



**A COMMUNITY-BASED APPROACH TO
UNDERSTANDING NEIGHBORHOOD ENVIRONMENTS
AND HEALTH:
GARDENS FOR GROWING HEALTHY COMMUNITIES**

PRESENTATION BY:

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PROJECT WEBSITE:

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DENVER URBAN GARDENS WEBSITE:

www.dug.org



PROJECT OVERVIEW



- Who: UCDHSC School of Medicine
UCDHSC College of Architecture and Planning
Denver Urban Gardens
Front Range Earth Force
Denver Urban Gardeners
- What: Four-year study funded by CDC
- Where: Denver, Colorado
- When: 2004-2008
- Why: Reduce burden of chronic disease and its precursors at the neighborhood level.
- How: Examine community gardens as an example of a neighborhood-level environmental change that models active and healthy living.

PARTNERSHIP CONTEXT

- Overview of Denver Urban Gardens
- Establishment of DUG-CU Partnership
- Utilization of research to support DUG's mission and inform programs

WHAT IS A COMMUNITY GARDEN?

Com-mu'ni-ty:

n. Any body of persons having common interests; a sharing or participation; identity or likeness.

Gar'den:

v. To cultivate;

n. A place for the cultivation of flowers, vegetables, or small plants.





We believe:

**In the power of
gardens to transform
individual lives,
families and local
communities.**

We believe:



Gardens have the power to break down racial and age barriers.

So DUG:

- Encourages community events that bring diverse groups together.**
- Sponsor intergenerational programs.**

We believe:



Gardens are able to empower community action.

So DUG:

- Designs and builds gardens guided by the needs of each community.**
- Emphasize garden leadership skills through local steering committees.**

We believe:



Gardens have the power to increase health and well being.

So DUG:

- Teaches nutrition in local school gardens.**
- Distributes free seeds and transplants to low and moderate income seniors and families.**



We believe:



Gardens have the power to improve the local economy.

So DUG:

- **Coordinates service-learning programs at the gardens to teach practical and employable skills.**
- **Enhances the livability and stability of neighborhoods.**

We believe:



Gardens have the power to create local food security.

So DUG:

- Provides a place for gardeners to supplement their food budget with garden-grown produce.
- Founded the DeLaney Community Farm CSA program.
- Encourages gardens to donate their surplus produce.

Our Community:



- Over 70 community gardens across Metro Denver and the DeLaney Community Farm
- Over 6,000 people benefit from DUG gardens
- Over 5,000 recipients of Free Seeds and Transplants
- Over 8,000 adults and students served in education and outreach programs.
- Nearly 2,500 volunteers giving nearly 20,000 hours



RESEARCH OBJECTIVES

- *To identify points where community gardens and gardening might be leveraged into specific diet, physical activity, and social engagement interventions; and*
- *To pilot and evaluate a community intervention(s) to increase community participation in gardens, fruit and vegetable intake, physical activity, and social networks.*

GGHC BACKGROUND



DENVER'S COMMUNITY GARDENS

- **73 COMMUNITY GARDENS AND PARKS**
 - 53% stable
 - 16% closed
 - 3% endangered
 - 15% transitional
 - 13% new
- **GARDEN SETTINGS**
 - 42% vacant land
 - 26% school grounds
 - 15% housing facility
 - 17% other (church, CBO, senior center)

DENVER'S GARDENS (2)

