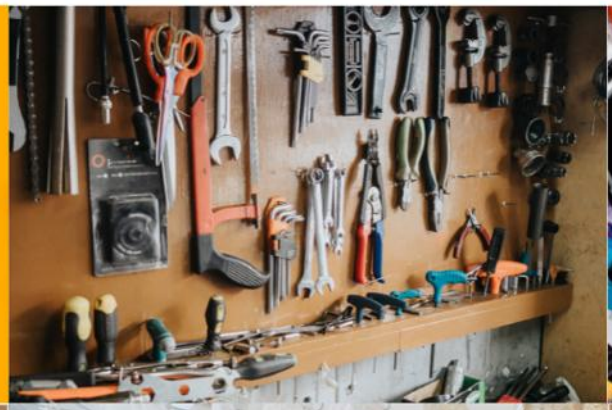
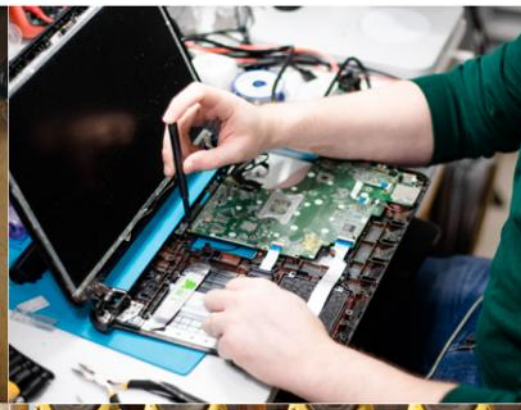


ECONOMIC, ENVIRONMENTAL, AND SOCIAL IMPACTS OF REUSE IN WASHINGTON STATE


zero waste washington

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EXECUTIVE SUMMARY

The Reuse Economy in Washington is often overlooked in favor of the traditionally published consumer-based businesses and associated jobs metrics. In order to build a circular economy in Washington State, it is important to understand the current status of reuse businesses and potential areas of growth and barriers to that growth.

Zero Waste Washington assessed the economic, environmental and social impact of the reuse sector in Washington. *Reuse* in this context means businesses that rent, re-sell, or repair consumer products. The study was modeled on similar studies conducted by ReUse Minnesota, so that Washington results could be compared to Minnesota results.

Spending on reuse (repair, resale, rental) *displaces* a sale of a new item

Using Dun and Bradstreet Economic 2020 data as a base, reuse businesses were identified and economic data were compiled and then winnowed, removing closed and misclassified businesses. Businesses were sorted into categories and the revenue summed. Environmental impacts - avoided greenhouse gas emissions and water usage - were calculated using the EPA the US Environmentally Extended input Output (USEEIO) model v 2.0 . Interviews and surveys of business owners and managers elucidated social impacts, focusing on community identity and evolvement as well as value and opportunity to individuals.

Key findings

Economic

There are more than 15,000 reuse businesses in Washington.
These businesses generate approximately $4.8 billion in revenue in the state.

Environmental

Collectively, the reuse businesses in Washington prevent approximately 777,250 metric tons CO2 equivalent emissions.
In addition, these businesses prevent withdrawals of approximately 32 billion liters of water.

Social

Respondents to surveys and interviews represented mostly (81%) microbusinesses with less than 10 employees, 31% were minority/women-owned 20% employ marginalized or underserved populations. They showed that repair businesses contribute to their local community in the following ways, 22% of them provided on the job training, 40% volunteer in their community, 43% collaborate or partner with other business locally.

The key challenges reuse businesses face include COVID-related supply chain (56% of respondents), “Lack of technically skilled workers” (43%), “rent or building costs” (43%) and “Cost of labor” (36%).

INTRODUCTION

Reuse, including resale, rental and repair, extends the life of products. Thus, there is less demand for new replacement items and an associated reduction in pressures to extract, manufacture and transport those goods to consumers and less need to dispose of those items at end of life. This results in environmental, economic, and social benefits. These benefits are not generally quantified in a holistic way. Sustainable businesses produce reports for their specific products within a limited lens.

