Spokane Regional Food System Inventory

SPOKANE FOOD POLICY COUNCIL

2016

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Executive Summary

Rationale

This report, written by members of the Spokane Food Policy Council (SFPC), is a broad assessment of the Spokane regional food system in 2016--the first of its kind for Spokane. Spokane joins other cities all across the United States that are evaluating their local food systems in an effort to improve access and quality of food for their residents and to determine their ability to provide food during economic, environmental and climatic challenges.

*A **food system** includes all aspects of food, beginning with the nourishment of the soil to planting of seeds, harvesting and processing of crops, to distribution and delivery of prepared food and the purchasing, preparing and consuming of the finished product. It also includes composting of waste back into soil nutrients.*

Our current food system is failing people and the evidence that it is dysfunctional food system is mounting:

- Many people, especially the poor, do not have easy access to healthy food.
- One in six people in the U.S. are food insecure.
- Many people suffer from food-related illness including diabetes, obesity and cardiovascular disease.
- Food recalls due to bacterially-infected food are common.
- Farm soils suffer high erosion rates and are contaminated with pesticides.
- Water resources are running low.
- Pollinators, such as honey bees, which pollinate 90% of our food crops, are dying in increasing numbers.

A functional food system provides healthy food for everyone and maintains the health of the natural resources needed to grow the food. As people recognize the failure of the national food system, they are creating local food systems that stimulate their local economy, provide healthy food for all the residents of their community, and protect their soil and water resources.

Outline of the Food System Inventory

The first section, **Economy**, discusses the current state of our national food system, then discusses the role that locally grown food plays in our broader food economy and the benefits and barriers to increasing it. The second section, **Population**, highlights residents' ability to access healthy, culturally relevant food. The last section, **Natural Resources**, summarizes the ability of our natural landscape to provide the food we need going into the future.

Economy

The Spokane region is located in the midst of an agricultural area, but very few crops and livestock grown here feed our residents. We spend $1.5 billion each year buying food from outside our region and only $4.2 million buying locally grown food.[1] We can create a more resilient local food system while strengthening our economy if we eat locally grown food. Our food dollars will stay in our community, creating a stronger economy.

Unfortunately, several barriers to this sort of economic vitality exist. Spokane regional farmers are aging and the region needs more programs to train our future farmers. There is also very limited local infrastructure for small local growers to process and distribute their food in Spokane County. A USDA certified meat processor and a fruit and vegetable processing plant would enhance the ability of small growers to deliver food to local markets.

Population

In Spokane County, 64% of all adults are obese or overweight.[2] Evidence is mounting that the increase in obesity is due to consumption of heavily processed food. About 15% of adults are food insecure[3], which means they are not sure where their next meal will come from. Poverty and lack of easy access to grocery stores contribute to this problem.

Many people do not know how to eat well or how to cook. New school programs introducing children to more fruits, vegetables and "scratch-cooking" are dropping obesity rates in children in Spokane County[4], but much more should be done to teach both adults and children the importance of healthy eating habits. Improving access to healthy foods requires action on multiple levels ranging from policy to individual changes.

Nearly every culture has its own food. What one eats, how it is prepared and served are important cultural identities. Having culturally appropriate food is an important aspect of a healthy food system. Wild foods are culturally important for many people and must be preserved.

Natural Resources

Food production is dependent on natural resources such as soil, water and pollinators. In our region all are in decline. Tilling practices have caused extensive water and wind erosion in local soils. The soils in the Palouse are becoming acidic, due to heavy applications of nitrogen fertilizers, which is limiting the ability to grow wheat.[5]

While the Spokane metro area is blessed with a plentiful aquifer, we cannot be complacent in allocation of its water. Outlying areas have dropping water tables and wells are going dry. All available surface water has been allocated. These pressures will increase withdrawal from the Spokane Valley Rathdrum Prairie Aquifer. Outdated water right laws do not give agricultural purposes a preference and farmers do not have access to enough water.

Farmland in Spokane County is disappearing at an alarming rate. Since the 1950s farmland has decreased from 72% to 47% of total land available[6]. Programs should be established to protect existing farmland, particularly for those that have water rights.

Protecting these resources is also crucial for the health of pollinators -- ninety percent of all food crops are dependent on them, and their populations have been crashing. Lack of habitat, forage and use of pesticides are likely causes.

Summary

The Spokane region is on its way to creating a vibrant local food system, but local farming is under-supported. We live in an area with strong agricultural roots and good soil. There is a growing nucleus of individuals, from growers to eaters, who are committed to seeing that everyone who lives here has access to healthy food and that our natural resources are protected. In the process, our economy will grow and we will be a more resilient community.

[1]Meter, Ken, 2014, Inland Northwest Region (Washington) Local Farm and Food Economy, http://www.crcworks.org/crcdocs/waspokesum14.pdf (2/21/2016)

[2]Spokane Regional Health District, Spokane Counts 2015, http://www.srhd.org/spokanecounts/indicator-overview (1/23/2016)

[3]Community Indicator Initiative of Spokane, http://www.communityindicators.ewu.edu/,(1/26/2016)

[4]Colleen Culbertson, Empire Health Foundation, Program Associate, Pers. Comm. Sept 10, 2015

[5]D. K. McCool, et al, 2001, Factors Affecting Agricultural Sustainability in the Pacific Northwest, USA; An Overview, http://tucson.ars.ag.gov/isco/isco10/SustainingTheGlobalFarm/P222-McCool.pdf

[6]USDA Census of Agriculture, http://www.agcensus.usda.gov/Publications/ (10/15/2015)

About The Spokane Food Policy Council

In 2013, City Council President Ben Stuckart convened the Spokane Food Policy Council (SFPC) to assess our regional food system and help develop a resilient food system in our area. The SFPC is comprised of individuals from a variety of sectors in agriculture, health, education, business, government and community development.

Our Mission: To advance policies and initiatives that foster a resilient food system in the Spokane area; one that is healthy and equitable for its citizens, economy and environment.

Our Vision: A thriving community that values and cultivates a viable, inclusive, and prosperous food system.

- A viable food system ensures stewardship of our **natural resources** while supporting a healthy food system.
- An inclusive food system ensures **all people** are able to participate in the food system in a healthy, equitable and a culturally relevant manner.
- A prosperous food system ensures strong **economic** opportunities throughout the food system.

Current Work of the Spokane Food Policy Council

The Spokane Food Policy Council has chosen the following strategies on which to focus for 2016.

Prosperous (Economy)

- Encourage institutional purchasing policies mandating that at least a portion of all food purchases are grown locally.
- Establish policies that allow for local food processing in or near urban areas, or create policies for designated food-processing food infrastructure districts.

Inclusive (Population)

- Development and capacity building of nutrition, food preparation, gardening and food education in K-12 schools.
- Incent grocery stores, farmers' markets, food carts, vending machines and other mobile vendors to locate in underserved communities.

Viable (Natural Resources)

- Work to preserve key pieces of regional farmland/wild land.
- Develop and suggest policies that reduce food in the waste stream.

Current Spokane Food Policy Council Directors and Advisors

Name	Affiliation
Elizabeth Abbey	PhD, RDN
Edward Brown	NW Local Food Distributor, Organic By Design
Jason Clark	CEO, Second Harvest
Brian Estes	Catholic Charities, Food for All
Torie Foote	Footehills Farm, Realtor
Jennifer Hall	Community Building, The Whole Plate
Erin Hannum	Lawyer for Farm Commons
Kitty Kitzke	Futurewise
LJ Klinkenberg	Luck Junky
Linda Moulder	Retired Biologist, Permaculturalist
Pat Munts	Spokane County Extension
Kyle Unland	Spokane Regional Health District
Joel Williamson	LINC foods
Melodi Wynne	Spokane Tribe
Advisors	
Todd Beyreuther	Washington State University
Chris Bieker	Private Citizen
Deborah Bisenius	City of Spokane
Nathan Calene	Spokane Food Policy Council Coordinator; Food Systems Planning
Wendy Knopp	NW Farm Credit Service
Alex Plummer	Charlie's Produce
Philip Small	Soil Scientist, Permaculturalist
Ben Stuckart	City Council

Disclaimer: This inventory is a living document and will be updated as new information becomes available. The businesses mentioned within are not meant to be definitive, but represent examples of local businesses involved in our local food system.

Economy

The Spokane region is located in the midst of an agricultural area, but very few crops and livestock grown here feed our residents. We spend $1.5 billion each year buying food from outside our region and only $4.2 million buying locally grown food.[1] Can we strengthen our local food economy and keep more dollars in our region?

I Our National Food System[2]

In order to appreciate the need for a robust local food system, it is important to understand the origin of most of the food found in our grocery stores. Today's national food system is global in nature and offers a cornucopia of choices for the American consumer. Grocery stores offer a myriad of brands, fruits and vegetables from around the globe, with many ready-to-eat options. Never before have people had such a selection of food choices.

But this food system is failing Americans in a number of ways. Obesity, diabetes and other diseases have skyrocketed in the last 20 years. Increasingly, people are looking at the food they eat as a cause of their medical problems. Multinational food companies provide a large part of many American diets and their offerings generally are high in calories and low in nutrition.

Today, 20 food corporations produce most of the food we eat, including organic brands. Large chain food stores control more than half of all grocery store sales. How did we move from a nation of family farms to this massive corporate system?

Our current national food system began with farm and food policies developed shortly after WWII. Young men were encouraged to leave farms and move to factories in order to provide cheap labor for manufacturing. A small number of industrialized farms remained to grow corn and other commodity crops necessary for processed food.

The oil crisis of the 1970s caused the cost of farming to skyrocket, forcing many farmers to sell or go into debt. Crop prices dropped because of failed Department of Agriculture policies during the 1970s. Farmers were encouraged to plant "fence row to fence row", causing overproduction. During this period, thousands of family farmers lost their farms. Meanwhile, cheap grain prices encouraged the expansion of factory farms and food manufacturing. Consolidation of our food system accelerated in the 1980s and 1990s, with federal deregulation and formation of the WTO (World Trade Organization).

The passage of NAFTA (North American Free Trade Agreement) in 1993 and the 1996 Farm Bill provided a crushing blow to the remaining family farmers. The Farm Bill forced a policy of "get big or get out." Farmers were encouraged to increase production

with the promise of expanded export markets—including Mexico. But almost immediately, this policy failed as prices for agricultural goods became unstable. Each time prices dropped, more small- and medium-scale farmers were forced into bankruptcy, while concentration of land ownership and agricultural production grew.

These national policies have resulted in a system where few corporations control the food we eat. (See Table 1, pg. 4 for a listing of the companies owned by the top five corporations.) The rapid industrialization of the food system has resulted in the degradation of the environment--polluted waterways, eroded and degraded soils and inhumane animal practices. For some of the particulars on issues created by our national food system see the *Human Health* and *Our National Food System* chapters.

Americans spend 90% of their food budgets on heavily processed food. This food is high in calories as well as preservatives, emulsifiers, binders and other ingredients never found in food grown in a field or in a garden. Consumption of these foods has been linked to obesity, diabetes and heart disease, but the political power of the food industry has prevented necessary changes in public policy to protect human health. (See *Food and Health* chapter for specific statistics about Spokane County residents).

People are recognizing that much of the food we eat is not good for us or for the environment. The food industry has a vast lobbying network and policymakers in Washington, D.C. seem stuck on the same failed policies. Regaining control of the national food system will not be easy. These efforts may require a restructuring of how we measure the economic value of food for consumption, sustenance and sharing. For this we can learn from local indigenous peoples who have, since time immemorial, recognized and celebrated reciprocal benefits for people, plants, environment and future generations. There are some encouraging developments in this direction. In many communities across the country, people are opting out of the existing large-scale industrialized system to rebuild smaller, healthier options that are rooted in local economies and connections between farmers and consumers. The Spokane region is on its way to joining them.

[1]Meter, Ken, 2014, Inland Northwest Region (Washington) Local Farm and Food Economy, http://www.crcworks.org/crcdocs/waspokesum14.pdf (2/21/2016)
[2]From: Hauter, Wenonah, Foodopoly: the battle over the future of food and farming in America, The New Press, 2012
[3]http://www.foodprocessing.com/top100/top-100-2014 (3/17/2016)

Table 1: Top 5 U.S. Food Companies and Their Brands[3]

	Company	2014 Food Sales ($ millions)	Brands
1	PepsiCo	38,224	Amp, Aquafina, Aunt Jemima, Baken-Ets, Cap'n Crunch, Chee-tos, Chester's, Cracker Jack, Diet Pepsi, Dole (license), Doritos, El Isleno, Ethos, Fiesta, Frappuccino, Flat Earth, Fritos, Funyuns, G2, G Natural, Gamesa, Gatorade, Grandma's Cookies, Hickory Sticks, Hostess Potato Chips, Izze, Kas Mas, King Vitaman, Lay's, Life, Lipton (partnership), Manzanita, Matador, Mirinda, Miss Vickie's, Mother's, Mountain Dew, Mug, Munchies, Muncos, Naked Juice, Near East, No Fear, Nobby Nuts, Ocean Spray (licensed), O'Grady's, Parkers, Pasta Roni, Pepsi, Propel, Quaker, Quisp, Rice-A-Roni, Rold Gold, Ruffles, Sabritas, Sabritones, Santitas, Seattle's Best Coffee, 7-Up, Sierra Mist, Slice, Smartfood, Smith's, SoBe, South Beach, Stacy's, Storm, SunChips, Tazo, Tostitos, Tropicana, True North, Walkers, Naked Juice
2	Tyson	36,077	Any'tizers, Bonici, Cavanaugh, Chairman's Reserve, Cobb, Colonial, Corn King, Cut & Ready, Delightful Farms, Deli Slices, Doskocil, Golden Trophy, Grilled & Ready, Hot Wings, IBP, Jefferson Meats, Joseph Copperfield's & Sons, Lady Aster, Mexican Original, Mr. Nuccio, Open Prairie Natural Angus, Original Wraps Our American Favorite, Pizza Topper, Pizzano, Readi Rise, Reuben, Russer, Solo Serves, Star Ranch Angus, Supreme Tender, TastyBird, Tenderpressed, Thorn Apple Valley, Trimmed & Ready, Tyson, Weaver, Wilson, Wilson Foodservice, Wright, Wunderbar
3	Nestle	27,978	Acqua Panna, Aero, After Eight, Alpo, Antica Gelateria del Corso, Aquarel, Arrowhead, Baby Ruth, Baci, Baeren Marke, Beggin Strips, Beltè, Beneful, Boost, Buitoni, Butterfinger, Buxton, Cailler, Calistoga, Carnation, Cat Chow, Cerelac, Cerevita, Chamyto, Cheerios (Europe-license), Chef, Chef-Mate, Chocapic, Cini Minis, Clinutren, Coffee-Mate, Contrex, Cookie Crisp, Dar Natury, Davigel, Davifrais, Deer Park, Delissio, Dibs, Dog Chow, Dreyer's, Edy's Slow Churned, Dibs, Häagen-Dazs, Drumstick, Skinny Cow, Nestlé Toll House, Nestlé Carnation, Nestlé Push-Up, Frosty Paws, Eskimo Pie, Ecco, Estrelitas, EveryDay, Extrême, Fancy Feast, Felix, Fitness, Friskies, Gerber, Gerber Graduates, Good Start, Gourmet, Herta, Hot Pockets, Lean Pockets, Ice Mountain, Impact, Jenny Craig, Juicy Juice, Kit Kat, La Cremeria, La Laitière, Lean Cuisine, Levissima, Lion, Maggi, Maxibon, Milo, Minor's, Mövenpick, Mucilon, NaturNes, Nero, Nescafé, Nescau, Nespresso, Nesquik, Nestea, Nestle, Nestlé Crunch, One, Optifast, Orion, Peptamen, Perrier, Perugina, Poland Spring, PowerBar, Pro Plan, Pure Life, Purina, Quality Street, Real Dairy, Resource, S.Pellegrino, Smarties, Stouffer's, Taster's Choice, Thomy, Tidy Cats, Toronto, Trio, Vittel, Wonka, Yorkie
4	JBS USA	24,000	5 Star Beef, Aspen Ridge Natural Beef, Blue Ribbon Angus, Cedar River Farms, Chef's Exclusive, Clear River Farms, G.F. Swift 1855 Brand, Liberty Bell, Moyer, Packerland, Showcase Premium Ground Beef Swift
5	Coca-Cola	21,462	Abbey Well, Aquarius, Barq's, Blak, Bright & Early, Canada Dry, Carver's, Citra, Coca-Cola, Coke, Dasani, Diet Coke, Fanta, Five Alive, Flavor Rage, Fresca, Fruitopia, Full Throttle, Georgia, Glaceau vitamin water, Hi-C, Honest Tea, Illy issimo, Inca Cola, Manzana Mia, Mello Yello, Minute Maid, Mr. Pibb, Nestea, Northern Neck, Odwalla, Powerade, Red Flash, Schweppes, Seagram's, Simply, Sprite, Surge, Tab, Vault

2 Growers

Growers include all people who grow the food we eat. They may be farmers growing crops from seed, or ranchers growing meat or dairy products.

Regional Farms

Tables 1-3 give a summary of the Inland Northwest regional farming picture. In general, counties south of Spokane County grow grains and legumes; those north of Spokane County produce forage and livestock. Whitman and Lincoln counties have the largest average farm size since their main crops are grains.

Table 1: Regional County Farms at a Glance (2012)[2]

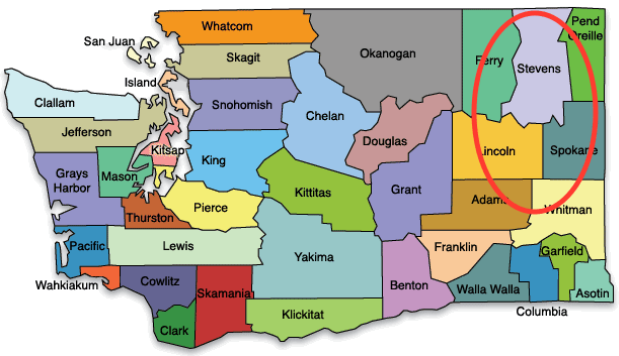
County	County Seat	# Farms	Acres Farmland	Major Crops & Livestock
Adams*	Ritzville	713	1,000,000	Wheat, Vegetables (all) Potatoes
Ferry	Republic	255	792,000	Forage, cattle and calves
Lincoln	Davenport	897	1,100,000	Wheat, barley
Pend Oreille	Newport	288	44,000	Forage, cattle and calves
Spokane	Spokane	2501	537,000	Wheat, forage, livestock, nursery
Stevens	Colville	1148	527,000	Forage, cattle and calves, wheat
Whitman	Colfax	1195	1,300,000	Wheat, barley, dried beans, cattle and calves
Totals		6997	5,300,000	

*only county with significant irrigated land

Adams County farmland is about 12% irrigated and derives 39% of its production value from vegetables and fruit. In contrast, Spokane, Stevens, Pend Oreille and Lincoln counties have only 2-3% of their farmland irrigated. In addition to the lack of irrigation, the region receives most of its precipitation during the winter months instead of during the growing season. Fruits and vegetables require more water than grains and grasses, which may explain why most farmland in the region produces grains and forage instead of fruits and vegetables.

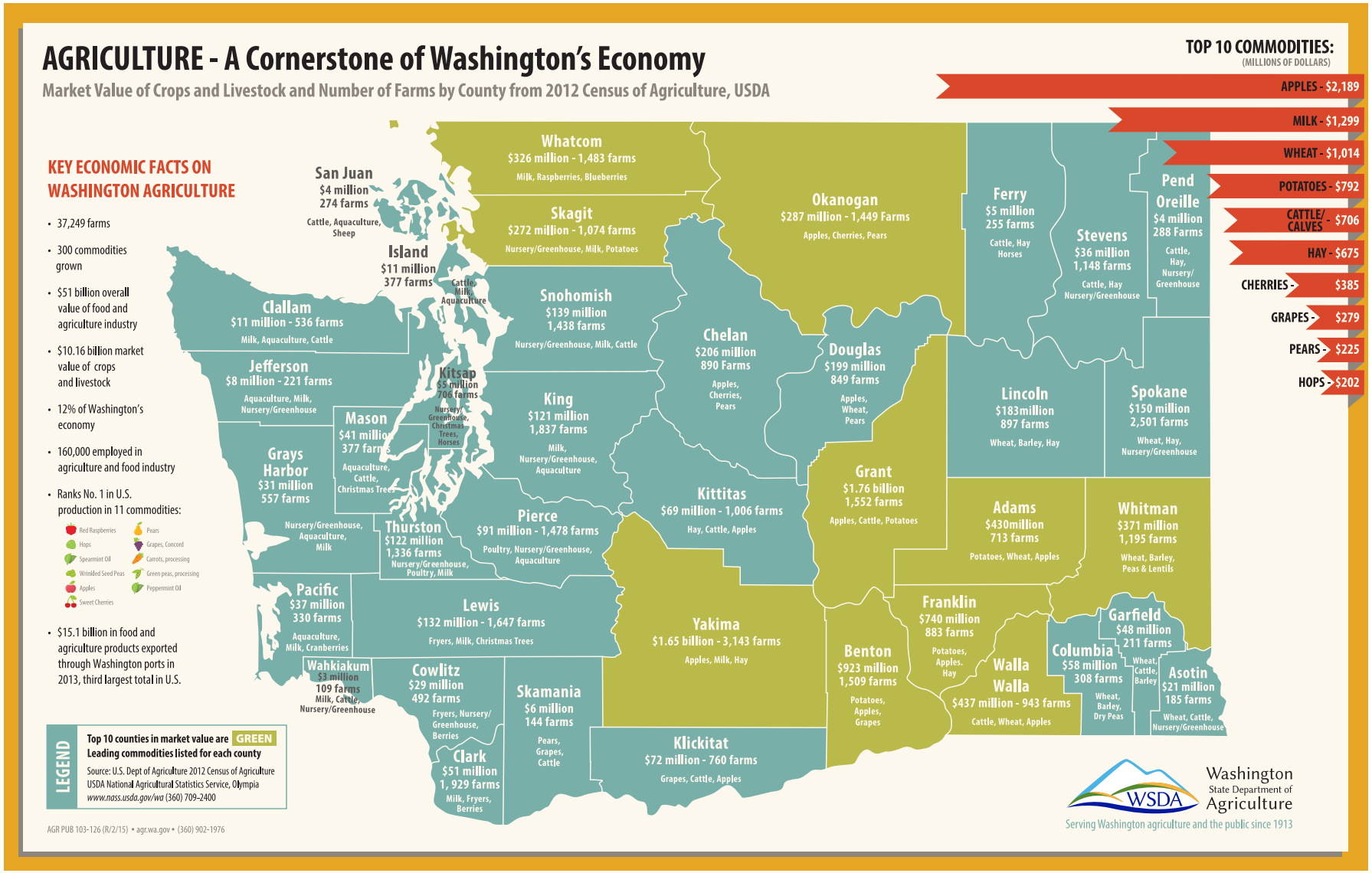
Table 2: Regional Farm Financial Picture in 2012[2]

County	Market Value of Products Sold	Direct Farm Sales	Net Cash Income Per Farm	Cost of Production** Per Farm
Adams	$430,155,000	$129,000	$183,658	$474,860
Ferry	$5,331,000	$408,100	$2,167	$23,124
Lincoln	$183,244,000	$183,200	$99,202	$142,704
Pend Oreille	$3,954,000	$71,280	$1,619	$12,902
Spokane	$149,760,000	$2,250,000	$16,667	$50,722
Stevens	$36,346,000	$871,200	$5,250	$28,955
Whitman	$370,801,000	$371,000	$143,835	$133,646
Totals	$1.18 billion	$4,280,000		



**Cost of production includes:

- Fertilizer, lime, soil conditioners (16%)
- Hired farm labor (11%)
- Chemical purchases (11%)
- Depreciation (9%)
- Supplies, repairs, maintenance (9%)
- Fuels (8%)
- Land & Building rentals (7%)
- Feed purchases (7%)
- Seed purchases (6%)
- Other (16%)


