Systems Thinking in Communities:

Understanding the Causes of Inactivity, Poor Diet/Nutrition, and Childhood Obesity in Cook County, Georgia

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Andrew

Introduction

Cook County Healthy Kids, Healthy Communities is one of 49 community partnerships participating in the national *Healthy Kids, Healthy Communities* program of the Robert Wood Johnson Foundation (www.healthykidshealthycommunities.org). The purpose of this *Cook County Healthy Kids, Healthy Communities* project was to introduce systems thinking at the community level by identifying the essential parts of the Cook County, Georgia system and how the system influences policy and environmental changes to promote healthy eating and active living as well as to prevent childhood obesity. To accomplish this goal, community partners and residents participated in a group model building session and discussions. The group model building exercises were designed by staff from Transtria LLC and the Social System Design Lab at Washington University in St. Louis, Missouri as part of the *Evaluation of Healthy Kids, Healthy Communities* funded by the Robert Wood Johnson Foundation. These exercises actively involved a wide range of participants in modeling complex systems and provided a way for different representatives (e.g., residents, government agencies, community-based organizations, businesses, academic institutions) to better understand the systems (i.e., dynamics and structures) in the community (see the *Healthy Kids, Healthy Communities Group Model Building Facilitation Handbook*, www.transtria.com/hkhc). Overall, the evaluation was designed to assess policy, system, and environmental changes as a result of the community partnerships' efforts to increase healthy eating and active living in order to reduce childhood obesity.

Cook County, Georgia: Background and Local Participation

Cook County, located in southern Georgia, has a population of 17,212.[2] Located about 30 miles north of the Florida border, the county has four towns: Adel, Cecil, Lenox, and Sparks. Adel has the largest population (5,534) of the four towns, while Cecil has the smallest population (286). The HKHC initiative focused on impacting Cook County, including the four towns and surrounding rural areas. Although, the main focus was on Adel, the county seat, which was home to many partner organizations and institutions.

The Cook County Family Connection was the initial lead agency for HKHC. Created in 1991, the non-profit collaborative serve children and families of Cook County. Over 40 partners, who include representatives from the community, schools, youth organizations, private and public organizations and agencies, and businesses, collectively serve the community. Mid-way through the grant period, the lead agency was formally transferred from Cook County Family Connections to the House of Grace. The House of Grace was a non-profit community agency, located in Sparks.

The purpose of the Cook County Healthy Kids, Healthy Communities partnership was to raise awareness of obesity and to promote infrastructure changes in the community. The partnership, which included several local organizations (e.g., Kiwanis Club, Cook County Exchange Club, Cook County School District), was started by a group of community members prior to receiving HKHC funds.

Cook County Healthy Kids, Healthy Communities' Priorities and Strategies

The partnership and capacity building strategies of *Cook County Healthy Kids, Healthy Communities* included:

- **Farmers' Market and Community Garden Advisory Committees:** The partnership created committees, made up of individuals, organizations, and HKHC staff, to lead the farmers' market and community garden initiatives.
- **Training and Capacity Building:** Several training opportunities were provided to the partnership and community on healthy eating and active living policy and environmental changes.
- **Youth Involvement:** Youth were involved in the planning, implementation, and maintenance of school and community gardens developed as a result of HKHC.

The healthy eating and active living strategies of *Cook County Healthy Kids, Healthy Communities* included:

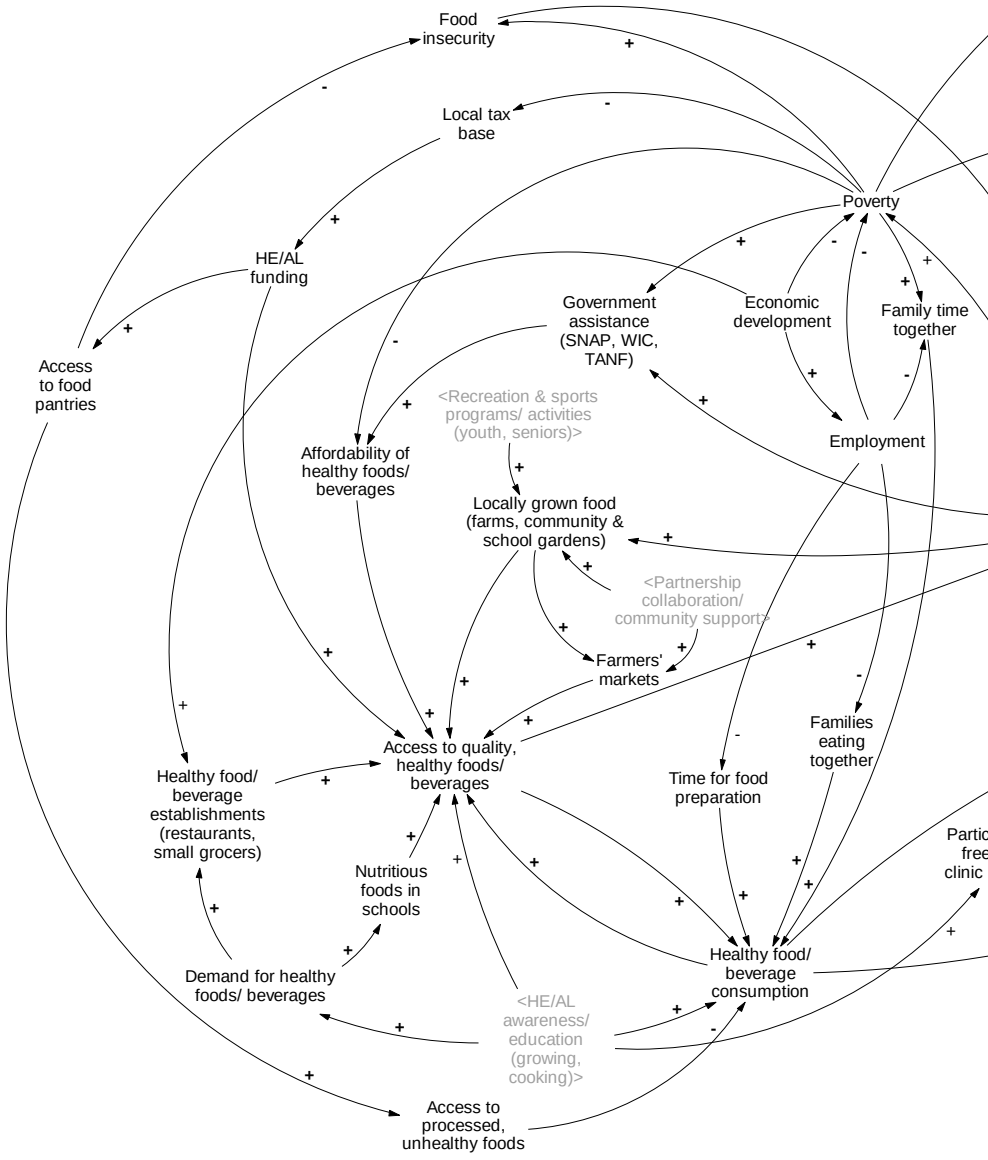
- **Mobile and Farmers' Market:** To increase access to fresh produce, the partnership collaborated with local farmers and businesses to develop the Cook County Farmers' Market and a mobile farmers' market that would run during the off-season.
- **Community and School Gardens:** The partnership worked with the Cook County School District and local partners to develop or revitalize eight community and school gardens.
- **Parks and Play Spaces:** To increase physical activity opportunities, the partnership focused on developing two play spaces in the community, one in Lenox and one at the Boys and Girls Club.
- **Joint Use Agreements:** The partnership collaborated with Cook County Parks and Recreation Department and Cook County School District to create joint use agreements that would allow the public access to facilities for physical activity.

For more information on the partnership, please refer to the Cook County case report (www.transtria.com/hkhc).

Systems Thinking in Communities: Cook County, Georgia

"Systems thinking" represents a range of methods, tools, and approaches for observing the behaviors of a system (e.g., family, community, organization) and how these behaviors change over time; changes may occur in the past, present, or future. Figure 1 illustrates a system of policies, environments, local collaborations, and social determinants in Cook County, Georgia that influence healthy eating, active living, and, ultimately, childhood obesity. This system and the dynamics within the system are complicated with many different elements interacting.

Figure 1: *Cook County HKHC* Causal Loop Diagram



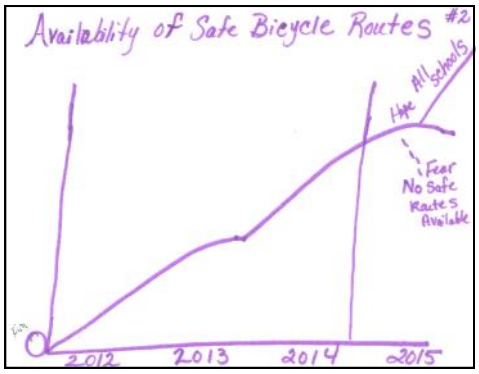
Models, such as Figure 1, provide a way to visualize all the elements of the system and their interactions, with a focus on causal relationships as opposed to associations. Through the model, specific types of causal relationships, or feedback loops, underlying the behavior of the dynamic system, can be identified to provide insights into what is working or not working in the system to support the intended outcomes (in this case, increases in healthy eating and active living, and decreases in childhood overweight and obesity). In system dynamics, the goal is to identify and understand the system feedback loops, or the cause-effect relationships that form a circuit where the effects "feed back" to influence the causes.

Group Model Building

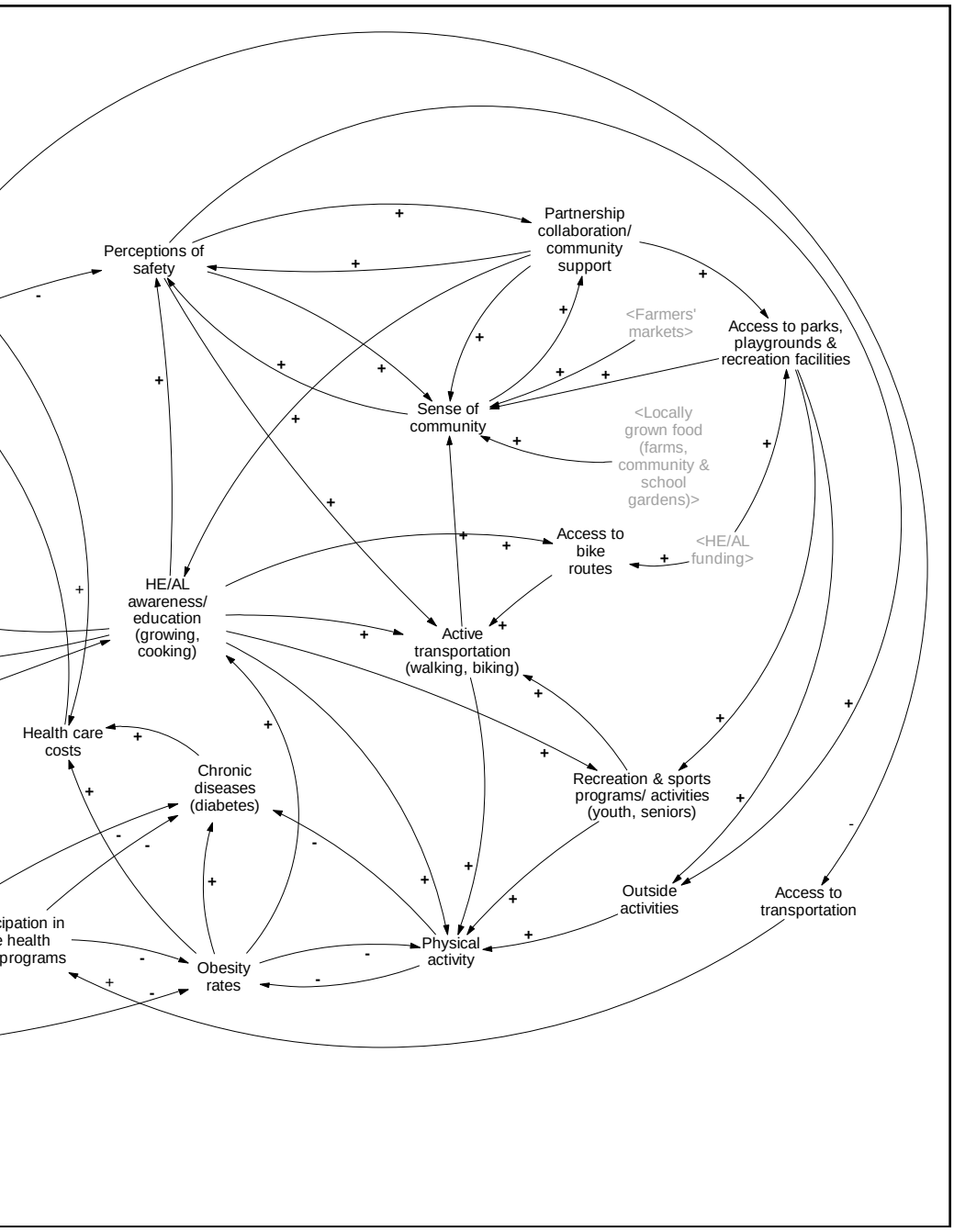
Members of the *Cook County Healthy Kids, Healthy Communities (HKHC)* partnership participated in a group model building session in April, 2012 and generated this system, also referred to as a causal loop diagram (Figure 1). Participants in the group model building session included residents and representatives from government agencies, community-based organizations, businesses, academic institutions. The group model building session had two primary activities: 1) a Behavior Over Time Graph exercise; and 2) a Causal Loop Diagram (or structural elicitation) exercise.

