.0%
\$50,000-\$64,999	7.3%	9.2%
\$65,000-\$69,000	11.3%	5.4%
More than \$70,000	50.8%	27.6%

J. Dotter (personal communication, July 11, 2001), Community Garden Coordinator for over 20 years, explains that the needs that are being expressed through gardener comments are not due to changes in the garden program as much as to increased activity and a feeling of empowerment on the part of the gardeners. As the program matures, there is more being expected of all participants including city staff, volunteer staff, and gardeners.

Comparing Gardens

Data from individual gardens was separated in order to compare the gardens for trends and differences. This will help identify trends, which are more

Table 23

Summary – Open-Ended Survey Comments

Comment	Number of responses	Percent of comments
Praise for gardens	17	13.0%
Concerns that volunteer officers need training and rule enforcement	17	13.0%
Enjoy sense of community	13	10.0%
Concerns about theft and vandalism	11	8.5%
Plots and garden not being maintained by gardeners	11	8.5%
Gardens need compost and mulch	11	8.5%
Requests for City service	8	6.0%
Gardens need more meetings and social get-togethers	8	6.0%
Praise for managers	7	5.0%
Gardens valuable tool for teaching children	6	4.0%
Requests for more plots	6	4.0%
Chemical use in the garden (both pro and con)	6	4.0%
Requests for more classes and expert advice	5	4.0%
Concerns about more than one plot per family	3	2.0%
Concerns about pets and animals in the garden	2	1.5%

(table continues)

Comment	Number of responses	Percent of comments
Total number of open-ended comments	131	

unique to the garden users and those which connect garden users as a part of the San Jose population. Data from individual gardens was only selected from eight gardens that received returns from at least half of their ploholders. If descriptive statistics were generated from gardens with lower return rates, data were judged less representative of that garden. The following gardens received nearly or above a 50% response rate, allowing summaries that would represent these gardeners:

1. Berryessa - 56 plots - 27 surveys returned for a 48% return rate.
2. Calabazas - 30 plots - 16 surveys returned for a 53% return rate.
3. Hamline - 29 plots - 17 surveys returned for a 58% return rate.
4. Jesse Frey - 34 plots - 19 surveys returned for a 56% return rate.
5. La Colina - 64 plots - 33 surveys returned for a 51% return rate.
6. Laguna Seca - 26 plots - 18 surveys returned for a 69% return rate.
7. Nuestra Tierra - 94 plots - 53 surveys returned for a 56% return rate.
8. Wallenburg - 80 plots - 40 surveys returned for a 50% return rate.

In addition to having samples representing half of all gardens being analyzed individually, the garden samples are spread throughout the city,

providing a demographic cross-section. The locations of the gardens qualifying for this analysis can be seen in Appendix I.

In order to compare the gardens, several variables were chosen from survey results, based on demographic targets outlined in San Jose's planning policies. Some variables such as gender, age, and home ownership are fairly standard across all gardens. The largest variations occur with ethnicity, income, and education. This data may allow managers and staff to target services to specific gardens based on their needs. Table 24 summarizes these indicators to identify garden trends.

Garden Neighborhoods

In addition to comparing the gardens to each other, the garden and neighborhood demographics can be compared, in order to see if garden users represent the neighborhoods in which the gardens are located. By setting an area around each garden using the Arc View mapping program, neighborhood demographic data was isolated for comparison. The community gardens were plotted on a map of San Jose, and a buffer of three-quarters of a mile was drawn around each point, based on the distance recommended for neighborhood resources in the Parks Greenprint (City of San Jose, 2000).

Once the map distances were established, Arc View can apply the dataset that belongs to that geographical area. The data used was a demographic projection for 2000, as much of California's census analysis remained incomplete as of the time of publishing. The garden neighborhoods chosen for analysis

Table 24

Comparing Community Gardens

Category	Laguna Nuestra							
	Berryessa	Calabazas	Hamline	Jesse Frey	La Colina	Seca	Tierra	Wallenburg
Women	33%	44%	59%	26%	18%	56%	23%	30%
Men	66%	56%	41%	74%	44%	44%	77%	70%
Work alone in your plot?	22%	31%	47%	31%	34%	28%	26%	30%
Average spent on								
supplies	\$77	\$82	\$110	\$52	\$120	\$95	\$98	\$63
Average age	55	55	52	66	57	51	55	61
Average years								
gardening in life	20	26	17	30	24	15	18	30

(table continues)

Category	Laguna Nuestra							
	Berryessa	Calabazas	Hamline	Jesse Frey	La Colina	Seca	Tierra	Wallenburg
Ethnicity								
Anglo	67%	56%	70%	94%	90%	59%	10%	85%
Hispanic	11.0%	0.0%	30.0%	0.0%	3%	23.5%	63.0%	8.0%
Asian	21.0%	44.0%	0.0%	6.0%	7%	17.5%	23.0%	2.0%
Born outside U.S.	33%	44%	29%	15%	25%	33%	66%	30%
Average family size	3.3	3.2	2.6	1.8	2.7	2.9	4.6	2.6
Income levels								
Below \$19,000	15%	12%	13%	0%	7%	6%	28%	13%
Over \$70,000	48%	56%	33%	21%	41%	65%	10%	32%

(table continues)

Category	Laguna Nuestra							
	Berryessa	Calabazas	Hamline	Jesse Frey	La Colina	Seca	Tierra	Wallenburg
Education								
Elementary	7.5%	6.3%	12.5%	5.0%	9.4%	0.0%	47.0%	15.0%
High school	15.0%	12.5%	12.5%	21.0%	9.4%	11.0%	23.5%	12.5%
Some college	52.0%	6.3%	31.3%	26.0%	28%	28.0%	8.0%	25.0%
College/university	18.5%	25.0%	12.5%	21.0%	37%	50.0%	15.5%	27.5%
Advanced degree	7.0%	50.0%	31.3%	26.0%	15%	11.0%	6.0%	2.5%
Homeowners	85%	81%	86%	95%	87%	89%	77%	90%
Also have a garden at home	44%	25%	12%	10%	31%	33%	27%	32%
Difficult to feed family								
without garden?	22.0%	0.0%	25.0%	5.3%	15%	5.6%	41.0%	20.0%

were those surrounding the eight gardens that received at least 50% returns.

Raw data and map files can be obtained through the author or through the Parks Department.

When comparing gardeners' demographics to those of nearby neighborhoods, most indicators do not trend with the neighborhoods. Both age and home ownership were significantly higher in the garden populations than in the neighborhoods. Ethnicity, income, and education showed no data trends relative to local figures with figures above and below local averages. This could suggest that the garden draws users from various demographic sectors in any given area. In Table 25, census data from eight garden neighborhoods is shown next to survey data from those gardens.

Correlation Studies

In order to determine if the variables in the study are related to each other, measures of association can be used as a guide. Based on the variable being analyzed, the appropriate measure is chosen to determine the relationship between two variables. The following variable types will be analyzed from the gardener survey.

Interval ratio variables. Relationships for two numerical variables can be measured through a chi square such as Pearson's r or Spearman's Rho. If one or both variables are ordinal, then Spearman's Rho should be used. These measures will show a directional relationship with values from -1.0 to +1.0. With this measure, the value closest to zero is the weakest.

Table 25

Comparing Garden Neighborhoods

	Berryessa	Berryessa	Calabazas	Hamline	Jesse Frey
	census	census	census	census	census
Average age	55	31	55	52	34
Ages 0-24		36%	31%	35%	34%
Over 65		5.1%	8%	11%	13%
Ethnicity					
Anglo	67%	31%	69%	77%	72%
Hispanic	11%	18%	12%	29%	46%
Asian	21%	47%	25%	11%	8%
Average family size	3.3	3.4	2.8	2.5	2.8

(table continues)

	Berryessa	Calabazas	Hamline	Jesse Frey
	census	census	census	census
Income levels				
Below \$19,000	15%	12%	18%	18%
Over \$70,000	48%	56%	36%	32%
Education				
Elementary	7.5%	6.3%	7%	13%
High school	15%	12.5%	28%	31%
Some college	52%	6.3%	26%	27%
College/ university	18.5%	25%	23%	18%
Advanced degree	7%	50%	15%	10%
Homeowners	85%	81%	49%	56%

	La Colina	La Colina	Laguna	La Colina	Laguna	Seca	Laguna	Seca	Laguna	Seca	Nuestra	Tierra	Wallenburg
	census	census	census	census	census	census	census	census	census	census	census	census	census
Average age	57	32	51	31	55	28	61	33					
Ages 0-24		39%		40%		42%		31%					
Over 65		6%		4%		6%		10%					
Ethnicity													
Anglo	90%	73%	59%	73%	10%	45%	85%	79%					
Hispanic	4%	20%	23.5%	20%	63%	34%	8%	17%					
Asian	6%	16%	17.5%	17%	23%	34%	2%	12%					
Average family													
size	2.7	3.3	2.9	3.4	4.6	3.9	2.6	2.5					

(table continues)

	La Colina census	La Colina census	Laguna Seca census	Laguna Seca census	Nuestra Tierra census	Nuestra Tierra census	Wallenburg census
Income levels							
Below \$19,000	7%	11%	6%	4%	28%	18%	13%
Over \$70,000	41%	58%	65%	61%	10%	32%	32%
Education							
Elementary	9.4%	3%	0%	2%	47%	13%	15%
High school	9.4%	31%	11%	21%	23.5%	36%	12.5%
Some college	28%	34%	28%	37%	8%	30%	25%
College/ university	37%	23%	50%	27%	15.5%	14%	27.5%

(table continues)

	La Colina	La Colina	Laguna	Laguna	La Colina	La Colina	Laguna	Nuestra	Nuestra	Wallenburg
	census	Seca	Seca	Seca	census	Seca	census	Tierra	Tierra	census
Advanced										
degree	15%	8%	11%	12%	6%	5%	2.5%	10%		
Homeowners	87%	70%	89%	80%	77%	65%	90%	58%		

Interval ratio variables are those that have a distinct numerical value. In the garden survey, interval ratio variables included age, years gardening, money spent, family size, and the distance traveled to the garden. If any of these are compared to an ordinal or nominal variable, the measure for the nominal variables must be used.

Ordinal variables. When both variables being associated are ordinal, the measure gamma can be used. Gamma will measure a directional relationship with values from -1.0 to +1.0, with measures closest to zero being weakest. Because gamma is not as effective at finding relationships between variables with no clear independent/dependent relationship, or those with a nonlinear relationship, Somer's d or Kendall's tau-b can also be used in these cases.

Ordinal variables are those that show a value that can be ranked. Ordinal variables analyzed in the survey include income, education level, hours spent in the garden, and satisfaction. If ordinal variables are compared to nominal variables, the measure for the latter variables must be used to determine the measures used.

Nominal variables. Measures of association for nominal variables are used whenever one or both of the variables are nominal, such as gender or ethnicity. Lambda is a unidirectional measure that will give a value between 0 and 1, as nominal variables cannot be more of one direction than another.

Lambda can be measured as a symmetric or asymmetric value depending on the variable relationship. With variable pairs where there is no dependent/

independent relationship, the symmetric value can be used. In this case, it is assumed that the variables are associated without causing the relationship.

When one variable in the pair can be considered independent, the asymmetric value can be used to show the strength of the variable effect.

Measures of association will be used to determine if trends that appear in the descriptive data can be viewed with more detail. Table 26 lists the variables used for this study, as well as the measures of association chosen to test relationships between those variables.

Relationships

There are many relationships between survey variables that can provide insights into gardeners and garden use:

Hours worked in the garden. The number of hours worked in the garden shows a negative, yet weak relationship with the level of education ($Y = 0.145$, $p = 0.019$) and income ($Y = -0.115$, $p = 0.76$). Thus, as the level of education and income increase, the number of hours worked in the garden decreases.