AGRICULTURE - A Cornerstone of Washington's Economy
Market Value of Crops and Livestock and Number of Farms by County from 2012 Census of Agriculture, USDA
KEY ECONOMIC FACTS ON WASHINGTON AGRICULTURE
• 37,249 farms
• 300 commodities grown
• $51 billion overall value of food and agriculture industry
• $10.16 billion market value of crops and livestock
• 12% of Washington's economy
• 160,000 employed in agriculture and food industry
• Ranks No. 1 in U.S. production in 11 commodities:
Red Raspberries
Hops
Spearmint Oil
Wrinkled Seed Peas
Apples
Sweet Cherries
Pears
Grapes, Concord
Carrots, processing
Green peas, processing
Peppermint Oil
• $15.1 billion in food and agriculture products exported through Washington ports in 2013, third largest total in U.S.
LEGEND
Top 10 counties in market value are GREEN
Leading commodities listed for each county
Source: U.S. Dept of Agriculture 2012 Census of Agriculture
USDA National Agricultural Statistics Service, Olympia
www.nass.usda.gov/wa (360) 709-2400
AGR PUB 103-126 (R/2/15) • agr.wa.gov • (360) 902-1976
TOP 10 COMMODITIES:
(MILLIONS OF DOLLARS)
APPLES - $2,189
MILK - $1,299
WHEAT - $1,014
POTATOES - $792
CATTLE/ CALVES - $706
HAY - $675
CHERRIES - $385
GRAPES - $279
PEARS - $225
HOPS - $202
Whatcom
$326 million - 1,483 farms
Milk, Raspberries, Blueberries
San Juan
$4 million
274 farms
Cattle, Aquaculture, Sheep
Skagit
$272 million - 1,074 farms
Nursery/Greenhouse, Milk, Potatoes
Island
$11 million
377 farms
Cattle, Milk, Aquaculture
Okanogan
$287 million - 1,449 Farms
Apples, Cherries, Pears
Ferry
$5 million
255 farms
Cattle, Hay Horses
Stevens
$36 million
1,148 farms
Cattle, Hay Nursery/Greenhouse
Pend Oreille
$4 million
288 Farms
Cattle, Hay, Nursery/ Greenhouse
Snohomish
$139 million
1,438 farms
Nursery/Greenhouse, Milk, Cattle
Clallam
$11 million - 536 farms
Milk, Aquaculture, Cattle
Chelan
$206 million
890 Farms
Apples, Cherries, Pears
Douglas
$199 million
849 farms
Apples, Wheat, Pears
Jefferson
$8 million - 221 farms
Aquaculture, Milk, Nursery/Greenhouse
Kitsap
$5 million
708 farms
Nursery/ Greenhouse, Christmas Trees, Horses
King
$121 million
1,837 farms
Milk, Nursery/Greenhouse, Aquaculture
Lincoln
$183million
897 farms
Wheat, Barley, Hay
Spokane
$150 million
2,501 farms
Wheat, Hay, Nursery/Greenhouse
Mason
$41 million
377 farms
Aquaculture, Cattle, Christmas Trees
Grays Harbor
$31 million
557 farms
Nursery/Greenhouse, Aquaculture, Milk
Kittitas
$69 million - 1,006 farms
Hay, Cattle, Apples
Grant
$1.76 billion
1,552 farms
Apples, Cattle, Potatoes
Adams
$430million
713 farms
Potatoes, Wheat, Apples
Whitman
$371 million
1,195 farms
Wheat, Barley, Peas & Lentils
Thurston
$122 million
1,336 farms
Nursery/Greenhouse, Poultry, Milk
Pierce
$91 million - 1,478 farms
Poultry, Nursery/Greenhouse, Aquaculture
Pacific
$37 million
330 farms
Aquaculture, Milk, Cranberries
Lewis
$132 million - 1,647 farms
Fryers, Milk, Christmas Trees
Yakima
$1.65 billion - 3,143 farms
Apples, Milk, Hay
Franklin
$740 million
883 farms
Potatoes, Apples, Hay
Garfield
$48 million
211 farms
Columbia
$58 million
308 farms
Wheat, Cattle, Barley
Asotin
$21 million
185 farms
Wheat, Cattle, Nursery/Greenhouse
Wahkiakum
$3 million
109 farms
Milk, Cattle, Nursery/Greenhouse
Cowlitz
$29 million
492 farms
Fryers, Nursery/ Greenhouse, Berries
Skamania
$6 million
144 farms
Pears, Grapes, Cattle
Benton
$923 million
1,509 farms
Potatoes, Apples, Grapes
Walla Walla
$437 million - 943 farms
Cattle, Wheat, Apples
Wheat, Barley, Dry Peas
Clark
$51 million
1, 929 farms
Milk, Fryers, Berries
Klickitat
$72 million - 760 farms
Grapes, Cattle, Apples
WSDA
Washington State Department of Agriculture
Serving Washington agriculture and the public since 1913

Spokane County Farms

More than half of the 2,501 farms in Spokane County are less than 50 acres. Almost 70% of farmland grows crops and 14% is pasture. The remainder is woodland or used for other applications.

Table 3: Value of Products Sold In Spokane County[2]

Ag Product	Value ($ million)	Percent of Total Sales
Grain	$97.7	65%
Livestock	$16.9	11%
Hay	$15.2	10%
Nursery Plants	$12.9	9%
Vegetables	$4.9	3%
Milk	$3.2	2%

The primary crops grown are wheat, forage, livestock and nursery plants. Although the number of farms stayed steady between 2007 and 2012 (the most recent Ag Census), the amount of farmland in Spokane County decreased by 14% during the same period (see pg 98).

Farmers in the State of Washington grow 300 different crops, including livestock. In Eastern Washington, farmers are limited in what they can grow due to climate, but do produce a wide variety of fruits, vegetables and animals.

Spokane County Farmers and Ranchers[2]

- Farmers whose principal occupation is farming operate 42% (1,039) of Spokane County's 2,501 farms.
- Seventy-nine percent of Spokane County farmers fully own their farms.
- Part-time farmers operate more than half of the farms in Spokane County.
- Farmers across the nation are aging and Spokane County follows that trend; Spokane farmers are, on average, 58.6 years old.
- Spokane County farmers sold $150 million of products in 2012, with $133 million in crops and $17 million in livestock.
- Seventy-four percent of Spokane County farms sold less than $10,000 in farm products.
- Nine hundred and eight (36%) of Spokane County's farms reported net income gains, while 1593 (64%) reported net losses.

Spokane County Direct Sales by Farmers

In 2012, 406 Spokane County farmers sold $2.3 million directly to consumers, which is much more than other regional counties (see Table 2). This is undoubtedly due to their access to a large population base. According to Joel Williamson, co-founder of LINC Foods (a regional company connecting local farmers with food suppliers), farmers will only travel about 100 miles, or 90 minutes to sell their products directly

to consumers. This limits the number of farmers that can sell directly to the metropolitan Spokane area.

Government Subsidies

Government subsidies for farmers take many forms. They range from local government property tax breaks to federally subsidized crop insurance. At the state level, farmers benefit from tax breaks on input and equipment expenditures. At the federal level, the bulk of subsidies have historically targeted staple commodity crops such as grains and oilseeds. Federal subsidies for specialty crops, such as fruits and vegetables, tree nuts, horticulture and nursery crops, have primarily been to assist with research and marketing but have also included cost-share dollars for conservation and subsidized water for irrigation. In the past decade, federal subsidies have expanded for specialty crops and smaller, beginning and organic farmers. These subsidies include subsidized loans and insurance and cost-share financing for a wide variety of practices and grants.

Vets on the Farm Program

The average age of farmers in Spokane County is 58.6 years. If the Spokane region is to remain viable as an agricultural center, it needs a mechanism for recruiting new farmers. The Spokane Conservation District has a new program to fill the void of aging farmers with veterans and active reserve military personnel, according to Pat Munts, the Small Farms Coordinator. Veterans come home from war and face a daunting challenge of fitting into our culture. They suffer from homelessness, mental illness and unemployment. This program offers training that will lead to farming and other agricultural-based employment.

Wild Plant Cultivation

Nature has provided wild food, including berries, roots and herbs, for generations of people living in this region. While the availability of wild foods has decreased with the onset of development, the revegetation of native plant species is increasingly recognized as desirable and viable in open spaces throughout urban and rural areas. Many native plant species thrive when planted in areas that have minimal water or cultivation. These foods are available seasonally and can be processed and preserved for off-season consumption. The use and care of wild plants can be taught in local community kitchens, schools, and grassroots groups. Increased availability and access to these native foods can provide a more affordable healthy choice for people in

underserved neighborhoods. It also helps keep dollars in the region and provides satisfying, nutritious food for the table.

[1]Meter, Ken, 2014, Inland Northwest Region (Washington) Local Farm and Food Economy, http://www.crcworks.org/crcdocs/waspokesum14.pdf (2/21/2016)
[2]USDA Census of Agriculture http://www.agcensus.usda.gov/Publications/2012 (8/15/2015)

Local Business Highlights

Shepherd's Grain

Karl Kupers and Fred Fleming began farming in new ways to keep their land productive for decades to come and to enable their wheat to be sold at a fair price. These farming ideas are called sustainable agriculture.

Fred Fleming describes the birth of Shepherd's Grain as an effort to reconfigure the opportunities available on his farm near Reardan. The farm had been in his family since 1888, but Fleming knew he was going to have to change his farming practices to make the farm viable in the new economy. The only way to get a higher price would be to offer a unique product that could be differentiated from commodity products.

Today there are nearly 60 growers from southern Alberta and the Pacific Northwest who raise wheat for Shepherd's Grain. They all use sustainable farming methods and are, or are in the process of certification by a third party audit. Their wheat is milled and the flour sold through ADM in Spokane to artisan bakers throughout the Pacific Northwest. A number of restaurants and pizzerias in Spokane use Shepherd's Grain flour. It is also available at URM Cash and Carry and Smart & Final Cash and Carry. Visit their website, www.shepherdsgrain.com, for more information.

Full Bushel Farm

Dan and Laura Sproule operate Full Bushel farm, a 6-acre oasis in the midst of rolling wheat hills south of Cheney. They support their family of six children by growing vegetables and selling them at two farmers' markets and through a handful of wholesale accounts. They just finished their fourth growing season.

Several years ago they were looking for a type of work where both of them could play an active role in raising their growing family, and they decided on farming. They interned on a 100-acre farm in Minnesota for 3 years, and learned a lot about techniques and efficiencies for being successful vegetable farmers. Dan feels this experience has helped them be successful as full-time farmers.

They moved back to this area to be close to family and found land to lease. They are looking for land to purchase, but any property with water rights is just too expensive. Dan says the lack of available water rights is a major barrier for beginning farmers in this region.

3 Urban Agriculture

Urban agriculture involves growing or producing food for commercial purposes in or around an urban area. The Spokane region has a rich history of urban agriculture, but increasingly, agricultural land close to the city perimeter is being sold and developed for other purposes. A robust urban agricultural system offers economic vitality to the region by keeping food dollars local while providing income for growers and other food-related businesses.

Why Urban Agriculture?

Urbanized populations are growing as people move from rural to urban environments.[1] An urban agricultural infrastructure is a way of meeting local food demands and ensures a level of self-reliance. Enabling crop production in urban areas helps solve food access issues. In Spokane County, seventeen census tracts are designated as food deserts (see pg. 57).[2] This lack of access to fresh, healthy food contributes to a poor diet and can lead to obesity and chronic diseases such as diabetes and heart disease. By placing urban agricultural sites inside or near food deserts, residents have ready access to healthy food and the cost of shipping produce can be greatly reduced or eliminated entirely.

***Food deserts** are areas in urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food.*

*A **census tract** is a small geographical area within a county that is delineated by a committee of local participants prior to each decennial census. Generally there are between 2,500 to 8,000 residents in each tract.*[3]

The USDA estimates that supermarkets lose $15 billion annually in unsold fruits and vegetables due to produce damage and spoilage during transport.[4] Locally-grown produce minimizes spoilage and degradation while extending product shelf life, which benefits consumers and retailers alike.

Finally, there is increasing interest among communities to develop "resilience" which is the ability to recover from a misfortune or change. If a community has its own food resources, it is not as susceptible to drought, crop failures or transportation

misfortunes as are those communities that import their food. See pg. 71 for specific information on Spokane County's current plan to feed itself in times of emergency.

Policies Regarding Urban Agriculture in the City of Spokane

With the help of the Spokane Food Policy Council, the City of Spokane recently updated its zoning regulations and revised its animal-keeping ordinance to promote the production and sale of local produce, flowers and eggs. These new policies will encourage residents to grow food for sale as well as their own use.

- **Market Garden Pilot Project** - This new ordinance allows the production and on-site sale of "agricultural products" meaning fruits, vegetables, flowers, and eggs in residential zones. Marijuana is specifically excluded.[5]
- **Revised Animal Law** - This revised ordinance takes into account one's lot size and bases the number of animals one can have by the square footage of the lot area. The new ordinance also allows "small livestock".[6]

Urban Agricultural Areas Within Spokane County

City of Spokane

The Vinegar Flats area along Latah Creek southwest of downtown Spokane has historically been farmed and there is a resurgence of market farming in that area. The City of Spokane has zoned 153 acres for Residential Agriculture in Latah Valley, with 92 acres designated prime agriculture land. Land zoned for Residential Agriculture within the City of Spokane is not protected, and can be developed for residential uses.

City of Spokane Valley

The City of Spokane Valley does not have any agriculture zoning, but has 14.6 acres that currently receive farm tax exemptions. Spokane Valley has an "open space" zoning designation, but this does not protect working lands such as farms.
Before incorporation as the City of Spokane Valley in 2003, the Spokane valley area historically had many truck farms (farms where vegetables are grown for markets). In the past decade, much of the area has been subdivided into 5-acre plots and few farms remain. However, the area has a number of water districts with agricultural water rights, so it is possible in the future that farmers could lease land that is currently sitting fallow. Spokane Valley sits above the Spokane Valley Rathdrum Prairie aquifer and has thin soils, so the area should be farmed by organic means to prevent contamination of the aquifer (see pg. 90 for information about the aquifer).

Spokane County Food Shed Analysis

Eastern Washington University students from the Urban and Regional Planning program recently completed an analysis of the Spokane County food shed. This analysis investigated whether the county can be self-reliant in its food supply within a 100-mile radius of the urban center. The Food Shed Analysis measured public land that is capable of growing food, where it is located, and how much land is needed for Spokane County residents, according to the 1.2 acre/person estimate of the Food and Agriculture Organization (FAO) of the United Nations.

*A **food shed** is the geographical area between where food is produced and where that food is consumed.*

The results are eye opening. Spokane County has a population of 479,398. Using the FAO's standard of 1.2 acres/person, the food shed needs to have 575,278 acres (899 sq miles) of agriculturally capable land. To identify appropriate land, the students used soil rankings from the Natural Resource Conservation Service (NRCS). They then subtracted any inappropriate land (i.e. national forest, Indian reservations, protected wetlands, etc.). They discovered that Spokane County could feasibly be self-reliant using public land available only within the county. There are 775,086 acres available for agriculture within Spokane County.[7]

[1] Washington State Office of Financial Management, http://www.ofm.wa.gov/pop/april1/poptrends.pdf (11/17/2015)

[2] USDA Economic Research Service http://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx (11/17/2015)

[3] https://www.census.gov/geo/reference/gtc/gtc_ct.html (4/4/2016)

[4] Gunders, Dana, Natural Resources Defense Council, 2012, Wasted: How America Is Losing Up to 0 Percent of Its Food from Farm to Fork to Landfill, https://www.nrdc.org/food/files/wasted-food-ip.pdf (11/17/2015)

[5] City of Spokane Market Garden Pilot Program, https://my.spokanecity.org/smc/?Section=17C.380.010, (2/24/2016)

[6] City of Spokane Revised Animal Law, https://my.spokanecity.org/smc/?Section=17c.310.115, (2/24/2016)

[7] Food Shed Analysis for Spokane County, EWU, Dept. of Urban and Regional Planning, 2014, drive.google.com/drive/folders/0B8ar4Y2OJf93d0hFVXFUU1R2bmc, (2/24/2016)

Local Business Highlight

Food For All Farm

Food For All (FFA) Farm is located along Latah Creek in the Vinegar Flats neighborhood of Spokane. A project of Catholic Charities Spokane (CCS), the farm was established in 2002 on a small parcel of historic farmland. Working to model effective food production strategies in a peri-urban setting, FFA Farm is a central element in CCS's food-systems work. The farm produces vegetables, herbs, flowers and berries using intensive methods on 1/3 acre, which are then distributed throughout several high poverty and food insecure Spokane neighborhoods.

The farm's operation models production strategies useful to small-scale commercial vegetable production as well as intensive urban gardeners, including systems of season-extension and drip irrigation. Beginning in 2016, the farm operation will further emphasize training opportunities by developing more intensive internship and volunteer education opportunities. In addition, there will be workshops and skill-sharing sessions for growers. The farm will also begin operation of a 18'x32' greenhouse and consider incorporation of livestock into farm management systems. Visit their website at http://www.catholiccharitiesfoodforall.org/

The historic home to a number of early truck farms that cultivated vegetable crops for sale to urban Spokane, the Vinegar Flats neighborhood is now home to several agricultural enterprises. These include the Food For All Farm, vegetable producer Urban Eden, bedding plant producer Lima Greenhouses, and Blue Moon nursery.

4 Food Processors

Food processing is defined as "handling or processing of any food in any manner of preparation for sale for human consumption" (RCW 69.07). Numerous processing methods are used to transform raw agricultural products to the foods that meet the preservation, taste, texture, appearance, and packaging needs of the food industry. There are several categories of processed food:

- **Minimally processed foods** are not substantially changed from their unprocessed form and retain most of their nutritional properties. Examples include bagged salads, fresh or frozen vegetable packages, packaged nuts or coffee, canned vegetables and tuna.
- **Moderately processed foods** have ingredients such as sweeteners, flavors, oils and preservatives added for safety or to ensure that food retains visual and taste appeal. They are rarely eaten alone and are used in cooking or in the manufacture of heavily processed foods. Examples include cake mixes, salad dressings, instant potatoes and tomato sauces.
- **Heavily processed foods** undergo many processes so they are ready to eat right out of the package. Examples include crackers, cookies, granola bars, TV dinners and soft drinks.[1]

Food processing is a fairly young industry. In 1941, M&M candies were one of the first processed foods, followed by instant coffee and frozen vegetables. Seventy years later, most people in the country eat processed foods every day. Processing makes it possible for seasonal produce to be preserved for later consumption. It can turn inedible products such as coffee or cacao beans into something edible. It also creates new products to tempt the consumer, such as candies, cookies, frozen dinners and packaged sauces.[1]

Food Processing in Spokane County

Since Spokane is the center of a large agricultural region, one might expect there to be a vibrant processing industry here. In the past, that was the situation. In the 1950s, more people were employed in the meat industry than in any other industry in Spokane. But by the late 1970s, three of the largest slaughtering facilities, Armor, Highgrade, and Swift, had all ceased operations, and today there are no USDA-inspected meat slaughtering facilities in Spokane. The closest ones are in Chewelah and Odessa.[2]

There are currently no major fruit or vegetable processing plants that process locally grown produce in Spokane County. Spokane Produce and LINC Foods process some produce from local growers, but quantities are small. Spokane Seed processes dried peas and lentils for the commodity market and their products are not available locally. There are a number of artisan processors packaging specialty goods, such as Thomas Hammer coffee and Bumblebar. These are, for the most part, small businesses with few employees.

The following are some of the food processors located in Spokane County. The list includes both commodity processors as well as processors of local and artisan products.[3]

- **ADM Milling** (Archer Daniels Midland Company)– A global milling company; the Spokane facility also mills Shepherd's Grain wheat into flours sold in local grocery stores, and used in restaurants and bakeries. Employee numbers not available.
- **Ameristar Meats, Inc.** – Provides meat products to food service operators (they butcher meat but don't slaughter animals); 160 employees
- **Bumble Bar, Inc.** – An organic and gluten free-certified facility that produces snack Bumble Bars and is a regional food-bar co-packer; 24 employees.
- **Cyrus O'Leary's Pies** - Makes pies sold to in-store bakeries of grocery stores & food service; 100 employees.
- **Darigold, Inc.** – A northwest farmer-owned co-op; produces milk, butter, and other dairy products; 84 employees.
- **Davidson Commodities** – Packages and markets locally grown peas, lentil and garbanzo beans. 2 employees.

- **LINC Foods** – A co-op that minimally processes local produce for sale to local institutions. 3 employees.
- **Longhorn Production Center, Inc.** - Longhorn ribs, barbecue sauce, hot dogs, sausage; 35 employees.
- **Rizzuto Foods** – Makes pizza crust, pizza dough, flatbreads, gluten-free products; 49 employees.
- **Spokane Produce** – Mainly a distribution center, but minimally processes some local produce. They currently process local salsas, Victor's hummus and fruits & vegetables; 250 employees.
- **Spokane Seed Co** – Grows, processes and markets dried peas, lentils, garbanzo beans for the global market; 56 employees.
- **Thomas Hammer Coffee Roasters** – Roasts coffee for local markets; 36 employees.

Economics of Local Food Processing

The processor sector in the County seems to be a stable sector that is showing signs of growth. While it doesn't appear to be employing more people, it seems to be paying those it employs more than in previous years (See Table 1).

Table 1: Gross Sales and Wages of Food Processors in Spokane County[4,5]

Year	Number of Processors	Gross Sales $Million	Total Employees	Total Wages $Million	Average Wage
2010	48	$516	1319	$48	$36,000
2012	46	$566	1472	$49	$38,800
2013	52	$775	1307	$52	$41,000
2015	53	NA	1246	$51	$41,000

Washington State Regulations for Food Processors

Many small growers are adding value to their raw products by canning, freezing, drying and other forms of food processing. Washington State Department of Agriculture (WSDA) requires a Food Processor License for many of these processes. The Cottage Food Law allows people to make low-risk food (e.g.jams and jellies) in their home kitchens and sell directly to consumers. A Cottage Food Permit is required prior to selling a product and gross sales cannot exceed $25,000 annually.[6]

Spokane County Regulations

Processing facilities can contribute to a local economy and help create an equitable food system by allowing fresh food to be distributed quickly and efficiently to the local population. Spokane County and the City of Spokane differ on allowing processing facilities within their agriculture zones. The County allows agricultural processing facilities for animals or vegetables and fruits in agriculture zones, while the City of Spokane does not allow agricultural processing facilities in residential agriculture zones.[7]

Commercial Kitchens

Washington State law requires that most processed food products offered for sale to the public be prepared in a separate kitchen, not the kitchen used to prepare home food. These separate kitchens are often referred to as commercial kitchens. The exception to this rule is The Cottage Food Law (see above). Any food processing activity must also be licensed. Food processed for resale (wholesale products) is licensed by the WSDA, while products processed for retail sales are licensed by the Spokane Regional Health District.

There are two rental commercial kitchens available regionally for local growers to process their crops for retail sales. Another one recently closed.

- **Kitchen Spokane** - a nonprofit commercial kitchen for use by the public; located in Spokane Valley.
- **Siemens Family Farm** -- was recently approved as a commercial kitchen; in Deer Park.

Growers can also contract with permitted restaurants and churches to process food. The grower is responsible for getting their own permit to process their product. The lack of commercial kitchens is a definite hindrance for small producers. For example, Litehouse salad dressing company moved from Spokane to Sandpoint, ID, because they had a supportive commercial kitchen there. They are now a national brand with over 300 viable jobs.

WSDA publishes the Handbook for Small and Direct Marketing Farms[8] which is an excellent source of information on processing requirements for farmers.

[1]A Brief History of Processed Foods, http://www.barharborfoods.com/blog-detail.php?A-Brief-History-of-Processed-Foods-155 (1/11/2016)

[2]Summary of Meat Processing in Washington, http://agr.wa.gov/FoF/docs/MeatProcessing.pdf (1/11/2016)

[3]Food Producers, Journal of Business, Aug. 27, 2015, pg. 14

[4]Washington State Regional Labor Economist, Doug Tweedy, pers. comm., on 12/8/2015

[5]Louisell, Mike, WSDA public information officer, WSDA Food Processing employment, e-mail., 12/8/2015

[6]Washington State Cottage Food Law, http://agr.wa.gov/foodanimal/cottagefoodoperation/ (1/11/2016)

[7]The Spokane County Food Assessment Land Use Chapter, Spokane Regional Health District, http://www.srhd.org/documents/PA_N/FoodandHealth2011-LandUse.pdf (1/11/2016)

[8]WSDA Handbook for Small and Direct Marketing Farms, 2014, http://agr.wa.gov/marketing/smallfarm/

Local Business Highlight

Davidson Commodities

Davidson Commodities is a family-owned business focused on supporting local family farms. Started by Mike Davidson in 1990, the Spokane-based company is now owned by his children, Matt and Kim Davidson. Their company specializes in agricultural marketing, partnering with PNW Co-op in Genesee, Idaho, to market Mighty Mustard cover crop seed and PNW Co-op Specialty Foods legumes.

"Our grandfather was a veterinarian, and we grew up on a 40-acre hobby farm in Minnesota, surrounded by working farms," says Kim. "We learned at an early age that it takes brains, discipline and hard work to succeed in farming. We consider it an honor to market the products grown by local farmers and share their stories with the world." Davidson Commodities is actively involved in building a strong regional food economy and increasing access to healthy, local foods. They support Second Harvest and Farm-to-School programs, provide free cooking tips and recipes, and educate buyers about the economic impact of buying local foods.