<u>Behavior Over Time Graphs</u>

To identify the range of things that affect or are affected by policy, system, and environmental changes in Cook County related to healthy eating, active living, and childhood obesity, participants designed graphs to name the influences and to illustrate how the influences have changed over time (past, present, and future). In this illustration for availability of safe bicycle routes, the number of routes has increased in the last year and the hope is that they increase, particularly around local schools.



Each graph is a tool to increase the use of common, specific language to describe *what* is changing in the community as well as *when*, *where*, and *how* it is changing. The graphs capture participants' perceptions of the influence, or variable, and through the graph, the participant tells their story. These perceptions are based on actual data or evidence, or they are part of the participants' lived experience.



Causal Loop Diagram

To examine the relationships among the variables from the behavior over time graphs, participants worked together and with facilitators to develop a causal loop diagram. In Figure 1, the words represent variables of quantities that can increase and decrease over time (i.e., the behavior over time graphs). These variables are influenced by other variables as indicated by the lines with arrows. The lines with arrows represent causal relationships - this is what is known about the system and how it behaves.

One feedback loop is: sense of community → perceptions of safety → partnership collaboration/ community support → sense of community.

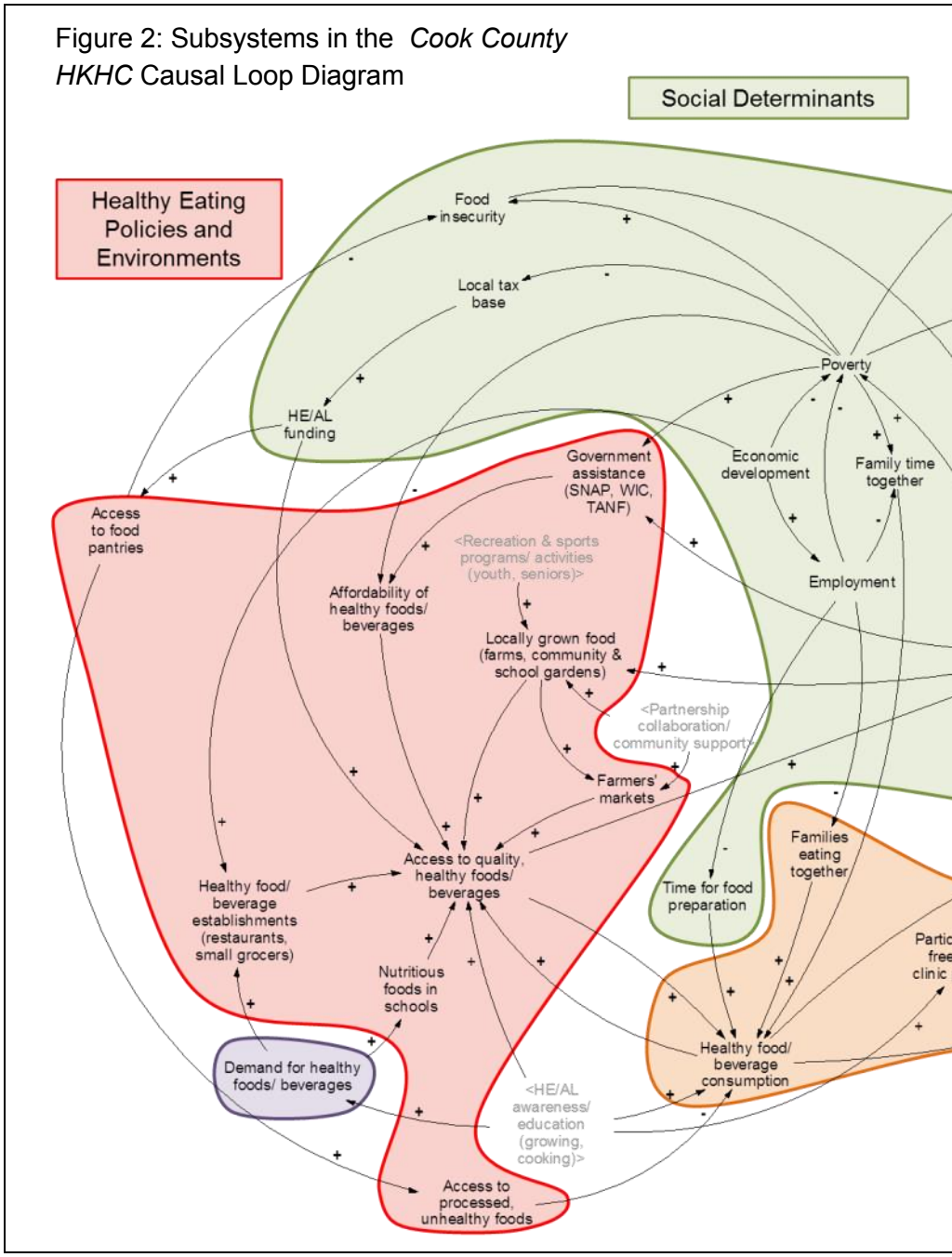
What is important to notice is that there are other feedback loops interacting simultaneously to influence or to be influenced by sense of community. Some variables may increase sense of community while other variables limit it. Determining the feedback loop or loops that dominate the system's behavior at any given time is a more challenging problem to figure out, and ultimately, requires the use of computer simulations.

Based on this preliminary work by the *Cook County HKHC* partnership, this "storybook" ties together the behavior over time graphs, the participants' stories and dialogue, and feedback loops from the causal loop diagram to understand the behavior of the system affecting health in Cook County, Georgia and to stimulate greater conversation related to Cook County's theory of change, including places to intervene in the system and opportunities to reinforce what is working. Each section builds on the previous sections by introducing concepts and notation from systems science.

Causal Loop Diagram for the Childhood Obesity System

The causal loop diagram (CLD) represents a holistic system and several subsystems interacting in Cook County, Georgia. In order to digest the depth and complexity of the diagram, it is helpful to examine the CLD in terms of the subsystems of influence. Because of this project's focus on healthy eating, active living, and childhood obesity, this system draws attention to a number of corresponding subsystems, including: healthy eating policies and environments (red), active living policies and environments (blue), health and health behaviors (orange), partnership and community capacity (purple), and social determinants (green).

Figure 2: Subsystems in the *Cook County HKHC* Causal Loop Diagram



From the group model building exercises, several variables and causal relationships illustrated in Figure 2 were identified within and across subsystems. This section describes the subsystems in the CLD.

<u>Healthy Eating Policies and Environments (Red)</u>

The healthy eating policy and environmental subsystem includes food production, food distribution and procurement, and food retail. During the behavior over time graphs exercise, the participants generated eight graphs related to policy or environmental strategies (e.g., farmers' markets) or contexts (e.g., locally grown food) that affected or were affected by the work of *Cook County HKHC.* The variables represent participants' conversations from the behavior over time graph and causal loop diagram exercises.

<u>Active Living Policies and Environments (Blue)</u>

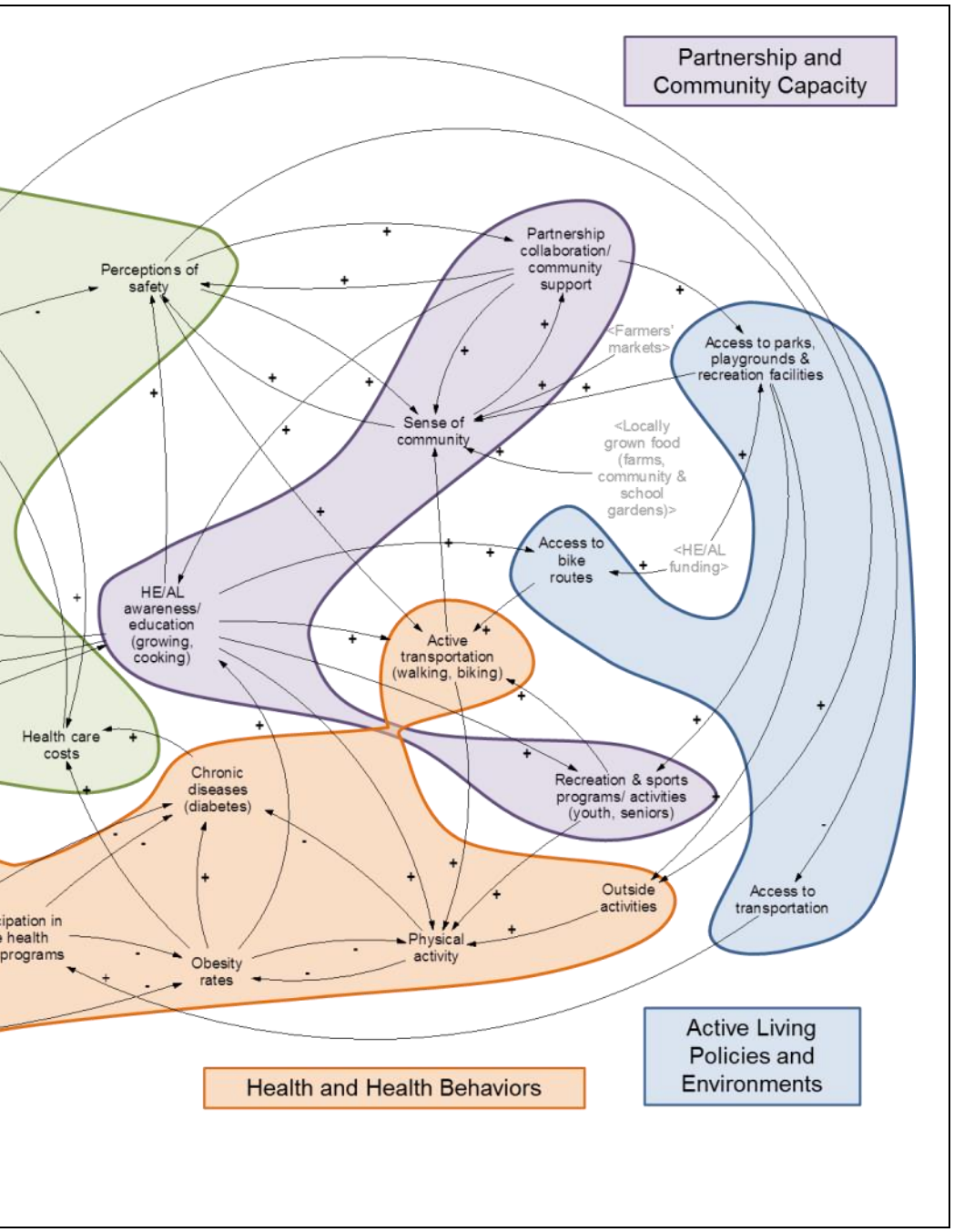
The active living policy and environmental subsystem includes design, planning, construction, and enforcement or maintenance related to access to opportunities for active transportation and recreation. For this topic, the group model building participants developed six graphs related to policy or environmental strategies (e.g., access to bike routes) or contexts (e.g., access to transportation) that affected or were affected by the partnership's work.

<u>Health and Health Behaviors (Orange)</u>

The subsystem for health and health behaviors includes health outcomes (e.g., obesity), health behaviors (e.g., healthy eating, physical activity), and behavioral proxies or context-specific behaviors (e.g., families eating together, outside activities).

Partnership and Community Capacity

The partnership and community capacity subsystem refers to the ways communities organized and rallied for changes to the healthy eating and active living subsystems. For instance, *Cook County HKHC* increased partnership collaboration and community support to accomplish their goals. This subsystem also includes community factors outside the partnership that may influence or be influenced by their efforts, such as a more general sense of community.



