DC FOOD ECONOMY STUDY

2019

District of Columbia Food Policy Council

District of Columbia Office of Planning

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

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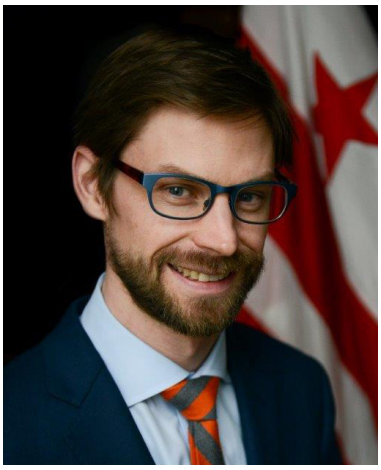
LETTER FROM THE OFFICE OF PLANNING



Andrew Trueblood
Director,
DC Office of Planning

Ona Balkus
Food Policy Director,
DC Office of Planning

Dear Washingtonians:

Whether you purchased coffee on the way to work this morning, grabbed lunch with coworkers, or stopped at the grocery store on your way home, chances are you have already interacted with the DC food economy today. As our city grows, the food economy has also expanded to meet our increasing food and beverage needs. The total economic impact of the District's food economy is an astounding $5.47 billion. Employment in the food economy has grown by 72% between 2001 and 2016, and 8% of the District's total workforce are directly employed by the food economy. As District residents, we proudly support local restaurants, food trucks, grocers, microbreweries, and #MadeinDC makers that contribute to a vibrant local food culture.

Yet there is more to do to ensure that the rapidly growing food economy is providing inclusive opportunities and benefits for all District residents. The average employee working at a grocery store or restaurant earned $36,161 and $30,844, respectively, in 2016. That's less than half the District's annual median household income that year, making it challenging for food sector employees to live in the District. Further, Wards 7 and 8 have not seen the same rapid growth in grocery options as the rest of the city, making it difficult for residents to access healthy food at affordable prices.

In compliance with the Fiscal Year 2017 Budget Support Act of 2016, the DC Office of Planning and the Food Policy Council have developed this study on the state of the District's food economy. Through data analysis as well as qualitative interviews and surveys, this report examines growth within key sectors of the District's food economy, considers the impact of the District's food economy in the region, and recommends strategies to support more equitable growth within the food economy going forward. We would like to thank the Food Policy Council and our community partners for their leadership and invaluable input on this study.

This administration is committed to creating pathways to the middle class through increased economic opportunity for all residents. This report shows clearly the crucial role the food economy can play in creating wealth-building and ownership opportunities for District residents engaged in this sector.

Sincerely,

Andrew Trueblood
Director,
DC Office of Planning

Ona Balkus
Food Policy Director,
DC Office of Planning

Introduction

The District of Columbia's food economy is a significant driver of economic growth and employment in the city and region. Made up of grocery stores, restaurants, small food and beverage manufacturers, and other types of businesses across multiple sectors, the food economy in the District engages and nourishes District residents, workers, and visitors.

This report calls attention to the District's robust food economy by highlighting its economic and employment impacts and identifying growth trends in the food economy since 2001. It examines key sectors of the District's food economy – including food retail, food service and bars, food and beverage manufacturing, and food and alcohol product wholesalers – and further focuses on grocery stores and restaurants as important subsectors within the District's food economy.

Lastly, the report recommends strategies to strengthen the District food economy by supporting new and growing small businesses, fostering connections across sectors in the food system, and advancing equitable and inclusive job growth. These recommendations are geared towards a wide range of stakeholders, including the District government, philanthropic and investment organizations, food businesses, community organizations, and residents seeking to strengthen the District's food economy.

Purpose and Methodology

The Fiscal Year 2017 Budget Support Act directed the District of Columbia Office of Planning (OP) to "conduct a study of the state of the local food economy."[1] The legislation required OP to consider: "(1) Obstacles and opportunities for new and existing businesses; (2) Opportunities for job growth and workforce development; (3) Geographic areas in the District that have a well-developed food economy; (4) Geographic areas in the District that have a poorly developed food economy; and (5) Opportunities for government investments to improve the local food economy."

The Food Policy Director's office within OP led the development of this study to examine the impact of the District's food system on employment, economic growth, and development within the District, surrounding Metropolitan Washington region, and seven-state local food region. Consultants at ICF International conducted the economic analysis and qualitative surveys and interviews and provided input into the final report. This report primarily uses U.S. Bureau of Labor Statistics (BLS) employment data from 2001 to 2016

[1] Fiscal Year 2017 Budget Support Act of 2016, Subtitle P, Section 6181.

and projected employment data through 2026, economic and labor market analytic tools, and surveys and interviews conducted with District food businesses and community organizations.[2] A limitation of this report and the use of federal BLS data is that employment is captured only at the aggregate District level. Because data is not available at the Ward or Census Tract level, this report does not analyze the differential growth of the District's food economy and employment in different Wards or neighborhoods.

The DC Food Economy is Strong and Expanding Rapidly

In 2016, there were nearly 71,300 employees directly employed by the District's food economy, making up 8.0% of the total District employment in all sectors. The District's food economy includes sectors where businesses gain most of their revenue from the sale of food, beverages, or food services, and sectors that are not entirely food-based but have food components, such as hotels with restaurants and large retail stores with grocery sections. An additional almost 10,500 employees were employed by businesses supporting District food businesses, such as wholesale trade, in 2016. See Appendix B for direct, indirect, and induced employment impact by food sector in the District.

The growth in the District's food economy has far outpaced general economic growth, growing by 72% in employment between 2001 and 2016. In contrast, the District experienced total growth of 21% in employment across all sectors during that same time period.

As shown in Table 1, **in 2016 the District's food economy generated $3.6 billion in wages, $5.5 billion in gross domestic product (GDP), and $8.7 billion in output.**

Impacts of the District's Food Economy

The total impact of the District's food economy can be measured by three areas of impact: direct, indirect, and induced. The food economy's direct impact is the direct employment and wages in the sectors that make up the District's food economy and the estimated GDP and output associated with that employment, such as the workers employed by a grocery store or restaurant. The indirect impact is the impact associated with the purchase of goods and services by the businesses in the food economy sectors, such as the real estate providers that work with food businesses. Lastly, the induced impact is the impact associated with the spending of wages earned by the workers employed in the food economy, such as the grocery store employees spending their wages in the broader economy.

[2] The economic and labor market analysis data was conducted using IMPLAN and Emsi software. The analysis used inputs from the Bureau of Labor Statistics from 2001 to 2016. More information on the methodology used for this report can be found in the Technical Appendix.

Table1: Total Economic Overview of the District of Columbia						
	Direct	Indirect	Induced	Total Food Economy	Total DC Economy (all sectors)	Percent of Total Economy
Employment	71,298	5,846	4,686	**81,831**	893,122	9.2%
Labor Income	$2,744,009,921	$577,327,982	$321,770,043	**$3,643,107,946**	$96,653,338,602	3.8%
Employee Compensation	$2,691,983,399	$535,041,212	$301,216,845	**$3,528,241,457**	$90,594,786,587	3.9%
Proprietors Income	$52,026,522	$42,286,770	$20,553,198	**$114,866,489**	$6,058,552,015	1.9%
Gross Domestic Product (GDP)	$4,061,701,166	$916,623,046	$491,681,828	**$5,470,006,040**	$130,577,882,721	4.2%
Output	$6,606,918,406	$1,327,921,581	$750,260,694	**$8,685,100,681**	$169,672,088,863	5.1%
District of Columbia Tax Revenue	Data not available	Data not available	Data not available	**$579,275,457**	$8,275,363,671	7.0%
Source: Inputs from ICF, DC Office of Planning, Emsi, and IMPLAN.						

Tax Revenue from the DC Food Economy

The District's food economy brought in $579.3 million of tax revenue in 2016 from businesses, workers, and consumers (see Table 2). The largest tax revenue from the District's food economy was the property tax on the land and buildings occupied by food businesses, accounting for 42% of the estimated total. Approximately one-third of the total tax revenue from the food economy was the sales tax paid by consumers that purchase food products and services in Washington, DC. The remaining taxes were from production and imports, income, fees, corporate profits and dividends, and motor vehicle licenses for food sector businesses.

Table 2: Tax Revenue from the District's Food Economy						
	Direct	Indirect	Induced	Total Food Economy	Total DC Economy (all sectors)	Percent of Total Economy
Employment	71,298	5,846	4,686	**81,831**	893,122	9.2%
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Sourcing and Demand in the District's Food Economy

Within the District's food economy, some sectors source many of their products locally, therefore supporting other District businesses. Yet in other cases, local businesses are sourcing very few products from local businesses. In addition, data shows that there is excess demand for certain food products and businesses within the DC food economy. These findings are important because they show areas of potential growth within the food economy.

Sourcing

While many District food businesses hire other District businesses like real-estate services and advertising, most source little to no food products from other District businesses. Approximately 79% of real estate services used by District food businesses in 2016 were located within the District, and the rest were in the Metropolitan Washington Council of Governments (COG) region. In contrast, virtually zero percent of cheese, poultry or meat products, or fruit and vegetable sales were supplied to DC food businesses by District food producers. While there are some transactions between District food producers and District businesses, the transactions were not identified in available economic data. Only approximately 8% of cheese sales, 2% of poultry and meat product sales, and 4% of fruit and vegetable sales were supplied to District food businesses from providers within the COG region. Appendix C includes more details on what services and products District food businesses procured in 2016.

Notably, large institutions are increasingly sourcing products locally. Colleges and universities in the District are among the largest institutional consumers and purchase goods and services from food contractors, full service restaurants, and several food and beverage manufacturers. Many have increasing student demand for local, seasonal food and have since launched sustainability initiatives to meet that demand.[3] Colleges and universities relied on District businesses for nearly all their full-service restaurant and limited service restaurant services in 2016. They also sourced approximately 10% of bread and bakery products, 19% of coffee and tea, and approximately 13% of fresh fruits and vegetables from District businesses.

[3] In 2012, nine universities signed the District of Columbia Mayor's College and University Sustainability Pledge. Among other elements, the pledge set the goal of ensuring certain percentages, set by the schools, of food and beverage dollars are spent on sustainable food grown within 250 miles of the city. Sustainable DC. District of Columbia Mayor's College and University Sustainability Pledge. 2014. http://www.sustainabledc.org/wp-content/uploads/2014/10/CUSP.signatures.pdf

Hospitals are other large institutions purchase goods from both food manufacturers as well as food service providers, but only sourced 2% of their bottled soft drink sales, 3% of canned fruits and vegetables sales, and 12% of fresh fruit and vegetable sales from local District food and grocery product wholesalers in 2016. Similarly, hotels and motels sourced all their food service contractors and caterers from District-based businesses in 2016, but only 10% of their bread and bakery products and 13% of wholesale fresh fruit and vegetable sales came from District-based businesses at that same time.

Demand

The rapid growth of the food economy in the District has been closely tied to the increase in the population and growing popularity as a tourist destination. As shown in Table 3, demand for the District's food economy goods and services comes from District residents, workers, and visitors, as well as demand from other countries. The District's food sectors experiencing the greatest total demand are the full-service restaurants, limited-service restaurants, other food and drinking place services, and food and beverage retail stores.

Understanding Demand

Local domestic demand is the amount of demand from District residents for each of the direct food sectors and products. Local net supply is the amount of each food sector and product that is produced in the District. Excess demand from DC residents is the amount of local demand (from District residents alone) that is not produced in the District (or additional local demand that is not being met in the District); excess demand can identify opportunities where local businesses can capture more of the local market share.

Table 3: Supply and Demand in the District's Direct Food Sectors in 2016						
Product within the Food Economy	**Local Domestic Demand (DC Residents)**	**Other Domestic Demand (Non-DC Residents)**	**Foreign Demand**	**Total Demand**	**Local Net Supply (DC Businesses)**	**Excess Demand from DC Residents and Businesses**
Bottled and canned soft drinks and water	$232,194,500	$849,509	$21,935	$233,065,944	$1,485,850	$230,708,650
Bread and bakery products, except frozen	$198,287,000	$68,363,821	$1,208,648	$267,859,469	$76,295,020	$121,991,980
Breweries	$136,072,400	30,044,118	2,941,944	$169,058,462	$40,415,600	$95,656,800
Canned fruits and vegetables	$91,957,340	$9,767,584	$875,176	$102,600,100	$9,460,086	$82,497,254
Food and beverage retail stores, including grocery stores	$594,826,600	$11,371,521	$0	$606,198,121	$519,916,100	$74,910,500
Wineries	$70,303,120	$729,148	$56,225	$71,088,493	$820,108	$69,483,012
Distilleries	$52,231,040	$7,840,505	$550,546	$60,622,091	$7,790,903	$44,440,137
Coffee and tea	$52,667,730	$10,676,018	$1,223,452	$64,567,200	$11,043,180	$41,624,550
All other manufactured food products	$71,257,250	$30,931,700	$5,834,559	$108,023,509	$30,448,750	$40,808,500
Vegetable and melon farming	$37,530,190	No data	No data	$37,530,190	No data	$37,530,190
Confectioneries from purchased chocolate	$38,873,250	$976,873	$117,149	$39,967,272	$3,106,551	$35,766,699
Fruit farming	$27,230,180	No data	No data	$27,230,180	No data	$27,230,180
Frozen cakes and other pastries	$15,358,510	$6,562,358	$652,868	$22,573,736	$7,084,421	$8,274,089
Chocolate and confectioneries from cacao beans	$4,831,004	$4,222,307	$466,105	$9,519,416	$1,786,671	$3,044,333
Limited-service restaurant services	$1,448,579,000	$405,029,887	$3,896,871	$1,857,505,758	$1,853,355,000	-$404,776,000
All other food and drinking place services	$394,003,900	$446,610,595	$2,154,229	$842,768,724	$849,971,500	-$455,967,600
Full-service restaurant services	$989,106,400	$1,071,822,035	$5,358,350	$2,066,286,785	$2,255,123,000	-$1,266,016,600
Source: Inputs from ICF, DC Office of Planning, Emsi, and IMPLAN.						

Some of the District's food sectors experience more demand from District businesses and residents than current supply. The food sectors with the greatest excess demand include beverage manufacturers (soft drinks, water, coffee, and tea), bread and bakery products, alcoholic beverages, canned vegetables, and food and beverage retail stores. District residents and businesses demanded more than $230 million in bottled and canned drinks, $121 million in bread and bakery products, $95 million in beer and ale, $82 million in canned fruits and vegetables, and $75 million for food and beverage retail stores above what was being supplied by District businesses in 2016. These sectors represent opportunities for local food manufacturing and food retail businesses to capture a greater local market share by developing and selling those products either directly to residents or to food businesses.

Unmet Demand for Grocery Stores

The unmet demand for food and beverage retail stores is likely due in part to the imbalanced distribution of grocery stores in the District. While specific data on the local demand for grocery stores was not available, the demand for all food and beverage retail stores from residents was estimated in 2016 at roughly $595 million. The District supply during this time was estimated to be only $520 million. Roughly $75 million dollars, or 13% of the total local demand for food retail stores, was estimated as "leakage" (i.e. due to residents shopping outside of the District) in 2016. While there has been significant growth in the number of grocery stores in the District over the past 15 years, certain areas, including Wards 7 and 8, continue to lack new grocery store development. In fact, of the 72 full-service grocery stores operating in the District in 2017, only 3 were located in Wards 7 and 8 (DC Food System Assessment 2018). Additional grocery stores in these underserved neighborhoods could better capture this loss of revenue while improving quality of life and increasing employment opportunities for residents in these neighborhoods.

There are also several food sectors in the District that have far more supply than local consumer demand. These sectors rely on non-resident customers and include restaurants and other food service and drinking places. In the restaurant sector, the demand largely comes from visitors and workers that come to the District from surrounding regions and depend on the continued success of the District as a major employment, visitor, and tourist center. More than half (52%) of the demand for full-service restaurants in the District comes from non-District residents. Full-service restaurants, other food and drinking places, and limited-service restaurants are the only food sectors experiencing greater supply than demand from District residents.

Trends in the District's Food Sectors

The growth in the District's food economy since 2001 can be linked to the significant population growth in the District and region, the increase in the number of workers in the District, and the increase in visitors. Since 2000, the District has added nearly 130,400 residents, and the number of jobs in the District has increased by roughly 128,500.[4,5] Domestic and international tourism also increased by 6.6 million visitors a year, and in 2016, visitor spending totaled $7.31 billion for all District businesses.[6]

As shown in Table 4, all the District's food sectors except for food manufacturing and food and grocery product wholesalers grew from 2001 to 2016. Growth is projected to continue in the future, with nearly all food sectors projected to grow from 2016 to 2026. This section analyzes trends by food sector.