There is also a weak relationship with the amount of money spent in the garden ($Y = 0.151$, $p = 0.015$) such that those who spend more money also spend more time. This permits some interesting speculation. A lower education rate correlates with lower income, and in the case of the garden, those with a lower income appear to be spending more money in the garden. It is likely that those with lower education and income also need to work more and spend more in the garden in order to supplement the family food supply. Hobby gardeners,

Table 26

Measures of Association

	Money spent	Years gardening	Satisfaction	Hours spent	Reason alone	Garden
Variable	Interval	Interval	Ordinal	Ordinal	Nominal	Nominal
	Measure	Measure	Measure	Measure	Measure	Measure
Age	Interval	Pearson's	Gamma	Gamma	Lambda/Eta	Lambda
Years gardening	Interval	Pearson's	Gamma	Gamma	Lambda/Eta	Lambda
Money spent	Interval	--	Gamma	Gamma	Lambda/Eta	Lambda
Family size	Interval	Pearson's	Gamma	Gamma	Lambda/Eta	Lambda
Family income	Interval	Pearson's	Gamma	Gamma	Lambda/Eta	Lambda

(table continues)

	Money spent	Years gardening	Satisfaction	Hours spent	Reason alone	Garden
Variable	Type	Interval	Ordinal	Ordinal	Nominal	Nominal
	Measure	Measure	Measure	Measure	Measure	Measure
Distance traveled	Interval	Pearson's	Gamma	Gamma	Lambda/Eta	Lambda
Hours spent	Ordinal	Gamma	Gamma	--	Lambda	Lambda
Education level	Ordinal	Gamma	Gamma	Gamma	Lambda	Lambda
Satisfaction	Ordinal	Gamma	--	Gamma	Lambda	Lambda
Garden alone	Nominal	Lambda	Lambda	Lambda	Lambda	--
Ethnicity	Nominal	Lambda/Eta	Lambda/Eta	Lambda	Lambda	Lambda
Reason for gardening	Nominal	Lambda/Eta	Lambda/Eta	Lambda	--	Lambda

(table continues)

	Money spent	Years gardening	Satisfaction	Hours spent	Garden alone
Variable	Interval	Interval	Ordinal	Ordinal	Nominal
	Measure	Measure	Measure	Measure	Measure
Born in U.S.	Nominal	Lambda	Lambda	Lambda	Lambda
Gender	Nominal	Lambda	Lambda	Lambda	Lambda

Note. "Hours spent in the garden" was reported by the gardeners as a range, and is therefore used as an ordinal variable in this study.

spending less time and money, may do so because they are less concerned with the output from the plot.

The hours worked in the garden also correlate positively with age ($Y = 0.138$, $p = 0.017$) and the number of years gardening ($Y = 0.226$, $p = 0.00$). Older, more experienced gardeners spend more time in the garden. This reflects the fact that gardening becomes a lifestyle choice with many who adopt it as a pastime.

Variables that did not have an effect on the hours worked per week included gender, ethnicity, whether the gardener works alone, or the reason he or she gives for gardening (see Table 27). It appears that gardeners will spend more time in the garden if they need the produce to supplement lower incomes, or if they have gardening as a lifestyle. Future research to determine more about these two gardening trends of food production and hobby gardening may clarify different needs for distinct gardener groups. Table 27 lists results of correlation studies done for 4 dependent variables. Measures of association, correlation coefficients, and significance levels are listed. Independent variables with significant relationships are shown with asterisks.

Working alone in the garden. Whether a gardener works alone in his or her plot is correlated with education level ($Y = 0.050$, $p = 0.009$). Those who have a higher level of education are more likely to work alone.

There is also a weak relationship between working alone, family size ($Y = 0.064$, $p = 0.001$), and age ($Y = 0.057$, $p = 0.009$). Older gardeners are

Table 27

Survey Variable Relationships

Hours worked in the garden			
Independent variables	Measure	Value	Significance
*Age	Gamma	0.138	0.017
*Years gardening	Gamma	0.226	.000
*Money spent	Gamma	0.151	0.015
Family size	Gamma	-0.021	0.718
*Income	Gamma	-0.115	0.076
Distance traveled	Gamma	0.111	0.106
Hours worked	N/A		
*Education level	Gamma	-0.145	0.019
Satisfaction	Gamma	0.022	0.803
Garden alone	Goodman's	0.001	0.941
Ethnicity	Goodman's	0.007	0.7
Reason for gardening	Lambda	0.027	0.436
Born in United States	Lambda	0.012	0.864
Gender	Lambda	0.038	0.399
*Age	Goodman's	0.057	0.009

Note. * next to independent variable represents a significant relationship.

(table continues)

Working alone in the garden			
Independent variables	Measure	Value	Significance
Money spent	Lambda	0.009	0.317
*Family size	Goodman's	0.064	0.001
*Income	Goodman's	0.022	0.205
Distance traveled	Goodman's	0.019	0.231
Hours worked	Goodman's	0.001	0.941
*Education level	Goodman's	0.05	0.009
Satisfaction	Goodman's	0.002	0.904
Garden alone	N/A		
Ethnicity	Goodman's	0.009	0.549
Reason for gardening	Goodman's	0.019	0.343
Born in United States	Goodman's	0.001	0.619
Gender	Goodman's	0.005	0.194
*Age	Pearson's	-0.163	0.001
*Years gardening	Pearson's	-0.13	0.019
Money spent	N/A		
*Family size	Pearson's	47.11	0.024
Income	Pearson's	29.94	0.226

(table continues)

Money spent on supplies			
Independent variables	Measure	Value	Significance
Distance traveled	Pearson's	16.4	0.903
*Hours worked	Gamma	0.151	0.015
Education level	Gamma	-0.087	0.104
Satisfaction	Gamma	-0.093	0.253
Garden alone	Gamma	0.044	0.591
*Ethnicity	Lambda	0.045	0.047
*Reason for gardening	Lambda	0.056	0.039
Born in United States	Lambda	0.004	0.922
Gender	Lambda	0.004	0.931
*Age	Lambda	0.057	0.034
*Years gardening	Lambda	0.034	0.028
*Money spent	Lambda	0.042	0.03
*Family size	Lambda	0.057	0.036
*Income	Lambda	0.054	0.028
*Distance traveled	Lambda	0.073	0.039
*Hours worked	Lambda	0.027	0.035
*Education level	Lambda	0.032	0.03

(table continues)

Independent variables	Reason for gardening		
	Measure	Value	Significance
*Satisfaction	Lambda	0.024	0.043
*Garden alone	Goodman	0.002	0.001
*Ethnicity	Lambda	0.035	0.046
Reason for gardening	N/A		
*Born in United States	Lambda	0.008	0.038
*Gender	Lambda	0.019	0.026
Age	Gamma	0.08	0.268
Years gardening	Gamma	0.041	0.62
Money spent	Gamma	-0.093	0.253
Family size	Gamma	0.015	0.847
Income	Gamma	0.044	0.593
Distance traveled	Gamma	0.002	0.978
Hours worked	Gamma		
Education level	Gamma	-0.106	0.147
Satisfaction	N/A		
Garden alone	Goodman's	0.002	0.904
Ethnicity	Goodman's	0.014	0.081

(table continues)

Satisfaction			
Independent variables	Measure	Value	Significance
Reason for gardening	Lambda	0.024	0.59
Born in United States	Lambda	0.042	0.646
Gender	Lambda	0.018	0.167

more likely to work alone in their plots, while those with larger families are more likely to work with others. This is logical as age and household size are negatively correlated such that as gardeners grow older, their family size is reduced. Variables that did not have a significant relationship with working alone in the plot included gender, income, ethnicity, number of hours worked in the garden, number of years gardening, spending rate in the garden, distance traveled to the garden, reason for gardening, or satisfaction with the garden.

Money spent on supplies. This variable correlated with several others in the survey. The amount spent on supplies each year shows a significant positive relationship with household size ($r = 47.11$, $p = 0.024$) and the number of hours worked in the garden ($r = 0.151$, $p = 0.015$) each week. This reflects the need that some gardeners have to supplement family food supplies.

There was a negative relationship between the amount spent in the garden and both age ($r = 0.163$, $p = 0.001$) and the number of years gardening

($r = -0.13$, $p = 0.019$). Older, more experienced gardeners may need fewer supplies as a result of experience and efficiencies.

There was also a relationship between the amount spent and both ethnicity ($r = 0.045$, $p = 0.047$) and the reason that gardeners garden ($r = 0.056$, $p = 0.039$). Once again, two trends seem apparent. The most money is spent by those who “want fresh food” and those who report gardening as a “hobby.” In terms of ethnicity, Hispanics spend proportionally more on their supplies, which may reflect their perspective about producing a crop rather than just gardening for enjoyment.

Reason for gardening. The reason for gardening shows a positive correlation with all variables tested (see Table 27). Because all variables show relationships, it is apparent that gardeners spend the time, money, and effort that they do based on the specific reason that they seek the garden experience. While these reasons are different for each gardener, all gardeners seem to tailor their use of the garden to gain the satisfaction they are seeking.

Satisfaction. There were no variables that showed a significant relationship with satisfaction level (see Table 27). This can be interpreted to mean that there are no features that can necessarily create or predict satisfaction with the gardens. Participatory management and gardening for the reasons that each person identifies, is likely to lead gardeners to get the satisfaction that they are seeking in the garden experience.

In a cooperative extension survey of 178 gardeners in New York and New Jersey, benefits were prioritized by quality of life issues, economic well-being, and social well-being (Patel, 1991).

Objective 3 - Plans and Policies

To determine whether the San Jose community gardens meet the criteria of the city's general plan and planning policies.

1. Discuss the benefits of community gardens in San Jose.
2. Compare community garden use to city plans and documents

Benefits of Community Gardens

As recreational facilities, community gardens are the sites of a unique combination of activities including food and flower production, recreation, social and cultural exchange, and the development of open space, community spirit, skills, and competence (Naimark, 1982). The following benefits (Patel, 1991) are summarized from the literature as well as from the gardeners and staff in the San Jose community gardening program.

Recreation and Relaxation

Gardening has important social and psychological benefits that are especially critical in high-stress urban settings (Bennett & Swasey, 1996). Gardening is a restorative activity that reduces stress and contributes to wellness (Francis & Hester, 1990). In addition to feelings of tranquillity (Kaplan & Kaplan, 1989), gardeners experience higher-order benefits such as increased levels of self-esteem and self-actualization (Waliczek et al., 1996). Horticultural therapy is

also proving to help patients heal damaged bodies and minds in a variety of healthcare facilities (Lewis, 1986).

Community gardens provide recreational activity in a neighborhood setting, increasing the value of the participation in the community. Therefore, garden and green space areas are important services for cities to provide to improve quality of life in urban areas (Bennett & Swasey, 1996).

Survey data showed that one-third of gardeners reported recreation and relaxation as their main reason for gardening, making it the most frequently mentioned reason (see Table 18).

Educational Opportunities

Successful learning strategies for children include (a) working with adult mentors, (b) gaining real-world experience, (c) making genuine contributions to the community, and (d) tailoring projects to needs and priorities of learners (Thompson, 1995). Participating in the gardens provides children with the benefits of intergenerational experiences (Ventura-Merkel et al., 1989), and encourages children and families to adopt active, creative roles in investigating and caring about real community concerns (National Assessment of Educational Progress, 1988).

Gardens are often the most accessible natural places for children to learn about nature's fragility and solace. Gardening also shows children that they can bring beauty into the world through their own actions (Heffernan, 1994).

Thirty-two percent of the community gardeners in San Jose reported that they garden with their children. In addition to daily intergenerational education in cultural and horticultural practices, the community gardens provide formalized classes in composting, pruning, pest management, and other pertinent topics.

Stimulating Social Interaction

A sense of community, safety, and diversity results as gardeners in city programs across the U.S. report sharing their vegetables, flowers, and themselves (Lewis, 1986). Gardeners enjoy sharing their love of gardening and distributing extra produce, while residents begin to feel safer because they recognize their neighbors as community members (Fisher, 1990).

Gardens and gardeners are bridges of cultural exchange as interactions between people from around the world help families and neighbors to learn tolerance and respect for other cultures (Bjornson, 1996; Dotter, 1994). Gardens offer immigrants a place to celebrate their traditions and teach children about their culture, as well as how to grow traditional foods, herbs, and medicinal plants (Francis & Hester, 1990). This way, immigrants can confidently integrate into the U.S. without compromising vital ethnic traditions (Dotter & Anderson, 1999).

Thirteen percent of San Jose community gardeners reported community building as their main reason for gardening at the community gardens. Other open-ended comments also referred to the benefits of the garden community

such as fostering an enjoyable, relaxing place to be, and a great place to take their kids.

Producing Nutritious Food

On average, 31% of all U.S. households currently grow vegetables, with an expected increase of nearly 20% in vegetable gardening by the year 2010 (Dortch, 1996). This confirms that urban garden projects can provide an important buffer to supplement outside food supplies while enhancing local economic and environmental conditions (Van der Ryn & Calthorpe, 1991).

Gardeners in San Jose reported that they enjoyed growing fresh produce, contributing food to their families, and sharing extra produce with friends, churches, community centers, and food banks. Ninety-nine percent of the San Jose gardeners grow vegetables in their plots, with 68% producing enough to share with others outside their family.

Developing Urban Open Space

Developing community gardens is one of the critical ways that American cities are undoing the damage that 50 years of urban planning has done to our farmland, communities, and culture (Lyman, 1997). In San Jose, community gardeners contribute over \$100,000 each year for water and supplies, as well as over 170,000 hours of labor, contributing to the use and maintenance of the community garden spaces.

Encouraging Self-Reliance

Gardening with others helps to create a sense of security that is developed from a hard woven fabric of neighborhood. In addition, supplementing the family food supply can also lead to a more judicious use of resources and a bigger picture of the whole region's ecology and stability (Nelson, 1996).

In addition to gardening, community gardeners are learning how to influence the development of public resources through planning and maintaining the gardens. Thirty-eight percent of the gardeners also participate in other community activities, 30% have contacted council members, and 74% are registered voters.

Conserving Natural Resources

Gardening can lead to a greater understanding of the ecosystem we inhabit, our sense of community, and the value of the earth (Bunn, 1996). Urban agriculture can bring nature into the cities, helping restore the connection to nature that has been largely lost in contemporary humans (Nelson, 1996).

