THE SOUTH SHORE FOOD HUB:
A JUMP START FOR THE NORTHWEST INDIANA LOCAL FOOD SYSTEM

A CREATIVE PROJECT SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE MASTER OF LANDSCAPE ARCHITECTURE

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Chapter 1: Introduction

Overview

This project comes out of a passion for food, desire to do meaningful work with people, and yearning to grow roots in a new home. Northwest Indiana is an exciting place to live, full of contradictions and potential. Here, a small but dedicated group of local foods advocates has helped envision a new future for food in the region. The new future reconciles contradictions—acres of crops, but little food to eat; malnourishment amid tons of food waste. It also harnesses potentials—fertile soils, unique microclimates for specialty crops, access to urban markets, and re-imagined uses for underutilized urban open space.

The project examines the mainstream and local food systems in Northwest Indiana and throughout the country. It also proposes an intervention—a food hub—that addresses some major gaps limiting the success of the local food system in Northwest Indiana.
Significance

Problems with our mainstream food system

Our nation has changed the way it eats drastically over the past hundred years. Technological advances in agriculture, intensified food marketing and processing, globalized food markets, and paradigm-shifting agricultural policies have provided Americans with an abundance and variety of cheap food unrivaled throughout the world. The United States produces more food calories than we can consume, even though adults eat nearly 30% more calories per person than just forty years ago. Although we are eating more than ever, Americans spend a smaller percentage of their total household expenditures on food than any other country—6% on average, versus 12% in New Zealand, 24% in Mexico, and 35% in China.

Our food is cheap because the mainstream food system externalizes many costs that we do not see. These costs emerge in various ways; our environment, our communities, our local economies, and our health.

Our Environment

The industrial food system relies on inputs of fertilizers, herbicides, and pesticides and depends on fossil fuels to power the extensive machinery and often, to make these chemical inputs. The results are reductions in soil and water quality and increasing energy use. One major problem with conventional farming practices is erosion. In 2003, 1.75 billion tons of topsoil was lost to erosion – or 200,000 tons each hour. That is more soil lost per year than the total 2010 U.S. harvest of corn, soybeans, and wheat combined. The erosion of topsoil reduces the fertility of the land, stripping away its capacity to produce food and requiring more inputs of fertilizer to maintain yields. When soil erodes, it carries agricultural chemicals downstream. Nutrient runoff in the agricultural upper regions of the

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2 USDA ERS, Food CPI and Expenditures: 2007 Table 97
Mississippi River has created an hypoxic “dead zone” in the Gulf of Mexico whose average size was over 6,600 sq mi from 2004 to 2008—that’s bigger than the state of Connecticut. The huge monocultures that make up the industrial food system, by their nature, will require more and more herbicides and insecticides over time to defend their fragile natures from the evolution of weeds and insects. By the 1990’s, despite a tenfold increase in insecticide use since 1945, crop losses due to insect damage had nearly doubled.

In the industrial system, we are using the earth’s resources at a faster rate that we could ever hope to replenish. The rate of groundwater withdrawal exceeds recharge rates in major agricultural regions like southern California, where much of the fresh produce consumed by the country is grown. We are also losing farmland, a valuable source of open space in metropolitan areas, to development. From 2002 to 2007, total cropland in the U.S. decreased from 434 million acres to 406 million acres.

**Our Local Economies**

Fewer and fewer farmers are able to make a living in agriculture. Farmers face increasing pressure in global markets, where despite subsidies, their products have a hard time competing with those from developing countries. Farmers’ share of every food dollar is also decreasing. A mere 19¢ of every dollar spent on food in 2006 went back to the farm—in 1975 it was 40¢. The increasing globalization of the food system siphons a greater share of the food dollar away from regional economies.

Generations ago, farm families’ income was offset by a reduction in food expenditures because they were able to eat

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7 USDA 2007 *Census of Agriculture.* United States Summary and State Data. Volume 1, Geographic Area Series, Part 51.
what they produced. Of the farmers that remain, it is less likely than ever that they grow food that their family can eat.

Midwestern farmers today primarily grow corn and soybeans, most of which are destined for seed or animal feed. In 2009, nearly 60% of grains grown in the U.S. were fed to animals in our country and abroad. Increasingly, farm families must seek outside work in order to supplement income from farming. In 2006, four out of every five farm households earned the majority of their income from off-farm sources.

Our Communities

We are a country that, 100 years ago, was 41% farmers, to one where less than 1% farm. The reduction in farmers has turned many rural communities into shadows of their former selves. When these communities deteriorate, so does a collective wisdom about food and farming. Decreasing numbers of people know how to grow, preserve, or cook food. Few of us today are aware of the complex system in which our food is grown, processed, marketed, and distributed. The images we hold of the family farm and the wholesomeness of our food are more nostalgia than truth. Sadly, our existing system, despite its abundance, consistency, and affordability, still fails our most vulnerable. The USDA reports that nearly 15% of Americans are food insecure.

Our Health

We also pay with our health. Type II diabetes is on the rise nationally. Cruelly, food insecure populations are disproportionately affected by the disease. We, as a nation, are eating more and more cheap food, especially meats and sugars, and spend more of our tax dollars on treating diet-related

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12 http://www.cdc.gov/media/pressrel/2008/r081030.htm
ailments. In 2004, the U.S. food supply provided 3,900 calories per person per day—nearly twice the USDA recommended amount for an adult. The increase in food has not meant better nutrition for all. Poor nutrition and physical inactivity accounted for 400,000 premature deaths in 2000. Because these costs have been disassociated with eating, most Americans have little incentive to question the system that gets food to our plates. For many who do understand the current system, the negative consequences of modern agricultural methods are simply the price of progress. However, progress need not have such a toll. Local food systems can provide an alternative that accounts for the costs of food up front, enriching our local environment, building local communities, improving our health, and stimulating local economies.

This project is rooted in the belief that our mainstream food system, while impressively productive, is not necessarily good for producers, consumers, communities, or the environment. For healthier land, water, air, individuals, communities, and economies, we need to diversify our investments in our food systems with a bias toward local. We need to build policies, education, and infrastructure which support local food systems so that they can function alongside the mainstream industrial system.

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Figure 1.1: The diagram on the following page illustrates some of the inputs and products during the life cycle of the most ubiquitous crop in Northwest Indiana—corn grain. Figures quoted are for the United States. Focus is on elements which are particularly unstable or unhealthy.
Local Food Systems can improve current circumstances

Local food systems directly address many weaknesses in the mainstream system, effecting the environment, economy, communities, and health.

Environment

Local food is not inherently better for the environment, but there is more incentive for local growers, versus mainstream farmers, to be good stewards of the earth. Part of the appeal of local food for consumers is the perceived benefits to the environment—a guarantee from your farmer that he or she is doing a good job taking care of the resources you share. Local food thrives on its transparency; the possibility of having a conversation with the person who grows your food, or a visit to their farm. The simpler relationship between grower and consumer in the local food system demands accountability as opposed to the industrial food system, whose complexity obfuscates responsibility for issues like energy use, soil quality, and water quality.

Additionally, local food holds the potential to create higher value farmland that better resists development pressures, preserving treasured open space. Ecologically sound technologies exist today that can help produce a greater variety of food in a more sustainable way than ever before. Season extension through hoop houses, hydroponics, closed loop systems utilizing animal wastes, urban agriculture, and vertical farming are all tools in the belt of today’s producers.

Economy

Market values per acre for fruits and vegetables are consistently above values for commodity crops. By growing more fruits and vegetables for local consumption, local economies can retain and re-circulate more food dollars in the community. By increasing capacity to process and distribute local foods, local growers can better meet local food demands of institutions like restaurants, schools, and hospitals.
If small and mid-sized farmers growing for local markets are better supported with policy and appropriately scaled infrastructure, more will be able to earn living wages and stay in farming. A strong local food system may even encourage new farmers.

**Community**

A strong local food system can enrich a community. In a local food system, food-related dollars are invested directly back into the community. Rural communities, especially in metro areas like Chicago’s, benefit from increased investment and job opportunities. Urban communities living in food deserts benefit from greater access to fresh, whole foods. An increase in community and home gardens can help a community by offsetting food costs for the poorest residents. Furthermore, urban agriculture can provide unique educational and recreational opportunities for communities.

**Health**

Local food tastes better because it is fresh and the varieties are grown for flavor instead of ability to withstand transport. Better tasting food, if coupled with increased education about food preparation and nutrition, has the potential to improve the health of a region. The American Medical Association and the U.S. Department of Agriculture agree that to maintain a healthy weight and avoid type II diabetes, our diet should emphasize unprocessed fruits, vegetables, and whole grains, all of which taste better grown locally.

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See also USDA, Dietary Guidelines for Americans, 2010.
Figure 1.2 Diagram illustrating the key relationships in a local food system that utilizes a food hub, using sweet corn as an example. Because the local system is fundamentally different structure and size, this system diagram for sweet corn looks very different than the preceding diagram for commodity corn in the mainstream industrial system. Most notably, the system flows in a cycle, rather than a one-way chain that ends in waste. The variety of products that come from sweet corn are also fewer than for commodity corn—fresh corn, frozen corn, seed, and compost. Perhaps most importantly, this system eliminates government payments, chemical inputs, harmful byproducts, and environmental degradation as compared with the industrial model for corn on page 6. This system provides its own soil building nutrients instead of relying on fossil fuel; leaving the soil, and its capacity to produce, richer, not poorer.
What does landscape architecture and planning have to offer the development of local food systems?

The fields of landscape architecture and planning aim to be comprehensive in scope, and for years have considered land use, transportation, housing, the economy, and the environment in their purview. Food systems, despite being integral to each of the afore-mentioned systems, have been largely ignored, to the detriment of communities. As Kamethwari Pothuchuki reminded us in the APA journal over a decade ago, lack of planning for the food system results in failed housing developments due to their lack of grocery and overflowing landfills due to lack of composting programs. Food systems must be considered in planning decisions just as transportation, housing, and environmental issues traditionally have been. The recent inclusion of food systems on an increasing number of colleges’ curriculums and planning agencies’ agendas is heartening, although overdue.

The foundation for the inclusion of food systems in the fields is strong, even though in practice, planning for food systems has happened rarely. The work of influential thinkers and practitioners in the field support the case for including food systems. Ecologists Howard Odum and Eugene Odum, urban planner, Jane Jacobs; landscape ecologist, Richard Forman; and landscape architects Ian McHarg, John Lyle, and Ann Spirn all argue implicitly for the cause of local food systems. Their voices compliment outspoken proponents of local food systems like farmer, teacher, and author, Wendell Berry; genetic biologist and advocate, Wes Jackson; and sociologist and activist, Thomas Lyson.

This project aims to distill the wisdom of these voices to propose an intervention which will support the local food system in Northwest Indiana. The proposed intervention will be informed by relevant research, precedent studies, and input from regional stakeholders from every link in the food system supply chain.
Goals & Objectives

The goal of this project is to propose an intervention, specifically a food hub, which will support the local food system in Northwest Indiana. The design of the proposed intervention will draw from theorists and practitioners influential to the fields of landscape architecture and planning. The nature of the intervention will be influenced by a review of relevant research on local food systems, food systems data and statistics, the history of the region, and local food system stakeholder input.

Methodology

Original research was conducted through focus groups, surveys, and semi-structured interviews with local food system stakeholders in association with the Northwest Indiana Regional Planning Commission’s local food study. In addition, relevant literature, data, and case studies were reviewed and critically analyzed.

Structure of the Project

The project is divided into four chapters. Chapter I introduces the project. Chapter II, Exploring the Northwest Indiana local food system, focuses on research and theory influencing planning for food systems and the history and current state of food in the region. Chapter III, Jump starting the Northwest Indiana local food system, lays out values and goals for the local food system as determined by stakeholders, critically examines two models for supporting local food systems using case studies, and presents objectives for the design of a food hub in the region. Chapter IV, Envisioning the South Shore Food Hub, covers site selection, regional and site-scale inventory and analysis, and proposes a master plan for a food hub for the region. Chapter IV also wraps up the project with a summary and conclusions.
Assumptions and Delimitations

Research for this project is limited in scope geographically to the three county region of Lake, Porter, and LaPorte counties in Indiana. Although major factors affecting this region from outside the region will be taken into consideration, data collected for nearby counties will not be collected in a comprehensive way.

This project proposes only physical interventions which will support the local food system. Intangible interventions such as policy change, education, and community participation are also necessary for the development of local food systems, but are not addressed.

This project assumes adequate community support and funding through a public-private venture.

Summary

As in many places across the nation, the residents and planners in Northwest Indiana are beginning to pay attention to local foods. During NIRPC’s comprehensive planning process, the public called for increased attention to local foods issues. Those public comments instigated the local food study for Northwest Indiana, from which this project draws.

The region is reaching a tipping point for local food. The number of farmers markets in the region has boomed and now reaches twelve. Unfortunately, these markets must fight for local farmers—there are not enough to growers to keep pace, resulting in non-local food trucked in to meet market goers’ demand.

At the same time interest in local agriculture is growing, Northwest Indiana’s agricultural sector is shrinking. The region has seen significant reductions in market value, jobs, and acres devoted to agriculture. Although agriculture still dominates our regional landscape, farmland is increasingly being converted to
other uses. The farmland still under cultivation is utilized primarily for the production of corn and soybeans, which cover 93% of all cropland in the region and account for 89% of the total market value. A tiny 0.1% of current farmland produces fresh food for local consumption, yet it boasts a full 5% of the total market value. If this is the case, why aren’t there more farmers growing for fresh market?

This question is at the crux of the whole system.

Northwest Indiana has the essential qualities necessary to support a thriving local food system—a nearby urban market, good soils, land available for urban agriculture and excellent accessibility by major highways. Many chefs, produce managers, institutional food buyers, and individual consumers exhibit a preference for local foods, but the lack of infrastructure, policies, and education supporting the local food system keeps producers from meeting the demand. This project proposes a design solution in the form of a food hub that can strengthen the local food system in Northwest Indiana.
Chapter II: Exploration of the Northwest Indiana local food system

Overview

This chapter explores the local food system of Northwest Indiana beginning with broadest concepts and culminating with specific data and figures meant to uncover the best way to intervene with a design solution that will support the continued growth and sustainability of the local food system.

The theoretical foundations section examines authors in landscape architecture and related fields to understand how to best frame a design intervention for a local food system. The history section provides context for the project and serve as a starting point to introduce the component of time into the design. The profile of the local food system is an analysis of stakeholder input and several indicators of the current state of the local food system to help determine the most effective design solution.
Would it not be well to consult with Nature in the outset, for she is the most extensive and experienced planter of us all.

-Henry David Thoreau

Theoretical Foundation of Landscape Architecture in Local Food Systems

To design for a thing as large and complex as a food system requires either hubris or great humility and an acceptance of the limitations of such an endeavor. The author strives throughout this project to draw from the latter qualities and has found good company among a slew of big-picture thinkers, whose ideas form the theoretical foundation of this project. These thinkers agree on many things, the most salient of which form the basis of this thesis; that humans operate as a member of and are subject
to the laws of a larger ecosystem, that practicing agriculture is an essential and defining characteristic of humans, and a major component of finding balance with our ecosystem is creating sustainable local food systems. Though not all of the thinkers which inspire this project have written or even thought specifically about local food, each of them frames the human condition in a way which is favorable to support sustainable local food systems.

Central to this project is the assertion that human society is firmly rooted in and bound by the laws of a greater ecosystem. Eugene and Howard Odum, Jane Jacobs, Ian McHarg, Ann Spirn, Richard Forman, John Lyle, Wendell Berry, Wes Jackson, and Thomas Lyson all agree that humans are part of “nature,” and if not explicitly, would likely agree that agriculture is as well, even if it is not currently practiced as such. However, their views are not commonplace. Agriculture has long been viewed as interlopers, rather than participants, in “nature.” Agricultural issues are ignored by society, who finds farming to be an issue of the rural few, irrelevant to daily life. The few in our society who still grow food are taught less about ecosystems than pesticides in agriculture schools and practice less stewardship and more maximum yield in the farm fields. Just as ecologists have excluded agriculture from their worldview, so has industrial agriculture has failed to recognize its place in the larger ecosystem.

Recent public interest in food issues—safety, environmental impact, economic impact, health, flavor, and freshness, hold the potential to focus the attention of public officials and land grant institutions on the impacts of agriculture on society and our environment. It is clear that overhauls of agricultural policy and education are required for lasting change in the food system. However, outside a total overhaul, landscape architects and planners have the opportunity to effect change in the food system through targeted infrastructure improvements.
Planners and designers can shepherd ideas into the public landscape which support a more sustainable food system, and therefore a more sustainable planet. It is as true today as when Eugene Odum wrote it in 1969; many of our environmental, societal, and economic problems stem from society's refusal to recognize our place in a greater system.¹ Through the design of infrastructure to support local food, landscape architects can help society better understand the greater system and recognize our place in it.

Over the next three pages a table presents the authors and designers whose ideas have shaped this project. Each of them, explicitly or implicitly, helps make the case for local food systems. They are presented, roughly according to their discipline, starting with those most broadly related to food systems and ending with those who specialize in food systems. Their ideas are organized around the three central themes:

- Society operates within and according to the laws of a larger ecosystem
- Agriculture is essential for society and follows natural law
- Sustainable local food systems are essential to greater stability in our ecosystem

The table presents how each author relates to the three themes of the project, selecting key ideas that illustrate their support.

¹ Odum, E.P., *Strategy of Ecosystem Development.*
Society operates within and according to the laws of a larger ecosystem. Agriculture is essential for society and follows natural law. Sustainable local food systems are essential to greater stability in our ecosystem.