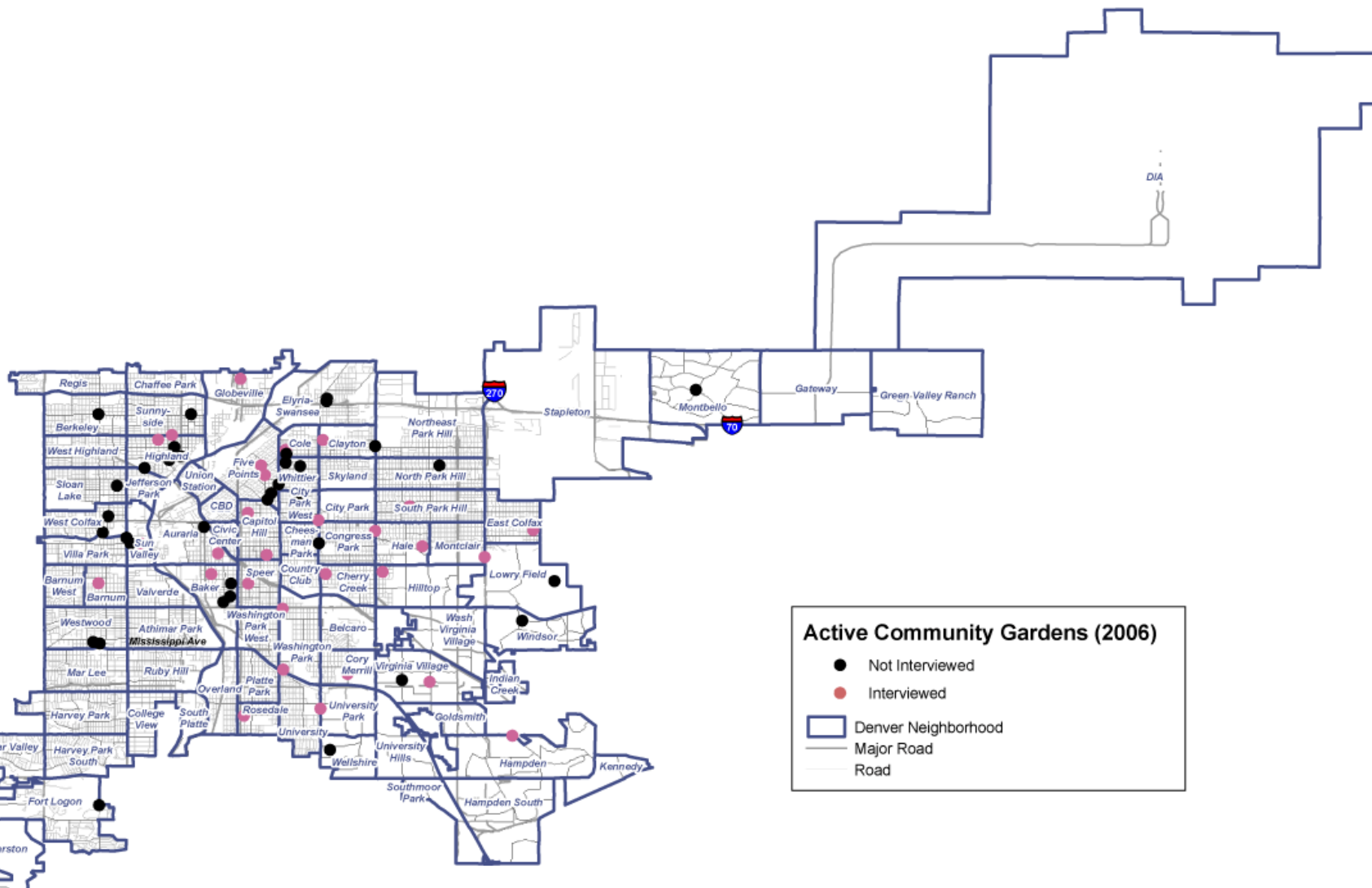
- **LAND TENURE**

- 52% Public land
- 24% Private land
- 16% Non-profit
- 8% DUG ownership

- **PARCEL SIZE**

- 41% $\leq 5,000$ sq. ft
- 44% 5,000-10,000 sq. ft
- 15% $> 10,000$ sq. ft

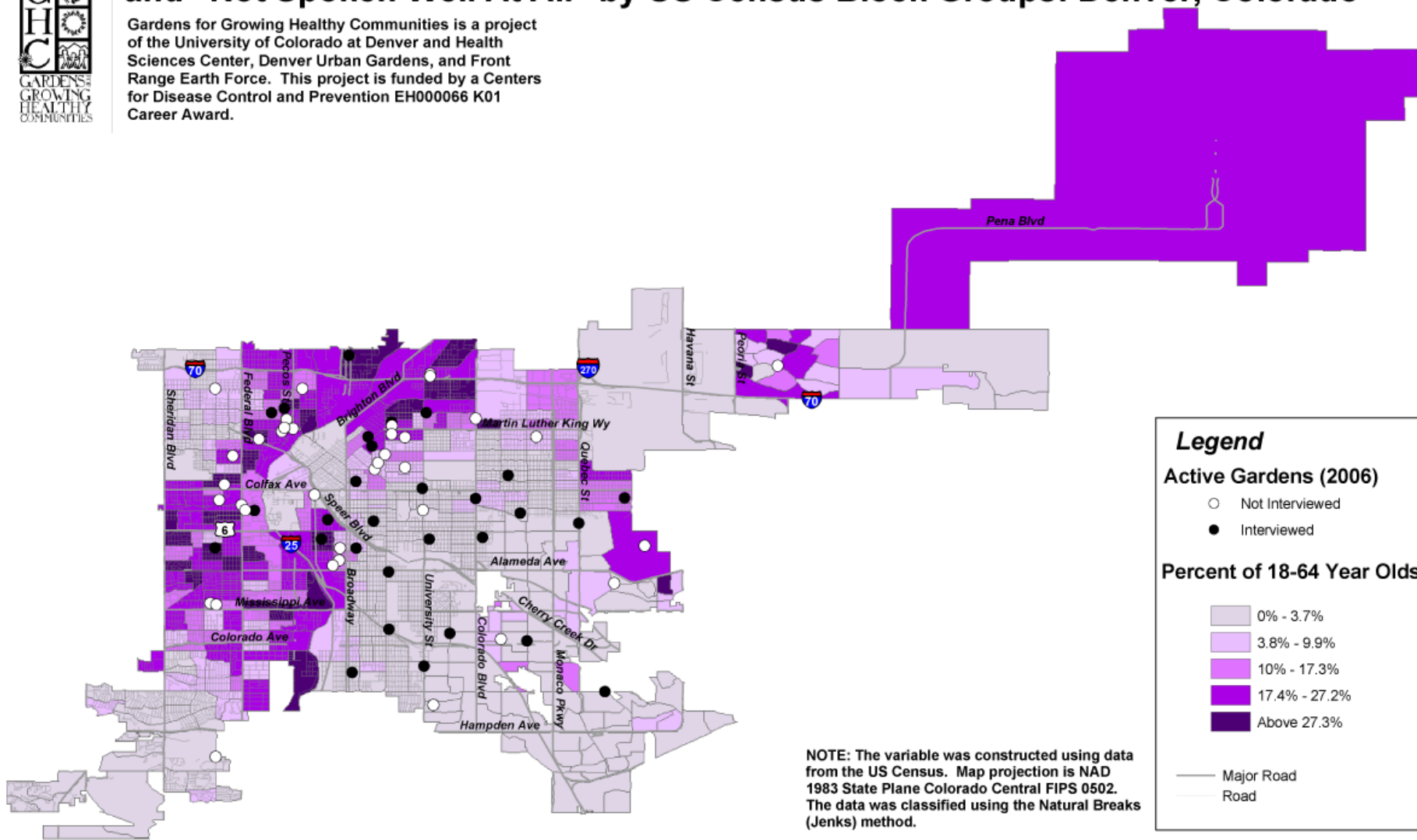
DENVER'S URBAN GARDENS





Language Proficiency: Percent of 18-64 Year Olds Who Speak English "Not Well" and "Not Spoken Well At All" by US Census Block Groups: Denver, Colorado

Gardens for Growing Healthy Communities is a project of the University of Colorado at Denver and Health Sciences Center, Denver Urban Gardens, and Front Range Earth Force. This project is funded by a Centers for Disease Control and Prevention EH000066 K01 Career Award.



Legend

Active Gardens (2006)