Urban open space can provide numerous resource improvements in urban areas including increased water filtration, reduced impact of urban heat islands, noise buffering, soil enrichment, and an increased habitat for plant and animal communities (Adams, 1994). San Jose community gardeners participate in water conservation programs at many of the gardens, as well as compost production and utilization.

Planning Documents

The City of San Jose has created several policy and planning documents that relate to urban land use. These documents, which include the city's general plan, the Park Department's Greenprint, and the Strong Neighborhood Initiative, provide guidelines for development decisions based on accepted considerations which should be made.

General Plan

Major strategies from the general plan which affect urban open space include growth management, urban conservation, the Greenline/Urban Growth Boundary, the Riparian Corridor Policy, and the Sustainable City. All of these strategies serve to balance rapid urban growth with social, environmental, and economic parameters. Goals and policies relative to the strategies outlined are designed to (a) serve existing needs, (b) prevent the deterioration of existing levels of services, and (c) upgrade city service levels when feasible. General plan goals provide a framework to determine how the gardens can fit into the general plan policy.

General plan goals which are applicable to the community garden program include:

1. Urban Conservation goal to improve the existing quality of life and create a stable mature community.
2. Neighborhood Identity goal designed to enhance the sense of neighborhood in San Jose.

3. **Balanced Community goal to develop balanced land use.**
4. **Land Use goal to provide high quality living environments in San Jose.**
5. **Housing goal designed to foster aesthetics and promote usable open space.**
6. **Parks and Recreation goals to improve the livability of the urban environment by providing open space and recreation needs of residents.**
7. **Solid Waste goals to educate residents about source reduction, recycling, composting, and other landfill alternatives.**
8. **Natural Resource goals to balance conservation and development.**
9. **Riparian Corridor goals designed to restore and protect riparian corridors.**
10. **Water Resources goal to use policies to protect water resources in the region.**
11. **Air Quality goals designed to maintain acceptable levels of air quality.**
12. **Agriculture and Prime Soils goals to retain the aquifer recharge through healthy soils in urban and rural areas.**

Greenprint

To address the challenges of providing services based on the unique needs of over 400 neighborhoods, the city adopted a parks planning approach based on resident and city staff input. The following sections summarize the data that was collected during program design, as well as through meetings with residents and staff.

Goals. During the strategic planning process for parks programming, nine goals were defined as key directions for the future.

1. Provide safe, clean, and renovated facilities.
2. Increase parks and open spaces.
3. Develop public gathering places.
4. Expand trail connections to parks and recreation facilities.
5. Build and improve community image and livability.
6. Promote stewardship and volunteerism.
7. Improve health and wellness.
8. Expand fiscal resources and partnerships.
9. Promote economic development.

Random telephone survey. A citywide telephone survey of 1,000 San Jose households was carried out with residents over 18, to determine community concerns and priorities regarding San Jose's parks, community facilities, and programs (Greenprint, 2000).

Major findings from the survey showed that 79% of those surveyed had visited a park in the last year. However, only 61% of those surveyed with an income of less than \$20,000 per year had visited a park in the last year. Results also showed that parks were more frequently used if travel distance was less than 10 minutes. There was a significant decline reported in park use after the age of 65.

Residents prioritized the following benefits derived from parks, recreation, and neighborhood services:

1. Provide safe places for children.

2. Provide alternatives to antisocial behavior.
3. Make areas more livable.
4. Promote youth development.
5. Help seniors and persons with disabilities.
6. Improve health.

Neighborhood workshops and focus groups. Neighborhood workshops were held in each of the 10 council districts to gather input from residents. Major themes that were identified include:

1. Community involvement and social time with the neighbors is diminishing, reducing the sense of neighborhood. Communities want more accessible, family-friendly gathering places to increase opportunities to socialize. They also felt that these programs and recreational activities should have good neighborhood access, within three-quarters of a mile reasonable walking distance of residences.
2. Family, community, and intergenerational bonding were perceived as critical benefits of parks programming, so programs should be diverse, catering to all cultures and age groups.
3. Concerns were voiced about park safety, traffic, and transportation access, as well as requests for adequate activity space, renovated amenities, and sufficient maintenance.

Parks Recreation and Neighborhood Services staff workshop. In data collection meetings for the Greenprint, city staff outlined beneficial trends in

recreation including (a) greater community involvement, (b) new partnerships, (c) neighborhood ownership of programs, and (d) more open space. Challenges that staff identified include (a) greater diversity of cultures and languages, (b) aging population of baby boomers, and (c) lack of facilities and open space with increasing demand for services.

Maintenance management workshop. Maintenance staff from the Department of Parks, Recreation and Neighborhood Services, Public Works, General Services, and Convention, Arts and Entertainment were asked about maintenance for city facilities. Key ideas for program improvements included (a) increasing user group involvement in maintenance, (b) developing coordinated volunteer programs, (c) improving emergency response times, and (d) performing preventative maintenance.

Strong Neighborhood Initiative (SNI)

The SNI is a coordination initiative to bring city staff and neighborhoods together to create cleaner, safer neighborhoods, while connecting those neighborhoods to resources and to each other. The proposed SNI Redevelopment Plan intends to improve the physical conditions of the neighborhoods by:

1. Enhancing community safety.
2. Expanding community services.
3. Developing a stronger sense of community.
4. Strengthening neighborhood associations.

5. Connecting neighborhoods to resources and each other.
6. Improving the economic viability of individual neighborhoods.

All of the neighborhood revitalization plans that have been completed by neighborhood groups include requests for community gardens. When the project environmental impact report for the SNI was analyzed, it was determined that the gardens could provide additional garden space for the current high demand, without a significant impact in terms of the regional environment or service provision from Parks, Recreation and Neighborhood Services (LSA Associates, 2001).

Summary of Planning Goals

When summarizing goals of the major planning documents that affect urban open space, there are several categories that can be used to group areas of focus. The following lists represent goals from the San Jose General Plan, Parks Greenprint, and the Strong Neighborhood Initiative in the areas of provision of parks services and development of neighborhood and community:

Provision of parks services.

1. Expand community services.
2. Increase parks and open spaces.
3. Develop walkable facilities within three-quarters of a mile of residents.
4. Provide safe, clean, and renovated facilities.
5. Connect neighborhoods to resources and each other.
6. Increase involvement of user groups.

7. Develop public gathering places.
8. Expand trail connections to parks and recreation facilities.
9. Parks and Recreation goals aim to improve the livability of the urban environment by providing open space and recreation needs of residents.

Development of neighborhood and community.

1. Develop a stronger sense of community.
2. Strengthen neighborhood associations.
3. Connect neighborhoods to resources and each other, and improve the economic viability of individual neighborhoods.
4. Develop public gathering places.
5. Build and improve community image and livability.
6. Urban Conservation goal to improve the existing quality of life and create a stable mature community.
7. Neighborhood Identity goal designed to enhance the sense of neighborhood in San Jose.
8. Housing goal designed to foster aesthetics and promote useable open space.

Protection of natural resources.

1. Expand trail connections to parks and recreation facilities.
2. Balanced Community goal to develop balanced land use.
3. Solid Waste goals to include educating residents about source reduction, recycling, composting, and other landfill alternatives.
4. Natural Resource goals to balance conservation and development.

5. Riparian Corridor goals to restore and protect riparian corridors.
6. Water Resources goal to use policies to protect scarce water resources.
7. Air Quality goal to protect air quality.
8. Agricultural Soils goal to preserve prime soils.

Promotion of health and wellness.

1. Enhance community safety.
2. Provide safe places for children.
3. Provide safe, clean, and renovated facilities.
4. Improve health and wellness.

Support of intergenerational programming.

1. Provide safe places for children.
2. Provide alternatives to antisocial behavior.
3. Promote youth development.
4. Help seniors and persons with disabilities.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on benefits to gardeners and the community, as well as alignment with city plans and policies, the community gardens can be considered a viable option for urban open space management in San Jose. In order to maintain viability for the gardens, this planning level study provides program-specific data for city officials and community planners to improve utilization of the community gardening program as a part of a sustainable city plan, addressing the needs of community development as well as natural resource preservation. Data collected for this research focused on resource use, demographics, and the benefits of community gardens, showing that the gardens use park resources efficiently and serve a diverse group of users, while fostering neighborhood and community development.

Efficient Use of Resources

San Jose's community gardens are an efficient use of public land that function with limited staff and budget due to support from users, other city departments, and outside agencies. Features that make the gardens unique include management and maintenance contributions made by the users, cooperative support of the program, and a satisfaction rate that maintains continuous demand for the service.

Gardener Participation

The effectiveness of the gardens is largely due to the fact that the users are involved in the service provision. Because gardeners are paying fees, leveraging their labor, and making day-to-day decisions in the garden, they are stakeholders in the success of the program.

Participation in the gardens directly impacts a discreet number of users each year, but gardeners participate on a consistent, ongoing basis that is not common for most parks facilities. This long-term involvement makes it possible to develop relationships among gardeners and identify leaders who can carry out roles to support all users.

Participation and experience in problem solving at the gardens extends to the steering committee and Parks Commission, as well as out into the communities where gardeners are active in community organizations as voters and in communication with their council members. Gardeners with experience in collaborative management also have a tremendous potential as neighborhood ambassadors with the language and cultural skills needed to make an impact in community development.

Coordinated Support

Coordinated support of the gardens not only supplements the staffing and budget available, but creates a number of stakeholders who contribute to the success and continued improvement of the gardens. The gardeners themselves make the program work through their commitment, labor, and their willingness to

solve the problems that arise. Other stakeholders include city departments, agencies such as Master Gardeners, and community organizations such as the food banks who contribute to the value of the gardens.

As each garden has developed independently, many have different resource utilization practices. The standardization of resources at gardens including plots, water use, and training may help to bring all gardens into the most efficient resource use. In addition, efficiencies that are designed and implemented by the users will also have better sustainability.

As pressure for open space intensifies, the gardens must continue to identify ways they can contribute to the widest sector of the community possible. With family members helping in the plots and eating fresh produce, and community members benefiting from food donations, classes, and community meetings in the gardens, it is clear that families and communities—not just the individual plotheolders—are served by the gardens.

Satisfaction Rates

The community gardens have very high satisfaction rates and waiting lists at nearly every garden. This high demand is due to the fact that all users find benefits to match their circumstances and reasons for gardening, including recreational, educational, economic, and community benefits. While the demand for plot space does not allow for promotion of the garden program, it encourages gardener participation and the best use of available garden space.

A key point in assessing resource efficiency is that data needs to be collected and compared over the years in order to see the trends in use and the needs for program improvement. Measures of effectiveness mean little without comparison over time or to other accepted indicators.

A. Sanger (personal communication, November 3, 2001), Community Garden Program Coordinator, concludes that “the focus of the current program change is on the partnerships involved at the gardens. The first line in the Rules and Regulations states that gardening in these spaces is a privilege, not a right. As a result, there have been increasing efforts to shift the focus of the gardens from a service provision center to a partnership where all parties contribute and all parties benefit.

Services for Diverse Users

San Jose is a rapidly urbanizing city with trends toward higher density and a more diverse ethnic makeup. In order to keep pace with the growth of the city, open space requirements will need to be assessed in all council districts. Knowledge and consideration of facility users, including demographic data, can help target service provision.

In order to identify trends among the San Jose garden users, survey data was summarized for the garden program as a whole, as well as from gardens that received at least 50% survey returns. In addition, San Jose demographics were compared from citywide census data and from individual garden

neighborhoods. The following trends can be utilized for better garden management and further study.

Gardeners Represent San Jose's Diversity

Gardeners in the San Jose community gardens represent the diversity and the range of the city's population. There are several target populations and trends that can be identified to help city staff provide services to these underserved populations.

Although ethnicity percentages are very similar between the city and the gardens, the gardens show a much higher rate of immigrants and those who speak a language other than English at home. This can create a situation where gardeners can become ambassadors to their neighborhoods and other members of their ethnic groups.

Age is a defining characteristic for the gardeners as the ploholders have a higher average age and frequency of users over 65. This population is not only more rare in other types of parks service provision, but adds value to the gardens as a intergenerational experience for the children that garden alongside their elders.

Ploholders also have a higher rate of home ownership than the city average. This could be related to the higher average age of the garden users.

Gardens as Neighborhood Resources

When comparing the individual gardens to the neighborhoods they are located in, trends follow those of the citywide statistics.

Home ownership is one of the strongest trends, with nearly all of the gardens showing higher home ownership than the neighborhood averages. Age is another indicator that makes the gardens stand out from the neighborhoods. Although 32% of the gardeners involve their children to work in their plots with them, the gardeners are typically an older group of users. The survey shows 33.5% of the gardeners are over 65, with an average age of 56.

As seen in the citywide demographics, there are no strong trends regarding ethnicity in the garden populations. In some cases, the garden representation of an ethnic group is higher than the neighborhood figures, and in other cases it is lower. Overall, the gardens represent the ethnicity numbers in the city population.

