

Estimating the Economic Contributions of the Moscow Farmers Market

By Colette DePhelps¹ and Steven Peterson²

Abstract

During the summer of 2018, a team of community members, led by University of Idaho Extension, performed a Rapid Market Assessment (RMA) of the Moscow Farmers Market, located in Moscow, Idaho. The RMA data was used by University of Idaho faculty to conduct an economic assessment of the Moscow Farmers Market using IMPact Analysis for PLANing (IMPLAN). The purpose of the study was to understand the economic footprint of the market, including estimating the market's economic contribution to the City of Moscow's investment in market operations and management and the economic contributions to the local economy in Latah County, Idaho. It is clear from this analysis that the Moscow Farmers Market is a significant asset to the City of Moscow and has significant positive direct and indirect contributions to the local economy. With the rise of COVID-19, it is important that the success of the Moscow Farmers Market be monitored, and that support be provided to market vendors and downtown shops to ensure their rebound post-pandemic.

Key words: Economic assessment, economic contribution, farmers market, IMPLAN, rapid market assessment.

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Introduction

The Moscow Farmers Market is a vital social institution known for its quality and selection of agricultural and artisan products and has been rated as one of the top farmers markets in Idaho and the nation (Janovich, 2016; Moscow Chamber of Commerce, 2017). Founded in 1976 by the Moscow Food Cooperative and transferred to City of Moscow management in 1978, the market was 42 years old at the time of this study. The Moscow Farmers Market is a signature event within Moscow, Idaho. Moscow, a rural community, is home to the University of Idaho's main residential campus and lacks any major tourist destination feature, such as lake or wilderness area, to attract visitor spending. Moscow (population 25,146 including students) is the seat of Latah County (population 39,473) (U.S. Census, 2018). The community is a housing, shopping, service, and dining center for the broader regional economy. Moscow's economy is heavily dependent on commuting patterns (primarily out-commuters) and visitor and tourism activity.

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The hospitality, tourism, and eating and drinking sectors are highly competitive and the community faces competition from Pullman Washington (home of Washington State University) to the west and Lewiston, Idaho to the south.

The Moscow Farmers Market has emerged as a community event that unites the arts, entertainment, local sustainable agriculture, the Moscow Food Cooperative (located one block east of Moscow's Main Street), and the downtown businesses. The Moscow Chamber acknowledges that the Market elevates tourism and visitation to the community, and it is an essential piece of the branding platform at the Moscow Chamber of Commerce and Visitor Center.

The Moscow Farmers Market is managed and funded by the City of Moscow. Overseen by a Mayor-appointed Farmers Market Commission, one of the strengths of the market is the active participation of stakeholders in market oversight with the city taking the lead. The market takes place downtown on Main Street every Saturday between May 1 and October 31, 8:00 am to 1:00 pm, averaging 26 market days per year.

During the summer of 2018, University of Idaho Extension performed a series of Rapid Market Assessments (RMAs) of the Moscow Farmers Market (Lev, Brewer and Stephenson, 2008a). The RMA data was used by University of Idaho business economics faculty to conduct an economic assessment of the market using IMPLAN. The purpose of the study was to understand the market's contribution to the economy of Moscow, Idaho and Latah County, Idaho. Also measured were the farmers market operating costs to the City of Moscow against the estimated tax contributions generated by the market. In summary, the 2018 economic contribution of the Moscow Farmers Market, including multiplier effects, was estimated to be approximately \$6.46 million in output, 113 jobs, and \$405,170 in state and local taxes.

Estimating Economic Contributions

This study estimates the economic contribution of the Moscow Farmers Market to the local economy of Latah County, Idaho. When discussing local food systems, the phrases economic impact and economic contribution are often used interchangeably (Watson, et. al., 2007). However, these phrases have very specific meanings in the economic development disciplines and measure economic activity differently (McFadden et. al, 2016; Watson, et. al., 2007). An economic contribution analyses looks at the gross changes an entity, such as a business or an event, makes to the local economy (Watson, et. al., 2007; Schmit, and Jablonski, 2017). This differs from an economic impact assessment that looks at the impact of a business expansion or opening and measures the net economic activity generated by the establishment of, or change in, the business (Watson, et. al. 2007; Schmit and Jablonski, 2017).