<table>
<thead>
<tr>
<th>Thinker</th>
<th>Field</th>
<th>Society operates within and according to the laws of a larger ecosystem</th>
<th>Agriculture is essential for society and follows natural law</th>
<th>Sustainable local food systems are essential to greater stability in our ecosystem</th>
<th>Ideas which support sustainable local food systems</th>
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<tbody>
<tr>
<td>Eugene P. Odum</td>
<td>Ecology</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Ecosystems evolve in succession from young stages characterized by production, growth, and quantity to mature stages characterized by protection, stability, and quality. Modern society and industrial agriculture in particular favor qualities of pioneer stages which are at odds with ecosystem development, a conflict at the core of rational land-use policies.</td>
</tr>
<tr>
<td>Howard T. Odum</td>
<td>Ecology</td>
<td>X</td>
<td>X</td>
<td></td>
<td>An energy analysis of our industrial food system indicates that we are outstripping the carrying capacity of the earth. Masking the depletion of agricultural soils through greater inputs of limited fossil fuels will lead to food shortage crises unless we adopt more sustainable farming practices.</td>
</tr>
<tr>
<td>Jane Jacobs</td>
<td>Urban Planning</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Agriculture evolved out of the urban environment before it became near exclusive domain of the hinterlands. Just as humans and their endeavors exist wholly within the natural order, agriculture belongs within and adjacent to cities. Furthermore, healthy city economies depend on replacing imports with local production.</td>
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<tbody>
<tr>
<td>Richard T. Forman</td>
<td>Landscape Ecology</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Ian McHarg</td>
<td>Landscape Architecture</td>
<td>✗</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anne Spirn</td>
<td>Landscape Architecture</td>
<td>✗</td>
<td></td>
<td></td>
</tr>
<tr>
<td>John T. Lyle</td>
<td>Landscape Architecture</td>
<td>✗</td>
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Forman, in the regional plan for Barcelona, included “major food areas for the future” as one of the 7 primary themes. This theme proposed large agricultural landscapes, concentrated greenhouses, and agriculture-nature parks to protect the prime agricultural soils, farm families, rural aesthetics and character, and biodiversity of the region.5

The creation of healthy places must be guided by the broader principles of ecology, summarized as:
- Retrogression (ill-health): simplicity, uniformity, independence, instability, low number of species, high entropy
- Evolution (health): complexity, diversity, interdependence (symbiosis), stability (steady state), high number of species, low entropy6

“The city must be recognized as part of nature and designed accordingly.”7

“Human beings are integral, interacting components of ecosystems at every level, and in order to deal adequately with these systems, we have to recognize that simple fact.”8

The most promising alternatives to our fragile global food system include smaller scale farming which requires less fossil fuel and more intensive managements, provides a greater diversity of crops, and is practiced inside towns and cities and near their outskirts.9

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5 Forman, Urban Regions.
6 McHarg, “An Ecological Method.”
8 Lyle, Design for Human Ecosystems, 17.
9 Ibid., 84-85.
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<th>Ideas which support sustainable local food systems</th>
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<tbody>
<tr>
<td>Wendell Berry</td>
<td>Literature, poetry, philosophy, agriculture</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>“Human continuity is virtually synonymous with good farming...For good farming to last, in must occur in a good farming community.”&lt;sup&gt;10&lt;/sup&gt; Once a farm abandons the scale and agricultural practices that evolved with the use of draft animals, there is nothing tethering a farmer to the values, methods, and restraint required to remain stewards of the land.&lt;sup&gt;11&lt;/sup&gt;</td>
</tr>
<tr>
<td>Wes Jackson</td>
<td>Botany, genetics, agriculture</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>The goal should be to create an agriculture which recognizes and co-evolves with natural systems.&lt;sup&gt;12&lt;/sup&gt; “Agriculture will remain a tragedy so long as it is kept separate from the problem of the human condition.”&lt;sup&gt;13&lt;/sup&gt; Cultural information imbedded in longstanding farming communities is essential to the future of agriculture and thus, the future of the human species.&lt;sup&gt;14&lt;/sup&gt; We need higher education to prepare students for homecoming rather than upward mobility.&lt;sup&gt;15&lt;/sup&gt;</td>
</tr>
<tr>
<td>Thomas Lyson</td>
<td>Sociology</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>“Civic agriculture...is a locally organized system of agriculture and food production characterized by networks of producers who are bound together by place.”&lt;sup&gt;16&lt;/sup&gt; It is characterized by sustainability, holistic ecological processes, equity, welfare, craft production, small firms, local control, self employment, democracy, civic engagement, and dispersed economic and political power.&lt;sup&gt;17&lt;/sup&gt;</td>
</tr>
</tbody>
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<sup>10</sup> Berry, *Standing by Words: Essays*, 1983, 149.  
<sup>11</sup> Ibid., 150-151.  
<sup>12</sup> Jackson, “Call for a Revolution in Agriculture,” 1981, 251.  
<sup>13</sup> Ibid., 255.  
<sup>14</sup> Jackson, “Call for a Revolution in Agriculture,” 1981, 256.  
<sup>15</sup> Ibid., 256.  
<sup>16</sup> Jackson, “Becoming Native to This Place,” 1994, 162.  
<sup>17</sup> Lyson, *Civic Agriculture*, 2004, 63.  
<sup>17</sup> Ibid., 70-71.
Eugene P. Odum defined an ecosystem as a unit of biological organization made up of all of the organisms in a given area interacting with the physical environment so that a flow of energy leads to a characteristic food web and material cycles within the system. It is clear by this definition that since humans function within ecosystems and food webs and material cycles are the defining characteristics of an ecosystem, that our food systems play a large role in the health of the ecosystems we inhabit. The theory of succession in ecology indicates that without outside intervention, ecosystems will mature to a stable state characterized by increased homeostasis with the physical environment in the sense of achieving maximum protection from its perturbations. A mature ecosystem is complex, diverse, and resilient—all qualities industrial agriculture disrupts. Industrial agriculture relies on maintaining the ecosystems at an immature level to achieve maximum yields. This high yield sacrifices complexity, diversity, and resiliency. An agricultural field is a fragile monoculture under constant threat of colonization by hardy invaders. This state is, to some extent, an unavoidable condition. Even in an organic vegetable garden with a diverse mix of heirloom plants, the gardener does daily battle with weather, weeds, and pests. The foods on which we’ve come to depend are largely weaklings, incapable of surviving without our care. However, this doesn’t mean that agriculture in its entirety is hopelessly at odds with the larger ecosystem—just modern industrial agriculture.

Howard Odum, systems theorist and younger brother to Eugene, wrote in a 1967 report to the President’s Science Advisory Committee on the world food problem that our industrial food system is outstripping the carrying capacity of the earth. He concluded that instead of sunshine, water, and soil, our potatoes were mostly made of oil. The dependence on non-renewable fossil fuels for high yield agriculture is unsustainable and masks the depletion of the soil caused by modern industrial techniques. Odum predicted food shortages once the limited supply of fossil fuels propping up agriculture was depleted and encouraged a widespread shift in the practice of agriculture. A major misconception of the
industrial food system was the conflation of yield with efficiency. Through system diagrams which accounted for the energy used from fossil fuels, Odum showed that industrial agriculture produced a net loss of energy, while traditional farming techniques in developing countries produced a small net gain. Therefore, even though modern industrial methods produced abundant yields, the high energy inputs required to achieve these yields reveal the system to be energy inefficient. Because the fossil fuels required to sustain industrial agriculture are limited and unstable, so is our current food system. He suggested that for the stability of the world food supply we refocus our food system towards simple closed loop systems which do not rely on fossil fuels. His recommendations were intended to guide policy abroad, which, at the time was intent on spreading the "green revolution" throughout developing nations.

Urban planning theorist Jane Jacobs' work agrees with Eugene and Howard Odum on the applicability of natural laws to human society. In Nature of Economies, she begins by stating her premise; “that human beings exist wholly within nature as part of the natural order in every respect.” She is best known for writing about cities, but her thoughts extend to regions and whole economies, viewing them through the lenses of ecology and economics. Like Eugene Odum, she recognizes that, as in natural ecology, diversity in a city engenders stability through the action of multiple, redundant feedback loops that self correct the ecosystem. Due to their complexity, diversity, and redundancy, cities are more resilient than other regions whose economies are simpler and less diverse. In the same way, a local food system will be more resilient with diversity of scale and product.

Jacobs also argues that agriculture evolved in tandem with cities and that as such, agriculture was urban before it was rural. The origin of agriculture, however, matters less than the idea her theory promotes; that agriculture is inseparable from the city. When Jacobs writes about agriculture, she is talking about a diverse agriculture that meets the food needs of the city that evolved with it, not export monocultures that we find on over half of Northwest

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20 Jacobs, The Nature of Economies, 2000
22 Philpott, "The History of Urban Agriculture."
Indiana’s land. Jacobs is writing about a local food system. She champions the local by writing that healthy city economies depend on replacing imports with local production.\textsuperscript{23} By finding and filling the numerous market niches demanded by a metropolis, instead of relying on imports from outside the region, the city and its region become more complex and therefore, resilient.

Jacobs’ and the Odums’ theories fit nicely with the work of pioneering landscape ecologist, Richard Forman. Forman, a biologist by training, looks at the surface of the earth as a complex mosaic made up of distinct and interrelated local ecosystems. In his plan for the city of Barcelona, he identifies the natural and human systems present in the Barcelona metropolitan region and plans comprehensively for them, balancing the needs of humans and the environment. Forman recognizes, like the Odums and Jacobs, that humans are part of a larger ecosystem and that neither environmental or human systems can be planned for in isolation. Forman also understands that agriculture is a required component of any human ecosystem and plans for food in the same way he plans for biodiversity, wildlife habitat, and robust regional economies. In the Barcelona Plan, Forman included “major food areas for the future” as one of the seven primary themes.\textsuperscript{24} This theme proposed large agricultural landscapes, concentrated greenhouses, and agriculture-nature parks to protect the prime agricultural soils, farm families, rural aesthetics and character, and biodiversity of the

\textsuperscript{23} Jacobs, “The Economy of Regions,” 1983

\textsuperscript{24} Forman’s seven primary themes for the Barcelona plan are Emerald network; Major food areas for the future; Water for nature and us; Streams, rivers, and blue-green ribbons; Growth, development, and municipalities; Transportation and industry, and; Nature and people in municipalities.
region. Forman’s proposals to ensure food for the future illustrate the principals of diversity, complexity, and redundancy espoused by ecologists for natural systems.

Ian McHarg’s ideas about landscape are drawn from ecology and harmonize with the work of the Odums, Jacobs, and Forman. McHarg states that healthy places must be guided by the broader principles of ecology, which he breaks down into negative and positive characteristics. An unhealthy place is characterized by retrogression, associated with simplicity, uniformity, independence, instability, low number of species, and high entropy. A healthy place is characterized by evolution, associated with complexity, diversity, interdependence, stability, a high number of species, and low entropy. Beyond determining land suitability for agriculture, McHarg does not write specifically about food or farming. However, he calls for landscape architects to design with nature. What better proving ground of his ideas can be found than in agriculture, where

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25 Forman, *Urban Regions.*
26 McHarg, “An Ecological Method.”
the success of fulfilling a basic human need (food) is dependent on careful stewardship of the land?

When Ann Spirn writes, “The city must be recognized as part of nature and designed accordingly,”27 she is addressing the dichotomy of humans and nature in the same vein as Eugene Odum and Jacobs. Spirn’s argument is applicable to other dichotomies which prevent comprehensive planning and design; urban v. rural, agriculture v. ecology, economy v. environment. Her call to design cities as a component of a larger ecosystem supports the notion of agriculture as multifaceted tool to feed a city and sustain the land. In particular, her ideas suggest urban agriculture as a component of green infrastructure in cities, much in the way that recreational areas within cities may simultaneously serve as stormwater infrastructure, air purifiers, and wildlife corridors. Agriculture, of course, can be practiced in myriad ways spanning the spectrum from devastating to nourishing the land. The type of agriculture which should be integrated into our cities is clearly the latter.

John Lyle is the landscape architect who has most seriously and thoroughly considered food systems in design. Like Odum, Jacobs, Forman, McHarg, and Spirn, he recognizes the need to view

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activity as part of a greater natural system. Unlike other landscape architects, Lyle specifically addresses food systems. In *Design for Human Ecosystems*, Lyle explains that the most promising alternatives to our fragile global food system include smaller scale farming which requires less fossil fuel and more intensive managements, provides a greater diversity of crops, and is practiced inside towns and cities and near their outskirts.

In two case studies, Lyle presents designs which incorporate alternatives to the problematic global food system. University Village is a hypothetical community of 150 students living on 100 acre site that provides many of their basic needs. The design balances the capacity of the land with the goal of near self-sufficiency. Lyle recognizes that total self-sufficiency in a community of this size is not a desirable goal considering the landscape resources of the site in light of the more suitable resources of the larger region. The University Village case study demonstrates a degree of eco-balance that can be achieved when the best

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29 Ibid., 84-85.
ecological knowledge of the designer is put to work within the limitations of the site.

The second case study, North Claremont, proposes alternatives for a 400 acre, formerly agricultural and natural area that has been zoned for single family detached residential lots. Four scenarios are illustrated; No Action, Food Emergency, Open Space, and Multiple Use. The Food Emergency design maximizes land devoted to intensive agriculture at the expense of natural space, but preserves the original zoning, where each single family residence is afforded at least one acre of land. The Multiple Use scenario balances agriculture with natural space and introduces a range of housing types, from attached to single family residences in a variety of configurations. Both designs strive to preserve natural space, rural character, and agricultural productivity while accommodating the proposed development.

Wendell Berry—poet, writer, philosopher, teacher, and farmer—has written extensively about agriculture and society. He proceeds from the belief that humans are one part of a bigger natural system and views agriculture as a defining characteristic of humanity. Berry sees a society’s agriculture as an indicator of its total character. Where agriculture goes, so does a culture. He is concerned with the land, but even more so, those who farm it. He views good agricultural practices as inseparable from their practitioners and recognizes that the communities that grow and support these practitioners are vanishing. He writes, “Human continuity is virtually synonymous with good farming...For good farming to last, in must occur in a good farming community.” Berry has been farming and writing for long enough to witness first-hand the rapid changes in our society’s agriculture and the often injurious effects on rural land and communities. His writing adds a human dimension to the ecological and economic arguments supporting local food systems.

Berry is a champion for the small family farming communities that supply a local food system and a promoter of agricultural practices that enrich the land. He views farming communities as long-standing keepers of cultural knowledge,

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30 Ibid., 181-183.
31 Berry, Standing by Words: Essays, 1983, 149.
writing “...essential wisdom accumulates in the community much as fertility builds in the soil.” He writes of the importance of memory and sense of place in a community, concerns share by landscape architects, but infrequently applied to the agricultural landscape. For Berry, the scale of our farms is inextricably linked to stewardship practices and the viability of farming communities. Once a farm abandons the scale and agricultural practices that evolved with the use of draft animals, there is nothing tethering a farmer to the values, methods, and restraint required to remain stewards of the land. Berry points to the Amish as an example of farming communities which doggedly persist at a scale that allows growth yet maintains agricultural traditions that respect the land.

Wes Jackson takes Berry’s poetic vision and Eugene and Howard Odum’s ecological framework and applies it to the field. Jackson trained as a genetic biologist and in 1976, founded the agricultural research and education organization, the Land Institute. Today, with Jackson as president, the Institute continues its founding mission; to “develop an agricultural system with the ecological stability of the prairie and a grain yield comparable to that from annual crops.” Jackson speaks and writes extensively, promoting an agriculture which recognizes and co-evolves with natural systems. Like the Odums, Jacobs, Forman, McHarg, and Spirn, Jackson sees the isolation of humans from agriculture, and agriculture from nature, as detrimental to all. Jackson opines that industrial agriculture is the greatest environmental problem we have. He describes the illusion of productivity of today’s predominant agriculture—contamination and erosion which decays our capacity to feed ourselves, but is masked through intensive inputs of fossil fuels, which will soon be gone. Through the Land Institute, Jackson and other scientists seek to develop a sustainable agriculture based on mixtures of perennial grains, emulating a prairie ecosystem. This agriculture would reduce erosion to near

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32 Ibid.
33 Ibid., 150-151.
34 Ibid., 150.
35 http://www.landinstitute.org
37 Ibid., 251-253.
negligible levels and require little to no inputs of chemicals or fossil fuels.\(^\text{38}\)

Jackson views agriculture as an essential component of human society and agrees with Wendell Berry, that cultural information imbedded in longstanding farming communities is essential to the future of agriculture and thus, the future of the human species.\(^\text{39}\) The types of communities that Jackson and Berry talk about as essential to the future of agriculture are disappearing. It is these farming communities that local food systems seek to preserve and support, and in the case of urban agriculture, re-grow from the ground up. Jackson looks to our educational institutions to help preserve, support, and re-grow agricultural communities. He believes we need higher education to prepare students for homecoming rather than the increasingly elusive upward mobility.\(^\text{40}\) Local food systems, especially, will need students looking to come home and grow roots rather than seek their fortune in far off places. Because many of the jobs that once made up local food systems have disappeared, new entrepreneurs will need to fill every niche of the system, from production to processing, marketing to retail, and recycling.

The final thinker whose ideas inform this local food system project is Thomas Lyson, a Cornell sociologist and community-based food system practitioner. Lyson coined the term ‘civic agriculture,’ which he defines as “a locally organized system of agriculture and food production characterized by networks of producers who are bound together by place.”\(^\text{41}\) Civic agriculture is characterized by sustainability, holistic ecological processes, equity, welfare, craft production, small firms, local control, self employment, democracy, civic engagement, and dispersed economic and political power.\(^\text{42}\) Lyson would agree that human society plays out within a larger ecosystem and that agriculture is an essential component of human society. Although he is sensitive to ecological issues, Lyson’s lens focuses on the social components of food systems. Lyson’s characterization of civic agriculture has much in common with the

\(^{38}\) Ibid., 260.
\(^{39}\) Ibid., 256.
\(^{40}\) Jackson, “Becoming Native to This Place,” 1994, 162.
\(^{41}\) Lyson, *Civic Agriculture*, 2004, 63.
\(^{42}\) Ibid., 70-71.
ideal local food system, and considers a full range of environmental, economic, and social concerns.

Conclusions

Food systems have received little attention from landscape architects and allied professionals, although at least three tenets supported by the disciplines support their consideration. The authors reviewed in this section unanimously agree that society operates within and according to the laws of a larger ecosystem. Most agree that agriculture is essential for society and follows natural laws, and several have thought enough about our food system to conclude that sustainable local food systems are essential to greater stability in our ecosystem.

With this theoretical foundation, landscape architects should know they have a place designing the infrastructure that will support more robust local food systems. Indeed, few professionals are better equipped to see the big picture necessary for such interventions. The building up of a local food system certainly requires the participation of cadre of stakeholders—farmers, chefs, produce managers, hospital administrators, agricultural economists, marketing specialists, community organizers, educators, and, above all, an energized base of consumers. So much of the necessary work to build up local food is intangible—cooperation, education, planning, policy advocacy, marketing, and organizing. During these activities, landscape architects and planners should certainly be at the table. However, when the time comes to build up local food by creating infrastructure, landscape architects and planners are uniquely qualified to lead the effort. Landscape architects can coordinate the needs and visions of these multiple voices into a coherent, functional, and inspiring whole that is more than the sum of its parts. Infrastructure facilitating a local food system, like infrastructure for managing stormwater or moving people through a city, can do better than serve one function. Local food system infrastructure should not take up space; it should be a place—a place that advances local food by filling logistical gaps, but also makes residents of a region proud to eat local. Landscape architects’ comprehensive outlook and skills at placemaking prepare them to create exceptional local food system infrastructure.
History of the Food System in Northwest Indiana

Overview

The history of the food system in Northwest Indiana is important for this project for two main reasons. First, it helps to know where to go if you understand where you have been. This is particularly true for food systems, which were much more local a couple of generations ago. By understanding what did and did not work in local food systems then, we are better prepared to design local food systems for the future. Second, the history for a site must be known intimately by the designer if the design is to preserve and promote the memory of the community, as suggested by Wendell Berry and Wes Jackson. These authors write about the gradual disappearance of the collective agricultural wisdom that has resided in traditional farming communities over the past two generations. This agricultural wisdom is one aspect a local food system seeks to preserve, where it remains, and re-learn and promote where it no longer exists.
With these ideas in mind, the following history of the food system in Northwest Indiana draws from several historians, the insights of an expert on early food cultures of the region, and historical data from the U.S. Department of Agriculture.

Each source consulted divides the history of the region somewhat differently. For ease of presentation, the history of the food system in Northwest Indiana is broken up into four categories:

- **American Indian phase (pre-1850),** characterized by dominance of the Potawatomi;
- **Pioneer phase (1850-1900),** characterized by European settlement, swamp draining, and the introduction of rail;
- **Pre-War phase (1900-1950),** characterized by many small family farms and the increasing predominance of commodity crops; and
- **Industrial agriculture phase (1950-present),** characterized by fewer, larger farms, higher yields, and less crop diversity.

When considering the history of the region, it is important to remember that even though the study area of Lake, Porter, and LaPorte counties is a useful grouping now because the region they encompass is recognized by federal, state, and municipal authorities to be a distinct zone within the metropolitan statistical area of Chicago. However, from a historical perspective, this grouping is quite arbitrary. The three county region is not homogenous and has distinct areas which were developed differently according to characteristic natural features. For this project, the region has been grouped into areas according to the ecologies which influenced when, what, and how food was produced in the region:

- **Duneland,** North of the Little Calumet, is an area historically important for berry crops.
Central region, centered around the Sauk Trail, was continually important for cultivation and grazing.

- Kankakee Marsh, formerly occupying the Southern part of the counties, was once one of the largest wetlands in the nation, and as such, was the last area in the state to be developed. The marsh was drained from 1850-1900 and has been under cultivation ever since.
Major themes that are explored in this section include relationships among crops, trade, and modes of transportation:

- Fruit crops were historically important in the duneland area, especially berries.
- Agricultural production and trade were principal factors in patterns of development throughout the region.
- A wide variety of crops was grown in the region from pre-European settlement through the development of rail in the industrial revolution, much more so than today.
- The transition to commodity crops was an important change in the food system, concurring with the arrival of rail to the region, especially in the Kankakee Marsh region.
- The region, like most of the United States, has seen a reduction of acres in farmland, increase in average farm size, and decrease in diversity of farm products on most farms over the years.
The American Indian Phase (pre-1850)

Many native people inhabited the region over the years, including Miami, Ottawa, and Potawatomi. The Potawatomi gathered, farmed, hunted, fished, and traded. In Potawatomi society, women were the principle carriers of agricultural knowledge. Potawatomi planted by hand in the soft soils along streams and rivers, cultivating squash, pumpkins, potatoes, corn, onions, beans, peppers, grapes, melons, and sunflowers. They domesticated turkeys, fished trout, whitefish, sturgeon, pike, pickerel, and bullheads and hunted deer, bear, and bison, and made maple sugar during the leanest season.  