- Not Interviewed
- Interviewed

Percent of 18-64 Year Olds

- 0% - 3.7%
- 3.8% - 9.9%
- 10% - 17.3%
- 17.4% - 27.2%
- Above 27.3%

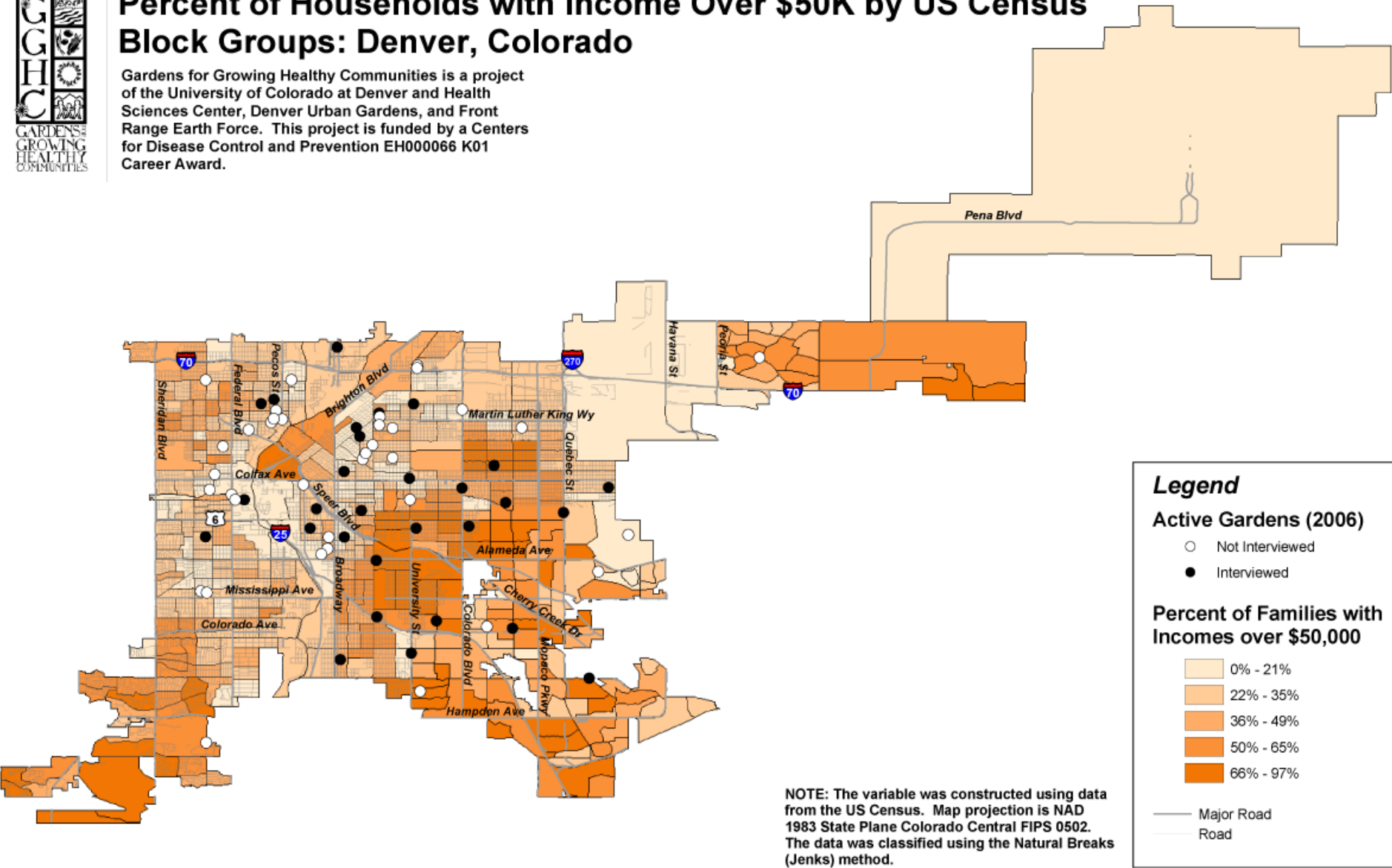
— Major Road
— Road

NOTE: The variable was constructed using data from the US Census. Map projection is NAD 1983 State Plane Colorado Central FIPS 0502. The data was classified using the Natural Breaks (Jenks) method.



Percent of Households with Income Over \$50K by US Census Block Groups: Denver, Colorado

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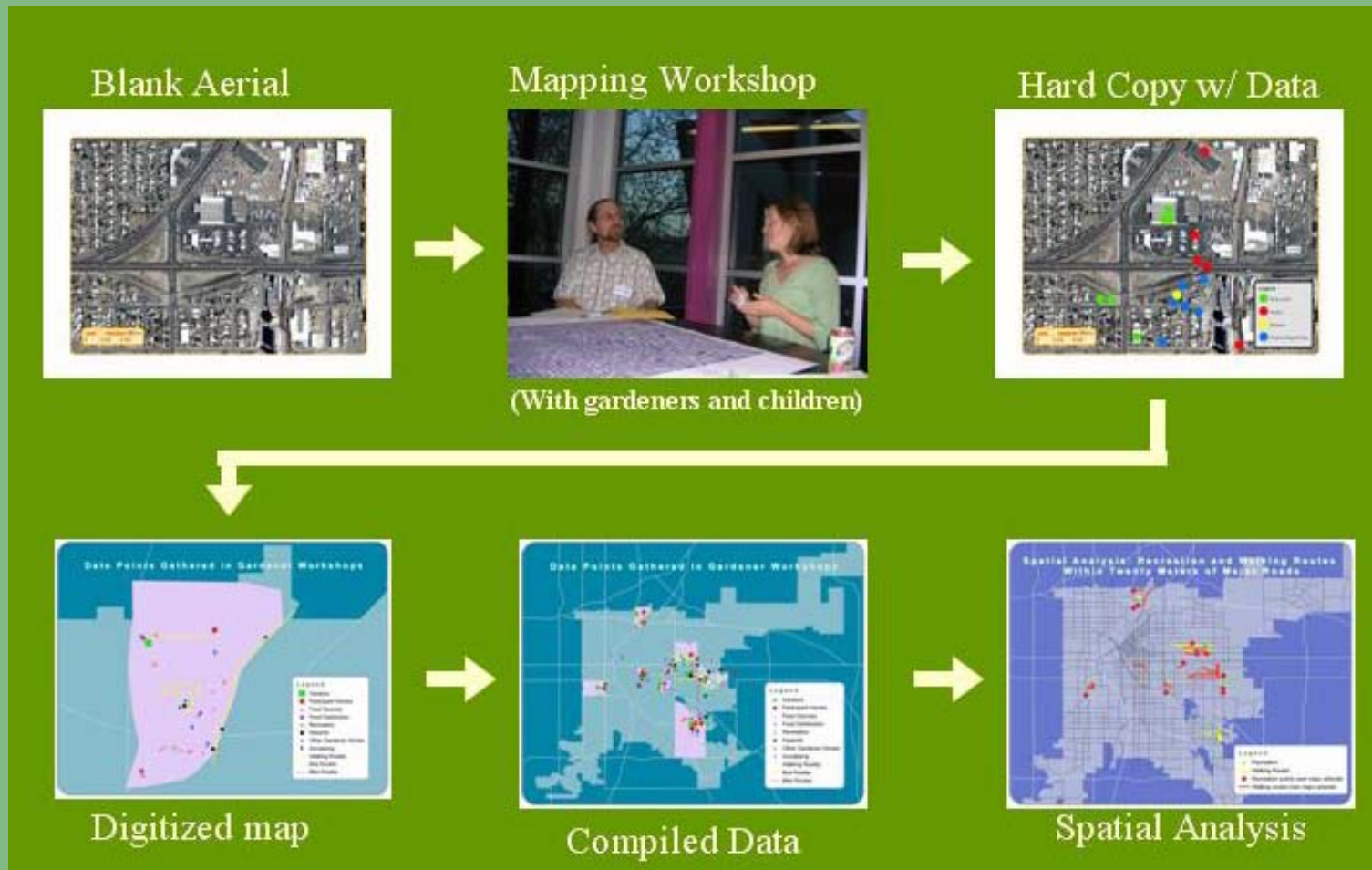
RESEARCH HIGHLIGHTS