In most cases, gardener income tends to follow the trend in the neighborhood. When there are deviations from this trend, however, income is typically lower than the surrounding neighborhood.

Divergent Trends in Garden Use

Various trends in the data such as income and education seem to point to two distinct groups using the garden: (a) those who wish to supplement family food supplies and (b) those who are largely hobby gardeners. The gardens have a higher percentage of residents who have not completed high school than the San Jose figures, as well as a higher percentage of those who have completed graduate studies. In the income category, garden users have a higher percentage of residents who earn less than \$19,000 than San Jose figures, and

yet the largest percentage of the gardeners earn over \$70,000.

This trend toward two main groups of users is also reflected in correlation studies which show relationships between time and money spent in the garden with those who have lower income and education, pointing to gardeners who may be supplementing family food supplies as a primary focus. Hobby gardeners, on the other hand, seem to spend less money, and time, perhaps because of their goals in gardening.

The fact that each gardener can use the same facilities for the reasons they find important, seems to be the driving force behind their satisfaction with the service. This makes the gardens a highly valuable resource, as their continued maintenance and success is based in part on the users who create the facilities and experiences that meet their needs in the gardens.

Recommendations

As the community gardens look for ways to increase their value and viability in the communities they serve, recommendations for future improvement can help to maintain and expand the program. Recommendations are established here for program improvement and future research.

Program Recommendations

Educate council members. Decision makers should know about the gardens in their district, as well as the benefits that can be derived from the establishment and maintenance of community gardens.

Identify potential garden sites. Gardeners and staff can help council and parks administration locate potential sites to consider for the development of community gardens.

Train volunteer staff. In order to foster mutual support, gardeners who take on the role of garden management should have training in all aspects of garden management, including people management and problem solving.

Identify garden leaders. Gardeners who show the potential to contribute in the garden and in the community should be supported by staff to foster their skills. These leaders can support (a) registration and data collection, (b) training and information dissemination, and (c) offering or explaining other city services

Provide technical training. Gardeners and staff need training in skills that enable them to manage their plots and the gardens with the greatest efficiency and conservation of natural resources.

Coordinate with neighborhood associations. By inviting neighborhood leaders to meetings or into the gardens, mutually supportive relationships can be established between the gardens and the community.

Water conservation. The Parks Department should continue to foster water conservation through limited watering hours, suggestions about watering tolerant crops, and water conservation training.

Policy assessment. The rules and program policies should continually be assessed for their relevancy for the program.

Future Research

Research should be conducted to further identify garden uses by two potentially different groups of users. Personal interviews could determine if the relationships identified in correlation studies are valid, and what types of service support each group would benefit the most from.

Future data collection would be valuable in order to determine the extended effects of the gardens in the community, as measured by:

1. Non-gardeners who attend classes in the gardens.
2. Non-gardeners using the garden for other uses such as community meetings.
3. Number of families affected by food donations from the gardens.

A future study would be valuable for analyzing detailed plot use including planting practices, plant selection, and efficiency measures that would account for variances at the different gardens. This data would also be valuable in identifying gardens that need water conservation training and those that can share successes and strategies about water use.

REFERENCES

- Abbott, J. (1995, May). Children need communities. Educational Leadership, 6-8.
- Adams, L. W. (1994). Urban wildlife habitats. Minneapolis: University of Minnesota Press.
- American Community Gardening Association. (1998, June). National community gardening survey. Unpublished association report. Philadelphia, PA: Author.
- Association of Bay Area Governments. (2000, February). Bay Area land use. Unpublished government document. San Francisco: Author.
- Babbie, E. (1995). The practice of social research. Belmont, CA: Wadsworth.
- Bassett, T. J. (1979). Vacant lot cultivation: Community gardening in America. Unpublished master's thesis, University of California, Berkeley.
- Bennett, E. S., & Swasey, J. E. (1996). Stress reduction and the urban public garden. Proceedings of a research and education symposium, People Plant Interactions in Urban Areas, San Antonio, TX.
- Bjomson, M. R. (1996). Immigrant gardens: Seeds of home in times of change. Proceedings of a research and education symposium, People Plant Interactions in Urban Areas, San Antonio, TX.
- Bunn, D. (1996). Developing a sense of community through gardening. Proceedings of a research and education symposium, People Plant Interactions in Urban Areas, San Antonio, TX.
- Business Information Technologies. (2001, November). U.S. postal route level demographics [shapefiles and DBF files]. Edina, MN: Author.
- California Council for Community Gardening. (1977). Bylaws, Article II. Unpublished document. . San Jose, CA: Author.
- Calthorpe, P. (1993). The next American metropolis: Ecology, community and the American dream. New York: Princeton Architectural Press.
- City of San Jose, Environmental Services Department. (1998). San Jose's sustainable city programs. Unpublished government document. San Jose, CA: Author.

- City of San Jose, Parks Department. (1976). Agreement with Olinder residents to use community garden space. Unpublished government document. San Jose, CA: Author.
- City of San Jose, Parks Recreation and Neighborhood Services. (2000, April). Strategy options report [internal document]. San Jose, CA: Author.
- City of San Jose, Parks Recreation and Neighborhood Services. (2000, August). Parks and Recreation Greenprint [internal document]. San Jose, CA: Author.
- City of San Jose, Planning Department. (1994). San Jose 2020: General plan. Unpublished government document. San Jose, CA: Author.
- Corson, W. H. (1994, March). Changing course: An outline of strategies for a sustainable future. Futures, 26(2), 206-222.
- Dortch, S. (1996, June). How green are our thumbs? American Demographics, 6-7.
- Dotter, J. (1994, May). Cultivating people-plant relationships in community and cultural heritage gardens, San Jose, California (1977-1992). In J. Flager & R. P. Poincelot (Eds.), People plant relationships: Setting research priorities proceedings (pp. 153-170). New York: Hawthorne Press.
- Dotter, J., & Anderson, M. (1999). Transplanting people and plants: Cultural diversity explored with new refugee community gardeners in San Jose, California. Proceedings of the Fifth International People Plant Conference. Sydney, Australia.
- Ferguson, D. C. (1987, December). City-sponsored community gardens in San Jose. Unpublished senior thesis presented to the staff of San Jose State University, San Jose, California.
- Fisher, K. (1990, October). People love plants, plants heal people. American Horticulturist, 11-15.
- Fowler, F. J. (1993) Survey research methods. Thousand Oaks, CA: Sage.
- Francis, M., & Hester, Jr., R. T. (1990). The meaning of gardens. Cambridge, MA: MIT Press.
- Gainer, B. L. (1999, June). Serving the public – The importance of public gardens. American Nurseryman, 189.

- Ghazi, P. (1998, April). Vital statistics. New Scientist, 18-19.
- Hatry, H. P. (1971). Improving productivity and productivity measurement in local government. Washington, DC: National Commission on Productivity.
- Heffeman, M. (1994, September). Children's garden project. Children's Environments, 11(3), 221-231.
- Henderson, H. (1994, March). Paths to sustainable development: The role of social indicators. Futures, 26(2), 125-137.
- Hynes, P. H. (1996). A patch of Eden: America's inner city gardeners. White River Junction, VT: Chelsea Green.
- Illich, I. (1971). Deschooling society. New York: Harper and Row.
- Jobb, J. (1979). The complete book of community gardening. New York: William Morrow.
- Kaplan, R., & Kaplan, S. (1989). The experience of nature. New York: Cambridge University Press.
- Leopold, A. (1949). A Sand County almanac. London: Oxford University Press.
- Levin, J. (1997). Elementary statistics in social research. New York: Addison Wesley.
- Levy, J. M. (1988). Contemporary urban planning. Englewood Cliffs, NJ: Prentice-Hall.
- Lewis, C. (1986, June). People and plants. American Horticulturist, 16-21.
- Lewis, C. A. (1996). Green nature human nature. Urbana, IL: University of Illinois Press.
- LSA Associates. (2001, August). Review of the SNI Program EIR. Unpublished document for the review of the San Jose Redevelopment Agency. Berkeley, CA: Author.
- Lyman, F. (1997, May/June). Twelve gates to the City: Ways to build strong livable urban areas. Sierra, 29-35.

- Maclaren, V. W. (1996, Spring). Urban sustainability reporting. Journal of the American Planning Association, 62, 184-202.
- Milbrath, L. W. (1994, March). Stumbling blocks to a sustainable society. Futures, 26(2), 117-124.
- Miller, R. L. (1976, June). The landscaper's utopia versus the city: A mismatch. The New England Quarterly, 85-89.
- Murphy, C. (1999). Cultivating Havana: Urban agriculture and food security in the years of crisis. Oakland, CA: Institute for Food and Development Policy.
- Naimark, S. (1982). A handbook of community gardening. New York: Charles Scribner's Sons.
- National Assessment of Educational Progress. (1988). Crossroads in American education. Princeton, NJ: Educational Testing Service.
- Nelson, T. (1996, November/December). Closing the nutrient loop. World Watch, 10-17.
- Olmstead, F. L. (1886, April 2). The problem and the solution. Speech to the Boston Society of Architects, Washington, D.C. Library of Congress, Olmstead Papers.
- Patel, I. C. (1991, Winter). Gardening's socioeconomic impacts. The Journal of Extension, 7-8.
- Richert, E. D., & Lapping, M. B. (1998, Spring). Ebenezer Howard and the garden city. American Planning Association Journal, 64, 126-132.
- Ruiz, M. (1992). Handbook for community garden managers. Unpublished city document. San Jose, CA.
- Spirm, A. W. (1985, Spring). Urban nature and human design. Journal of Planning Education and Research, 5.
- Statistical Package for the Social Sciences (SPSS) [Computer software]. (1999). Chicago, IL: Author.
- Thompson, S. (1995, May). The Community as classroom. Educational Leadership, 17-20.

- Trust for Public Land. (1995). Urban farms and gardens report. Unpublished agency report. San Francisco, CA: Author.
- U.S. Census Bureau. (1990). Census of population and housing data. Washington, DC: Author.
- U.S. Census Bureau. (2000). QT-01 profile of general demographic characteristics: 2000. Washington, DC: Author.
- Van der Ryn, S., & Calthorpe, P. (1991). Sustainable communities. San Francisco: Sierra Club Books.
- Ventura-Merkel, K., Liederman, D. S., & Ossofsky, J. (1989). Intergenerational programs: Imperatives, strategies, impacts, trends. Binghamton, NY: Haworth.
- Waliczek, T. M., Mattson, R. H., & Zajicek, J. M. (1996, December). Benefits of community gardening on quality of life issues. Environmental Horticulture, 14(4), 204-209.
- Warner, S. B. (1987). To dwell is to garden: A history of Boston's community gardens. Boston: Northeastern University Press.

APPENDIX A
Survey Instrument

SAN JOSE COMMUNITY GARDEN SURVEY

Please take five minutes to complete this survey and return it to us in the pre-paid reply envelope. Your response to this survey is greatly appreciated.

PLEASE DO NOT PUT YOUR NAME ON THIS QUESTIONNAIRE.

Name of your Community Garden _____

1. How long have you been gardening (in your life)?

Approximately _____ years

2. How long have you been gardening in the San Jose Community Gardens?

_____ years

3. How did you learn about San Jose's community gardens?

Family member

Friend

Brochure

Saw the garden

Phone Book

Media (news, radio etc.)

Other _____

4. Do other family members help you work in your plot? (please check all that apply)

No, I work in my plot alone

My spouse

My children

My siblings

My parents

Other _____

5. How many children under the age of 18 help in your garden plot?

None

Two

One

Three or more

6. About how far do you travel in each direction to get to the community garden?

_____ Mile(s)

7. Approximately how many hours a week do you work in the garden during the growing season?

1-5 hours

11-20 hours

6-10 hours

More than 20 hours

8. On average, how much do you spend on garden supplies each year? \$ _____
(items such as seeds, compost, tools, etc. - not including water fees)

9. How many months of the year do you bring produce home from your garden?
 1-4 months 10-12 months
 5-9 months Other _____

10. Would it be difficult to feed your family without produce from the garden?
 Yes No Don't know

11. What do you grow in your plot? (please check all that apply)
 Vegetables Herbs
 Fruits Flowers
 Other _____

12. Do you often have more food in your plot than you or your family can use?
 Yes No

12a. If yes, what do you do with the extra food?
 Share it with my friends and neighbors
 Donate it to a food bank
 Preserve it through canning, drying, etc.
 Compost it/throw it out
 Donate it to a church or community center
 Other _____

13. What other activities do you participate in at the community garden?
 Volunteer officer
 Garden clean-up days
 Community Garden Steering Committee
 School programs or tours
 Other _____

The following questions about your background to help us to see how people with different backgrounds use the gardens.