Table 4: Direct Food Economy Employment and Wages in the District's Food Sectors and Subsectors (2001-2016 and 2026 Projected)

Food sector	2001	2006	2011	2016	Projected 2026	Percent Change 2001-2016	Projected Percent Change 2016-2026	Avg. Annual Wages 2016
Food manufacturing	477	318	219	**366**	552	-23.3%	50.8%	$38,613
Beverage manufacturing	5	9	33	**146**	252	2820.0%	72.6%	$39,485
Food and grocery product wholesalers	768	809	736	**658**	610	-14.3%	-7.3%	$64,384
Alcoholic beverage merchant wholesalers	564	586	541	**689**	827	22.2%	20.0%	$85,407
Food and beverage retail	5,436	5,621	6,617	**8,125**	9,709	49.5%	19.5%	$36,161
Subsector: Supermarkets / Grocery Stores	3,817	3,583	4,391	**5,058**	5,889	32.5%	16.4%	$38,672
Food services and drinking places	29,761	34,284	42,004	**53,813**	63,898	80.8%	18.7%	$30,844
Subsector: Full-service restaurants	14,385	17,008	21,287	**27,804**	33,386	93.3%	20.1%	$33,601
Subsector: Limited-service restaurants	6,019	7,462	10,043	**12,945**	15,668	115.1%	21.0%	$26,106

Note: Supermarkets and grocery stores, full-service, and limited-service restaurants are included in this table as relevant subsectors of broader food sectors because they employ large numbers of workers and are considered critical subsectors in the District's food economy. For additional employment trends on other subsectors within the food sectors, see Appendix D.
Source: Inputs from ICF, DC Office of Planning, Emsi, and IMPLAN.

[4]According to the U.S. Census, the District of Columbia population in 2000 was 572,059, and the estimated population in 2018 was 702,455. Government of the District of Columbia. "New US Census Bureau Numbers Officially Put DC's Population over 700,000." December 19, 2018. https://mayor.dc.gov/release/new-us-census-bureau-numbers-officially-put-dc%E2%80%99s-population-over-700000.

[5]According to the DC Department of Employment Services, the total number of jobs in the District of Columbia was 653,700 in 2001 and 795,000 in June 2018. DC Department of Employment Services. "D.C. Labor Market Indicators: June 2018." June 18, 2018. https://does.dc.gov/sites/default/files/dc/sites/does/page_content/attachments/DC%20Labor%20Market%20Indicators_June18.pdf.

[6]Destination DC. "About Destination DC." January 2019. https://washington.org/dc-information/about-destination-dc.

Food and Beverage Retail

The District's food and beverage retail sector has consistently increased from 2006 to 2016 and is expected to grow by 20% in employment growth by 2026. The food and beverage retail sector includes:

- Grocery stores;
- Convenience stores;
- Beer, liquor, and wine stores; and
- Specialty food stores including meat markets, fish and seafood markets, fruit and vegetable markets, confectionery and nut stores, baked goods stores, and food, health, and supplement stores that sell food supplements and vitamins.

Every subsector in the food and beverage retail sector has grown since 2001. The grocery store subsector employs approximately half of the workers in the District's food retail sector and grew in employment by 33% from 2001 to 2016. While the growth of employment in the grocery store subsector is projected to slow to 16% between 2016 and 2026, employment within other subsectors is projected to continue growing rapidly. From 2001 and 2016, two subsectors – convenience stores and baked goods stores – more than doubled their employment, and meat markets increased employment by 71% in that same time. The specialty food stores subsector is projected to increase in employment by 98% by 2026, and baked goods, confectionery and nut stores, and convenience stores subsectors are expected to grow in employment by 31%, 32% and 24% respectively. See Appendix D for more information on the trends within the District's food and beverage retail subsectors.

Spotlight on Grocery Stores

Grocery stores grew by 33% in employment from 2001 to 2016 and comprised the largest subsector in the food and beverage retail sector. Grocery stores are projected to continue to grow through 2026 but at a lower rate than the past 10 years and begin to flatten out as the market becomes saturated. While employment in the grocery store subsector grew by 41% between 2006 and 2016, the projected rate of employment growth over the next ten years is only 16%.

The District's growth in grocery store employment over the last ten years has been driven by new grocery store development. A total of 32 full-service grocery stores and other stores with a large grocery component (such as Costco and Walmart) opened in the District between 2000 and 2016. Six of these 32 stores were replacement stores, replacing existing stores with larger, more modern versions. Thirteen different grocers opened one or more stores in the District during this time, showing the demand for diverse models of grocers including organic grocers, large traditional national and

regional chains, and smaller local groceries. See Appendix H for more information on the grocery store subsector in the District including new stores since 2016 and supply chain purchases.

Although the number of grocery stores in the District has grown substantially, the growth has not been evenly distributed across the District's neighborhoods. Growth has been concentrated in neighborhoods that have seen significant increases in the income levels of residents. These neighborhoods have seen a significant amount of new housing construction, and grocery stores often serve as anchors in these developments and in surrounding commercial buildings. Neighborhoods in the District that have not experienced as much increased income or new development, such as in Wards 7 and 8, have not experienced nearly as much growth in food businesses. For example, while nine new grocery stores opened in Ward 6 between 2000 and 2016, only one grocery store opened in Ward 8 (and has since closed), and no new grocery stores opened in Ward 7 during that time. As mentioned in the Text Box "Unmet Demand for Grocery Stores" on page 12, lack of grocery store development in Wards 7 and 8 leads to fewer employment opportunities and compromised quality of life for residents in these neighborhoods.

Food Services and Drinking Places

The food services and drinking places sector in the District has increased by 81% in employment from 2001 to 2016 and is projected to continue to increase by 19% by 2026. Restaurants make up the largest portion of jobs in the food services and drinking places sector (as well as in the District's total food economy).

The food services and drinking places sector includes:

- Full-service restaurants;
- Limited-service restaurants;
- Drinking places that serve alcohol;
- Food service contractors;
- Caterers; and
- Food trucks.

Most of the District's food service and drinking places subsectors are expected to increase in employment. Food trucks experienced an increase of 205% employment growth from 2001 to 2016, and are projected to continue to grow by 57% by 2026. Other subsectors projected to grow in employment by 2026 include food service contractors by 28%, full-service restaurants by 20%, and limited-service restaurants by 21%. However, caterers, who experienced a marginal amount of employment growth of 11% between 2001 and 2016, are projected to decline in employment by 26% by 2026. See Appendix D for more information on the trends within the District's food service and drinking places subsectors.

Spotlight on Restaurants

The restaurant subsector has driven growth and employment of the District's food economy. Restaurants employed more than 53,500 employees in 2016, accounting for approximately 75% of all workers in the District's food economy. Employment in the restaurant subsector has consistently grown since 2001, adding an average of roughly 1,700 jobs per year. The full-service restaurant subsector grew by 93% from 2001 to 2016, and the limited-service restaurant subsector grew by 115% over that same time.

Restaurants in the District are projected to continue to grow through 2026, but at a lower rate than the past 10 years. Between 2006 and 2016, employment in restaurants grew by 67%, but the projected employment growth for both full-service and limited-service restaurant subsectors between 2016 and 2026 is only 20%. Like grocery stores, the rapid growth in restaurants in the past 10 years is projected to start flattening out as the market in the District becomes more saturated. See Appendix I for more information on the restaurant subsector.

Food and Beverage Manufacturing

The District's food and beverage manufacturing sectors are primarily made up of small businesses that serve other businesses and institutions in the region. The food and beverage manufacturing sectors represent an aggregate of subsectors processing agricultural products into products for intermediate or final consumption. These products are often sold to wholesalers or retailers for distribution to consumers.

The subsectors in the food manufacturing sector include:

- Coffee and tea manufacturing;
- Manufacturing for retail bakeries;
- Manufacturing for commercial bakeries;
- Perishable prepared food manufacturing; and
- Other food manufacturing.

The subsectors in the beverage manufacturing sector include:

- Breweries; and
- Distilleries.

While the overall food manufacturing sector in the District declined by 23% from 2001 to 2016, some new subsectors, such as coffee and tea and perishable prepared foods, experienced growth. While there was virtually no coffee and tea manufacturing in the District in 2001, 61 employees were employed by this subsector in 2016. In contrast,

manufacturers for retail bakeries experienced a 47% decline in employment from 2001 to 2016 and are projected to continue to decrease by 32% over the next ten years. Approximately 200 new jobs are projected to be created in the next ten years in food manufacturing, with most of those jobs projected in the perishable prepared foods subsector. These new growing subsectors will drive overall employment in the District's food manufacturing sector to increase by 51% by 2026.

The beverage manufacturing sector in the District experienced significant growth between 2001 and 2016 with 141 new jobs. Most of the growth occurred in the five years between 2011 and 2016 driven by the growth of craft breweries. Employment in breweries grew by 99 jobs between 2001 and 2016 and is projected to continue growing by 72% by 2026. Distilleries also grew rapidly between 2011 and 2016 by 27 jobs, and employment in distilleries is expected to continue growing by 50% by 2026. Over 100 new jobs are projected to be created in beverage manufacturing by 2026.

These trends in the manufacturing subsectors indicate that certain food and beverage manufacturing are economically viable sectors, particularly for smaller-scale operations. Given the high real-estate costs and lack of large industrial areas in the District, it is unlikely that traditional large-scale manufacturing could be successful. However, as indicated by growth since 2011, food and beverage manufacturing subsectors in smaller facilities and high-value markets are promising models for future growth of food manufacturing. See Appendix D for more information on the trends within the District's food and beverage manufacturing subsectors.

Food and Beverage Wholesale

Food and beverage wholesalers help meet the needs of other food businesses by providing products in larger quantities and often lower costs. While the food and grocery product wholesale sector in the District generally declined between 2001 and 2016, the alcoholic beverage wholesale sector experienced growth. The food and beverage wholesale sectors represent an aggregate of subsectors engaged in merchant wholesale distribution of groceries and related products to food retailers, restaurants, and other food businesses.

The subsectors in the food and grocery product wholesale sector include:

- General line grocery merchant wholesalers;
- Fish and seafood merchant wholesalers;
- Meat and meat product merchant wholesalers;
- Fresh fruits and vegetables merchant wholesalers; and
- Other grocery and related product merchant wholesalers.

The subsectors in the alcoholic beverage wholesale sector include:

- Beer and ale merchant wholesalers; and
- Wine and spirit alcoholic beverage merchant wholesalers.

Employment in the District's food and grocery product wholesale sector peaked in 2006 and has since declined. Between 2001 and 2016, the sector declined by 14% and is projected to continue to decrease slightly by 7% by 2026. However, like with the food manufacturing sector, some food and grocery product wholesale subsectors are faring better than others. The general line grocery merchant wholesale subsector, which primarily serves grocery stores, has grown by 39% to meet the increased demand from new grocery development and is projected to continue growing by 34% by 2026. The fish and seafood wholesale subsector is also expected to grow in employment by 34% by 2026. In contrast, both the meat and meat product wholesale subsector and fruit and vegetable wholesale subsector declined since 2001 and are projected to further decrease significantly – by 68% and 80%, respectively, by 2026.

Employment in the alcoholic beverage wholesale sector grew by 22% between 2001 and 2016. Within this sector, employment in the District's beer and ale merchant wholesale subsector grew by 118% and is projected to continue to increase by 20% by 2026. Employment in the wine and spirit wholesale subsector is projected to slightly increase by 8% by 2026, after experiencing a 30% decline from 2006 to 2016. See Appendix D for more information on the District's food and beverage wholesale sector.

Wages and Occupational Trends in the District's Food Economy

Driven by changes in the District's overall food economy, the demand for different types of jobs has changed over time. Increases in restaurants and food retail like grocery stores have in turn sparked demand for skilled food preparation workers and front-of-the-line supervisors. While the number of jobs has increased in the food sector over the past fifteen years, the average wages of most food jobs have remained relatively low and fall well below the District's median income. This section discusses wages and demand for occupations within the District food economy.

Wages within the District's Food Economy

Although wages vary widely between occupations in the District's food economy, a significant amount of jobs in the District's food economy are low-wage jobs. The average annual income within the food and beverage retail sector in 2016 was $36,161, less than half the District's median annual household income of $72,935.[7] The largest group

[7] DC Office of Planning. "Key Indicators 2012-2016, using American Community Survey data." 2018. https://planning.dc.gov/sites/default/files/dc/sites/op/page_content/attachments/Key%20Indicators%202012%20-%202016.pdf.

of workers within the food retail sector was cashiers who made $12.96 an hour in 2016 (about $27,000 annually); the highest wage earners in the food retail sector were first-line supervisors who made $24.87 an hour (about $51,700 annually). The average annual income in 2016 within the food services and drinking sector was $30,844, and the largest group of workers, food preparation and service workers, made $14.00 an hour (about $29,100 annually).[8] While the average annual income of the food and beverage manufacturing sector was only $38,613 in 2016, the most common occupation, packing and filling machine operators, had a median hourly wage of $20.81 (about $43,300 annually), and industrial machinery mechanics made $32.77 an hour (about $68,200 annually). Within the food and grocery product wholesale sectors, the average annual income in 2016 was $64,384 for the food sector and $85,407 for the beverage sector.[9] See Appendix E for more detailed information about wages in different food sectors in the District.

The range of wages by occupation within the same food sector is important to show potential for career development. If an employee can start a cashier job in a food retail store at $12.96/hour, advance to a stock clerk for $15.17/hour, and eventually become a first-line supervisor for a wage of $24.87/hour, this shows opportunities for advancement. These opportunities for advancement, however, require training and professional development to gain additional skills. As the District's food economy continues to grow and change, an alignment of workforce development providers and food employers will be crucial to successfully build career pathways.

Projected Occupational Trends for the District's Food Economy

Occupations within the District's food economy are projected to change by 2026. The major occupations projected to experience little or negative growth by 2026 (with projected growth less than 5%) include cooks at fast food restaurants, office clerks, production workers, packaging shipping and receiving clerks, and counter attendants at cafeterias, food concessions, and coffee shops. This is partly due to technology and automation of food services. Additionally, the demand for all occupations within the food and grocery product wholesale sector is projected to decline, mirroring the general decline of employment in the sector.

However, many other occupations are projected to be increasingly in high-demand within the District's food economy. Within the food and drinking places sector, the most in-demand occupations by 2026 include food preparation and serving workers, cooks, and first-line supervisors of food preparation and serving workers. In the food retail sector, the most in-demand occupations by 2026 include general and operations managers, food preparation workers, and stock clerks.

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[8] It should be noted that food service workers can receive tips and, therefore, these figures may underestimate their actual earnings.

[9] Annual income is calculated with the assumptions of a 40-hour work week and 52 weeks of work per year.

In contrast, projected increased occupations in the manufacturing and wholesaling sectors are related to the distribution of goods. In-demand occupations within the alcoholic beverage wholesale sector will include sale representatives, industrial and light truck drivers, and stock clerks and order fillers. For the food and beverage manufacturing sector, the positions projected to grow the most by 2026 include industrial machinery mechanics, packaging machine operators, sales representatives, and truck drivers. See Appendix E for more information on occupational trends within the District's food sectors.

Food Business Surveys and Interviews

To build a more complete picture of the food economy, authors used surveys and interviews to collect qualitative data from industry professionals. The qualitative analysis included 30 semi-structured interviews and 94 survey responses completed by District food businesses and nonprofit organizations.[10] Approximately three-quarters (74%) of the businesses surveyed operate only in one quadrant of the District, with a majority of those operating in the Northwest or Northeast quadrants. The surveys and interviews focused on the benefits and challenges of operating a food business in the District, as well as workforce and training needs. This section highlights findings from these surveys and interviews.

Strengths of the District's Food Economy

The surveys and interviews revealed several strengths of the District's food economy. Sixty-four percent of survey respondents agreed or strongly agreed that the District is a favorable environment to start a food business. Interviewees emphasized the strong link between the demand for food goods and services and the strength of the broader District economy. In describing this link, one interviewee stated:

> *"When the economy does well as it has, particularly in the last seven or eight years, then people have disposable income, and they spend more on going out to eat or celebrating. The strength of the local economy is a driving factor."*

Survey respondents also acknowledged the importance of a strong local and regional supply chain to procure food supplies. Eighty-three percent of respondents found the regional supply chain to be helpful or very helpful, and 70% rated the local supply chain

[10] For more information on the methodology of the survey and interviews, see the Technical Appendix and Appendix J: Survey and Interview Findings.

as helpful or very helpful. Alcohol was reported as the most available product in the District's local supply chain, followed by dry goods and paper products, while fresh food and packaging were considered more difficult to acquire.

Many interviewees also emphasized that the relationships among the District's small businesses strengthened the local supply chain, and many interviewees highlighted food incubators in the District as important hubs for these networks. Interviewees also mentioned reciprocity and informal, social ties as benefits in the local supply chain:

> *"We're always very generous with fellow restaurant people who come in, and we take care of them really well. And then also I would go out as much as I could after work and visit them at their establishments and support them as well."*

Challenges for District Food Businesses

While most survey respondents and interviewees rated the District as a favorable place to start a food business, a majority of them also reported that operating a business in the District came with certain challenges, including licensing, labor regulations, taxation, and other regulations like health inspections.