Social Determinants

Finally, the social determinants subsystem denotes societal conditions (e.g., poverty) and psychosocial influences (e.g., perceptions of safety) in the community that impact health beyond the healthy eating and active living subsystems. In order to achieve health equity, populations and subgroups within the community must have equitable access to these resources and services.

Each one of these subsystems has many more variables, causal relationships (arrows), and feedback loops that can be explored in greater depth by the *Cook County HKHC* partners or by other representatives in Cook County, Georgia. Using this CLD as a starting place, community conversations about different theories of change within subsystems may continue to take place.

The next sections begin to examine the feedback loops central to the work of *Cook County HKHC*. In these sections, causal relationships and notations (i.e., arrows, "+" signs, "-" signs) from Figure 2 will be described to increase understanding about how systems thinking and modeling tools can work in communities to increase understanding of complex problems that are continuously changing over time, such as childhood obesity. At the end of this CLD storybook, references to other resources will be provided for those interested in more advanced systems science methods and analytic approaches.

Community and School Gardens Feedback Loop

To simplify the discussion about feedback loops, several loops drawn from the *Cook County HKHC* CLD (see Figures 1 and 2) are highlighted in Figures 3-5. While the CLD provides a theory of change for the childhood obesity prevention movement in Cook County, Georgia, each feedback loop tells a story about a more specific change process.

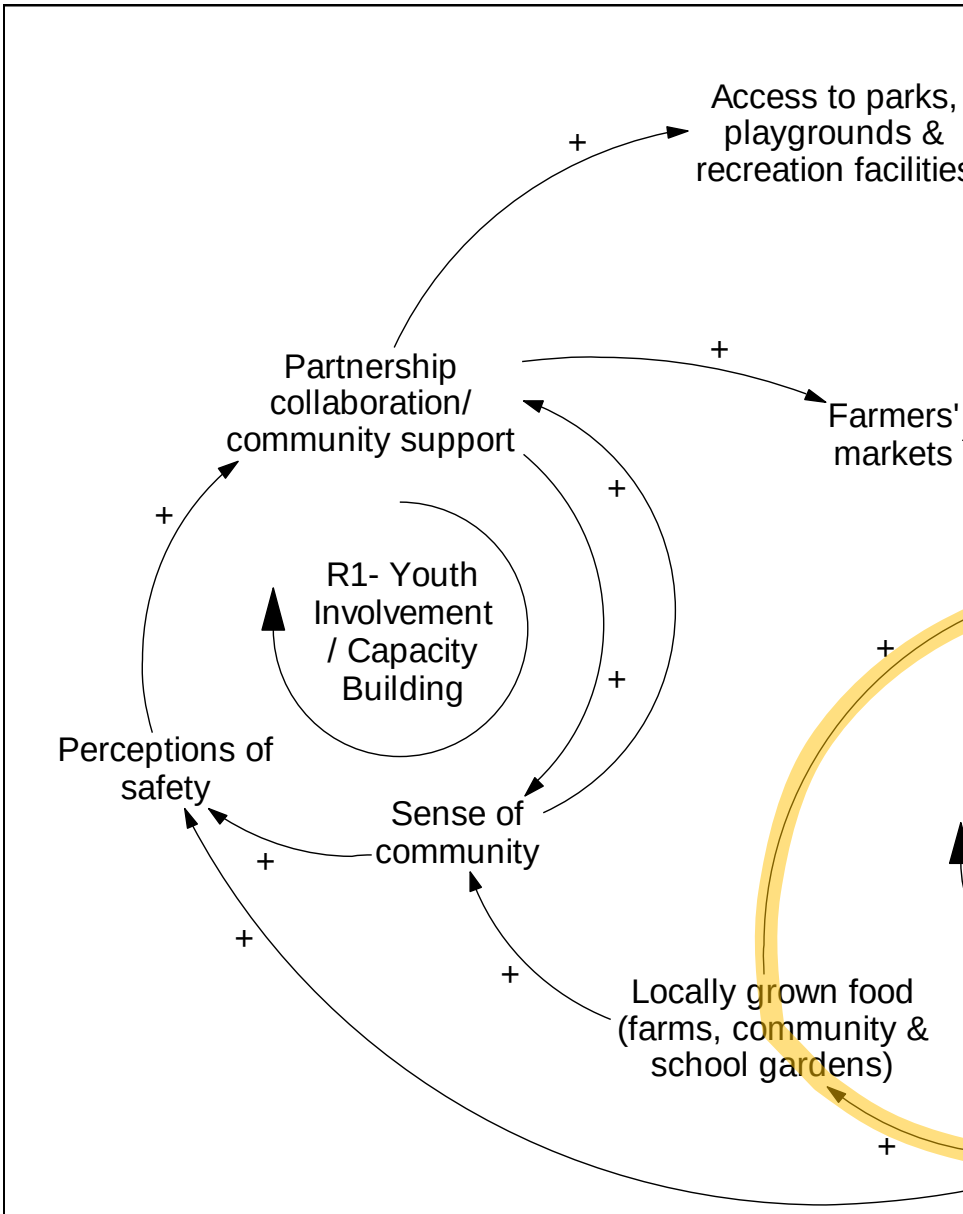


Figure 3: Community and School Gardens Feedback Loop

Causal Story for Feedback Loop

Story A: In this case , the story is about locally grown food through community and school gardens (orange highlighted loop in Figure 3). Cook County, Georgia partners worked with the school district to develop or revitalize eight gardens. Participants described how the gardens increase access to fresh produce. In turn, the availability of fresh produce leads to increases in consumption of healthy foods, resulting in lower rates of obesity. With lower rates of obesity, fewer efforts are needed to increase awareness and education about the benefits of healthy eating and locally grown foods (as these are well-established).

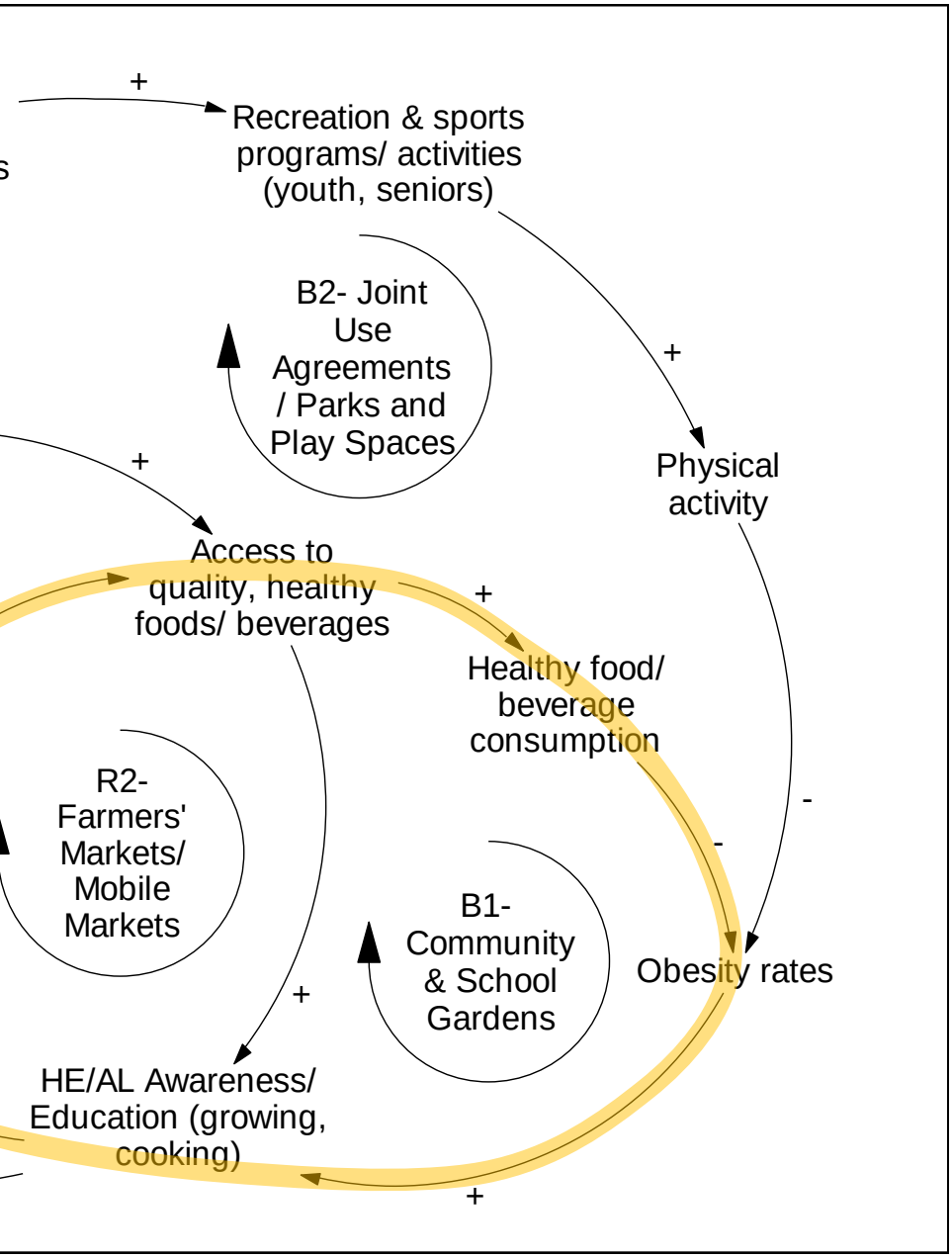
Story B: While the preceding story reflected a positive scenario for Cook County, Georgia, the same feedback loop also tells the opposite story. Fewer or no gardens decreases access to healthy foods and, therefore, consumption of these foods. Consequently, obesity rates increase and there is greater need for education related to healthy eating that, in turn, feeds back to increase gardening and local agriculture.

Balancing Loop and Notation

These stories represent a balancing loop, and the notation in the feedback loop identifies it as a balancing loop (see "B1 — Community and School Gardens" and orange highlighted loop in Figure 3). The words represent variables of quantities that increase and decrease as illustrated in the stories above. These variables change over time and are influenced by other variables as indicated by the arrows. Each arrow represents a causal relationship, and the plus and minus signs on the arrows indicate whether or not the influence of one variable on another variable (1) increases/adds to (plus or "+" sign), or (2) decreases/removes from the other variable (minus or "-" sign). These signs are referred to as polarities.

"I think there's still a lot of people in the community that do know how to garden and still have a good idea of how they can grow produce. I think we also have a generation coming up that doesn't … a lot of them don't even know where plants come from. I'm hoping that with the stuff that we're doing with the community gardens and school gardens, kids are going to understand not only the importance of eating healthy but knowing how to grow their own produce and knowing how to get the food they need to eat." (Participant)

In a balancing loop, the effect of the variables tend to create more of a stable trend over time, as opposed to one that is continually increasing or decreasing. This effect continues through the cycle and returns a stabilizing influence to the original variable, respectively.



Looking specifically at the "+" or "-" notation, a feedback loop that has an odd number of "-" signs, or polarities in the loop, is considered a balancing loop. Reinforcing loops, with zero or an even number of "-" signs, are another type of feedback loop and these are referenced in the next sections.

In isolation, this balancing loop represents the influence of community and school gardens on consumption of healthy foods and beverages and obesity. To understand other influences on these variables, it is important to remember that this reinforcing loop is only one part of the larger CLD (see Figures 1 and 2), and the other loops and causal relationships can have an impact on the variables in this loop.

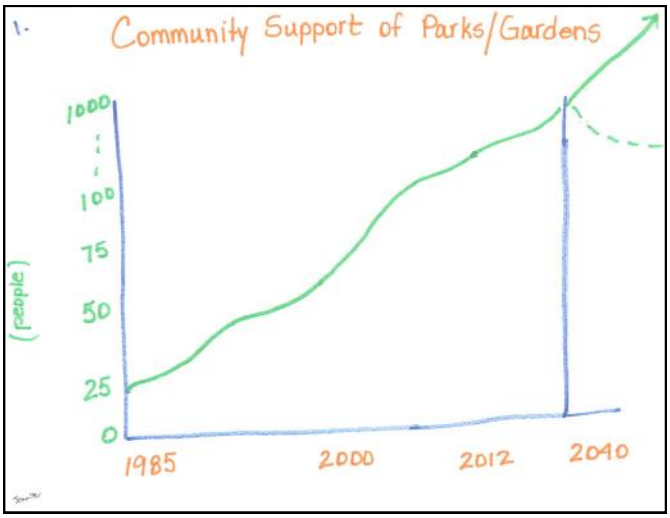
<u>System Insights for *Cook County HKHC*</u>

Participants identified an increase in community support of gardens over the last three decades in Cook County, Georgia (see behavior over time graph).