Matt and Kim believe supporting other local businesses is vital to building a strong economy. For example, all their packaging is printed by Justus Bag, all freight is handled by Unishippers, and all marketing materials are designed by Zipline Interactive. "The impact of local agriculture on our regional economy stretches far beyond farms," says Kim. Visit their website at: http://www.davidsoncommodities.com/.

5 Distributors

Roughly 90% of the food consumed in the Inland Northwest is sourced outside the region. $1.5 billion of food is imported to our region and then distributed to grocery stores and other retail outlets.[1]

Spokane is the major food distribution center for the Inland Northwest. Trucks from various parts of the country deliver produce, meat, seafood, deli products, beer, wine and liquor, soft drinks, and specialty foods to local distributors and they then deliver to markets throughout the region, including Idaho, Eastern Oregon and Montana. Food travels an average of 1500 miles before it is delivered to the consumer (See *Our National Food System* chapter).

Most produce imported from other countries and bound for the western United States enters the United States through California ports. Table 1 shows where most of our produce is sourced.

Local farmers face a number of barriers trying to be a part of this distribution system. They need to carry an insurance policy with coverage for at least $1 million dollars, have large cooling and packaging facilities, and produce enough volume for distributors to be willing to consider their business.[2] In addition, institutional buyers increasingly require all producers and distributors to have third-party food safety certification (see pg. 47) which can cost up to $1000 annually.

Table 1: The U.S. Trade Situation for Fruit and Vegetable Products[3]

Country	% Share in 2011	U.S. Fruit and Vegetable Imports
Mexico	36	Tomatoes, avocados, peppers, grapes, cucumbers, melons, berries, onions, cucumbers, asparagus, lemons, vegetables
Canada	12	Potatoes, tomatoes, peppers, cranberries, cucumbers, mushrooms, beans, carrots, fresh/preserved vegetables/fruits
China	8	Fruit juices, citrus, processed/frozen fruit and vegetables/fruits, onions, garlic, preserved mushrooms, stone fruit
Chile	8	Grapes, cranberries, apples, avocados, citrus, stone fruit, berries, fruit juices
Costa Rica	5	Pineapples, bananas, orange juice, melons, tropical and preserved fruits/vegetables
Guatemala	4	Bananas, pineapples, tropical fruits, preserved and frozen fruits/vegetables, melons, tomatoes, beans, berries
Peru	3	Asparagus, preserved/frozen vegetables, grapes, onions, avocados, tropical fruits
Ecuador	4	Bananas, tropical fruits, fruit juice, peas and beans, preserved fruits/vegetables
Argentina	2	Fruit juices, berries, olives, strawberries, grapes, garlic
Thailand	2	Pineapples, processed fruits, beans, fruit juices, tropical/preserved fruits/vegetables
Brazil	2	Orange juice and other fruit juices, grapes, tropical fruits and vegetables
Spain	2	Olives, mandarins, peppers, fruit juices, cucumbers, mushrooms, stone fruit, citrus fruit and juice, preserved foods
Honduras	1	Bananas, melons, pineapples, cucumbers, beans, fresh/preserved fruits/vegetables
Philippines	1	Fresh pineapples and juice, bananas, tropical fruits/vegetables, root vegetables
Colombia	1	Bananas, pineapples, preserved/frozen fruits/vegetables, tropical products, fruit

Below are some of the main produce distributors serving the Spokane region. Currently, Charlie's Produce and Peirone's are the only two large-scale distributors that buy from farmers in the Spokane region. Unlike other distributors, Charlie's Produce does not yet require third-party certification (see pg. 49), so they will accept produce from small local growers. (They currently buy from C&S Hydrohut (hydroponic lettuce), and LINC Foods).[4] Peirone's purchases some produce from two Spokane Valley growers. They are currently revamping their vendor requirements and will be requiring GAP certification in the future.[3] Spokane Produce buys some produce from Yakima, Wenatchee and Wapato. Spokane County growers do not grow enough volume. Farmers need $3 million in insurance and must have a mechanism for tracing produce to site of origin in order to distribute through Spokane Produce.[5]

Distributors Located in Spokane

- **Charlie's Produce** - Produce distribution center that supplies restaurants, grocery stores, institutions, wholesalers.
- **Food Service of America** – Distributes produce, seafood, meat within a 250 mile radius; delivers to restaurants, schools, health care facilities, hotels and government food service operations.
- **LINC Foods** – Employee-owned cooperative that connects local farms to institutional scale markets by providing aggregation, processing and distribution services.
- **Organically Grown Company** – Distributes certified organic produce to retailers and restaurants throughout the Pacific Northwest; Oregon based employee and grower owned company.
- **NW Local Food Distributor**—Delivers freshly made organic juices and packaged products to grocery stores, convenience stores, university stores, pubs and bakeries; 4 employees.
- **Peirone's Produce** – Owned by URM; offers a complete line of fresh produce as well as organic produce, "dry" produce complements, specialty items, and produce supply items. Produce is sourced direct on Peirone's trucks from Arizona, California, Florida, Mexico, and Texas.
- **Safeway Distribution Center** – Distributes to 43 regional Safeway stores.
- **Sodexo** – Services schools, hospitals, military bases, correctional facilities and government agencies; headquartered in France.
- **Spokane Produce** – Family-owned produce and processing center that distributes to grocery, restaurant, other wholesalers and government agencies.
- **SYSCO** - Markets and distributes food products to restaurants, healthcare and educational facilities, and other customers; headquartered in Houston, TX.
- **URM** - A retailer-owned food distribution co-op for Rosauers, Yokes, Trading Company and other grocery stores.

Distributors Located Outside Spokane

- **Azure Standard**—Serves area stores and buying clubs with natural foods. Based in Dufur, OR.
- **Duck Delivery Produce** –Delivers fruits, vegetables and custom cut produce; serves Spokane customers through its Portland warehouse.

- **Full Circle** –Provides online ordering and home delivery service specializing in organic produce and artisan crafted goods; based in Kent, Washington and serves Washington, Idaho, Oregon and Alaska.
- **KeHE Distributors** --Nature's Best distribution; national natural foods distributor that sells to all Safeway and Albertson's stores; has a distribution center in Portland.
- **UNFI** (United Natural Foods Inc) – Distributes natural, organic and specialty foods and other products; has a distribution center in Seattle.

Food Brokers in Spokane

A food broker is a sales professional who sells for multiple wholesale manufacturers, working entirely on commission. Wholesale manufacturers use food brokers as a replacement for, or to supplement their in-house sales team.

- **Evergreen Fancy Foods, Inc.** – Serves retail stores throughout the Northwest with specialty foods, natural foods and confections.
- **GM Food Sales** – Serves Eastern Washington, Northern Idaho and Montana retail markets with deli and meat products. Warehouses include URM and SuperValu; retail outlets include Albertsons, Harvest Foods, IGA, Rosauers, Safeway, Super 1 Food, Trading Co. Stores and Yokes.
- **Maviga NA** - Markets grain and field beans; headquartered in UK.

[1]Meter, Ken, 2014, Inland Northwest Region (Washington) Local Farm and Food Economy, http://www.crcworks.org/crcdocs/waspokesum14.pdf (2/21/2016)

[2]Amanda Morrow, buyer, Peirone's Produce, pers. comm., (8/25/2015)

[3]Johnson, Renee, 2014, The U.S. Trade Situation for Fruit and Vegetable Products, Congressional Research Service

[4]Alex Plummer, CEO, Charlie's Produce, pers. comm., 8/13/2015

[5]Dave Nelson, buyer, Spokane Produce, pers. comm. (8/25/2015)

Local Business Highlights

LINC Foods

LINC Foods is a farmer and worker-owned cooperative. They work to increase sales for local small farmers by reducing the barriers preventing larger local institutions from sourcing local ingredients. They also are helping to keep the small-scale

diversified farm which uses sustainable growing practices, a viable model for building a healthy local food system. Joel Williamson, co-founder, started this work because his family has been in Spokane for four generations, and had a business rooted in the agricultural community up until 1998. Beth Robinette, the other co-founder, is a 4th generation rancher near Medical Lake and has been a long time food activist.

LINC Foods sells locally produced fruits, vegetables, grains, legumes, meats, cheeses, and eggs to colleges, universities, hospitals, retirement communities, restaurants, and grocery stores. They recently started a barley and white wheat malting operation for the craft brewing market using regionally grown grain. Farmer-owners in the Spokane area grow all of the products they sell. For more information, see: http://www.lincfoods.com/

Charlie's Produce

Charlie's Produce values their local growers and they believe in keeping the local food economy alive. The workers live and work in Spokane and donate time, products and equipment to the Spokane community. They are partners with restaurants, retail grocers, wholesalers and co-op's. They have helped many of our area's smaller local farmer/grower operations sustain their farms by distributing their goods. Their delivery area includes Northern Idaho, Northeastern Oregon, Montana (all the way to Billings) as well as Eastern Washington. Visit their website at http://www.charliesproduce.com/locations/spokane/

6 Retailers

Retailers sell food to consumers. Grocery stores and other food markets generally sell food that requires some preparation prior to consumption, while restaurants, delis, cafeterias, food carts, etc., do the final preparation and then sell food that is ready to eat. A third component of the retail food market is direct sales, where farmers sell directly to consumers through Community Supported Agriculture (CSA), farmers' markets, U-picks and farm stands. On-line purchasing and home delivery are other retail segments that are growing rapidly.

Consumers in the Inland Northwest purchase $1.7 billion of food each year, including $1.0 billion to eat at home.[1] The remaining $700 million is purchased ready-to-eat. Washington State Department of Revenue reports that taxable retail sales in the City of Spokane for the food & beverage industry in 2014 was $250 million[2].

*The **food and beverage industry** includes all companies involved in processing raw food materials, packaging and distributing them. This includes fresh, prepared food as well as packaged food and alcoholic and nonalcoholic beverages. Any product meant for human consumption, aside from pharmaceuticals, passes through this industry*

Local Food Sources

Farms

One hundred and fifty-nine regional farms marketed products directly to retail outlets. (Regional farms include farms in the seven counties of northeastern Washington. (See map on pg. 6) This is a 40% increase in direct sales from 2007 to 2014. Direct sales in the this region surpass national averages. However the region continues to spend at least $1.5 billion each year buying food sourced outside the region.[1] Thus, 88% of the food consumed is sourced elsewhere. This presents a huge opportunity to increase the market share of our region's farms.

Grocery-type Stores

There are more than 581 superstores, supermarkets, grocery stores, specialty food stores, convenience stores and fast food restaurants in Spokane County.[3] Most of the grocery-type stores are located on arterials. Current city zoning codes prevent grocery stores in residential areas. Food deserts, or low-income areas with limited access to a grocery store or supermarket, are found in 17 census tracts throughout Spokane County, including the West Central and Riverside (downtown) neighborhoods (See pg. 57).[4]

It is difficult for grocery stores to buy products from local farmers and vendors. It takes time for the buyers to deal with individual farmers and it is very expensive for farmers to have the proper processing and cooling facilities, volume of produce, as well as insurance to sell to that market.

Yokes Fresh Market buys from local farmers, but prefers that farmers deliver to one of their distributors (Peirone's or Spokane Produce). They try to have the same produce in all 13 stores, and it is unrealistic for a farmer to deliver to both the Pasco store and the Sandpoint store.[5]

Huckleberry's Natural Market has purchased from local growers, but new corporate policies will limit their local purchases to only farmers from whom they have previously purchased. The following are some local stores that currently purchase from local farmers and vendors:

- Yokes Fresh Market
- Main Market
- Rocket Market
- Huckleberry's Natural Market

Restaurant-type Venues

A restaurant-type venue includes any facility where food is prepared for the consumer, such as sit-down restaurants, caterers, fast food, food trucks, etc. A growing number of restaurants are buying from local farmers and advertising a local, seasonal menu. Some restaurants make an effort to serve seasonal and local foods; others have a local food budget. Below are some restaurants offering local food.

- Stacks at the Steam Plant
- Central Food
- Ruins
- Wandering Table
- Santé
- Mizuna
- Luna
- Clover
- Casper Fry
- South Perry Pizza
- Tamarack Public House
- Veracci's Pizza

Direct Sales by Farmers

Seven hundred and sixty-five of the 7-county regional (see pg. 6) farms sell $4.2 million of food products directly to household consumers. Spokane County leads the region in direct sales, with $2.3 million generated from 406 farms.[1] Farmers selling directly to consumers generally live within 100 miles of Spokane since it is only practical to travel up to 90 minutes one-way to sell produce.

Community Supported Agriculture (CSA)

Community supported agriculture offers an opportunity for farmers and consumers to develop a relationship. The consumer pays for a "subscription" or a season's worth of produce in the spring. Then farmer uses that money to grow the food. The consumer is guaranteed a

box of produce weekly throughout the season and the farmer is guaranteed sale of his or her product.

There are 30 farms in the region that market through CSAs.[I] Some of these include:

- Rocky Ridge Ranch
- Urban Eden Farm
- Elithorp Farm
- LINC Foods
- Tolstoy Farms

Spokane Area Farmers' Markets

Farmers' markets are a popular way for growers to sell their product. One grower sells at two local markets and reports he can make up to $2000/day. Farmers' markets are also places where consumers can interact with the farmers. They can be a fun weekly adventure for families, with music, free tastes and a community party atmosphere.

Table 1: Spokane Area Farmer's Markets, 2015

Day	Farmer's Market	Time	Location
Tuesday	Cheney	2pm-6pm	City hall Parking 609 2nd st.
	*West Central Marketplace	3pm-6pm	Cannon Playground1603 N. Belt
	Fairwood	3pm-7pm	319 W Hastings Rd
Wednesday	Kendall Yards Night Market	4pm-8pm	1335 W Summit Parkway
	*Millwood	3pm-7pm	3223 N Marguerite
	*Spokane	8am-1pm	20 W Fifth
Thursday	*South Perry Street	3pm-7pm	924 S Perry St
	Airway Heights	9am-1pm	13100 W 14th, Hwy 2
	Deer Park	9am-1pm	412 W Crawford
	4th Street	3pm-7pm	14208 E 4th Avenue
Friday	*Emerson-Garfield	3pm-7pm	806 W Knox
	Hillyard	3pm-6pm	5104 N Market
Saturday	*Liberty Lake	9am-1pm	1421 Meadowwood Ln
	*Spokane	8am-1pm	20 W Fifth

* indicates members of the Washington State Farmers' Market Association (WSFMA)

Washington State Farmers' Market Association (WSFMA) collects sales data for the preceding year. The total reported sales for five WSFMA member markets located in Spokane County in 2014 was $1,119,258 (One market did not report its 2014 sales). Of this total, $907,449, or 81% was from farm vendor sales. All these markets are considered "small" to "very small," with 8-47 vendors.[6]

U-Pick & Farm Stands

- The **Green Bluff Growers** is an association of about 50 small family farms and food stands located on Green Bluff, north of Spokane. They have found their niche in the U-pick market. They offer a number of seasonal festivals and activities to draw consumers to their farms and they sell most of their produce there.
- Other local farmers have U-pick strawberries, blueberries and additional produce throughout the season.

On-line and Direct Delivery

Less than 2% of sales in the $600 billion annual U.S. grocery market take place online, but it is growing rapidly.[7] Some examples of businesses that sell on-line and deliver to the Spokane area include:

- **Full Circle** - Delivers organic produce and groceries to homes and pick-up sites in Spokane.
- **Bountiful Baskets**- A food co-op that distributes produce baskets, artisan and sandwich bread every other week.
- **Amazon** - Delivers groceries and more to your door.
- **Zaycon Foods**- A Spokane Valley business that delivers meat to pick-up sites. They buy directly from the grower as needed.
- **LINC Foods**- Has a single pick-up site, but is working to increase its offerings.

[1]Meter, Ken, 2014,Inland Northwest Region (Washington) Local Farm and Food Economy, http://www.crcworks.org/crcdocs/waspokesum14.pdf, (2/21/2016)

[2]Washington State Department of Revenue as cited in 2015 Market Fact Book, Journal of Business, pg.18

[3]Spokane Regional Health District, Sept, 2011, Food and Health in Spokane County, An Overview, http://www.srhd.org/documents/PA_N/FoodandHealthOverview-2011.pdf, (2/21/20216)

[4]USDA Economic Research Service, Food Access Research Atlas, http://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.asp (1/12/2016)

[5]Duane Wentz, Yoke's buyer, pers. comm., 8/17/2015

[6]Colleen Donovan, Farmers' Market Research Coordinator, http://smallfarms.wsu.edu/marketing/, email, 1/15/2016

[7]Farm to Fridge is heating up, Time, Aug 13, 2015

Local Business Highlights

Central Food

David Blaine, chef of Central Food, has been buying from local farmers for 15 years. He spends a lot of time developing relationships and continually reaches out to new farmers. He buys greens, vegetables, fruits, berries, legumes, meats and cheeses from local sources and comments that his 70-seat restaurant has outstripped the ability of local farms to produce for them.

David says there are a lot of inefficiencies in dealing with local farmers. Each one has a unique way of packaging and grading his/her product, which adds to the time it takes to negotiate a sale. It also takes time to meet new farmers and build the relationships that he finds so valuable.

David would like to see development of a local system to support farmers, with distribution, wholesaling and canning facilities. This could help local farmers grow more product and help local restaurants and institutions buy more local food. He says, "Winning the hearts and minds of consumers is no longer the issue, as it was in the early days. Now we have to create the distribution infrastructure so that these concepts can be scalable." Visit their website: http://eatcentralfood.com/

Main Market Co-op

Main Market Co-op is Spokane's only food cooperative; it is owned by households from the Spokane area, not a group of investors.

The founding principles of the market include growing and supporting the local food economy, protecting the environment, educating about the benefits of real food and good food policy, and (as a not-for-profit) sharing all of the profits with members and through reinvestment and local community investing.

These are the beliefs that underlie the business, but in practice they are a full service grocery store with a café/deli, bulk section, wellness department, local meat department, and a full line of groceries and produce emphasizing local and organic throughout. Their commitment is to buy local first whenever possible, supporting in particular the smaller scale food producers.

They understand the challenges of scale for small producers and work to overcome those challenges while helping to promote the products, educate their growing customer base and make healthy food more accessible to all of the Spokane community. Visit their website at: http://www.mainmarket.coop

7 Consumers

Consumers are individuals, and/or institutions that purchase food from wholesale and retail outlets for human consumption. Inland Northwest consumers spend $1.7 billion buying food each year, including $1.0 billion for home use. Most of this food is produced outside the region, so regional consumers spend at least $1.5 billion per year purchasing food that is sourced from far away.[1]

Individuals

Our current food system takes money out of our regional community. If the 7-county region's 616,000 residents (see map on pg 6) purchased, or increased spending by, $5 each week directly from regional farmers, this would generate $156 million/yr of new farm income for the region.[1]

Food Eaten at Home

Spokane County residents purchase $1.3 billion of food each year, including $782 million to eat at home.[1]

Table 1: Annual Home Purchases in Spokane County[1]

Food Product	Millions $
Meats, poultry, fish and eggs	163
Fruits & vegetables	153
Cereals and bakery products	103
Dairy products	83
Other, incl sweets, fats & oils	280

Food Eaten Outside the Home

Consumers spent $250 million in the City of Spokane in 2014 buying food in restaurant-type facilities.[2] An additional $268 million was spent in other regional facilities.

Table 2: Estimated Food Needs for Spokane County, Incorporated and Unincorporated Areas[3]

Food Category	Total Spokane County *retail weight in pounds/year*	Unincorporated Area *retail weight in pounds/year*	Incorporated Area *retail weight in pounds/year*	U.S. Avg. per Capita *retail weight in pounds/year*
Fruit	136,911,000	39,452,928	97,176,072	282
Vegetables	194,187,600	56,073,523	138,114,077	400
Dairy	129,409,950	37,368,358	92,041,591	267
Milk	98,547,300	28,456,473	70,090,826	203
Butter	2,180,250	629,568	1,550,682	4
Cheese	14,438,100	4,169,139	10,268,960	27
Yogurt	3,294,600	951,347	15,934,119	6.8
Other dairy	10,949,700	3,161830	7,787,869	22
Meat	95,252,700	27,505,126	67,747,573	196
Grains	93,847,650	27,099,404	66,748.245	193
Nuts	4,263,600	1,231,155	3,032,444	9
Sweeteners	64,244,700	18,551,270	45,693,429	1323
Eggs	15,746,250	4,546,880	11,199,370	32
Fats & oils	36,696,030	10,548,761	26,099,701	76

Institutions

Institutions include hospitals, retirement communities, schools, jails, detention centers, drug treatment centers, soup kitchens, food banks and universities. Institutions normally have policies regarding food purchasing. Examples of some institutions in the region buying from local growers, include:

- Gonzaga University
- Eastern Washington University
- Whitworth University
- Deaconess Hospital
- Northern Quest Casino
- Cheney School District
- Spokane Public Schools (District 81)

A significant barrier blocking institutions from buying locally grown food is the requirement of third-party safety certification, known as Good Agricultural Practices (GAP) (see pg. 49). Currently, none of the small farms in the region have GAP certification, but several are working towards it. Many institutions, including Spokane Public Schools, require GAP certification from all producers and distributors of the food they buy. Empire Health Foundation is involved in encouraging scratch cooking in seven school districts throughout our seven-county region as part of an obesity prevention program. They are encouraging the school

districts to purchase local food, and have awarded funds to LINC Foods to help small farmers become GAP-certified. Schools then can buy from local small farmers through the USDA commodity program. Empire Health Foundation has found that scratch cooking and using local food go well together: once schools are used to doing more of the processing themselves (chopping vegetables, etc.) they are more equipped to buy from smaller farmers whose product is less processed than what they might get from a large distributor. (see pg 52 for more information on this program)

[1]Meter, Ken, 2014,Inland Northwest Region (Washington) Local Farm and Food Economy, http://www.crcworks.org/crcdocs/waspokesum14.pdf, (2/21/2016)

[2]Washington State Department of Revenue as cited in 2015 Market Fact Book, Journal of Business, pg.18

[3]USDA Economic Research Service report "Food Intakes Converted to Retail Commodities Database (ARS) and Food Availability (Per Capita) Data System ERS 1999-2002." http://www.ers.usda.gov/data-products/commodity-consumption-by-population-characteristics/documentation.aspx, (1/12/2016)

[4]Gonzaga Reaches Sustainability Milestone with Locally Grown Produce, Gonzaga University, http://news.gonzaga.edu/2014/gonzaga-reaches-sustainability, (January 4, 2016)

Local Business Highlight

Zag Dining at Gonzaga

The "Zag Dining by Sodexo" team at Gonzaga University has done more than just buy local.[4] They have aided LINC Foods in building a model of what a successful local food partnership can look like. In 2014, Gonzaga committed to the Real Food Challenge* by pledging that 25% of food served on campus would be sourced from ecologically sound, fair, humane, local and community-based providers by 2020. Partnering with LINC Foods is one step toward that goal.

Coordinating produce drop offs on campus and educating students on the benefits of eating local are ways that Zag Dining fosters community between the campus and Spokane farmers. "This partnership with LINC has been enriching for everyone," states Daniel Caris, the Zag Dining's sustainability coordinator. "We (Zag Dining) want to be a model for other universities and encourage them to reach out to their local communities. The benefits are truly priceless." Visit their website at: https://zagdining.sodexomyway.com/

*More about the real food challenge can be found at: http://www.realfoodchallenge.org/about

8 Managing Food and Other Organic Wastes

Ideally, a food system is circular, starting and ending with the soil in which seeds grow. Our current food system is linear, starting with the soil and ending at a landfill or incinerator. As a result, many nutrients present in food and other organic waste end up "wasted" and soil ends up nutrient-poor.