14. Age as of your last birthday? _____

15. Gender: Female Male

16. Ethnic background? _____

17. What language(s) do you speak at home? _____

18. Were you born in the United States?

Yes

No

18a. If not, where were you born? _____

18b. How many years have you been in the United States? _____ years

19. How many members are in your household including yourself? _____

20. What is your approximate family income?

\$19,000 or below

\$50,000 - \$64,999

\$20,000 - \$34,999

\$65,000 - \$69,999

\$35,000 - \$49,999

More than \$70,000

21. What is the highest level of education you have attained?

Up to 9th grade

College or university degree

High school (or equivalent)

Advanced degree

Some college courses

Other _____

22. Where you live, do you own, rent, or lease?

Own

Rent

Lease

23. What type of housing do you live in?

House

Apartment

Condominium

Mobile home

Duplex, triplex

Other _____

24. Do you have a vegetable garden at home?

Yes

No

24a. If no, why not? _____

25. Are you involved with other community efforts besides the community garden?
(such as neighborhood associations, church groups, volunteer organizations)

Yes

No

25a. If yes, please list _____

APPENDIX B
Approval Letter



*Office of the Academic
Vice President
Associate Vice President
Graduate Studies and Research
One Washington Square
San José, CA 95192-0025
Voice: 408-924-2480
Fax: 408-924-2477*

The California State University:
Cancellor's Office
Bakersfield, Chico, Dominguez Hills,
Fresno, Fullerton, Hayward, Humboldt,
Long Beach, Los Angeles, Maritime Academy,
Monterey Bay, Northridge, Pomona,
Sacramento, San Bernardino, San Diego,
San Francisco, San José, San Luis Obispo, San
Marcos, Sonoma, Stanislaus

TO: Michele Young
45 Hobson St., 4B
San Jose, CA 95110

FROM: Nabil Ibrahim, N. Ibrahim
AVP, Graduate Studies & Research

DATE: September 8, 2000

The Human Subjects-Institutional Review Board has approved your request to use human subjects in the study entitled:

**"Aligning San Jose's Community Gardens with
the City's Plans and Goals"**

This approval is contingent upon the subjects participating in your research project being appropriately protected from risk. This includes the protection of the anonymity of the subjects' identity when they participate in your research project, and with regard to any and all data that may be collected from the subjects. The approval includes continued monitoring of your research by the Board to assure that the subjects are being adequately and properly protected from such risks. If at any time a subject becomes injured or complains of injury, you must notify Nabil Ibrahim, Ph.D., immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information. This approval is in effect for one-year and data collection beyond September 8, 2001 requires an extension request.

Please also be advised that all subjects need to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subjects participation, refusal to participate, or withdrawal will not affect any services the subject is receiving or will receive at the institution in which the research is being conducted.

If you have any questions, please contact me at (408) 924-2480.

APPENDIX C

2002 Rules and Regulations and Gardener Agreement



COMMUNITY GARDENING PROGRAM 2002 RULES AND REGULATIONS

I. Overview

San José Community Gardens are intended to be beautiful, safe, and peaceful oases amidst the fast-paced life of Silicon Valley. The following set of rules and regulations has been designed for the following reasons:

- To ensure that community gardens are safe.
- To ensure that community gardens are pleasant places to be and to look at—for gardeners, neighbors, and the general public.
- To establish fairness and equity among community gardeners.
- To prevent damage to the land and groundwater.
- To protect the future of community gardens in San José.

As in any group endeavor, individuals must give up some of their individuality to accommodate the function of the group. Community gardening is no exception.

The Rules and Regulations are reviewed and revised annually in an ongoing effort to improve them and keep them relevant to changing conditions. If you have suggestions or concerns, please call the Community Gardening Program office at 277-2575. However, unless official changes are made, you must abide by these rules and regulations as they are currently written. Failure to do so may result in the forfeiture of gardening privileges. If you feel these rules place unfair restrictions on you, then perhaps you should reconsider your decision to garden in a community situation.

Because the Community Gardening Program has only one paid City staff person (who is not paid to be a policeman!), everyone shares in the responsibility of enforcing these Rules and Regulations. Please voice your concerns about rule violations directly to the person in question or to volunteer staff. City staff will be notified by volunteers when necessary.

II. Who can rent a plot in a San José community garden?

Anyone age 18 or older who lives in San José or one of its neighboring towns (including Campbell, Cupertino, Los Gatos, Milpitas, Monte Sereno, Santa Clara, Saratoga, and Sunnyvale). However, San José residents have priority over non-residents when plots are assigned.

All plotholders, regardless of residency, share the same privileges.

III. Plot Allocation, Registration, and Fees

1. One garden plot per individual or household. The Community Gardening Program uses the following guidelines to ensure that this rule is applied uniformly:
 - A community gardener may not garden more than one garden plot.
 - Two (or more) adults living at the same address can each have their own garden plot if they garden only their own plot AND if they file their taxes independently and neither (none) is claimed as a dependent of the other.
2. The person whose signature appears on the Registration Form is considered the primary plotholder and is ultimately responsible for the garden plot. However, family and friends are welcome and encouraged to participate.
3. Garden plots are issued on a year-to-year basis, from January 1 – December 31.
4. Current plotholders in good standing have the option of renewing their garden plots each year.
5. Returning plotholders must complete the Community Garden Registration Form and pay their annual water fee by the registration deadline. Those who do not meet the registration deadline risk forfeiting their gardening privileges and having their garden plot assigned to a new gardener.
6. If there are no vacant garden plots, prospective gardeners may add their name to one or more community garden waiting list, and they will be contacted—in the order on the waiting list—when garden plots become available.
7. Plotholders who relinquish their garden plot for any reason must notify someone on the garden management team.
8. Plotholders who relinquish their garden plot may not directly transfer their plot to anyone else, including family or friends. Garden plots that become available will be re-assigned to new gardeners by the garden management team.
9. New plotholders must complete the Community Garden Registration Form and pay their annual water fee before they can begin gardening.
10. Payment of annual water fees is to be made by check or money order only. **Cash is not accepted.**
11. Annual water fees are non-refundable, unless proof of a family or medical emergency is provided.
12. A fee of approximately \$.12 per square foot of garden will be charged annually. This fee will cover expenses related to water usage and basic upkeep of the garden. Each garden's volunteer management team sets the exact fee(s), which can also include a cleanup deposit, a fee for special events or projects, etc.
13. The garden's management team will determine a pro-rated water fee for new plotholders who begin gardening mid-year.

IV. Gardening Guidelines

A. ORGANIC GARDENING

The Community Gardening Program adheres strictly to the gardening principles, concepts, and practices popularly called "organic." Use of pesticides, herbicides, chemical fertilizers, or other such substances or practices inconsistent with organic gardening is prohibited and may result in the immediate revocation of gardening privileges. *(Please refer to the "Garden Product Guidelines" for more information.)*

B. PLANTING SCHEDULE

1. Community garden plots must be planted and maintained year-round.

4 N. 2nd Street Ste 600, San José, CA 95113 • www.sjcommunitygardens.org • tel (408) 277-2575 • fax (408) 298-1701

2. Summer gardens must be planted by May 1st.
3. Remains of summer gardens must be removed by December 1st.
4. Plotholders must plant cover crops if they do not actively garden during the winter.
5. Mature crops must be harvested. Volunteer staff are authorized to harvest mature crops if they are being neglected.

C. PLANTING GUIDELINES

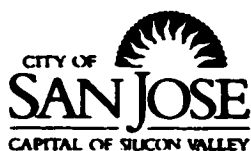
1. Plotholders may grow vegetables, fruits, herbs, and flowers in their plot.
2. Plotholders may not plant trees or woody perennials in their plot. Those trees and woody perennials already existing in garden plots can be removed when the plots are vacated.
3. Crops should be rotated.
4. Plotholders should grow a variety of plants and should never grow less than two types of plants at any one time.
5. Avoid planting water-intensive crops, such as taro, rice, and sugar cane—no more than 30 square feet (6'x5', or some other comparable configuration).
6. Respect the need of your neighbors' plants for sunlight. Do not plant tall crops in a way that will cause excessive shading to nearby plots.
7. Place all plants and trellises at least 12" inside plot perimeter. Do not construct or erect trellises more than 6' high.

V. Plotholder Responsibilities

1. Plotholders are responsible for the year-round maintenance of their garden plots and the surrounding pathways. Plots and pathways must be kept free of weeds, trash, and other debris at all times.
2. Common areas are maintained as a shared responsibility by all gardeners. Such maintenance will occur at garden cleanups scheduled by the volunteer staff and/or on an ongoing basis.
3. Plotholders are required to attend scheduled garden cleanups or make alternative arrangements with garden staff to assist in the maintenance of the garden.
4. Plotholders may contribute to the community garden in additional ways, such as making phone calls, writing newsletters, etc., as coordinated with the volunteer staff.
5. Plotholders must attend garden meetings (if your garden schedules meetings). If you are unable to attend a meeting, you must make alternative arrangements with volunteer staff.
6. Plotholders must be involved in the hands-on cultivation of their plots, though family and friends are welcome to share in the responsibility.
7. Plotholders may not pay for someone else to garden their plot.
8. In the event of a family emergency, illness or injury, vacation, or other unforeseen circumstance, plotholders may arrange for other people to tend their garden plot, but plotholders must also notify volunteer staff.
9. Plotholders must notify volunteer staff of the following: water leaks or other irrigation problems; graffiti, theft, or vandalism; rule violations; pest or disease problems.
10. Plotholders and their guests must comply with all rules and regulations.
11. Primary plotholders will be held accountable for the behavior of their guests.

VI. At the Community Garden

1. **HOURS OF OPERATION:** Community gardens are open from sunrise to sunset. (Comucopia and El Jardin open at 8:00 a.m.)
2. **BEHAVIOR:** Foul language or loud offensive behavior is not permitted.
3. **GATES:** In general, garden gates should be kept closed and locked at all times.
4. **CARS:** Vehicles are not allowed in the garden, except in designated parking areas.
5. **WATER:** The amount of water used determines future water fees. All watering should be supervised. All gardeners are authorized to turn water off if it has been left unattended.
6. **BATHROOM:** Proper bathroom facilities must be used. Urinating or defecating in the community garden is prohibited.
7. **GARBAGE:** Pack it in, pack it out. Unless your garden has arranged for garbage removal, you must take any garbage you generate with you to discard elsewhere. Discarding of garbage on the ground or in compost or green waste piles is prohibited.
8. **GREEN WASTE:** Weeds and plant material should be composted on-site or placed in the green waste collection area(s). Green waste should not be thrown away or left in the pathways.
9. **NO SELLING:** Produce from community gardens is primarily for family consumption. Excess food can be preserved for future use, shared with friends or neighbors, or donated to local food banks. **You may not sell your produce.**
10. **HARVESTING:** Harvest only from your own plot.
11. **IRRIGATION SYSTEM:** Any alterations to the irrigation system must be approved by volunteer staff. No alterations can be made to the irrigation system on Fridays, Saturdays, Sundays, or holidays because of the risk of an accident and the limited availability of City staff during these times. In the event of an irrigation emergency, you should contact your garden manger, the Community Gardening Program at (408) 277-2575, or the Department of Parks, Recreation & Neighborhood Services at (408) 277-4573.
12. **TOOLS:** Garden-owned tools are for garden use only and should be cleaned and returned to the toolshed after use. Tools must be kept locked in the toolshed overnight and should never be taken off the garden premises.
13. **SMOKING:** No smoking in the garden when other, non-smoking gardeners are present. Cigarette butts should be disposed of properly.
14. **CONTROLLED SUBSTANCES:** No alcoholic beverages or illegal drugs of any kind allowed.
15. **ANIMALS:** Pets are not allowed in community gardens. Feral cats can be kept at a garden for rodent control if the following guidelines are strictly followed:
 - At least two thirds of gardeners agree to it.
 - No more than 3 cats per garden.
 - All cats must be neutered and immunized.
 - When cat caretakers leave the garden, they must take the cats with them or make appropriate arrangements for their future care.
 - Cats must be fed in an area far away from garden plots.



Garden Product Guidelines

You should not use any materials or products that are harmful to humans. Nor should you use fertilizer material or tillage methods harmful to the soil's structure, to its fertility, or to its microorganisms.

Pest and Disease Control

Allowed

Bacillus thuringiensis (Bt)
 soap spray
 pepper and onion spray
 sulfur
 wood ashes
 sour milk solution
 tanglefoot
 marigolds
 netting
 lady bugs
 lace wings
 beneficial nematodes
 dormant oils
 Micro-cop™ or equivalent (for orchard use only)
 diatomaceous earth (DE)
 baking soda
 Borax, boric acid
 Sluggo
 mole and gopher traps

Prohibited

rotenone
 pyrethrum (pyrethrate, pyrethroids)
 nicotine sulfate
 malathion
 diazinon
 sevin
 any organophosphate
 Roundup™
 Finale™
 Dursban™
 any organochloride
 chlorpyrifos

Fertilizers

Cottonseed
 blood, bone, horn, and hoof meals
 kelp
 manure
 compost
 liquid fish or seaweed
 similar fertilizers classed as "organic"

ammonium sulfate
 muriate of potash
 superphosphates
 highly soluble chemical fertilizer



Parks, Recreation and Neighborhood Services

COMMUNITY GARDENING PROGRAM, 4 N. 2ND ST. SUITE 600, SAN JOSE, CA 95113 ☎ (408) 277-2575

Gardener Agreement

I understand that participating in the San José Community Gardening Program is a privilege, not a right. I understand that I do not own my garden plot, but pay for the use of that land on an annual basis. I understand that I am a steward of my garden plot and that it is my responsibility to use the land in such a way that it will be maintained—if not improved—for future use.