From the systems thinking exercises, several insights can inform ongoing work of the partnership related to gardens. For instance, an emphasis on awareness and education related to growing fresh produce (e.g., gardens, agriculture) as a proactive response to the high rates of obesity in the area. Partners have already begun to involve youth in cooking classes and related activities that are fun and engaging to stimulate their interest..

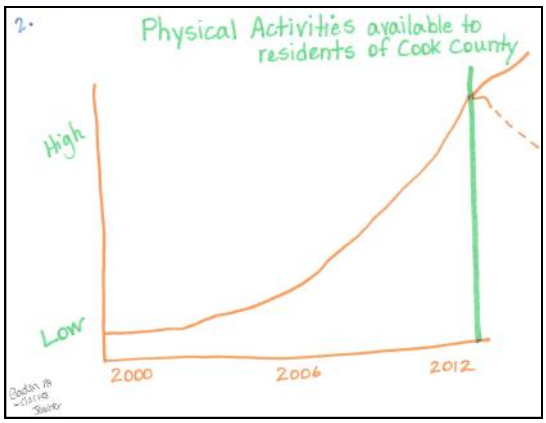
In addition to these insights, systems thinking can also help to pose key questions for assessment and evaluation, including assessing factors that have led youth to be relatively unaware of where plants come from or how to grow their own food (see quote on previous page).

In addition, the efforts to engage and educate youth about growing, preparing, and consuming healthy foods require evaluation to understand the motivators and barriers to producing and consuming locally-grown foods.



Parks and Play Spaces (Joint Use Agreements) Feedback Loop

The feedback loop highlighted in blue in Figure 4 reflects the same concepts and notation, and highlights parks and play spaces as well as joint use agreements. Like the community and school gardens loop in Figure 3, this loop also has one "-" sign or polarity; because this is an odd number, it is still a balancing loop (see B2 — Joint Use Agreements/ Parks and Play Spaces in Figure 4). Similar to the previous loop, this one shows how changes in obesity affect awareness and education, with the exception that the pathway for this loop includes perceptions of safety as well as collaboration and support and it focuses on access to places and programs for recreation and their influence on physical activity and obesity.

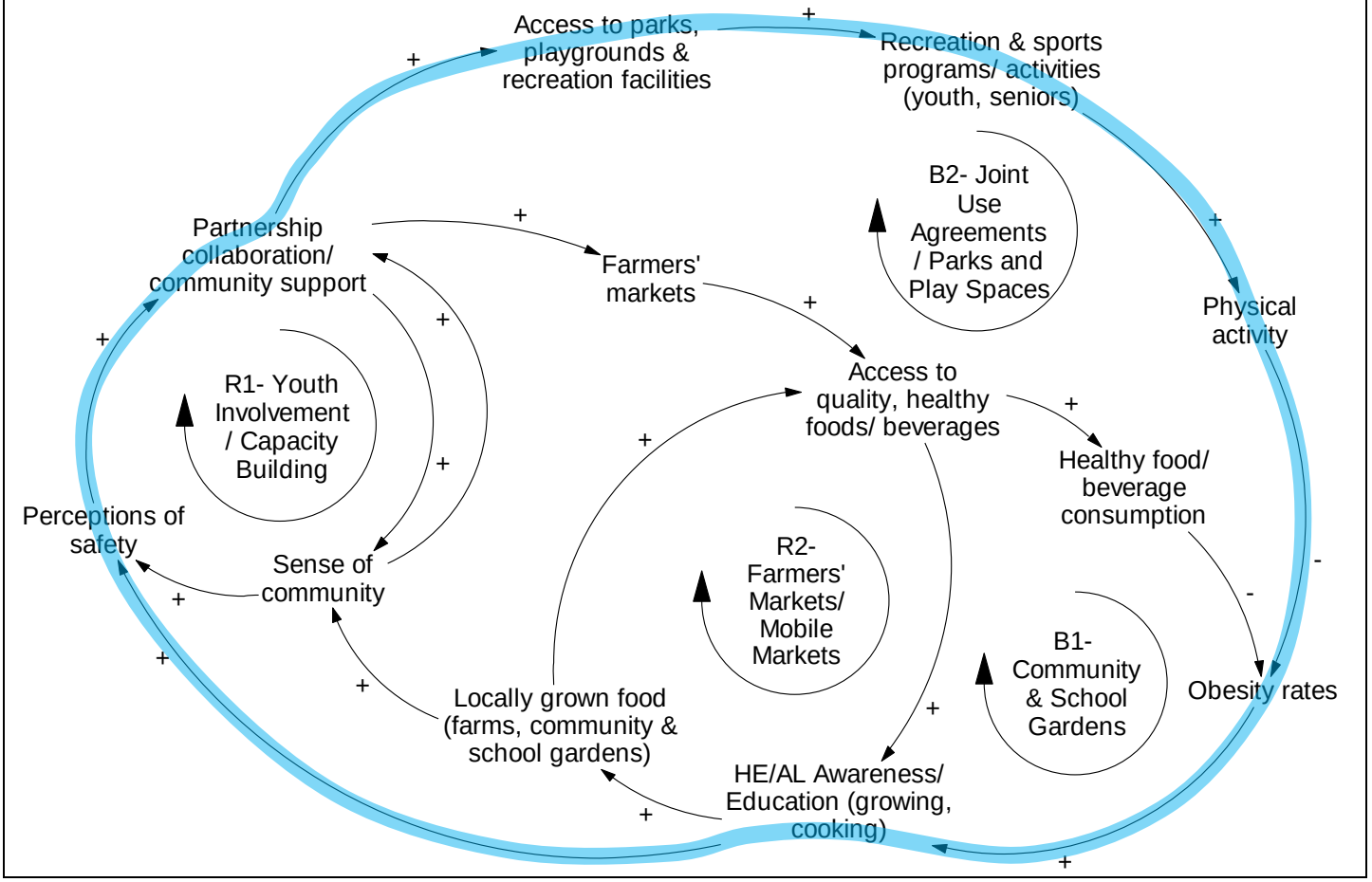


Some of these causal relationships may have more immediate effects (e.g., recreation activities and physical activity) and other relationships may have delayed effects (e.g., physical activity decreasing obesity). This delayed effect is noted using two hash marks through the middle of the arrow line (not included in Figure 4).

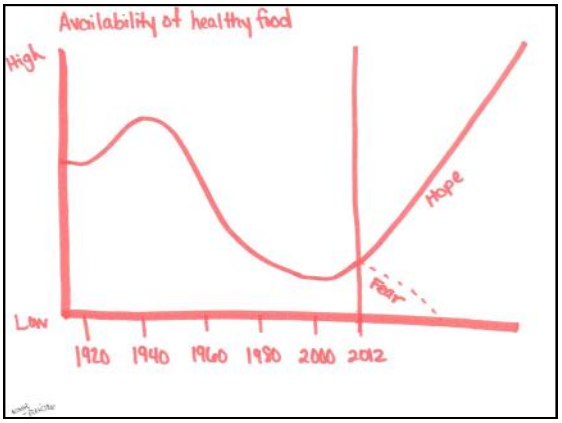
In the behavior over time graphs exercise, participants described an increase in opportunities for physical activity for residents since 2000 with the hope that these continue to increase (see illustration). Participants also noted that these activities must be enticing to get kids out of the house (see quote below).

"If we are wanting to increase physical activity or decrease some of the sedentary activity, there's going to need to be some attractive alternatives to staying in the house. If that's increasing sports leagues, increasing park use, things of that sort, as long as they're accessible and attractive to the kids in that age range to actually make them want to get out and do stuff... something that can maybe trump playing video games." (Participant)

Figure 4: Joint Use Agreements/Parks and Play Spaces Feedback Loop



Farmers' Markets/Mobile Markets Feedback Loop



Highlighted in red in Figure 5, the farmers' markets and mobile markets feedback loop represents one of the *Cook County HKHC* strategies to increase healthy eating in Cook County, Georgia.

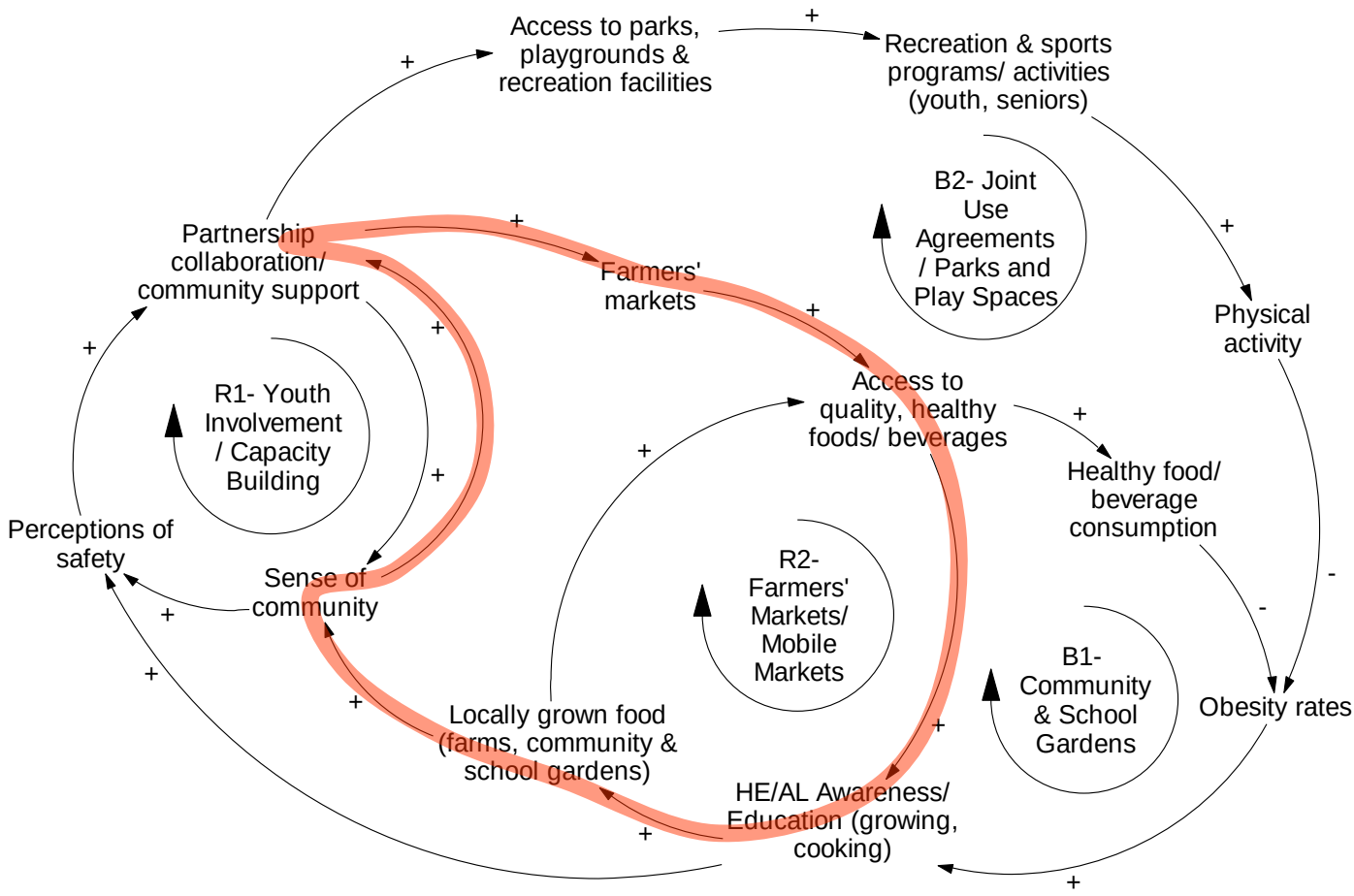
Unlike the previous loops (see Figures 3-4), this is a reinforcing loop (all "+" signs). In addition, it includes causal relationships representing more immediate effects (e.g., farmers' markets increase access to quality, healthy foods and beverages), and, potentially, delayed effects (e.g., partnership collaboration and support leading to farmers' markets).

In the behavior over time graphs exercise, participants described a significant decline in the availability of healthy food from 1950 to 2000 with the hope that the availability will increase into the future (see illustration). At the same time, participants also described an increase in a sense of community related to residents congregating in and around the markets (see quote below).

Learning from these exercises, partners may consider developing more opportunities for community engagement and networking in the markets in order to further improve the sense of community, and, simultaneously, the viability and sustainability of the markets.