Food Waste

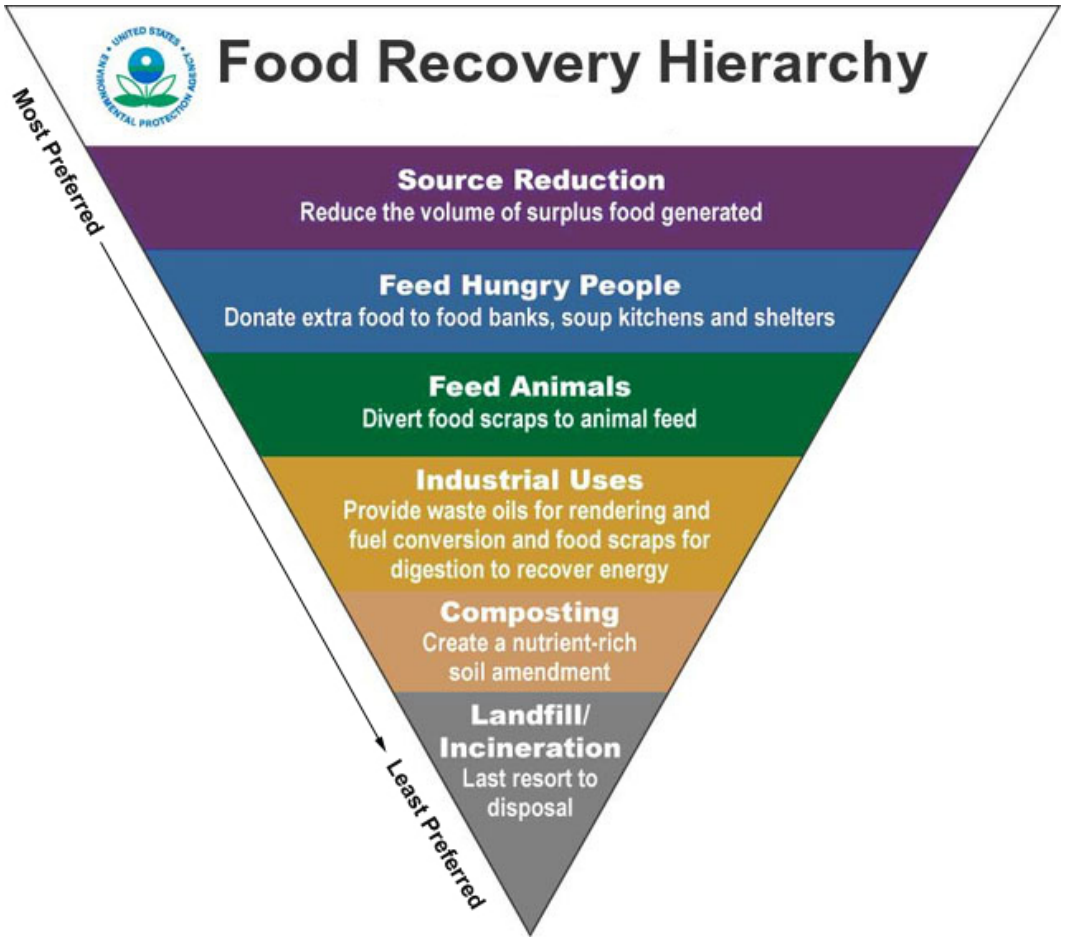
The Problem

The EPA (Environmental Protection Agency) reports that in 2012 Americans generated more than 36 million tons of food waste, of which nearly 34 million tons went to landfills. It is estimated that 25-40% of the food that is grown, processed and transported in the U.S. is not consumed. This equals more than 20 pounds of food per person per month.[1]

Food waste is a part of the food system that is generally dismissed as "garbage." But, in fact, it is a valuable resource that can be made into compost and used as a soil amendment. Food waste is any uneaten food substance; it can be raw or cooked, solid or liquid. It's generated by the processing, handling, storage, sale, preparation, cooking and serving of foods, so food waste can be generated anywhere in the food system. The USDA estimates that supermarkets lose $15 billion annually in unsold fruits and vegetables due to shrinkage (produce damage during transport) and spoilage.[2]

Preventing Food Waste

Reducing food waste in the U.S. can deliver significant environmental, social and economic benefits. Fortunately there are numerous ways to reduce food waste with little expense and large benefits. The EPA Food Recovery Hierarchy prioritizes actions organizations can take to prevent and divert wasted food.[1]



Food Recovery Efforts in Spokane

Both state and national Good Samaritan Food Donation laws protect food donors, including individuals, and nonprofit feeding programs that act in good faith. There are a number of programs in Spokane County that keep uneaten food out of the waste stream. Some are listed below.

- There are several businesses that recycle food and yard waste into compost. In 2014, a total of about 78,600 tons of clean green, food waste, wood, sawdust and shaving waste, and land clearing debris were recycled through

regional commercial facilities. Department of Ecology records indicate that about 32,000 tons of compost was created from this waste. Two companies that collect food waste for composting are:

  - **Barr-Tech** - a regional facility that recycles discarded organic material from a variety of municipal, commercial and industrial sources in Eastern Washington and Northern Idaho. The Spokane Green Clean Bins go to Barr-Tech. They compost both food and biosolids (see pg. 44). They sell their compost to large regional farmers and the landscape market.
  - **Sunshine Disposal and Recycling** - picks up food and yard waste from their subscribers' curbside green bins. Their service area extends throughout Spokane and surrounding counties.

- In Spokane, food waste is mostly **incinerated**. In 2012, Spokane County residents generated 32,010,000 pounds of compostable food waste.[4] Recently the City of Spokane started collecting food waste with the yard waste as an optional program. They collect it and send it to Barr-Tech for composting. The service runs from March through November.
- Several companies in the region collect **used vegetable oil** from restaurants and recycle it into biodiesel fuel or animal feed supplement.
- **Distribution centers**, such as Charlie's Produce, donate food that can't be sold to the local food banks. They also give food that can't be sold or used at food banks to area livestock growers.
- Many local grocery stores, operating through **Grocery Rescue**, donate food to Second Harvest Food Bank.
- **Feed Spokane** is a non-profit food rescue agency that works to eliminate food waste and hunger in Spokane. They collect food from area restaurants and grocery providers and supply it to non-profit organizations that serve free meals to those in need. (See pg. 61 for more information about this group).
- Central Food is one restaurant that gives food that has not been served to a customer (i.e. pre-table) to area farmers to feed to chickens and pigs.
- The **Edible Tree Program** locates fruit and nut trees that are not being harvested and finds volunteers to pick them for local food banks.

Turning Food Waste into Energy

Food waste combined with green waste such as lawn clippings makes an excellent feedstock for anaerobic digesters, according to Mark Fuchs of the Washington State Department of Ecology. Anaerobic digesters (e.g. Spokane Waste Water Treatment Plant) can process these food wastes with other organic waste to produce significant quantities of methane to power generators, fuel trucks and busses, or be scrubbed for natural gas line input. Commercial food waste from food processing centers and bakeries can be mixed with dairy manure for co-digestion. Currently, eight Washington dairies digest manure with various food waste feedstocks.

***Compost** is a mixture of decaying organic matter used as a soil amendment. Compost is usually made by gathering plant material, such as leaves, grass clippings and food waste into a pile or bin and letting it decompose with the action of bacteria, fungi and other organisms. Any organic matter can be composted, but it may take a long time for bones, wood stumps and other hard material to decompose.*

Food Waste Reduction in the Home

People waste a lot of food in the home. According to the Washington State Department of Ecology's 2009 study, 24% of residential garbage is food. The average family throws away an average of $1600 annually by wasting food. Both King and Thurston counties in Washington State have developed educational programs on ways to reduce food waste.[3]

Home composting reduces garbage and produces a rich, beneficial soil additive. It is quite simple to do and instructions are readily available online. Spokane County's Regional Solid Waste Management Office offers a Master Composting class. They have an average of 800 Spokane Country residents earning free composting systems by participating in an annual compost fair. Even apartment dwellers can keep a worm-composting bin on a balcony or under the sink.

There is no question that even deteriorating food unfit for human consumption has value within the municipal setting. Incineration requires a great amount of heat energy to drive the moisture out of food waste before it can be combusted. And landfill disposal creates uncontrolled emissions of methane. Food waste has high value when properly managed through animal feed, a digester or composting and becomes a beneficial component of an appropriately designed food system.

Other Organic Waste Management

All organic waste can be recycled and used to replenish soil nutrients and tilth. If this waste is composted, it does not become waste, but a resource that enriches soils and keeps carbon dioxide out of the air. In the U.S., organic waste is the second highest component of landfills and organic waste is the largest source of methane emissions. Methane is the third most significant contributor to global warming, possessing 25 times the impact of carbon dioxide; thus, it's emissions should be minimized.

Yard and Wood Waste

Yard and clean wood waste can be recycled into compost as long as they are pesticide and herbicide-free. These woody materials, along with straw, can also be burned or gasified to create heat energy, which can drive electrical power production or serve other uses. The City of Spokane offers curbside pickup of organic materials on a subscription basis. Individuals may also take Clean Green material to the Waste to Energy transfer stations.

Biochar

Biochar is a carbon-rich product obtained when biomass such as manure, leaves, grasses or wood products is heated to the point of thermal decomposition in low or zero oxygen conditions. It is like charcoal, but has agricultural and environmental benefits such as increased fertility of acidic soils, increased carbon sequestration and retention of water and nutrients in soil.

Spokane is an active center of biochar research. There are currently two businesses working to create equipment to turn agricultural waste into biochar.

- Synthigen, LLC is developing a "Gady gasifier", created by David Gady, a Rockford farmer.
- Ag Energy Solutions is working to turn field residues into biochar.

There are readily available resources for biochar creation in the region, including:

- Fuel reduction programs through the Department of Natural Resources, Conservation Districts and Firewise programs;
- Timber slash management programs;
- Urban wood pruning debris;
- Pallets, clean construction and demolition lumber.

Some local farmers and gardeners are producing or using biochar, but there are not large quantities produced locally yet. A great opportunity exists for local development of this agricultural input.

Wastewater

Wastewater is sent from homes or businesses to a treatment facility to remove solids and impurities. When it is treated to a level consistent with its intended use, it can be safely used for irrigation, to recharge groundwater aquifers and for other commercial water needs.

The Washington State Department of Ecology is developing rules to encourage reusing wastewater for irrigation and other purposes. Spokane County's treatment plant treats water to Class A standards, allowing water to be used for most purposes short of drinking water. Irrigation, restoring wetlands, maintaining flows in the Spokane River and industrial uses are possibilities. There is a tension among those who advocate keeping the discharge in the Spokane River to increase flows and those who want to use the water for irrigation and to decrease pumping from the Spokane Valley-Rathdrum Prairie Aquifer.

Biosolids

Biosolids are the nutrient-rich organic product of wastewater treatment. A beneficial resource, biosolids contain essential plant nutrients and organic matter. Biosolids are typically recycled as a fertilizer and soil amendment. Applying biosolids to agricultural land is permitted under the Clean Water Act. The Spokane Waste Water Treatment Plant produces Class B biosolids that are applied to farmland and cultivated into the ground where grains, oil seeds or forage such as triticale, alfalfa or timothy for animal feed are grown. They are not used where human food is grown.

Both the City of Cheney and Barr-Tech compost biosolids. The City of Cheney Wastewater Division mixes biosolids with yard waste and wood chips to make Class A compost. They sell their compost to local consumers and landscape businesses.

There are many opportunities for reducing organic waste to zero in Spokane County. Organic waste should be collected, digested and/or composted and returned to the soil. Woody resources can be gasified to create heat energy or biochar and the biochar applied directly or, co-composted with other organics resources. Organic waste really is not a waste product, but a wasted resource.

[1]US EPA: Resource Conservation - Food Waste http://www.epa.gov/sustainable-management-food (1/12/2016)

[2]Gunders, Dana, Natural Resources Defense Council, Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill, https://www.nrdc.org/food/files/wasted-food-ip.pdf (11/17/ 2015)

[3]State of Washington Food Waste Prevention http://www.ecy.wa.gov/programs/swfa/organics/prevent.html (12/07/2015)

[4]Spokane Waste Management Plan, 2015, http://www.spokanecounty.org/data/utilitiessolidwaste/Draft%20Final-Spokane%20County%202015%20Solid%20Waste%20Management%20Plan%20(1).pdf, 3/31/2016

Local Business Highlight

FooteHills Farm

Estabished in 2012, Footehills Farm has grown from a small hillside garden into an established, recognized source of high-quality, sustainably-grown ethnic, culinary and medicinal herbs and produce in the Spokane area. The owners, Thom and Torie Foote, moved here in 2011 with the intent to live close to their source of food. Besides herbs and produce, they raise chickens, turkeys and pigs.

One of the key ingredients in the success of Footehill Farm is the creation of biologically balanced soil and alternate growing systems. This is being pursued using biochar. They learned of biochar in 2012 and immediately started making their own. Because they produce large quantities of compost they are able to "charge" the biochar with nutrients by adding it to the compost. Tilled into the clay soil, it has resulted in increased tilth and exceptional productivity.

9 Barriers to Growing a Robust Local Food Economy

Farmers interested in marketing their products locally face a number of barriers. Some barriers affect all farmers equally, but small farmers selling locally have particular challenges.

Infrastructure Barriers

- Small farmers are overburdened by the need to grow food, then process, deliver, market and sell it. For some, that means a 90-minute drive (one way) to spend several hours at a booth in a Farmers' Market once or twice a week. For others, it means having customers come to their farm to collect their CSA allotment, or pick fruit or vegetables. A few farmers can deliver pre-sold produce to local restaurants or a few stores, but it takes time away from farming to market and deliver it. With a centralized delivery and retail system that serves small farmers, they could spend their time in their fields and pastures.
- There are not enough local processing and manufacturing facilities for crops/livestock grown in the Spokane region. For example, cattle have to be transported to Chewelah or Odessa to be slaughtered in a USDA facility[1].
- There is a lack of commercial kitchens in the region (see pg. 19) where farmers can produce value-added product.
- There are not enough local wholesale and distribution facilities. Farmers could grow more product if they did not have to act as retailers too. It is difficult for grocery stores to buy products from local farmers and vendors. It takes too much time for the buyers to deal with individual farmers.

Political Barriers

- All fruit and vegetable growers are facing pressure to comply with the third-party Good Agricultural Practices (GAP) certification, and wholesale and institutional buyers are increasingly requiring GAP certification. The

certification costs farmers about $1000 and about 10 hours of administrative time prior to annual audits.

- Wholesalers require traceability mechanisms and lot numbers for produce, adding another expense for small growers.
- Most farmers feel federal, state, local and non-governmental regulations are their biggest obstacles, according to a survey completed by Washington State Department of Agriculture. Smaller operators face special disadvantages due to regulatory complexity and their lack of knowledge about negotiating the system.[2] These regulations add costs and have a damaging effect on business. There are often overlapping or inconsistent applications, multiple permit requirements and difficulty in accessing agency guidance.
- Farmers and local food business owners now face the challenge of navigating the complexity of new rules required by the Food and Drug Administration (FDA). The FDA is implementing food safety requirements for small farms and processing facilities of raw agricultural products through the Food Safety Modernization Act (FSMA). The Preventative Controls Rule regulates food safety measures for facilities that process food for human consumption It went into effect in November 2015.The standards for produce production (Produce Rule) went into effect in January 2016. Farms and facilities subject to these rules have from 1 to 5 years to comply, depending on their gross annual sales. Some exemptions are available for small-scale farms and producers.
- There is a lack of recognition of a local food system as an economic development opportunity.
- Small farmers are not always aware of the governmental subsidies available to them.

Good Agricultural Practices *(GAP) Certification[3] is a set of voluntary food-safety guidelines designed to help farmers handle food safety from the farm to the market. Farmers are certified by third-party auditors and inspectors. It is not a governmental program.*

Resource Barriers

- Land with water rights is very expensive, making it prohibitive for new farmers to purchase. There are no available water rights in Eastern

Washington, according to Guy Gifford of the Washington State Department of Ecology.[3]

- Farmland is expensive; the price is very difficult for beginning farmers to manage.
- Washington State loses, on average, an acre an hour of farmland to conversion to other uses.[4]

Barriers for Consumers

- The region's agricultural focus is on commodity production and much of the food grown here is not available to local consumers. There is limited local access to local wheat and other commodity crops.
- There is a regional shortage of producers. Farmers' markets, restaurants and institutions struggle to find enough local food to fill the demand.
- There is a lack of easy access to local food. If a consumer wishes to buy local food, he or she can visit a Farmers' Market, sign up for a CSA, go to Main Market or one of the few supermarkets that carry it. There are not many options for a metropolitan area of 500,000.
- There is a lack of easy access to healthy food for residents that live in food desert neighborhoods. Ideally, grocery stores would be within walking distance to all residents.
- Some institutions may have policies that limit purchasing of local food.
- There is a lack of consumer education on the economic and health reasons to purchase local food. There is also a lack of education about cooking with local food, including eating seasonally and gathering wild food as well as sustainable methods and environmental benefits of local, seasonal diets.
- There is not a culture of buying and eating locally grown food in this region. Some cities, such as Portland and Seattle have a strong local food culture. Spokane is just growing into this culture, but has a long ways to go to really embrace it. A "Buy Local Food" campaign could help jumpstart this movement.

Despite these barriers, the local food movement is growing. There are innovative policy options that could be made to address many of these issues. The Spokane Food Policy Council will be working in this arena for the coming years.

[1]Summary of Meat Processing in Washington, http://agr.wa.gov/FoF/docs/MeatProcessing.pdf 1/11/2016)

[2]WSDA Future of Farming Report: Washington Agriculture, strategic Plan 2020 and Beyond. http://www.growingformarket.com/articles/GAPs-certification (1/11/2016)

[3]Guy Gregory, Department of Ecology Technical Services Supervisor, pers. comm., 7/28/2015

[4]Kitty Kitzke, Futurewise, pers. comm., 3/24/2016

Population

A functional food system provides healthy and culturally relevant food to everyone. What are the issues preventing access to healthy food for all people in our community?

10 Food and Health

"We are what we eat" is an adage that still rings true since diet plays a major role in health. While the relationship between food and health is complex, many diseases such as diabetes, obesity and cardiovascular disease have been linked to diet and food consumption. A healthy diet (see *Healthy Eating* chapter) forms a strong basis for good health.

Diet Related Chronic Disease

Half of all adults in the U.S. – about 117 million people – have a preventable, diet-related chronic disease. Two-thirds of Americans are obese or overweight thanks to a deadly combination of poor diet and lack of exercise.[1]

Today's youth may live shorter lives than their parents and experience more chronic diseases such as diabetes, heart disease, hypertension, asthma and arthritis, simply because of the food they eat.

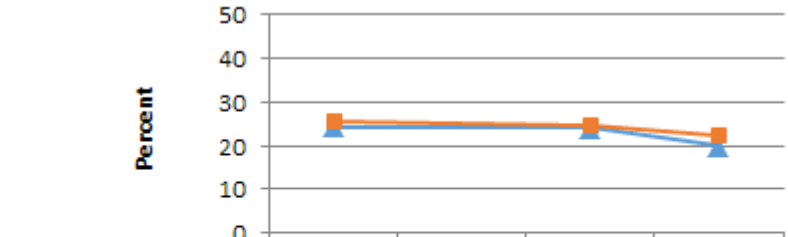
Two major chronic diseases related to food are obesity and diabetes and they are strongly linked. Type 2 diabetes was once seen only in obese adults but now is being diagnosed with more frequency in obese children under 18. In Spokane County, in 2013[2]:

- Approximately 64% of adults and 25% of youth are either overweight or obese.
- About 75% of diabetic adults and 30% of diabetic adolescents are either overweight or obese.
- Nine percent of adults and 5% of youth have diabetes in Spokane.

Figure 1: Weight Status of Spokane County Adults, 2013

Fruit and Vegetable Consumption

Eating a healthy diet can help stave off chronic diseases. One of the biggest influencers that impacts a person's health is the amount of fruits and vegetables being consumed. A diet with plenty of fruits and vegetables provides many health benefits, including lower blood pressure, reduced risk of heart disease, stroke, and some cancers. Studies also show that fruits and vegetables can help control weight or help a person lose weight when replacing calorie-dense foods[2].



	2008	2010	2012	2014
Spokane County	24.3		23.9	20.0
Washington State	25.6		24.6	22.3

Data was not collected in 2010.

Figure 2: Youth Who Ate 5 Fruits and Vegetables per Day

The daily recommended amount of fruits and vegetables varies by age group, gender, and amount of usual physical activity, but 5 servings a day is usually used as an indicator of a healthy diet.

In 2014 in Spokane, only about 25% of adults and 20% of youth ate five or more servings of fruits and/or vegetables a day. Among youth in Spokane County in 2014:[2]

- As age increased, the likelihood of eating five or more servings of fruits and vegetables per day decreased.
- Males were more likely to have eaten five or more servings per day than females.
- Native Americans/Alaska Natives were more likely to have eaten five or more servings per day when compared to whites.
- There was no difference in youth fruit and vegetable intake by maternal education level.

Child Nutrition

Empire Health Foundation sponsors an Obesity Prevention Initiative, in which 10 Eastern Washington School districts are participating, including District 81, Cheney, Mead and East Valley. Obesity rates are dropping in schools that have transitioned

from serving unhealthy processed foods to serving healthy scratch-cooked meals for lunches.[4]

The federal Healthy, Hunger-Free Kids Act of 2010[3] funds children nutrition programs and free lunch programs. It set new nutrition standards, providing food that is lower in sodium and saturated fat, and serving locally sourced (when possible) whole grains and a variety of fruits and vegetables. Programs include "Farm-to-School" in which students learn where their food comes from, and the "Harvest of the Month" program which educates them about the fruit or vegetable being served that month.

Food and Waterborne Diseases in Spokane County

Bacterial contamination of food can also affect health. Even though nationwide food recalls from grocery stores and restaurants are not unusual in the news today, environmental public health efforts have greatly reduced the occurrence of food and waterborne illness. In the U.S., enteric (gastrointestinal) illnesses were the fourth leading cause of death 100 years ago, but today they are not usually life threatening. Still, many individuals contract food or waterborne illness each year.

In 2013 in Spokane County, there were 122 food and waterborne illnesses. The rate of food and waterborne disease in Spokane County significantly decreased from 2009 to 2013. Spokane County had a rate of food and waterborne disease significantly lower than that of Washington State in 2009-2013.[2]

Factors that Influence Dietary Consumption

There are many factors, such as taste, availability, culture, cost or health issues, that influence what we eat. Some factors can be attributed to individual choices while others are a product of the home environment, food policies, and food availability. The next two chapters will examine some of these factors.

[1] USDA Dietary Fact Sheet, 2015,http://health.gov/dietaryguidelines/ (1/25/2016)

[2] Spokane Regional Health District, Spokane Counts 2015, http://www.srhd.org/spokanecounts/indicator-overview (1/23/2016)

[3] Sande, Renee, Nov 3, 2015, Scratch Cooking in Area Schools "Making the Healthy Choice the Easy Choice", https://www.linkedin.com/pulse/scratch-cooking-area-schools-making-healthy-choice-easy-renee-sande (1/26/2016)

[4] Colleen Culbertson, Empire Health Foundation, Program Associate, Pers. Comm. Sept 10, 2015

11 Food Insecurity in Spokane County

Healthy food is not easily available to many residents of Spokane County. Access to healthy food means being able to obtain nutritious, culturally appropriate food without physical or financial barriers. People must have access to healthy food in order to purchase and consume it. There are a number of reasons residents don't have access to healthy food, including:

- Food deserts
- Cost barriers
- Lack of cooking skills
- Lack of nutritional understanding
- Lack of culturally relevant food
- Lack of transportation
- Homelessness

Food Insecurity Issues

Not having access to healthy food leads to food insecurity. Food insecurity means a person or family has to cut meal size or skip meals because there is not enough money for food at least once in a year. The USDA defines very low food security as "reports of multiple indications of disrupted eating patterns and reduced food intake".[1] Food insecurity and hunger cause social, economic and public health issues in communities. Adults may experience impaired work performance leading to reduced earnings and children experience reduced cognitive development and learning capacity.

In 2013, 15.8% of adults in Spokane County were food insecure. In 2014, almost one in six (16%) 8th, 10th and 12th graders who took the Healthy Youth Survey in Spokane reported that they had to skip meals because there was not enough to eat. Food insecurity decreased as maternal education level increased and was more likely among males, blacks, Native Americans/Alaska Natives, Hispanics and multi-racial youth.[2]

Feeding America's *Map the Meal Gap*[3] studies food insecurity by county throughout the United States annually by analyzing data compiled by trusted sources like the U.S. Department of Agriculture, U.S. Census Bureau and Bureau of Labor Statistics. The most recent study, in 2015, found that 16% of people in Spokane County, including 25% of children, are food insecure. Further, it found that 27% of Spokane County's food insecure population does not receive assistance because they earn income above the threshold for federal nutrition assistance programs. The total annual food budget shortfall for all food insecure people in Spokane County was close to $36.9 million. At a cost of $2.79 per meal, the "meal gap" in Spokane County exceeds $13 million annually.

Second Harvest has surveyed emergency food clients in Spokane County to learn more about why people are using food bank, the level of need and to identify gaps in service. Over the years, surveys have found that people receiving food assistance represent all walks of life, all ages, and diversity in race that reflects Spokane's population. Survey findings also have indicated that far too many low-income families are not eating enough nutritious fruits and vegetables. Instead, they stretch their limited incomes by purchasing cheaper, highly processed, calorie-rich products. The most recent survey, in 2012, found that 45% of households eat one or no servings of fruits and vegetables per day.