Licensing

Three quarters (77%) of respondents rated the District's licensing requirements as challenging or very challenging. Interviewees reported that popular and emerging food businesses like breweries or urban farms do not have specific license categories and often, owners must choose the closest match to register their business. One interviewee stated:

> *"There's no clear-cut category … for an urban farm. I've been communicating with a couple of members of the Department of Health and [Department of Consumer and Regulatory Affairs] to figure out what we should put on our Certificate of Occupancy... [C]urrently, we are listed under a catering license, but it took a long time to get that. I think honestly … no one really knew what to do."*

When businesses like these receive licenses for the wrong type of business, it can create more problems down the road. Businesses are then required to follow regulations that may or may not fit with the business, and long-term issues, such as having additional health inspections that are not relevant to the business, may occur.

Labor Regulations

More than two-thirds (70%) of respondents rated the District's labor regulations as challenging or very challenging and highlighted that the minimum wage in the District is hard on businesses. Several interviewees noted that the increasing labor costs make it more difficult for District food businesses to compete with similar businesses operating in neighboring states where the minimum wage is lower.

As discussed above and presented in Appendix D, wages for most food sector jobs in the District fall well below the median income. The District government has raised the minimum wage as a strategy to help residents afford the high cost of living in the District.

Taxation

More than two-thirds (67%) of respondents rated the District's tax policies as challenging or very challenging and expressed concern about the District's friendliness toward food businesses with regard to taxes. Some interviewees reported feeling that the District relies too heavily on the business community to finance projects and overestimates food business profit margins. Other interviewees highlighted the tax burdens for doing business as a distributor working with District businesses. One interviewee stated:

> *"If you're a distributor, and you're based in Maryland or Virginia, and you distribute in the city, you have to fill out a form with ABRA (the Alcoholic Beverage Regulation Administration) for every delivery, basically paying the tax on the delivery."*

Other Challenges

Survey respondents perceived other District regulations, like health inspections, as challenging or very challenging. Respondents reported inconsistencies and arbitrariness in the inspection processes. One issue was the lack of interagency coordination. One interviewee stated:

> *"There is a lack of communication across those different agencies. [W]ith ABRA, we're classified one way, but the [Department of Health] … classifies us in another way. And they don't speak [to each other], and so sometimes there's… confusion about how even just to inspect us or how to label us."*

The costs associated with operating a food business in the District were also reported as challenging. Nearly all (91%) survey respondents reported that real estate costs were challenging or very challenging to opening and sustaining a business in the District. More than half of the respondents viewed parking, labor force, transportation, and accessing capital as other challenging or very challenging costs. See Appendix J for more information from the surveys and interviews conducted for this report.

Workforce Challenges

Recruiting and maintaining a skilled workforce is crucial to the development and success of the District's food economy. Nearly all the survey respondents identified job training and workforce development as areas for improvement. Respondents reported a current shortage of staff and/or need for job training for existing positions, particularly restaurant positions. Survey respondents identified that filling qualified mid-level, management, and executive positions is especially difficult and time consuming. As shown in Appendix J, while 73% of respondents could hire entry-level staff within two months, just 33% were able to hire mid-level staff and only 14% were able to hire management and executive staff within that same time period.

Survey respondents and interviewees stated that specialized hospitality and/or culinary training would be beneficial for their businesses and the overall food industry. They also deemed "soft skills" or workplace readiness skills, such as punctuality and organization, essential for all types of positions. Other skills included executive functioning skills like working memory, basic literacy, and math skills. While some business owners reported that they hire based on industry experience, others prioritize workers' personalities and their willingness to learn on the job.

Several existing culinary workforce training programs were mentioned, including Project Empowerment and DC Central Kitchen. Some interviewees stated that public schools could better prepare District youth for employment in the food and hospitality industry and suggested strengthening high school home economics courses or offering hospitality vocational training to better prepare young District residents.

One specific need identified through interviews was for technicians to service specialized industry equipment, such as commercial kitchen equipment and technology. Interviewees indicated that the companies that currently service their equipment are in Maryland or Virginia. In response to the shortage of specialized technicians in the District, at least two interviewees have trained staff members to service key company equipment.

Trends in the District's Food Sectors

The success of the District's food economy is interconnected with the strength of the food system in the surrounding Metropolitan Washington Council of Governments (COG) region. The COG region includes a diverse landscape of agriculture, forestry, aquaculture, and support industries that provide food and beverage products to District residents and businesses and other neighboring jurisdictions. This section provides details on the trends within the COG region and the surrounding seven-state region. For comparison purposes, the data in this section on the COG region excludes the District.

Food Economy Trends in the Metropolitan Washington Council of Governments (COG) Region

The success of the District's food economy is interconnected with the strength of the food system in the surrounding Metropolitan Washington Council of Governments (COG) region. The COG region includes a diverse landscape of agriculture, forestry, aquaculture, and support industries that provide food and beverage products to District residents and businesses and other neighboring jurisdictions. This section provides details on the trends within the COG region and the surrounding seven-state region. For comparison purposes, the data in this section on the COG region excludes the District.

The COG region includes the District of Columbia, Maryland's Montgomery, Prince George's, Frederick, and Charles Counties, and Virginia's Arlington, Fairfax, Loudoun, and Prince William Counties and the City of Alexandria.

In 2016, the COG region's food economy included almost 400,000 direct and indirect jobs and contributed over $24 billion to the region. The District led the COG region in food economy growth, and other jurisdictions such as Fairfax County, Montgomery County, and Prince George's County were the other top food economies in the region. The COG's direct employment in food sectors grew by 45% between 2001 and 2016, compared to a total growth of 23% across all industry sectors in the COG region. During the same time, the District's direct employment in food sectors grew by 72% while total employment across all sectors in the District grew by 21%. See Appendix F for the economic and employment impact of the COG food economy by COG city/county.

The COG's food sectors experienced similar employment trends to the District's food sectors from 2001 to 2016. The COG's food service and drinking places sector is the largest food sector, growing by 52% between 2001 and 2016. The District's food service and drinking places sector grew by 81% during the same time. Similar to trends in the District, the COG region's employment increased significantly in food trucks, snack bars,

limited-service and full-service restaurants, and food service contracting subsectors. However, while the District's caterer subsector experienced only 11% of employment growth from 2001 to 2016, catering in the COG region increased by 67% in that same time.

The COG's food and beverage retail store sector grew by 39% since 2001. The largest increase in employment occurred in convenience stores, which grew by 318% between 2001 and 2016. Grocery stores, baked goods stores, specialty food stores, and food and health supplement stores that sell vitamins and food supplements also grew during this time. However, meat and fish and seafood markets decreased during the same time.

Other food sectors in the COG region mostly grew between 2001 and 2016. The COG region's food manufacturing sector grew by 26% from 2001 to 2016, with retail and commercial bakeries by far the largest sectors. Overall beverage manufacturing grew by 31% from 2001 to 2016, with distilleries, wineries, and breweries experiencing employment increases of 163 jobs (1,811% growth), 929 jobs (3,100% growth), and 121 jobs (57% growth), respectively. The only subsector within the beverage manufacturing sector to decline was the bottled and canned drinks and water subsector, which decreased by 400 jobs (-34% loss). The agriculture sector also declined in the COG region, led by a loss of jobs in animal production.

The COG's food and beverage wholesaling sectors, including meat wholesalers and fruit and vegetable merchant wholesalers, grew by 37% and 27% respectively between 2001 and 2016. As mentioned previously, the District's wholesale sector declined moderately during that time. Arlington County experienced a 413% increase in employment in food wholesale from 2001 to 2016, and Loudon County had a 114% increase. These trends indicate that District-based wholesalers likely moved to the surrounding suburbs to combat challenges including land availability and real estate costs.

Appendix F provides detailed information on the employment trends of the COG's food sectors and subsectors by city/county from 2001 to 2016.

Regional Food Production

The District's food economy benefits from locally-grown food. For the purposes of this report, we used the Healthy Schools Act of 2010[11] "locally-grown food" definition which is food produced in the surrounding seven-state region made up of Maryland, Virginia, West Virginia, Pennsylvania, Delaware, New Jersey, and North Carolina. Food grown in the District was not considered for this report because there is currently no data on how much food is produced in the District.

[11]D.C. Law 18-209, Healthy Schools Act of 2010, D.C. Official Code § 38-821.01 et seq. http://lims.dccouncil.us/Download/22719/B18-0564-SignedAct.pdf.

Crop and animal production declined in the seven-state region over the past 15 years. Maryland was the only state from the seven-state region with a marginal increase of 2% in crop production, and Pennsylvania was the only state with a slight increase in animal production and aquaculture of 4%. Overall food manufacturing in the seven-state region also declined by 4% from 2001 to 2016, but beverage manufacturing increased by 15% in that same time. Food and grocery product wholesale in the seven-state region increased slightly by 7% between 2001 to 2016, and alcoholic beverage wholesale increased by 54% in that same time. Maryland, New Jersey, and North Carolina had growth in food and grocery product wholesale, while other states saw their food and grocery product wholesale sectors decline. Appendix G provides more detailed data on how the food sectors and subsectors in the region have evolved between 2001 and 2016.

Regional Comparisons

Between 2001 and 2016, the District led both the COG and seven-state food region in employment growth within food and beverage retail, food service and drinking places, and beverage manufacturing. At the same time, the District experienced a steeper decline in food manufacturing and wholesale sectors. As mentioned previously, it is likely that the COG region, which experienced a growth of food wholesalers, absorbed those who left the District. Table 5 shows the growth rates in the District compared to the COG Region, local food region, and the U.S. between 2001 and 2016.

Table 5: Percent Change in Employment by Major Food Economy Sector 2001-2016

Food Sector	Percent Change in Employment 2001-2016			
	DC	COG Region	Local Food Region	US
Crop Production	No data	-6.1%	-9.5%	-0.6%
Animal Production and Aquaculture	No data	-30.3%	-19.2%	28.0%
Food Manufacturing	-23.3%	26.0%	-4.4%	-0.6%
Beverage Manufacturing	2,820%	30.8%	14.8%	33.4%
Food and Grocery Product Wholesalers	-14.3%	37.3%	6.9%	11.0%
Alcoholic Beverage Merchant Wholesalers	22.2%	27.0%	54.4%	48.9%
Food and Beverage Retail	49.5%	41.8%	No data	4.8%
Food Service and Drinking Places	80.8%	51.8%	No data	37.5%

Note: At the time of this report, there was no employment data available for the District's agricultural sector.
Source: Inputs from ICF, DC Office of Planning, Emsi, and IMPLAN.

Peer City Comparison

Despite leading the region in employment and growth of several food sectors, the District is still behind the size and strength of food economies of some peer cities.[12] Philadelphia, San Francisco, and Boston were chosen as peer cities based on similar economic characteristics and living costs. As shown in Table 6 below, this section compares the concentrations of those food sectors across the District and its peer cities.

Table 6: Comparative Concentration of Food Sectors in DC and Peer Cities, 2016

Food Sector	Location			
	DC	Philadelphia	San Francisco	Boston
Food & Beverage Manufacturing	0.03	0.60	0.38	0.45
Food and grocery product wholesalers & Alcoholic Beverage Wholesalers	0.36	0.95	0.67	0.60
Food and Beverage Stores	0.46	0.95	0.67	0.77
Food Service and Drinking Places	0.84	0.95	1.15	0.95

Note: This chart highlights the Location Quotients (LQs) for DC and its peer cities. See footnote 12 for more information on LQs.
Source: Emsi.

Compared to the selected peer cities, the District's major food sectors are all smaller, especially its manufacturing and wholesaling sectors. This difference is partially explained by historic development. While Philadelphia, Boston, and to a lesser extent San Francisco historically developed large manufacturing sectors and continue to have large areas devoted to this use, the District has not created or preserved large industrial areas, except in some areas of Ward 5.

This comparison is not meant to imply that the District should preserve more industrial space, but rather to consider how the local food economy in the District could further support local entrepreneurs and small food businesses that need manufacturing space at an affordable price. As mentioned in the recommendations, the District should consider incentivizing and facilitating more incubator spaces, shared commercial kitchen space, and storage space that could better support District businesses and entrepreneurs.

[12] The peer city analysis used an economic analysis tool called Location Quotients (LQ) to compare the strength and size of different food sectors across cities. LQs show how concentrated a particular industry or sector is in a city compared to the rest of the country and can highlight what is unique in a geographic area.

Key Findings

This section presents the key findings of the data presented above.

Finding 1: The District's food economy is strong and expanding rapidly.

In 2016, nearly 71,300 workers, or approximately 8% of the District's total workforce, were directly employed in the food economy. From 2001 to 2016, employment in the District's food economy grew by 72%, compared to 21% employment growth overall in the District. In total, the District's food economy produced $5.47 billion in economic impact and generated more than $579.3 million in tax revenue for the District in 2016. Additionally, the District's food economy supported nearly 1,900 jobs outside of the District across neighboring jurisdictions like Prince George's County in Maryland. The size and strength of the District's food economy highlights its importance in local and regional economic growth.

Finding 2: Most food and beverage products sold and served in the District come from businesses outside of the region.

In 2016, almost all fresh food sales like cheese, poultry, meat, seafood products, or produce by District businesses came from food producers outside the District. Local sales were not identified in available economic data, either because they were too small or not captured by current tracking tools. In contrast, District food businesses sourced at least half of supportive services, including real estate, advertising, and wholesale trade distribution services, from other District businesses.

The District's large institutions source much of their prepared food from District businesses. Colleges and universities, hospitals, and professional associations sourced nearly all their full-service and limited-service restaurant needs and catering services from District-based businesses in 2016. In addition, they sourced approximately 19% of coffee and tea, 13% of fresh fruit and vegetables, and 10% of bread and bakery products from District food businesses in 2016.

Finding 3: There is excess demand in several food sectors, indicating an opportunity for District businesses to capture more market share.

There are several food subsectors that had greater demand from District residents than current supply by District-based businesses in 2016. These products include fresh fruit ($27.2 million excess demand), fresh vegetables ($37.5 million excess demand), canned fruit and vegetables ($82.5 million excess demand), food and beverage retail stores including grocery stores ($74.9 million excess demand), bread and bakery products

($122 million excess demand), coffee and tea ($41.6 million excess demand), wineries ($69.5 million excess demand), breweries ($95.7 million excess demand), and distilleries ($44.4 million excess demand). Although District businesses are unlikely to entirely meet this excess demand, this data shows potential for expansion for emerging District food producers and businesses.

Finding 4: Previous and projected growth in the District's food economy vary significantly by sector.

Restaurants, bars, and retail stores will continue to see significant, albeit slower, growth over the next 10 years. The District's food services and drinking places sector grew in employment by 81% from 2001 to 2016, and will continue to grow more slowly, by an additional 19%, through 2026. Likewise, the food and beverage retail sector grew in employment by 50% from 2001 and 2016 and is projected to grow another 20% by 2026. Within the retail sector, grocery stores and convenience stores will be outpaced by specialty food stores, which are projected to have the largest percentage growth, 98%, within the retail sector by 2026.

Although the manufacturing sector has generally declined, small-scale specialty manufacturing is projected to grow over the next 10 years. Manufacturing subsectors showing recent and projected growth include coffee and tea, perishable prepared foods, breweries, and distilleries.

The wholesale sector has similarly declined, although some subsectors continue to grow. Meat and meat product merchant wholesale and fruit and vegetable merchant wholesale subsectors are projected to decline significantly by 2026, while general line grocery merchant wholesale, fish and seafood merchant wholesale, and alcoholic beverage merchant wholesale subsectors are projected to grow significantly during that time.

Finding 5: Although wages differ across the District's food sectors, most occupations in the food economy provide less than half of the District median income. Businesses report demand for more skilled workers to fill higher-wage positions.

The District's median income in 2016 was $72,935, and most salaries in the food economy fell well below that amount. Cashiers in the retail sector made an average hourly wage of $12.96 (about $27,000 annually), and food preparation and serving workers in the food services and drinking places sector made an average hourly wage of $14.00 an hour (about $29,120 annually).

Other more high-skilled occupations fared slightly better. Packaging and filling machine operators in the manufacturing sector made an average hourly wage of $20.81 (about $43,285 annually). Sale representatives in the wholesale sectors made an average hourly wage of $33.16 an hour (about $68,973 annually).

Interviews and surveys of District food businesses found that while 73% of respondents could hire entry-level staff within two months, just 33% were able to hire mid-level staff and only 14% were able to hire management and executive staff within that same time period. In addition, businesses reported the need for technicians to service specialized industry equipment, such as commercial kitchen equipment and technology.

Finding 6: District businesses face challenges such as licensing requirements, labor regulations, taxation, and associated costs with doing business in the District.

Interviews and surveys of District food businesses found that while the District is regarded as a favorable place to operate a food business, businesses face several challenges. More than three-quarters of survey respondents viewed the District's licensing regulations as the most challenging regulatory hurtle, followed by local labor regulations, local infrastructure, local tax incentives, and local food regulations. In addition, nearly all (91%) of survey respondents viewed the real estate costs as the most challenging costs for opening and operating a food business in the District, followed by parking, labor force, transportation, and accessing capital lenders. Interviews called attention to opportunities to streamline permitting, licensing, and health inspection processes for emerging food subsectors.