"A lot of our initiatives, like community gardens and farmers markets and playgrounds and all those things, can be used to build a sense of community. Kids are all going to the same playground and playing together and everyone's coming on Saturday to meet at the farmers' market and buy groceries and hanging out and having a good time, and going out and growing plants together in a community garden." (Participant)

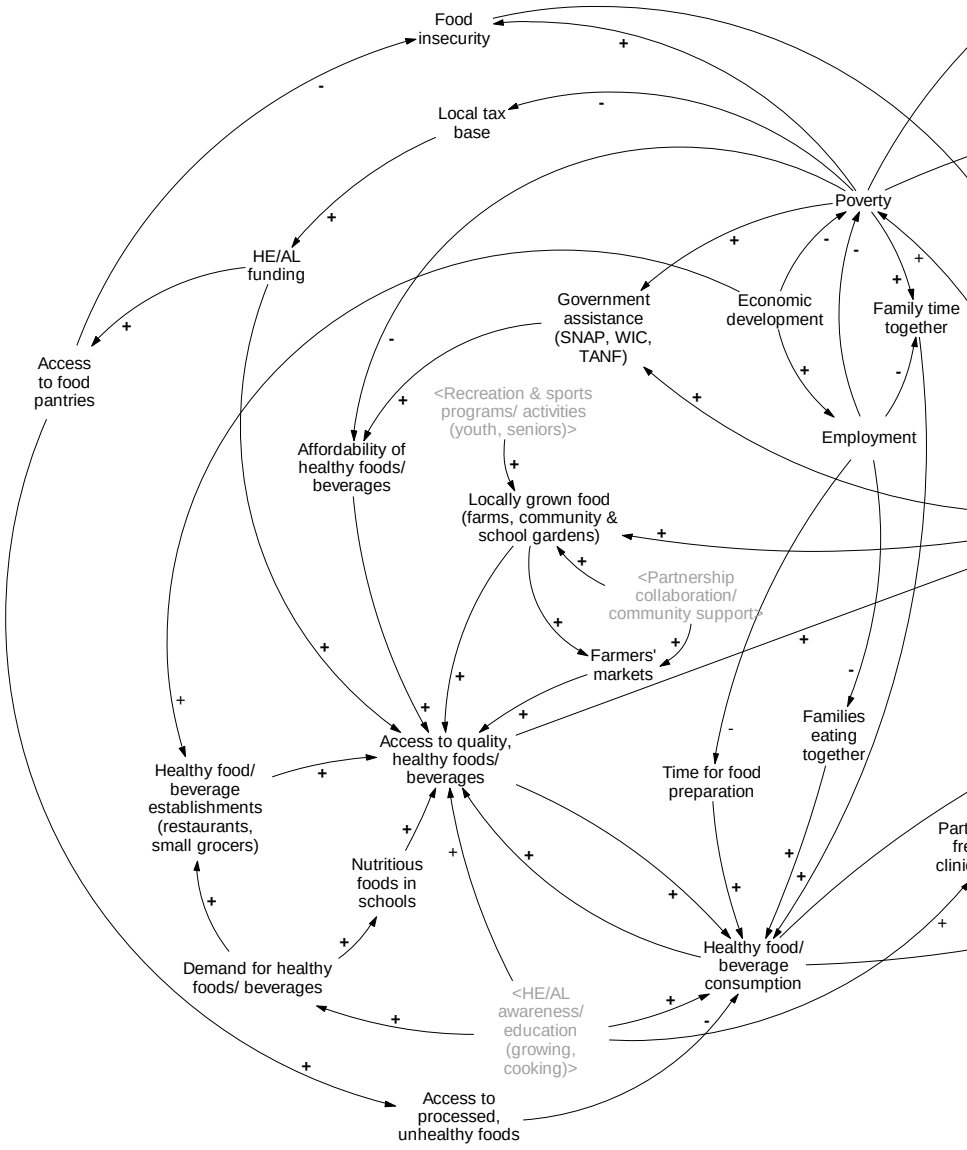
Figure 5: Farmers' Markets/Mobile Markets Feedback Loop



Opportunities for Systems Thinking in Cook County, Georgia

This storybook provided an introduction to some basic concepts and methods for systems thinking at the community level, including: causal loop diagrams, variables, causal relationships and polarities, reinforcing feedback loops, and balancing feedback loops, among others. For the *Cook County HKHC* partners, this storybook also summarized the healthy eating, active living, partnership and community capacity, social determinants, and health and health behaviors subsystems in the Cook County causal loop diagram as well as three specific feedback loops corresponding to the partnership's primary strategies.

Figure 6: *Cook County HKHC* Causal Loop Diagram



This causal loop diagram reflects a series of conversations among partners and residents from 2011 to 2013. Some discussions probed more deeply into different variables through the behavior over time graphs exercise, or causal relationships through the causal loop diagram exercise.

This represented a first attempt to collectively examine the range of things that affect or are affected by policy, system, and environmental changes in Cook County, Georgia to promote healthy eating and active living as well as preventing childhood overweight and obesity.

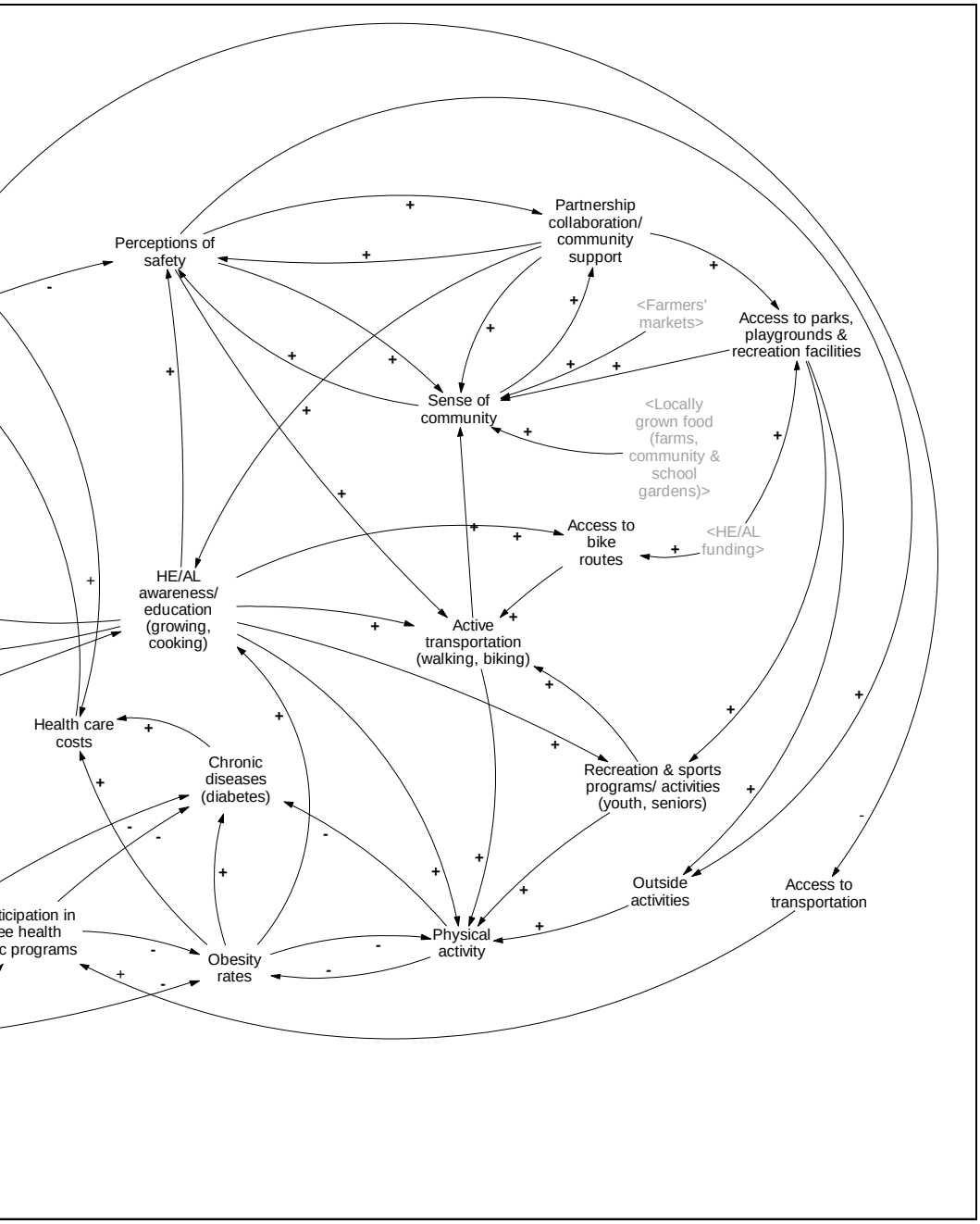
Yet, there are several limitations to this storybook, including:

- the participants represent a sample of the *Cook County HKHC* partners (organizations and residents) as opposed to a representative snapshot of government agencies, community organizations, businesses, and community residents;
- the behavior over time graphs and the causal loop diagram represent perceptions of the participants in these exercises (similar to a survey or an interview representing perceptions of the respondents);
- the exercises and associated dialogue took place in brief one- to two-hour sessions, compromising the group's capacity to spend too much time on any one variable, relationship, or feedback loop; and
- the responses represent a moment in time so the underlying structure of the diagram and the types of feedback represented may reflect "hot button" issues of the time.

Much work is yet to be done to ensure that this causal loop diagram is accurate and comprehensive, for

example:

- having conversations to discuss existing feedback loops to ensure that the appropriate variables and relationships are represented accurately;



- reviewing the behavior over time graphs (see also Appendix E) to confirm that the trends reflect common perceptions among residents and compare these trends to actual data;
- revisiting variables removed because they were not part of feedback loops, including franchised grocery stores, contracts for soft drinks and candy, fast food restaurants and convenience stores, sedentary behavior, traffic safety, agriculture industry (pesticides, hormones, chemicals), economic development, screen time (TV, computer, video games), school PE and recess, car use/ driving, schools in neighborhoods, crime, exposure to unhealthy food marketing/advertising; and
- starting new conversations about other variables (behavior over time graphs exercise) or relationships (causal loop diagram exercise) to add to this diagram.

In addition, different subgroups in Cook County may use this causal loop diagram to delve in deeper into some of the subsectors (e.g., healthy eating, active living) or feedback loops, creating new, more focused causal loop diagrams with more specific variables and causal relationships.

Use of more advanced systems science methods and analytic approaches to create computer simulation models is another way to take this early work to the next level. The references section includes citations for resources on these methods and analytic approaches, and it is necessary to engage professional systems scientists in these activities.

Please refer to the Appendices for more information, including:

- Appendix A: Behavior over time graphs generated during site visit
- Appendix B: Photograph of the original version of the *Cook County HKHC* Causal Loop Diagram
- Appendix C: Original translation of the causal loop diagram into Vensim PLE
- Appendix D: Transcript translation of the causal loop diagram into Vensim PLE
- Appendix E: Behavior over time graphs not represented in the storybook

References for Systems Thinking in Communities:

Group model building handbook:
Hovmand, P., Brennan L., & Kemner, A. (2013). Healthy Kids, Healthy Communities Group Model Building Facilitation Handbook. Retrieved from http://www.transtria.com/hkhc.

Vensim PLE software for causal loop diagram creation and modification:
Ventana Systems. (2010). Vensim Personal Learning Edition (Version 5.11A) [Software]. Available from http://vensim.com/vensim-personal-learning-edition/

System dynamics modeling resources and support:
Andersen, D. F. and G. P. Richardson (1997). "Scripts for group model building." System Dynamics Review 13(2): 107-129.

Hovmand, P. (2013). Community Based System Dynamics. New York, NY: Springer.