Food Deserts

The USDA has mapped all census tracts (see pg. 12) in the nation, identifying food deserts[4] In Spokane County, there are 17 census tracts designated as food deserts. Lack of access to healthy food contributes to a poor diet and can lead to higher levels of obesity and chronic diseases such as diabetes and heart disease.

*The USDA considers a neighborhood a **food desert** if at least a fifth of residents live in poverty and a third live more than a mile from a grocery store in urban areas, or more than 10 miles in rural areas, where residents are more likely to have cars.*

Cost Barriers

The Census Bureau uses a set of household income thresholds to determine who is in poverty[5]. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. The official poverty definition uses income before taxes and does not include capital gains or noncash

benefits (such as public housing, Medicaid, and SNAP benefits). In 2014, the poverty rate in Spokane County was 16.4%, or 76,917 individuals.[2]

The Self-Sufficiency Standard for Washington State[6] defines the income needed to realistically support a family, without public or private assistance. For most workers throughout Washington State, the Self-Sufficiency Standard shows that earnings well above the official Federal Poverty Level are far below what is needed to meet families' basic needs. When someone has to make the choice between buying food and paying rent, they often go hungry or buy inexpensive, nutritiously poor food.

A single parent with one preschooler and one school-age child living in Spokane County and working a full-time minimum wage job earns only 44% of the income needed to meet the family's basic needs if they are not receiving any other support; with the help of housing, childcare, food and health care support, this parent could meet 99% of the family's basic needs.

Table 1: Spokane County Self-sufficiency Standard 2014[5]

Household	Annual Income Need to Meet Basic Expenses	Hourly Wage Needed to Meet Basic Expenses
1 Adult	$17,923	$8.49
1 Adult, 1 Preschooler	$36,023	$17.06
1 Adult, 1 Preschooler, 1 School-age	$46,573	$22.05
Average Wage in Spokane	$44,479	$21.07

Table 2: State and Federal Income Bases

	Annual Income	Hourly Wage
Full-time Minimum Wage (WA)	$19,991	$9.47
Federal Poverty Level (3 person household)	$19,790	NA

There are several government programs that help families fill the gap between earned income and cost of basic family needs.[5]

- The **Temporary Assistance for Needy Families** (TANF, formerly Welfare) benefit amount for a family of 3 is $5,736 annually.
- The **Supplemental Nutrition Assistance Program** (SNAP, formerly food stamps) benefit requires a family of 3 to have an income below $26,117. The benefit amount was $5,964 annually in 2014.
- The **Women, Infants and Children** program (WIC) benefit amount was $495 in 2014 annually for a family of 3.

With the help of child care assistance, food assistance (SNAP and WIC), and Medicaid, a single adult supporting one preschooler and one school-age child and

living in Spokane County, transitioning from welfare to work, would be better able to meet her family's needs with a wage of $11.57 per hour. (See information on pg. 59 for usage rates of these programs in our County).

Lack of Cooking Skills

People are busy; grocery stores are filled with heavily processed food items that are easy to prepare; fast food stores dot the landscape—and the food tastes good! "Why cook?" is a common refrain from many of us.

But a diet of heavily processed food, either from grocery store aisles, the neighborhood restaurant or fast food joint, is unhealthy and can lead to obesity and diabetes, heart disease and other health issues.

People have forgotten how to cook "from scratch". Cooking is not taught in many schools and many parents don't know how to teach their children anymore. If they visit a farmers' market and buy some kale or squash, they don't know how to prepare them.

Several organizations in Spokane have taken on the challenge of teaching people how to cook and eat healthy food.

- **The Kitchen at Second Harvest** --increases health, wellness and self-sufficiency through scratch cooking classes, cooking demonstrations, recipe testing, meal sampling and nutrition education. The Kitchen empowers families to reduce or eliminate the foods that contribute to obesity and nutrition-related health conditions. Children and adults learn to make healthy yet economical food choices, helping them move out of poverty.
- **Women and Children's Free Restaurant** – teaches families to improve their physical and financial health through nutrition education, cooking skills and how to stretch limited food dollars.
- **Food $ense** – WSU Extension offers this nutrition education program to teach youth and adults with limited incomes how to eat healthy and maximize the value of their food dollars.

- **Kitchen Spokane** – a nonprofit offering classes in culinary arts.

Lack of Nutritional Understanding

Today's consumers are overrun with conflicting information about food. Should we eat low fat? Are eggs good or bad? What about red meat? Artificial sweeteners? There is a lot of confusion about food in the media and people have no easy way to sort truth from advertising. It doesn't help that many doctors have not had any training in nutrition and are as confused as the rest of us. The USDA updates their dietary recommendations every five years, but those recommendations can be influenced by food company lobbyists, so can we even trust them?

Nutritionists can offer realistic guidelines (see *Healthy Eating* chapter), and people who have taken nutrition courses or have independently studied the subject can provide advice. But someone who hasn't had the opportunity to learn about nutrition may not know that the food choices they make can harm them. Not only may people be misinformed about what types of food to eat, but also how much and in what combinations to make a balanced meal.

As obesity and diabetes rates increase, people are making the connection between diet and health. There is a movement to introduce "scratch cooking" in schools so children learn to eat healthy food (See pg. 52). The cooking classes mentioned above also include nutritional counseling and education.

Lack Of Culturally Appropriate Food

Nearly every culture has its own food traditions. What one eats, how it is prepared and served are important cultural identities. In this region, fish, particularly salmon for the indigenous people, is one culturally important food (see pg. 65 for a discussion of fish in the Spokane River).[7]

Homelessness

People who are homeless depend on free meals provided by various organizations in the region. While these organizations do an amazing job of providing meals on shoe-string budgets, they are sometimes constrained by the quality of food that they can provide depending on food donations that they receive (see pg 61 for information about free food in Spokane).

Addressing Food Insecurity

Government Programs

The U.S. Department of Agriculture (USDA) provides food assistance programs to low-income residents to increase their nutrition and promote health. The programs also bring millions of dollars into the community for food purchasing. The largest program is the Supplemental Nutrition Assistance Program (SNAP), formerly food stamps.

Table 2: SNAP Enrollment in 2010[2]

Region	Percent of Population
Spokane	31%
Spokane Valley	24%
Spokane County	23.2%
Washington State	18.6%

Table 3: Other Federal Programs[2]

Program	Enrollment (Percent of Population)	Notes
Women, Infant and Children Supplemental Nutrition Program (WIC)	58%	2009 data; program brings $9.8 million to the County for food purchase
Free and reduced price lunch program	45%	2010 data
USDA Fresh Fruit & Vegetable Grant Program	Eleven elementary schools	Highest in state; provided schools with about $300,000 for purchasing fruits and vegetables

The next chapter, *Access to Food*, discusses local efforts to address food insecurity.

[1] http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx (1/24/2016)

[2] Community Indicator Initiative of Spokane, http://www.communityindicators.ewu.edu/,(1/26/2016)

[3] Feeding America, http://map.feedingamerica.org/county/2013/overall (2/10/16)

[4] USDA, Food Access Research Atlas, http://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx (1/24/2016)

[5] https://www.census.gov/hhes/www/poverty/methods/definitions.html, (1/25/2016)

[6] University of Washington Center for Women's Welfare, 2015, The Self Sufficiency Standard for Washington, http://selfsufficiencystandard.org/washington, (1/24/2016)

[7] Food: An Important Part of Most Cultures, Live Rich, Live Well, http://liverichlivewell.com/food-an-important-part-of-most-cultures/ (1/29/2016)

12 Access to Food

Food is a basic need, yet many people do not have enough food or the right kinds of food to lead an active, healthy life. While household income is a major factor in being able to purchase enough food, another factor is being able to get to a market with a good selection of affordable healthy food.

Many Spokane County organizations have been working to implement projects that will help address food insecurity and affordable access to healthy foods, such as:[1]

- creating community partnerships to increase access to fresh fruit and vegetables through free and healthy community meals and produce distribution;
- farmers' markets that accept food assistance debit cards and Women, Infant, and Children (WIC) nutrition program vouchers;
- amending city and county comprehensive plans to improve resident access to growing their own food;
- schools that participate in farm-to-school and school garden programs;
- and increasing the number of community gardens, especially in lower income neighborhoods.

Access to Free Food

Food Distribution Centers

Second Harvest was founded in 1971 as a central warehouse for a handful of neighborhood food banks in Spokane. Today, distribution centers in Spokane and the Tri-Cities supply free food to 250 food banks, meal sites and other hunger-relief programs to feed more than 55,000 hungry people each week in the Inland Northwest. Second Harvest

gets healthy food to where it's needed most in Spokane County by collaborating with 100 programs that fill nutritional gaps for people in poverty, the working poor, elderly and disabled people on very low fixed incomes, homeless people, and children and families in temporary crisis. Second Harvest provides close to 200,000 pounds of food to its Spokane County network each week. More than half that food is healthy fresh produce and other perishable products. Second Harvest receives an abundance of nutritious farm-fresh food donations in our agriculturally rich region. Second Harvest's membership in Feeding Washington, the state's largest response to hunger, has significantly increased its access to fresh fruits and vegetables for people in need. Second Harvest also is a member of the Feeding America national food bank network.[2]

Northwest Harvest is a Washington statewide hunger relief agency. It is the only nonprofit food bank distributor operating statewide in Washington with a network of more than 380 food banks, meal programs and high-need schools. Through this network, they provide more than 2 million meals every month. They have a warehouse in Spokane Valley.[3]

Free Meals

Emergency food banks and free meal sites, run by non-profits and churches, are the most concentrated in the poorest neighborhoods in the City of Spokane. Low-income neighborhoods with limited access to free food include Nevada/Lidgerwood and the Mead, Mt. Spokane, and Green Bluff areas.

Feed Spokane is a non-profit food rescue agency that rescues prepared foods from local restaurants and grocery providers and supplies them to non-profit organizations that serve free meals to those in need. In 2009, the organization safely redirected 38,858 meals to local free meal sites. They print a Free Meal Schedule[4] (see pg 70) for Spokane. Free meals are available seven days a week for

breakfast, lunch and dinner at a variety of outlets, but one has to have transportation to access them.

Meals on Wheels delivers over 20,000 meals each month to vulnerable seniors and adults. In 2014, Meals on Wheels delivered 294,000 meals.[5]

Access to Fresh Produce

Many studies show that eating fruits and vegetables improves one's health and is an integral part of a healthy diet. There are a variety of ways Spokane County residents can access these.

Farmers' Markets

Prior to 2000, the downtown Spokane Farmers' Market was the only market in town. In 2015, there were 13 farmer's markets in the county. Access to fresh produce for low-income individuals has increased as a number of markets now accept SNAP-Electronic Benefit Transfer (EBT), WIC and Senior Nutrition Farmers' Market Nutrition vouchers (see pg. 31 for a list of current farmer's markets).

Home Gardens

There is no way to quantify the number of people who garden. But more and more people seem to be replacing lawns with gardens or including edibles in their landscaping. Spokane is free from lawn mandates and front yard gardens are permissible. The recently initiated market garden ordinance (see pg. 13) in Spokane may encourage more home gardens.

Community Gardens

Community gardens are small plots of land in urban or rural areas owned by local government or private landowners and made available for gardening. Neighbors, community members or specific groups such as schools, churches or businesses use the land to grow food for consumption, education and donation to people in need. The Spokane Community Gardens is a loose network of gardens. In 2015 there were at least 21 public gardens and an unknown number of private ones in Spokane County.

Table 1: Community Gardens in Spokane County, 2015

Community Gardens (CG)	Location	Notes
All Saints Lutheran Church	314 S. Spruce St	Public, Browne's Addition
Commons CG	33rd and Lamont	Public, on Water Dept property
Chief Garry CG	2103 E Mission	Public
East Central CG	Ralph & Hartson	Public, on Water Dept prop.
Salvation Army	222 E. Indiana	Private/public; for residents of Salvation Army
West Central CG	1832 W Dean	NA
NE Community Center CG	Lacey & Liberty	Public
Pumpkin Patch CG	Maringo & Upriver Dr, Millwood	NA
East Valley School Farm & CG	Wellesley & Sullivan	School & public garden/farm 3 acres
Fairview & Hemlock CG	Fairview & Hemlock	NA
Beautiful Savior Lutheran Church	4320 S. Conklin St	NA
Riverview CG	1420 W Water Ave	NA
United Church of Christ	611 N Progress Rd Spokane Valley	Church garden open to public
Resurrection Episcopal Church CG	15319 E Eighth Ave Spokane Valley	Church garden open to the public
Grant Park CG	1300 E Ninth	NA
Spokane Valley Partners CG	11202 E Mission Spokane Valley	NA
East Central Community Organization Garden	1700 E Fourth Ave	NA
Airway Heights CG	924 S Lawson, Airway Heights	NA
Deer Park CG	N. North Ave & W 1st St, Deer Park	NA
Rocky Hill Park Community Garden	22710 E Country Vista Drive, Liberty Lake	NA
Cheney CG	Centennial Park, Cheney	Cheney Parks & Rec

Edible Trees

The Spokane Edible Tree Project is a program sponsored by Second Harvest Food Bank, The Lands Council, WSU Extension and the Portland Fruit Tree Project.

They identify fruit and nut trees that are not being harvested in Spokane County and then harvest and donate the produce to food banks.

Access to Wild Food

For generations people have hunted and gathered the wild food sources available in this region. Today people continue to hunt and collect these free foods including deer, elk, moose, turkey, duck, fish, huckleberries, elderberries, mushrooms, camas and cattail roots and a variety of herbs. These foods provide recreational, sustenance and spiritual purposes for many people.

With the onset of development, land available for native plant production has been reduced to rural and neglected urban spaces. For example, berries and other edible vegetation are found in undeveloped areas along the Spokane river. While the State Government regulates hunting and fishing to control populations, fruits, herbs and vegetables can be freely gathered on public lands and are vulnerable to over harvesting. For example, huckleberry bushes are being cut and pulled from the ground in some areas. Land use planning policies could be used to protect and preserve these areas to better ensure a sustainable level of production and cultivation of native plant species.

Local native foods have the potential to again become an integral part of our local food system. Tribal communities are engaging in dialogue and education to promote sustainable practices to help revive the production and cultivation of local native foods. Return to a traditional diet, in addition to healthy nontraditional foods, is a step closer to food sovereignty and food safety for tribal and other groups. Open sharing of knowledge and resources, protecting and preserving native habitat, and increasing availability and access to traditional foods are ways to refocus the attention and appreciation of these foods for the benefit of indigenous peoples and the greater community.

The Spokane River's Fish

Fish are a public resource, available to anyone who has purchased a fishing license. Many people in our area fish the waters of the Spokane River, for pleasure as well as food. There are both wild and hatchery bred fish in the river, including trout, bass, carp and suckers. Avista, as part of their licensing agreement, stocks Long Lake (a reservoir of the Spokane River) with 150,000 fish each year.[6]

But the river is polluted, and, as a result, the fish contain chemicals such as PCBs and PBDEs (flame retardants) that can be harmful to health. The Spokane Regional Health District and Washington State Department of Health issued a Spokane River Fish Advisory in 2012 (see pg. 71) with recommendations to reduce one's exposure to these toxins.[7] There are efforts to clean the River of these pollutants through the federal Superfund Program.

The Spokane River used to be filled with salmon, which provided nourishment, medicinal and spiritual connection for the local indigenous people. The fish they caught were among the biggest in the entire Columbia River Basin--Chinook salmon could weigh 80 pounds or more. Installation of dams along the River, and finally the construction of Grand Coulee Dam put an end to the salmon on the Spokane River since the dams were built without fish ladders.[8] There is a movement to rectify this situation and return salmon to the River. The Spokane City Council passed a resolution on 6/25/2014, to support the Northwest Power and Conservation Council's Fish and Wildlife Program's inclusion of anadromous fish passage above Grand Coulee Dam.[9]

Access to Retail Food

See the *Retailers* chapter for further information about retail food outlets.

City of Spokane

The majority of grocery-type food outlets are located on arterial streets in the City of Spokane where there is approximately the same number of small grocery stores as

supermarkets. There are twice as many convenience stores as there are grocery stores and supermarkets.

Access to grocery stores and supermarkets in low-income areas in the City of Spokane is fairly evenly distributed with the exception of the West Central and Riverside (downtown) neighborhoods, which are considered food deserts *(see pg. 57)*. Approximately 40% to-50% of residents in these two neighborhoods receive SNAP benefits (food stamps). These two areas lack a supermarket or grocery store accessible to low-income individuals. Convenience stores are the only neighborhood retail option for purchasing food in West Central neighborhood. In contrast, residents from other low-income neighborhoods such as Nevada/Lidgerwood, Whitman, Bemiss, Logan, and Chief Garry have relatively good access to supermarkets or grocery stores.[10]

City of Spokane Valley

In the City of Spokane Valley, supermarkets and grocery stores are located along arterials; Sprague Avenue has five supermarkets within approximately 2.5 miles of each other. Access to healthy foods through supermarkets and grocery stores is sparser for low-income residents living north of the freeway and away from Argonne Road.[7]

Accessing Food from Low-Income Neighborhoods

In 2011, the Spokane Regional Health District conducted focus group interviews with 49 low-income residents from the Greater Hillyard (Hillyard, Whitman and Bemiss neighborhoods), East Central and West Central neighborhoods. The results illustrate the issues around food access for low-income residents:

- Free food from nonprofit agencies was the most common way to obtain food for their families.
- Fast food establishments were the most popular place to eat out with some participants stating, “fast food is one of our food resources.”
- The primary means for getting fresh fruit and vegetables is from grocery stores and supermarkets in their neighborhood.
- More than half of participants stated that they traveled one mile or less from their home to purchase or obtain food for their family.

- Forty percent of the participants used their own vehicle to get groceries, 10% walked, 15% carpooled or had a friend drive them, and the remainder used public transportation.
- The three main factors that influenced what participants purchased were price, health and children's preferences.
- Health issues included diabetes, being overweight and having "nutrition restrictions."
- Participants said they read labels and purchased foods that were lower in sodium, fat and sugar.

In conclusion, focus group participants valued low price, convenient location, and nutrition as key factors when accessing food in low-income neighborhoods.[10]

Food Access and Transportation

Many low-income individuals do not have cars and do not live within walking distance of a grocery store. Access to supermarkets and grocery stores via a transit system is difficult for those carrying multiple or heavy bags of food. For small and light items, bus access is more doable and the routing is good. Spokane Transit Authority designs routes to connect as many destinations and origins as possible while still providing logical routing. Grocery stores and supermarkets are an important consideration and useful to have on every route to reduce the number of buses people need to catch while transporting groceries. The one exception to grocery stores and supermarkets accessible by transit routes is on Trent highway extending north of Liberty Lake. Newman Market is the closest small grocery store for residents living in this rural area and is not bus-accessible.[10]

Food Access in Schools

See page 52 for a discussion of the changes in local school lunch programs to provide "scratch cooking" and "Harvest of the Month" programs in order to introduce children to a variety of fruits and vegetables. Many schools also have gardens where children can learn about local, seasonal foods.

The Fresh Fruit and Vegetable Program[11] (FFVP) provides all enrolled students in participating elementary schools with a variety of free fresh fruits and vegetables throughout the school day—separate from the lunch or breakfast meal in one or

more areas of the school. The program's main goal is to combat childhood obesity by helping students learn more about healthful eating habits.

The National School Lunch and Breakfast Program[12] is a federally assisted meal program operating in public and nonprofit private schools and residential child care institutions. It provides nutritionally balanced, low-cost or free lunches to children each school day. The program was established under the National School Lunch Act, signed by President Harry Truman in 1946. School lunches must meet meal and nutrition standards based on the latest USDA *Dietary Guidelines*. The current meal plan increases the availability of fruits, vegetables, and whole grains in the school menu. While school lunches must meet federal meal requirements, local school food authorities make the decisions about what specific foods to serve and how they are prepared. Any child at a participating school may purchase a meal through the National School Lunch and Breakfast Program. Children from families with incomes at or below 130 percent of the poverty level are eligible for free meals.

Second Harvest's Bite 2 Go Program offers food insecure children meals during the weekend. Almost half of the students in Spokane County qualify for free or reduced-price school meals, which frequently offer their best source of nutrition on weekdays. This program helps children get the nutrition they need over the weekend so they come to school ready to learn on Mondays. Bite 2 Go provides a good mix of easy-to-open, single-serving, nutritious, nonperishable food items to cover four meals and three snacks over the weekend during the school year. Over the past two years, Second Harvest has more than doubled the service provided to children in Spokane through Bite 2 Go. By the end of the 2014-15 school year, 2,172 schoolchildren a week at 55 schools were receiving Bite 2 Go food for over the weekend.

Access to Food During and After a Disaster

Grocery stores only maintain about a 6-day supply of food, especially perishables. Distribution centers don't have much more storage either. Second Harvest Food Bank is a member of the national organization, Feeding America, which organizes food banks around the nation to provide food for regions dealing with a disaster.

Greater Spokane Emergency Management coordinates mass care and feeding through Emergency Support Function 6[13] contained in Spokane County's Comprehensive Emergency Management Plan.[14] This Plan details procedures to handle the myriad of issues involved with emergencies and disasters.

Other resources include but are not limited to Second Harvest, The Salvation Army, Community Organizations Active in Disasters and the Inland NW Volunteers Active in Disasters. (The last two organizations consist of faith-based groups, businesses, governmental organizations, individuals, and others committed to assisting our community daily and in times of need.)

Greater Spokane Emergency Management coordinates all Emergency Support Functions, specifically ESF6 mentioned above, as it relates to this plan through a Duty Officer who can be contacted 24/7/365 by any partner organization within Spokane County before or during an emergency by calling: 509-477-4209 #0822.

[1]Spokane Counts, 2015, http://www.srhd.org/spokanecounts (1/25/2016

[2]Jason Clark, CEO, Second Harvest Food Bank, pers. Comm., 3/3/16)

3 Northwest Harvest Food Bank, http://www.northwestharvest.org/, (3/17/2016)

[4]Free Meal Schedule, Feed Spokane, https://feedspokane.com/meal-providers/meal-centers-locations/ (1/29/2016)

[5]Meals on Wheels, http://www.mowspokane.org/meals_wheels.html, (12/14/2015)

[6]Jerry White, Jr, Spokane Riverkeeper, Jan 29, 2016, Pers. Comm.