Berries grew wild throughout the duneland region and

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\[2\] Ibid.
were a particularly important foodstuff, so much that the Potawatomi named months after them—strawberries and blueberries each had a month.³

Potawatomi traded using trails that extended East and West along the ridges formed by ancient shore lines or along the lakeshore.⁴ More often, they traveled by water in birch bark canoes, sometimes as far as into the St. Lawrence and down the Mississippi.⁵ With concern to food, trading between the earliest Europeans, French trappers, and the Potawatomi was rather unbalanced. Trappers depended heavily on Potawatomi food and largely adopted their diet and methods of preparation. The major contribution of the French trappers to the Potawatomi diet was the introduction of pork.⁶

One of the first settlers in the region was Joseph Bailly, who, in 1822, established his isolated fur trading post between the Little Calumet River and a Potawatomi trail in present day Northern Porter County.⁷ Bailly developed strong ties with the Potawatomi, which was the key to his success as a businessperson. In this early period, the wealthiest residents of the region were the Potawatomi, whose knowledge of the region allowed them to produce and glean more food and other essential supplies from the land. Newcomers to the region were heavily reliant on the Potawatomi, who accumulated much wealth through trade with these comparatively desperate people.

Near the end of this early period, the influence of the Potawatomi waned. Many Potawatomi were forcibly removed to Kansas by treaty in 1833. Those who remained in the area were dispersed by European settlers, typically to places less desirable for farming, like the dunes and the Kankakee Marsh.⁸

³ Dr. Ezekiel Flannery (researcher in the history of local foodways) in discussion with the author, January 2011.
⁵ Ibid.
⁶ Flannery, 2011.
⁸ See also Schoon, Calumet Beginnings, 2003.
The Pioneer Phase (1850-1900)

Settlers reached the Northwest region of Indiana later than the rest of the state because so many swamps made it hard to travel. From 1840-1850, the first big wave of settlers arrived, more than doubling the population of Lake and Porter counties. 9

During the first years of settlement, the majority of the population made their livelihoods as farmers south of the Little Calumet River, as the region north of the river was too wet to enter by foot and too filled with vegetation to enter by boat. The only markets for agricultural goods were in Michigan City and Chicago, and to a lesser extent, LaPorte. The journey was upwards of forty miles, and was made by horse or ox-drawn wagon either along the lakeshore or on Potawatomi trails poorly suited for wagon travel. 10

The principal agricultural products attempted by farmers were butter, cheese, hay, oats, and potatoes. 11 Cattle raising became a principal occupation out of necessity, because the cattle could transport themselves to market. 12 Still, the expense and frustration of the journey to market encouraged many pioneers to continue emigrating westward in search of more hospitable regions in which to settle.

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11 Ibid.
12 Ball, T.H. Northwestern Indiana From 1800-1900: A View of Our Region Through the Nineteenth Century. Chicago: Donohue & Henneberry, 1900.
Stagecoach inns were some of the settlers’ first businesses in the region, serving multiple functions as tavern, inn, and trading post. These taverns provided basic lodging and simple meals. A winter menu from the Oak Hill Tavern reports that for $.25, a traveler could get a meal of pork, pheasant, quail, prairie chicken, buckwheat cakes with maple syrup, potatoes, bread and butter, honey, tea, coffee, and milk.\textsuperscript{13}

As the population in the region increased, a degree of division of labor appeared and specialization in agricultural products was seen. The soil and topography dictated that the Northernmost area of the region was best suited for orchards, the floodplains for hay or grazing, the sandy ridge just south of the Little Calumet River was excellent for root crops, while the extremely fertile southern halves of the counties, including the freshly drained Kankakee marshland, grew just about anything.\textsuperscript{14}

The increase in development showed an inverse relationship with many native food sources, including deer, bear, prairie chicken, black walnut, sugar maples, and anything that grew in the Kankakee marsh.\textsuperscript{15}

**Railroads**

The first wave of railroad building was from 1852-1865, when four major railroads were built. The first stations and shipping points grew up around the railroads in the 1850s. These were Chesterton, Lake Station, Dyer, and Porter, then Ross and Hobart.\textsuperscript{16} During this era, there was great variety in transportation

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{East_Chicago_Station_circa_1907.jpg}
\caption{East Chicago Station, circa 1907. Photo from rootsweb.com.}
\end{figure}

\begin{table}
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\hline
Year & Event \\
\hline
1852 & First railroad built \\
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1865 & Last railroad built \\
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\textsuperscript{13} Schoon, *Calumet Beginnings*, 2003.
\textsuperscript{14} Ibid.
\textsuperscript{15} Flannery, 2011.
\textsuperscript{16} Moore, *The Calumet Region*, 1959.
methods and agricultural products.

Strawberries, wintergreen berries, and huckleberries grew wild in mass quantities along the sand ridges and were harvested by women and children. Huckleberries could be raked from the vines into bed sheets. Cranberries were abundant in swamps and marshes. Berries were packed in barrels and shipped by rail to Chicago. A thousand bushels of huckleberries were shipped from Tolleston in a single season. The fruit crop exceeded the grain crop of Centre Township some years. An annual shipment of berries from Lake county was about 5,000 bushels.¹⁷

Strawberries, then raspberries and cranberries were picked by kids, who then walked to Ainsworth Station (South Chicago) to sell or peddled them in Chicago, where they got 10-15 cents/quart.¹⁸ Poultry, eggs, and dairy were shipped to Chicago. Dairy farmers located near rail lines where there were daily milk stops.¹⁹ Crops were hauled to Chicago or other cities for sale. Many truck gardens were established in Northern Lake counties.

Most farms during this period were small by today’s standards—40-160 acres. Although they were small, they produced a wider variety of products than do today’s farms. Different areas began to specialize their agricultural products based on their specific microclimate and geography. Lake County was the top producer of butter, hay and oats in 1870 and in 1880, led the state in cheese production.²⁰ Onions were a big cash crop on the sandy Calumet shoreline and in the South Holland area. The fertile prairie in the central region grew corn, oats, hay and potatoes.²¹

Trains changed agriculture dramatically—they brought new equipment to farms and took fresh produce away. Tinley and Valparaiso moraine became the home to big farms that were more about selling produce than feeding a family.²² The Civil war, along

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¹⁹ Ibid.
²¹ Ibid.
with the new railroads, greatly influenced agriculture in the region, raising farm product prices.

Although Chicago is known throughout the world for its stockyards, Hammond, Indiana, was the site of one of the most significant developments in meat packing history. In 1891, the big four packers included three from Chicago and one in Hammond, called the State Line Slaughterhouse, the first packer to successfully ship dressed beef to distant cities by rail.

Figure 2.9. Hammond Distilling Co., circa 1910. Photo from rootsweb.com.
The Transition to Industrial Agriculture

The transition to industrial scale agriculture during the 20th century was greatly influenced by the rise of global trade, changes in technology and U.S. agricultural policy. The first wave of globalization in the early 1900s was powered by steam engines and the telegraph and brought about the “golden age” of American agriculture, lasting from 1910-1914. The golden age was short as prices in the world market dropped in the 1920s. The U.S. responded by increasing tariffs, as did many countries, and world trade continued to plunge. In 1933, the U.S. passed the first Agricultural Adjustment Act in response to economic distress in agriculture that worsened with the onset of the Depression. The act was a combination of commodity specific price and income support programs. In 1949, the Agricultural Act was passed,

aiming to further stabilize U.S. agriculture with a permanent policy of high, fixed-price supports and acreage allotments.

After WWII, technology in farming increased at a rapid pace. Mechanization and increased chemical inputs led to greater economies of scale, spurring rapid growth in average farm size and rapid decline in the number of farms and the rural population. Tractors quickly replaced draft animals and by 1960, mechanical harvesting was the norm. Rapid development of inexpensive chemical fertilizers and pesticides, advances in plant and animal breeding and mechanization increased agricultural productivity at an average rate of 1.9% annually from 1948-1999. Rising productivity after WWII led to increasing surpluses and U.S. agricultural policy responded with a more market-oriented approach to take advantage of global market demands.

In the 1970s, U.S. agricultural exports rose dramatically, propelled by the repeal of the gold standard and the Soviet Union’s agricultural crisis. As the Soviet Union recovered and their demand for U.S. grain waned, U.S. farms once again found themselves in financial crises in the 1980s. Throughout the 1980s and ‘90s, U.S. agriculture was increasingly integrated with the global market, exporting and importing more agricultural products than ever before. As developing nations’ agricultural production expands, U.S. farmers are pressured in both export and domestic markets.

![Figure 2.12 National trend in agricultural exports. Reproduced from Dimitri, 2005.](image)
Technology and globalization will continue to influence U.S. agriculture into the future. Although the Northwest Indiana agricultural landscape, like most of the U.S., is weighted heavily toward commodity crops that are deeply enmeshed with the global marketplace, fresh market farmers may find some relief from global pressures as a result of the local foods movement. With increased consumer demand for local foods, farmers of fresh market products have an edge in a market flooded with tasteless tomatoes and bland apples from distant places. Investment in the quality, production and marketing of local foods is a wise strategy for U.S. agriculture policy,
decreasing the influence of global markets on our food supply.

Technological advances in farming can support local food systems by focusing on more than yield increase. Technology supporting local food can extend seasons, reduce petrochemical inputs, develop on-farm energy and increase efficiency and sustainability in the marketing, distribution, and waste management of local food.

Figure 2.15 Distribution of commodity crops, fruits, and vegetables across the region's landscape.
Profile of the Northwest Indiana Local Food System

Local Food Supply in the Region

The USDA, in its 2007 Census of Agriculture, finds that, nationally, local food suppliers which engage in direct sales are generally smaller in size, grow mostly fruits and vegetables, and have access to urban markets. The suppliers are also younger, less experienced, and are more likely to be women than suppliers in the mainstream food system. Direct sales farms are typically close to a city and small in size. A full 84% of all farms engaged in direct sales are either in or adjacent to metro counties. Direct sales decrease proportionally with a suppliers’ distance from a metro area. Of all farms engaged in direct sales, small farms receive a larger portion of their total income from direct sales at 35%. Medium sized farms derive 17% and large farms, 7.5%.
Because the Northwest Indiana region is within the Chicago metropolitan statistical area, one may expect to find high numbers of direct sales farms and equally elevated earnings. The data show that LaPorte and Lake counties exceed national and foodshed averages for earnings from direct farm sales, as expected, but Porter county lags behind the national average by two thirds. The direct sales farms in Lake county, while fewer in number, do well in earnings. Of all the farms in the region, LaPorte county has the highest percentage of farms with direct sales. Nationally, fruit and vegetable growers are currently more successful at direct sales than livestock producers. Of all farms in the nation, farms whose main products are melons or vegetables are more likely to engage in direct sales (44%), followed by fruit and nut producers (17%). Vegetable, fruit, and nut producers also earn more through direct sales per farm than other producers. Only 26% of all
direct sales are made by fruit and vegetable growers, but they earn 56% of the revenue from all direct sales. Fruits and vegetables have a natural affinity for direct sales because they require minimal processing before sale compared to livestock.

In the region, the great majority of acres of vegetables harvested are found in LaPorte county. Porter and Lake counties harvest more acres of vegetables than the average Indiana county, but far less than an average county in the nation.
Figure 2.21 Map of farms and ranches identified through the Indiana Department of Agriculture, MarketMaker, and stakeholder input to be active in the local food system through direct sales. The number of producers identified (52) is below the number of farms participating in direct sales in the region (145) according to the 2007 Census of Agriculture.
Across the nation, a single county in the U.S. averages 35 acres of vegetables harvested per 1,000 residents, not accounting for density. Compared with this figure, even the region’s standout county in terms of vegetable acres harvested falls short of typical. LaPorte county counts 29.5 acres per 1,000 residents, while the more densely populated Lake and Porter counties harvest a fraction of the national county average.

Of the 25 producers which responded to the local food study survey, the majority were vegetable growers, in keeping with national trends. Vegetable producers were followed by meat and fruit producers, then dairy producers. Some respondents produced foods in multiple categories.

Research by the USDA shows that direct sales are boosted if producers diversify their on-farm entrepreneurial activities, like production of value added goods, community supported agriculture, or organic production. The majority (68%) of all direct sales producers practice direct sales alone and earn only $6,844 on average. In comparison, the very few (2%) direct sales producers that engage in three or more additional entrepreneurial activities earn on average four times as much, or $28,651 from their direct sales.

Figure 2.22 Producers responded to the survey in proportions characteristic of local foods producers.
In the region, our survey respondents use multiple avenues to market their food. Most respondents marketed through farmers markets and on-farm stand and stores. Fewer respondents marketed direct to groceries, restaurants, and institutions. From among the “other” responses, producers marketed through the Chicago Produce Terminal, the Wakarusa Auction, a CSA, and a farmer’s cooperative in St. Joseph county.

Producers responding to the survey market primarily in Lake and Porter counties within the region and other nearby counties like Cook, Lake and Will counties in Illinois, St. Joseph county in Indiana, and Berrien county in Michigan. The breadth of marketing choices geographically and by retail venue indicate that many of the respondents diversify their marketing outlets.

Although gross figures for number of farms and direct to consumer sales in the region are comparable to state and
national averages, considering the region’s dense population and proximity to an urban center, Northwest Indiana could do much more in direct sales. Figures detailing the portion of farm sales income from direct to consumer sales indicate that compared with national averages, the region lags behind its potential. With an abundance of fertile land and a dense population within close distance, our region should be able to greatly increase direct to consumer sales.

<table>
<thead>
<tr>
<th>Region</th>
<th>Direct farm sales per capita, 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>$3.85</td>
</tr>
<tr>
<td>Foodshed</td>
<td>$3.12</td>
</tr>
<tr>
<td>Region</td>
<td>$1.36</td>
</tr>
<tr>
<td>Porter</td>
<td>$0.76</td>
</tr>
<tr>
<td>LaPorte</td>
<td>$4.34</td>
</tr>
<tr>
<td>Lake</td>
<td>$0.88</td>
</tr>
</tbody>
</table>

Figure 2.26 Direct farm sales per capita. Data from the USDA Census of Agriculture, 2007.

<table>
<thead>
<tr>
<th>Region</th>
<th>Percent of total farm sales income from direct to consumer sales, 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake</td>
<td>0.70%</td>
</tr>
<tr>
<td>LaPorte</td>
<td>0.30%</td>
</tr>
<tr>
<td>Porter</td>
<td>0.20%</td>
</tr>
<tr>
<td>Region Average</td>
<td>0.40%</td>
</tr>
<tr>
<td>Foodshed Average</td>
<td>0.73%</td>
</tr>
<tr>
<td>National Average</td>
<td>0.53%</td>
</tr>
</tbody>
</table>

Figure 2.25 Percent of total farm sales income from direct to consumer sales. Data from USDA Census of Agriculture, 2007.
Direct-to-Consumer Markets

Direct-to-consumer marketing is the face of local food, representing the way the local food system is most easily recognized by the general public. Direct-to-consumer marketing includes farmers’ markets, community supported agriculture (CSA), U-Picks, roadside stands, and on-farm stores. Data about these kinds of markets is tracked by the Census of Agriculture, a survey conducted every five years by the USDA’s National Agricultural Statistics Service, most recently in 2007. The data collected for the Census of Agriculture is limited in its applicability to local markets by the definitions for direct marketing and sales, which include internet sales where products may be shipped long distances. Still, we can use the data to see general trends in direct-to-consumer marketing. Nationally, direct-to-consumer sales are a small but fast growing segment of agriculture, making up only .8% of the total market share, but showing a 120% increase from 1997 to 2007. From 2002-2007, growth was concentrated in larger farms (sales over $50,000 annually) and farms which specialized in fruit, vegetables, or beef.

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Figure 2.28 Region Farmers Markets identified by Porter County Extension outnumber the count by the USDA (8 as opposed to 12).
Farmers Markets

The USDA has been collecting information about farmers’ markets since 1994. From that point until 2010, farmers’ markets in the United States grew by 249%, with steady increases each year. From 2009-2010, the Midwest saw the largest percent increase of numbers of markets out of any region.

In 2011, our three county region counted 12 farmers markets, up from 8 in 2010. The 50% increase in our region is above the state increase of 37% and the national increase of 17%. Indiana has 171 farmers markets total and ranks 5th in the nation in growth. Neighboring states Illinois and Michigan boast high numbers of farmers markets (305 and 349, respectively). Michigan also ranks high in growth, up 30% from 2010.

Farmers’ markets in our region are typically sponsored by an organization, municipality or business and provide temporary space and infrastructure for multiple vendors to sell direct to the public. Farmers markets are fairly well distributed in major population centers, with the exception of the eastern-most communities along the lake like East Chicago and Hammond.

Nationally, about 12% of farmers markets have the capability of accepting SNAP (formerly known as food stamp) benefits onsite. In our region, none of the farmers markets currently accept SNAP. The Valparaiso farmers market, however, does accept WIC cash value vouchers and participates in the Senior Farmers Markets Nutrition Program. Valparaiso is the sole farmers market offering these services to low-income residents of the region, even though it has fewer low income residents than many other municipalities in the region.

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National research shows that farmers markets are often the first point of entry to the marketplace for small and medium sized producers, serving as business incubators. From the point of view of the consumer, farmers markets allow consumers to develop relationships with the people who grow their food and provide the opportunity to support local farmers. Farmers markets can benefit the local economy by enlivening business cores, as in the case of the European Market in downtown Chesterton. Farmers markets also hold the potential to offer fresh food to communities where access is typically limited. Although farmers markets have the potential to help support a thriving local food system, it is often difficult. Although many of the foods at farmers’ markets may be produced locally, it is not a requirement of all markets. In the USDA Agricultural Marketing Service’s 2006 Survey of Farmers’ Market Managers, it was found that only 63% of markets require vendors to sell only products they produced. Furthermore, due to the lack of standard definition of local food, among markets that distinguished local food from non-local, the range of distance away from the market that qualified as local may vary from

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4 http://www.ams.usda.gov/AMSv1.0/WholesaleFarmersMarkets

within the county to within the state or as far as 100 miles away.\textsuperscript{6}

Results from our local food survey indicate that regional farmers markets are not as connected with the local food system as they could be. Half of the region’s market managers responded to the online survey. These managers reported that half of the markets require vendors to declare where their products were grown or processed. Only one manager reported that the market had defined “local.” One third of markets are unable to find sufficient vendors to sell local food. Half of the managers estimated that the percentage of their market made up of local food vendors was 25% or less. Half of the managers responded that the biggest challenge in promoting or requiring locally grown or processed food at markets was simply finding vendors.

Market managers report that education of the public about local foods, increased support for fledgling growers and producers and a means to find vendors would help increase the amount of local food vendors at their markets.

“We need to support initiatives like a growers guild and a regional food hub.”

-survey quote from market manager

\textsuperscript{6} Battle, Emily. “The wait is over as area farmers markets open.” The Free Lance-Star, April 22, 2009.
Seasonal Produce Retailers

Figure 2.30 Seasonal Produce Retailers in the region based on data from MarketMaker, 2010.
Community supported agriculture

Another sector of direct-to-consumer agriculture are farms operating through community supported agriculture, or as they are commonly referred to, CSAs. The 2007 Agricultural Census estimates that as many as 12,549 farms nationwide marketed products through a CSA arrangement. Our research using Local Harvest and stakeholder input indicates there are at least four CSAs operating in our three county region and many more in adjacent counties. Shares from region CSAs range in size, price, payment structure, and number of farms supplying the CSA.

U-picks, farm stands and farm stores

Other types of markets that operate direct-to-consumer are U-picks, farm stores, and farm stands. U-pick operations are most effective for products that are not easily harvested by machine but require no expertise to harvest by hand, like berries, tomatoes, pumpkins, and Christmas trees. Berries and apples are popular U-pick products in the region, which counts at least 20 locations.

Farms stores refer to permanent on-farm structures which sell produce from the host farm and possibly other local farms. They may also be associated with a U-pick operation. Farm stands can be stationary or mobile and typically operate seasonally, selling products roadside, either on or off the farm. Using MarketMaker and the Indiana Department of Agriculture Guide, at least 13 farm stores in the region were identified.

Household and community gardens

Community and household gardens make important contributions to the overall foodshed, but are not well documented. The American Community Gardening Association estimates 18,000 community gardens in the United States and

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Canada.\textsuperscript{8} The National Gardening Association estimates that 36 million households in the United States grew herbs, fruits, or vegetables in 2008 and more planned to grow them in 2009.

Currently, there is no directory of community or household gardens in the region, but Chicago’s greenNet has identified over 600 active community gardens over 50 wards in the city of Chicago. Recent efforts by GrowNWI, a new joint project by County Line Orchard, the Lake Area United Way, and many regional partners, may help identify existing community gardens in the region. GrowNWI’s overarching goal is to promote and support urban agriculture and community gardens in Northwest Indiana.

What problems do local food suppliers face?