Finding 7: Trends in the region's food economies reflect similar trends in the District's food economy, except for food manufacturing and food and grocery product wholesaling.

In 2016, the COG region's food economy included almost 400,000 total direct and indirect jobs and contributed over $24 billion to the region. Direct employment in the COG's food economy grew by 45% between 2001 and 2016, compared to a total growth of 23% in the COG region over the same time. Similar to District trends, several of the COG's food and beverage sectors experienced growth in employment, including the food service and drinking places sector (52%), the food and beverage retail store sector (39%), and the beverage manufacturing sector (31%). However, unlike the District, the COG's food manufacturing sector and food and grocery wholesaling sectors grew in employment by 26% and 27%, respectively.

In the surrounding seven-state region, employment in the alcoholic beverage wholesaling sector has grown in all seven states, and beverage manufacturing has grown in all states except in Maryland and West Virginia. Food manufacturing has grown in several

states, namely Delaware and North Carolina, and declined in others, namely Maryland, Virginia, and West Virginia. Growth in the wholesale sectors also varies by state, with Maryland, New Jersey, and North Carolina seeing significant growth, while Delaware, Pennsylvania, Virginia, and West Virginia experienced varying degrees of decline. Finally, crop production and agriculture declined in the seven-state region except for in Maryland and Pennsylvania, which had slight increases.

Recommendations to Strengthen the District's Food Economy

The District has a robust and rapidly expanding food economy. This section translates the data and findings presented above into strategies to ensure that this growth is sustainable and equitable.

Expand career pathways with the food economy

More District residents could benefit from the employment and wealth-generating opportunities of the District's expanding food economy if there were more opportunities for workforce development focused on food-sector skills. The District's food economy already directly employs over 71,300 people and supports an additional 10,500 jobs in related sectors. The District's full-service restaurant subsector alone is projected to add over 5,200 jobs by 2026. Food businesses interviewed for this report struggled to find employees with the relevant skills and competencies needed to be successful on the job. Some of these businesses instead hire non-District residents. This presents a missed opportunity to keep wealth within the District and employee more District residents.

High-skilled positions are the most in-demand and earn higher salaries. Workforce development opportunities in the District should be expanded to include more professional development for workers currently in entry-level jobs to create pathways to advancement and greater economic opportunity within the food economy. More training opportunities for technicians to service food-sector equipment are also needed. More vocational training and opportunities within District high schools could better prepare young graduating students to enter the food workforce and move quickly up to higher-wage positions.

Specific recommendations related to workforce development will be included in the upcoming DC Food Workforce Development Strategy, to be published in 2019 by the DC Office of Planning with input from other District agencies. Funded by the Kaiser Permanente Foundation, this comprehensive strategy will draw on the findings of this report and specify how the District could expand food sector jobs that promote equitable economic growth, public health, and fair working conditions.

Support new and growing businesses within the food economy

As presented in this report, many subsectors within the food economy will continue to experience significant growth over the next ten years. To ensure that this growth benefits all residents, targeted assistance and resources should be provided to low-income entrepreneurs of color, and those serving underserved areas of the District.

Support the development of food incubators across the District, especially in areas currently underserved

Food business incubators provide food entrepreneurs with commercial kitchen space, business development assistance, and other resources. Incubators particularly help food businesses that are developing new perishable prepared food products, a subsector that is set to experience 112% growth by 2026. In 2012, the first incubator, Union Kitchen, opened. As of 2018, there were five food incubators operating in the District, shown in Table 7.

Table 7: Food Incubators in the District

Name	Address	Ward	Zoned as Industrial Land?
EatsPlace	3607 Georgia Ave NW	1	N
Mess Hall	703 Edgewood St NE	5	Y
Union Kitchen	1110 Congress Street NE	5	Y
TasteLab	2619 Evarts Street NE	5	Y
Taste Makers	2800 10th St NE	5	Y

While food business incubators have opened quickly over the past six years, they are not evenly distributed around the District. There are currently no food business incubators in Wards 7 or 8, the Wards with the highest rates of unemployment in the District. Locating incubators in these Wards would help spur wealth creation, employment, and ownership opportunities among residents.

Several District agencies, such as the Department of Small and Local Business Development (DSLBD), Department of Health (DC Health), and the Department of Housing and Community Development (DHCD), already support incubators and commercial kitchens through grant funding and technical assistance. Future funding, including from federal and philanthropic sources, should be identified to spur development of food business incubators with a focus on Wards 7 and 8.

Streamline the permitting and licensing system for food businesses, especially small and emerging businesses with limited staff capacity

To promote more local business ownership, the permitting and licensing processes for food businesses should be simplified and streamlined. Complex applications and processes hinder food entrepreneurs from starting and maintaining businesses in the District. Surveys and interviews with food businesses revealed that the process of starting a new business in the District can be difficult and time consuming. Survey respondents found it particularly difficult to identify requirements and determine responsible agencies throughout the process. Others found that District agencies did not recognize their type of business, such as urban farms, and had them register inaccurately as another type of business.

Support local food production and distribution

Several sectors in the District's food economy are essential to meeting the growing demand for locally-made goods. Those include the small-scale food and beverage manufacturing sector and distributors specializing in local products. The District should identify opportunities to support these key sectors in the food economy.

Consider a central storage and processing facility for local food products

A central warehouse, distribution, and food processing facility in the District could produce food products, provide culinary training, facilitate small-scale distribution, and increase the availability of locally produced foods. In 2016, only 2% of the warehouse and storage services demanded by local food businesses were supplied within the District, and only 1% of the truck transportation services used for distribution were supplied by District businesses.

Given the high cost of real estate in the District, most food businesses are working in small spaces without room for storage, and in many cases are paying a premium to have relatively small amounts of food delivered to their businesses. A central storage facility could decrease costs for small businesses and connect them to more regional and local food producers.

Support local food businesses – including food and beverage manufacturers, wholesalers, and urban farms – to meet local demand of food products

With additional support, District food businesses could help meet the excess demand in the District for many food items. As shown in Table 2, there was approximately $231 million in excess demand in the District for bottled and canned soft drinks and water, and approximately $41 million in excess demand for other manufactured food products. The demand for these products and recent success of breweries and perishable food manufacturers highlight that the District's food economy could support more growth in food and beverage manufacturing. If food and beverage manufacturers could capture just 5% of the District's total restaurant spending of $1.7 billion, it would generate $85 million in additional local sales.

Support for District food manufacturers could include identifying areas and existing buildings in the District that are suitable for food manufacturers, and assisting with business development, branding, and marketing through programs such as Made in DC. Networking events, such as a local/regional food trade show, could further connect food businesses.

Lastly, urban farms in the District should have more access to resources and support. Farms not only supply fresh food to other food businesses; they also create local jobs, activate green spaces, and often provide healthy food to the surrounding communities. Yet currently urban farms in the District struggle to navigate licensing and permitting, identify grants and resources, and access large contracts and buyers. In addition, there is insufficient data on the current offerings and sales of District farms, making it difficult to measure progress.

The District will soon provide more assistance to urban farms through the newly created Office of Urban Agriculture in the Department of Energy and the Environment created by the Fiscal Year 2020 Budget Support Act. Continuing to expand support for farms will increase the supply of fresh, local food for District food businesses while also creating employment opportunities around the District.

Incentivize local food procurement by large institutions

While some local sourcing of food and beverage products and services already exists between businesses and institutions in the District, there is great economic and employment potential for increased local and regional sourcing. The District and its partners can help strengthen the connections across local and regional producers, businesses, and institutions by encouraging local procurement and better linking stakeholders in the food system.

The District's public schools, colleges and universities, hospitals, national industry and trade organizations, and large professional services sector are major patrons of District food businesses. To highlight this support and encourage increased investment, large institutions should consider developing local purchasing policies. Local purchasing policies would define the local food area for the various types of food purchases and aim for a designated percentage of institutional purchases to be procured from businesses within those areas. The Healthy Schools Act of 2010 creates a monetary incentive for schools to purchase at least one local product for each meal, and could be a model for other institutional policies.

The District can also help build the capacity of smaller food businesses to meet institutional purchasing needs. Many small food businesses are hampered by the inability to meet the quality assurance standards and the distribution requirements of large institutional buyers. The District could develop training programs, mentoring, and technical assistance for small food suppliers and food businesses meet the standards of large institutions buyers. Technical assistance could also be used to highlight the District's Certified Business Enterprise (CBE) program as a platform for catalyzing small business development through a preferred status in District procurement opportunities. The preferred status enables the District to leverage its procurement needs to expand opportunities for local businesses. Simultaneously, District partners could identify ways that large institutional buyers could adjust their contracts to enable smaller businesses to compete.

Increase healthy food access in certain areas of the District

The disparate development and distribution of grocery stores across the District has significant economic, health, and social implications. Demand for food and beverage stores from District residents exceeded current supply by an estimated $75 million in 2016. These dollars and their economic impact were lost as District residents shopped in neighboring jurisdictions. The development of healthy food retail in underserved areas, especially in Wards 7 and 8, would enhance healthy food access, keep wealth within the District, and spur employment and ownership opportunities for residents within their own communities.

The DC Food Policy Council's 2019 Policy Priorities include creating a Locally-Owned Healthy Food Retail Investment Fund that matches private investments in locally owned, community-driven grocery stores in underserved areas. This Fund would focus on small footprint stores, possibly co-located on the bottom floor of affordable housing, healthcare centers, and other community-serving facilities. Learning from best practices from other state grocery investment funds, this fund would target investment

and technical assistance towards local entrepreneurs and businesses that create living wage jobs and offer products based on the needs/wants of the surrounding community. To support emerging business owners in opening their first stores as well as existing businesses looking to expand, the Fund would also provide technical assistance and training on store operations, business strategy, and branding.

Conclusion

The District's food economy provides career pathways and opportunities for business ownership for many District residents. It has expanded rapidly over the past 15 years and is projected to continue to grow over the next decade. Yet the growing food economy has not provided equal opportunities for employment, ownership, and health to all District residents. The District has the opportunity to strengthen its food economy while enhancing equity and prosperity within the food workforce through strategic policy changes and investments, including those recommended above. The DC Food Policy Council hopes to partner with fellow District agencies, community groups, and other stakeholders to accomplish these recommended actions and make the District food economy a strong, inclusive driver of wealth and opportunity for all residents in the District of Columbia.

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Technical Appendix: Data Sources and Methodologies

Employment, Wage, Location Quotient, Supply and Demand Data, and Purchase Requirements Data

Direct employment figures, wages, location quotients, supply and demand, and purchase requirements data are sourced from Emsi, a leading provider of proprietary labor market data and analytics. Emsi includes employment data by North American Industrial Classification System (NAICS) codes from the Bureau of Labor Statistics' (BLS) Quarterly Census of Employment and Wages (QCEW), Non-QCEW Employees, Self-Employed, and Extended Proprietors and captures all payroll employees, self-employed and proprietors, and other payroll and non-payroll employees.

Employment and wages for other direct food economy sectors that are not identified by a specific NAICS code and for Tier Two industries (sectors that are not entirely food based but that have a food component) are estimates based on information provided by the District of Columbia Office of Planning (OP) and the DC Food Policy Council (FPC) on each establishment.

Projected employment for the year 2026 is also sourced from Emsi. Emsi employment projections are based on a combination of government-published sources at the national, state, and regional levels and a combination of the short-term, mid-term, and long-term trend lines.

Economic Impact Study

The IMPLAN (IMpact Analysis for PLANning) model was utilized to project the economic and fiscal impact of the District of Columbia food economy. IMPLAN is one of the most wildly accepted economic impact models used by federal, state, and local government agencies, as well as in the private sector.

IMPLAN utilizes Input-output and social accounting matrices to project the economy-wide impact of an economic stimulus occurring in a subset of food sectors, to calculate the direct, indirect, and induced impacts. Input/output (I/O) models utilize accounting tables, which trace the linkages of inter-industry purchases and sales within a geographic area. I/O models utilize technology linkages that provide information on the inputs for all industries that are used to produce a good or service in another particular industry.[13]

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[13] Weisbrod, G. and Weisbrod, B. Measuring Economic Impacts of Projects and Programs. EDR Group. 1997. http://www.edrgroup.com/pdf/econ-impact-primer.pdf.

I/O models also utilize local trade linkages that provide information on how much of a given industry's purchases are supplied by other industries within the study area.[14] The I/O model yields "multipliers" that are used to calculate the total direct, indirect and induced effect on jobs, income and output generated per dollar of spending on various types of goods and services in the study area.[15]

The IMPLAN data set is constructed of data from the U.S. National Income and Product Accounts (NIPA) and the Bureau of Economic Analysis, among a variety of other data sources. The model includes 536 industry sectors based on the North American Industry Classification System (NAICS). The model uses region-specific multipliers to trace and calculate the flow of dollars from the industries that originate the impact to supplier industries. Three types of impacts are calculated in IMPLAN:

- Direct Impacts, which are impacts related to the direct jobs in the DC food economy and represent the direct model inputs.
- Indirect Impacts, which are impacts in the industries that supply or interact with the primary industries, in this case industry sectors that sell and purchase goods and services from direct food industry sectors businesses.
- Induced Impacts, which represent the impact of the spending of wages earned by workers in the direct and indirect industry sectors.[16]

Although IMPLAN is a widely accepted economic impact model, all models produce projections that should be considered estimates and not precise forecasts. I/O models, the basis of the IMPLAN model, apply historical relationships between demand (i.e., specific expenditures within a given industrial sector) and the resulting economic activity to estimate how new expenditures will affect economic development metrics including jobs, earnings, and output.[17] The accuracy of these inter-industry relationships (i.e., input-output coefficients or multipliers) is dependent on parameters including the date of the multipliers reflecting the relationships, how well the defined industrial sectors reflect the particular inputs and outputs being studied, and how well the multipliers reflect the geography of the region of study.[18] I/O tables used in the IMPLAN model were developed by the Department of Commerce Bureau of Economic Analysis (BEA) in 2002 and are based on national level data. Inter-industry relationships, however, may change gradually over time and national level data may not exactly reflect the industry dynamics of each region of study. The IMPLAN model used in this study does provide specific I/O tables for the District and the counties in the COG that are modified from the national BEA data, improving the estimates. Despite these limitations, input-output modeling remains a widely used methodology for measuring economic impact.

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[14]Weisbrod and Weisbrod, ibid.

[15]Weisbrod and Weisbrod, ibid.

[16]More information on the methodology and data sources used in the IMPLAN model and the key model assumptions can be found at: https://implanhelp.zendesk.com/hc/en-us/articles/115009505587-Key-Assumptions-of-IMPLAN-Input-Output-Analysis.

[17]JEDI: Jobs and Economic Impact Models. Limitations of JEDI. National Renewable Energy Laboratory. https://www.nrel.gov/analysis/jedi/limitations.html.

[18]JEDI, ibid.

Food Business Surveys/Interviews

ICF designed interview and survey research protocols to document the first-hand experiences of food industry business owners and managers in the District. Information was collected through semi-structured interviews and closed- and open-ended survey questions. These components were designed to complement one another, highlighting trends within and across subsectors while offering detailed insight into study participants' experiences.

Interviews

Purposeful sampling was used to recruit participants. ICF and OP identified potential interviewees from each of the targeted food subsectors. An effort was made to recruit companies that were diverse in terms of location, experience level, company size, and owner demographics.

Potential interview participants were initially contacted by ICF via phone if a phone number was available or via email or the company's website contact form if it was not. Depending on the method of outreach, a verbal script or template message was used to provide information about the study and the interview. ICF followed up with potential interviewees that did not respond to the initial contact attempts using the same script and message, with an added sentence indicating that it was a follow-up message. Those who were not reached after two attempts by ICF were contacted by OP or a member of the Food Policy Council's Local Food Business and Labor Development Working Group. Snowball sampling was also used. Interviewees were asked to recommend relevant stakeholders from the food economy to be interviewed. ICF forwarded the recommendations to OP for review and contacted approved stakeholders using the same outreach process described above.

Sixty potential interviewees were contacted. Two businesses had relocated outside of The District and one company had closed, leaving 57 eligible businesses. ICF scheduled interviews with 32 individuals (two did not show up for their interviews). Participants were interviewed in person or via telephone, based on their preference. The interview protocol was designed to elicit open-ended reflections on key topics of interest such as challenges and opportunities for food businesses. The protocol included both general and subsector-specific questions. Interviewers took notes and recorded conversations. Recordings were transcribed and imported into NVivo qualitative analysis software. Codes were developed to identify and compare common themes. The semi-structured interview guide and the NVivo code book, used in the qualitative analysis, is available upon request from OP.

Surveys

To develop the starting point of the survey dataset, ICF downloaded all companies in the Dun & Bradstreet database with target NAICS codes. Supplemental lists of companies in the following subsectors were compiled by OP: Community Supported Agriculture (CSA), commercial kitchens, urban farms, farmers' markets, nonprofits, and restaurant groups. The combined dataset included 3,229 companies.