[7]Spokane River Fish Advisory, http://www.doh.wa.gov/portals/1/Documents/Pubs/334-164.pdf, 2012

[8]The Spokane River, https://www.nwcouncil.org/history/SpokaneRiver (1/29/2016)

[9]Agenda Sheet for City Council for 07/07/2014, http://www.friendsoftoppenishcreek.org/cabinet/data/CR_Treaty_4.pdf

[10]Spokane Regional Health District, 2011, Food and Health Overview, /http://www.srhd.org/documents/PA_N/FoodandHealthOverview-2011.pdf

[11]State of Washington, Office of Superintendent of Public Instruction, Fresh Fruit and Vegetable Program, http://www.k12.wa.us/ChildNutrition/programs/FFVP/default.aspx (1/28/2016)

[12]National School Lunch Program, http://www.fns.usda.gov/nslp/national-school-lunch-program-nslp (1/28/2016)

[13]http://www.spokanecounty.org/emergencymgmt/content.aspx?c=2678

[14]http://www.spokanecounty.org/emergencymgmt/default.aspx

Figure 1: Free Meal Schedule for Spokane, 2015

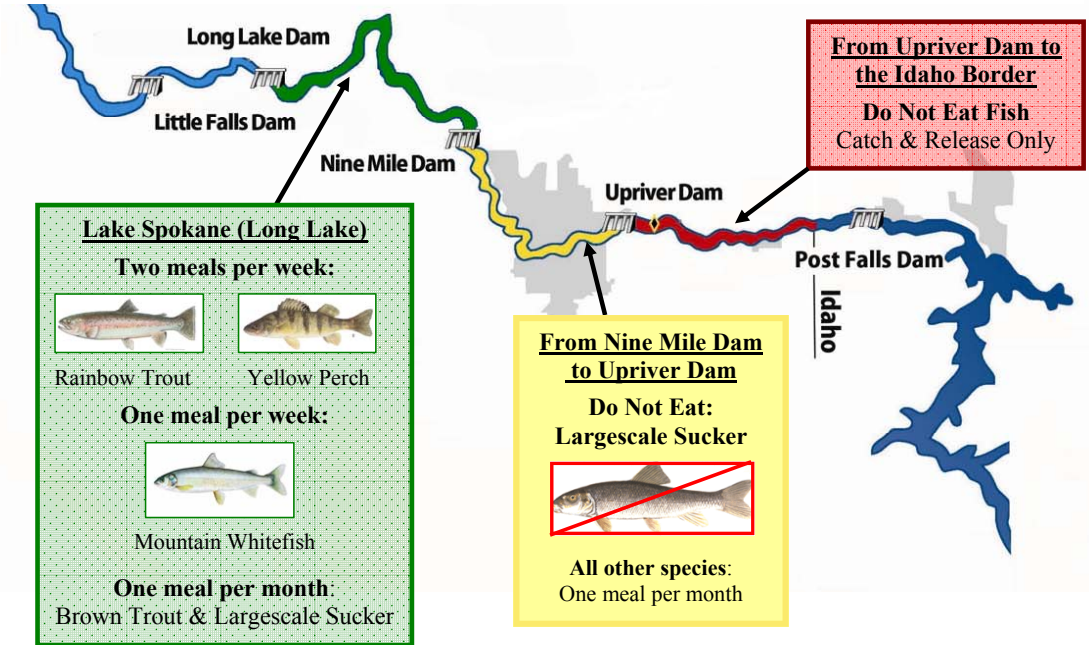
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
B	**Shalom**	**House of Charity**	**House of Charity**	**House of Charity**	**House of Charity**	**House of Charity**	**House of Charity**
R	7:30-8:30 am	7:30-8:30 am	7:30-8:30 am	7:30-8:30 am	7:30-8:30 am	7:30-8:30 am	7:30-8:30 am
E	**Mid-City Concerns**	**Shalom**	**Shalom**	**Shalom**	**Shalom**	**Crosswalk (Youth)**	**Orchard Christian**
A	**Senior Center**	7:30-8:30 am	7:30-8:30 am	7:30-8:30 am	7:30-8:30 am	9:00-9:30 am	**Fellowship**
K	8:00-9:30 am	**Mid-City Concerns**	**Mid-City Concerns**	**Mid-City Concerns**	**Mid-City Concerns**	**City Gate (2nd & 4th Sat)**	7:00 am (except 1st Sunday
F	**Crosswalk (Youth)**	**Senior Center**	**Senior Center**	**Senior Center**	**Senior Center**	10:00-12:00 pm	of the month)
A	9:00-9:30 am	8:00-9:30 am	8:00-9:30 am	8:00-9:30 am	8:00-9:30 am	**Holy Trinity Episcopal**	**Crosswalk (Youth)**
S		**Crosswalk (Youth)**	**Crosswalk (Youth)**	**Crosswalk (Youth)**	**Crosswalk (Youth)**	8:45-10 am	9:00-9:30 am
T		9:00-9:30 am	9:00-9:30 am	9:00-9:30 am	9:00-9:30 am		
		City Gate	**City Gate**	**City Gate**	**City Gate**		
		10:00-11:00 am	10:00-11:00 am	10:00-11:00 am	10:00-11:00 am		
L	**Our Lady of Lourdes**	**House of Charity**	**House of Charity**	**House of Charity**	**House of Charity**	**House of Charity**	**Crosswalk (Youth)**
U	11:00 am-Noon	11:00-11:30 am	11:00-11:30 am	11:00-11:30 am	11:00-11:30 am	11:00-11:30 am	12:00-12:30 pm
N	**Mid-City Concerns**	**Our Lady of Lourdes**	**Our Lady of Lourdes**	**Our Lady of Lourdes**	**Our Lady of Lourdes**	**Crosswalk (Youth)**	**Union Gospel Mission**
C	**Senior Center**	11:00 am-Noon	11:00 am-Noon	11:00 am-Noon	11:00 am-Noon	12:00-12:30 pm	12:00 pm-12:30 pm
H	11:30 am-12:15 pm	**Mid-City Concerns**	**Mid-City Concerns**	**Mid-City Concerns**	**Peaceful Valley**	**Union Gospel Mission**	**Spokane Valley United**
	Union Gospel Mission	**Senior Center**	**Senior Center**	**Senior Center**	**Community Center**	12:00 pm-12:30 pm	**Methodist Free Lunch**
	12:00 pm-12:30 pm	11:30 am-12:15 pm	11:30 am-12:15 pm	11:30 am-12:15 pm	11:00-11:30 am	**Calvary Soup Kitchen**	**(Last Sunday of each**
	Crosswalk (Youth)	**Union Gospel Mission**	**Union Gospel Mission**	**Union Gospel Mission**	**Mid-City Concerns**	11:00-1:00	**month)**
	12:00-12:30 pm	12:00 pm-12:30 pm	12:00 pm-12:30 pm	12:00 pm-12:30 pm	**Senior Center**		12:30 pm
	Cup of Cool Water(Youth)	**Crosswalk (Youth)**	**Crosswalk (Youth)**	**Crosswalk (Youth)**	11:30 am-12:15 pm		**St. Ann's Sunday Lunch**
	1:00-4:00 pm	12:00-12:30 pm	12:00-12:30 pm	12:00-12:30 pm	**Union Gospel Mission**		1:00 pm
	Connections Church	**Cup of Cool Water(Youth)**	**Cup of Cool Water(Youth)**	**City Gate**	12:00 pm-12:30 pm		
	12:00-2:00 pm	1:00-4:00 pm	1:00-4:00 pm	12:00-3:00 pm	**Crosswalk (Youth)**		
		City Gate	**City Gate**		12:00-12:30 pm		
		12:00-3:00 pm	12:00-3:00 pm		**City Gate**		
			Connections Church		12:00-3:00 pm		
			12:00-2:00 pm		**Women's and Children's**		
					Free Restaurant		
					11:30 am-1:30 pm		
D	**Our Lady of Lourdes**	**Our Lady of Lourdes**	**Our Lady of Lourdes**	**House of Charity**	**Our Lady of Lourdes**	**Union Gospel Mission**	**Union Gospel Mission**
I	4:00-500 pm	4:00-5:00 pm	4:00-5:00 pm	4:30 pm-5:30pm	4:00-5:00 pm	5:30 pm-6:00 pm	5:30 pm-6:00 pm
N	**Shalom**	**Women's and Children's**	**Holy Trinity Episcopal**	**Our Lady of Lourdes**	**Connections Church**	**Crosswalk (Youth)**	**Crosswalk (Youth)**
N	4:30-5:30 pm	**Free Restaurant**	5:30 pm	4:00-5:00 pm	5:00-6:30 pm	6:00-6:30 pm	6:00-6:30 pm
E	**Union Gospel Mission**	3:00-6:00 pm	**Union Gospel Mission**	**Shalom**	**Union Gospel Mission**	**City Gate**	**City Gate**
R	5:30 pm-6:00 pm	**Orchard Christian**	5:30 pm-6:00 pm	4:30-5:30 pm	5:30 pm-6:00 pm	7:00-8:30 pm	7:00-8:30 pm
	Off Broadway Outreach	**Fellowship**	**Crosswalk (Youth)**	**Union Gospel Mission**	**Crosswalk (Youth)**		
	5:30 pm	4:30 pm (except 1st	6:00-6:30 pm	5:30 pm-6:00 pm	6:00-6:30 pm		
	Crosswalk (Youth)	Tuesday of the month)	**SPEAR**(Kids)	**Crosswalk (Youth)**	**City Gate**		
	6:00-6:30 pm	**All Saints Lutheran**	3:30-6:00pm	6:00-6:30 pm	7:00-8:30 pm		
		5:00-6:00 pm	**Blessings Under the**	**Cup of Cool Water(Youth)**			
		Union Gospel Mission	**Bridge**	7:30-9:30 pm			
		5:30 pm-6:00 pm	6:00-7:00 pm	**Salvation Army**			
		Crosswalk (Youth)	**Women's &Children's**	5:00-7:30 pm			
		6:00-6:30 pm	**Free Restaurant**				
		Cup of Cool Water(Youth)	3:00-6:00 pm				
		7:30-9:30 pm	**City Gate**				
		SPEAR (kids)	7:00-8:30pm				
		3:30-6:00pm					

Spokane River Fish Advisory

Updated 2009

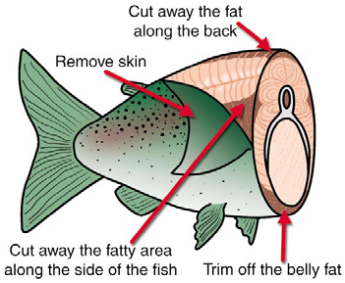
Spokane River fish contain chemicals called PCBs and PBDEs (flame retardants). These chemicals can be harmful to your health and the health of your children if eaten in quantities higher than advised.

This advisory is for everyone; men, women, and children. Woman who are or might become pregnant, nursing mothers, and young children should pay special attention to this advisory.



You can reduce your exposure to PCBs if you prepare your fish this way:

- When cleaning fish, remove the skin, fat, and internal organs before cooking
- Cook fish on a rack so the juices and fat will drip off
- Do not eat the head, juices, bones, organs/guts, fat, and skin
- Consume younger, smaller fish



Questions?

Spokane River Fish Advisory:
Spokane Regional Health District
Mike LaScuola 509-324-1574
www.srhd.org

Fish Advisories in Washington State:
WA Department of Health
Toll-Free 1-877-485-7316
www.doh.wa.gov/fish

Washington State Mercury Advisory: Women who are or might become pregnant, nursing mothers, and young children should follow this advice due to high mercury levels in these fish statewide:
Northern Pikeminnow – Do Not Eat **Largemouth and Smallmouth Bass – Two meals per month**

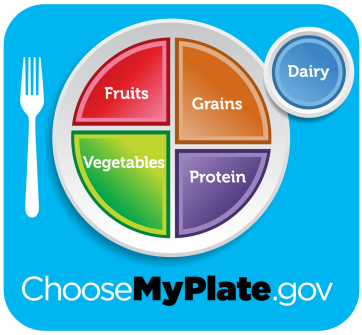
DOH 334-164 June 2009 For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).

13 Healthy Eating

Consumption of mostly minimally processed food (see pg. 16) is key to a healthy diet. Moderately and heavily processed food should be eaten in moderation, not as a regular healthy diet.

USDA's Dietary Guidelines for Americans[1]

A healthy diet is one that:



- Follows a healthy eating pattern across the lifespan. All food and beverage choices matter. Choose a healthy eating pattern at an appropriate calorie level to help achieve and maintain a healthy body weight, support nutrient adequacy, and reduce the risk of chronic disease.
- Focuses on variety, nutrient density, and amount. To meet nutrient needs within calorie limits, choose a variety of nutrient-dense foods across and within all food groups in recommended amounts.
- Limits calories from added sugars and saturated fats and reduces sodium intake. Consume an eating pattern low in added sugars, saturated fats, and sodium. Cut back on foods and beverages higher in these components to amounts that fit within healthy eating patterns.
- Shifts to healthier food and beverage choices**.** Choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. Consider cultural and personal preferences to make these shifts easier to accomplish and maintain.
- Supports healthy eating patterns for all. Everyone has a role in helping to create and support healthy eating patterns in multiple settings nationwide, from home to school to work to communities.

A healthy eating pattern includes:

- A variety of vegetables from all of these subgroups—dark green, red and orange, legumes (beans and peas), and starchy
- Fruits, especially whole fruits
- Grains, at least half of which are whole grains
- Fat-free or low-fat dairy, including milk, yogurt, cheese, and/or fortified soy beverages
- A variety of protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and soy products
- Oils

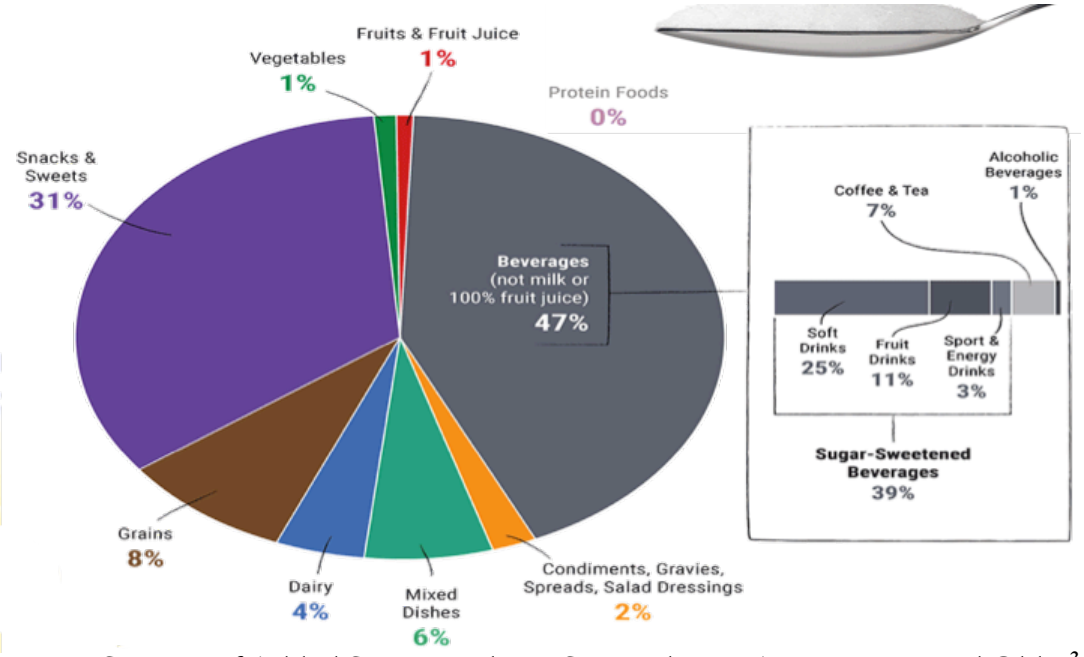


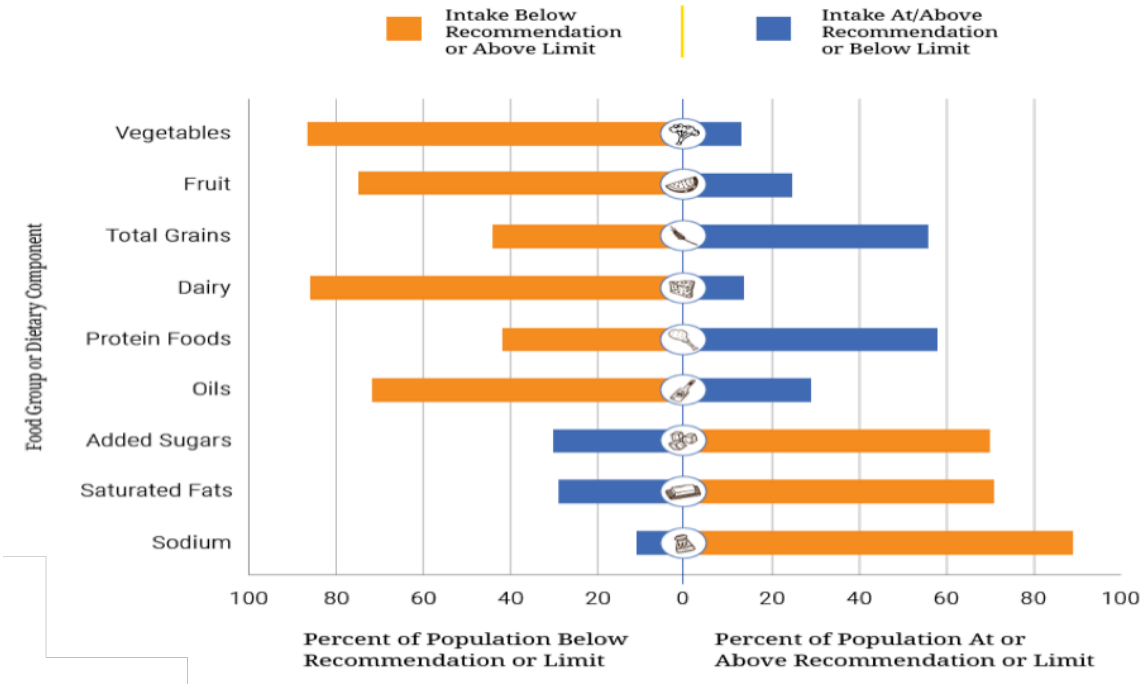
Figure 1: Sources of Added Sugars in the U.S. Population Ages 2 Years and Older[2]

A healthy eating pattern limits saturated fats and trans fats, added sugars and sodium. The typical eating patterns currently consumed by many in the United States do not align with the USDA *Dietary Guidelines*. When compared to the Healthy U.S.-Style Pattern:

- About three-fourths of the U.S. population has an eating pattern that is low in vegetables, fruits, dairy, and oils.

- More than half of the U.S. population is meeting or exceeding total grain and total protein foods recommendations, but are not meeting the recommendations for the subgroups within each of these food groups.
- Most Americans exceed the recommendations for added sugars, saturated fats, and sodium.
- In addition, the eating patterns of many people are too high in calories. Calorie intake over time, in comparison to calorie needs, is best evaluated by measuring body weight status. The high percentage of the population that is overweight or obese suggests that many in the United States over consume calories. More than two-thirds of all adults and nearly one-third of all children and youth in the United States are either overweight or obese.

Figure 2: Dietary Intakes Compared to Recommendations. Percent of the U.S. Population Ages 1 Year and Older Who are Below, At, or Above Each Dietary Goal or Limit[3]



[1]USDA Dietary Guidelines, 2015, http://health.gov/dietaryguidelines/2015/guidelines/ (1/24/2016)
[2]What We Eat in America, Food Category analyses for the 2015 Dietary Guidelines Advisory Committee, NHANES 2009-2010
[3]What We Eat in America, NHANES, 2007-2010

14 Human Health and our National Food System

In the United States, obesity and diet-related chronic disease rates are escalating, while the public's health is further threatened by rising antibiotic resistance, chemicals and pathogens contaminating our food, air, soil and water, depletion of natural resources and climate change. These threats have enormous human, social, and economic costs that are growing, cumulative, and unequally distributed. These issues are all related to food—what we eat and how it is produced. The U.S. industrial food system provides plentiful, relatively inexpensive food, but much of it is unhealthy, and the system is not sustainable.[I] There are health risks and issues at each step of the national food system. The discussion below is not comprehensive, but is meant to give the reader a glimpse of the variety of health issues associated with our national food system.

Production

Herbicides & Pesticides

A variety of herbicides and pesticides are used during conventional food production to control weeds and insects. The most popular herbicide is Round-up (glyphosate) produced by Monsanto. In the 1990s, Monsanto developed "Round-up Ready" seeds that have been genetically altered to be resistant to Round-up and are called genetically modified organisms (GMO). Farmers can spray their fields with glyphosate, knowing it won't harm their crops. As a result, the application of herbicides, especially glyphosate, in the United States has increased many times over in recent years. Glyphosate application in the U.S. increased from 25 million pounds in 1992 to over 250 million pounds in 2012. Round-Up is the most

heavily used herbicide in the U.S. and is the world's most widely produced herbicide by volume. Today it is applied four times more than that of the second leading pesticide. Glyphosate is found in food, air, rainfall, and surface waters.[2]

So why should we care? The Spokane region is in the heaviest-herbicide use category with over 88 pounds of glyphosate applied per square mile on agricultural land. In 2015, the World Health Organization's (WHO's) International Agency for Research on Cancer (IARC) pronounced that glyphosate is "probably carcinogenic to humans."[3]

Fertilizers

Since food grows in soil (or, in the case of meat, our food eats plants grown in soil), it makes sense that the healthier the soil, the healthier the food. Fertilizers provide one or more chemical elements necessary for plant growth and development. Historically, soil fertility was maintained by using animal manure and crop rotations. Now, fertility is maintained by the addition ofpetroleum-based fertilizers. One of the main requirements of plant growth is nitrogen. Synthetic nitrogen is created using hydrogen in the form of natural gas, a non-renewable resource that emits carbon dioxide into the atmosphere, contributing to climate change.[4]

In 2010 an estimated 21 million pounds of synthetic fertilizers were spread over American farmland.[5] Synthetic fertilizers used in conventional agriculture can lead to the destruction of soil structure and reduce trace minerals in the soil. Analysis of the nation's oldest continuous cropping test plots in Illinois shows that, contrary to long-held beliefs, nitrogen fertilization does not build up soil organic matter.[6] Long-term research at Rodale Institute shows that properly managed cover crops (legumes, grains, grasses or mixtures) can provide all the nitrogen needed while reversing the loss of soil organic matter.[7]

Animal Antibiotics & Steroids

Animal production methods can affect the health of consumers. The use of antibiotics in agriculture helped develop resistance in micro-organisms that the antibiotics are meant to eliminate. Every year, over 400,000 people in the United States are sickened with resistant *Salmonella* or *Campylobacter.* Approximately 20-26 million pounds of antibiotics a year are administered to livestock that absorb roughly 25% of the medication, while excreting the rest (75%) into the environment.[8]

Steroid hormones are also given to livestock to increase growth rates, efficiency of conversion from feed to meat, and the leanness of the meat. The American Public Health Association acknowledges that "there is evidence that hormones originating outside the body can interfere with our own hormone function." Evidence suggests females exposed to estradiol during pregnancy have increased risk of breast cancer as adults. In 1998 the European Union banned the importation of meat of hormone-treated animals.[9]

Processing

Heavily Processed Foods

Although heavily processed foods (refer to pg. 16 for a definition) are not inherently unhealthy, many foods in this category are high in added sugar (especially high fructose corn syrup), sodium, saturated fats or *trans*-fats, and contain little dietary fiber. Some of these foods, such as cakes, cookies and soft drinks, are among the major sources of calories among U.S. adults and children. Breads and snack foods are often made with refined grains—grains that have been processed to remove the bran and germ, which contain important nutrients like B-vitamins, iron and fiber. The convenience that many heavily processed foods offer may also encourage unhealthy eating patterns, such as skipping meals and overconsuming calories.

Food-borne Illness

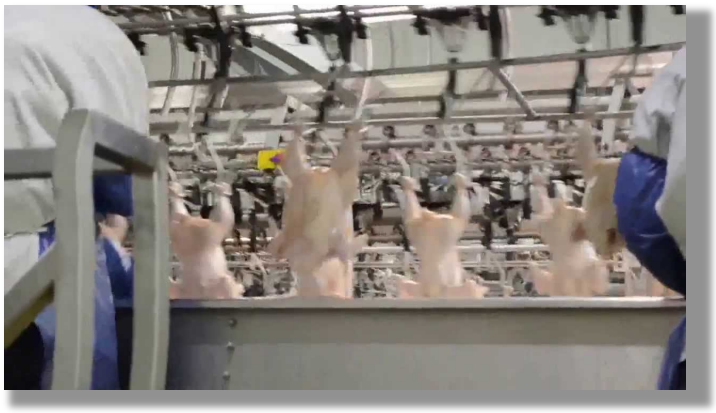
Although many forms of food processing are designed to minimize food safety risks, rapid growth in the food processing industry can contribute to food-borne illness outbreaks. As processing plants have become larger (see pg 1), they handle larger volumes of products—sometimes from many different sources—and distribute them over a broader geographic area. This can increase the risk of widespread exposure to contaminated products, as evidenced by the 2009 nationwide recall of contaminated products made with peanut paste.[10]

The Food and Drug Administration (FDA), an organization responsible for ensuring the safety of our food supply, has been criticized for inadequately inspecting food processing facilities.[11] To address food safety risks involving raw agricultural products, the FDA is now for the first time beginning to regulate farm practices involving the production and handling of produce that is generally consumed raw through the Food Safety Modernization Act produce rule. (See pg. 47 for a description of this Act and it's implications) It is anticipated that the FDA will be increasing its cadre of inspectors and

food safety education efforts to enforce these rules and minimize food safety risks. Without increases in federal funding, however, these measures are not likely to occur.

Worker Justice Impacts

In addition to affecting our food supply, the practices common to certain food processing industries affect the people who work for them. In particular, workers in U.S. meat and poultry processing plants often suffer health risks, poor working conditions and labor violations. They may be expected to perform dangerous tasks, such as working with sharp knives and hooks, under hazardous and exhausting conditions, sometimes without adequate training. Injuries, some life-threatening or fatal, are not uncommon; 36% of employees in the meat industry are injured each year. Compared to all other job categories, the food processing industry as a whole ranks among the highest for job-related injuries. Injured employees of meat and poultry processing plants are not sufficiently protected under U.S. labor laws; they are often unable to receive compensation and an injury may cause them to lose their jobs. Processing plants frequently hire migrant workers who are willing to accept low wages and poor working conditions. In some cases, illegal immigrants are smuggled into the country by the companies that hire them and face fears of deportation. These and other threats of retribution can squelch efforts on the part of employees to organize unions.[11]



Distribution

Americans are presented with a global palette of food choices unimaginable to earlier generations. Through the 1930s, ready access to fresh foods from around the globe was still a novelty, and many retailers and consumers thought it worth celebrating. An upscale New York restaurant, for example, boasted about the mileage traveled by its exotic produce. According to its menu, the ingredients of a vegetable salad collectively covered over 22,000 miles. Since then, food miles—the distance food travels from where it is grown or raised to where it is purchased by a consumer—have come under considerable scrutiny. "Local" and "regional" have become the qualities sought out by conscientious eaters. It is now understood that the convenience, variety and other

benefits afforded by global food distribution must be weighed against the social, health, environmental and economic implications of transporting food over long distances.[12]

Energy and Climate Consequences of Food Transport

Increasing attention is being given to the consequences of transporting large volumes of food over great distances. Among other concerns are peak oil and climate change (refer to *Climate* chapter). Transport vehicles rely on burning dwindling reserves of fossil fuels for energy, which emits greenhouse gases (GHGs) that contribute to climate change. Counting food miles is one way to measure the impacts of transporting food and food ingredients. Fruits and vegetables, for example, often get a lot of attention because of the distances they travel. A frequently quoted source found that, on average, produce arriving at a major Chicago food market was transported more than 1,500 miles.[12]

Consumption

See the *Food Insecurity* and *Access to Food* chapters for a full discussion on food consumption and health issues.