In this study, over 50 local producers were contacted and asked to comment on their biggest challenges. About half of these replied and their responses varied greatly, but some major themes emerged:

- Marketing
- Education
- Competition with large volume retailers
- Time/timing
- Distribution

Marketing or advertising was the most often repeated theme, appearing in a third of the open responses. Along with marketing comes education, so that consumers understand the extent of positive benefits of local products. Competition with high volume retailers is a challenge which may also be addressed with more effective marketing and education. Lack of time and timing came up several times in the context of having enough staff for farmers markets, especially when there are multiple markets on a given day. Distribution was the final theme emerging from the responses. When local producers were asked in an open ended question, what would help them most to sell locally; over half responded that effective marketing and consumer education would help most. After marketing and education, distribution was the next most often reported wish. The last theme to emerge from the responses was a need for communication among local producers.

In light of the responses from local producers seeking local distributors, it comes as no surprise that when MarketMaker was used to identify possible local distributors during the outreach portion of the study, there were few to be found. Some of the responses from the three distributors who took the survey shed light on the difficulties of distributing at the local scale. Challenges cited include lack of efficient and economical transportation, cold storage, and a more accessible network of restaurants interested in local food.
Although the acreage and income of local producers was not requested in the survey, during regular meetings and interviews with key stakeholders, it was learned that many of our local producers are small. This is typical across the nation, as
local food suppliers generally have annual gross incomes of $50,000 or less. Their size puts them at odds with the scale of the mainstream food system, where farms, distributors, processors, and institutional consumer demands are very large. Small farms find it hard to integrate into the existing mainstream system which demands consistent high volume, no matter the season.9

In the mainstream food system, all of the functions necessary to get a chicken from egg to table are broken up among a long chain of intermediaries which process, package, store, ship, advertise, and sell the product. In local food systems, this supply chain is often abbreviated, where the chicken farmer is also the processor, distributor, marketer, and vendor. When local growers shorten the supply chain by selling directly to consumers, they may be able to capture profits that auxiliary industries would retain in the mainstream system.10 However, direct sales also require a wider range of skills. A weakness in any one of these skills is a potential barrier to success.

For many small farmers participating in direct sales, the time spent away from the farm processing, distributing, marketing, and selling their products makes it difficult to scale up their business. They are spread so thin they are left little time to grow to the size necessary to take advantage of mainstream markets. Many researchers report that the time requirements for direct marketing are difficult for small farmers to meet.11

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10 Martinez, et. al., “Local Food Systems.”
Farmers’ markets and u-picks can be especially draining on the labor resources of the small farmer involved in direct sales. Small suppliers are often multi-taskers in the food supply chain, growing, processing, distributing, marketing, and selling their products themselves. This state of affairs is likely not by choice but for lack of better options. There is a dearth of support industries that tolerate the small scale of many local growers. Existing mainstream processors, refrigerated storage facilities, and distribution centers operate at a scale that puts them out of reach for individual small suppliers. This lack of appropriately scaled infrastructure is reported as a barrier to accessing larger market.

Another commonly cited barrier to success in direct sales by local suppliers is lack of expertise of some key elements of the supply chain after production, specifically accounting, knowledge of institutional purchasing practices, and deciphering of many layers of local, state, and national food safety regulations. Staying on top of regulations can be challenging due to unclear jurisdictional boundaries, where multiple levels of government claim authority over rulemaking and enforcement. Understanding which regulations apply can be difficult for suppliers wishing to move products across local or state boundaries, especially in the case of processed foods.

What are solutions to these problems?

Small farmers who have been successful operating through multiple direct sales venues have done so by streamlining packaging and marketing processes while diversifying the outlets for sale, for instance selling in

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13 Day-Farnsworth, Lindsey, Brent McCown, Michelle Miller, and Anne Pfeiffer. Scaling Up: Meeting the Demand for Local Food. (CIAS002) 1-12-09, UW-Extension Ag Innovation Center and UW-Madison Center for Integrated Agricultural Systems, Madison: Cooperative Extension Publishing, 2009, 40.
15 Tropp, “National Farmers Market.”
institutions as well as farmers’ markets. Other farmers have joined forces to meet the large scale demands of mainstream institutional buyers, like schools and hospitals. By partnering with other small scale suppliers, farmers can increase their customer base, share risk, reduce the number of man-hours devoted to many tasks throughout the supply chain, and ultimately, compete in the mainstream food system.

Local Food Demand

Although local food buyers are hard to pin down by common demographic measures, studies suggest they share common values. Educating non-local food buyers about these values and about how to access local foods is key to increasing market share for local foods.

Who demands local food and why?

There are many reasons people choose to buy local, top among them freshness, quality, benefits to the local economy, benefits to the local environment, and value. Although many studies have been conducted to determine the characteristics of local food buyers, they tend to produce conflicting results, and are therefore limited in their usefulness. Determining consumers’ willingness to pay a premium for local foods has been clearer. The USDA Economic Research Service (ERS) compared ten studies of willingness to pay and found that in random sample trials, consumers on the whole were willing to

16 Martinez, “Local Food Systems.”
See also Day-Farnsworth, “Scaling Up.”

pay between 9% and 50% more for a local food product. However, pinning down who of the general public is more likely to pay more for local food was less conclusive. ERS found that neither gender, education, nor income is a factor determining the willingness to pay more for a local food item. The comparison found commonalities in values of consumers who were willing to pay more for local food. Local food buyers prioritized quality, nutrition, the environment, and supporting local growers. 

Although the local food survey did not initially seek input from individual residents of the region about their experience with local food, after a strong response from individuals, a category was added to the survey to seek their feedback. Twenty-four individual consumers responded to the survey. In open ended responses, individuals in the region echoed many of the same reasons for choosing local food that appears in current research. Respondents valued local food for the following reasons, beginning with the most reported response:

1. Supporting the local economy/local community

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19 Martinez, “Local Food Systems,”

20 Ibid.
2. Environmental issues
3. Freshness/taste, tied with health

Local consumers most often look to farmers markets to find local food, but also go to farm stands, grow their own food, and seek out local options on restaurant menus. When asked what would make choosing local foods easier, residents responded that year round availability and local options in grocery stores would help most.

In national research, restaurants and institutional buyers echoed many of the same values as individual consumers in Northwest Indiana and across the nation. Grocery store owners perceive locally grown food as a trend on the rise, however studies on food retailers are limited.

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**Groceries and food stores**

Although farmers’ markets and farm stands may be the most visible manifestations of local food, research suggests that nationally, most local food is sold through traditional retail establishments. The research firm Packaged Facts reported that in 2007, only 24% of local food was sold through direct-to-consumer operations. Retailers of local food include national grocery chains, small, independent grocers, health and natural food stores, and consumer-owned food cooperatives. Many of the largest national grocery chains make some effort to market local foods, including Wal-Mart and Meijer, however their definitions of local and commitment to supporting local growers varies. Research suggests that smaller independent grocery stores with established ties to a specific region find it easier to market themselves as purveyors of local foods.

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22 Guptill, “Buying into the Food System.”

23 Martinez, “Local Food Systems.”
24 Ibid.
25 Ibid.
Although the sample size of our survey’s retailer respondents is statistically insignificant, their reports of the challenges of sourcing local food are valuable. Of the four retailers that responded to the survey, all four reported that they source locally whenever possible. The respondents sourced food in a variety of ways, using distributors, farmers markets and going direct to farmers.

Other ways that local retailers source food is online and directly from manufacturers. Retailers rank better quality local products as the most important factor in sourcing more local food, followed by lower cost and more reliable delivery. Retailers report that they need more farmers with reliable availability that can deliver the goods to the stores. For larger scale stores, like full service groceries, it is necessary to be able to identify the products at point of purchase through the store’s price look up (PLU) system and provide invoicing and consumer packaging that is country of origin labeling (COOL) compliant. Hypothetically, this could be achieved by a farmer with some
specialized software and a printer to make stickers for the products, but in practice, it may be an insurmountable obstacle for a single farmer, who is already juggling the needs of multiple vendors. One retailer reported that working with local farmers would be easier if they could project their purchasing needs seasons in advance. While this may be difficult for a new retailer to project, established groceries and food stores with relatively steady product needs could feasibly project a portion of their produce needs enough in advance to coordinate planting between multiple cooperating farmers.

The following maps show many groceries, specialty food stores, and convenience stores in the region, overlaid upon the most populated areas (in grey). Some specialty food stores and a few full service groceries work with local producers. While convenience stores are not commonly considered as distribution channels for local food, as stakeholders have pointed out, they could easily sell ready to eat local foods with longer shelf lives, like apples, honey, and canned value added items, and as such, should be included as possible local food outlets.
Foodservice marketing includes selling to restaurants and institutions like schools, hospitals, and prisons. Relationships between farms and institutions are mutually beneficial, with the institutions receiving fresher food and

Where does the food you purchase come from?

My own garden or farm
Lake, Porter, or LaPorte Counties
Indiana, Illinois, or Michigan
Nationally or internationally

16.7% 25.0% 58.3% 83.3%

Figure 2.39 Regional restaurant and institutional respondents’ approach to sourcing local food.

farmers accessing a dependable market. The National Restaurant Association reports increasing interest in local foods in restaurants, with locally sourced produce, meat, and seafood as the top “hot trends” for 2010. The Association’s 2009 survey found that 90% of fine dining and 30% of quickservice operators believed that local foods will continue to grow in popularity.

Food buyers from seven restaurants, four schools and a food bank weighed in on the local food survey. Overall, they were enthusiastic about local foods, reporting that they either already sourced locally or would like to. Although 92% of respondents reported that they source locally as much as possible or when convenient, provenance of food purchased was weighted heavily toward non-local sources, indicating unmet demand.

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26 Martinez, “Local Food Systems.”
28 Ibid.
Figure 2.40 Region restaurants and institutions typically buy food through a distributor.

Respondents reported that they mainly get food through distributors, mainly Gordon Food Service and Sysco. Others went to farmers markets, went direct to the farmer, or used jobbers (small wholesalers who sell only to retailers and institutions).

Institutions ranked reliable delivery as the most important factor in being able to source more local food, followed by better quality products, greater availability of products throughout the year, and a more streamlined ordering process.

When reporting on challenges of sourcing local food, many institutions mention the same issues. Two thirds of institutions cited availability of local food as a challenge. The same amount reported that delivery was a major issue. A little over 40% responded that coordination with farmers and other local food vendors is a challenge, as is obtaining adequate volume for their needs. Other challenges noted were HACCP, tracking, price, and seasonal limitations. When asked what most would help them to source local food, institutions overwhelmingly reported a streamlined, centralized ordering and delivery system. These responses reflect the work recently done by the USDA’s Agricultural Marketing Service on food hubs. AMS’s research proposes food hubs as a solution for the

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29 HACCP stands for hazard analysis and critical control points, a federal food safety management system used in commercial food preparation.
logistical problems that local food systems commonly face, including problems of coordination, ordering, and distribution.\textsuperscript{30}

Even though five schools responded positively to sourcing local foods in the survey, the region is yet to have an official farm to school program. The National Farm to School Network estimates that over 2000 schools operated a farm to school program in 2010, a number that has grown from just 6

\textsuperscript{30} http://www.ams.usda.gov/AMSv1.0/foodhubs

schools less than 10 years ago.\textsuperscript{31} (Farm to School Network 2009) In farm to school programs, relationships with local farmers provide schools with fresh local produce and opportunities for experiential learning through farm visits. Some farm to school programs also grow food for school lunches on site, incorporating school gardens into the curriculum as tools for hands on learning.

Although outreach to hospitals during the study was weak and none responded to the survey, partnerships between

local producers and hospitals seem like a natural fit. The large, stable and relatively immobile population of health conscious consumers that make up the staff and patients at hospitals have been found to especially appreciate local foods marketed through hospital cafeterias.\(^{32}\)

**What problems do local food consumers face?**

The mainstream food system of which most institutions, restaurants, and retailers are a part operates at a large scale. Typical consumers are accustomed to the ease of giant food distributors who provide large quantities of food reliably, no matter the season. Even if a restaurant, school, hospital, or grocery store wishes to source local food, it can be difficult to coordinate purchases through local vendors. Restaurants cite lack of reliable vendors, inconsistency in product availability and quality, difficulty of following non-standard ordering procedures, and complications of dealing with multiple vendors among the challenges of sourcing local foods.\(^{33}\) Hospitals and school cafeterias found similar obstacles, plus staff who rely on pre-cooked heat and serve products and do not know how to prepare fresh foods.\(^{34}\)

**What are solutions to these problems?**

Cooperation among suppliers to streamline the purchasing process for institutional buyers will help ease the transition to local foods. If multiple growers funnel their produce through a shared distributor who understands how to sell to institutions, they will overcome the barriers of scale they face on their own. Additionally, education at all levels of demand, from the grocery shopper, to chef, to hospital administrator will help make the case for local foods and establish a base of knowledge about how to utilize local producers.

\(^{32}\) Sachs, Elizabeth and Gail Feenstra. *Emerging Local Food Purchasing Initiatives in Northern California Hospitals.* UC Sustainable Agriculture Research and Education Program, UC Davis, Davis: UC Sustainable Agriculture Research and Education Program, Undated.

\(^{33}\) Painter, “An Analysis of Food Chain Demand.”

\(^{34}\) Sachs, “Emerging Local Food Purchasing.”
Summary

The preceding sections explore the food system of Northwest Indiana from the most abstract to the most tangible. Although food systems have received little attention from landscape architects and allied professionals, well established tenets of the discipline support the involvement of landscape architect in local food system planning, especially in the building of infrastructure.

As landscape architects search for the genus loci of a place, they are well advised to seek out its history. The history of food systems in Northwest Indiana shows that a wide variety of crops was grown in the region from pre-European settlement through the development of rail in the industrial revolution, much more so than today. Although the region has seen a reduction of acres in farmland, increase in average farm size, and decrease in diversity of farm products on most farms over the
years, the inherent characteristics of our soil and climate would support an increase in the diversity of farm products necessary to build up the local food system.

The issues facing the local food system in Northwest Indiana is similar to issues that are faced by local food systems across the country. Research shows that the following will best help strengthen Northwest Indiana's local food system:

- Cooperation among suppliers to streamline the purchasing process for institutional buyers
- A shared distributor to aggregate, process, and label local products and deliver them to institutions in a ready-to-sell form
- Education and promotion of local foods at all levels; from the grocery shopper, to the chef, to the hospital administrator

The next chapter will lay out the values, goals, and objectives identified in stakeholder research and introduce a possible intervention in the local food system to address these issues: the food hub.
Chapter III: A jump start for the Northwest Indiana local food system

Overview

Throughout the author’s year-long engagement with the local food study at NIRPC, stakeholders repeated some refrains again and again in meetings and in surveys. The local food system suffered from a gap in distribution, not enough production of local food, too few processors, and the need for more education and promotion of local foods were consistent themes throughout the study. These issues were echoed by national research reviewed by the USDA Agricultural Marketing Service (AMS). AMS has recently begun the promotion of local food hubs, which they see as a viable solution to help grow local food systems. Through stakeholder input, AMS’s research on local food hubs, and case studies of two existing hubs, the form and function of a food hub for Northwest Indiana, the South Shore of Indiana, will be defined.
Since September 2010, the author has been convening meetings with a variety of local food system stakeholders in the region, interviewing key players, and surveying over 80 individuals representing all facets of the local food system. The input gleaned from these sources has been distilled into a succinct list of values and goals representing the collective concerns of the region. These values and goals will be represented to the extent possible in the design proposal for a Northwest Indiana local food hub.

Values

These values have been drawn from concerns brought forth at the kickoff meeting in September 2010 and FoodSAC’s 2040 visioning session, conducted at a meeting in February 2011.

- Sustainable farming
- Environmental stewardship
- Hunger and access to fresh local food
- Economic development
- Health
- Comprehensive “big picture” thinking
- Cooperation
- Building local community through local food
- Fairness
- Enjoyment of Food
Goals

These goals were identified at FoodSAC’s 2040 visioning session in February 2011, refined by NIRPC staff over the summer, and edited by the Food System Advisory Committee (FoodSAC) in August 2011.

- Residents of the region eat more local food.
- Our local food system is an economic generator for the region.
- Local food is accessible to everyone in our region.
- Our region is healthier through local food.
- Residents of the region have a great awareness, understanding and appreciation of local food.
- Our local food system enhances our environment.
- Our region has a strong network of local food system collaborators.
- Our local food system uses appropriate cutting edge technology.

Objectives supporting these goals that are specific to the local food hub proposal are detailed on pages 99-101, following two precedent studies.
Food Hubs

Introduction

One solution to the near ubiquitous problem of processing, storage, and distribution in local food systems is a food hub. Much like local food, there is not a standard definition of a food hub. Beginning in September 2009, the USDA Agricultural Marketing Service (AMS) began researching existing facilities, organizations, and services that they characterize as food hubs and has come up with a working definition. AMS currently describes a food hub as:

“A centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products.”


A food hub serves to fill in the “missing middle” of local food systems.2 Throughout the nation, local foods advocates and researchers have recognized two main difficulties in strengthening local food systems; scale and distribution. “Missing middle” describes both issues. Food systems today tend to operate at two scales, very large and very small. Local food producers are apt to be small—too small to sell and distribute on their own to most restaurants, let alone schools or hospitals. A food hub allows aggregation with other small producers, sometimes under a local or regional brand. Together, the volume of their products is large enough to serve institutions. As the market for local foods is strengthened, producers who wish to grow their business can more easily do so, moving from being a small business to a medium sized one.

Missing middle also describes the problem of distribution. It is the “middle-men” who have disappeared from local food

systems. Relatively few processors or distributors exist compared with the number of growers and consumers. Those that do exist, once again, operate at an industrial or miniscule scale, and are incompatible with the scale of local producers. Food hubs supply the infrastructure and expertise required to overcome issues of scale and distribution and bring together producers and consumers to form a more robust local food system. Food hubs also serve an important networking function, coordinating pre-season planting, processing and delivery requirements, and marketing messages for multiple producers, institutions, and partner agencies. Through greater coordination, individual stakeholders can achieve more together than they ever could alone.

Organization & Structure

A 2008 Cardiff University study identifies five basic driving forces for food hubs. These are:

- Retail-led
- Public Sector-led
- Producer/Entrepreneur-led
- Producer/Cooperative-led
- Wholesaler-led (retailers and distributors)

Each of the drivers has advantages and disadvantages, which are illustrated in Figure 2. Although it is useful to categorize existing hub models to assess their strengths, weaknesses, opportunities and threats, in practice, food hubs tend to combine multiple categories in their structures, as evidenced in Figure 3.1. Driving forces behind food hubs in the U.S. Reproduced from Barnham, Preliminary Findings, 2011.
AMS, in their food hub study, found that nearly a quarter of the 45 hubs surveyed described their driver as a combination of two or more categories. Entrepreneurs and collaborations between producers and entrepreneurs make up 40% of food hub drivers, while 16% were started by non-profits. Although only 7% of U.S. food hubs defined themselves as driven by the public sector, 60% of food hubs utilized government funding to begin their operations. Half of those still received government funds in April 2011.

AMS found that most food hubs in the U.S. have organized themselves as non-profits (36%) or cooperatives (27%). Other popular structures are LLC (22%), C corp (7%),
and S corp (4%). These figures indicate a tendency among U.S. food hubs to seek more than profit. Food hubs vary in their purposes: which range from an exclusively market-driven model seeking profit through increased efficiency, to a holistic model that aims to strengthen the entire local food system through increased accessibility, sustainability, education, and profits.

Whether food hubs are solely market-driven or subscribe to the triple bottom line of people, planet, and profit, there are certain components of a food hub that are necessary. AMS identifies three core functions of any successful food hub:

- Aggregation/Distribution
- Active Coordination
- Permanent Facilities

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3 Barnham, *Regional Food Hubs*, 2011
In order to provide aggregation and distribution services, a food hub must have a drop off point for multiple farmers and a pick up point for distributors and other customers. Active coordination refers to supply chain logistics, marketing, and coordination among multiple stakeholders. AMS suggests a hub include a business management team to fulfill this capacity. A food hub also needs permanent facilities for food storage, processing, packing, and palletizing. These are the most basic functions of a food hub, but a food hub can be much more. Hubs may include wholesale and retail vending space, on-hub farms, community kitchens, or event space and provide a range of educational and community services.

Services

Existing food hubs vary in the services they provide. They often work with partners to expand their range of services. Food hubs most often provide marketing and promotion, transportation, and branding services. They most often rely on...
partners for food safety and GAP (Good Agricultural Practices) training, and for marketing and promotion.\(^4\)

Food hubs also provide a variety of auxiliary services benefiting their communities. Most food hubs aim to increase community awareness about local and sustainable foods issues. Nearly half of food hubs distribute to food deserts (areas with low access to fresh foods), while just under 35% rely on a partner agency to do so. Just under half offer nutrition or cooking education themselves or through a partner. Only 50% of the food hubs surveyed accept SNAP (Supplemental Nutritional Assistance Program, formerly food stamps) themselves or through a partner agency.