- Community mapping workshops (Spring 2005)
- Garden narratives (Spring 2005-Current)
 - Objective data about gardens across city
 - Key informant interviews (67 individuals; 29 gardens)
- Establishment of a community network of gardeners (Fall 2005).
- Neighborhood Environment and Health Survey (Fall 2006-Fall 2007)
- Intervention (2007-2008)

GENERATE KNOWLEDGE: WORKSHOP APPROACH

- Generate local knowledge
- Engaging process (fun, participatory, simple)
- Making connection between neighborhood and health
- Effective and efficient
- Flexible process (age, ethnicity, participant #s, setting)
- Learning and discovery process for participants with potential for behavior change
- Spatial analysis capabilities (scalable, outside data)

COMMUNITY MAPPING PROCESS



WORKSHOP OUTCOMES

- Digitized maps from three workshops:
 - 15 participants
 - 10 gardens
- Community mapping allowed us to engage residents in a flexible way and generate knowledge about local environments and health
- Majority of participants agreed to be interviewed by research staff and then went on to join the GGHC community network established in Fall 2005

TOWARDS A NATURAL HISTORY

- Describe community gardens in Denver
 - physical features of the gardens
- Profile demographics of garden communities
 - key census variables
- Describe prevailing themes from key informant interviews
 - meaning and history of gardens
 - social aspects of community gardening
 - garden-community relationships

KEY INFORMANT INTERVIEWS

- Semi-structured interviews with 67 gardeners from 29 gardens.
- Interviews conducted in the garden setting or a gardener's home during summer and early fall of 2005.
- Garden tours and interviews averaged approximately 1.5 hours.

SAMPLE QUESTIONS

- Why do you garden?
- What has been your experience in this garden?
- Have you introduced others to the garden?
- What does this garden mean to you?
- What do people think about this garden?
- Do you think there are health benefits related to gardening?
- What are you most proud of in terms of the garden and its role in your neighborhood?

INTERVIEW THEMES

- Gardening practices
- Meaning and history of garden
- Physical aspects of garden
- Social aspects of garden
- Health outcomes
- Experiences / perceptions
- Community-garden relationship

WHAT DID WE LEARN?

PRIMARY BENEFITS: INDIVIDUAL GARDENERS

Better nutrition

Physical activity

Family connections

Social connections

Therapeutic

Stress relief

Emotional gains

Economic gains

Spiritual

WHAT DID WE LEARN?

SECONDARY BENEFITS: GARDEN NEIGHBORHOODS

Safety

Beautification

Local events

Destination for residents

Place for mentoring

Food sharing

Social connections

Civic engagement



WHAT DID WE LEARN?