Waste

Animal Waste

Concentrated animal feeding operations (CAFO's) can pose a threat to air and water quality. Manure is stored in anaerobic lagoons, which are large pools that emit airborne toxins harmful to humans and may contaminate water supplies. These chemicals may include the potent greenhouse gases methane, hydrogen sulfide, and carbon dioxide, as well as ammonia. These chemicals can cause a variety of human health problems. Water contaminated by manure runoff can also cause health problem,s including death, diarrhea, vomiting, stomach cramps, fever, and neurological damage. Arsenic, copper, selenium, zinc, cadmium, molybdenum, nickel, lead, iron, manganese, aluminum, and boron can be found in the manure. These heavy metals accumulate in the sludge in the bottom of lagoons, reaching toxic levels. Runoff with these elements may end up in water bodies where they make their way up the food chain through bioaccumulation.

These chemicals can be taken up either directly from exposure or by consumption of food containing the chemical. People may get skin or organ cancer, liver dysfunction, hair and nail loss, and anemia from these heavy metals.[13] The Washington State Department of Ecology is currently updating and improving protections to CAFO's and a preliminary draft for permits has been developed.[14]

[1] American Public Health Association, Toward a Healthy Sustainable Food System, Nov 06, 2007, https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/29/12/34/toward-a-healthy-sustainable-food-system (1/20/2016)

[2] Landrigan, Philip, M.D., and Charles Benbrook, Ph.D., GMOs, Herbicides, and Public Health, Aug. 20, 2015, http://www.nejm.org/doi/ref/10.1056/NEJMp1505660#t=article (1/28/2016)

[3] Cressey, Daniel, Nature Magazine, March 25, 2015, Widely used herbicide linked to cancer, cited from Scientific American, http://www.scientificamerican.com/article/widely-used-herbicide-linked-to-cancer/?print=true (1/28/2016)

[4] Oregon State University Extension Service, April 30, 2008, Here's the Scoop on Chemical and Organic Fertilizers, http://extension.oregonstate.edu/gardening/node/955 (1/28/2016)

[5] USDA Environmental Research Service. Chemical Inputs: Fertilizer Use & Markets, http://www.ers.usda.gov/topics/farm-practices-management/chemical-inputs/fertilizer-use-markets.aspx - .UdxCohaBCI9 (1/28/2016)

[6] College of Agricultural, Consumer and Environmental Sciences (ACES), Study reveals that Nitrogen Fertilizers Deplete Soil Organic Carbon, Oct 29, 2007, http://news.aces.illinois.edu/news/study-reveals-nitrogen-fertilizers-deplete-soil-organic-carbon (1/28/2016)

[7] LaSalle, Tim, Rodale Institute, The Organic Green Revolution, http://stopogm.net/sites/stopogm.net/files/webfm/plataforma/OrganicGreenRev2008.pdf (1/28/2016)

[8] Centers for Disease Control and Prevention, Challenges in Food Safety, http://www.cdc.gov/foodsafety/challenges/index.html (1/28/2016)

[9] Center for Food Safety, America's Secret Animal Drug Problem, http://www.centerforfoodsafety.org/files/animal_drug_10_26_77838.pdf (1/28/2016)

[10] Centers for Disease Control and Prevention, Multistate Outbreak of *Salmonella Typhimurium* Infections linked to peanut butter, 2008-2009, http://www.cdc.gov/salmonella/2009/peanut-butter-2008-2009.html (1/28/2016)

[11] John Hopkins School of Public Health, Food Processing, http://www.jhsph.edu/research/centers-and-institutes/teaching-the-food-system/curriculum/_pdf/Food_Processing-Background.pdf (1/28/2106)

[12] John Hopkins School of Public Health, Food Distribution and Transport, http://www.jhsph.edu/research/centers-and-institutes/teaching-the-food-system/curriculum/_pdf/Distribution_and_Transport-Background.pdf. (1/28/2016)

[13] Marks, Robin, National Resource Defense Council, 2001, Cesspools of Shame, https://www.nrdc.org/water/pollution/cesspools/cesspools.pdf (1/28/2016)

[14] Washington State Department of Ecology, Concentrated Animal Feeding Operation Permit, http://www.ecy.wa.gov/programs/WQ/permits/cafo/index.html (1/28/2016)

Natural Resources

All food systems ultimately depend on natural resources such as soil and water. Can Spokane's regional natural resources feed our population into the future?

15 Climate

Spokane Regional Climate

The Spokane region has a rare climate due to its elevation and location between the Cascade and Rocky Mountain ranges. The Cascades create a barrier from the moist, mild air of the Pacific Ocean in the winter and cool air in the summer. This results in considerably lower precipitation than the Seattle region. The Rocky Mountains shield the Spokane region from some of the winter's coldest air masses traveling southward across Canada.[1]

Spokane has a Mediterranean-type climate of dry summers and wet winters, with short spring and fall seasons. July and December averages are 69.5°F and 27.5°F, respectively. Spokane has an average of 16.5 inches annual precipitation, most coming as snow in the winter. These averages are likely to change as the climate warms.[2]

Climate Change in the Spokane Region[3,4]

In recent years, scientists have refined their ability to provide projections of the effects of climate change at a local level. For the Spokane region, these include:

- Increased average annual temperature of 1-3°F by the 2020s
- Increased precipitation ranging from 1-12% in the 2020s, particularly in the winter
- Reductions in snowpack, especially at low and mid elevations (winter precipitation will be rain)
- Peaking of streams and rivers in winter, lower flows in late summer
- In-migration of people from coastal and dryer areas, causing an increase in energy and resource demand

A reliable water supply is critical for agriculture and hydroelectric energy production. Currently, much of our region's water is stored in winter mountain snowpack. The snowpack gradually melts, replenishing the streams and rivers in the late summer and fall, a time of little rainfall. The predicted climate warming will change this dynamic,

resulting in excessive water flows in the winter and minimal flows in the late summer and fall.

Agriculture

Overall, there will be reduced summer precipitation. The average total water supply available to agriculture in some Eastern Washington irrigated areas will likely decline significantly as a result of climate change, resulting in more frequent and more stringent rationing and decreases in crop production. For dry land agriculture, it is likely that there will be longer growing seasons, reduced summer precipitation and increasingly competitive weeds. Some crops may benefit from the increased frost-free days and others will suffer increased pest damage. More land will likely remain fallow which will cut the number of acres of production.

Energy Supply and Demand

There will be changes in the seasonality and quantity of hydropower resources, changes in energy demand and increasing conflicts between hydropower and other users of water. Spokane and Columbia River dams will likely have more demand and less supply of hydropower.

In the Spokane metro area, degree-days requiring heating will decline by about 15% in the 2040s compared to the historic condition, but degree-days requiring cooling will increase by 88%. Warmer winters will mean less heating needs for buildings and less snow removal. Higher summer temperatures could mean increased irrigation needs for residents and therefore even more demands on the aquifer and water delivery systems. In addition, more intense heat waves and air pollution will have impacts on human health.

*A **degree day** is a unit used to determine the heating requirements of buildings, representing a fall of one degree below a specified average outdoor temperature (usually 65°F) for one day.*

Water Resources

There will be more precipitation falling as rain rather than snow. Rain quickly runs off the land, especially over impermeable or paved areas, which could increase stormwater and wastewater treatment costs. Winter and spring rainstorm events could cause localized flooding and increased erosion of soils.

Wild Foods

The effects of climate change on wild foods in this area are unknown. Anecdotal observations include split seasons for some of the spring roots and change of taste for some of the edible spring flowering plants that bloom out of normal timing.

Population

It is predicted that population will increase in the Spokane region, due to our plentiful water supply and relatively benign climate. This will increase the demand on water and energy resources.

[1] http://www.weather.com/weather/monthly/l/USWA0422 (2/22/2016)

[2] "Climate of Washington" *Climates of the States, Climatography of the United States No. 60. National Weather Service*. http://cdo.ncdc.noaa.gov/climatenormals/clim60/states/Clim_WA_01.pdf (12/7/2015)

[3] http://www3.epa.gov/climatechange/impacts/northwest.html (2/22/2016)

[4] Stum, Blaine. 2014. Climate Change and Spokane: 2014, City of Spokane.

16 Air Quality in the Spokane Region

Agricultural and food processing practices can impact air quality in a number of ways. Factory farms emit foul odors, air particles, greenhouse gasses and other toxic chemicals. Burning fields can send fine particulate matter into the air. Food processing practices can produce odors. Fortunately, these practices are tightly regulated in our region and we normally maintain good air quality.

The Washington State Department of Ecology is charged with developing regulations related to agricultural practices affecting air quality (e.g. burning and wind erosion) statewide. However, since the 1967 Clean Air Washington Act (RCW 70.94), the air quality in our region has been regulated by the Spokane Regional Clean Air Agency. This agency is tasked with overseeing the air quality throughout Spokane County and is thereby responsible for enforcing federal, state and local air pollution laws and regulations related to outdoor air pollution countywide. Regional offices of the Department of Ecology oversee the air quality in all other counties in the region. Tribes protect air quality on reservations with technical assistance from the federal Environmental Protection Agency.[1]

Regulated Agricultural and Food Businesses[2]

Any commercial or industrial facility that operates within Spokane County and emits air pollutants is subject to annual registration, permitting and inspection requirements. These include the following food related businesses:

- Grain handling facilities that produce more than 10 million bushels annually
- Agricultural chemical, manufacturing, mixing and packaging operations (e.g. fertilizer concentrates, pesticides, etc)
- Agricultural drying and dehydrating operations
- Sterilizing operations
- Cattle feedlots with more than 1000 cattle
- Composting operations
- Hay cubing operations and pelletizers
- Grain, seed, feed and flour mills and related operations
- Rendering operations
- Wholesale meat/fish/poultry slaughter and packing plants
- Coffee roasting operations
- Bakeries

Agricultural burning is also regulated at the state level. Burning is only allowed by commercial agricultural operations; permits and fees normally are required prior to any burning. Very few agricultural burning permits are issued in Spokane County, so the impact to the air is very minimal.[3]

In the past, grass burning and agricultural practices were responsible for poor air quality at certain times of the year. Advances in farming practices such as no-till farming and cessation of grass burning have significantly improved air quality in our region. However, as the region experienced in the summer of 2015, forest fires can negatively impact our air quality. The likelihood of increased forest fires in the future is high as our climate warms.

Prescribed burning is a management tool that the Forest Service has been using for decades to prevent wildfires. Prescribed burning not only helps reduce hazardous fuels that lead to extreme fires, they can minimize the spread of pest insects and disease, provide forage for game, improve habitat for threatened and endangered species, recycle nutrients back to the soil, and promote the growth of wildflowers and other wild edible plants. Indigenous peoples traditionally used fire as a food

management tool in the forest and on the prairie. Varying levels of traditional knowledge that informed those practices remain with the indigenous peoples. As mentioned previously, tribes are responsible for the air quality on reservations and the Spokane Indian Reservation has some of the highest air quality in the Nation.[4]

[1]Spokane Regional Clean Air Agency, https://www.spokanecleanair.org/ (6/22/2015)
[2]Spokane Regional Clean Air Agency, Regulations & Fees, https://www.spokanecleanair.org/about-us/regulations-fees, (6/22/2015)
[3]Lisa Woodard, Public Information Officer, Spokane Regional Clean Air Agency, pers. comm., (6/22/2015)
[4]Melodi Wynne, pers. Comm.. 3/16/2016

17 Water

Spokane Watershed

A watershed is an area or region drained by a river, river system or other body of water. Locally, the Spokane River watershed includes the land from the peak of the Bitterroot Mountains (border between Montana and Idaho) west to the Davenport area where the Spokane River flows into the Columbia. It includes the Coeur d'Alene River and Lake Coeur D'Alene, as well as the land that drains all the tributaries (such as the Little Spokane River and Latah Creek) that flow into the Spokane River. Each tributary, in turn, has its own watershed (See Fig. 1).

Figure 1: The Spokane River Watershed Shown in Yellow

The Spokane Valley-Rathdrum Prairie Aquifer (SVRP Aquifer)

The SVRP Aquifer[1] is a large underground gravel, cobble and boulder formation containing about 10 trillion gallons of high-quality water. Water flows into the Aquifer from adjacent lakes, mountain streams, the Spokane River and precipitation. It flows from Lake Pend Oreille to downtown Spokane, then north around Five Mile Prairie (See Fig. 2).

The SVRP Aquifer has one of the fastest flow rates in the United States, flowing as much as 60 feet per day in some areas. It is one of the most productive aquifers in

the country. Close to 1 billion gallons of water flow in and out of the SVRP Aquifer each day. Currently, human use of the SVRP Aquifer does not exceed its recharge rate.

The SVRP Aquifer spans two states (Washington and Idaho) and lies within four counties (Kootenai, Bonner, Stevens and Spokane). It is the sole drinking water source for over 500,000 people. In places it mixes with the Spokane River and in many locations lies under very thin topsoil, making it highly susceptible to pollution. The Environmental Protection Agency designated it as a Sole Source Aquifer in 1978, which allows for increased public education for aquifer protection and develops management practices to help protect the quality of the water.

Agricultural practices impact the SVRP Aquifer. Farmers and gardeners pump water to irrigate their fields and crops. Fertilizer, herbicide and manure runoff pollutes the water. Growers must be educated on best practices to protect this irreplaceable resource.

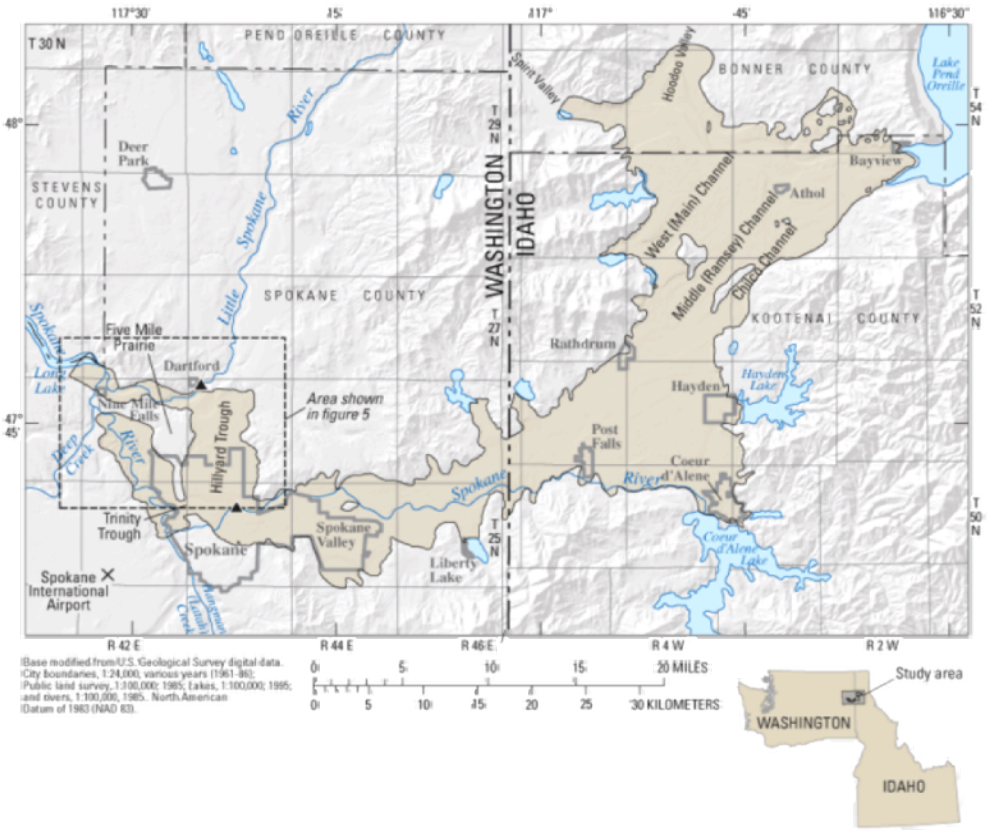


Figure 2: The Spokane Valley-Rathdrum Prairie Aquifer

The Spokane Aquifer Joint Board (SAJB)[2]

The SAJB is comprised of 20 water purveyors (see Table 1) throughout the Spokane area that provide safe, clean drinking water to homes, offices and industries. Collectively they operate 122 wells, supplying drinking water and irrigation to more than 500,000 people in the Spokane area. Each water purveyor sets its own water rates.

Table 1: Irrigation District Water District
Carnhope Irrigation District No. 7
City of Millwood
City of Spokane Water Department
Consolidated Irrigation District No. 19
East Spokane Water District No. 1
Honeywell Electronic Materials
Hutchinson Irrigation District #16
Irvin Water District #6
Liberty Lake Sewer and Water District 1
Moab Irrigation District #20
Model Irrigation District #18
Modern Electric and Water Co
North Spokane Irrigation District #8
Orchard Avenue Irrigation District
Pasadena Park Irrigation District #17
Spokane Business & Industrial Park
Spokane County Water District #3
Trentwood Irrigation District #3
Vera Water & Power
Whitworth Water District #2

In 2000, The SAJB developed a comprehensive wellhead protection plan, with an update in 2007. This plan created wellhead protection areas and defined areas for contaminant source inventory and risk assessment. Their public education includes the Aquifer Atlas, which gives extensive information about the Aquifer.[1]

Ground and Surface Water

While the Spokane metropolitan region is blessed with the abundant water resource of the SVRP Aquifer, other parts of the region are not so fortunate. Water tables are dropping, causing wells to go dry. As the climate warms and the region has less snowpack, farmers will face increasing water shortages.

All water in the State of Washington is public water. The State Department of Ecology regulates water usage within the state and grants rights to usage through "water rights." A water right is a legal authorization to use a predefined quantity of public water for a designated purpose. This purpose must qualify as a "beneficial use". Beneficial use involves the application of a reasonable quantity of water to a non-wasteful use, such as irrigation, domestic water supply or power generation.

Any use of surface water (lakes, ponds, rivers, streams, or springs) requires a water-right permit or certificate. Likewise, withdrawals of underground (ground) water require a water right permit or certificate, unless the use is specifically exempt from state permitting requirements. While "exempt" groundwater uses are excused from needing a state permit, they still are considered to be water rights.

The State of Washington is divided into 62 Water Resource Inventory Areas (WRIA) that delineate major watersheds. The Department of Ecology Water

Resources Program has a report of each WRIA available on-line.[3] It paints a dismal picture for Eastern Washington's water resources. Groundwater tables are dropping and surface water, such as lakes and streams, are already appropriated. There are no new water rights available in Eastern Washington.[4] One can sell old water rights, and they go to the highest bidder, usually a city.

Spokane County created a water demand forecast model of Spokane County water resources in 2011.[5] The study assumes that agricultural usage will remain constant up to 2040 since there are no new water rights available. The study estimates that there are 10 billion gallons/yr available for agriculture in the County. This includes livestock and irrigated acres. (A billion gallons/yr equals 4.25 cubic feet/second, which equals 3,070 acre-feet).

The impact of decreasing water supplies on area farmers cannot be overemphasized. We are running out of water for irrigation. The Inland Northwest region has 187,000 acres of irrigated farmland. Spokane County had 48,661 acres of irrigated farmland in 2012, down from 61,829 acres in 2007.[6] New farmers are having difficulty finding farmland with water rights, wells are going dry and water is becoming more expensive.

While wild native plant species have traditionally thrived with normal rain and ground water levels, the changes in water supply addressed above is creating stress for these crops. These wild species typically use less water than agricultural crops, which should be a key consideration when developing solutions to our local water crisis. Limited water intensive solutions may include spring restoration and gray water distribution.

[1]The Spokane Valley Rathdrum Prairie Aquifer Atlas, 2009 update

[2] The Spokane Aquifer Joint Board, http://www.spokaneaquifer.org/, (12/12/2015)

[3]Washington State Department of Ecology: Water Resources, http://www.ecy.wa.gov/programs/wr/rights/water-right-home.html (1/13/2016)

[4]Guy Gregory, Department of Ecology Technical services Supervisor, pers. comm., 7/28/2015

[5]Spokane County Water Demand Forecast Model, Spokane County Water Resources, January 2013, http://www.spokanecounty.org/data/utilitieswqmp/Water Demand Model & Forecast 2013 Update.pdf

[6]USDA Census of Agriculture http://www.agcensus.usda.gov/Publications/2012 (12/12/2015)

18 Soils in the Spokane Region

Soil is a mixture of minerals, organic matter, organisms, gases and liquids that form the "skin" of the Earth. It is a complex structure and is the end product of the parent rock material, topography and climate in any particular region. Soils vary, depending on the type of minerals present in parent rock, the amount of organic matter present, and the amount of weathering they have experienced.

Spokane regional soils have been formed by multiple ice age flood events, mountain uplift and volcanic activity. Spokane soils can be divided into two major regions separated by the Spokane River, which flows east to west on its path to join the Columbia River.

In the southern part of Spokane County are the fertile, rolling, loess hills of the Palouse. Palouse soils are world renowned for agricultural productivity; they are deep and dark from the color of organic matter. More than 40% of this area is cropland, which is mostly dry-farmed. Crops grown include wheat, barley peas, canola and lentils.

To the north and east, are granitic mountains and foothills capped with Mt. Mazama volcanic ash (from Crater Lake, OR). This area has many farms and ranches. Most acreage is in hay, grain and pasture. The soils support highly productive coniferous forests and the USDA manages large tracts as national forest in this area.

To the west are the Channeled Scablands, formed during the Ice Age when multiple flood events from glacial Lake Missoula scoured soil from the region. Some cattle grazing may occur in this area, but there is very little soil or moisture.[1]

Table 1: Agriculturally-relevant Soils in Eastern Washington[2]

Major Land Resource Areas	Locations	Soil Type	Land Use
Palouse & Nez Peirce Prairies	Airway Heights, Davenport, Edwall, Pullman, Colfax, Rockford	Mollisols (deep, dark, fertile) Loess	Cropland-43% Grassland -42% Forest -3% Urban -2% Other –10%
Northern Rocky Mountain Valleys	Spokane Valley, Peone Prairie, Green Bluff, Elk, Deer Park, Newport, Usk, Cusick	Mollisols Entisols (deep, loamy or clayey)	Cropland – 17% Grassland – 53% Forest – 17% Urban – 6% Other 7%
Northern Rocky Mountains	Mica Peak, lake Cœur d'Alene, Newman Lake, Mt Spokane, Loon Lake, Colville, Springdale, Ford, Wellpinit	Andisol (volcanic ash) Inceptisols (mildly weathered) Alfisols (weathered)	Cropland 3% Grassland 13% Forest 80% Urban 1% Other 3% (½ area is U.S. forest service land)

Major Soil Resource Concerns

Measures of soil health include its pH, soil structure, permeability, nutrient and chemical levels and the types of organisms living in it (i.e. microbes, springtails and nematodes).

Palouse Soil Erosion

While this region has been blessed with fertile, deep soils, a century of heavy usage has taken its toll. Agricultural tillage has caused heavy wind and water erosion, resulting in sedimentation of streams and road ditches. Tillage also destroys soil structure and causes a decrease in organic matter and soil tilth. It also causes "tillage translocation", causing soil to move downhill. Agricultural practices also affect water quality and quantity by increasing run-off.

"The vast loess deposits of the Pacific Northwest are often considered an inexhaustible supply of productive soil. This assumption is incorrect."[3]

Since the area was plowed from virgin prairie or timber less than 120 years ago, much of the cropland has been degraded by wind, water or tillage erosion. The USDA reported in 1978 that erosion in the Palouse River Basin in Eastern Washington and Northern Idaho had removed all of the original topsoil from 10% of the cropland, and on 25-75% of the topsoil from another 60% of the cropland.[1] Cover cropping practices are becoming a growing trend in the

Midwest and around the country to prevent topsoil erosion, rebuild the quality of depleted soil, and increase the value of land.[3] Revegetation of native perennial species is another proven method to prevent erosion and rejuvenate the soil base.