By filling out and submitting the Community Garden Registration Form, I acknowledge and agree to comply with the following:

1. The San José Community Gardening Program Rules and Regulations.

The Rules and Regulations are reviewed and revised annually in an ongoing effort to improve them and keep them relevant to changing conditions. I understand that it is my responsibility to read carefully the Rules and Regulations distributed each year and understand any changes that may have been made. Further, I understand that the volunteer management team is authorized by the City to interpret and enforce these Rules and Regulations. I understand that City staff welcomes and encourages my feedback about the Rules and Regulations; however, until official changes are made, I understand that I am obligated to follow the Rules and Regulations as they are written.

2. Community Garden By-laws.

Some community gardens have written and adopted by-laws that provide additional guidelines for good management practices, though others have yet to do so. The by-laws can include additional rules specific to each community garden so long as they do not conflict with any of the Program Rules and Regulations. Although my community garden may not have by-laws yet, I understand that it is my responsibility to observe any rules or customs that have been established by the volunteer management team at my community garden.

Signature: _____

Date: _____

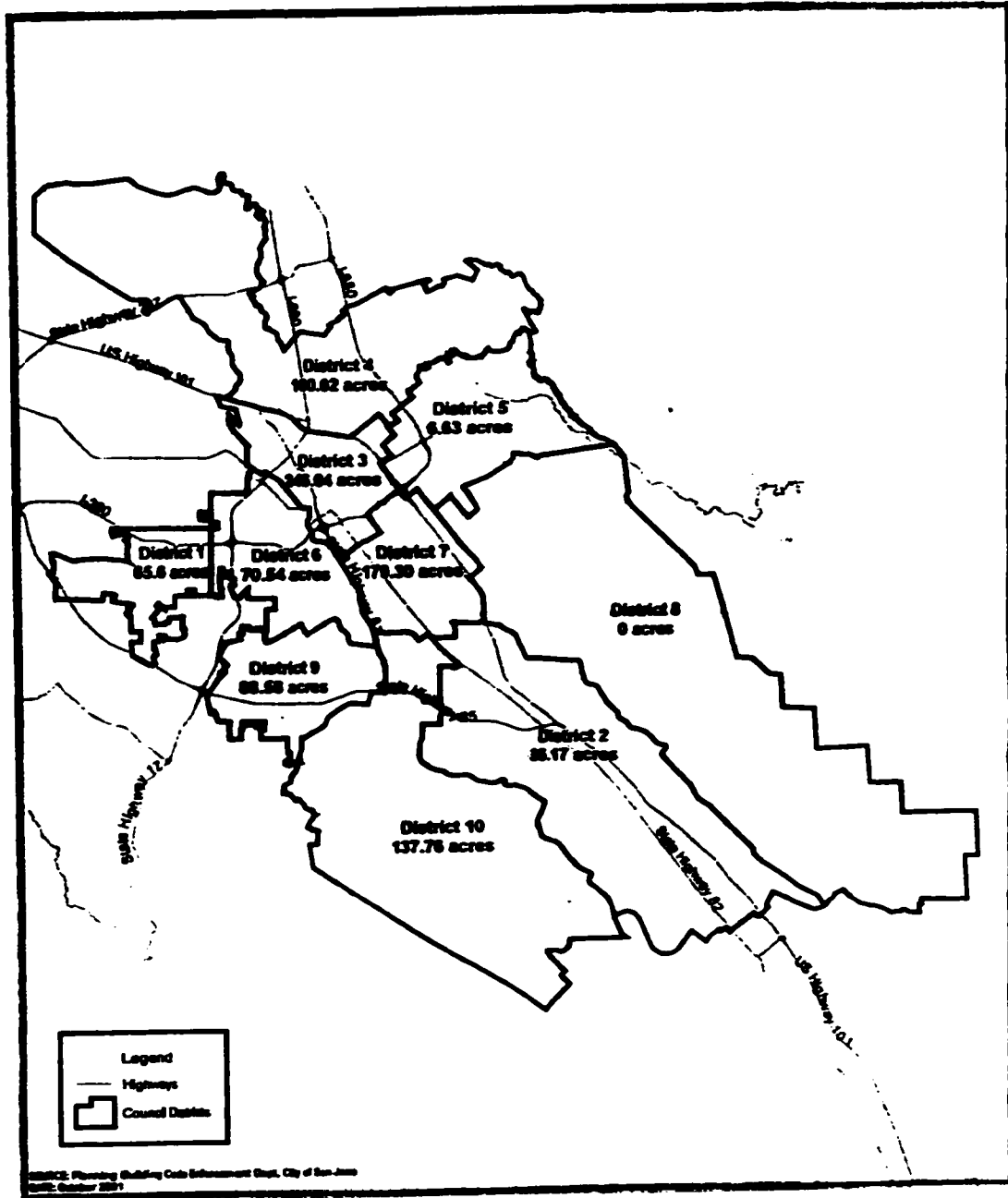
Please retain a copy of this Gardener Agreement for your records.

APPENDIX D

Community Garden Registration Form

APPENDIX E

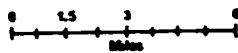
Map of Needed Council Acreage



Legend
— Highways
□ Council Districts

SOURCE: Planning Building Code Enforcement Dept., City of San José
DATE: October 2007

San José City Council Districts



APPENDIX F

Foreign Language Survey

Encuesta del Jardín de la Comunidad de San José

Por favor tomese cinco minutos para completar esta encuesta y retornarla en el sobre prepago incluido. Muchas Gracias por su colaboración.

Por favor no coloque su nombre en la encuesta.

El nombre de su Jardín de la Comunidad _____

1. ¿Cuánto tiempo de su vida lleva usted cultivando un huerto o jardín?
Aproximadamente _____ años.
2. ¿Cuánto tiempo lleva usted cultivando un huerto o jardín en los jardines de la comunidad de San José?
Aproximadamente _____ años.
3. ¿Cómo se enteró usted acerca de los jardines de la comunidad de San José?
 Un familiar Un amigo
 El folleto informativo Vió el jardín
 La guía telefónica Los medios de comunicación social (televisión, radio etc.)
 Otro _____
4. ¿Otros miembros de su familia le ayudan a cultivar su parcela? (por favor marque todas las respuestas que aplican)
 No, yo trabajo solo en mi parcela Mi esposo
 Mis hijos Mis hermanos
 Mis padres Otro _____
5. ¿Cuántos niños menores de 18 años le ayudan en su parcela?
 Ninguno Dos
 Uno Tres o más
6. ¿Que distancia viaja usted aproximadamente para llegar a su jardín de la comunidad?
_____ millas.
7. Aproximadamente cuantas horas a la semana trabaja usted en el jardín durante la época de cultivo?
 1-5 horas 11-20 horas
 6-10 horas más de 20 horas
8. ¿Cuánto gasta usted aproximadamente por año en productos para el jardín (semillas, abono, herramientas, etc., - sin incluir los costos del agua)?
\$ _____

9. ¿Cuántos meses del año lleva usted a su casa productos cosechados en su jardín?
 1-4 meses 10-12 meses
 5-9 meses Otro _____
10. ¿Le sería difícil alimentarse a su familia si no contara con los productos cosechados en su jardín?
 Sí No No se
11. ¿Qué cultiva usted en su parcela? (por favor marque todas las respuestas que aplican)
 Verduras Hierbas
 Frutas Flores
 Otro _____
12. ¿Produce usted a menudo más comida en su parcela de la que usted o su familia pueden usar? Sí No
- 12a. ¿Si usted respondió "Sí" a la pregunta anterior entonces por favor responda:
 ¿Qué hace usted con los productos que le sobran?
 Los reparto entre mis amigos y vecinos
 Los dono a un banco de comida
 Los preservé preparando conservas, enlatando, secando, etc.,
 Los uso como abono / la desecho
 Los dono a la iglesia o al centro de la comunidad
 Otro _____
13. ¿En qué otras actividades participa usted en el jardín de la comunidad?
 Funcionario voluntario
 Participo en los días de limpieza del jardín
 Participo en el comité que dirige al jardín de la comunidad
 Participo en programas escolares o giras
 Otro _____

Las siguientes preguntas son acerca de sus antecedentes. Estas preguntas nos ayudan a comprender como personas con diferentes características utilizan los jardines.

14. Edad actual

15. Género

- Femenino Masculino

16. Origen o Raza _____

17. ¿Qué idioma (s) habla usted en su casa? _____

18. ¿Nació usted en los Estados Unidos?

Sí No

18a. Si su respuesta a la pregunta anterior fué "No" entonces por favor responda:

¿Dónde nació usted? _____

18b. ¿Cuántos años lleva usted viviendo en los Estados Unidos? _____

19. ¿Cuántas personas componen su nucleo familiar (viven con usted) incluyendo usted mismo? _____

20. ¿Cuál es su ingreso familiar aproximado?

\$19,000 o menos \$50,000-\$64,999
 \$20,000 - \$34,999 \$65,000 - \$69,999
 \$35,000 - \$49,999 más de \$70,000

21. ¿Cuál es el nivel más alto de educación que usted ha alcanzado?

Escuela Primaria (hasta el 9º grado) Universidad o título universitario
 Escuela secundaria (o equivalente) Post-grado o Maestria
 Algunos cursos universitarios Otro _____

22. ¿Posee usted su vivienda, la alquila o renta en forma de lease?

Propia Alquila Lease

23. ¿En que tipo de vivienda vive usted?

Casa Apartamento
 Condominio Casa rodante
 Dúplex, Triplex Otro _____

24. ¿Tine usted un jardín de hortalizas (huerta) en su casa?

Sí No

25. ¿Esta usted involucrado en otros esfuerzos comunitarios además del jardín de la comunidad? (tal como asociaciones de barrio o vecindario, asociaciones religiosas o de la iglesia, organizaciones voluntarias, etc.)

Sí No

25a. Si respondió "Sí" a la pregunta anterior, por favor liste:

26. ¿Ha usted contactado alguna vez a su representante en el Consejo de la Ciudad?

Sí No

27. ¿Está usted registrado para votar en California?

Sí No

28. ¿Cuál es la razón principal por la cual usted cultiva un huerto o jardín en su jardín de la comunidad?

_____.

29. ¿En general, que tan satisfecho se encuentra usted con su jardín de la comunidad?

- | | |
|---------------------------------------|-------------------------------------|
| <input type="radio"/> Muy satisfecho | <input type="radio"/> Satisfecho |
| <input type="radio"/> Poco satisfecho | <input type="radio"/> No satisfecho |

La razón _____.

Si usted tiene otras ideas o comentarios que no se incluyeron en este estudio, por favor, siéntase libre de compartirlas con nosotros en el espacio libre a continuación.

Gracias de nuevo.

Otras ideas o comentarios:

*

*

*

*

Por favor tomese un momento para devolver el estudio en el sobre pre-pagado que le hemos proporcionado. Anime a sus compañeros jardineros a responder también. Todos los jardines de la comunidad de los cuales recibamos respuestas de la mitad o mas de sus jardineros van a ser incluidos en una subasta de herramientas, materiales de jardineria.

¡Gracias! - Su ayuda con esta encuesta ha sido muy valiosa.

MOLIMO VAS DA UZMETE PET MINUTA I ISPUNITE OVA PITANJA I POSALJETE NAMA NAZAD U PRED-PLACENOJ KOVERTI. CERTIFIKAT JE DA VI ZADRZITE KAO HVALA ZA VASU POMOC.

MOLIMO VAS DA NESTAVITE VASE IME NA OVAJ FORMULAR.