TERTIARY BENEFITS: BEYOND GARDEN NEIGHBORHOOD

Support for other gardens

Strengthen information networks

Food sharing

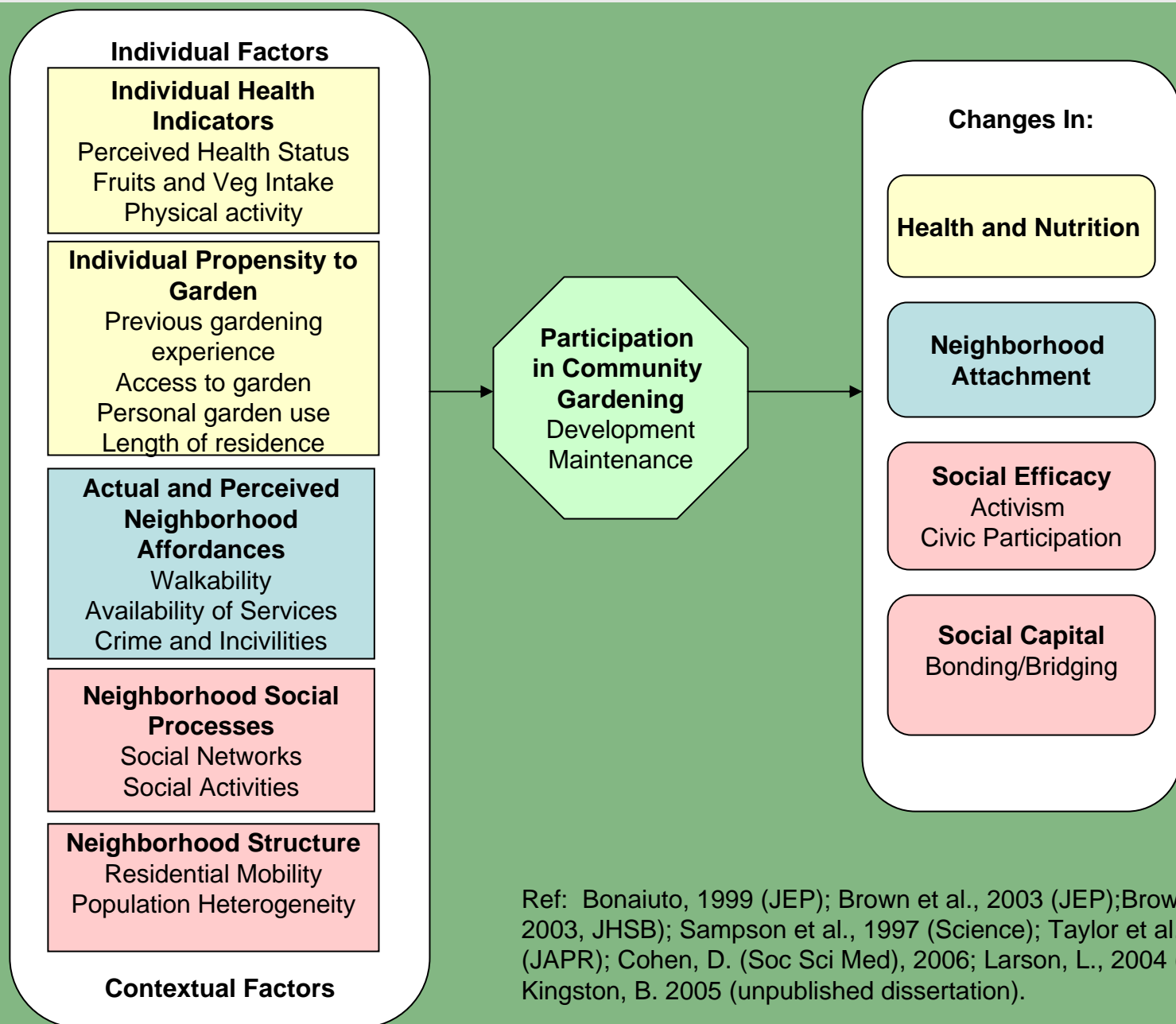
Community activism

Local policy and practices



HEALTHY NEIGHBORHOOD NETWORK MEETING
MARCH 2006

Neighborhood physical environments, structures, social processes and active and healthy living: A conceptual model



Ref: Bonaiuto, 1999 (JEP); Brown et al., 2003 (JEP); Browning, C., 2003, JHSB); Sampson et al., 1997 (Science); Taylor et al., 1984 (JAPR); Cohen, D. (Soc Sci Med), 2006; Larson, L., 2004 (JPER); Kingston, B. 2005 (unpublished dissertation).