Food hubs also offer environmental programs, although it is unclear from the AMS survey results whether these are services or educational programs. About 85% of food hubs offer some sort of composting program, about half themselves and half through a partner. Approximately 75% offer a recycling program and 30% offer an energy savings program.

\(^4\) Ibid.
Products

Although the products offered by food hubs vary, fresh produce is almost always offered (95%). Other common products are eggs, dairy, meat, and poultry. Value-added products like preserves, baked goods, frozen, canned, and prepared foods are offered, but by fewer food hubs.

The number of suppliers (local farms and processors) per food hub also differs. Number of suppliers for a food hub range from 4-450, and average 77.\(^5\)

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\(^5\) Ibid.

Figure 3.8 Products offered by food hubs, broken down into primary and secondary products. Reproduced from Barnham, Preliminary Findings, 2011.

Figure 3.9 Number of suppliers for each food hub. Reproduced from Barnham, Preliminary Findings, 2011.
Sales

Sales figures for food hubs are promising. Although the median age for U.S. food hubs is just five years, several are economically solvent. For the 35 food hubs surveyed by AMS, the average annual sales in 2010 were $3.7 million. The median was $700,000 and ranged from $46,000 at the low end, up to $40 million. Six out of 35 hubs grossed over $5 million, but the majority grossed much less.

Among food hubs grossing $3 million or less, average sales were $871,000 and the median was $580,000.

Food hubs have an array of customers, including restaurants, hospitals, caterers, colleges, distributors, food cooperatives, corner stores, mobile retail units, and more. Restaurants and

Figure 3.10 Sales figures for 35 U.S. food hubs in 2010. Reproduced from Barnham, Preliminary Findings, 2011.

Figure 3.11 Sales figures for U.S. food hubs grossing $3 million or less in 2010. Reproduced from Barnham, Preliminary Findings, 2011.
food co-ops are most often a food hub’s primary customers. Food hubs also sell direct to the public through hub-owned storefronts, but this method is less common, with just 18% of hubs reporting direct sales.

AMS found that the average food hub in the U.S. is seven years old or younger. They typically have strong relationships with local producers who have been involved since the hub’s inception. Food hubs commonly incorporate social or environmental concerns into their missions, exemplifying the

Summary

The concept of a food hub is relatively young and little research exists. However, the AMS survey and work done by Cardiff University indicates that the food hub model shows promise. As food hubs mature, more research will be necessary to evaluate their success as infrastructure for local food systems.
triple bottom line. The average food hub employs six full or part time staff and utilizes several volunteers. Hubs typically work with 40 food suppliers on a regular basis. Many of their suppliers are small or mid-sized farmers or ranchers.

Food hubs’ primary products are fresh fruits and vegetables, but they typically sell a variety of items including eggs, meat, poultry, and value-added products. Their customer base is diverse, including a variety of institutions and restaurants. Outside of the principal activities of aggregation, storage, and distribution, the average food hub offers a range of services and activities for the community—farmers and the public alike. Gross sales averaged $871,000, but most hubs continue to rely on some form of external support to cover expenses.\(^6\)

Based on available knowledge, food hubs are a promising solution for the missing middle in local food systems. They hold the potential to expand market opportunities for small and mid-size producers and to increase access of fresh local foods in communities.

**Public Markets**

One element that most food hubs lack is public space. The addition of public space for festivals and events could enrich the concept of the food hub. Luckily, there is a strong tradition of vibrant public space in the food hub’s predecessor, of sorts—the public market. AMS has also looked to public markets as a channel for the aggregation and distribution of local foods. By their nature, many public markets across the U.S. have become de facto local food hubs. Public markets are typically involved in a variety of activities which overlap with local food hubs, like finding new markets for producers, processing, storage, community services, educational programs, quality control, and marketing.\(^7\)

\(^6\) Ibid.

There are several key differences between public markets and food hubs. One is the relationship with producers, who are tenants instead of suppliers. In a public market, the producers sell directly to the public using the market’s facilities. Another key difference is the physical layout of the market, which is geared primarily toward retail sales. AMS surveyed 25 public markets across the nation and found that 52% are retail oriented, 20% are wholesale, and 28% are a combination of the two. Thirty-two percent are outdoor facilities.\(^8\)

Public markets are generally better established than food hubs, as many were founded over 90 years ago.

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\(^8\) Ibid.
Public markets are most often non-profits or managed by a municipal agency. The Food Hub Collaboration found that government agencies are running the oldest public markets. Most of the newer markets have structured themselves as non-profits. Most markets are funded through tenant rents, grants, and municipal funding. Market sizes and capacities vary widely.

The principal participants on the supply side of public markets are market managers, tenants, and partner agencies. Each group provides different services at the market. Tenants in public markets do most of the packing and processing while market managers take care of marketing, promotions, branding, business management, and training. Market managers typically provide nutrition and cooking educational programs and coordinate the acceptance of SNAP and other public benefits. Market managers also coordinate composting, recycling, and energy saving programs.\(^9\)

\(^9\) Ibid.
Precedent Studies for a South Shore Hub

Two precedents have been selected as potential models for the proposed food hub in Northwest Indiana. One is a newly established, holistic food hub, the Local Food Hub in Charlottesville, Virginia. The other is the well established public market in Detroit, Eastern Market.

Local Food Hub - Charlottesville, Virginia

The mission of the Local Food Hub\textsuperscript{10} is:

“To strengthen and secure our local food supply by supporting small, family farms, increasing the amount of fresh food available to our community, and inspiring the next generation of farmers.”

The Local Food Hub (LFH) was started in 2009 by two women entrepreneurs, one with a background in non-profits, the other with experience in retail and distribution.\textsuperscript{11} The cost to start up the hub was $300,000 and was obtained from county economic development grants, local foundations, individual donations, and in-kind contributions.\textsuperscript{12} LFH is structured as a non-profit organization comprised of a local food distribution service and an educational farm.

As of June, 2011, the LFH was supplied by over 60 small farms from within 100 miles of the hub. Suppliers primarily produce fruits and vegetables, but also eggs, chicken, beef, pork, and some value added items. Producers for LFH range in size from 1-500 acres and have gross annual sales from $2,500 to $2 million. LFH suppliers must show a commitment to pursuing sustainable growing practices, but are not required to obtain any specific certifications, such as organic.\textsuperscript{13}

Customers of LFH report that their relationship has increased their local food purchases by 30%. LFH supplies 100 customers including several distributors, caterers, and processors, 45 public schools, 20 restaurants, 10 groceries, four senior centers, three college dining halls, and one hospital.

\textsuperscript{10} Local Food Hub is the proper name for this organization, not to be confused with the generic term local food hub, which is used throughout this project. \textsuperscript{11} Barnham, \textit{Preliminary Findings}, 2011. \textsuperscript{12} National Food Hub Collaboration. “Food hubs: Viable regional distribution solutions.” \textit{Sustainable Agriculture and Food Systems Funders Forum}. Minneapolis: SAFSF, June 22, 2011. \textsuperscript{13} Ibid.
Their food shows up in the hospital cafeteria, on patient trays, and through a once a week “pop-up market” for staff. As a result of LFH’s collaboration with Charlottesville public schools, over 30,000 students have access to fresh, local foods in their cafeterias.\footnote{Ibid.} LFH sells wholesale only, which they say keeps their products from competing with direct sales at local farmers markets.\footnote{Farm Aid, The Local Food Hub. 2011. http://www.farmaid.org (accessed June 22, 2011).}

Through partnerships with community organizations, LFH has been able to reach out to low-income communities. They have worked with the Boys & Girls Club to organize pop-up markets in low-income neighborhoods, partnered with the municipal Parks and Recreation for a summer food program, and collaborated with food banks to donate fresh produce.

LFH has grown quickly since its inception in 2009. Sales for 2010 totaled $375,000.

Producers working with LFH report an average sales increase of 20-60% and are making plans to increase production. LFH also reinvests in the local farming community through their purchases, totaling $600,000 so far. Wholesale distributors have a reputation among producers for low purchase prices, which puts wholesale markets out of reach for some producers. All of the producers supplying LFH have reported their pricing
to be either “fair” or “good.” LFH estimates their services have assisted in retaining more than 200 local agricultural jobs.\textsuperscript{16}

An important part of the work of LFH is coordinating production with growers. LFH reviews sales figures and works with buyers to make projections in the fall. By December, they report their projected demand and target pricing range to producers. By mid-January, they are pre-ordering crops from farmers. This advance planning helps growers with their business plan and planting schedule and ensures a more consistent supply.\textsuperscript{17}

LFH is made up of two geographically isolated facilities; the distribution warehouse and the educational farm. The farm is 60 acres and certified organic. It includes a greenhouse, packing shed, box cooler, a barn used for classes, outbuildings for farm equipment, housing for farm managers and apprentices and office space for three full time staff, five seasonal apprentices, and three summer interns. The LFH distribution warehouse includes a 3,000 square foot cooler, 200 square foot freezer, a loading dock, a fork lift, a 16’ refrigerated truck, and an office for five full time staff.\textsuperscript{18}

The holistic vision, quick growth, and willingness to translate their experience into a model for other potential food hubs around the country make LFH an excellent precedent for a food hub in Northwest Indiana. Furthermore, LFH’s mission reflects several values identified by stakeholders in our region. However, LFH’s relatively narrow scope with regards to economic development does not fully address the broad-based goal of the local food system becoming an economic generator for the region. LFH has focused their economic development concerns almost exclusively toward farmers, while stakeholders in Northwest Indiana seek enhancement of all sectors of the food system, including processing, retail, restaurants, and waste management. Although LFH does many outreach activities in

\textsuperscript{16} National Food Hub Collaboration, Food Hubs, 2011.
\textsuperscript{17} Ibid.
\textsuperscript{18} Ibid.
urban areas, the impact of their facilities on their surroundings is limited due to their rural locations. In order to fully address the goal of becoming an economic generator for the region, the model provided by LFH must be supplemented by a separate model that seeks to revitalize an urban region which has experienced intense disinvestment and blight.

Figure 3.17 LFH's distribution center in rural Charlottesville, Virginia.
Eastern Market–Detroit, Michigan

The iconic Eastern Market was founded in 1891 when Detroit’s downtown farmers market moved to a wood and hay market about a mile northeast of downtown. At first Eastern Market was a single shed and open market supplied by local truck farmers who sold directly to the public. It has grown over the years to become the largest public market in the U.S.—a 43 acre complex, replete with five market sheds, offices, and several auxiliary structures. Today, it offers a diverse range of fresh and prepared foods, goods, and services year-round through the daily wholesale market, the flagship Saturday public market, and several farm stands across the city. It also hosts many festivals such as Michigan Apple Fest and Flower Day, and private events.

Since 2006, the market has operated as a public-private venture, where the buildings and operations are the responsibility of the non-profit Eastern Market Corporation (EMC) while the grounds belong to the city of Detroit. The EMC’s ambitious vision for the market extends far beyond selling food. Their goal is to make the EMC “the undisputed center for fresh and nutritious food in southeast Michigan,” using it to “build a dynamic, diverse, and unique urban district.”

The site of Eastern Market is distinctly urban, adjacent to industrial and commercial land uses with multi and single family residential zones within six blocks. The area is bordered by major roads and highways which make it highly accessible by truck, but disconnected from other districts for pedestrians. The area, known for its “grittiness” and diversity, has been targeted as a catalyst for development in Detroit. Since 1996, no

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less than eight plans have been conceived for the district. Implementation has been slow, but recent renovations to the market sheds and the groundbreaking of the Detroit Market Garden, envisioned as a center for urban agriculture, show promise. The Market Garden is to be a 2.5 acre urban farm and resource to the public about urban agriculture. The plan for the Market Garden includes:

- Greenhouse to grow starter plants for community gardens throughout the city
- Hoop sheds to extend the growing season
- A variety of intense gardens highlighting different planting strategies
- On site community composting center
- Storage for tools and supplies for community gardens
- Classroom space

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The most recent plan for the Eastern Market District is the Eastern Market 360° Capital Improvement Plan, conceived in 2009. It incorporates much of the work from previous planning efforts. The plan has seven key objectives:  

1. Increase Market Share  
2. Improve public health  
3. Enhance facilities for all market  
4. Improve flexibility  
5. Increase long term viability  
6. Expand district business activity  
7. Reduce disruption  

While the 360° Capital Improvement Plan’s objectives for the established Eastern Market necessarily differ from the goals for a proposed food hub in Northwest Indiana, they can still act as a guide for food hub development. Several of the objectives are directly applicable to the development of a food hub in the commercial/industrial corridor in Miller Beach. The 360° Plan seeks to use the marketplace as an anchor to reverse decades of decline and transform the historic core of Detroit around food. The plan seeks to increase the supply and demand for nutritious food by adding a more elaborate, permanent retail complex and education center. The plan also calls for increased outreach to urban food deserts using the existing wholesale distribution infrastructure. Planned renovations include a variety of more sustainable heating.

cooling, and electrical power solutions with low operating costs over the long term. Structures will be renovated or built with multiple uses in mind to allow for the greatest degree of flexibility. The 360° plan calls for more market days, increased opportunities for special events, space for incubating food-related businesses, and the introduction of appropriate mixed-use development to increase customer traffic and economic vitality. ²⁴

Detroit is facing many of the same issues as areas of Northwest Indiana—disinvestment, an ever-shrinking population and tax base, vacant land, and derelict buildings. Detroit is using the Eastern Market to stimulate the revitalization of the historic core through food-related enterprise. Areas in the region share some of the same qualities as the Eastern Market District—commercial, industrial, and residential land use within close proximity; a certain appealing industrial “grittness;” and above all, a palpable potential to be something greater.

The Eastern Market promotes local food, but not exclusively. The wholesale market, especially, relies on products from a variety of places. Many of the proposals in recent plans for reinvestment include local-food specific projects such as the Market Garden and Urban Agriculture Center. Due to the abundance and variety of growers in Michigan and the long standing tradition of truck farms at Eastern Market, availability of local products is almost taken for granted. However, this is not the case in Northwest Indiana, where the number of local producers is much fewer. For a local food hub in the region to be successful, a more hands-on approach will be necessary, including pre-season coordination with growers and matchmaking between producers and buyers.

²⁴ Ibid.
Summary

The ideal food hub for Northwest Indiana will incorporate elements of a non-profit local food hub and the for-profit components of a public market. Both precedents have lessons to offer a potential hub in the region. A South Shore food hub should emulate LFH’s hands-on approach to strengthening the local food system and mission to support small family farms. A South Shore hub should also incorporate a retail component and flexible event space, and seek to revitalize the surrounding region, as is the goal for Eastern Market. Like both precedents, a South Shore hub should include an educational farm, classroom and office space, and a composting facility.

A South Shore Food Hub will best support the local food system if it is able to fill the gaps in aggregation, storage, and distribution for local producers, and provides a “place to be” that excites interest in and increases demand for local food.

Objectives

The goals identified by local food system stakeholders are supported by objectives inspired by AMS research on food hubs, precedent studies, theoretical foundations, and the history of the food system in the region. These objectives are specific to the development of a local food hub, and as such, are not meant to comprehensively address all aspects of the local food system.

1) Goal: Residents of the region will eat more local food.
   a) The South Shore Hub (SSH) increases the supply and demand for local food through coordination between producers and buyers, aggregating, packing, distributing, promoting, and selling local food under a regional brand.

2) Goal: Our local food system will be an economic generator for the region.
   a) The SSH supports local farmers by providing infrastructure and support services, such as pre-season planning, required to scale up to meet demand.
   b) The SSH incubates fledgling local food businesses by providing infrastructure and services.
c) The SSH will serve to spur the revitalization of the surrounding community by creating a place of pride for the region, drawing residents and visitors into the community for recreation, education, and shopping.

3) Goal: Local food will be accessible to everyone in our region.
   a) The SSH will be accessible by foot, bicycle, and public transit as well as by car.
   b) The SSH will be in or near a food desert and environmental justice (EJ) populations.*
   c) The SSH will support satellite food trucks, pop-up markets, and urban agriculture to bring fresh local food to food deserts.
   d) The SSH will accept WIC, SNAP, and Senior farmers market benefits and will provide training and grant writing resources so that partner farmers markets can too.

4) Goal: Our region will be healthier through local food.
   a) The SSH will excite interest in fresh, healthy, local foods through marketing campaigns and festivals.
   b) The SSH will partner with regional social service agencies to support health in the region.
   c) The SSH will provide space for cooking demonstrations and classes.

5) Goal: Residents of the region will have a great awareness, understanding and appreciation of local food.
   a) The SSH will create and market a regional brand to sell at an on-site retail store and wholesale to groceries, restaurants, and institutions throughout the region.
   b) The SSH will promote culturally, historically, and environmentally relevant regional foods by growing and promoting them.
   c) The SSH will work with partner organizations to provide local foods related agricultural, historical, nutritional, and environmental education at area schools.
   d) The SSH will work with partner organizations to support urban agriculture in the region with technical assistance, grant-writing help, and providing an outlet for sales.

6) Goal: Our local food system will enhance our environment.
   a) The SSH will demonstrate best practices in urban agriculture that ensure healthy water and soil and conserve or generate power.
   b) The SSH will demonstrate best practices in green building and site design.

*See definition of key terms in the Appendix for full description of environmental justice populations.
c) The SSH will work with partner agencies to support sustainable farming practices among local producers through education and technical assistance.

d) The SSH will work with partner agencies to promote the use of sustainable urban agriculture as a green infrastructure strategy throughout cities and towns in the region.

7) Goal: Our region will have a strong network of local food system collaborators.

a) The SSH will convene local food system stakeholders to coordinate efforts and strengthen the local food system.

b) The SSH will host a regional food policy council.

8) Goal: Our local food system will use appropriate cutting edge technology.

a) The SSH’s on-site urban farm will utilize season extension technologies such as hoop houses and indoor agriculture (aquaponics).

b) The SSH will generate energy on site using sustainable sources (wind, biomass, solar).

c) The SSH will harvest and utilize rainwater on-site.

d) The SSH will facilitate local food coordination, education, and purchasing through a fully-integrated web-based system.

e) The SSH will be flexible enough to explore new appropriate technologies as they become available.
Chapter IV:  
Envisioning the South Shore Hub

Overview

This chapter proposes a local food hub in the Miller Beach community of Gary, the South Shore Hub (SSH). First, the rationale for site selection is presented, followed by analysis at a regional scale. Regional analysis is followed by inventory and analysis at the site scale and an outline of the program. The last section discusses conceptual design and presents and evaluates the master plan.

Site selection

A number of potential sites around the region were reviewed over the course of the project, including several in Valparaiso, a few in East Chicago and Hammond, and two in the Miller community of Gary. Many sites were identified through the Northwest Indiana Forum's property finder, a regional database of commercial and industrial properties for sale or rent. Other sites were identified through the author's familiarity with the region. Each potential site was researched on county GIS
websites to verify lot sizes and, when available, zoning. All potential sites were inspected by the author and documented with photos. In all, ten potential sites were visited and documented.

Potential sites had to meet a set of criteria required by the program. Since there is no direct precedent for a site incorporating all proposed uses for the hub, space requirements were determined by identifying several sites with comparable uses and documenting their size and layout. The space needs for the potential hub were then estimated by summing the total space required for all programmed uses.