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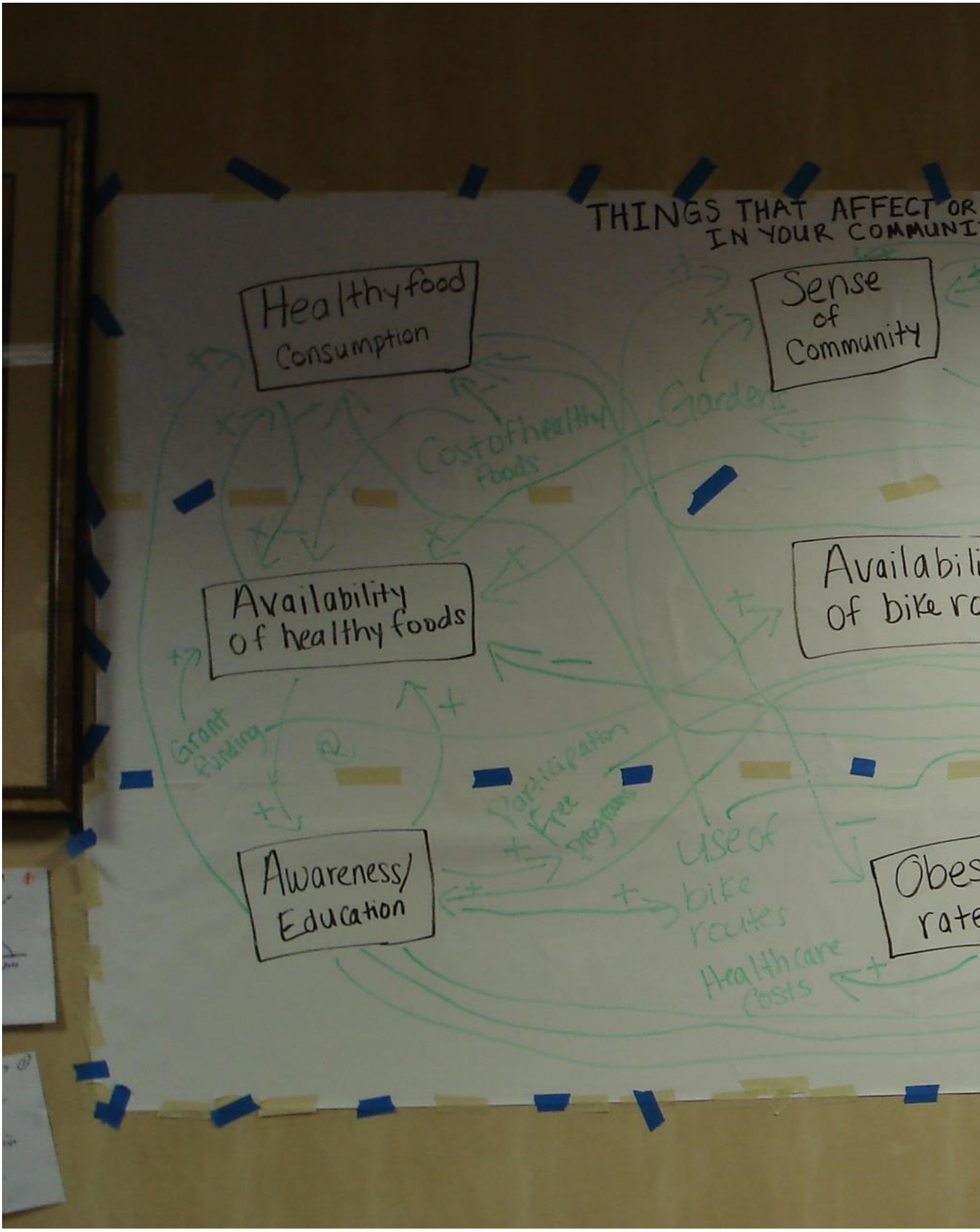
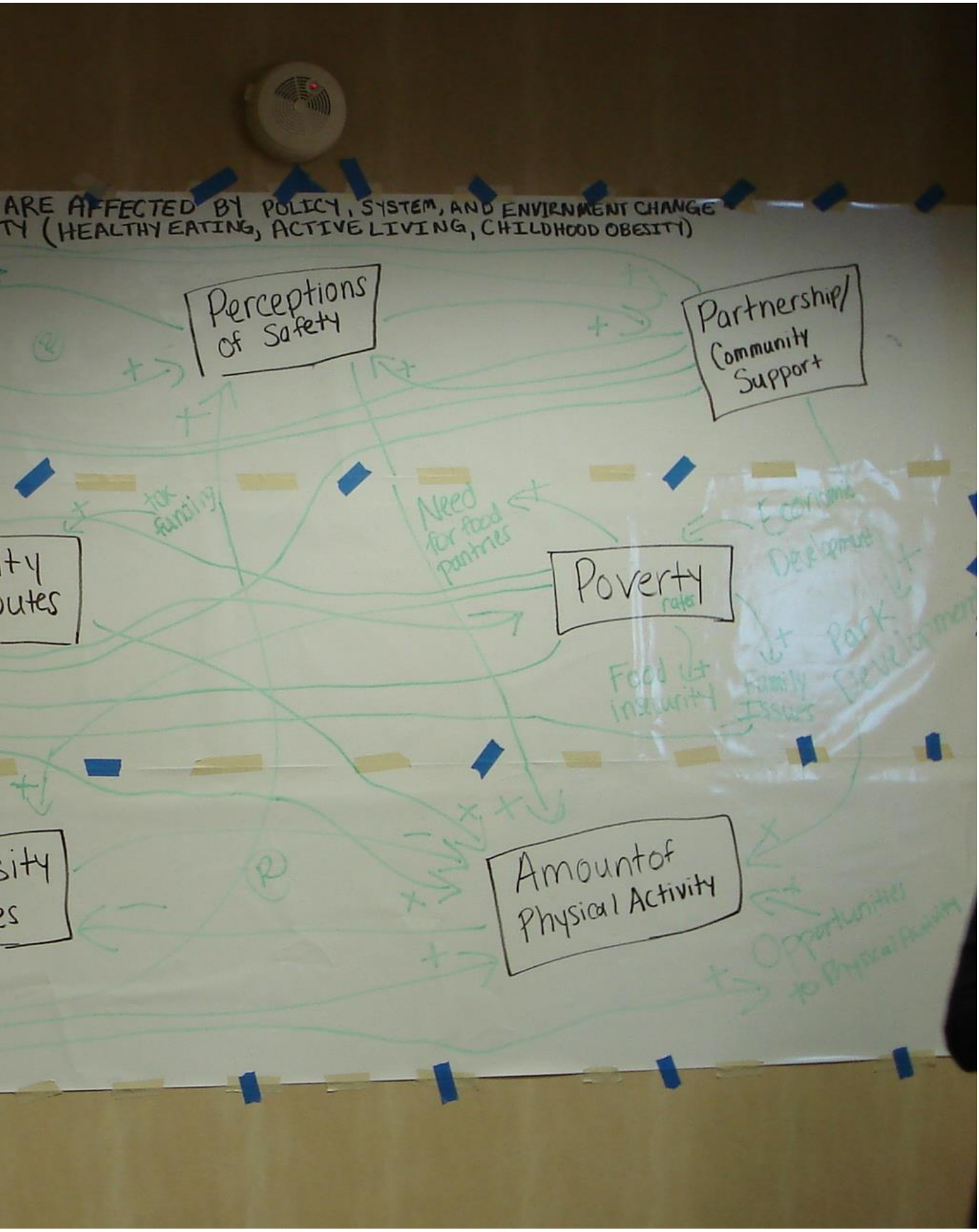
Appendix A: Behavior Over Time Graphs Generated during Site Visit

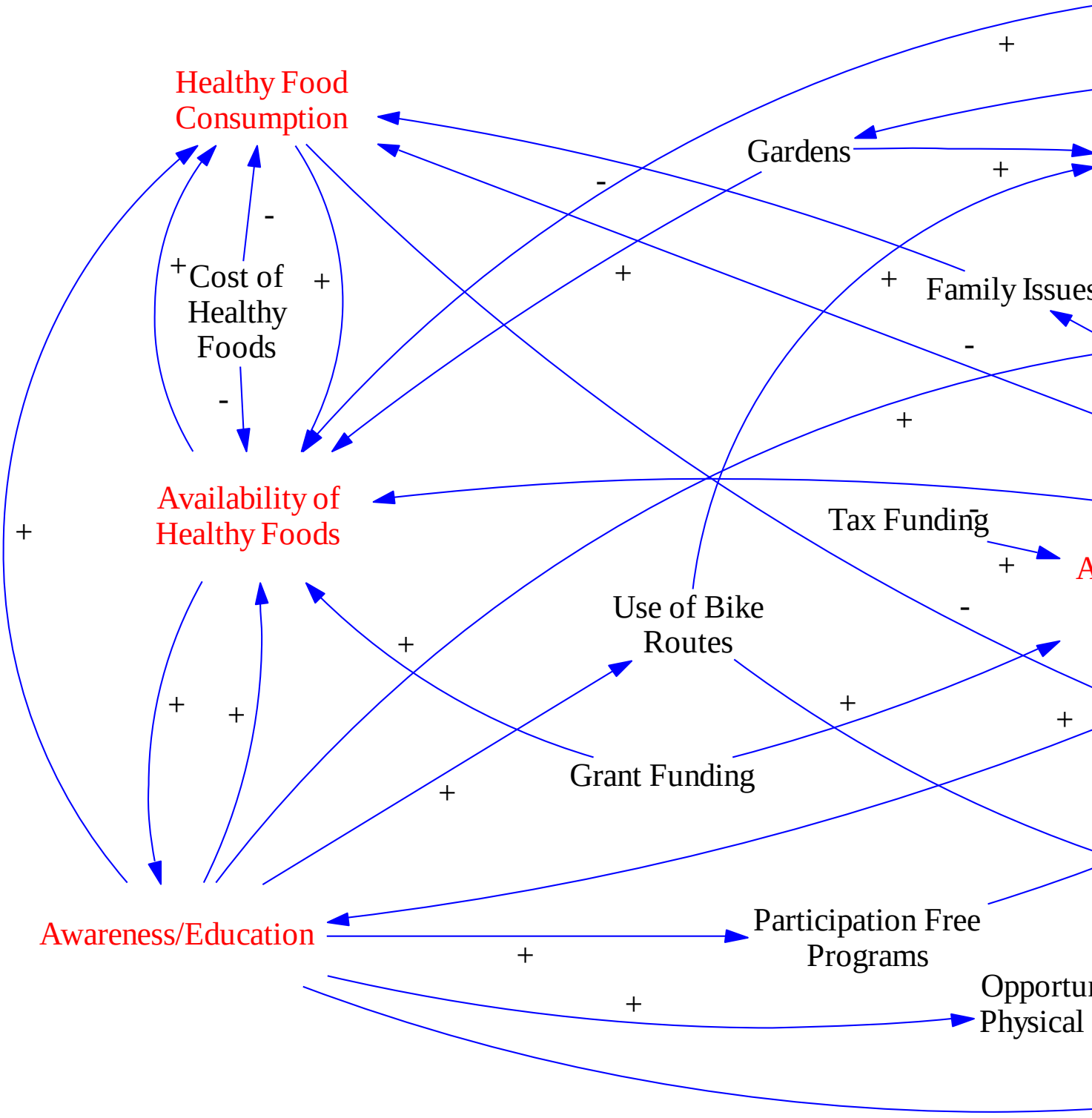
Cook County, Georgia: *Cook County HKHC*	
Categories	**Number of Graphs**
Active Living Behavior	6
Active Living Environments	0
Funding	0
Healthy Eating Behavior	3
Healthy Eating Environments	5
Marketing and Media Coverage	0
Obesity and Long Term Outcomes	2
Partnership & Community Capacity	2
Policies	1
Programs & Promotions (Education and Awareness)	8
Social Determinants of Health	5
Insufficient Data for Coding	1
Total Graphs	**33**