IME VASE BASTE Green Thumb Community Garden

1. KOLIKO DUGO STE BILI BASTOVAN? (U VASEM ZIVOTU)
PRIBLIZNO _____ GODINA

2. KOLIKO STE DUGO BILI BASTOVAN U BASTI SAN JOSEA?
_____ GODINA

3. KAKO STE CULI O BASTI U SAN JOSEU?
OD FAMILIJE _____ OD PRIJATELJA _____ IZ BROSURE _____
VIDJELI STE BASTU _____ PREKO MEDIJE _____ OSTALO _____

4. DA LI VAM JE NEKO OD FAMILIJE POMOGAO U VASOJ BASTI? (MOLIMO VAS NAVEDITE SVE)
NE, SAM(A) _____ MOJA SUPRUGA ILI MUZ _____ MOJA DJECA _____
MOJE SESTRE I BRACA _____ MOJI RODITELJI _____ OSTALO _____

5. KOLIKO DJECE MLADJE OD 18 GODINA POMAZE U VASOJ BASTI?
NIJEDNO _____ DVOJE _____
JEDNO _____ TROJE ILI VISE _____

6. KOLIKO JE UDALJENA VASA BASTA?
MILJA _____ BLOKOVA _____

7. PRIBLIZNO KOLIKO DUGO SATI SEMICNO VI RADITE U BASTI U PRODUKTIVNIM
GODISNIM DOBIMA?
1-5 SATI _____ 11-20 SATI _____
6-10 SATI _____ VISE OD 20 SATI _____

8. U PROSJEKU, KOLIKO VI POTROSITE NA BASTI SVAKE GODINE? \$ _____

9. KOLIKO MJESECI U GODINI VI DONESETE PRODUKTE KUCI IZ VASTE BASTE?
1-4 MJESECA _____ 5-9 MJESECI _____
10-12 MJESECI _____ OSTALO _____

10. BI I BILO TESKO DA HRANITE SVOJU FAMILIJU BEZ PRODUKTA IZ BASTE?
DA _____ NE _____ NEZNAM _____

11. STA USPIJEVA U NASOJ BASTI? (MALO OZNACITE SVE PRIMJERE)
POVRCE _____ VOCE _____ BILJKE _____
CVJECE _____ OSTALO _____

24. (A) DA LI IMATE POVRČNU BASTU KRAJ KUĆE?

DA ___ NE ___

(B) AKO NE, ZASTO? _____

25. (A) DA LI STE UKLJUCENI U DRUGE AKTIVNOSTI, SEM GARDENA?

(KAO KOMSINSKI SASTANAK, RELIGIOZNE GRUPE, VOLUNTERSKE ORGANIZACIJE)

DA ___ NE ___

(B) AKO DA, KOJE? _____

26. JESTE LI IKAD KONTAKTIRALI VAS.....

DA ___ NE ___

27. DA LI SE OSJECATE VISE UKLJUCENIJIM(OM) U VASEM KOMSINLUKU ODKAD IMATE GARDEN?

VISE UKLJUCEN(A) ___ ISTO ___ MANJE UKLJUCEN(A) ___

28. KOJA JE GLAVNA BENIFICIJA, ILI RAZLOG DA VI DOLAZITE U GARDEN?

29. U GLAVNOM, KOLIKO STE VI ZADOVOLJNI SA GARDENOM?

VEOMA ZADOVOLJAN(NA) ___ ZADOVOLJAN(NA) ___
NESTO KAO ZADOVOLJAN(NA) ___ NEZADOVOLJAN(NA) ___

RAZLOG _____

AKO IMATE DRUGIH IDEJA ILI KOMENATA ^{TRBA} KOJE NISU IZRAZNI GORE, MOLIMO VAS DA IH OVDJE NAPISETE. HVALA JOS JEDNOM.

IDEJE:

•

•

•

•

MOLIMO VAS DA POSALJETE OVAJ U KOVERTI KOJU SMO VAM MI DALI. PROGLASITE DRUGIMA DA TO ISTO URADE.

-HVALA PUNO! -VASA POMOC CE BITI JAKO POTREBNA.

12. (A) DA LI INACE IMATE VISKA HRANE U VASOJ BASTI NEGO STO POTREBNO?
 DA _____ NE _____

(B) AKO DA, STA VI RADITE SA TIM PRODUKTIMA?
 _____ PODJELIM SA SVOJIM PRIJATELJIMA I KOMSIJAMA
 _____ DONATIRAM IH
 _____ ZAMRZNEM IH ZA ZIMNICU
 _____ KOMPOZICIRAM IH ILI BACIM
 _____ DONATIRAM IH U RELIGIOZNU USTANOVU ILI GRADSKI CENTAR
 _____ OSTALO _____

13. KOJE SU OSTALE VASE DRUGE AKTIVNOSI U BASTI?
 VOLUNTERSKI POSAO _____ CISCENJE BASTE _____ ??? _____
 VODJA SKOLSKIH TURA _____ OSTALO _____

SLJEDECA PITANJA ISTICU SE O BASTOVANIMA, STO NAM POMAZE DA VIDIMO KAKO LJUDI SA RAZLICITIM POZADINAMA UPOTREBLJAVAJU GARDEN.

14. KOLIKO IMATE GODINA? _____

15. KOJI STE SPOL?
 MUSKI _____ ZENSKI _____

16. RELIGIJA? _____

17. KOJE JEZIKE GOVORITE U KUCI? _____

18. (A) JESTE LI RODJENI U SJEDINJENIM DRZAVAMA?
 DA _____ NE _____

(B) AKO NE, GDJE STE RODJENI? _____

(C) KOLIKO DUGO STE U SJEDINJENIM DRZAVAMA? _____ GODINA

19. KOLIKO UKUCANA IMATE UKLJUCUJUCI VAS? _____

20. KOJI VAM JE KUCNI UNOS?
 \$19,000 ILI ISPOD _____ \$20,000-\$34,000 _____ \$35,000-\$49,000 _____
 \$50,000-\$64,000 _____ \$65,000-\$69,000 _____ VISE OD \$70,000 _____

21. KOJU STE SKOLU ZAVRSILI?
 DO 5-TOG RAZREDA _____ SREDNJU SKOLU _____ KURSOVI SA FAKULTETA _____
 FAKULTET _____ VISU SKOLU _____ DRUGO _____

22. DA LI VI RENTATE ILI POSJEDUJETE, ILI VASU USTANOVU?
 RENTAM _____ POSJEDUJEM _____

23. U KAKVOJ USTANOVI VI ZIVITE?
 KUCI _____ CONDOMINIUM _____ DUPLEKS, TRIPLEKS _____
 APARTMAN _____ MOBILNI DOM _____ DRUGO _____

APPENDIX G

Letter of Introduction



Parks, Recreation and Neighborhood Services
COMMUNITY GARDENING PROGRAM

November 1, 2000

Dear Gardener,

The following survey was sent to all community gardeners in San José. If you are not a current community gardener, please disregard this survey.

Research on San José's Community Gardens is being carried out by Michele Young for the completion of a Master's Degree in Environmental Studies at San José State University. The survey is part of a research plan to find out how the community gardens fit into the City's Master Plan. We hope that this information will help City Council and City Departments to see how valuable the gardens are in meeting City objectives.

This survey is voluntary and your responses are completely anonymous. Your name will not appear on any report. Please do not put your name on the survey.

If you have any questions or comments regarding this survey, Michele Young will be happy to talk with you. She can be reached at (408) 297-6132. For questions or complaints about research subjects' rights, please contact Dr. Nabil Ibrahim, Associate VP of Graduate Studies and Research at San José State University, at (408) 924-2427.

All of the gardens will receive a summary of the research results after the answers have been totaled. We plan to take the results to City Council to highlight the successes of community gardens. Thank you for your help!

Sincerely,

Todd Capurso
Department of Parks, Recreation
& Neighborhood Services



Departamento de Parques, Recreación y Servicios del Vecindario
 EL PROGRAMA DE LOS JARDINES DE LA COMUNIDAD

1 de noviembre de 2000

Estimado Jardinero,

La siguiente encuesta fué enviada a todos los jardines de la comunidad en San José. Si usted no es actualmente un jardinero de la comunidad, por favor haga caso omiso de esta encuesta.

Michele Young esta llevando a cabo una investigación en los jardines de la comunidad de San José para completar su Maestria en Estudios Ambientales en la Universidad de San Jose State. La encuesta es parte de un proyecto de investigación para determinar como los jardines de la comunidad calzan en el Plan Maestro de la Ciudad. Esperamos que este estudio ayude a demostrar a los departamentos de la Ciudad y del Consejo lo valiosos que son los jardines de la comunidad en el logro de los objetivos de la Ciudad.

Si usted no puede completar esta encuesta en Inglés o no dispone de alguien que le ayude a hacerlo, por favor envíela de retomo en el sobre pre-pagado incluido para recibir una copia en Español, o solicite una al gerente de su jardín.

Esta encuesta es voluntaria y sus respuestas son completamente anónimas. Su nombre no va a aparecer en ningún reporte. Por favor no coloque su nombre en la encuesta.

Michele Young se encuentra disponible para responder a cualquier pregunta o comentario que usted pueda tener en relación a esta encuesta. Ella puede ser localizada por teléfono al (408) 297-6132. Para preguntas o quejas en relación a los derechos de investigación por favor contacte al Dr. Nabil Ibrahim, Vicepresidente Asociado de Estudios de Postgrado e Investigación de la Universidad de San Jose State al (408) 924-2427.

Todos los jardines recibirán un resumen de los resultados de esta investigación luego de que las respuestas hayan sido totalizadas. Es nuestra intención llevar estos resultados al Consejo de la Ciudad para demostrar los logros de los jardines de la comunidad. Muchas gracias por su ayuda!

Atentamente,

Todd Capurso
 Departamento de Parques, Recreación,
 y Servicios al Vecindarios

APPENDIX H
Open-Ended Survey Comments

OPEN-ENDED SURVEY COMMENTS

Praise for Gardens

Garden	Comment
BS	Tools kept onsite are very convenient.
BS	I would be very unhappy without my community garden.
BS	The garden is well organized, and the people are friendly.
HL	I love the garden!!!
JF	The program is great and should be expanded.
LAC	I appreciate the convenience and low cost, tools available onsite.
LAC	The garden is clean, friendly, responsible, and close to home.
LAC	We need the community gardens to grow chemical-free food.
LS	The garden is a beautiful and restful place to be.
LS	Gardening is a very therapeutic hobby.
LS	Garden members are active with support committees.
LS	The city's investment in community gardens is one of the best uses of public funds.
MF	The garden is a safe and clean place to be.
MF	I like the garden because I can plant many different types of food there.
RB	I have never had any problems in the garden.
RB	I feel very content in the garden.
RB	The garden is a friendly place which is clean and orderly.

Garden Code:	2	Berryessa	BS
	3	Calabasas	Cal
	4	Cornecopia	Crn
	5	Coyote	Coy
	6	El Jardin	ELJ
	7	Green Thumb	GT
	8	Hamline	HL
	9	Jesse Frey	JF
	10	La Colina	LAC
	11	Laguna Seca	LS
	12	Las Milpas	LM
	13	Mayfair	MF
	14	Nuestra Tierra	NT
	15	Wallenburg	WB
	16	Watson	WA
	17	Rainbow	RB

Concerns that Garden Managers Need More Training for Better Rule Enforcement

Garden	Comment
BS	The management needs to enforce the rules.
BS	Better management is needed to make the garden work.
BS	Rules must be enforced (the pesticide rule, for example).
BS	Notices should be sent to gardeners about weeds, cluttered paths, etc. after pesticide and important things taken care of.
BS	Garden leadership needs to solve problems AND build community.
BS	Leadership training courses are needed for volunteer officers.
BS	Recruitment program with gardeners waiting list helps motivate gardeners to be involved.
BS	Managers should learn to give positive recognition.
BS	Managers should be trained to follow a plan for financial stability.
BS	Managers and City staff should be trained to run meaningful meetings.
BS	We need better communication through the bulletin board—relevant, updated information.
Cal	It is very challenging to communicate and get things done with gardeners who do not speak English.
Coy	Garden management complains about everything we do.
HL	I have more shade than I realized when I took the plot.
JF	The officers should be evaluated.
LS	The manager should treat gardeners equally, but they don't.
LS	All rules should apply equally for all gardeners.

Enjoy Sense of Community

Garden	Comment
LAC	I love the chance to meet other gardeners and see their gardens in progress.
Cm	The gardeners are friendly, respectful, and helpful. There is a sense of community.
Coy	The garden is a great place to meet nice people.
Coy	This is a nice way to meet your neighbors.
Coy	It is very interesting to share cultures through plants, methods, recipes, and uses.
RB	The garden is great for meeting people with new garden ideas and techniques.
MF	I am very happy at the garden because I can talk with many friends there.
MF	I enjoy the good community at the garden.
16	I enjoy talking with other gardeners and learning about their cultures, views, and beliefs.
16	All of the garden members are very cooperative.
LS	The garden is great for meeting people and sharing ideas.
LS	The garden is a great place to meet friendly, helpful people.
LS	Close, friendly, and a great opportunity to have a little plot of land.

Concerns About Theft and Vandalism

Garden	Comment
BS	Political squabbles and theft are two problems.
Coy	Theft is an occasional problem.
Coy	Stop the theft of tools, vegetables, and flowers.
Coy	Produce theft is a problem.
Coy	People steal from the gardens.
Coy	The security needs to be tighter. Things have been stolen from me.
LAC	Need better control of vandals.
LAC	We have a theft and vandalism problem.
MF	Drinking and vandalism make the garden less than perfect.
RB	Summer camp results in theft and vandalism.
RB	There is too much thievery.