There were two survey priorities: collecting responses from all of the identified subsectors, and maximizing the number of responses collected. To pursue both objectives, two methods were used to collect survey data. First, a link to the survey was distributed to companies selected through two waves of stratified random sampling. Second, the survey link was distributed organically through food economy-related listservs, websites, and groups, including the Food Policy Council. Individuals reached organically were encouraged to share the survey URL with their networks. A total of 94 surveys were completed. The breakdown of survey responses by wave of outreach and the survey instrument are available upon request from OP.

Appendices

Appendix A: Food Sector and Subsector Definitions

Food Sector or Subsector	Definition
Direct Food Economy Sectors	
Food manufacturing	This sector transforms livestock and agricultural products into products for intermediate or final consumption. The food products manufactured in these establishments are typically sold to wholesalers or retailers for distribution to consumers.
Beverage product manufacturing	This sector includes establishments primarily engaged in manufacturing soft drinks and ice; purifying and bottling water; and manufacturing brewery, winery, and distillery products.
Food and grocery product wholesalers	This sector includes establishments primarily engaged in the merchant wholesale distribution of (1) a general line of groceries; (2) packaged frozen food; (3) dairy products; (4) poultry and poultry products; (5) confectioneries; (6) fish and seafood; (7) meats and meat products; (8) fresh fruits and vegetables; and (9) other grocery and related products.
Farm product raw material merchant wholesalers	This sector includes establishments primarily engaged in the merchant wholesale distribution of agricultural products (except raw milk, live poultry, and fresh fruits and vegetables), such as grains, field beans, livestock, and other farm product raw materials (excluding seeds).
Alcoholic beverage merchant wholesalers	This sector includes establishments primarily engaged in the merchant wholesale distribution of beer, ale, wine, and/or distilled alcoholic beverages.
Food and beverage retail	This sector usually sells retail food and beverage merchandise from fixed point-of-sale locations. Establishments in this subsector have special equipment (e.g., freezers, refrigerated display cases, refrigerators) for displaying food and beverage goods. Examples include grocery stores, convenience stores, and specialty food retailers such as fish markets.
Food services and drinking places	This sector prepares meals, snacks, and beverages to customers for immediate on-premises and off-premises consumption. There is a wide range of establishments in these industries. Some provide food and drink only, while others provide various combinations of seating space, waiter/waitress services, and incidental amenities, such as limited entertainment. The industry groups include Special Food Services, such as food service contractors, caterers, and mobile food services; Drinking Places (Alcoholic Beverages); and Restaurants. Food and beverage services at hotels and motels, theaters, country clubs, similar recreational facilities, and civic and social organizations are included in this subsector only if these services are provided by a separate establishment primarily engaged in providing food and beverage services, such food service contractors.
Managing offices (management and administration staff for Restaurant groups only)	This sector is composed of restaurant group headquarters. These establishments administer, oversee, and manage restaurants of the company or enterprise and that normally undertake the strategic or organizational planning and decision-making role of the company or enterprise.
Commercial kitchens/food Incubators	This subsector provides commercial-grade food preparation equipment (e.g., mixers, ovens, stoves) and preparation space for use by other businesses.
Urban farms / Community supported agriculture (CSA)	This subsector grows crops, plants, vines, or trees and their seeds that operate in an urban area. CSAs connect the producer and consumers within the food system more closely by allowing the consumer to subscribe to the harvest of a certain farm or group of farms.
Farmers markets	This subsector is made up of physical retail marketplaces intended to sell foods directly by farmers to consumers. Farmers markets can be indoors or outdoors and typically consist of booths, tables or stands where farmers sell fruits, vegetables, meats, cheeses, and sometimes prepared foods and beverages.
Food non-profits	This subsector includes community organizations working on a food related cause or objective.
Food tech	This subsector is engaged in developing technology or products that are used by the food industry to improve production, increase efficiency, and lower costs.

Appendix A: Food Sector and Subsector Definitions (continued)

Food Sector or Subsector	Definition
Food trade associations	This subsector includes establishments primarily engaged in promoting the business interests of their members. These establishments may conduct research on new products and services; develop market statistics; sponsor quality and certification standards; lobby public officials; or publish newsletters, books, or periodicals for distribution to their members.
Federal government	This subsector includes the food service and food retail located within Federal Government buildings operated the Federal Government.
Tier 2 Food Industry Sectors (Sectors with Food Components, estimated by ICF)	
Pharmacies and drug stores	This sector includes the food component of all drug stores in the District, including CVS, Walgreens, and others.
Department stores (Walmart and Target)	This sector includes the food component of all Walmarts, Targets, and other department stores in the District.
Motion picture and video exhibition	This sector includes the food component, consisting of the concessions, bar, or restaurant at movie theaters in the District.
Hospitals	This sector includes the food component of all hospitals in the District, as estimated by ICF. Only the workers that are employed directly by a hospital are included here. Workers that are employed by food service contractors within hospitals are included under food service and drinking places.
Golf courses and country clubs	This sector includes the concessions or restaurants at all golf courses and country clubs in the District.
Bowling centers	This sector includes the concessions, bars, or restaurants at all bowling establishments in the District.
Hotels and motels	This sector includes the food component of all hotels in the District. Only the workers that are employed directly by a hotel are included here. Workers that are employed by food service contractors or separate restaurants that operate in hotels are included under food service and drinking places.

Appendix B: District of Columbia Food Sectors and Economic Impact

Table B1: Direct, Indirect, and Tier 2 Sectors within the District's Food Economy in 2016

DC Sectors and Subsectors	Employment 2016	Total Wages 2016	Average Annual Wage 2016
Food manufacturing	**366**	**$16,682,163**	**$45,580**
Commercial bakeries	132	$5,192,183	$39,335
Retail bakeries	84	$2,990,367	$35,600
Coffee and tea manufacturing	61	$3,801,612	$62,322
Perishable prepared food manufacturing	57	$2,423,147	$42,511
Fruit and vegetable canning	12	$1,210,759	$100,897
Confectionery manufacturing from cacao beans	5	$302,440	$60,488
Confectionery mfg. from purchased chocolate	5	$317,440	$63,488
Frozen cakes and other pastries manufacturing	5	$196,581	$39,316
All other miscellaneous food manufacturing	5	$247,634	$49,527
Beverage product manufacturing	**146**	**$6,242,526**	**$42,757**
Breweries	104	$3,478,719	$33,449
Distilleries	32	$1,781,165	$55,661
Soft drink manufacturing	5	$636,982	$127,396
Wineries	5	$345,660	$69,132
Food and grocery product wholesalers	**658**	**$43,427,197**	**$65,999**
Other grocery product merchant wholesalers	212	$16,508,574	$77,871
General line grocery merchant wholesalers	146	$8,988,632	$61,566
Fish and seafood merchant wholesalers	106	$6,301,994	$59,453
Meat and meat product merchant wholesalers	90	$4,965,809	$55,176
Fruit and vegetable merchant wholesalers	46	$3,143,888	$68,345
Confectionery merchant wholesalers	30	$2,096,611	$69,887
Packaged frozen food merchant wholesalers	9	$553,449	$61,494
Dairy product merchant wholesalers	9	$512,236	$56,915
Poultry product merchant wholesalers	9	$356,004	$39,556
Farm product raw material merchant wholesalers	**26**	**$1,950,725**	**$75,028**
Other farm product raw material merch. wholesalers	17	$845,693	$49,747
Grain and field bean merchant wholesalers	9	$1,105,032	$122,781
Alcoholic beverage merchant wholesalers, Farm Supply	**689**	**$55,794,229**	**$80,979**
Beer and ale merchant wholesalers	418	$31,495,495	$75,348
Wine and spirit merchant wholesalers	261	$23,297,174	$89,261
Farm supplies merchant wholesalers	9	$1,001,560	$111,284
Food and beverage retail & farm supply stores	**8,125**	**$281,051,020**	**$34,591**
Supermarkets and other grocery stores	5,058	$185,372,077	$36,649
Convenience stores	1,193	$24,176,363	$20,265
Beer, wine, and liquor stores	727	$36,873,031	$50,719
All other specialty food stores	500	$14,955,857	$29,912
Baked goods stores	171	$3,705,094	$21,667

Table B1: Direct, Indirect, and Tier 2 Sectors within the District's Food Economy in 2016 (continued)

DC Sectors and Subsectors	Employment 2016	Total Wages 2016	Average Annual Wage 2016
Meat markets	116	$6,123,430	$52,788
Food, health, supplement stores	102	$3,143,869	$30,822
Confectionery and nut stores	76	$1,561,375	$20,544
Fish and seafood markets	72	$2,719,578	$37,772
Vending machine operators	59	$1,043,558	$17,687
Nursery, garden, and farm supply stores	36	$1,221,476	$33,930
Fruit and vegetable markets	18	$155,310	$8,628
Food services and drinking places	**53,813**	**$1,643,230,212**	**$30,536**
Full-service restaurants	27,804	$918,799,906	$33,046
Limited-service restaurants (includes fast casual)	12,945	$323,844,787	$25,017
Food service contractors	5,025	$153,281,610	$30,504
Drinking places, alcoholic beverages	2,498	$67,328,136	$26,953
Snack and nonalcoholic beverage bars	2,374	$59,326,973	$24,990
Caterers	2,171	$87,617,433	$40,358
Cafeterias, grill buffets, and buffets	555	$16,059,063	$28,935
Mobile food services (includes food trucks and mobile delis)	259	$5,133,846	$19,822
Community food services	182	$11,838,458	$65,046
Tier 2 - Industry Sectors with a Food Component (estimated employment and wages for food component only)			
Pharmacies and drug stores	318	$12,770,706	$40,159
Department Stores (Walmart and Target)	49	$1,291,768	$26,363
Movie theaters	43	$836,178	$19,446
Hospitals (includes DC and Federal Hospitals)	297	$8,910,000	$30,000
Golf courses and country clubs	17	$614,074	$36,122
Bowling centers	20	$436,840	$21,842
Hotels and motels	3,674	$186,668,592	$50,808
TOTAL FOOD ECONOMY	**71,290**	**$2,579,480,188**	**$36,183**

Table B2: Economic Impact of the District's Food Economy - Employment by Sector and Subsector in 2016

Industry	Direct	Indirect	Induced	Total
Full-service restaurants	27,804	0	0	27,804
All other food and drinking places	13,338	0	0	13,338
Limited-service restaurants	12,945	0	0	12,945
Retail - Food and beverage stores	8,103	0	0	8,103
Hotels and motels, including casino hotels	3,674	31	8	3,713
Wholesale trade	1,373	152	52	1,577
Real estate	0	997	203	1,200
Business and professional associations	1,148	37	11	1,196
Management of companies and enterprises	706	451	18	1,174
Hospitals	297	0	340	637
Grant making, giving, and social advocacy organizations	439	5	28	473
Services to buildings	0	340	94	434
Employment services	0	375	57	432
Retail - Health and personal care stores	318	30	51	399
Advertising, public relations, and related services	0	234	15	249
Retail – Non-store retailers	169	8	44	221
Accounting, tax preparation, bookkeeping, and payroll services	0	193	25	218
Bread and bakery product, except frozen, manufacturing	217	0	0	217

Table B3: Estimated Local Tax Impact from the District's Food Economy in 2016

Tax Type	District of Columbia Tax Revenue
Sales Tax	$182,197,943
Property Tax	$244,496,130
Corporate Profits and Dividends Tax	$19,778,032
Income Tax	$43,429,213
Motor Vehicle License	$2,302,074
Non-Tax Fee/Fines	$20,507,855
Other Taxes (on production and imports)	$66,564,210
Total Tax Revenue from the Food Economy	**$579,275,457**

Appendix C: Supply and Demand of Food Businesses in the District

Table C1: Major Suppliers of District's Food Economy Sectors in 2016

Top Supplying Industry Sector (anywhere in US)	Percent Supplied in DC	Percent Supplied in COG	Top Purchasing Food Sectors in DC
Real estate buying and selling, leasing, managing, and related services	79%	100%	Full-service restaurant services Retail services - Food and beverage stores Limited-service restaurant
Wholesale trade distribution services	55%	71%	Full-service restaurant services Bottled and canned soft drinks and water Bread and bakery products, except frozen Beer, ale, malt liquor and nonalcoholic beer Canned fruits and vegetables Retail services - Food and beverage stores
Advertising, public relations, and related services	64%	100%	Full-service restaurant services Retail services - Food and beverage stores Limited-service restaurant
Cheese	0%	8%	Full-service restaurant services Limited-service restaurant Food Service Contractors and Caterers
Processed poultry meat products	0%	1%	Full-service restaurant services Limited-service restaurant Community food, housing, and other relief services Food Service Contractors and Caterers
Meat (except poultry) produced in slaughtering plant	0%	1%	Full-service restaurants services Limited-service restaurants Community food, housing, and other relief services
Bottled and canned soft drinks and water	0%	30%	Full-service restaurant services Limited-service restaurant
Seafood products	0.04%	2%	Full-service restaurant services
Soybean and other oilseed processing	0%	0%	Frozen cakes and other pastries Food Service Contractors and Caterers
Warehousing and storage services	2%	32%	Retail services - Food and beverage stores
Distilled liquors Wine and brandies	0.05%	3%	Full-service restaurant services Distilled liquors except brandies
Fruit	0%	4%	Wine and brandies Coffee and tea
Truck transportation services (distribution)	1%	39%	Bottled and canned soft drinks and water Beer, ale, malt liquor and nonalcoholic beer Canned fruits and vegetables Retail services - Food and beverage stores

Table C2: Largest Business/Institutional Consumers of the District's Food Economy by Industry Sector in 2016

Business/Institutional Consumer	Top DC Food Sectors Consumed (ranked by consumption amount)	Estimated Gross Spending	Estimated Percent Spent in DC
Colleges and Universities	Bread and bakery products, except frozen	$19,377,000	10%
	Full-service restaurant services	$16,904,000	99%
	Beer, ale, malt liquor and nonalcoholic beer	$14,056,000	14%
	Limited-service restaurant	$7,142,000	99%
	Canned fruits and vegetables	$4,298,000	3%
	Coffee and tea	$4,032,000	19%
	Supermarkets and other grocery (except convenience stores)	$1,836,233	47%
	Fresh fruit and vegetable wholesalers	$602,000	13%
Hospitals	Full-service restaurant services	$58,917,000	99%
	Limited-service restaurant	$14,628,000	99%
	Coffee and tea	$6,468,000	19%
	Canned fruits and vegetables	$2,647,000	3%
	Supermarkets and other grocery (except convenience stores)	$2,571,621	47%
	Bottled and canned soft drinks and water	$2,207,000	2%
	Fresh fruit and vegetable wholesalers	$1,586,000	13%
Professional Services (including legal)	Full-service restaurant services	$204,325,000	99%
	Limited-service restaurant	$98,849,000	99%
	Food service contractors and caterers	$20,100,000	100%
	Supermarkets and other grocery (except convenience stores)	$4,146,554	46%
	Fresh fruit and vegetable wholesalers	$2,260,841	13%
Hotels and motels	Food Service Contractors and Caterers	$9,478,000	100%
	Bottled and canned soft drinks and water	$3,936,000	2%
	Bread and bakery products, except frozen	$3,894,000	10%
	Supermarkets and other grocery (except convenience stores)	$1,872,285	47%
	Coffee and tea	$1,850,000	19%
	Fresh fruit and vegetable wholesalers	$403,108	13%
Business and professional associations	Bread and bakery products, except frozen	$6,749,000	10%
	Beer, ale, malt liquor and nonalcoholic beer	$5,947,000	14%
	Coffee and tea	$2,427,000	19%
	Canned fruits and vegetables	$1,698,000	3%
	Bottled and canned soft drinks and water	$1,318,000	2%

Appendix D: Direct Employment and Wages by Sector within the District's Food Economy, 2001-2016

Table D1: Direct Employment and Wages – Food and Beverage Retail in the District

Sector and subsectors	2001	2006	2011	2016	Projected 2026	Percent Change 2001-2016	Percent Change 2006-2016	Projected Percent Change 2016-2026	Avg. Annual Wages 2016
Food and beverage retail	**5,436**	**5,621**	**6,617**	**8,125**	**9,709**	**49.5%**	**44.5%**	**19.5%**	**$36,161**
Supermarkets and other grocery stores	3,817	3,583	4,391	5,058	5,889	32.5%	41.2%	16.4%	$38,672
Convenience stores	327	513	834	1,193	1,479	264.8%	132.6%	24.0%	$21,838
Meat markets	68	92	77	116	133	70.6%	26.1%	14.7%	$55,002
Fish and seafood markets	90	69	36	72	88	-20.0%	4.3%	22.2%	$37,711
Baked goods stores	80	17	147	171	224	113.8%	905.9%	31.0%	$25,071
Confectionery and nut stores	50	28	40	76	100	52.0%	171.4%	31.6%	$21,117
All other specialty food stores	123	288	66	500	989	306.5%	73.6%	97.8%	$31,889
Beer, wine, and liquor stores	718	667	609	727	791	1.3%	9.0%	8.8%	$46,997
Food, health, supplement stores	84	46	33	102	121	21.4%	121.7%	18.6%	$33,376