Stratified Soil Acidification

Stratified soil acidification is caused by ammonia-based fertilizers and is a problem with no-till conservation tillage. This is disheartening because no-till is effective at reducing erosion. Many aspects of soil composition change in the process of acidification: some minerals dissolve, other minerals form, secondary byproducts are created and phosphorous nutrition is impacted. Farmers must treat soil with lime to counteract the negative effects of acidification and that is difficult to do without tilling. Stratified soil acidification is forcing farmers to return to conventional tillage, which increases the risk of losing soil productivity to water and wind erosion.[4]

Northern Rocky Mountain Valleys and Northern Rocky Mountains

Wind and water erosion are issues on cultivated land in these areas also. Other issues include decrease of organic matter and soil productivity as well as soil moisture. Use of compost and biochar could reduce these issues and help create healthier soils.

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[1]USDA NRCS Washington, Conservation Footprints, http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wa/people/employees/?cid=nrcs144p2_036549 (1/13/2016)

[2]United States Department of Agriculture, Natural Resources Conservation Service.2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin.U.S. Department of Agriculture Handbook 296

[3]Cover Crops, a Farming Revolution With Deep Roots in the Past, New York Times Feb. 6 2016.

[4]D. K. McCool, et al, 2001, Factors Affecting Agricultural Sustainability in the Pacific Northwest, USA; An Overview, http://tucson.ars.ag.gov/isco/isco10/SustainingTheGlobalFarm/P222-McCool.pdf

19 Working Lands in Spokane County

Definition of Working Lands

"Working land" is a term often used by public conservation agencies and land trusts to refer to lands, such as farms, rangelands, and forests, that yield food and timber, support local economies, safeguard clean water, and provide critical habitat for native animal and plant species. The protection and conservation of working lands helps foster a healthy, vibrant food system.

History of Working Lands in Spokane County

Prior to European settlement of this region, three bands of Spokane Indians-Upper, Middle and Lower - called the Spokane River watershed home. The Coeur d'Alene tribe also lived along the river near the present day border with Idaho. They ate a variety of roots, seeds, nuts and fruits, meat and birds, as well as salmon and trout caught from the Spokane River. All the food they needed was provided locally by the rangeland, forests and waterways.

Early homesteaders were drawn to the bountiful, fertile agricultural land of the Palouse Hills and began growing wheat in the 1890s. Wheat remains a major crop of the region and Whitman County is today the #1 wheat-producing county in the U.S. Farming communities developed throughout the region and Spokane became a center of processing and distribution of

agricultural commodities. In the 1950s, for example, more people were employed in the meat industry than in any other industry in Spokane.[1]

Loss of Working Lands

The business of agriculture has contributed to Spokane's growth and remains a factor in the local economy. But Spokane's growth, in turn, has consumed agricultural land. In 1950, 72% percent of Spokane County's land was in agriculture (see Table 1). In the most recent 2012 Ag Census, that figure has decreased to 47%. Much of Spokane's suburban sprawl has spread to the north and east. On the Five Mile Prairie, just north of Spokane's city limits, new homes are rapidly filling in what was an area of small family farms as recently as a decade ago. To the east, the City of Spokane Valley exists in an area that used to be a vibrant truck farming region. The loss of farmland may not be as dire as it looks, since farmers have become more efficient in the growing of crops.

Table 1: Historical Overview of Spokane County Farmland[2]

Census Year	Total Farms in County	Total Acres in Farms	Ave Size of Farms (in acres)	Acres Irrigated	Farms Irrigated	% Acres in Farmland
1950	3594	825,785	226	37,791	632	72%
1997	1643	589,843	359	10,711	266	52%
2012	2501	537,000	215	10,286	494	47%

Acres in Spokane County: 1,139,840 = 1781 mi^2

Forest lands in the region are also being swallowed by development. For example, data from the Timber Resource Statistics for Forest Land shows timberland (excluding national forest land) in eastern Washington declined at an average rate of 0.35 percent per year from 1980 to 2001 (from approximately 4.3 million acres to 3.8 million acres).[3] This decline is mostly the result of increased urban development, right-of-ways, and agriculture. The loss of forest lands has adversely impacted forest habitat, wetlands, streams, and native animal and plant species. The timber industry has also suffered a decline in the region.[4]

In addition, the conversion of land in the region to agricultural use and urban development has taken a huge toll on the way of life and well-being of the local tribes. The tribes have become dispossessed, displaced and removed from the foods that their homelands provide. The disconnection and lack of access to their traditional food sources is blamed for health problems previously unknown in their populations.

Definition of Farmland

"Farm and agricultural land" in Washington State is defined by State Law (RCW 84.34.020) as any parcel of land that is 20 or more acres or multiple parcels of land that are contiguous and total 20 or more acres. The property must be devoted primarily to the production of livestock or agricultural commodities for commercial purposes.

Farmed properties smaller than 20 acres can also be considered "farm and agricultural land" if they meet certain income criteria. These parcels are required to produce income in the form of "cash;" that is, a monetary profit from cash income, not from barter or trade.

"The legislature finds that uncoordinated and unplanned growth, together with a lack of common goals expressing the public's interest in the conservation and wise use of our lands, pose a threat to the environment, sustainable economic development, and the health, safety, and high quality of life enjoyed by residents of the state." RCW 36.70A.010

Protection of Working Lands

Washington State Regulations

Due to a trend of sprawling growth consuming natural resource lands, the State of Washington has developed several avenues to ensure preservation of our natural resources, including prime agricultural, forest and mineral lands. Following are the current regulations protecting these valuable resources.

- **Growth Management Act** (RCW 36.70 a) – Requires all counties to designate important agricultural land and adopt regulations to ensure that land uses adjacent to farms and ranches do not interfere with agricultural operations. This law requires a land-use plan designating urban growth areas and critical areas/natural resources to guide growth.
- **Open Space Tax Act** (RCW 84.34) - Allows property owners to have their open space, including farm and agricultural and timberlands valued at their current use rather than at their highest and best use. The act states that it is in the best interest of the state to maintain, preserve and conserve adequate open space lands for the production of food, fiber, and forest crops and to assure the use and enjoyment of natural resources and scenic beauty for the economic and social well-being of the state and its citizens.

- **Right to Farm Act** (RCW 7.48.300) - Provides protection from nuisance lawsuits for agricultural activities, such as odors and noise from farm animals.

Other policies include agricultural zoning, conservation easements, purchase and transfer of development rights. Still in effect is a 1980 Executive Order from Governor Dixy Lee Ray directing all state agencies to evaluate and consider the impacts of agriculture on their land policy decisions and, in addition, "give due regard to local government planning, zoning, or other local government agricultural land protection programs."

Local Regulations

In 2011, the Spokane Regional Health District published *The Spokane County Food Assessment Land Use Chapter for Planners*[5] which offers a succinct summary of Spokane County, City of Spokane and City of Spokane Valley zoning and comprehensive plan data regarding agriculture within the County. It states "Additions of the food system to each section of the comprehensive plan can be thought of as filtering the food system through each section of a comprehensive plan. When this is done, each section is analyzed for its relationship to the food system. Filtering the food system through each section of the comprehensive plan allows for a thorough understanding to be made about how each section can be used to improve upon the various elements of the food system."

Zoned and Preserved Farmland in Spokane County[6]

Agricultural land in Spokane County is zoned by residential density. Large Tract Agricultural land (LTA) allows 1 unit per 40 acres, while Small Tract Agricultural (STA) zones allow 1 unit every 10 acres. There are 298,161 acres in LTA and 53,620 acres in STA. The City of Spokane has 153 acres zoned as residential agriculture in the Latah/Hangman Neighborhood and the City of Spokane Valley has no land zoned for agricultural use. Zoned land is not protected and can be rezoned for different uses.

Conservation easements protect 54,667 acres in Spokane County. Riverside and Mount Spokane State Parks, as well as the Turnbull National Wildlife Refuge are local public lands in this classification. There is no data to distinguish protected farmland. Inland Northwest Land Conservancy holds 15 easements on 690 acres of farmland in Spokane County, maintaining these lands as agricultural permanently.

Agencies and Private Organizations Protecting Working Lands

There are a variety of governmental agencies as well as private organizations dedicated to the preservation of farmland. Below are some state and local groups. See Washington's Food System Report[7] for a comprehensive list of resources in the State of Washington.

Federal, State, and Local Partners

- The federal Farm Bill has enabled funds for the purchase of conservation easements and protection against development of productive farmland. The Bill also provides commodity support payments to certain commodity growers, and provides funding for a Specialty Crop Block Grant Program that focuses on the enhancement of specialty crop growers.
- The federal government also impacts farms and farmland through the work of many USDA agencies, such as the agricultural credit programs, Natural Resources Conservation Services, and the Farm Service Agency, among others. The Environmental Protection Agency has a regulatory impact on farms.
- Non-profit organizations play a significant role in organizing and advocacy around farmland preservation issues. There are several groups committed to improving agriculture in Washington including the American Farmland Trust, the Washington State Farm Bureau, the Washington State Grange, the Washington State Dairy Federation, the Washington State Cattlemen's Association, and others. These groups supported the creation of the Office of Farmland Preservation and continue to be instrumental in advocating the importance of preserving farms in Washington.
- The Nature Conservancy program Farming for Wildlife encourages farmers to alternate a wetland environment with crop rotation, demonstrating an innovative form of farmland preservation in environmentally sensitive areas.
- Futurewise, a statewide non-profit, works to increase protections for working farms and farmland, particularly during major updates to local Comprehensive Plans, development regulations, and Critical Area Ordinances.
- Inland Northwest Land Conservancy (INLC) is a regional organization working with willing private landowners who wish to conserve their own land. INLC works with landowners, other conservation groups, and government

agencies to conserve the special places that nourish wildlife and preserve the clean air, clean waters, and scenic beauty of our region.

Washington State Agencies

- Washington State Department of Agriculture (WSDA) is primarily responsible for regulating the activities of agricultural producers (along with other state agencies that have some jurisdiction over agricultural activities). The WSDA also supports education, marketing and promotion programs for farmers. Due to recent budget cuts, programs supporting these efforts have been reduced, or in some cases, eliminated. In 2011, the WSDA Small Farm, Direct Marketing, and Domestic Marketing programs were not funded, resulting in a loss of service to this farm demographic.
- Washington State Conservation Commission's mission is to lead the citizens of the state in the wise stewardship, conservation, and protection of soil, water, and related natural resources. The commission houses the Office of Farmland Preservation (OFP) and the state's Agricultural Conservation Easement Account.
- Spokane County Conservation District is one of several statewide conservation districts. It works with landowners on a voluntary basis, providing incentive-based conservation assistance on private lands. They offer stewardship information, classes and technical assistance to property owners. Programs include shoreline stewardship, forestry, small acreage conservation agriculture, water resources, and soil information. The Spokane office is funded in large part by a local assessment.
- The Washington Wildlife and Recreation Program includes the Farmland Preservation Program that funds purchase of development rights on farmlands in Washington and ensures the lands remain available for agricultural practices.
- Washington State University is a research land-grant university that operates four research and extension centers, and has extension offices in all 39 counties.

Potential Initiatives to Grow and Protect Working Lands in Spokane County

Spokane County's farmland has decreased by 288,785 acres (see Table 1 on pg. 98) since 1950. Urban growth, abandonment of marginal agricultural acreage, and more

efficient farming practices have all contributed to this loss. But State of Washington laws and oversight as well as initiatives by local agencies and organizations are working to ensure that there will be adequate land to grow the region's food. Some examples include:

- Innovative Residential Development allows the designer flexibility in residential types, place and density to make more efficient use of land, energy and resources. It may include clustered housing and increased density, lot averaging, zero-lot lines, condominium ownership, transfer or purchase of development rights, and mixed residential types.
- Some Washington counties (Thurston, Whatcom) have developed Transfer of Development Rights Programs that allow property owners to sell their development rights without selling their property for development. These programs preserve existing agricultural lands.
- Conservation Easements – These are permanent legal agreements between a landowner and a qualified conservation organization. This legal agreement permanently limits development to preserve specific conservation values and traditional uses. When a landowner places a conservation easement on his or her property, the property remains in private ownership.

[1] http://www.historylink.org/ (12/15/2016)

[2] USDA Census of Agriculture, http://www.agcensus.usda.gov/Publications/ (10/15/2015)

[3] Department Natural Resources, Forest Land Conversion in Washington State– http://file.dnr.wa.gov/publications/em_fwflanduse.pdf], 3/31/2016

[4] Department Natural Resources, Washington's Forests, Timber Supply, and Forest-Related Industries– http://file.dnr.wa.gov/publications/em_fwfeconomiclow1.pdf]

[5] Spokane Regional Health District, 2011, The Spokane County Food Assessment Land Use Chapter for Planners, http://www.srhd.org/documents/PA_N/FoodandHealth2011-LandUse.pdf (1/13/2016)

[6] Spokane County Zoning Code, http://www.spokanecounty.org/data/buildingandplanning/lrp/documents/2009ZoneCode.pdf (1/13/2016)

[7] Report on Washington's Food System Response to Executive Order 10-02 January 2012,http://depts.washington.edu/uwcphn/work/php/Washington's_Food_System_Report_01_17_12.pdf

20 Pollinators

One of every three bites of food comes from plants pollinated by honeybees and other pollinators. Bees pollinate crop species that provide 90% of the world's food. Other pollinators include various species of solitary bees, various flies, wasps, birds and bats.[1]

Table 1: Crops Pollinated by Honey Bees				
Apples	Onions	Avocadoes	Cherries	Celery
Carrots	Mangos	Lemons	Limes	Honeydews
Cantaloupe	Zucchinis	Summer Squash	Eggplant	Cucumber
Green Onions	Cauliflowers	Leeks	Bok Choy	Broccoli
Kale	Mustard Greens	Almonds	Cashews	Brazil Nuts
Coffee	Watermelons	Strawberries	Walnuts	Beans
Apricots	Peaches	Pears	Berries	Cotton
Tomato	Grapes	Alfalfa	Sunflowers	Peanuts

Human activity has put heavy pressure on pollinators by both increasing their demand and removing their habitat. This is likely a result of the assumption that pollination is a free and abundantly available ecological service. Horticulture has rapidly expanded over the last decades, while the landscape has become more uniform due to intensive agriculture.

Honey bees (*Apis mellifera*) are a major pollinator of our food crops. They are currently in a state of rapid decline in many places around the world. Since 2005, colony collapse disorder (CCD) and other causes of honey bee mortality have resulted in an annual loss of about 30% of all honey bee colonies in the United States.

Many possible causes for CCD have been proposed. While there is likely no single cause, a large amount of speculation has surrounded a recently introduced family of pesticides called neonicotinoids as being a culprit. In 2014, the City of Spokane banned the purchase and use of products containing neonicotinoids based on increasing evidence of their harm to bees.[2]

Beekeeping in Washington State

In Washington State, all hives, whether for home or commercial use, must be registered with the Washington State Department of Agriculture Plant Protection Division each year.[3]

The U.S. Department of Agriculture considers beekeepers as farmers for certain federal programs, and most states' laws follow suit. But Washington tax law had previously listed them under the service category. Recognizing the importance of bees in agriculture, the State of Washington has recently designated beekeepers as farmers. This change in classification allows beekeepers to gain the same tax exemptions as farmers.[4]

Federal farm programs provide financial incentives to plant pollinator habitat. Both the Natural Resource Conservation Service and the Farm Service Agency have programs that do this. Also there are some federal farm subsidies for honey producers.

In 1980, there were more than 40 large commercial pollinators in Washington. Now there are about 10. The number of part-time beekeepers who do pollinating also has dropped. The decrease in beekeepers in Washington is largely a result of the taxes Washington beekeepers had to pay, which made them less competitive than those from other states. Spokane County is sixth in the state in number of bee colonies. [5]

Table 2: Bee Colonies in 2012 and 2002[5]

	# Farms with Bees	# Colonies	# lb Honey	Honey Sales
WA State, 2012	1051	96,685	2,267,253	$3,949,000
WA State, 2002	690	67,909	2,449,444	$3,111,000
Spokane County, 2012	96	3437	100,630	$199,000
Spokane County, 2002	58	4497	199,410	$253,250

[1]Pollination: Why are Bees Important?, http://nativeplants.msu.edu/about/pollination (1/13/2016)

[2]Spokane City Council aims to protect honeybees, Spokesman Review, June 17, 2014

[3]WSDA Handbook for Small and Direct Marketing Farms, 2014, http://agr.wa.gov/marketing/smallfarm/ (1/12/2016)

[4]Beekeepers now designated as farmers under Washington law,The Spokesman Review, http://www.spokesman.com/stories/2015/jul/30/beekeepers-now-designated-as-farmers-under/, (July 30, 2015)

[5]USDA Census of Agriculture http://www.agcensus.usda.gov/Publications/2012 (8/15/2015)

21 Moving Forward

Local governments have long been involved in food systems in one way or another, such as administering anti-hunger and nutrition education programs or regulating agricultural operations through zoning.[1] There is a movement to create a national food policy[2] to address, at a national level, a number of issues that have been discussed in this report. Many of the suggestions proposed nationally will work also locally. Following are some examples of policies that will move the region forward as we transform our food system to ensure healthy, culturally appropriate food for everyone, while preserving our natural resources and strengthening our economy.

Production

- Protect farmland from development; purchase farmland to use as resources for training future farmers and providing food for low income individuals.
- Assure water resources are available for growing food; encourage xeriscaping (using native plants that do not need to be watered), LID (Low impact design), Permaculture: Design models to preserve water.
- Review laws and policies that might impede establishment of community gardens and urban farms in residential and commercial areas.
- Publish a guide on how to navigate the policy, food safety, and regulatory landscape related to growing and selling food; streamline application and permit requirements for farmers.
- Encourage new development projects to include gardening in neighborhood plans.
- Property tax exemption for reclaimed lots designed for urban agriculture use.

Processing

- Support Community Commercial Kitchen public access/spaces for food processing/preserving.
- Encourage development of local processing and manufacturing facilities.
- Create a central kitchen and food processing model for Spokane public schools where local foods can easily be delivered and processed. (Use school kitchens while not in session)

Distribution

- Develop food hubs providing processing and distribution capacity dedicated to locally produced food.
- Catalog and promote existing incentives for healthy food production, processing and distribution companies to locate and expand in municipalities and county. Identify existing laws and policies that hinder development of these food businesses and recommend ways to reduce those barriers.
- Work with school districts, parent-teacher organizations, student organizations, and community groups to establish farmers' markets and community-supported agriculture drop-off locations on school grounds.

Marketing

- Develop a City-wide Healthy Eating Publicity Campaign; Promote culturally-relevant foods as part of a broader healthy eating campaign.
- Assign a city agency or retain a third-party public relations agency to ensure that your city's local food ventures are included and promoted through major social media platforms that guide consumer food choices.
- Enact institutional purchasing policies mandating that at least a portion of all food purchases are grown locally (i.e., same region, state, or a distance from point of services).
- Have WIC/ EBT staff share information about farmers markets: Give out dates, time, and place. Ensure EBT/WIC able to use at all farmers markets.
- Encourage farmers' market website (Days, hours of operations, map with directions, seasonal crop charts, and a contact for the market; weekly email bulletin put out by farmers' markets.
- Encourage local food sections in newspapers to have a "local, seasonal approach" to recipes, perhaps in conjunction with school "harvest of the month" programs.

- Develop a long-term strategic plan for farmers markets in Spokane, identify opportunities for infrastructure to support farmers' markets

Access

- Promote incentives for healthy food retail to locate and expand in food desert areas.
- Change zoning to allow neighborhood grocery stores in neighborhoods.
- Improve access to healthy food in government facilities, including parks, recreational facilities, childcare programs, and city office buildings.
- Develop a Green cart mobile vending cart program to sell fresh, unprocessed fruits and vegetables in neighborhoods that lack access to fresh produce.
- Develop policies that assure food is healthy and fairly distributed.

Resource/ Waste Recovery

- Prevent edible food from entering the waste stream; reduce food waste through education (take only what you will eat) and composting.
- Use urban waste as a resource for urban gardening.
- Form a working group to study the potential for park facilities and operations to support composting more broadly in the neighborhoods.
- Support food recovery operations such as Spokane Edible Tree Project and Feed Spokane.

Food Safety

- Encourage residents to grow responsibly for disease and pest prevention; offer training fon safety procedures.
- Propose additional fees/permits for non-residential chemical use.
- Support GAP certification for small farmers.

General Recommendations

- Develop a comprehensive approach to local or regional food planning; promote local food as economic development.
- Leverage existing planning, arts, culture and environment, volunteer coordination, grant making, fundraising, horticulture, and arboriculture staff to support local food initiatives.
- Develop an urban growers website: a comprehensive source on urban agriculture that provides links to all existing resources and initiatives.

- Incubators provide food entrepreneurs with a "quick start" for their new food companies by offering fully permitted and built out commercial kitchens and food processing facilities that can be rented by the hour, day, or longer. Ideally, these incubators allow for distribution, foodservice preparation, and retail sales. And they provide professional services to assist in product development, marketing, and sales to institutions. Cities can support their creation through permitting appropriate locations to host many kinds of food operations. Incubators can exist as privately owned businesses that may receive support similar to other private food ventures or as nonprofit ventures supported through public and private funds as well as fees for service and rental use.
- Cities can work to make vacant and abandoned or tax delinquent land available for food production either directly through their taxing authority or through a land bank or conservancy. As abandoned and delinquent land becomes available, cities can rezone the land for many kinds of food ventures and solicit proposals to develop the land for food production or other food-related activities, and offer favorable purchase or long-term lease terms.
- Formalize food literacy and food production education for adults and children.
- Connect greenways, storm water management tools, and food production.
- Join State of Washington Food Policy Roundtable.

Conclusion- This list may be used as a starting point to understanding some options available for Spokane County. Once criteria and priorities are established, we can move forward to implement the "best" alternatives for Spokane.

1Model Healthy Food System Resolution, ChangeLab Solutions, 2013

2 Mark Bittman, et al, Re-Envisioning our Broken Food System, Union of Concerned Scientists, Catalyst, Winter 2016

PRINCIPLES OF A HEALTHY, SUSTAINABLE FOOD SYSTEM

In June 2010, the American Dietetic Association, American Nurses Association, American Planning Association, and American Public Health Association initiated a collaborative process to develop a set of shared food system principles. The following principles are a result of this process and have been collectively endorsed by these organizations.

We support socially, economically, and ecologically sustainable food systems that promote health – the current and future health of individuals, communities, and the natural environment.

A healthy, sustainable food system is:

HEALTH-PROMOTING

- Supports the physical and mental health of all farmers, workers and eaters
- Accounts for the public health impacts across the entire lifecycle of how food is produced, processed, packaged, labeled, distributed, marketed, consumed and disposed

SUSTAINABLE

- Conserves, protects, and regenerates natural resources, landscapes and biodiversity
- Meets our current food and nutrition needs without compromising the ability of the system to meet the needs of future generations

RESILIENT

- Thrives in the face of challenges, such as unpredictable climate, increased pest resistance, and declining, increasingly expensive water and energy supplies

DIVERSE IN

- Size and scale—includes a diverse range of food production, transformation, distribution, marketing, consumption, and disposal practices, occurring at diverse scales, from local and regional, to national and global
- Geography—considers geographic differences in natural resources, climate, customs, and heritage
- Culture—appreciates and supports a diversity of cultures, socio-demographics, and lifestyles
- Choice—provides a variety of health-promoting food choices for all

FAIR

- Supports fair and just communities and conditions for all farmers, workers and eaters
- Provides equitable physical access to affordable food that is health promoting and culturally appropriate

ECONOMICALLY BALANCED

- Provides economic opportunities that are balanced across geographic regions of the country and at different scales of activity, from local to global, for a diverse range of food system stakeholders
- Affords farmers and workers in all sectors of the system a living wage

TRANSPARENT

- Provides opportunities for farmers, workers and eaters to gain the knowledge necessary to understand how food is produced, transformed, distributed, marketed, consumed and disposed
- Empowers farmers, workers and eaters to actively participate in decision-making in all sectors of the system

A healthy, sustainable food system emphasizes, strengthens, and makes visible the interdependent and inseparable relationships between individual sectors (from production to waste disposal) and characteristics (health-promoting, sustainable, resilient, diverse, fair, economically balanced, and transparent) of the system.

eat right. American Dietetic Association | ANA American Nurses Association | APA American Planning Association *Making Great Communities Happen* | APHA American Public Health Association

These principles should not be construed as endorsement by any organization of any specific policy or policies.
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