Study Methods

This study collected primary data on the Moscow Farmers Market through RMAs, vendor surveys, and business surveys. RMAs combine customer counts and dot survey data to estimate spending at farmers markets on a specific market day (Lev, Brewer and Stephenson, 2008b). IMPact Analysis for PLANing (IMPLAN) input-output economic impact modeling software was used to generate the economic multipliers used in the study and to estimate the economic contributions of the Moscow Farmers Market.

Using a Latah County IMPLAN model, four estimates of sales attributed to the market were employed in the analysis: market customer spending inside and outside the market based on 2018 RMA surveys, market customer spending based on 2018 market vendor (producer)

surveys; and, a 2016 survey of brick and mortar businesses incubated in the market which asked about employee numbers and payroll.

RMA data used in the calculation of the economic contributions was collected on three market days, July 28, August 11, and September 8, 2018. The July 28 and September 8 assessment data included adult customer counts and four-question dot surveys. On August 11, only adult customer counts were undertaken. In both dot surveys, adults were asked to indicate where they lived and how much they anticipated spending inside and outside the market.

On July 28, approximately 10.6% (1070) of adults who visited the Moscow Farmers Market participated in the dot survey. On September 8, 12% (1258) of adults participated. Respondent numbers by question varied slightly (less than 5%) which indicates most answered all dot survey questions. Slight variations on question response numbers are expected as some customers are unwilling to answer certain questions, primarily those regarding spending inside and outside the market.

Estimating Market Attendance

The adult customer estimates on all three market days were derived by counting the number of adult shoppers in the market at opening plus hourly customer estimates following the RMA methodology developed by Lev, Stephenson, and Brewer (2008a; 2008b). To obtain hourly estimates, volunteers were stationed at each of the market's five entrances for 10 minutes, at 25-35 minutes after each hour the market was open. Using clickers, volunteers counted the number of adults entering the market in that ten-minute period. The ten-minute counts were then multiplied by six (10 minutes x 6 = 60 minutes) to obtain an estimate of adult customers entering the market during that hour.

In the summer of 2018, Moscow Farmers Market customer count estimates were conducted on July 28, August 11, and September 8. These dates were chosen because they did not correspond with other large-scale community events that might attract an unusual number of market shoppers. On each of the three Saturdays, the estimated adult customers attending the market exceeded 10,000 (Figure 1).

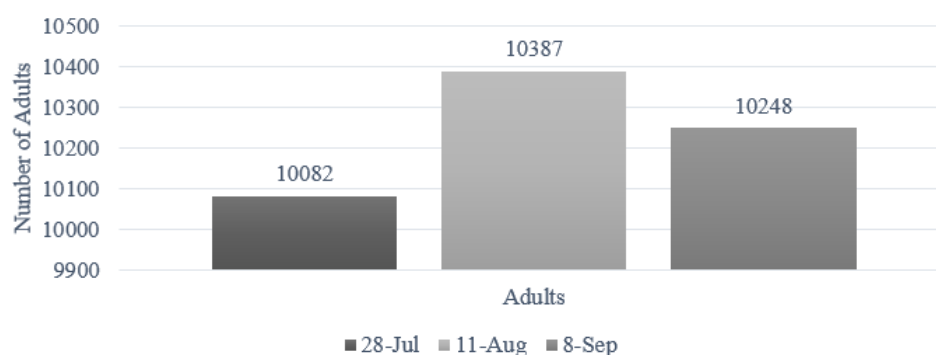


Figure 1. Summer 2018 Adult Customer Count Estimates

Using an average weekly adult attendance of 10,239, the estimated attendance of the 2018 market season was approximately 266,214 adults. This is up from 84,084 in 2003; it represents a 217% cumulative increase and an 8.0% average annual growth rate (Peterson, 2020).

The magnitude of visitors to the market is significant. For example, the number of market visitors is 6.7 times the population of Latah County or 10.6 times the population of Moscow.

Understanding Where Moscow Farmers Market Shoppers Live

The RMA dot survey asked market visitors to indicate whether they lived within or outside Latah County (Figure 2). Survey participant location is important because it identifies the portion of market spending arising from nonresidents that bring new monies into Latah County. On July 28, approximately 48% of shoppers at the Moscow Farmers Market lived outside of Latah County and approximately 43% of shoppers lived outside of Idaho. On September 8, approximately 54% of shoppers lived outside Latah County and 49% lived outside of Idaho. Between 16-17% of shoppers self-identified as being visitors or tourists from out of the local region.