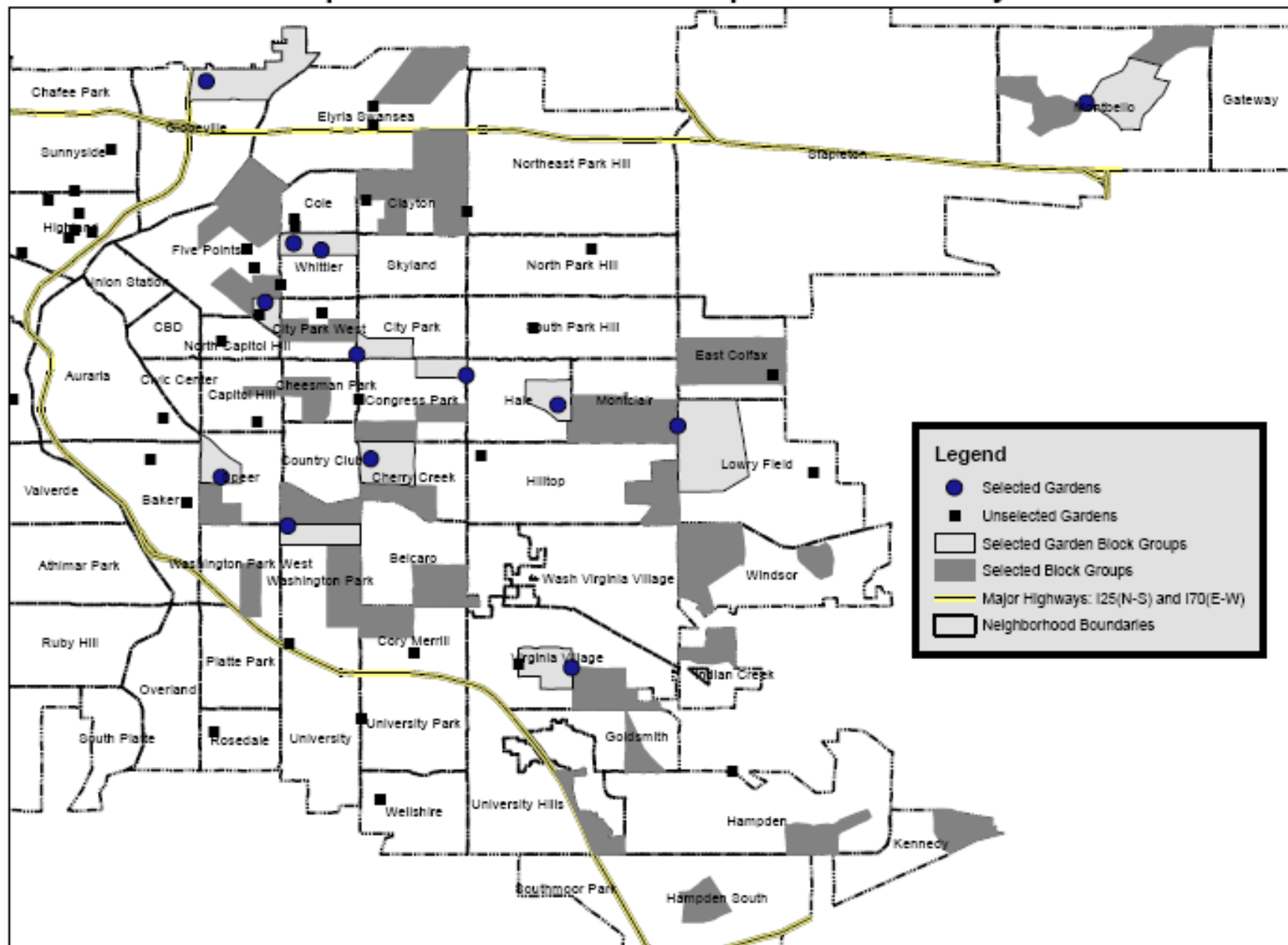
NEIGHBORHOOD ENVIRONMENTS AND HEALTH SURVEY

- **To investigate neighborhood physical environments, social structures, social processes and active and healthy living.**
 - **To examine the relationships between garden participation and neighborhood social processes (social ties and collective efficacy)**
 - **To examine how these social processes relate to health behaviors and health status.**

CONSTRUCTS AND MEASURES

Construct	Measures	Source
Neighborhood Structure	Residential Mobility Population Heterogeneity Income	US Census
Neighborhood Social Processes	Collective Efficacy Social Networks	NEHS (in progress)
Physical Environment	Land Use Mix Walkability Presence of places for PA Presence of food locales	NEHS Audit Aerial photographs
Crime and Disorder	Crime Statistics Physical Incivilities	City of Denver NEH Audit
Neighborhood Place Attachment	Scale to measure one's attachment to his/her neighborhood	NEHS
Culture of Food	Food practices F/V intake	NEHS
Physical Activity	CHAMPS -frequency and intensity of activity	NEHS
Health Status	Self-rated health BMI, Weight history	NEHS