Table D2: Direct Employment and Wages – Food Service and Drinking Places in the District

Sector and subsectors	2001	2006	2011	2016	Projected 2026	Percent Change 2001-2016	Percent Change 2006-2016	Projected Percent Change 2016-2026	Avg. Annual Wages 2016
Food services and drinking places	**29,761**	**34,284**	**42,004**	**53,813**	**63,898**	**80.8%**	**57.0%**	**18.7%**	**$30,844**
Food service contractors	3,661	2,982	2,615	5,025	6,432	37.3%	68.5%	28.0%	$29,976
Caterers	1,954	1,903	2,125	2,171	1,618	11.1%	14.1%	-25.5%	$39,363
Mobile food services (food trucks)	85	18	53	259	407	204.7%	1338.9%	57.1%	$22,307
Drinking places, alcoholic beverages	1,106	1,236	1,761	2,498	3,360	125.9%	102.1%	34.5%	$26,719
Full-service restaurants	14,385	17,008	21,287	27,804	33,386	93.3%	63.5%	20.1%	$33,601
Limited-service restaurants	6,019	7,350	9,914	12,945	15,668	115.1%	76.1%	21.0%	$26,106
Cafeterias, grill buffets, and buffets	381	734	431	555	501	45.7%	-24.4%	-9.7%	$28,656
Snack and nonalcoholic beverage bars	1,933	1,785	1,880	2,374	2,526	22.8%	33.0%	6.4%	$25,702
Community food services (including food banks and pantries, onsite meal provisions, etc.)	236	228	245	182	182	-22.9%	-20.2%	0. 0%	$67,895

Table D3: Direct Employment and Wages – Food and Beverage Manufacturing in the District

Sector and subsectors	2001	2006	2011	2016	Projected 2026	Percent Change 2001-2016	Percent Change 2006-2016	Projected Percent Change 2016-2026	Avg. Annual Wages 2016
Food manufacturing	**477**	**318**	**219**	**366**	**552**	**-23.3%**	**15.1%**	**50.8%**	**$38,613**
Retail bakeries	159	110	91	84	57	-47.2%	-23.6%	-32.1%	$27,089
Commercial bakeries	186	119	102	132	170	-29.0%	10.9%	28.8%	$33,787
Coffee and tea manufacturing	0	0	0	61	83	-	-	36.1%	$49,425
Perishable prepared food manufacturing	0	13	9	57	121	-	338.5%	112.3%	$39,539
Beverage manufacturing	**5**	**9**	**13**	**146**	**252**	**2820.0%**	**1522.2%**	**72.6%**	**$39,485**
Breweries	5	5	5	104	179	1980.0%	1980.0%	72.1%	$32,257
Distilleries	0	0	5	32	48	-	-	50.0%	$57,661

Table D4: Direct Employment and Wages – Food and Beverage Wholesaling in the District

Sector and subsectors	2001	2006	2011	2016	Projected 2026	Percent Change 2001-2016	Percent Change 2006-2016	Projected Percent Change 2016-2026	Avg. Annual Wages 2016
Food and grocery related wholesalers	**768**	**809**	**736**	**658**	**610**	**-14.3%**	**-18.7%**	**-7.3%**	**$64,384**
General line grocery merchant wholesalers	105	147	129	146	195	39.0%	-0.7%	33.6%	$49,128
Fish and seafood merchant wholesalers	85	124	78	106	142	24.7%	-14.5%	34.0%	$51,397
Meat and meat product merchant wholesalers	167	196	134	90	29	-46.1%	-54.1%	-67.8%	$56,804
Fruit and vegetable merchant wholesalers	166	67	81	46	9	-72.3%	-31.3%	-80.4%	$62,079
Other grocery product merchant wholesalers	185	229	274	212	169	14.6%	-7.4%	-20.3%	$78,024
Alcoholic beverage merchant wholesalers	**564**	**586**	**541**	**689**	**827**	**22.2%**	**17.6%**	**20.0%**	**$85,407**
Beer and ale merchant wholesalers	143	192	359	418	546	192.3%	117.7%	30.6%	$80,513
Wine and spirit merchant wholesalers	416	373	159	261	281	-37.3%	-30.0%	7.7%	$93,244

Appendix E: Occupational Data for the District's Food Sectors

Table E1: Most Common Occupations – Food and Beverage Retail Sector in the District

Most Common Occupations	Percent of Industry 2016	Projected Percent of Industry 2026	Projected Percent Change	Average Wage 2016
Cashiers	31.9%	30.3%	-5.0%	$12.96
Stock clerks and order fillers	17.4%	18.2%	4.6%	$15.17
Food preparation workers	5.5%	6.1%	10.9%	$14.35
First-line supervisors of retail sales workers	5.5%	5.7%	3.6%	$24.87
Retail salespersons	5.0%	5.2%	4.0%	$17.55
Packers and packagers, hand	4.6%	3.7%	-19.6%	$13.46
Combined food preparation and serving workers	3.9%	4.1%	5.1%	$14.00
Butchers and meat cutters	3.5%	3.7%	5.7%	$21.40
Customer service representatives	2.9%	3.0%	3.4%	$22.45
Bakers	1.6%	1.7%	6.2%	$15.75
First-line supervisors of office and administrative support workers	1.5%	1.6%	6.7%	$39.29

Table E2: Most Common Occupations – Food Services and Drinking Places Sector in the District

Most Common Occupations	Percent of Industry 2016	Projected Percent of Industry 2026	Projected Percent Change	Average Wage 2016
Combined food preparation and serving workers	25.6%	27.7%	8.2%	$14.00
Servers	19.8%	19.3%	-2.5%	$17.48
Cooks, restaurant	9.5%	9.8%	3.2%	$14.93
First-line supervisors of food preparation and serving workers	6.4%	6.4%	0.0%	$21.23
Cooks, fast food	4.4%	3.8%	-13.6%	$13.29
Food preparation workers	4.2%	4.2%	0.0%	$14.35
Bartenders	4.0%	3.8%	-5.0%	$18.29
Dishwashers	3.6%	3.5%	-2.8%	$14.19
Hosts and hostesses, restaurant, lounge, and coffee shop	3.3%	3.2%	-3.0%	$13.79
Cashiers	3.0%	2.9%	-3.3%	$12.96
Counter attendants, cafeteria, food concession, and coffee shop	2.8%	2.6%	-7.1%	$13.98
Dining room and cafeteria attendants and bartender helpers	2.7%	2.6%	-3.7%	$15.06

Table E3: Most Common Occupations – Food and Beverage Manufacturing Sectors in the District

Most Common Occupations	Percent of Industry 2016	Projected Percent of Industry 2026	Projected Percent Change	Average Wage 2016
Food Manufacturing				
Packaging and filling machine operators and tenders	8.2%	8.2%	0.0%	$20.81
Meat, poultry, and fish cutters and trimmers	7.8%	7.8%	0.0%	$18.57
Food batchmakers	7.8%	7.8%	0.0%	$15.60
Slaughterers and meat packers	4.9%	5.0%	2.0%	$18.74
Packers and packagers, hand	4.2%	4.2%	0.0%	$13.46
Laborers and freight, stock, and material movers, hand	4.1%	4.1%	0.0%	$24.07
Helpers--production workers	3.6%	3.6%	0.0%	$19.28
Bakers	3.5%	3.5%	0.0%	$15.75
First-line supervisors of production and operating workers	3.4%	3.4%	0.0%	$36.54
Industrial truck and tractor operators	2.4%	2.4%	0.0%	$22.77
Industrial machinery mechanics	2.3%	2.6%	13.0%	$32.77
Inspectors, testers, sorters, samplers, and weighers	2.2%	2.1%	-4.5%	$28.69
Maintenance and repair workers, general	2.0%	2.0%	0.0%	$23.71
Beverage Manufacturing				
Packaging and filling machine operators and tenders	11.8%	11.9%	0.8%	$20.81
Separating, filtering, clarifying, precipitating, and still machine operators	6.3%	6.3%	0.0%	$42.69
Sales representatives, wholesale and manufacturing	4.4%	4.4%	0.0%	$33.16
Industrial truck and tractor operators	3.5%	3.5%	0.0%	$22.77
Demonstrators and product promoters	3.3%	3.4%	3.0%	$19.21
Laborers and freight, stock, and material movers, hand	3.2%	3.2%	0.0%	$24.07
Waiters and waitresses	3.0%	3.0%	0.0%	$17.48
Heavy and tractor-trailer truck drivers	2.7%	2.7%	0.0%	$24.16
Driver/sales workers	2.6%	2.6%	0.0%	$16.27
Stock clerks and order fillers	2.5%	2.5%	0.0%	$15.17
Industrial machinery mechanics	2.4%	2.7%	12.5%	$32.77

Table E4: Most Common Occupations – Food and Beverage Wholesaling Sectors in the District

Most Common Occupations	Percent of Industry 2016	Projected Percent of Industry 2026	Projected Percent Change	Average Wage 2016
Food and grocery product wholesalers				
Sales representatives, wholesale and manufacturing	11.3%	11.6%	2.7%	$33.16
Laborers and freight, stock, and material movers, hand	9.2%	9.5%	3.3%	$24.07
Driver/sales workers	9.0%	9.3%	3.3%	$16.27
Heavy and tractor-trailer truck drivers	8.5%	8.7%	2.4%	$24.16
Stock clerks and order fillers	7.0%	6.1%	-12.9%	$15.17
Light truck or delivery services drivers	4.6%	4.7%	2.2%	$15.31
Packers and packagers, hand	3.6%	3.7%	2.8%	$13.46
Industrial truck and tractor operators	3.2%	3.2%	0.0%	$22.77
Shipping, receiving, and traffic clerks	2.5%	2.4%	-4.0%	$22.61
Office clerks, general	2.2%	2.1%	-4.5%	$20.97
General and operations managers	2.1%	2.1%	0.0%	$71.74
Alcoholic beverage wholesalers				
Sales representatives, wholesale and manufacturing	25.9%	26.1%	0.8%	$33.16
Laborers and freight, stock, and material movers, hand	9.0%	9.1%	1.1%	$24.07
Heavy and tractor-trailer truck drivers	8.0%	8.1%	1.3%	$24.16
Driver/sales workers	6.4%	6.4%	0.0%	$16.27
Stock clerks and order fillers	4.7%	4.8%	2.1%	$15.17
Merchandise displayers and window trimmers	4.0%	4.0%	0.0%	$19.79
Light truck or delivery services drivers	4.0%	4.1%	2.5%	$15.31
First-line supervisors of non-retail sales workers	3.9%	3.9%	0.0%	$36.58
Sales managers	2.4%	2.4%	0.0%	$63.50
Industrial truck and tractor operators	2.3%	2.4%	4.3%	$22.77
General and operations managers	2.1%	2.1%	0.0%	$71.74
Stock clerks and order fillers	2.5%	2.5%	0.0%	$15.17
Industrial machinery mechanics	2.4%	2.7%	12.5%	$32.77

Appendix F: The COG's Food Economy

Table F1: Economic Impact Summary of the District Food Economy in the COG, by City/County in 2016

COG City/County	Employment	Labor Income	Total Value Added	Output
District of Columbia	81,831	$3,643,107,946	$5,470,006,040	$8,685,100,681
Montgomery Co, MD	298	$15,904,713	$27,450,592	$54,707,163
Prince George's Co, MD	716	$35,764,220	$66,182,008	$134,750,936
Frederick Co, MD	26	$1,262,318	$2,241,465	$5,413,938
Charles Co, MD	29	$1,702,572	$4,576,154	$10,131,608
Fairfax Co, VA	341	$31,650,373	$52,302,887	$81,100,818
Arlington Co, VA	320	$35,970,559	$59,075,875	$86,378,613
Alexandria, VA	88	$5,742,495	$13,267,302	$20,839,245
Loudoun Co, VA	38	$1,839,619	$3,107,235	$5,547,719
Prince William Co, VA	42	$1,951,238	$3,380,547	$6,775,451
TOTAL IMPACT (outside DC)	**1,898**	**$131,788,108**	**$231,584,064**	**$405,645,491**
TOTAL IMPACT (including DC)	**83,729**	**$3,774,896,053**	**$5,701,590,104**	**$9,090,746,171**

Table F2: Economic Impact of the COG Region Food Economy in 2016

COG City/County	Employment	Labor Income	Total Value Added	Output
District of Columbia	81,831	$3,643,107,946	$5,470,006,040	$8,685,100,681
Montgomery Co, MD	68,977	$2,817,449,556	$4,408,112,527	$7,008,831,193
Prince George's Co, MD	50,200	$1,598,585,452	$2,801,487,505	$5,006,709,695
Frederick Co, MD	24,011	$686,660,416	$1,216,710,414	$2,498,866,610
Charles Co, MD	9,451	$249,744,119	$450,476,127	$832,842,088
Fairfax Co, VA	75,366	$3,006,806,269	$4,888,947,227	$7,670,342,310
Arlington Co, VA	20,272	$809,430,183	$1,248,154,484	$1,951,256,277
Alexandria, VA	14,010	$555,866,825	$894,041,898	$1,521,829,603
Loudoun Co, VA	30,107	$945,775,940	$1,626,961,598	$2,839,040,222
Prince William Co, VA	25,268	$729,859,579	$1,272,460,659	$2,230,442,455
TOTAL IMPACT (outside DC)	**317,663**	**$11,400,178,339**	**$18,807,352,439**	**$31,560,160,453**
TOTAL IMPACT (including DC)	**399,494**	**$15,043,286,284**	**$24,277,358,479**	**$40,245,261,133**

Table F3: Total Employment Impact of the Food Economy in the COG region by Industry Sector in 2016

Subsector	Direct	Indirect	Induced	Total
Full-service restaurants	106,541	0	0	106,541
Limited-service restaurants	87,350	0	0	87,350
Retail - food and beverage stores	54,195	0	0	54,195
All other food and drinking places	46,031	0	0	46,031
Wholesale trade	4,999	1,752	864	7,615
Real estate	0	4,807	1,625	6,432
Bread and bakery product, except frozen, manufacturing	6,374	0	0	6,374
Hotels and motels, including casino hotels	3,674	66	24	3,764
Management of companies and enterprises	707	2,768	208	3,684
Services to buildings	0	1,566	886	2,452
Support activities for agriculture and forestry	1,711	0	0	1,711
Hospitals	297	0	1,498	1,795
Crop production	2,821	0	0	1,332
Employment services	0	1,121	321	1,442
Warehousing and storage	684	634	76	1,394

Table F4: Food Service and Drinking Places Employment in COG Region Excluding the District in 2001 - 2016

Sector and subsectors	Employment 2001	Employment 2016	Percent Change 2001-2016
Food services and drinking places	**112,226**	**170,655**	**52.1%**
Food service contractors	7,752	12,480	61.0%
Caterers	4,401	7,328	66.5%
Mobile food services (includes food trucks)	390	2,027	420.2%
Drinking places, alcoholic beverages	1,272	1,394	9.6%
Full-service restaurants	54,737	76,673	40.1%
Limited-service restaurants (includes fast casual)	37,759	60,565	60.4%
Cafeterias, grill buffets, and buffets	1,068	1,592	49.0%
Snack and nonalcoholic beverage bars	4,547	8,321	83.0%
Community food services	299	275	-8.0%

Table F5: Employment in Food Services and Drinking Places by County in COG Region 2001-2016

COG City/County	2001 Jobs	2016 Jobs	2001 - 2016 Change	2001 - 2016 % Change
District of Columbia	**29,761**	**53,813**	**24,052**	**81%**
Charles Co, MD	**4,557**	**5,497**	**940**	**21%**
Frederick Co, MD	**5,878**	**9,919**	**4,041**	**69%**
Montgomery Co, MD	**24,823**	**35,235**	**10,413**	**42%**
Prince Georges Co, MD	**17,916**	**27,402**	**9,486**	**53%**
Arlington Co, VA	**8,197**	**12,803**	**4,607**	**56%**
Fairfax Co, VA	**29,911**	**42,805**	**12,894**	**43%**
Loudoun Co, VA	**6,278**	**14,435**	**8,157**	**130%**
Prince William Co, VA	**8,049**	**14,056**	**6,007**	**75%**
Alexandria, VA	**6,318**	**7,736**	**1,418**	**22%**

Table F6: Food and Beverage Retail in COG Region Excluding the District in 2001 - 2016

Sector and subsectors	Employment 2001	Employment 2016	Percent Change 2001-2016
Food and beverage retail	**40,182**	**55,726**	**38.7%**
Supermarkets and other grocery stores	30,155	40,465	34.2%
Convenience stores	1,084	4,530	318.0%
Meat markets	639	278	-56.5%
Fish and seafood markets	308	213	-30.7%
Baked goods stores	289	690	138.8%
Confectionery and nut stores	347	395	13.7%
All other specialty food stores	908	1,480	62.9%
Beer, wine, and liquor stores	1,947	2,367	21.6%
Food, health, supplement stores	893	1,317	47.4%

Table F7: Employment in Food and Beverage Retail by County in COG Region 2001-2016

COG City/County	2001 Jobs	2016 Jobs	2001 - 2016 Change	2001 - 2016 % Change
District of Columbia	**5,436**	**8,125**	**2,689**	**49%**
Charles Co, MD	**1,358**	**1,677**	**319**	**23%**
Frederick Co, MD	**2,430**	**3,338**	**908**	**37%**
Montgomery Co, MD	**10,269**	**12,945**	**2,677**	**26%**
Prince Georges Co, MD	**8,343**	**10,442**	**2,100**	**25%**
Arlington Co, VA	**1,684**	**2,292**	**608**	**36%**
Fairfax Co, VA	**8,710**	**11,362**	**2,651**	**30%**
Loudoun Co, VA	**1,429**	**4,159**	**2,730**	**191%**
Prince William Co, VA	**1,739**	**3,983**	**2,244**	**129%**
Alexandria, VA	**1,221**	**2,538**	**1,317**	**108%**

Table F8: Agriculture Employment in 2016 in COG Region Excluding the District in 2016[19]

Sector and subsectors	Employment 2016
Agriculture	**6,808**
Crop Production	2,821
All other crop farming	1,332
Greenhouse, nursery, and floriculture production	1,088
Grain farming	524
Fruit farming	502
Oilseed farming	147
Vegetable and melon farming	128
Animal Production and Aquaculture	**1,930**
Beef cattle ranching and farming	599
Animal production, except cattle and poultry and eggs	456
Dairy cattle and milk production	273
Support Activities for Crop Production	1,017
Support Activities for Animal Production	694
Shellfish Fishing	64
Commercial hunting and trapping	282

[19]No data was available regarding the total amount of crops produced in the District or related employment numbers.