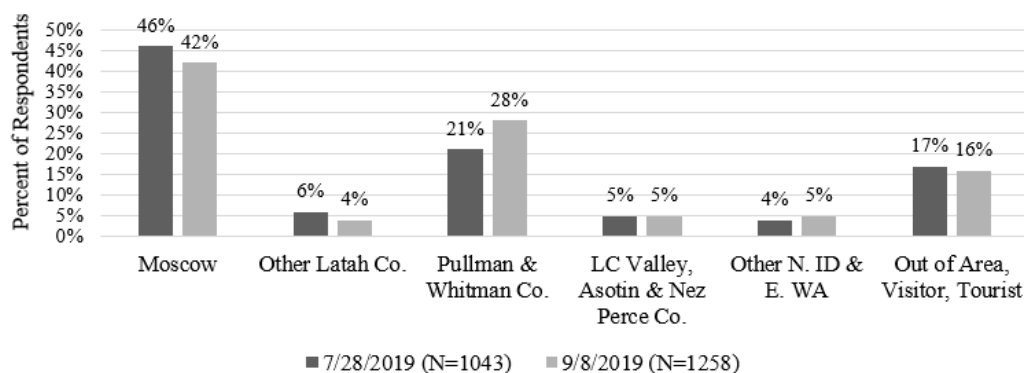


Figure 2. Where Moscow Farmers Market Visitors Live

Approximately one half of the shoppers living outside Idaho resided in Pullman, Washington or Whitman County, Washington which borders Latah County to the west. Notably, Pullman has a small, mid-week, Wednesday afternoon farmers market and does not have a competing Saturday farmers market.

Estimating Customer Spending Inside the Market

Market spending is estimated by “shopping group” – adults who spend from one “wallet.” A shopping group is generally one or two adults. The number of adults per shopping group is estimated to range from 1.6 to 2.0. On both July 28 and September 8, adults from the same shopping group were asked to answer the survey using one dot per question (one answer per shopping group) to avoid over counting. Market customers were asked how much they had or would spend at the market that day. Response categories were provided (Figure 3).

Given that Moscow, Idaho and Pullman, Washington are both college towns, frequent instances occur when multiple shopping groups from one household (e.g. non-related roommates or housemates) visit the market with each spending from their own wallet. Therefore, a shopping group is not synonymous with a household.

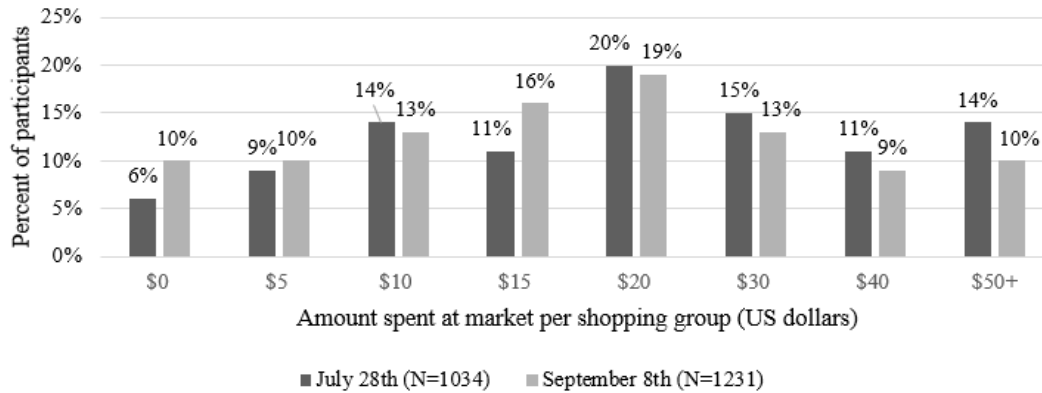


Figure 3. Shopping Group Spending Inside the Market

A “basket” refers to the total dollar value of the market purchases made by a shopping group. The size of the average basket (average amount spent per shopping group) was calculated by dividing the total amount survey respondents indicated they spent by the total number of shopping groups who completed the survey question. Table 1 summarizes the average basket size per shopping group on July 28 and September 8.