For this study, Zero Waste Washington conducted a literature review, gathered Washington data and purchased additional business data from Dun & Bradstreet (D&B). Data was analyzed to environmental, economic, and social benefits that result in Washington when consumers rent, repair or buy used instead of purchasing new. These findings allow for a statewide perspective.

METHODS

Project scope: Defining Reuse Businesses

For the purpose of this report, reuse is defined as “The continued use, repair, or repurposing of items or materials which extends the life of resources and decreases the demand for new production.” (Reuse Minnesota, 2022).

This project addresses consumer products, especially focuses on those items for which a consumer has the opportunity to make a choice to buy new or instead to extend the life of an existing item by renting, repairing or buying used. Fundamentally, the assessment is on the spending on reuse (repair, resale, rental) which displaces a sale of a new item. That is, items where a consumer makes a choice to displace that spending.

The Minnesota Pollution Control Agency (MPCA) pioneered this kind of assessment to measure statewide impacts of the reuse industry as a sector of the Economy in the United States (MPCA, 2011). Reuse Minnesota authored two additional assessments in 2020 and 2022, updating their process and adding more product categories (Reuse Minnesota, 2020, 2022). We generally followed Reuse Minnesota's methodology so that Washington's data could be comparable to their results. Where our methodology differs from Minnesota is noted in the appropriate sections below.

Included categories

The study generally included businesses and organizations that:

- Resell an item after it has been used by an original owner
- Salvage and refurbish materials to extend their life and reduce the overall first costs of manufacturing materials and products
- Extend a product's life through repair so it can be used longer and replace the need for a new item
- Rent an item for short-term use as an alternative to purchasing that item new

Businesses were grouped into the following categories:

- **Auction:** Auctions, including auto auctions
- **Auto and recreational vehicle repair**: Auto, truck, RV, boat, trailer, small aircraft repair
- **Books**: Book Stores (not publishers) including comics, Childrens' books, specialty books, university, religious
- **Bridal+**: Bridal, wedding, costume, party attire
- **Businesses with reuse**: Businesses with rental, repair or resale as component: appliances, electronics, health devices, tailoring, dry cleaners, hobby, jewelry, furnishings, hobby, minimarts (videos+), grocery
- **Home Centers**: Home centers, including hardware, nurseries, paint stores,
- **Music**: Musical instrument retailer and repairers
- **Car dealer with used:** New car store which sells reused cars
- **Party and event rentals**: Party and event rental companies
- **Car rental**: Passenger Car, Truck and Van Rental
- **Pawn**: Pawn shops
- **Public library**: Public library (includes agency and specialty libraries)
- **Recreational Vehicles**: Recreational vehicle and boat dealers, leasing and rentals (includes trailers, campers, vans) and motorcycle and small aircraft rentals
- **Rental businesses**: Rental businesses, including videos, plants, appliances, electronics, equipment, furniture, home health equipment, goats, and more
- **Repair businesses**: Repair businesses, including tailoring, shoe, appliances, equipment, carpet, jewelry, watches, furnishings, handyman, tire retreading, sharpening, and more (not otherwise called out)
- **Resellers**: Resellers, including thrift, consignment, estate sale, antiques, vintage, "used" sellers, used book sellers, architectural salvage and more
- **Sporting Goods**: Sport retailers, including bikes, kayaks, rock-climbing, motorcycles, guns, surf, all-terrain vehicle (ATV), hiking/camping, and ski area
- **Used Cars**: Used car dealers
- **Water delivery**: Water delivery (rental of equipment and reuse of large bottles)
- **Zero Waste Mission**: Zero waste stores, refilleries, tool libraries

The categories match the Minnesota categories, generally, with the exception of two categories added in this study: public libraries and water delivery.

Excluded categories

This study does not include businesses that provide primary housing construction services (including plumbing, remodeling, and landscaping) because the development sector is large and is generally included as a line item in economic assessments.

On the other hand, small home repairs (such as those accomplished by a "handy man") are included as are household furnishings which includes furniture, carpet (i.e., carpet repair), and blinds repair. These latter items are included because consumers make choices to "reuse" rather than buying new for these types of items.

Business-to-business activities, such as commercial and industrial equipment rental, were not included unless they had a component of service available to the general public.