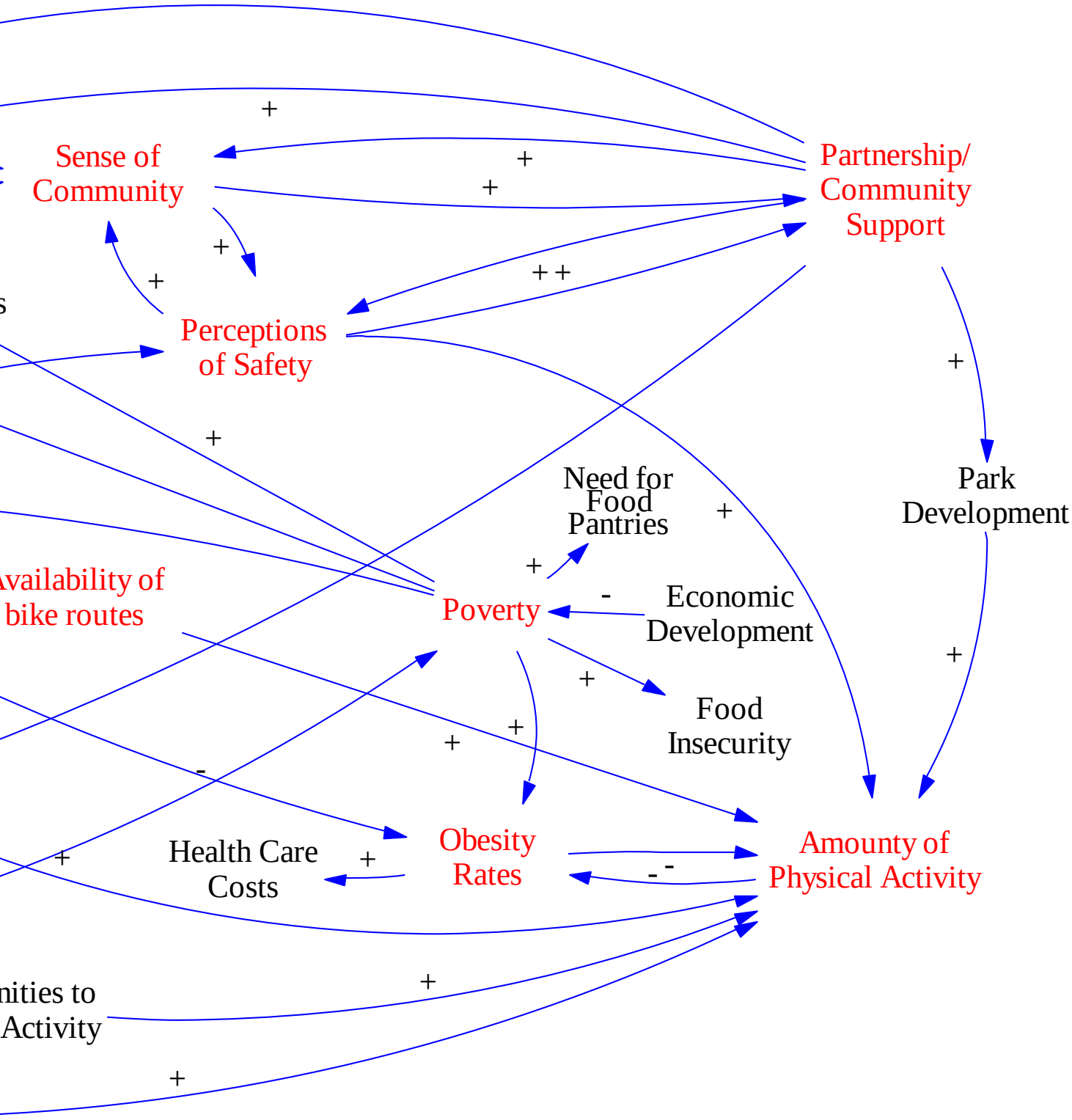
Appendix B: Photograph of the Original Version of the *Cook County HKHC* Causal Loop Diagram



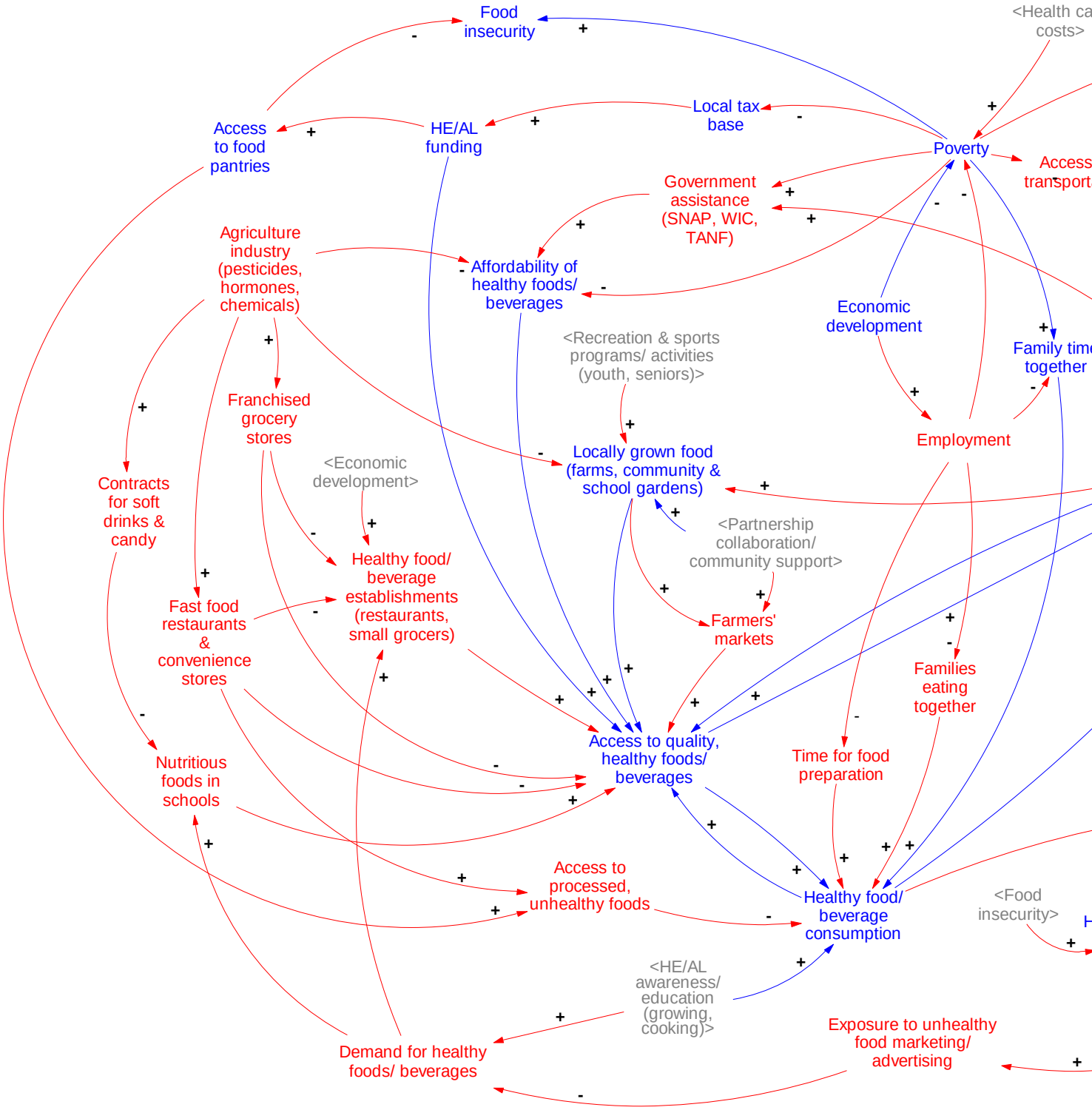

ARE AFFECTED BY POLICY, SYSTEM, AND ENVIRNMENT CHANGE
TY (HEALTHY EATING, ACTIVE LIVING, CHILDHOOD OBESITY)
Perceptions of Safety
Partnership/ Community Support
Need for food pantries
Poverty
rates
Amount of Physical Activity
Opportunities for Physical Activity

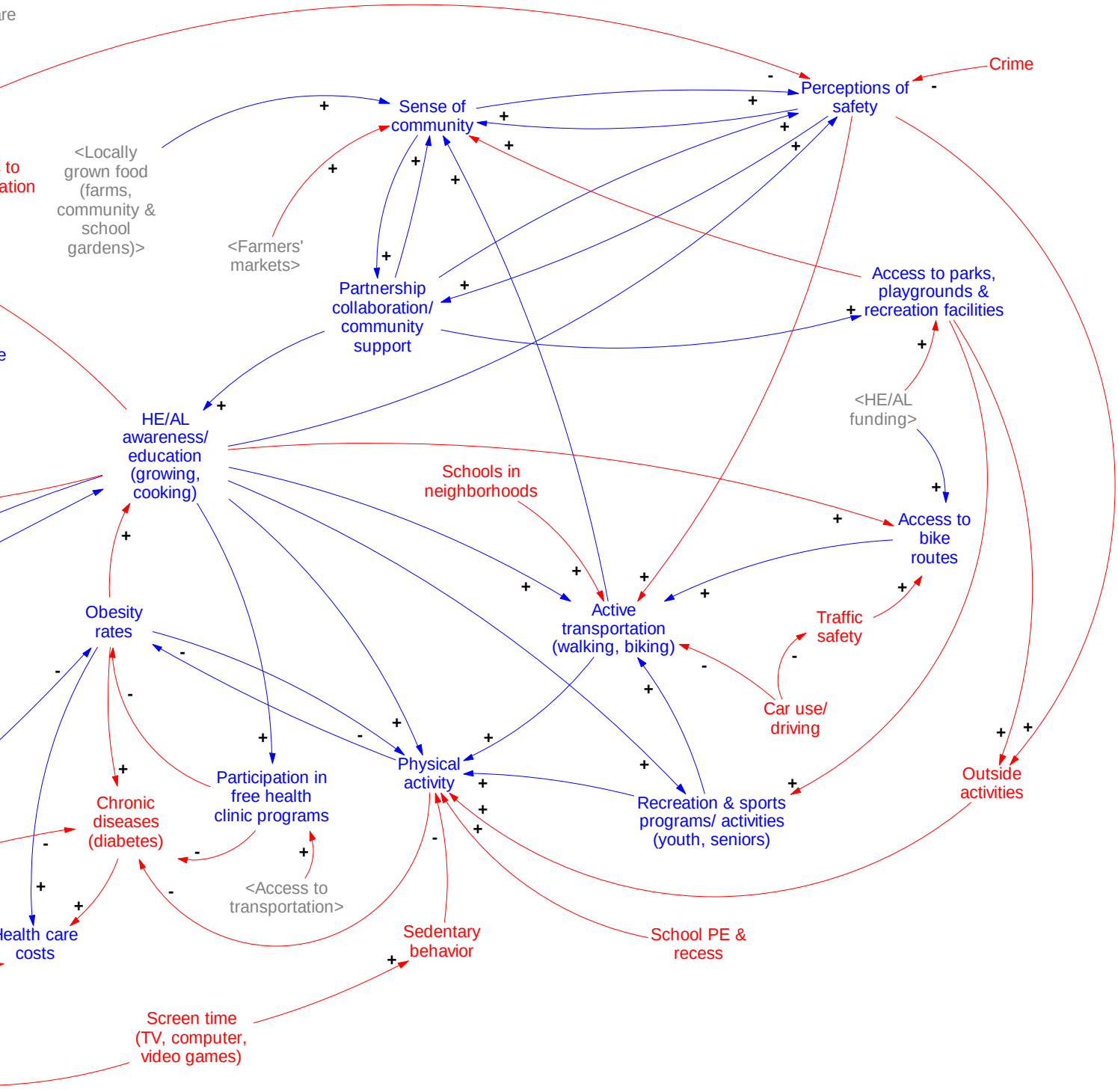
Appendix C: Original Translation of the Causal Loop Diagram into Vensim PLE



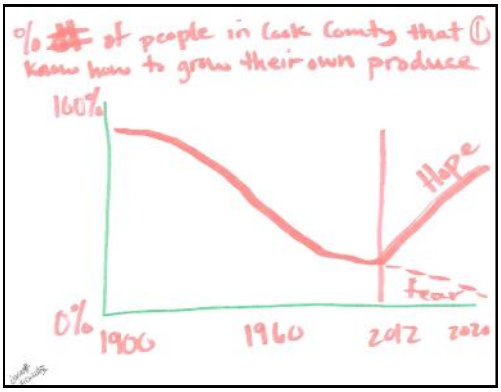

Sense of Community
Partnership/ Community Support
Perceptions of Safety
Park Development
Need for Food Pantries
Availability of bike routes
Poverty
Economic Development
Food Insecurity
Obesity Rates
Health Care Costs
Amounty of Physical Activity
nities to Activity
+
-

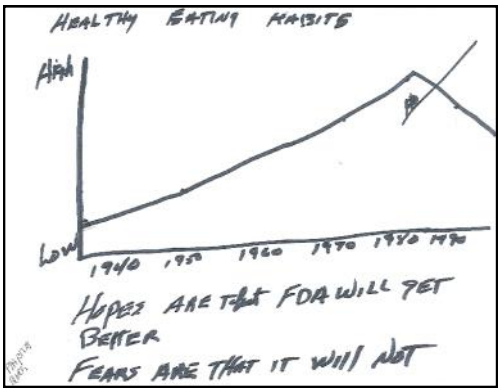
Appendix D: Transcript Translation of the Causal Loop Diagram into Vensim PLE