Table 1: July 28 and September 8 Average Market “Basket” Size

Time Period	Average Spent (US dollars)	
	July 28	September 8
All of market (8:00 am to 1:00 pm)	\$23.38	\$20.48
First half of market (8:00 am to 10:00 am)	\$24.83	\$22.61
Second half of market (10:00 am to 1:00 pm)	\$22.38	\$19.44

Total market sales are estimated by multiplying the average amount spent per shopping group (basket size) by the number of shopping groups. To derive this estimate, we divided the estimated number of adult shoppers by the number of adults per shopping group, then multiplied the number of shopping groups by the average amount spent per shopping group (basket size).

On July 28, the average amount spent per shopping group was \$23.38 and the average amount spent per shopping group on September 8 was \$20.48 (Table 1). Using the customer counts for each market day (Figure 1), estimated market sales on July 28 ranged from \$117,859 to \$147,323 and estimated market sales on September 8 ranged from \$104,940 to \$131,174. Total estimated annual customer spending was \$3,648,487.

Market customer spending based on 2018 market vendor surveys

Estimated customer spending based on vendor (producer) surveys is the most conservative measure of market economic contributions employed in this study and represents the lower-bound estimation. Moscow Farmers Market policies require vendors to report their annual sales to the market. However, vendors may underreport for several reasons such as the quality of record keeping, tax reasons, or implicit privacy concerns, and some vendors ignore the policy

and do not report at all. Total reported vendor sales for 2018 was \$1,308,908, adjusted for non-respondents, which is about \$2 million less than revenues reported from the customer surveys. This was expected given the estimated underreporting of the vendor surveys. Because the consumer surveys are stated preferences, some upward bias may exist in those estimates. We report both results representing lower and upper bounds of the contributions from market customer spending.

There is a close link between the Moscow Farmers Market and small, local agriculture producers. Approximately \$300,000 of the reported vendor agriculture sales (about 50%) were estimated to be produced in Latah County, which is a conservative. The remaining agriculture, craft, and value-added products were margined in the calculations of economic contributions to account for the difference between the market region and the economic region (Latah County). The market region is a 200-mile radius around Moscow, but the calculation of the economic contributions was for Latah County.

Estimating Customer Spending Outside the Market

Measuring the economic contributions of local foods can include the “spillover effects of implementing local food markets, such as the extent to which local food markets draw shoppers to neighboring businesses” (O’Hara and Pirog, 2013, p39). On July 28, RMA dot survey respondents were asked how much they anticipated spending outside the market in the downtown area and on September 8, they were asked how much they anticipated spending outside the market in all of Moscow (Figure 4).

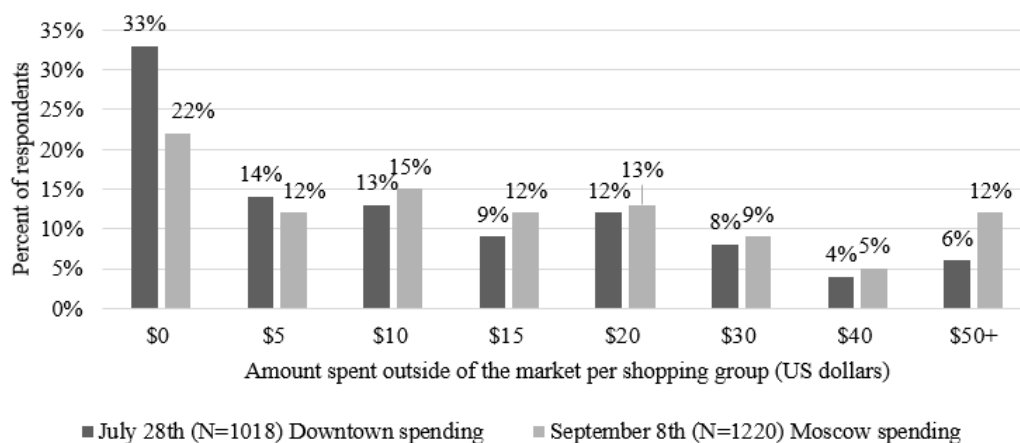


Figure 4. Spending Outside the Market

On July 28, the average amount spent per shopping group in downtown was \$13.05 and the average amount spent per shopping group in all of Moscow on September 8 was \$17.05. Using the customer counts for each market day (Figure 1), estimated spending outside the market in the downtown area on July 28 ranged from \$65,785 to \$82,231 and estimated spending outside the market in all of Moscow (including the downtown area) on September 8 ranged from \$87,364 to \$109,205. The customer spending in all of Moscow (including the downtown area) outside the market during the 2018 market season was estimated at \$2.84 million. These sales

were assigned 50% to the eating and drinking establishment sector and 50% to retail-trade sector in IMPLAN.