Table F9: Employment in Agriculture by County in COG Region 2001-2016

COG City/County	2001 Jobs	2016 Jobs	2001 - 2016 Change	2001 - 2016 % Change
District of Columbia	**No data**	**No data**	**No data**	**No data**
Charles Co, MD	**544**	**452**	**-92**	**-17%**
Frederick Co, MD	**1,887**	**1,804**	**-83**	**-4%**
Montgomery Co, MD	**1,030**	**817**	**-213**	**-21%**
Prince Georges Co, MD	**664**	**362**	**-303**	**-46%**
Arlington Co, VA	**40**	**40**	**0**	**0%**
Fairfax Co, VA	**244**	**173**	**-70**	**-29%**
Loudoun Co, VA	**1,976**	**1,851**	**-125**	**-6%**
Prince William Co, VA	**538**	**461**	**-77**	**-14%**
Alexandria, VA	**15**	**25**	**10**	**67%**

Table F10: Food and Beverage Manufacturing Employment in COG Region Excluding the District in 2001 - 2016

Sector and subsectors	Employment 2001	Employment 2016	Percent Change 2001-2016
Food manufacturing	**5,560**	**7,003**	**26.0%**
Retail Bakeries	1,014	1,742	71.8%
Commercial Bakeries	1,694	1,436	-15.2%
Frozen Specialty Food Manufacturing	269	353	31.2%
Perishable Prepared Food Manufacturing	97	195	101.5%
Coffee and Tea Manufacturing	39	189	391.6%
Fluid Milk Manufacturing	374	137	-63.3%
Cookie and Cracker Manufacturing	19	136	635.4%
Frozen Cakes, Pies, and Other Pastries Manufacturing	9	136	1,409.0%
All Other Miscellaneous Food Manufacturing	21	103	400.3%
Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing	9	98	988.1%
Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour	37	97	162.7%
Other Snack Food Manufacturing	9	94	947.7%
Fruit and Vegetable Canning	25	88	255.7%
Beverage product manufacturing	**1,726**	**2,257**	**30.8%**
Breweries	211	332	57.3%
Distilleries	9	172	1,811.1%
Wineries	30	959	3,096.7%
Bottled and Canned Soft Drinks & Water	1,182	782	-33.8%

Table F11: Employment in Food and Beverage Manufacturing by County in COG Region 2001-2016

COG City/County	2001 Jobs	2016 Jobs	2001 - 2016 Change	2001 - 2016 % Change
District of Columbia	**5,436**	**8,125**	**2,689**	**49%**
Charles Co, MD	**1,358**	**1,677**	**319**	**23%**
Frederick Co, MD	**2,430**	**3,338**	**908**	**37%**
Montgomery Co, MD	**10,269**	**12,945**	**2,677**	**26%**
Prince Georges Co, MD	**8,343**	**10,442**	**2,100**	**25%**
Arlington Co, VA	**1,684**	**2,292**	**608**	**36%**
Fairfax Co, VA	**8,710**	**11,362**	**2,651**	**30%**
Loudoun Co, VA	**1,429**	**4,159**	**2,730**	**191%**
Prince William Co, VA	**1,739**	**3,983**	**2,244**	**129%**
Alexandria, VA	**1,221**	**2,538**	**1,317**	**108%**

Table F12: Food and Beverage Wholesaling Employment in COG Region Excluding the District in 2016

Sector and subsectors	Employment 2001	Employment 2016	Percent Change 2001-2016
Food and grocery product wholesalers	4,792	6,579	37.3%
General line grocery merchant wholesalers	1,059	1,913	80.6%
Confectionery merchant wholesalers	741	532	-28.2%
Fish and seafood merchant wholesalers	79	106	34.2%
Meat and meat product merchant wholesalers	196	369	88.4%
Fruit and vegetable merchant wholesalers	217	407	87.3%
Other grocery product merchant wholesalers	1,619	2,726	68.4%
Alcoholic beverage merchant wholesalers	1,423	1,808	27.0%
Beer and ale merchant wholesalers	555	990	78.4%
Wine and spirit merchant wholesalers	592	632	6.8%

Table F13: Employment in Food and Beverage Manufacturing by County in COG Region 2001-2016

COG City/County	2001 Jobs	2016 Jobs	2001 - 2016 Change	2001 - 2016 % Change
District of Columbia	1,332	1,347	15	1%
Charles Co, MD	218	259	41	19%
Frederick Co, MD	340	482	142	42%
Montgomery Co, MD	595	750	155	26%
Prince Georges Co, MD	2,221	3,119	898	40%
Arlington Co, VA	47	241	194	413%
Fairfax Co, VA	887	1,199	312	35%
Loudoun Co, VA	207	443	236	114%
Prince William Co, VA	74	113	39	53%
Alexandria, VA	474	333	-141	-30%

Appendix G: The Local Food Region's Food Economy

Table G1: Employment in Seven State Local Food Region

Sector	2001	2006	2011	2016	Change 2001-2016	% Change 2001-2016
Crop production	73,076	69,583	66,395	66,100	-6,976	-9.5%
Animal production and aquaculture	50,066	47,663	41,170	40,431	-9,636	-19.2.8%
Food manufacturing	229,582	212,949	207,377	219,503	-10,079	-4.4%
Beverage manufacturing	25,081	19,932	19,626	28,797	3,716	14.8%
Food and grocery product wholesalers	104,212	112,758	108,352	111,369	7,157	6.9%
Alcoholic beverage merchant wholesalers	15,683	19,541	21,197	24,218	8,535	54.4%

Table G2: Percent Change in Food Economy Employment for States within the Local Seven State Region

Sector	Percent Change in Employment 2001-2016									
	DC	COG	DE	MD	NJ	NC	PA	VA	WV	U.S. Average
Crop Production	N/A	-6.1%	-24.8%	2.1%	-4.3%	-11.1%	-7.1%	-19.4%	-1.8%	-0.6%
Animal Production and Aquaculture	N/A	-30.3%	-28.6%	-25.4%	-7.3%	-26.0%	4.1%	-34.5%	-53.3%	28.0%
Food Manufacturing	-23.3	26.0%	2.9%	-11.3%	-0.4%	6.8%	-8.4%	-12.3%	-20.2%	-0.6%
Beverage Manufacturing	2820.0%	30.8%	139.6%	-29.9%	21.1%	27.1%	2.9%	80.1%	-59.7%	33.4%
Food and Grocery Product Wholesalers	-14.3%	37.3%	-8.7%	15.4%	24.8%	14.8%	-1.9%	-15.4%	-26.7%	11.0%
Alcoholic Beverage Merchant Wholesalers	22.2%	27.0%	45.2%	59.1%	47.6%	73.7%	61.1%	39.7%	37.7%	48.9%

Appendix H: Grocery Stores in Washington, DC

Table H1: Most Common Occupations in the Grocery Stores Subsector in the District

Occupation	2016 Jobs	2026 Jobs	% of Industry 2016	Projected % of Industry 2026	Projected 2016 - 2026 Change	Projected 2016 - 2026 % Change	Median Hourly Earnings 2026
Cashiers	2,592	2,942	31.9	30.3	350	14%	$11.90
Stock Clerks and Order Fillers	1,414	1,767	17.4	18.2	353	25%	$13.66
Food Preparation Workers	447	592	5.5	6.1	145	33%	$13.06
First-Line Supervisors of Retail Sales Workers	447	553	5.5	5.7	107	24%	$17.58
Retail Salespersons	406	505	5.0	5.2	99	24%	$13.91
Packers and Packagers, Hand	374	359	4.6	3.7	-15	-3.90%	$12.64
Combined Food Preparation and Serving Workers	317	398	3.9	4.1	81	26%	$12.23
Butchers and Meat Cutters	284	359	3.5	3.7	75	26%	$21.85
Customer Service Representatives	236	291	2.9	3.0	56	24%	$21.32
Bakers	130	165	1.6	1.7	35	27%	$13.64

Table H2: New Grocery Stores in the District: 2000-2016

Store	Location	Square Feet	Year Established	District Ward
Whole Foods Market	1440 P Street, NW	42,000	2000	2
Giant	1050 Brentwood Road, NE	54,000	2002	5
Giant*	1345 Park Road, NW	53,000	2005	1
Trader Joes	1101 25th Street, NW	11,800	2006	2
Yes! Organics	3809 12th Street, NE	7,200	2006	5
Giant	1535 Alabama Avenue, SE	66,000	2007	8
Harris Teeter	1391 Pennsylvania Avenue, SE	47,000	2008	6
Harris Teeter	1631 Kalorama Road, NW	37,000	2008	1
Safeway	490 L Street, NW	59,000	2008	6
Yes! Organics	4100 Georgia Avenue, NW	11,000	2008	4
Yes! Organics	2123 14th Street, NW	6,000	2008	1
Safeway*	1855 Wisconsin Avenue, NW	71,000	2010	2
Safeway*	401 M Street, SW	55,000	2010	6
Harris Teeter	1st & M Streets, NE	50,000	2010	6
Whole Foods Market	22nd & I Streets, NW	37,000	2011	2
Aldi	901 17th Street, NE	17,900	2011	5
Yes! Organics*	410 8th Street, SE	4,115	2012	6
Costco	New York & South Dakota Avenue, NE	154,000	2012	5
Sav-A-Lot	680 Rhode Island Avenue, NE	NA	2013	5
Glens Garden Market	2001 S Street, NW	8,400	2013	2
Giant	3rd & H Streets, NE	41,200	2013	6
Giant*	7th & O Streets, NW	75,000	2013	2
Walmart	1st & H Streets, NW	76,000	2013	6
Walmart	5929 Georgia Avenue, NW	106,000	2013	4
Trader Joe's	14th & U Streets, NW	15,100	2014	2
Safeway*	3830 Georgia Avenue, NW	62,000	2014	4
Streets Market and Cafe	2400 14th Street, NW	9,000	2014	1
Harris Teeter	1212 4th Street, SE	50,000	2014	6
Giant*	3336 Wisconsin Avenue, NW	56,000	2014	3
MOM's	1501 New York Avenue, NE	16,000	2014	5
Union Kitchen Grocery	538 3rd Street, NE	1,000	2015	6
Walmart	South Dakota Avenue & Riggs Road, NE	120,000	2015	4

*Indicates a replacement store.
Source: Washington DC Economic Partnership. “New DC Grocery Store (since 2000).” 2019.
https://wdcep.com/dc-industries/retail/

Table H3: Supply Chain Purchases by Grocery Stores in the District of Columbia

Industry	Total Purchases	% Satisfied by District based Businesses
General Warehousing and Storage	$10,259,471	1.3%
Corporate, Subsidiary, and Regional Managing Offices	$8,213,418	14.1%
Lessors of Residential Buildings and Dwellings	$6,777,174	48.7%
Offices of Real Estate Agents and Brokers	$5,773,150	99.3%
Lessors of Nonresidential Buildings (except Mini warehouses)	$4,076,821	86.0%
Other Activities Related to Real Estate	$3,653,913	70.5%
Residential Property Managers	$2,824,677	99.2%
General Freight Trucking, Long-Distance, Truckload	$2,082,000	0.8%
Electric Power Distribution	$1,849,902	69.8%
Lessors of Mini warehouses and Self-Storage Units	$1,810,795	11.5%
Nonresidential Property Managers	$1,746,382	100.0%
Advertising Agencies	$1,731,571	69.1%
Commercial Banking	$1,632,341	45.6%
Offices of Certified Public Accountants	$1,304,779	99.9%
General Freight Trucking, Local	$1,095,658	4.0%
General Freight Trucking, Long-Distance, Less Than Truckload	$924,720	1.7%
Offices of Lawyers	$907,757	100.0%
Janitorial Services	$893,375	99.8%
Crop Production	$888,904	0.0%
Administrative Management and General Management Consulting Services	$854,254	99.9%
Refrigerated Warehousing and Storage	$836,621	0.0%
Other Warehousing and Storage	$806,476	13.9%
Wholesale Trade Agents and Brokers	$761,478	54.8%
Cheese Manufacturing	$720,036	0.0%
Specialized Freight (except Used Goods) Trucking, Local	$694,606	3.4%
All Other Professional, Scientific, and Technical Services	$672,062	99.7%
Other Requirements	$66,218,652	Data not available
Total Requirements	**$130,010,993**	**41.0%**

Appendix I: Restaurants in Washington, DC

Table I1: Most Common Occupations in Restaurants, the District

Occupation	2016 Jobs	2026 Jobs	% of Industry 2016	Projected % of Industry 2026	Projected 2016 - 2026 Change	Projected 2016 - 2026 % Change	Median Hourly Earnings
Combined Food Preparation and Serving Workers	13,776	17,700	25.6	27.7	3,924	28.5%	$12.23
Food Servers	10,655	12,332	19.8	19.3	1,677	15.7%	$11.85
Cooks, Restaurant	5,112	6,262	9.5	9.8	1,150	22.5%	$13.88
First-Line Supervisors of Food Preparation and Serving Workers	3,444	4,089	6.4	6.4	645	18.7%	$17.18
Cooks, Fast Food	2,368	2,428	4.4	3.8	60	2.5%	$11.84
Food Preparation Workers	2,260	2,684	4.2	4.2	424	18.7%	$13.06
Bartenders	2,153	2,428	4.0	3.8	276	12.8%	$14.97
Dishwashers	1,937	2,236	3.6	3.5	299	15.4%	$12.46
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	1,776	2,045	3.3	3.2	269	15.1%	$12.74
Cashiers	1,614	1,853	3.0	2.9	239	14.8%	$11.90
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	1,507	1,661	2.8	2.6	155	10.3%	$12.45
Dining Room and Cafeteria Attendants and Bartender Helpers	1,453	1,661	2.7	2.6	208	14.3%	$12.38
Driver/Sales Workers	915	895	1.7	1.4	-20	-2.2%	$12.27
Food Service Managers	753	895	1.4	1.4	141	18.7%	$25.59

Table I2: Largest Business/Institutional Consumers of the District of Columbia's Restaurants

Industry (business/Institutional consumer)	Gross Demand
Hospitals	$40,404,660
Legal services	$39,683,670
Management consulting services	$30,801,820
Architectural, engineering, and related services	$23,634,884
Grantmaking, giving, and social advocacy organizations	$23,592,012
Colleges and Universities	$21,057,498
Computer systems design services	$20,225,628
Real estate	$19,471,764
Information Services	$17,681,633