Plots and Garden Not Being Maintained by Gardeners

Garden	Comment
BS	Many people are too busy to make the garden work. Need time and expertise.
BS	Unassigned plots should be kept cleaned up to make the garden more attractive.
BS	Gardens should enforce planting on vacant plots.
Cal	Gardeners need to complete the hours that they have committed to the garden. Most don't.
Cal	People who don't maintain their plots need to be moved out.
Cal	If gardeners don't help keep the garden clean, they need to be out of the garden.
Cm	The garden serves the purpose, but not much beyond that because no one has time.
Cm	Gardeners need to take better care of their plots.
JF	The dumpster fills up quickly during growing season.
16	There are gardeners who do not maintain their plots—breeding ground for pests and diseases.
RB	Gardeners should not stack wood and other items against fence; it looks unsightly and attracts rats.

Gardens Need Compost and Mulch

Garden	Comment
BS	The City needs to provide compost.
Coy	We need more compost.
HL	Gardeners should each be making their own compost from yard waste and food scraps.
JF	We should get more support from the City of San Jose—money and compost.
JF	We need more wood chips and compost.
JF	We need free compost.
JF	We need free compost and wood chips.
LAC	Free mulch delivery from parks or tree service.
MF	Gardens should have onsite composting.
16	We need free compost from the City.
16	I would be willing to keep a compost pile turned and watered.

Requests for City Service

Garden	Comment
BS	The gardens should make bigger plots available.
Coy	We need better gopher control.
ELJ	Water fees are too high - \$75.
GT	There should be no separate plots; one big area for all to garden.
HL	Electrical outlets would be great for rototillers, charging Mekita batteries, etc.
JF	We need garbage service.
LAC	Seed and soil amendment catalog to take advantage of bulk prices.
16	We need the City to help with heavy equipment several times a year.

Gardens Need More Meetings and Social Get-togethers

Garden	Comment
Cal	Gardeners need more opportunities to communicate with each other.
Cm	I would like to see a few garden meetings a year where we can share information and improve the garden system.
Cm	I wish we would have at least one meeting a year with everyone including managers and City staff.
Coy	I would like to see a picnic for the gardeners.
GT	Garden needs an annual schedule for all meetings.
HL	I would like to have a phone list for the gardeners.
HL	I don't like the meetings/organization; I just want to garden.
HL	It is difficult to get enough attendance at meetings.

Praise for Managers

Garden	Comment
Cal	Our garden manager is wonderful; kudos to her.
Coy	The manager is very helpful.
HL	Garden well managed.
JF	The garden leadership is great.
LS	Great manager, beautiful setting.
LS	With the new manager, we are back as part of the City's plan.
16	It is great that the garden is managed by the gardeners.

Gardens Valuable Tool for Teaching Children

Garden	Comment
Cm	The garden is a beautiful area and a great educational resource.
Coy	The garden promotes a physical respect for the environment, and challenges of food production.
ELJ	I garden to spend time with my father. He is very old and loves the garden.
ELJ	I am happy to see the children enjoying the garden with their families.
JF	The garden teaches the children to value the land and the time they have with family.
RB	The garden is the best place I can go to teach my children about nature.

Requests for More Plots

Garden	Comment
HL	If plots available in other gardens, I would garden near my home.
LAC	More plots/gardens are needed to allow more people to use this resource.
Coy	The City should create more gardens so that I can go to one close to home.
LS	The City needs to increase the number of community gardens.
LS	The City needs more gardens.
LS	There are no gardens in the Cambrian district.

Chemical Use in the Garden (Both Pro and Con)

Garden	Comment
BS	Someone used Round-up and killed some of my perennials.
HL	If we all weed by hand, we can keep the garden chemical free. There is no need for Round-up.
HL	I would like to use some ant poison, but can't.
HL	We were promised Round-up applications for the Bermuda grass.
HL	We used to be able to use fungicides. Please reconsider that policy.
LM	Weeds and gophers are big problems.

Requests for More Classes and Expert Advice

Garden	Comment
Cal	There is often garbage that needs to be hauled away. We need pick-up.
Coy	I need some growing/planting help from "experts" to learn how to garden better. Maybe winter classes?
LAC	Need more support and advice from horticulture professionals.
LAC	Need better identification and control of plant diseases.
LAC	Provide free classes to gardeners on basics of garden layout, fertilization, chemical-free maintenance.
LS	Educational programs are needed to include schools, community centers, and organizations.

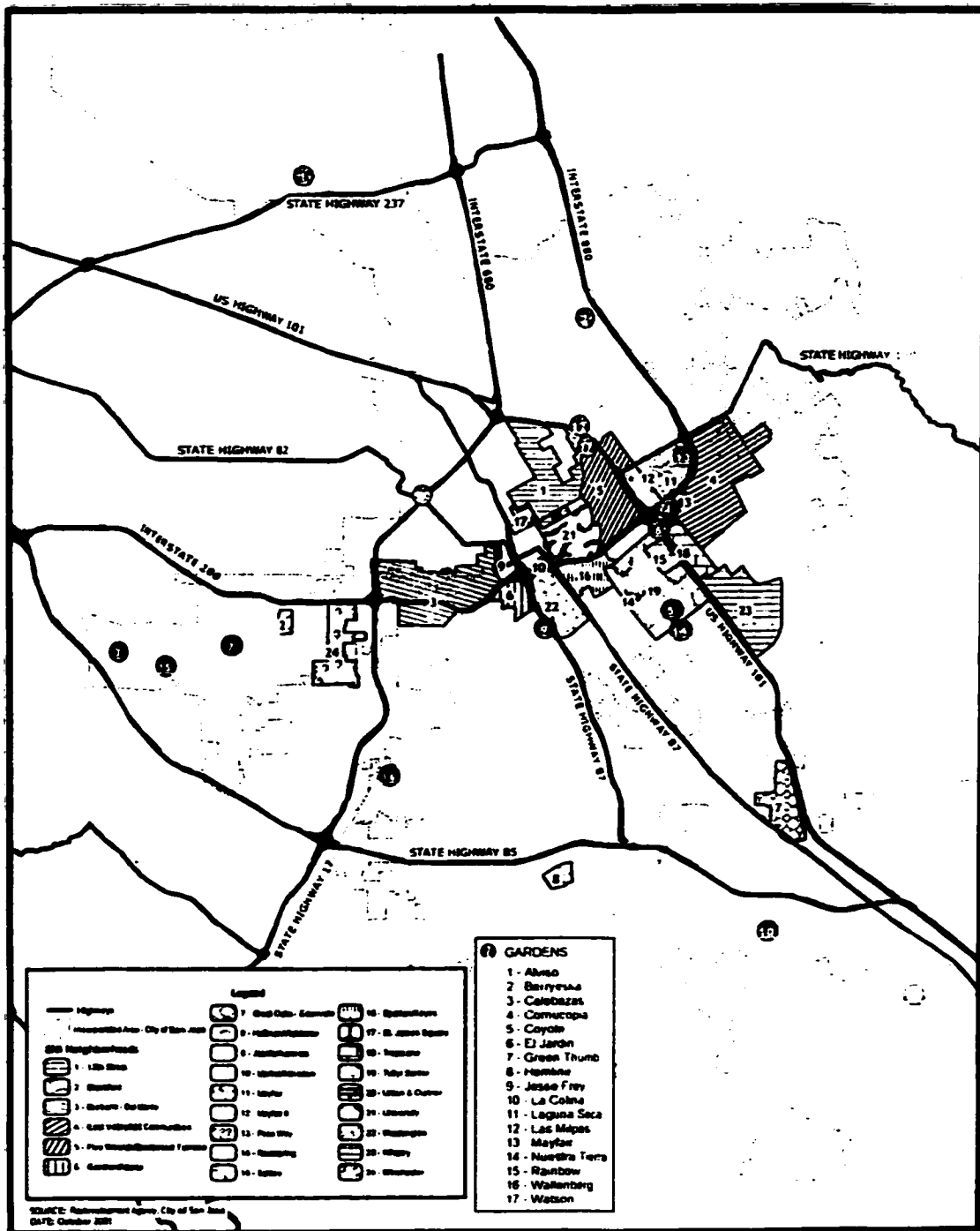
Concerns About More Than One Plot Per Family

Garden	Comment
ELJ	Some gardeners have more than one plot.
GT	There should only be one plot per family.
LM	One plot per person is a critical rule.

Concerns About Pets and Animals in the Garden

Garden	Comment
ELJ	Gardeners bring dogs into the garden.
16	Please remove all of the cats from the garden.

APPENDIX I
Garden Locations

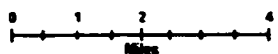


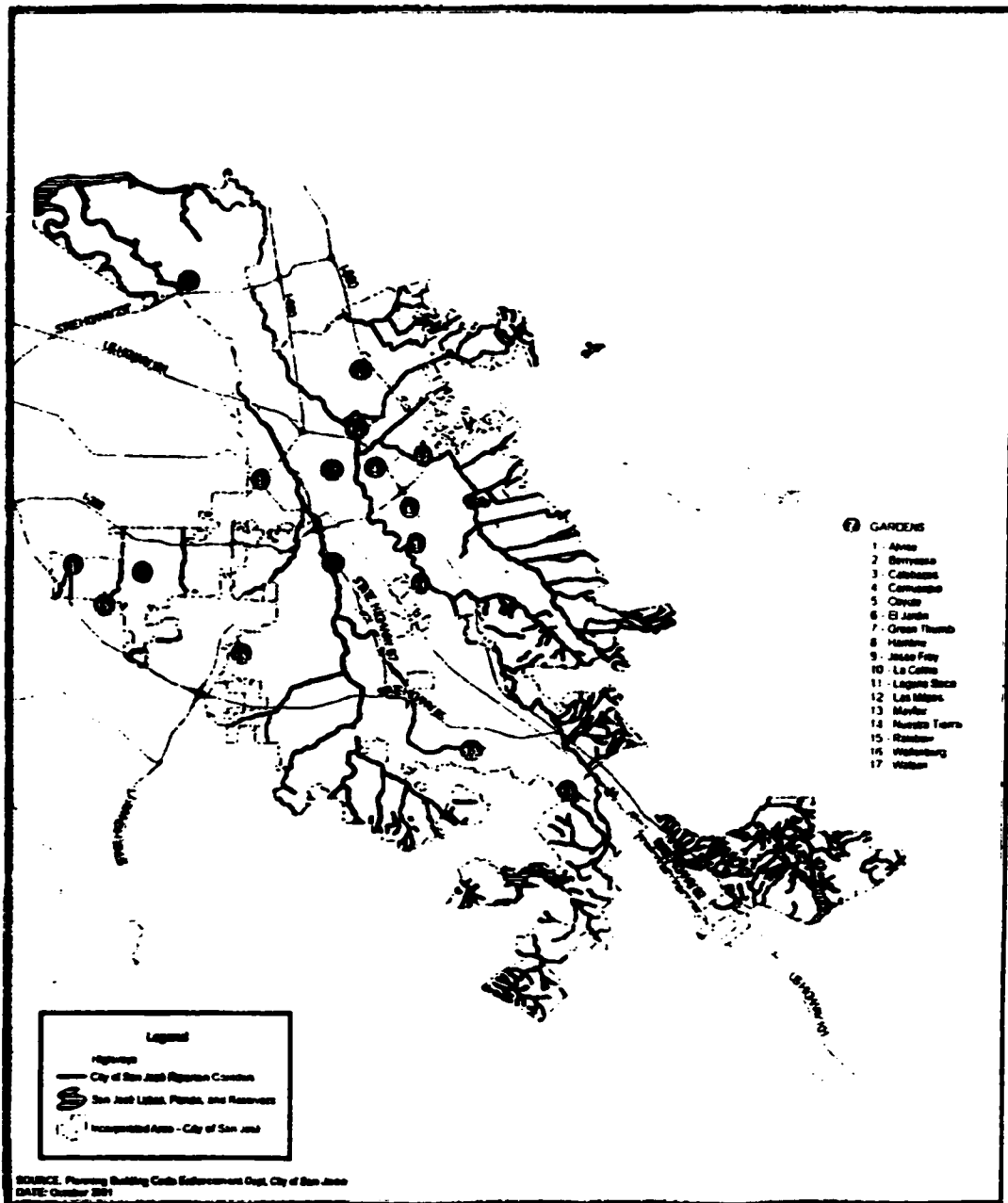
Legend	
Major Highways	7 - Old City - Centro
Intersected Area - City of San José	8 - San José
SNI Neighborhoods	9 - San José
1 - San José	10 - San José
2 - San José	11 - San José
3 - San José	12 - San José
4 - San José	13 - San José
5 - San José	14 - San José
6 - San José	15 - San José
	16 - San José
	17 - San José

- GARDENS**
- 1 - Abasco
 - 2 - Barrymore
 - 3 - Celestinas
 - 4 - Comucopa
 - 5 - Coyote
 - 6 - El Jardín
 - 7 - Green Thumb
 - 8 - Humana
 - 9 - Jesse Frey
 - 10 - La Colina
 - 11 - Laguna Seca
 - 12 - Las Mapas
 - 13 - Mayfair
 - 14 - Nuestra Tierra
 - 15 - Rainbow
 - 16 - Wallenberg
 - 17 - Watson

SOURCE: Redevelopment Agency, City of San José
DATE: October 2001

San José SNI Neighborhoods





San José Riparian Corridors