Contributions of brick and mortar businesses incubated in the market

The Moscow Farmers Market serves as a community business incubator encouraging entrepreneurship and fostering new business innovation. This attribute of the market has been encouraged, monitored, and supported by Moscow Farmers Market management and the Moscow Chamber of Commerce. In 2016, they estimated that approximately 15-20 processed or prepared food market vendors had expanded into successful permanent brick and mortar firms and that these firms would likely not exist in the absence of incubation assistance from the market.

To estimate the economic contributions of businesses incubated in the market, we utilized payroll and employment data from a survey we conducted in 2016 of six restaurants and seven processed food firms identified by market management and the Chamber of Commerce as having been incubated in the market. Due to the sensitivity of the data collected, the 2016 survey was conducted through in-person interviews. Interviews were conducted by the Moscow Farmers Market manager, the Moscow Chamber of Commerce, and University of Idaho Extension. This data was entered into the 2018 IMPLAN model.

Based on RMA surveys and other previous analyses of downtown market businesses, we estimate that 60% of the revenues of the 13 firms surveyed were basic, new monies from nonresident customers (i.e. Pullman and elsewhere) or lost revenues from local residents that would have dined and shopped out of town in the absence of these firms. The total basic annual sales of brick and mortar and related market spinoffs is estimated at \$1.683 million annually. The remaining 40% is non-basic or resident spending and not counted in the calculation of economic contributions.

Market Financial Sustainability

In 2018, the City of Moscow ran an approximate operating deficit of \$70,181 for the farmers market (after netting out vendor revenues) as reported by the city. The estimated property taxes generated by the contributions of the market are \$138,558 (as reported from IMPLAN), creating a technical surplus \$68,377. There are two considerations. First, some of the city expenditures might have been incurred anyway in the absence of the market, reducing the deficit. Secondly the property tax revenues are generated across all taxing districts, including the city. The study concluded that operating the market is at or close to fiscal breakeven. This is an area for future research.

Summarized Approach of Analyses

Annual direct community market customer spending including customer spending inside and outside the market was estimated as \$6.49 million based on the 2018 RMA surveys. For the 2018 RMA surveys, the average market (inside) spending was averaged to an estimate of \$21.93 and the average spending in Moscow (outside the market) was \$17.05. We assumed a per-wallet measure with a group size of 1.6 persons. The annual spending from brick and mortar and related market spinoffs was \$1,683,000. Total direct annual gross spending related to the market was \$8.312 million. Direct Latah County agricultural production included in the analysis was \$300,000. It was assumed that market spending was 60% basic, and included in the economic contribution analysis, and 40% non-basic and not included in the economic analysis.

Of the basic activity, it is assumed that 51% originated from nonresidents (as validated by the 2018 RMA surveys), and the balance of 9% represented Moscow patrons who would have spent their monies outside of Moscow (i.e. import substitution) for a total of 60%. The total spending is assigned to industry sectors in IMPLAN based on the vendor survey. One of the benefits of the market is providing local shopping and family entertainment opportunities on summer and fall Saturdays, keeping local spending in Moscow instead of leaking outside to the regional economy.

Summary Results

The primary indicators of economic activity most relevant to this economic contribution assessment are earnings (payroll), jobs, and taxes. The Moscow Farmers Market creates total economic contributions of 113 annual jobs, wage, and salary payments of \$2,433,642, and total output (sales) of \$6,485,062 (Table 2). These contributions are separated into four categories.

First, the market contributions based on RMA customer surveys were 22 annual jobs, \$542,333 in wages and salaries, and \$1,312,998 in annual output. These are *net*, subtracting out the contributions measured by the vendor surveys. Second, the market contributions based on the vendor surveys were 13 annual jobs, \$303,415 in wages and salaries, and \$734,574 in annual output. This represents a lower-bound estimation of downtown (inside) market contributions. Combined categories 1 and 2 represent an upper-bound estimation of spending inside the market. The third category is from the brick and mortar/spinoffs, which created contributions of 48 annual jobs, \$988,621 in wages and salaries, and \$2,631,938 in annual output. The fourth category reports contributions from Moscow visitor expenditures in Moscow outside the market area, which were 30 annual jobs, \$599,272 in wages and salaries, and \$1,805,062 in annual output.