Table I3: Restaurant Purchases in the District of Columbia

Industry	Total Value of Purchases	% Satisfied in by District Businesses
Corporate, Subsidiary, and Regional Managing Offices	$264,594,545	14.10%
Cheese Manufacturing	$55,755,689	0.00%
Lessors of Residential Buildings and Dwellings	$49,678,725	48.70%
Offices of Real Estate Agents and Brokers	$42,318,926	99.30%
Poultry Processing	$37,316,639	0.00%
Lessors of Nonfinancial Intangible Assets	$30,409,955	1.80%
Lessors of Nonresidential Buildings (except Miniwarehouses)	$29,884,323	86.00%
Animal (except Poultry) Slaughtering	$27,798,131	0.00%
Meat Processed from Carcasses	$27,129,031	0.00%
Other Activities Related to Real Estate	$26,784,281	70.50%
Wholesale Trade Agents and Brokers	$21,145,913	54.8%
Seafood Product Preparation and Packaging	$19,470,592	0.0%
Distilleries	$18,974,650	22.9%
Advertising Agencies	$17,880,531	69.1%
Soft Drink Manufacturing	$17,677,314	1.3%
Breweries	$16,653,855	13.5%
Ice Cream and Frozen Dessert Manufacturing	$15,316,711	0.0%
Offices of Certified Public Accountants	$13,685,278	99.9%
Offices of Lawyers	$13,360,809	100.0%
Lessors of Miniwarehouses and Self-Storage Units	$13,273,671	11.5%
Internet Publishing and Broadcasting and Web Search Portals	$13,021,016	62.8%
Offices of Other Holding Companies	$12,841,101	100.0%
Nonresidential Property Managers	$12,801,502	100.0%
Flavoring Syrup and Concentrate Manufacturing	$12,471,581	0.0%
Direct Property and Casualty Insurance Carriers	$11,926,768	11.4%
Wineries	$11,120,898	0.1%
Commercial Bakeries	$11,091,941	9.3%
Other Snack Food Manufacturing	$11,058,276	0.0%
Finfish Fishing	$10,518,066	0.5%
Shellfish Fishing	$10,113,612	1.0%
General Freight Trucking, Long-Distance, Truckload	$8,003,762	0.8%

Table I3: Restaurant Purchases in the District of Columbia (continued)

Industry	Total Value of Purchases	% Satisfied in by District Businesses
Commercial and Industrial Machinery and Equipment Repair and Maintenance	$6,722,903	5.7%
Computer and Computer Peripheral Equipment and Software Wholesalers	$6,700,461	33.2%
Fluid Milk Manufacturing	$6,626,756	0.0%
Animal Production	$6,508,239	0.0%
All other Requirements	$789,678,212	Data not available
TOTAL	**$1,700,314,664**	**30.50%**

Appendix J: Survey and Interview Findings

Table J1: Rate how helpful or challenging each of the following factors is to companies in DC's food industry; n=68

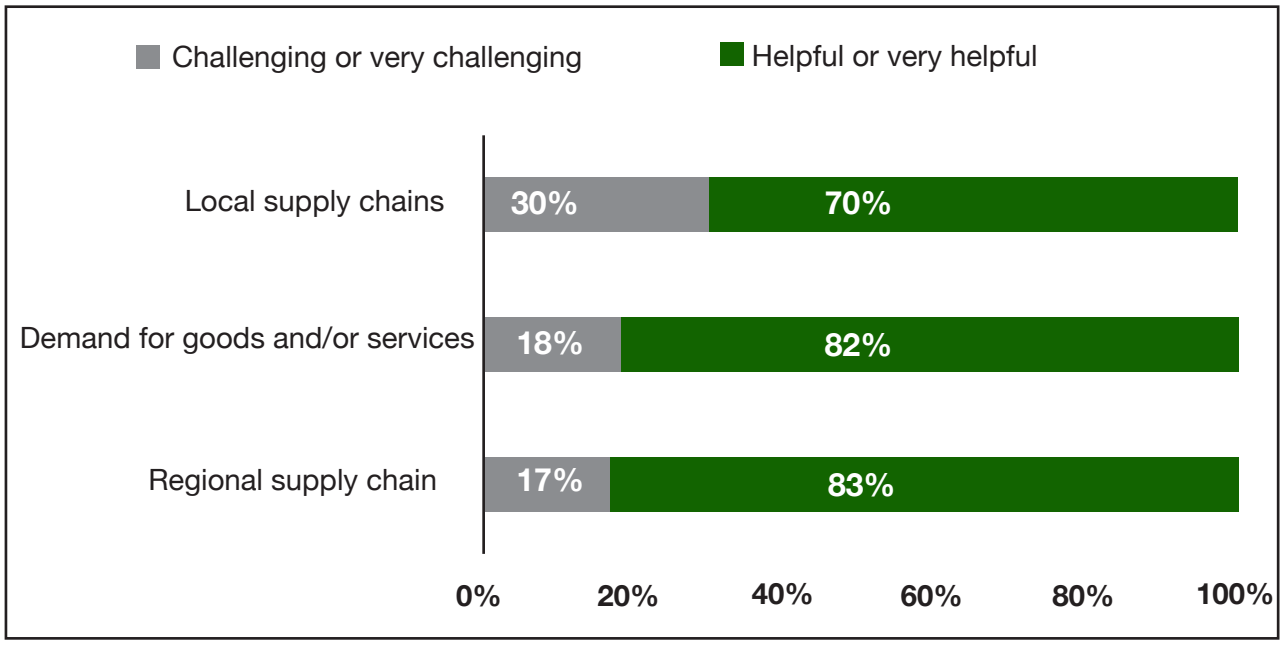


Table J2: Rate the availability of key supplies; n=68

Supply	Not at all easy	Fairly easy	Moderately easy	Very easy
Alcohol	–	13%	25%	63%
Dry Goods	18%	–	27%	55%
Paper Products	–	33%	17%	50%
Fresh Food	9%	21%	38%	32%
Packaging	15%	31%	23%	31%

Table J3: Rate how helpful or challenging each of the following factors is to companies in DC's food industry; n=53

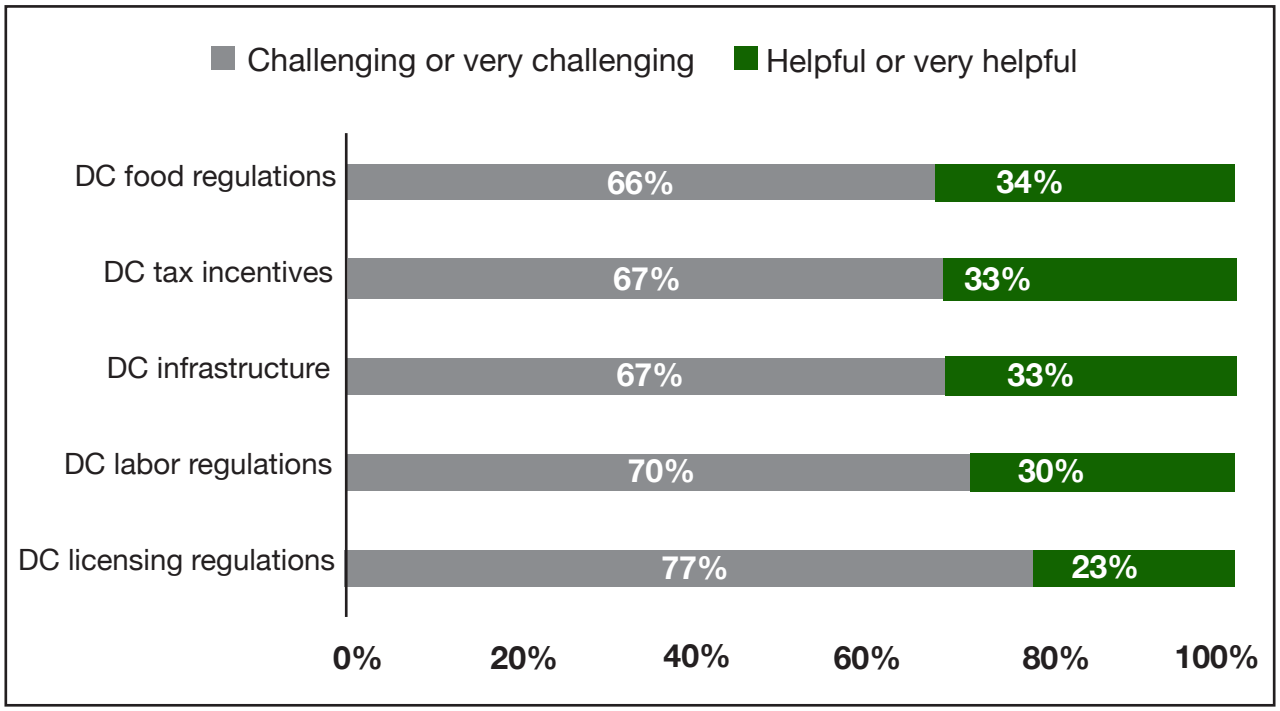


Table J4: Rate how helpful or harmful each of the following factors is to companies in DC's food economy; n=68

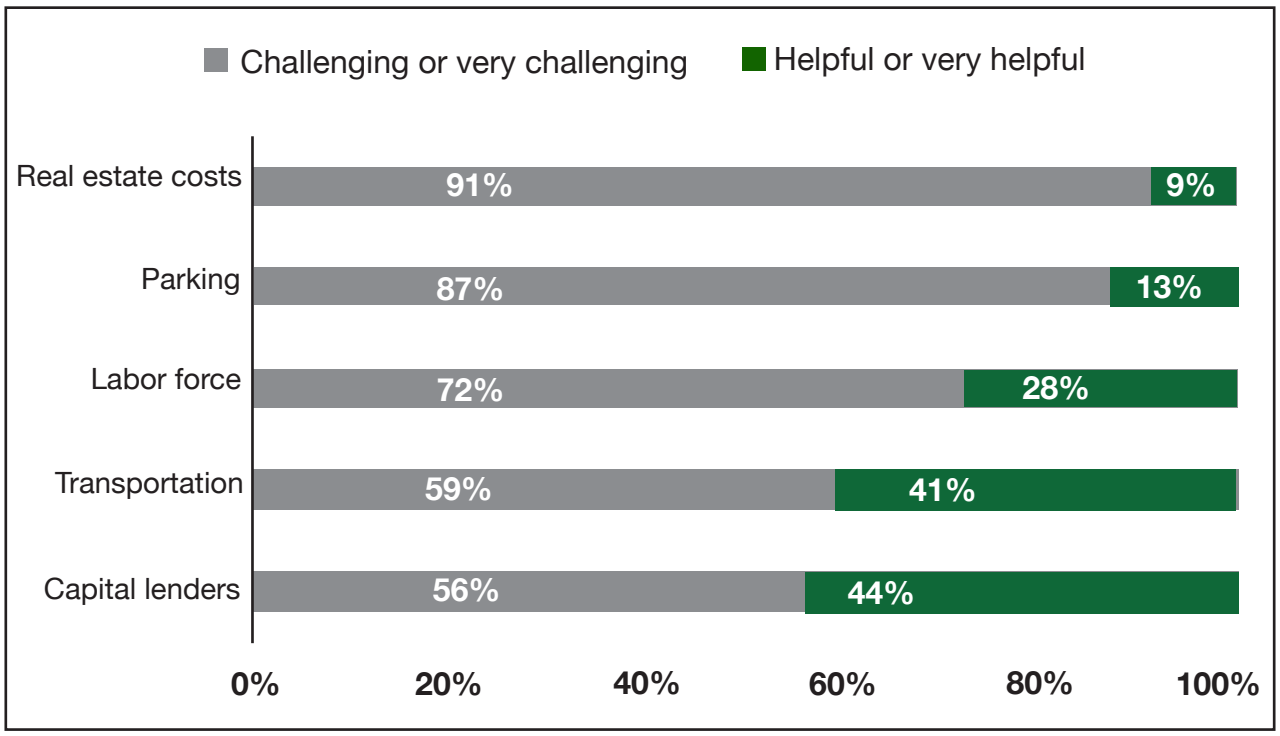


Table J5: Indicate how many months it takes to hire qualified employees for the following types of positions; n=66

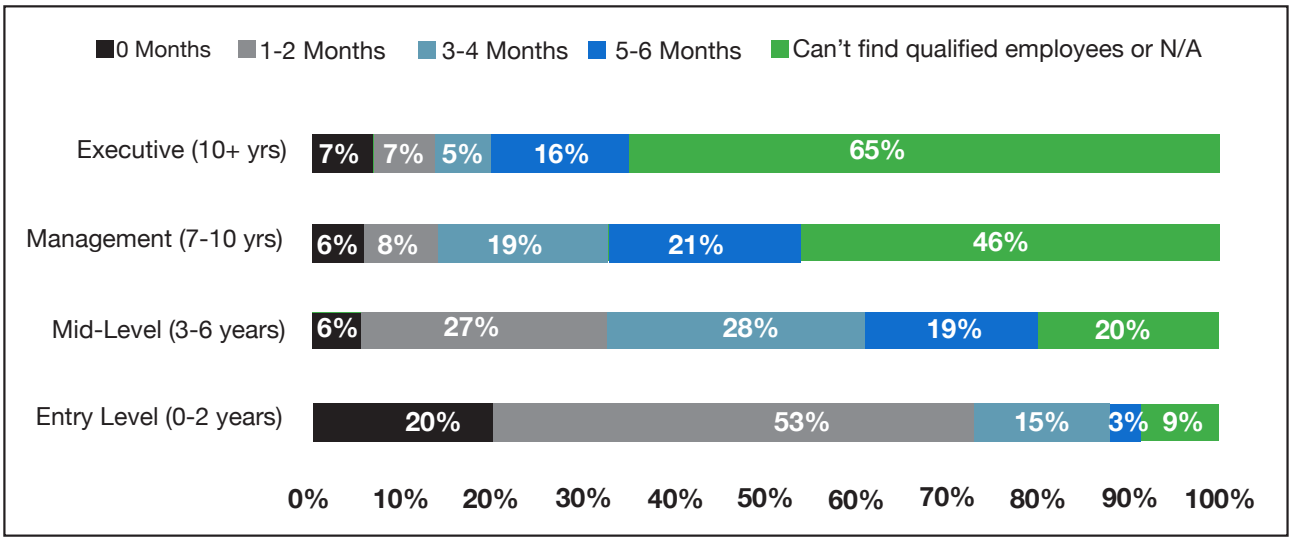
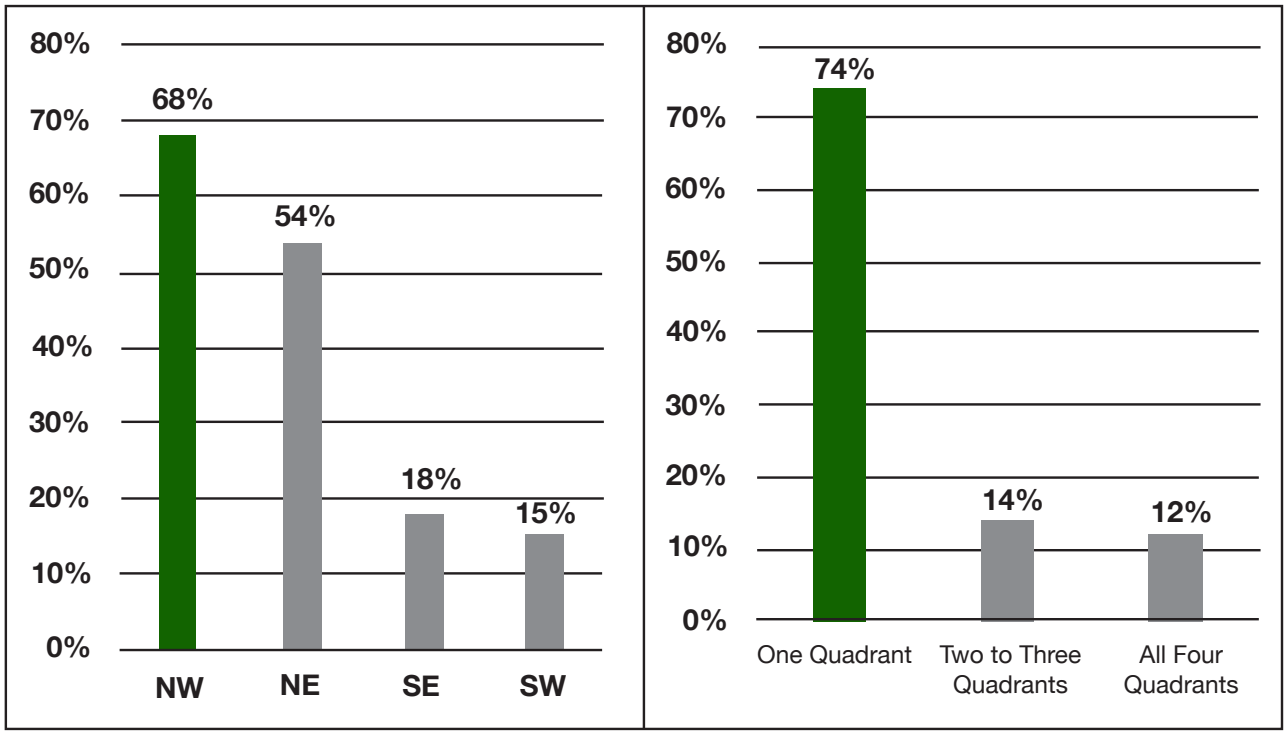


Table J6: In which quadrant(s) of DC does your company conduct business?[20] n=78



[20] The question required respondents to check all response options that apply therefore total percentages may exceed 100 percent.