<table>
<thead>
<tr>
<th>Programmatic criteria for facilities at nodes:</th>
<th>Area (sf)</th>
<th>(acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office space for a self-sustaining agricultural product innovation center</td>
<td>Hammond Innovation Center</td>
<td>4,800</td>
</tr>
<tr>
<td>Retail space for a business incubator</td>
<td>Sawgrass Market, Chesterton</td>
<td>21,000</td>
</tr>
<tr>
<td>Demonstration area for hoop houses and other strategies to extend the growing season</td>
<td>Growing Power, Milwaukee</td>
<td>87,120</td>
</tr>
<tr>
<td>Demonstration area for best practices for fruit &amp; vegetable farming/gardening at a variety of scales</td>
<td>LFH Educational Farm, VA</td>
<td>304,920</td>
</tr>
<tr>
<td>Facility accommodates a cooperative centralized warehouse distribution center and cold storage</td>
<td>Common Market, Phila</td>
<td>40,000</td>
</tr>
<tr>
<td>Create facilities for cooperative processing (kitchens, packaging centers, abattoirs)</td>
<td>Indy’s Kitchen</td>
<td>2,360</td>
</tr>
<tr>
<td>Facility provides a home base for mobile processing facilities</td>
<td>Lorentz Meats, MN</td>
<td>10,000</td>
</tr>
<tr>
<td>Flexible event space for festivals to recognize and promote local foods</td>
<td>Showers Plaza, Bloomington</td>
<td>120,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Precedent project</th>
<th>Area (sf)</th>
<th>(acres)</th>
</tr>
</thead>
</table>

Table 4.1 Space requirements based on initial program

```
590,200
78,160
512,040
```

| total space required | 590,200 | 13.55 |
| indoor               | 78,160  | 1.79  |
| outdoor              | 512,040 | 11.75 |
In addition to space requirements, the ideal site would also meet the following criteria:

- Accessibility by 16' delivery trucks and ideally, semi trailers
- Within a 45 minute drive from most existing farms
- Within a 15 minute drive from major population centers
- Accessible (by 15 minute drive or on bus route) to environmental justice populations
- Within a 30 minute drive of several major institutional buyers like schools, hospitals, and grocers
- Avoid development of managed lands, wetlands, and floodplains
- Prioritize the development of greyfield and brownfield sites
- Prioritize sites with rail and barge access

A regional search produced a plethora of suitable properties based on the original nine criteria, so a more selective set of criteria were developed to evaluate potential sites. The additional criteria include:

- Prioritize sites with existing reusable structures
- Prioritize socioeconomically and racially neutral sites so that all residents of the region may feel ownership of the hub
- Prioritize pedestrian and bike access through connections to existing and proposed greenway network
- Prioritize sites with existing or possible future adjacent mixed use

These 13 criteria were determined based on stakeholder values and existing research on local food distribution. The most non-negotiable criteria is that the site be accessible to trucks. All research indicates that presently, local food is distributed by truck, whether by pickup, refrigerated delivery vehicle, or semi. Accessibility to the site includes space to maneuver, the presence of loading docks, and legal rights to travel on nearby roads.

The determination of maximum distances from key entities, like farms, population centers, environmental justice populations, and institutional consumers is admittedly unscientific. The author was unable to find a recommended maximum distance in existing literature and found it premature to survey stakeholders about their willingness to drive to a
distribution hub for this project. The maximum distances are to be used as a tool for comparison of sites, not an absolute make-or-break factor in site selection. With this understood, the travel time from farms was set at 45 minutes, to major institutional consumers at 30 minutes, and from major population centers and, in particular, environmental justice communities, at 15 minutes. The author understands from discussions with farmers that an hour drive to a farmers market is not uncommon, therefore 45 minutes was chosen to help tighten the selection criteria. For institutional consumers, the hub is envisioned to provide a delivery service throughout the region. The delivery service would be achieved using electric or bio-diesel trucks whose refueling requirements are better compatible with short routes, chosen here to be 30 minutes. For individual consumers, the maximum travel time is the shortest, at 15 minutes. Special attention should be given to accessibility to environmental justice (EJ) populations—those low-income or minority residents of the region who disproportionately experience the effects of environmental and economic degradation.

The next two criteria; avoid wetlands, managed lands, and floodplains; and prioritize development of brownfields and greyfields, reflect the goal that the local food system enhance the environment. It is assumed that all the existing wetlands in the region function better as green infrastructure than wetlands constructed in order to satisfy environmental mitigation requirements. Floodplains are avoided for reasons similar to wetlands. Existing wetlands are valued for their water filtering capabilities, flood control, and recreational value, whether managed or not. It is also assumed that the existing managed lands are of high value environmentally, recreationally, or both, and therefore should not be diminished in any way. Greyfields and brownfields, on the other hand, are a detriment to the environment of the region. These sites are at best, covered in impermeable pavement, contributing to the volume, speed, and poor quality of stormwater. At worst, they continue to leach
toxic substances into the groundwater and soils. Both greyfields and brownfields are sources of blight in the region, usually being vacant or dilapidated properties. The remediation of these sites through urban agriculture is a source of great interest among stakeholders, and therefore, is prioritized.

The prioritization of rail and barge access is, to an extent, a liberty taken by the author. As discussed earlier, local food is documented to travel exclusively via roads at the present time. However, throughout this project, the existing paradigm for the food system is challenged. Therefore, the author felt it important to provide rail or barge access to the site should the current circumstances change so that road travel became undesirable. Although local food systems have not utilized rail or barge, the global food system certainly does, resulting in a significant reduction in energy used. The table at left created by the USDA shows that although fresh produce typically travels 374 miles per shipment, the energy use for freight is reduced by a third over travel by truck. Refrigerated rail travel for fresh produce is making great strides, but still can only economically outcompete truck travel in trans-continental shipments. When a fossil fuel based transportation system is no longer the cheapest way to distribute fresh food, we can expect to see an increase in alternative fuels and modes of transportation. A local food hub positioned to tap into rail or barge will best be able accommodate these alternative modes of transportation when the time is right.

---

**Table 4.2 Characteristics of freight travel by truck and rail**

<table>
<thead>
<tr>
<th>Commodity group</th>
<th>Average distance per shipment Miles</th>
<th>1997</th>
<th>2002</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh produce, oilseeds, and other horticulture</td>
<td>438</td>
<td>481</td>
<td>374</td>
<td></td>
</tr>
<tr>
<td>Meat, fish, and preparations</td>
<td>137</td>
<td>162</td>
<td>243</td>
<td></td>
</tr>
<tr>
<td>Milled grain products and preparations, and bakery products</td>
<td>122</td>
<td>189</td>
<td>262</td>
<td></td>
</tr>
<tr>
<td>Other prepared foodstuffs and fats and oils</td>
<td>127</td>
<td>179</td>
<td>230</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Freight mode</th>
<th>Energy use by freight mode Btu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy use per truck mile</td>
<td>21,340</td>
</tr>
<tr>
<td>Energy use per freight car rail mile</td>
<td>15,784</td>
</tr>
</tbody>
</table>

After the application of the core criteria, a great number of possible sites were identified. In order to narrow the field, several additional criteria were developed. The first of these is to prioritize sites with existing usable structures. This criterion was chosen in the spirit of reducing consumption and recycling. Reusing materials found on site can also help to tell a potentially important story about the site’s history and renewal.

The second added criterion is to prioritize socioeconomically and racially neutral sites so that all residents of the region may feel ownership of the hub. This criterion was developed during site visits, when site character was observed. Although the region as a whole is incredibly diverse economically, culturally, and racially, this diversity is not sprinkled evenly throughout the region. Many places in Northwest Indiana remain very segregated. The ideal hub location would be a place where people of all backgrounds can feel safe and welcome.

The third criterion to be added is the prioritization of sites with linkages to existing and proposed trails. The hub is envisioned to serve as a trailhead and destination for bikers, runners, and walkers in the region. Linkages with trails are important to help fulfill the goal of a healthier region, which can be achieved in part through the promotion of regular physical activity. These linkages are also important to physically connect the hub with natural areas throughout the region. As discussed in the review of food system thinkers, part of the problem with our society’s relationship with food is the isolation of agriculture from the natural world. The hub will help draw connections between agriculture and nature within the site and seek to expand these connections outside the site, throughout the region. Linking to high quality natural areas via trails is the best way to achieve the desired physical connection with nature.

The fourth criterion to be added was inspired by the economic development goals of Detroit’s Eastern Market. This criterion prioritizes sites with existing or potential adjacent
mixed use. As discussed in the precedent study of Eastern Market, the market is seen as an anchor for economic development in the surrounding neighborhood. Ideally, the proposed hub in Northwest Indiana would serve the same purpose, catalyzing the renewal of a diminished neighborhood. The potential for this is evaluated based on the presence of existing mixed use or potential for future mixed use development.

Regional inventory & analysis

Four of the several sites considered over the course of this project are reviewed in the table and map on the following pages. Each of the sites had its particular strength. The Strongbow site in Valparaiso is adjacent to a rich mix of uses in a thriving commercial corridor. The East Chicago location had great access by environmental justice populations and great potential connections with schools and parks. The Miller bowling alley site, while small, is located at the intersection of several key thoroughfares and the gateway to downtown Miller. The table shows that a 15 acre lot at the former K-mart greyfield is a good choice for the South Shore Hub site. The proposed site meets all criteria but one—existing adjacent mixed use. However, this drawback can be addressed through a design that provides for potential development of mixed uses in adjacent sites.

The proposed SSH is located at the edge of the densest area of the region, Northern Lake county. This area has the greatest number of potential institutional customers like groceries and schools (See Figure 2). The proposed site’s location at the East edge of the densest area makes it accessible to a great number of fresh market producers, the majority of whom farm in LaPorte County (See Figure 3). The proposed hub’s edge location also makes it accessible to environmental justice (EJ) populations (See Figure 4). An important factor for accessibility to EJ populations is transit. Northern Lake County has a bus network that serves most low income communities in
the area. This bus system would need to add a short spur to access the proposed SSH.

As discussed in the site selection section, connections with natural areas are valuable for the hub. The selected site has the best connection with existing natural areas through adjacency and proposed trails (See Figure 5). The site avoids floodplains and wetlands, but is close enough to reap their benefits as a recreational destination or teaching tool.

<table>
<thead>
<tr>
<th>Criteria for locating local food hub:</th>
<th>Lot behind Strongbow’s, Valparaiso</th>
<th>White Oak Industrial, East Chicago/Hammond</th>
<th>Old Bowling Alley, Miller Beach</th>
<th>Old Kmart, Miller Beach</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Between 10-20 acres of usable space</td>
<td>14 acres</td>
<td>20+ acres</td>
<td>3 acres</td>
<td>15 acres</td>
</tr>
<tr>
<td>2 Accessible by delivery trucks</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3 Distance from existing farms (within 45 min drive)</td>
<td>Yes</td>
<td>Few farms</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4 Distance from major population centers (within 15 min drive)</td>
<td>Barely accessible to N Lake county</td>
<td>Within major pop. center</td>
<td>At edge of major pop. center</td>
<td>At edge of major pop. center</td>
</tr>
<tr>
<td>5 Prioritize accessibility from environmental justice communities (within 15 min drive and on bus route)</td>
<td>Few EJ communities in Valpo</td>
<td>Within EJ community</td>
<td>At edge of EJ communities</td>
<td>At edge of EJ communities</td>
</tr>
<tr>
<td>6 Distance from institutional consumers; schools, hospitals, grocers (30 min drive)</td>
<td>Barely accessible to N Lake county</td>
<td>Good access</td>
<td>Excellent access</td>
<td>Excellent access</td>
</tr>
<tr>
<td>7 Avoid managed lands, floodplains, and wetlands</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>8 Prioritize development of greyfield/brownfield sites</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>9 Prioritize sites with rail and barge access</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>10 Prioritize sites with usable existing structures</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>11 Prioritize socioeconomically and racially 'neutral' sites, so that all residents of the region may feel ownership of hub</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>12 Prioritize access to existing and proposed NWI greenway system</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>13 Prioritize sites with adjacent existing or potential mixed use</td>
<td>Existing</td>
<td>Potential</td>
<td>Existing</td>
<td>Potential</td>
</tr>
</tbody>
</table>

Table 4.3 Matrix of four potential sites considered for the hub
Figure 4.1 Location map of four possible sites reviewed in the matrix on the previous page.
Producers transport farm products to hub

Restaurants, groceries, hospitals, & schools serve residents of the region

These simplified diagrams illustrate how a hub functions in relation to the farms and consumers it serves. The hub aims to streamline the aggregation, processing, marketing, and distributing functions of the local food system. In order for the hub to do this efficiently and economically, a hub must be sited so that it can easily reach and be reached by other parts of its network—producers, restaurants, groceries, hospitals, and schools. The maps on the following pages illustrate the spatial relationships between the proposed hub site and these key partners.
Figure 4.2 The service area of the proposed SSH reaches most of the potential institutional consumers within 30 minutes.
Figure 4.3 The proposed SSH is accessible by truck to most fresh market farmers in the region within 45 minutes. Within 60 minutes, the hub is accessible to nearly all of them.
Figure 4.4 The proposed SSH is within a 15 minute drive from the majority of EJ communities in the region. These areas are served by bus, which could easily adapt to serve the nearby SSH.
Figure 4.5 The proposed site has the best access to parkland of any of the sites reviewed.
Vicinity Inventory & Analysis

A major component affecting the accessibility of the hub relates to its function as a distribution center. The selected location features two raised loading docks and several drive-in garage doors that can be used as-is. Furthermore, at 15 acres, the site has ample room for circulation for trucks of all sizes, and if desired in the future, the construction of a rail spur with access to Chicago and Detroit.

In addition to the loading docks, two buildings on site are ripe for re-use. One building, the former K-mart, is a “big box” replete with a nursery to be adapted as an attached greenhouse and an auto-zone that can play a role in distribution. The other building on site is an L shaped strip mall with its own loading dock. Both of these structures can be reused to a great extent, decreasing the need for materials and reducing demolition waste. As a greyfield, the site is covered in impermeable surfaces. Through the development of the site, much of this asphalt and concrete will be removed, however some will be recycled into new paved surfaces on site.

The proposed site also meets the requirement for a socioeconomically and racially neutral site. The Miller community, more than many in the region, is integrated socioeconomically and racially. There are a variety of home prices, renters and owners, and single and multi-family homes. Although the larger municipality of Gary, of which Miller belongs, is predominately black, and nearby towns of Ogden Dunes and Lake Station are predominately white, Miller is a nearly even mix of both. The character of the site also contributes to its neutrality. The site is accessible to, but not within a residential area. It is located on US 20, a primary commercial corridor in Gary (see figure 6) and an important thoroughfare throughout Northern Indiana.
Figure 4.6 Map showing major commercial corridors in Gary (red) as identified in the Gary Planning Commission’s Comprehensive Plan. The selected site is circled in yellow.

The final criteria, that the site be adjacent to existing or proposed mixed use, is only partially fulfilled by the selected site. The site is in a distinctly commercial area with adjacency to parkland. The site is not adjacent to residential areas, although there are several neighborhoods within a short distance of the site. The site is at the edge of Gary, at the beginning of its easternmost commercial corridor (see figure 6). The site is well positioned to serve as the Eastern gateway.
National Lakeshore. Although the area is strictly commercial at present, the presence of a thriving food hub could spark the development of a mix of uses in the area, including retail, office, recreational, entertainment, cultural, and even some residential use.

One potential instigator for mixed use in the area are the recreational attractions. The area immediately around the hub is predominated by natural areas managed by the National Park Service. The city of Gary with Wolff, Clements & Associates developed the Gary
Green Link Plan in 2005. The plan envisions a natural resources greenway and recreation corridor that will ring the City of Gary, connecting the Grand Calumet River, Little Calumet River and Lake Michigan’s shoreline. The plan proposes many new trails, some that run adjacent to the proposed site. By linking the site to this greater network of recreation and natural resources, the site can more effectively integrate its message of food’s place in the landscape into the hub’s design.

Despite the great benefits of so much natural and recreational land adjacent to the site, there are some drawbacks. Although trails link the proposed site to residential and other

Figure 4.8 Managed lands (olive) and wetlands (teal) occupy much of the land surrounding the site. Although they are passable by trail (brown dashed lines), their size makes them a possible barrier (pink circles) for pedestrian and bike access to the site (yellow asterisk).
commercial areas, there is a considerable distance to cover to reach the site. This issue should be overcome by increasing the quality and appeal of travel by trail. Trails should be constructed so that people of all fitness levels and ages can use them, day or night. The site should serve as a hub for cyclists, offering services like repairs, rentals, and low cost refurbished bikes. The strong promotion of non-motorized travel for visitors to the hub could help overcome the potential barrier of distance caused by the natural areas.

Figure 4.9 Barriers and conflicts impeding site access by pedestrians and cyclists are highlighted in this map, as well as the pockets of residential areas created by these barriers.
Site Inventory & Analysis

The existing uses around the site vary from managed lands with little human access to relatively busy commercial parcels. The site is defined by the train tracks to the north and US 20 at the south. Both are busy corridors, the rail with consistent freight traffic and US 20 with cars, trucks, and trailers. Many of the businesses along this section of US 20 cater to travelers, especially truck drivers, because a major exit for Interstate 90 is at Ripley Street, just south of the site. Business include restaurants, gas stations, auto parts stores, car dealerships,
storage facilities, and motels. Heading east on US 20, the number of businesses decrease and naturalized areas are more abundant. Heading west on US 20, density increases as the road merges with US 12 and snakes through Gary, Hammond, and East Chicago, and eventually Chicago, as Lake Shore Drive. Although rail access was a contributing factor in the selection of the site, immediate use of rail access is not proposed in the design for the SSH. Research on food hubs indicates that rail is not the preferred mode of transportation for local products at this time. Presently, there are insufficient freight rail stops in nearby communities to rely on rail for local distribution. Rail may become a more important factor as volume of local foods increases and some regional products are demanded outside the region.

**Environmental systems**

The site is largely a sea of asphalt which ignores natural systems. Stormwater drains to the municipal sewer and less so into adjacent unpaved areas. The site is flat, although, based on adjacent natural areas, it used to be sand dunes. The current condition of the soil is unknown, because it may include fill from elsewhere. Native soils are sandy and range from dry to wet based on topography. The site south of the existing structures receives full sun throughout most of the day, which is preferable for most crops.

**Noise and Views**

The site receives noise from rail and highway traffic. The noise is inevitable, but will not negatively affect the intended site uses. Views toward the south are poor, with asphalt as far as can be seen. Views to the north often are blocked by trains, but occasionally allow glimpses of medium-to high quality natural areas in the National Park. Wetland and forest remnants to the northwest and east of the site are attractive and provide definition to the site.
Figure 4.11 Inventory of sun, water, and soils on site
Figure 4.12 Inventory of noise and views into and out of the site
Program

The program for the site was developed based on literature reviewed, precedent studies, and stakeholder input. Each element of the program is associated with a specific objective developed to move forward stakeholder goals through the hub design. The program for the site is presented in table form over the next several pages so that linkages between the program, goals, and objectives remain clear.

1) Goal: People in the region will eat more local food.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) The South Shore Hub (SSH) increases the supply and demand for local food through coordination between producers and buyers, aggregating, packing, distributing, promoting, and selling local food under a regional brand.</td>
<td>i. Facilities for aggregation and packing including a cooler (at least 3,000 sf), freezer (at least 200 sf), and packing station within close vicinity.</td>
</tr>
<tr>
<td></td>
<td>ii. Facilities and storage for distribution including covered loading dock, sufficient space to maneuver a forklift indoors, outdoor circulation that accommodates semi-trailer trucks and provides parking and maintenance space for at least two 16’ hybrid electric delivery vehicles and a 16’ mobile abattoir.</td>
</tr>
<tr>
<td></td>
<td>iii. Office space for 5+ development/marketing/sales professionals including conference/meeting room, and a break room for packing/distribution/retail staff.</td>
</tr>
<tr>
<td></td>
<td>iv. On-site retail space (approx. 20,000 sf) to sell regional brand.</td>
</tr>
</tbody>
</table>
### 2) Goal: Our local food system will be an economic generator for the region.