The 2018 economic contributions of the Moscow Farmers Market, including the direct, indirect, and induced contributions, are reported by category in Table 2. The individual categories are reported separately to provide a range of contributions based on each type of market activity and market measure. The total estimated market contributions include the upper bound estimates of spending inside the market, brick and mortar contributions and Moscow visitor expenditures outside the market (Table 2). A comparison of the 2018 RMA results to previous Moscow Farmers Market customer spending and RMA studies indicate the 2018 upper bound results appear to be reasonable (Argona, 2013; Williams, 2011).

Table 2: 2018 Economic Contributions of the Moscow Farmers Market - Includes the Direct, Indirect, and Induced Contributions

Category	Jobs	Wages/Salaries	Output
1) Market visitors (customer survey) net	22	\$542,333	\$1,312,998
2) Market visitors (vendor survey)	13	\$303,415	\$734,574
3) Brick and mortar/spinoffs	48	\$988,621	\$2,631,938
4) Outside visitor spending in Moscow	30	\$599,272	\$1,805,552
Total	113	\$2,433,642	\$6,485,062
<u>Tax Contributions</u>	<u>Local</u>	<u>State</u>	<u>Total</u>
Taxes generated by market activity	\$138,558	\$266,613	\$405,171

^a Rounded to the nearest U.S. Dollar

Table 3 reports the economic contributions by direct, indirect, and induced effects. It also reports the respective multipliers. The average “effective” sales (output) multiplier for the IMPLAN model was 1.45, labor income was 1.29, and employment multiplier was 1.18. For each direct job, a total of 1.18 jobs are added to the regional economy.

Table 3: Economic Contributions Reported by Direct, Indirect, and Induced Effects^a

Impact Type	Jobs	Labor Income	Output
Direct Effect	96	\$1,882,092	\$4,470,831
Indirect Effect	7	\$ 235,352	\$890,366
Induced Effect	10	\$ 316,196	\$1,123,866
Total Effect	113	\$ 2,433,642	\$6,485,062
Multipliers	1.18	1.29	1.45

^a Rounded to the nearest U.S. Dollar

Are the Estimated Economic Contributions Reasonable?

This study casts a wide net across all the important activities and functions of the market, reflected in the results. We report the contributions by category so that the individual components of the contributions can be seen and measured. Approximately 266,214 customers visited the market in 2018 of which 135,769 visitors or 51% were nonresidents. Given the high volume of visitors, even a relatively small amount of spending can have large economic contributions. The key question is how much of that spending “sticks” in the community and contributes to the economy. Moscow has a vibrant downtown with a significant eating and drinking and small-firm specialty-shop sector. The market clearly is an important contributor to the economic activity that supports these firms.

Conclusion

The City of Moscow has an award-winning farmers market that is growing robustly and contributing economic benefits to the downtown community. The market provides a steady flow of annual visitors to downtown Moscow bringing new money to the Moscow economy. About 61% of market customers visit the market before 11 am, creating a wave of shoppers every market Saturday at the start of the business day for Moscow firms.

Annual visitor spending was estimated at \$6.49 million by the 2018 RMA surveys. Economic contributions of the market including multiplier effects were an estimated \$6.46 million (in output) and 113 local jobs. Estimated annual state and local tax contributions of the market were \$138,558 in property taxes and \$405,170 in state sales, excise, and income taxes. Factoring in the multiplier effects, with the net property tax contributions, the market is financially self-sustaining.

Support and participation are vital for community enterprises, such as the Moscow Farmers Market, to grow and prosper. The Moscow Farmers Market has received substantial community support and financial assistance from the City of Moscow. It is clear from this analysis that the Moscow Farmers Market is a significant asset to the City of Moscow and has significant positive direct and indirect contributions to the local economy. With the rise of COVID-19, it is important that the success of the Moscow Farmers Market be monitored, and support be provided to assist market vendors and downtown shops as they rebound post-pandemic.

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