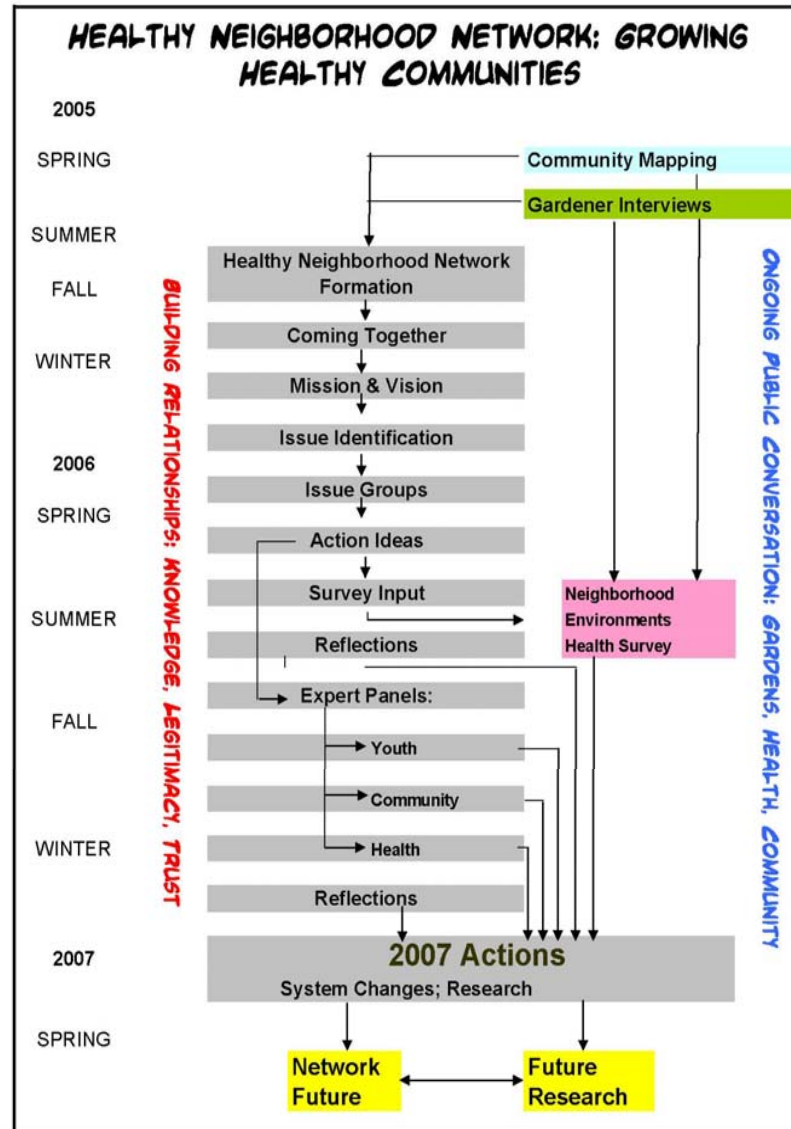
Selected Block Groups and Garden Block Groups for NEH Survey



SURVEY POPULATION

Variable	Sample Population	
	Gardener N=126	General Population N=343
% Female	66	67
% Owner Occupied	64	71
% HH with HS Degree or Higher	97	86
% HH earning >50K	57	41
% Hispanic	15	29
Race		
% White	77	59
% Black	8	18
% Other	15	24
Age Categories		
% 18-24	2	8
% 25-44	39	42
% 45-64	43	37
% 65 and better	17	13

GETTING TO ACTION ...



NEXT STEPS

- Connecting Generations through School – Based Gardens:
 - Connect adults over 50 and 3rd graders through volunteer-based mentoring program
 - Adapt Experience Corps®, developed by Marc Freedman (Civic Ventures, Inc) and Linda Fried (Johns Hopkins SPH) to Denver's school gardens programs.
 - Recruit 15 older adults; 60 children for feasibility study.

CONCLUSION

- Gardens serve as a model for healthy and active living.
- Gardens facilitate connections among people, foster an environment for establishing bonds of trust and understanding, and build community
- Creating social capital, by developing networks of relationships that weave individuals into groups and communities, is important for health.
- Bridging and bonding social capital generated within and across gardens may represent important intervening social processes that mediate structural neighborhood effects on health and thus may contribute to:
 - Increases in F&V intake, activity levels.
 - Improvements in mental health and well-being.
 - Empowerment of individuals and communities to advocate for neighborhood changes and improvements.



Gardens for Growing Healthy Communities

A community-based participatory study of community gardens in Denver, Colorado

Gardens for Growing Healthy Communities (GGHC) is a three-year study of over 60 community gardens in Denver to learn about how neighborhoods can be designed to promote health and well-being.

GGHC is a collaborative research project of the University of Colorado's School of Medicine and College of Architecture and Planning, Denver Urban Gardens, Front Range Earth Force, and residents and other stakeholders in Denver.

Get involved! Help us learn about your garden and your community to promote active, healthy living for everyone in your neighborhood.

HNN Meeting Schedule 2007

For more information, visit our websites at www.gghcdenver.org and www.dug.org.

Thank you!



**GARDENS FOR
GROWING
HEALTHY
COMMUNITIES**

**PROJECT INFO
WHO WE ARE
PARTNERS
TIME LINE
SITE MAP
LINKS
NEWS**