<table>
<thead>
<tr>
<th>a)</th>
<th>The SSH supports local farmers by providing infrastructure and support services, such as pre-season planning, required to scale up to meet demand.</th>
<th>See 1) a) i-iii</th>
</tr>
</thead>
<tbody>
<tr>
<td>b)</td>
<td>The SSH incubates fledgling local food businesses by providing infrastructure and services.</td>
<td>i. Renovation of strip center W of SSH to accommodate local small businesses and restaurants.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Space (at least 1,000 sf) within SSH retail zone for local ready-to-eat merchants.</td>
</tr>
<tr>
<td>c)</td>
<td>The SSH will serve to spur the revitalization of the Miller Beach neighborhood in Gary around local foods.</td>
<td>i. Connectivity via lighted multi-use trails to surrounding neighborhoods, commercial districts, and parks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii. Connectivity to future site of mixed-use development E of SSH.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>iii. The SSH will act as a welcoming gateway to Miller and the dunes.</td>
</tr>
</tbody>
</table>

### 3) Goal: Local food will be accessible to everyone in our region.

| a) | The SSH will be accessible by foot, bicycle, and public transit as well as by car. | i. Amend existing bus route to include spur serving SSH complex. |
|    |                                                                                   | ii. Provide municipal bus stop at SSH retail entrance. |
|    |                                                                                   | iii. Flexible parking space to accommodate at least 150 cars and 4 school buses with additional parking available at adjacent sites. |
|    |                                                                                   | See also, 2) c) i. |
| b) | The SSH will be in or near a food desert and EJ populations.                      | i. Locate SSH within a 15 minute walk, drive, or bus ride from EJ population in a food desert. |
| c) | The SSH will support satellite food trucks, pop-up markets, and urban agriculture to bring fresh local food to food deserts. | i. Loading zones to accommodate vehicles of a variety of sizes, from cars and pickups to delivery trucks. |
|    |                                                                                   | ii. Outdoor classroom space in demonstration urban agriculture area that includes seating, shelter, electricity, and presentation space for small groups. |
| d) | The SSH will accept WIC, SNAP, and Senior farmers market benefits and will provide training and technical assistance so that partner farmers markets can too. | i. Electricity available to outdoor vendors. |

See also 1) a) iii.
4) **Goal: Our region will be healthier through local food.**

<table>
<thead>
<tr>
<th>a)</th>
<th>The SSH will excite interest in fresh, healthy, local foods through marketing campaigns and festivals.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Flexible indoor and outdoor spaces offering seating, shelter, electricity, sound systems, parking, circulation, and presentation space for groups ranging from two to 200.</td>
</tr>
<tr>
<td>ii.</td>
<td>Regional brand design used throughout SSH complex and satellite operations to unify varied range of products and services.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b)</th>
<th>The SSH will partner with regional social service agencies to support health in the region.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>The SSH campus will include space for partner social service agencies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c)</th>
<th>The SSH will provide space for cooking demonstrations and classes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>The SSH main building will include a commercial grade kitchen with sufficient space for classes and demonstrations (approx. 2,500 sf). The kitchen will be adjacent to freezer and refrigeration space and will be within close proximity of other class/conference space and retail area.</td>
</tr>
</tbody>
</table>

5) **Goal: Residents of the region will have a great awareness, understanding and appreciation of local food.**

<table>
<thead>
<tr>
<th>a)</th>
<th>The SSH will market a regional brand at an on-site retail store and wholesale to groceries, restaurants, and institutions throughout the region.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>The SSH will promote and sell historically, culturally, and environmentally important foods grown on-site, such as blueberries, huckleberries, strawberries, raspberries, blackberries, squash, pumpkins, melons, onions, potatoes, salad greens, herbs, tomatoes, goat’s milk and cheese, and eggs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b)</th>
<th>The SSH will promote culturally, historically, and environmentally important regional foods by growing and marketing them.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>See 1) a) i-iv</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c)</th>
<th>The SSH will work with partner organizations to provide local foods related agricultural, historical, nutritional, and environmental education at area schools and on site.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>See 3) c) ii; 4) a) i; 4) c) i</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d)</th>
<th>The SSH will work with partner organizations to support urban agriculture in the region with technical assistance, grant-writing help, and providing an outlet for sales.</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>See 3) c) ii; 4) a) i; 1) a) i-iv; 6) a) i-vi</td>
</tr>
</tbody>
</table>
6) **Goal: Our local food system will enhance our environment.**

| a) The SSH will demonstrate best practices in urban agriculture that ensure healthy water and soil. | i. The SSH will employ organic or better practices in the on-site farm. |
| | ii. The SSH will employ low-flow drip irrigation using recycled water when necessary. |
| | iii. The SSH will utilize an indoor aquaponics system for the production of fish, salad greens, and tomatoes year round. |
| | iv. The SSH will have an on-farm vermi-compost center to recycle farm wastes and generate fertilizer. |
| | v. The SSH will have an apiary to assist pollination and produce honey. |
| | vi. The SSH will keep laying hens and goats for farm sanitation, eggs, and dairy. |
| | vii. The SSH will have a demonstration ‘forest’ garden utilizing native duneland plants |
| b) The SSH will demonstrate best practices in green building and site design. | i. The SSH will harvest, filter, and store stormwater from roofs and paved surfaces for use on site. |
| | ii. The SSH will collect energy using wind turbines and photovoltaic panels to offset energy use on site. |
| | iii. The SSH will use existing and recycled materials in its construction to the greatest extent possible. |
| | iv. The SSH will use native ornamental and edible plants in the landscape. |
| | v. The SSH will employ energy efficient systems such as geothermal and radiant floor heating. |

| c) The SSH will work with partner agencies to support sustainable farming practices among local producers through education and technical assistance. | See 6) a) i-iv; 1) a) iii |
| d) The SSH will work with partner agencies to promote the use of sustainable urban agriculture as a green infrastructure strategy throughout cities and towns in the region. | See 6) a) i-iv; 6) b) iv |
### 7) Goal: Our region will have a strong network of local food system collaborators.

| a) | The SSH will convene local food system stakeholders to coordinate efforts and strengthen the local food system. | See 1) a) iii |
| b) | The SSH will host a regional food policy council. | See 1) a) iii |

### 8) Goal: Our local food system will use appropriate cutting edge technology.

| a) | The SSH’s on-site urban farm will utilize season extension technologies. | i. The SSH will retrofit existing structures to accommodate aquaponics, hydroponics, and vermicomposting (equivalent of approx. 6 greenhouses) |
|    | | ii. The SSH will utilize movable high tunnels (at least 15) |
| b) | The SSH will generate energy on site using sustainable sources. | See 6) b) ii |
| c) | The SSH will harvest and utilize rainwater on-site. | See 6) b) i |
| d) | The SSH will facilitate local food coordination, education, and purchasing through a fully-integrated web-based system. | See 1) a) iii |
| e) | The SSH will be flexible enough to explore new appropriate technologies as they become available. | See 8) a) ii |

### Conceptual Design

The greatest design challenge for the site is to accommodate the multiple elements of the program so that they work together without conflict. Four major circulation patterns must be accommodated outside the structures. First, the site must provide smooth circulation for distribution vehicles moving into and away from the hub’s facilities. These vehicles need lanes of at least 12’ and turning radii of 38’. Second, the site must allow for easy maneuvering of farm vehicles and animals, including tractors, four wheelers, a herd of goats, and eggmobiles. These elements also benefit from lanes at least 12’ wide. Third, the site must
accommodate private vehicles and transit, including parking and drop-off locations for buses and cars. School buses require the largest turning radius at 42', and like trucks, benefit from lanes at least 12' wide. Additionally, two smaller buildings on the site will require their own parking and circulation. These are currently a Chinese restaurant in the

Figure 4.13 Concept for distinct spaces and circulation on site.
Southwest corner of the site, and a vacant office building in the Southeast corner of the site. Fourth, the site must provide safe and pleasant access to pedestrians and cyclists. Cycling through the site will be discouraged, but ample bike parking will be provided.

In addition to circulation, the program requires several distinct spaces. These include indoor space for growing, processing, storage, and retail, office space, and event space. Outdoor space is predominated by productive zones for native gardens, greenhouses, high tunnels, farm animals, and outbuildings. Other outdoor spaces include parking, demonstration productive native gardens, and public event and meeting spaces to accommodate groups of varying sizes. The placement of these spaces within the site will help transition outdoor uses to complementary indoor spaces. For instance, indoor and outdoor event space should be adjacent, as should indoor and outdoor productive space. Parking and drop-off zones for events and retail should correspond with event and retail space indoors and out. Distribution circulation and loading areas should have direct access to processing, packing, and storage areas indoors.

The design will also need to make transitions from adjacent land uses. Several existing natural areas adjacent to the site will be preserved or remediated to the extent appropriate by removing invasives and planting native species, particularly edibles. Care is taken to provide appropriate transitions between native areas, demonstration productive native gardens, and productive areas where exotic edibles (most vegetables) are grown. Access to these existing natural areas will be provided through the development of proposed trails, including overpasses when necessary. The design should also provide pedestrian access to the underutilized shopping area east of the site in the event of future development.
Figure 4.14 Concept for connectors, transitions, and edges.
While many spaces in the site should be connected, others should remain distinctly separate. One such place is the southern edge of the site which runs parallel with US 20/Melton Rd. Currently, US 20 has no sidewalks in this area. Noise and quick moving traffic necessitate a considerable buffer zone to provide safe and comfortable thoroughfare for pedestrians and cyclists. Due to the nature of businesses along US 20 and the size of the street, it is recommended to route pedestrians to the non-motorized trail proposed to run parallel, but 600 feet south of the highway instead of a sidewalk adjacent to the road.

Another space which benefits from a buffer is the outdoor productive area, especially the zones for composting and farm animals. These areas should be shielded to the extent possible from exhaust fumes from vehicles on US 20 and in the parking areas on site. Conversely, adjacent uses such as the restaurant in the Southwest corner of the site, will benefit from a buffer separating their space from farm animals and compost.

**Master Plan**

The master plan for the South Shore Hub is presented graphically over the next several pages. The proposed design seeks to inspire residents of and visitors to the region to eat locally. The South Shore Hub does this in two main ways, by making local food more accessible and by educating and energizing the public on local food issues. Local food is made more accessible through the coordination, aggregation, and distribution functions of the hub. In this way, the hub brings local food to places that people already look for food, like groceries and restaurants. The hub also serves as a direct source of local food in the style of a public market. The hub makes local food accessible by providing support for those who want to grow locally. As a center for urban agriculture, the hub demonstrates and educates urban farmers.

*Continued after images on page 143.*
Figure 4.15 Master Plan
Key:

1. Aggregation, processing, storage, distribution, retail, classrooms, and office facility. See interior plan for details.

2. Indoor production facilities- aquaponics, hydroponics, greenhouses.

3. Parking/event space.

4. Local food business incubator.

5. Event space/amphitheater.

6. Demonstration garden - duneland edibles.

7. Demonstration garden - forest gardening using native species; small group meeting space.

8. Row crops, perennials and annuals, with adjustable sliding high tunnels.

9. Compost station, barn for supplies, goats, chicken tractors.

10. Social service partner agency.

11. Wind turbines.


13. Ped/peddle trailhead, canopy walk.


Figure 4.16 Keyed Plan
Figure 4.17 Section A shows the business incubator at the west side of the site.
Figure 4.18 Section B shows the passage to the duneland native garden and the west third of the hub.
Figure 4.19 **Section C** shows the central third of the hub, highlighting the canopy extension and bus stop.
Figure 4.20 Section D shows the urban agriculture center. Located in the eastern third of the hub.
Figure 4.21 Section E shows the canopy walk into Indiana Dunes National Lakeshore.
Figure 4.22 Interior Plan

Symbology
- Service entrances
- Main public entrances
- Secondary entrances
- Production space
- Aggregation/process space
- Retail space
- Office/classroom space
- Public meeting/event space

Interior Plan Key
1. Retail market
2. Aquaponics production area
3. Greenhouses for year-round hydroponics
4. Loading yard/ flex space
5. Bicycle parking
6. Bus drop-off and market entry
7. Outdoor seating for quick service vendors
8. Quick service food vendors
9. Classroom space
10. Office/event flex space
11. Conference/meeting space
12. Offices
13. Storage
14. Sunken loading dock
15. Wash/pack station
16. Loading dock/service entrance
17. Processing station- meat, eggs, dairy
18. Harvested water storage and filtration
19. Commercial kitchen/classroom
20. Walk-in refrigerator
21. Walk-in freezer

Figure 4.22 Interior Plan
Site Circulation

- Service vehicle circulation
- Agricultural vehicle circulation
- Public transit and private vehicle circulation
- Pedestrian/bicycle site access

Nodes

Public access nodes mark the main entry locations for the public, serving visitors arriving via cars, public transit, bicycle, and by foot.

Agricultural nodes are at the entry of the indoor hydroponics system and the storage areas.

The service nodes mark the places where deliveries are dropped off and picked up.

The ped/peddle node marks the trailhead and gateway to the complex.

Figure 4.23 Site circulation and nodes
The hub also seeks to educate and energize the public about local food. The hub provides marketing and promotional services through its regional label. The hub is also a place for local food stakeholders to come together, for regional food policy council meetings, for growers association workshops, and for events hosted by partner agencies like university cooperative extensions and county soil and water districts. The design of the hub intends to create a place where people can see and understand the value of local food. The hub should be a place for which all of Northwest Indiana feels pride and ownership—a place for seniors outings and school field trips. The hub, ideally, is a place people want to be because it reminds them of what is great about the region.

Key Features of the Master Plan

The master plan has several key features incorporated into the design. These features are numbered corresponding to the keyed plan on page 135.

1. The main structure of the hub is the old K-mart, retrofitted to provide facilities for aggregation, processing, storage, distribution, retail space for groceries and quick service foods, classrooms, meeting space, and office space. The layout of these areas within the structure and their relationship to the outside is detailed in the interior plan on page 141. At least half of the roof space on this massive building would be appropriate for photovoltaic panels.
2. Indoor production facilities for aquaponics and hydroponics and semi-attached greenhouses for year-round growing are located at the southeast and eastern edge of the main building. These areas capture maximum sunlight for winter growing. Their edge lined with garage doors makes for easy access for farm equipment like front end loaders for moving compost. The systems housed within this space will cultivate perch, tilapia, salad greens, tomatoes, and herbs as well as vermi-compost (worm castings) in closed or nearly closed loops.
The indoor agriculture on site is inspired by the two-acre, largely indoor farm at Growing Power's Milwaukee flagship urban agriculture center.

3. Parking for visitors and staff takes up considerable space on site. It is important that it remain as flexible as possible so that when not used for parking, it can serve in another way. The lot provides electricity and water for vendors during festivals. The travel lanes remain asphalt, however the parking spaces are permeable and direct.
stormwater to islands planted with native trees and edibles.
Excess stormwater is directed south toward the high tunnels.
4. The former strip mall on the west side of the site serves as a local food business incubator. The structure includes a pergola spanning the eastern and southern edges, outdoor seating, and a pass through to the duneland demonstration garden and amphitheatre.
5. In the northwest corner of the site there is an amphitheatre style group meeting space. Although it would be an inappropriate venue for a quiet, solemn performance due to potential intermittent noise from trains, louder or more casual events would suffer little from train interruptions. The space seats 200+.
6. Cradling the amphitheatre is a demonstration garden of native duneland edibles. Just across the tracks is the national lakeshore, full of edible native plants like blueberries, raspberries, huckleberries, strawberries, and prickly pear. This garden features these edibles in a native setting, complete with 9’ dunes.
7. A second native garden demonstrates principals of forest gardening, a type of permaculture practiced by growing multiple layers of complementary edible species together, as grown in a forest. This naturalistic garden includes a small group meeting space accommodating 20 adults or 30 children.
8. High tunnels are used to extend the season of a variety of crops appropriate to the region. Suggested crops include annuals like squash, pumpkins, cucumbers, melons, onions, potatoes, tomatoes, peppers, and greens, perennials like blueberries, raspberries, and strawberries, and experimental perennial grains like those being developed by Wes Jackson’s Land Institute.
9. The business of farming requires plenty of space for storing equipment and supplies and shelter for animals. The area where this storage is most concentrated is just west of the high tunnels. This area includes the main compost station, barn for equipment, supplies, and goats, and room to park chicken tractors.
10. The existing structure in the southeast corner of the site is a good place for a partner agency or business like cooperative extension, WIC (federal nutrition program for women, infants, and children), or a bike shop.

11. Wind turbines line the south edge of the site along US 20. The turbines are a compact helix shape, to allow a greater concentration of units in limited space. Height will be adjusted to access maximum wind speeds. An example of an appropriate choice is quietrevolution's vertical axis wind turbine, a model designed especially for use in cities.

12-14. The trail proposed to run along the eastern edge of the site presents several conflicts that need to be addressed. The trails must cross two busy roads, Ripley Street and US 20, and a set of three rail lines. The design proposes a crossing at Ripley Street at grade and two pedestrian overpasses over US 20 and the railroad tracks. The overpass for US 20 provides a safe crossing and a literal gateway to Gary and the Dunes for an important exit off of Interstate 80/94. The rail overpass offers a terrific view down the rail corridor. The proposed trail for the hub is a boardwalk of wood and steel. Grades are kept within ADA guidelines, which allows ease of use by bicycles and those with disabilities. The gradual incline to the rail overpass takes pedestrians through the tree canopies before opening up before the long views of the rail lines, then back through tree canopies as they descend to the park.

Figure 4.25 Image of a quietrevolution wind turbine, from www.quietrevolution.com.
Summary

The proposed plan for a South Shore Hub addresses every objective set forth for the project. These objectives aim to achieve the goals set by stakeholders in the region, keeping in mind their overarching values:

- Sustainable farming
- Environmental stewardship
- Hunger and access to fresh local food
- Economic development
- Health
- Comprehensive “big picture” thinking
- Cooperation
- Building local community through local food
- Fairness
- Enjoyment of Food.

The hub fills the “missing middle” of the local food system by providing coordination, marketing, aggregation, processing, and distribution services to local producers and consumers. The hub aims to further support the local food system by energizing the public on local foods and inspiring the next generation of farmers, chefs, and eaters in the region. The hub supplies the missing infrastructure for the local food system and creates a place of pride for people of the region.

The design for the South Shore Hub attempts to joyfully satisfy the lengthy checklist of needs communicated by local foods stakeholders. The design is inspired by the ideas of great writers, planners, designers, poets, and scientists. It seeks its genius loci from the neighboring dunes and swales and sets itself in time by referencing the region’s past while helping to create its more sustainable future.
Conclusions

This project proposes a food hub for Northwest Indiana. Through this intervention, the local food system will have the capacity to grow and strengthen itself. A stronger local food system will help challenge existing paradigm that favors global over local, quantity over quality, big over small, and the present over the future.

The hub attempts to address several concrete issues that have been reported repeatedly by local food stakeholders across Northwest Indiana and the nation—problems of scale, coordination, and distribution. By coordinating supply and demand, aggregating supply to achieve greater scale, and distributing at the scale and manner required for institutions, the food hub provides infrastructure and logistical services that fill major gaps in the local food system. However, the hub attempts to
to be a place to educate and energize the public about food, so they care where and how it is grown, by whom, and understand what their food is truly worth. It is also a place for local food stakeholders to come together to advocate for smarter food policy at local and national levels.

The proposed food hub aims to support and grow the food system in Northwest Indiana, but the impact can extend to a greater region. The proposed hub, some day, could be one among many—a constellation of food hubs dotting the country, helping every region grow and eat more of their own food. These hubs should not function as islands, but cooperate to create a strong, diverse network, so that if

Figure 4.26 Diagram showing a hypothetical network of local food hubs serving a larger region, based on diagrams presented on page 111.
Northwest Indiana’s tomato crop fails, regionites can eat Southwest Michigan tomatoes, or central Wisconsin tomatoes, or tomatoes from Northern Kentucky and know they are still supporting their neighbors and caring for their environment.

There is nothing groundbreaking in this proposal. In fact, much of what will strengthen local food involves applying common sense and rebuilding knowledge that was widespread a few generations ago. Although it seems that many people these days do not know how to make spaghetti sauce unless it is from a jar and fewer know how to grow a decent
tomato or can it for later, many others recognize a need to reconnect with their food.

At a recent Farm to Table dinner hosted by an enterprising local orchard, the author had the opportunity to share her work with the regional planning commission with the attendees. A few tables were filled with familiar faces—those who had organized the event and had been active in planning commission meetings, but the majority of the diners came simply because they wanted something delicious to eat. The author’s table was comprised of four adventurous retirees who read about the dinner in the paper the night before and a young couple who heard of it on facebook. We were surrounded by people of all ages and backgrounds as we compared recipes for an overabundance of zucchini and strategies to keep groundhogs out of the squash. We ate the bounty of the season—potatoes, pumpkin, carrots, apples, cheeses, beef, and chicken grown by local farms and prepared by local chefs. It was divine. The organizers of this event had hoped for 150 guests, at most, but close to 300 people poured in the doors. The showing at this event, the public’s comments to the regional planning commission, and the recent increase in farmers markets demonstrates the region’s growing interest in local foods. Now is the time to leverage this interest to build up local foods in the region.

Although much of the work required to advance Northwest Indiana’s local food system involves building nonmaterial things like momentum and support, we soon must build infrastructure. When this happens, landscape architects and planners should be ready to take the lead. No other professions are as well suited to coordinate multiple stakeholders’ visions and expertise to create functional, flexible, and inspiring infrastructure.

Several well respected practitioners and writers in landscape architecture and allied fields support the argument that food systems should be within the purview of landscape architecture.
architecture. From Jane Jacobs to John Lyle, several important landscape theorists believe that: 1) Society operates within and according to the laws of a larger ecosystem; 2) Agriculture is essential for society and follows natural law; and 3) Sustainable local food systems are essential to greater stability in our ecosystem. While it is true that few landscape architects have designed agricultural landscapes or infrastructure for food systems, it is also true that few projects of this kind have been attempted by any professional field. The growing interest in local food should be an opportunity for landscape architects and planners to broaden their field of practice. This broadening would be a benefit to society as a whole and to a field that, unless it finds new sources of projects, will struggle over the next several years in a recession economy.