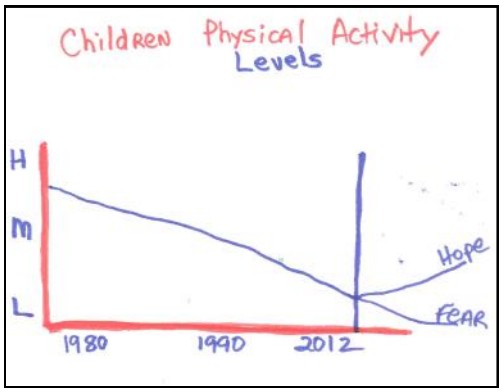


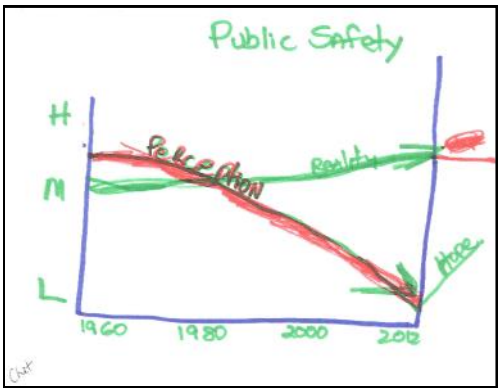

Crime
Perceptions of safety
Sense of community
<Locally grown food (farms, community & school gardens)>
<Farmers' markets>
Partnership collaboration/ community support
Access to parks, playgrounds & recreation facilities
<HE/AL funding>
HE/AL awareness/ education (growing, cooking)
Schools in neighborhoods
Access to bike routes
Obesity rates
Active transportation (walking, biking)
Traffic safety
Car use/ driving
Physical activity
Participation in free health clinic programs
Chronic diseases (diabetes)
Recreation & sports programs/ activities (youth, seniors)
Outside activities
<Access to transportation>
Sedentary behavior
School PE & recess
Screen time (TV, computer, video games)

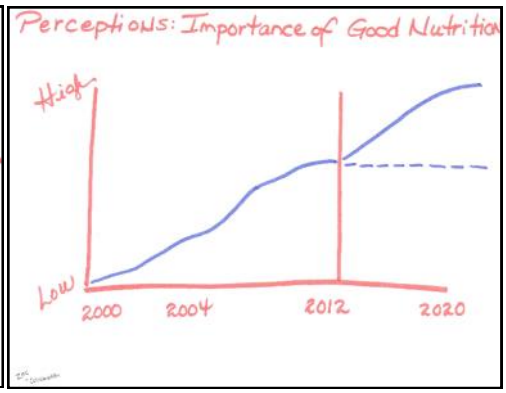
Appendix E: Behavior Over Time Graphs not Represented in the Storybook

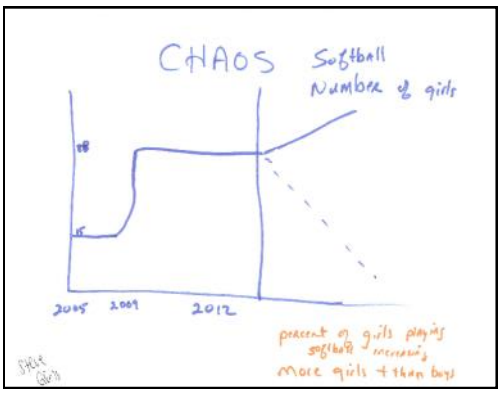


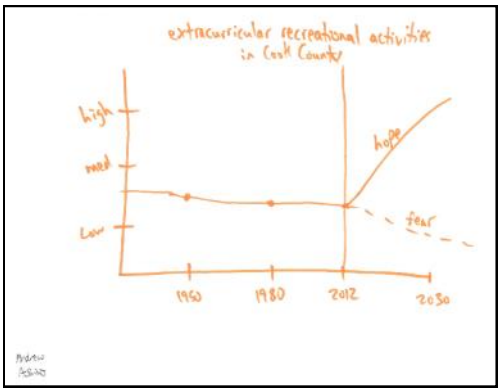


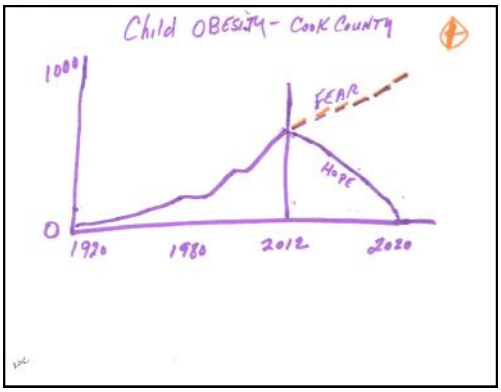


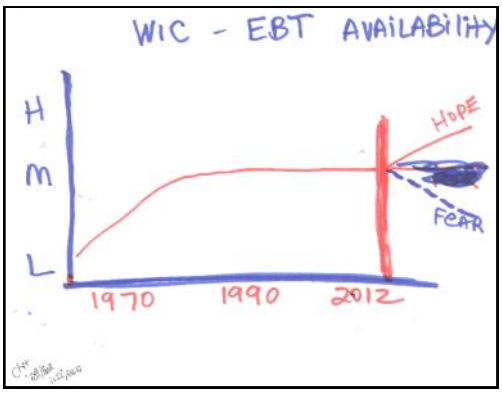


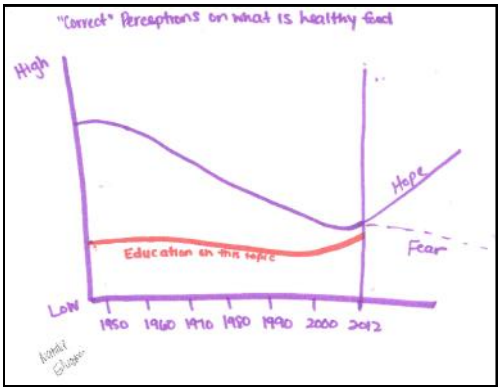


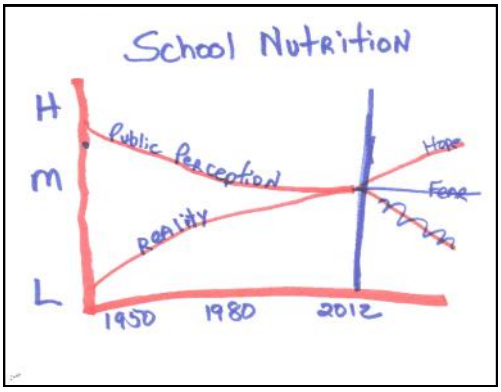


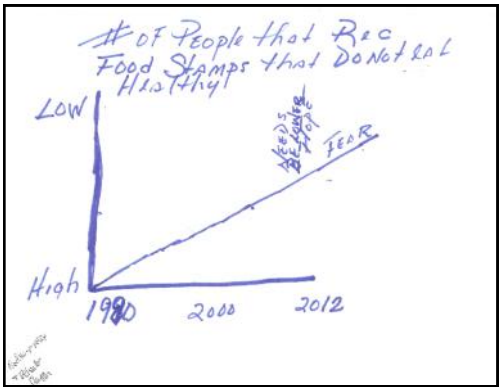


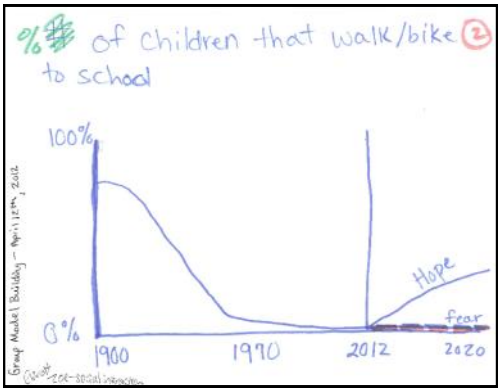


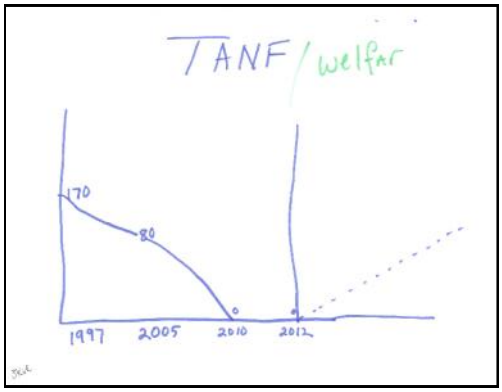


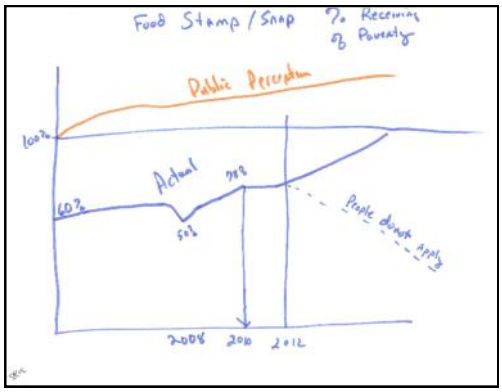


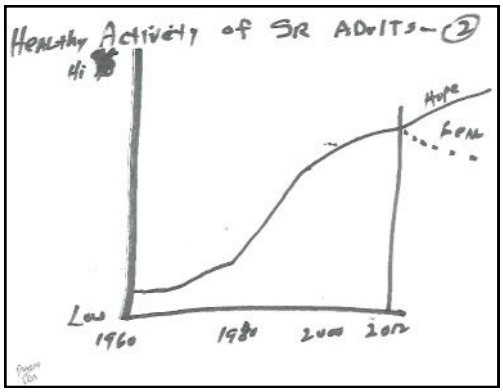


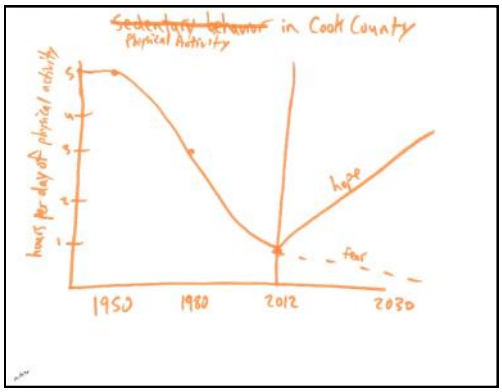


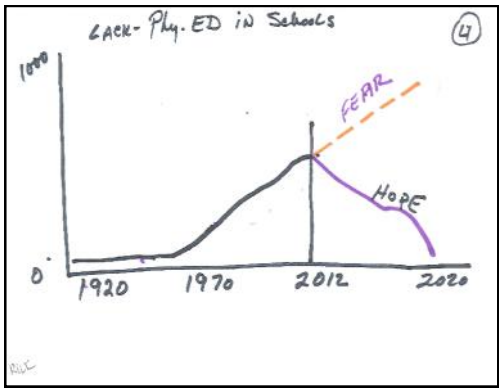

% # of children that walk/bike to school (2)
100%
0%
1900
1990
2012
2020
Hope
fear

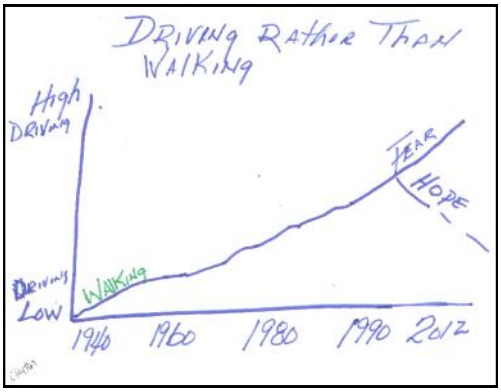

TANF / welfar
170
80
0
1997
2005
2010
2012

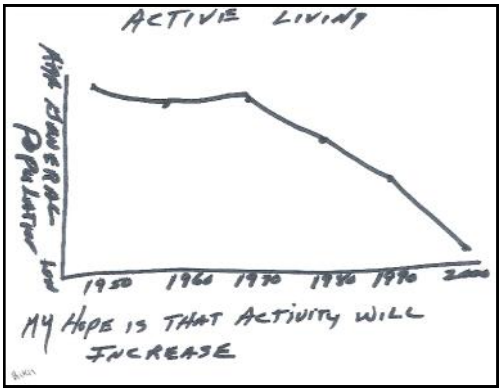

Food Stamp / Snap
% Receiving
& Poverty
Public Perception
100%
Actual
60%
50%
Hope
People doesn't apply
2008
2010
2012


Healthy Activity of SR ADULTS – (2)
Hi
Low
Hope
fear
1960
1980
2000
2012


Sedentary behavior in Cook County
Physical Activity
hours per day of physical activity
5
4
3
2
1
hope
fear
1950
1980
2012
2030


LACK- Phy. ED in Schools (4)
1000
0
FEAR
HOPE
1920
1970
2012
2020


DRIVING RATHER THAN WALKING
High DRIVING
Driving Low
WALKING
FEAR
HOPE
1940
1960
1980
1990
2012


ACTIVE LIVING
MY HOPE IS THAT ACTIVITY WILL INCREASE