This creative project grew out of the author’s a passion for food and the environment, a desire to do meaningful work, and a yearning to grow roots in her new home. The proposed food hub aims to reconcile contradictions prevalent in the region—acres of crops, but little food to eat; malnourishment amid tons of food waste. It also seeks to harness potentials—fertile soils, unique microclimates for specialty crops, access to urban markets, and re-imagined uses for underutilized urban open space.

Gary Strang argues in “Infrastructure as Landscape” that infrastructure systems hold unrealized potential to shape urban form. He writes:

> Designers have most often been charged with hiding, screening and cosmetically mitigating infrastructure, in order to maintain the image of the untouched natural surroundings of an earlier era. They are rarely asked to consider infrastructure as an opportunity, as a fundamental component of urban and regional form.¹

The South Shore Hub is an effort to create a meaningful place from infrastructure that, otherwise, would just take up

space. It serves to aggregate, process, package, market, and
distribute local food, but it also is a public space for festival-goers,
hikers, cyclists, students, and shoppers. The hub connects people
with food and with nature while reinforcing the links between the
two. The South Shore Hub provides infrastructure with the
capacity to direct today's food paradigm toward a more
sustainable future. It also aims to be a vital, regenerative place in a
struggling city and a public space that all residents of the region
are proud to claim as their own.
Appendix:

Definitions

2040 Comprehensive Regional Plan: NIRPC’s thirty year plan for the region which jointly addresses transportation, the environment, economic development, land use, social equity, and for the first time, the local food system.

Areas of low access: In this project, areas mapped using GIS which show difficulty accessing food stores likely to sell fresh, whole, minimally or unprocessed foods. The analysis considers access to public transportation, access to a car, and time required to travel to the store. Sometimes referred to as “food deserts,” the concept has no standard definition.

Environmental justice (EJ) communities: From the EPA, “Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” In this project, EJ communities are identified as minority and near poverty populations.

Food Desert: The USDA ERS, along with other partners, defines a food desert as a low-income census tract where a substantial number or share of residents has low access to a supermarket or large grocery store.

Food Hub: Unofficially defined by the USDA AMS as a permanent, centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products.

Food Security/Insecurity: The ready and assured availability, or lack, of nutritionally adequate and safe foods aquired in socially acceptable ways (that is, without resorting to emergency food supplies, scavenging, stealing, or other coping strategies).\(^1\)

Food System: The people, places, and processes involved in the production, processing, distribution, consumption, and waste management of food.

Foodshed: A term describing the geography which contains the food system for a particular area, modeled after the concept of a watershed. The foodshed for the project is determined to be 100 miles around the region.

Local food: Local in terms of food is defined as broadly as within 400 miles of place of consumption and as narrowly as from within the county in which it was grown. Distance and geographic boundaries are frequently used to define local, less commonly time from harvest to consumption is used, and sometimes local is determined by the qualities of the food. For this project, local is defined as a 100 mile radius from the outer boundaries of the three county region of Lake, Porter, and LaPorte, Indiana.

Northwest Indiana: Three county region made up of Lake, Porter, and LaPorte counties which is included in the metropolitan statistical area for the city of Chicago.

Northwestern Indiana Regional Planning Commission (NIRPC): The regional council of governments and metropolitan planning organization for Northwest Indiana that is conducting the local food study from which this project stems.

Organic agriculture: Agricultural practices according to USDA’s national organic standards and certified by USDA-accredited State and private certification organizations.

Small family farms: Farms that are organized as a sole proprietorship, partnership, or family corporation and gross annual sales under $250,000. (USDA definition)

Sustainable agriculture: A broader range of agricultural practices which may be similar or even better than USDA certified organic, but have not yet applied for or have no interest in organic certification. Includes forest farming, permaculture, and beyond-organic techniques which do not use certain fertilizers, pesticides, or herbicides, and evidence stewardship of natural resources like soil, water, and air.
Programs & Policy Supporting Local Foods

There is a constellation of programs and policies at all levels of government which support local foods. Some shine brightly while others barely flicker. The USDA Economic Research Service provided a compendium of these programs and policies broken down by level of government, which is summarized here:

Federal level programs and policies

The Department of Defense (DOD) Fresh Fruit and Vegetable Program began distributing fresh in-state produce from small to medium sized farms to schools and hospitals in its underutilized trucks in 1996. At last report, in 1998, the program served institutions in 38 states.

The Community Food Projects Grants Program (CFP), established in 1996 as part of the Farm Act, grants awards to community based projects and studies that address food insecurity in low-income communities.

The Community Food Security Initiative, established in 1999 by the USDA, provides financial support to help get CSAs and farmers' markets in low-income communities get started.

The WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) Farmers' Market Nutrition Program (FMNP) was established in 1992 and allows low income mothers buy unprocessed produce from farmers' markets, farms, and roadside stands using coupons that supplement their normal monthly benefits. States decide individually whether to apply an optional geographic requirement limiting purchases to in-state growers.

During fiscal year 2009, 17,543 farmers, 3,635 farmers' markets and 2,662 roadside stands throughout 45 states were authorized to accept FMNP coupons.

The Senior Farmers’ Market Nutrition Program (SFMNP) operates similarly to the FMNP, but provides coupons for low-income seniors and expands the purchase options to CSAs. In fiscal year 2009, In FY 2009, 809,711 seniors in 51 states received SFMNP coupons.

The Federal State Marketing Improvement Program provides matching funds to states undertaking projects and research in new agricultural products and food marketing, while not limited to local foods, may apply to local food programs and studies.

The National Farmers’ Market Promotion Program (FMPP) began funding local food market expansion in 2006 by providing competitive grants to local governments, agricultural co-ops, and farmers’ markets to provide training, advertising, and educational programs.

The Specialty Crop Block Grant Program (SCBGP) began funding states to implement “buy local” campaigns and promote and study local foods initiatives in 2004.

The Community Facilities Program of USDA’s Rural Development provides loans or grants to buy, construct, or renovate community infrastructure like community kitchens or food processing centers.

The Business and Industry Guarantee Loan Program (B&I), as part of the 2008 Farm Act, sets aside 5% of all funds to support rural efforts to store, process, and distribute local or regional foods, totaling $100 million in fiscal year 2010.
The Value-Added Agricultural Market Development (VAAMD) Program provides grants to producers who want to incorporate processing and marketing into their business, 10% of which are earmarked for local and regional supply networks.

The National School Lunch Act was amended in the 2008 Farm Act to encourage a purchasing preference for local unprocessed agricultural products.

The Rural Microentrepreneur Assistance Program was created as part of the 2008 Farm Act to provide grants to start or grow rural small businesses.

The Know Your Farmer, Know Your Food Initiative, launched by the USDA in 2009, aims to support local food systems in a variety of ways, including new regulations by the Food Safety and Inspection Service, which began allowing small State-inspected meat and poultry processors to sell across state lines; Farm to School Tactical Teams provided by the Food and Nutrition Service and Agricultural Marketing Service to aid schools’ transition to locally sourced lunches; and funding through the Risk Management Agency for applicable education for underserved farmers.

While it is encouraging to know that these programs exist, it is necessary for local foods supporters to develop specific strategies which incorporate these programs for them to have any value on the ground.

State and Local Policies and Programs

States and local municipalities are among the most influential supporters of local foods. In addition to creating their own policies and programs which can support or weaken local foods systems, they are often the administrators of funds provided through federal programs. Individual states and municipalities can effectively make or break the effectiveness of federally funded programs with their support or lack thereof.

States determine whether food through the DOD Fruit and Vegetable program will come from—from—local (defined by the state) or elsewhere. States also administer the federal electronic benefits transfer program for food purchases for low-income participants, called SNAP. It is up to state or local municipalities to decide how SNAP may be used at farmers’ markets. A USDA survey of farmers’ market managers shows high variability in SNAP payment availability throughout the nation, ranging from 0% in the Southwest to nearly 16% in the Far West (Ragland 2009).

Some states and local governments have created their own policies and programs to support the local food system. Approximately thirteen states and eleven local governments have established food policy councils to explore and support local foods (Agricultural Law Center 2008). The USDA Economic Research Service reviewed all the legislative bills throughout the nation since 2004 and found that most state level bills dealt with farmers’ market promotion and supporting farm to school programs (Martinez 2010).
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<th>Botanical name</th>
<th>Common Name</th>
<th>Soil</th>
<th>Sun</th>
<th>Habit</th>
<th>Height</th>
<th>Spacing</th>
<th>Blooms</th>
<th>Color</th>
<th>Fall</th>
<th>Fruit harvest</th>
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<td>Multi-stemmed</td>
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<td>yellow-orange</td>
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<td>Single or multi-stemmed</td>
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<td>spring</td>
<td>white</td>
<td>red</td>
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<td>Sun</td>
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<td>5</td>
<td>10</td>
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<td>White</td>
<td>Purple foliage berries</td>
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<td>Arching</td>
<td>6</td>
<td>5</td>
<td>Early summer</td>
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<td>Black raspberry</td>
<td>Not picky</td>
<td>Part sun</td>
<td>Arching</td>
<td>5</td>
<td>10</td>
<td>Early summer</td>
<td>White</td>
<td>Yellowish</td>
<td>Early fall</td>
<td>Red one</td>
</tr>
<tr>
<td>Botanical name</td>
<td>Common Name</td>
<td>Soil</td>
<td>Sun</td>
<td>Habit</td>
<td>Height</td>
<td>Spacing</td>
<td>Blooms</td>
<td>Color</td>
<td>Fall</td>
<td>Fruit harvest</td>
<td>Notes</td>
</tr>
<tr>
<td>---------------------</td>
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<td>-------------</td>
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<td>--------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td><em>Vaccinium angustifolium</em></td>
<td>Lowbush blueberry</td>
<td>acid, sandy, moist</td>
<td>sun to part</td>
<td>sun</td>
<td>rounded</td>
<td>2</td>
<td>2</td>
<td>late spring</td>
<td>white</td>
<td>red, showy</td>
<td>black glaucous berries mid to late</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>summer black glaucous</td>
</tr>
<tr>
<td><em>Vaccinium corymbosum</em></td>
<td>Highbush blueberry</td>
<td>acid, sandy, moist</td>
<td>sun to part</td>
<td>sun</td>
<td>rounded</td>
<td>10</td>
<td>10</td>
<td>spring</td>
<td>white, pink</td>
<td>red, orange, purple, yellow foliage</td>
<td>berries mid to late</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>summer black glaucous</td>
</tr>
<tr>
<td><em>Viburnum acerifolium</em></td>
<td>Mapleleaf viburnum</td>
<td>acid, sandy, moist</td>
<td>sun to part</td>
<td>sun to part</td>
<td>upright</td>
<td>5</td>
<td>5</td>
<td>early summer white</td>
<td>reddish purple</td>
<td>yellow foliage, black</td>
<td>n/a Good for wildlife</td>
</tr>
</tbody>
</table>

**Herbaceous Perennials**

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Common Name</th>
<th>Soil</th>
<th>Sun</th>
<th>Habit</th>
<th>Height</th>
<th>Spacing</th>
<th>Blooms</th>
<th>Color</th>
<th>Fall</th>
<th>Fruit harvest</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Anemonella thalictroides</em></td>
<td>Rue anemone</td>
<td>well</td>
<td>part-full</td>
<td>shade</td>
<td>clump</td>
<td>3/4</td>
<td>3/4</td>
<td>Early spring</td>
<td>white</td>
<td>dormant</td>
<td>n/a showy flowers</td>
</tr>
<tr>
<td><em>Asclepias tuberosa</em></td>
<td>Butterfly weed</td>
<td>well</td>
<td>drained</td>
<td>sun</td>
<td>clump</td>
<td>2</td>
<td>2</td>
<td>summer</td>
<td>orange</td>
<td>seed-pods</td>
<td>n/a showy, attracts butterflies</td>
</tr>
<tr>
<td><em>Aster laevis</em></td>
<td>Smooth blue aster</td>
<td>well</td>
<td>drained</td>
<td>sun</td>
<td>clump</td>
<td>3</td>
<td>2</td>
<td>early fall</td>
<td>blue-purple</td>
<td>n/a Spread by seed and rhizome, keep in check</td>
<td></td>
</tr>
<tr>
<td><em>Coreopsis palmata</em></td>
<td>Prairie tickseed</td>
<td>well</td>
<td>drained</td>
<td>sun</td>
<td>erect</td>
<td>2</td>
<td>1</td>
<td>late spring</td>
<td>yellow</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><em>Epilobium angustifolium</em></td>
<td>Fireweed</td>
<td>well</td>
<td>full to part</td>
<td>sun</td>
<td>erect</td>
<td>4</td>
<td>1</td>
<td>mid</td>
<td>purple-pink</td>
<td>n/a Aggressive spreader, colonizes disturbed sites</td>
<td></td>
</tr>
<tr>
<td><em>Gentiana saponaria</em></td>
<td>Soapwort gentian</td>
<td>moist</td>
<td>part shade</td>
<td>erect</td>
<td>1 1/2</td>
<td>1</td>
<td>early fall</td>
<td>blue</td>
<td>gold</td>
<td>n/a</td>
<td>n/a may get floppy and require support</td>
</tr>
<tr>
<td><em>Helenium autumnale</em></td>
<td>Sneezeweed Coral bells, prairie alum</td>
<td>moist</td>
<td>sun</td>
<td>erect</td>
<td>4</td>
<td>2 1/2</td>
<td>summer</td>
<td>orange</td>
<td>blooming</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td><em>Heuchera richardsonii</em></td>
<td>Coral bells, prairie alum root</td>
<td>well</td>
<td>sun-part sun</td>
<td>clump w/tall</td>
<td>2</td>
<td>1</td>
<td>summer</td>
<td>green</td>
<td>n/a</td>
<td>n/a mass to form ground cover</td>
<td></td>
</tr>
<tr>
<td><em>Liatris spicata</em></td>
<td>Blazing star</td>
<td>well</td>
<td>drained</td>
<td>sun</td>
<td>erect</td>
<td>3</td>
<td>1</td>
<td>summer</td>
<td>purple</td>
<td>n/a</td>
<td>n/a low germination rate</td>
</tr>
<tr>
<td><em>Lithospermum canescens</em></td>
<td>Hoary puccoon</td>
<td>well</td>
<td>drained</td>
<td>sun</td>
<td>mounded</td>
<td>1</td>
<td>1 1/2</td>
<td>summer</td>
<td>yellow</td>
<td>n/a</td>
<td>n/a low germination rate</td>
</tr>
<tr>
<td>Botanical name</td>
<td>Common Name</td>
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<td>Blooms</td>
<td>Color</td>
<td>Fall</td>
<td>Fruit harvest</td>
<td>Notes</td>
</tr>
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<td>-------------------</td>
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<td>---------------</td>
<td>------------------------</td>
</tr>
<tr>
<td><strong>Lobelia siphilitica</strong></td>
<td>Blue cardinal flower</td>
<td>moist</td>
<td>sun-part sun</td>
<td>erect</td>
<td>2 1/2</td>
<td>1</td>
<td>late</td>
<td>blue</td>
<td>blooms</td>
<td>through</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Monarda fistulosa</strong></td>
<td>Wild bergamot   well</td>
<td>drained</td>
<td>sun-part sun</td>
<td>mounded</td>
<td>3</td>
<td>2 1/2</td>
<td>summer-early fall</td>
<td>lavender</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Onoclea Sensitive fern</strong></td>
<td>moist part to full</td>
<td>rounded</td>
<td>3</td>
<td>n/a</td>
<td>green</td>
<td>n/a</td>
<td>n/a</td>
<td>harvest pink-red</td>
<td>tunas late summer</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td><strong>Opuntia humifusa</strong></td>
<td>Prickly pear</td>
<td>dry</td>
<td>full sun</td>
<td>spreading</td>
<td>1</td>
<td>1</td>
<td>late spring-early</td>
<td>yellow</td>
<td>n/a</td>
<td>tunas late summer</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Phlox pilosa</strong></td>
<td>Downy phlox</td>
<td>dry</td>
<td>sun-part sun</td>
<td>mounded</td>
<td>1 1/2</td>
<td>1 1/2</td>
<td>spring</td>
<td>lavender</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td><strong>Sisyrischium albidum</strong></td>
<td>White blue-eyed grass</td>
<td>dry</td>
<td>sun</td>
<td>clumping</td>
<td>1 1/2</td>
<td>1</td>
<td>spring</td>
<td>white</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td><strong>Showy Solidago speciosa</strong></td>
<td>goldenrod</td>
<td>dry</td>
<td>sun</td>
<td>erect</td>
<td>2 1/2</td>
<td>2 1/2</td>
<td>fall</td>
<td>yellow</td>
<td>fall</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Vernonia fasciculata</strong></td>
<td>Ironweed</td>
<td>well</td>
<td>sun</td>
<td>clump</td>
<td>3 1/2</td>
<td>2 1/2</td>
<td>fall</td>
<td>purple</td>
<td>fall</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Arctostaphylos uva-ursi</strong></td>
<td>Bearberry</td>
<td>well</td>
<td>full sun to part shade</td>
<td>spreading</td>
<td>1 1/2</td>
<td>n/a evergreen</td>
<td>bronze</td>
<td>drupes</td>
<td>Likes poor soil</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td><strong>Fragaria X ananassa</strong></td>
<td>Garden strawberry</td>
<td>well</td>
<td>full sun to</td>
<td>spreading</td>
<td>1/2</td>
<td>2</td>
<td>late spring</td>
<td>white</td>
<td>n/a</td>
<td>Good choice for hydroponics</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**Grasses/sedges**

<p>| <strong>Juncus effusus</strong> | Dwarf | corkscrew | wet | full sun | clump | 1      | 1      | n/a | n/a | n/a | n/a |</p>
<table>
<thead>
<tr>
<th>Botanical name</th>
<th>Common Name</th>
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<th>Habit</th>
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<th>Color</th>
<th>Fall</th>
<th>Fruit harvest</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panicum virgatum</td>
<td>Switchgrass</td>
<td>moist</td>
<td>sun</td>
<td>erect</td>
<td>5</td>
<td>2 1/2</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>airy seedheads</td>
</tr>
<tr>
<td>Bulbs</td>
<td>Great blue</td>
<td>flag</td>
<td>moist</td>
<td>sun</td>
<td>erect</td>
<td>3</td>
<td>1 1/2</td>
<td>late spring</td>
<td>purple</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Iris virginica flag</td>
<td>flag</td>
<td>moist</td>
<td>sun</td>
<td>erect</td>
<td>3</td>
<td>1 1/2</td>
<td>mid</td>
<td>purple</td>
<td>n/a</td>
<td>n/a</td>
<td>rhizomes</td>
</tr>
<tr>
<td>Lilium michiganense Michigan lily</td>
<td>Michigan lily</td>
<td>moist</td>
<td>sun</td>
<td>erect</td>
<td>3 1/2</td>
<td>1 1/2</td>
<td>summer</td>
<td>orange</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Vines</td>
<td>Trumpet honeysuckle</td>
<td>well</td>
<td>sun to part-</td>
<td>climbing</td>
<td>18</td>
<td>2</td>
<td>spring</td>
<td>red</td>
<td>n/a</td>
<td>n/a</td>
<td>attracts hummingbirds</td>
</tr>
<tr>
<td>Lonicera sempervirens</td>
<td>Trumpet honeysuckle</td>
<td>drained</td>
<td>sun</td>
<td>climbing</td>
<td>18</td>
<td>2</td>
<td>spring</td>
<td>red</td>
<td>n/a</td>
<td>n/a</td>
<td>technically a shrub, but stays under 1’ trailing</td>
</tr>
<tr>
<td>Northern dewberry</td>
<td>Northern dewberry</td>
<td>moist, well-</td>
<td>sun to part-</td>
<td>early</td>
<td>1</td>
<td>6</td>
<td>summer</td>
<td>white</td>
<td>n/a</td>
<td>early fall</td>
<td>along ground</td>
</tr>
<tr>
<td>Rubus flagellaris</td>
<td>Dewberry</td>
<td>drained</td>
<td>sun</td>
<td>trailing</td>
<td>1</td>
<td>6</td>
<td>summer</td>
<td>white</td>
<td>n/a</td>
<td>early fall</td>
<td>along ground</td>
</tr>
</tbody>
</table>
Collage of native edibles and ornamentals from plant schedule (pp A-8 through A-11)
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