Data Collection and Refinement

Building a List of Repair Economy Businesses in Washington

Using the NAICS Code System

The team employed a set of industry codes, defined by the North American Industry Classification System (NAICS), to generate a list of relevant reuse businesses in Washington State, building from those identified in the Minnesota studies. NAICS Codes are numeric identifiers used to categorize businesses and governmental agencies in the United States, Canada, and Mexico into a set of primary and secondary industries based on the goods and/or services they provide. Through research and case selection, the team crafted a discrete set of NAICS Codes that encompass businesses engaging in consumer-facing repair, reuse, rental, and other activities defined within the project's scope. Each code deemed relevant to the project were entered into Dun & Bradstreet (D&B) Hoovers database to generate a list of all businesses in the state of Washington registered under that NAICS Code. Altogether, these lists were combined to form the majority of the final reuse business list.

Testing Borderline Codes

While it was usually clear from the name and description of a particular NAICS Code whether or not that industry fell within the project scope, it was difficult to determine the relevance of a small subset of codes. For these borderline codes, the team used a process to test whether or not enough repair economy businesses appear under that label to warrant the code's inclusion in the search list:

1. The code in question was entered into a D&B Hoovers search to find all Washington businesses registered under that industry code.
2. The resulting list was sorted by highest revenue – a proxy for high economic and environmental impact as the input in the EIO-LCA model (see section xx).
3. Up to 10 high revenue businesses in the first 50 results were spot checked, inspecting the business name, internet search results, and business website for repair economy activities.
4. If the majority of these spot-checked businesses were determined to be relevant for the project, then that NAICS Code was added to the set of codes used to generate our final business list.

Filtering Out Non-Repair Economy Businesses

Once the team finalized the set of relevant NAICS Codes to be used to generate our final business list, the following methodologies were used to filter out non-repair economy businesses.

- ***"Primary" vs. "Primary and Secondary" Industry***

  Within the search of each relevant NAICS code, there is an option within the D&B Hoovers database to include or exclude businesses registered with that code as its secondary industry. These secondary industry businesses were found to be occasionally, but not always, engaged in reuse activities. Therefore, it was necessary to ascertain whether or not to include these secondary industry businesses in the search results of each relevant code. This was done by:

  1. Sorting the search results by revenue.
  2. Toggling back and forth between the "Primary Only" and "Primary and Secondary" viewing options in the search criteria.
  3. Observing which businesses appeared when switching to "Primary and Secondary" to identify those registered with that code as their secondary industry.
  4. Inspecting those business names, internet search results, and business websites for repair economy activities.
  5. If a meaningful number of these secondary industry businesses were deemed relevant, then the "Primary and Secondary" option was saved under that code's search criteria.

- ***Keywords - Website Content***

  The search results of some relevant codes contained many non-repair economy businesses, despite selecting the "Primary Only" industry option. To further narrow these searches, a keyword filter was applied to limit results to show only businesses with website content containing at least one of a set of keywords indicative of repair economy activities. To determine this set of keywords, the team began by referencing the set used in the Minnesota studies: rental, repair, reuse, thrift, vintage, and consignment. The team added additional keywords to broaden the search, based on the initial search results: lend, tailor, metalwork, renovate, sharpening, smithing, refurbish, mend, and restore. These terms were added to the search filter alongside multiple conjugations of the terms already present.[1]

  The team applied this website keyword filter to 10 [need to update, when finalized] of the relevant NAICS Codes searched. However, this filtering process is contingent on businesses having a website accessible to the D&B platform. Some, especially small businesses, do not have a website, preventing potential repair economy businesses from appearing in the search results. Therefore, care was taken to limit the use of website content keywords as a search criteria. It was only used when the initial search of a relevant NAICS code returned a significant proportion of irrelevant businesses *and* most businesses in that industry had websites available.

- ***Including Additional Businesses***

  After building a preliminary business list using NAICS Codes, several steps were taken to identify and include additional repair economy businesses. Any duplicate businesses identified using these steps were automatically omitted when added to the final list, so employing other systems of identifying repair economy businesses, beyond the use of NAICS Codes, proved to be a valuable means of methodological diversification. These systems included a keyword search of business names, a list previously generated for Zero Waste Washington's Repair Economy Map, and a compilation of individual repair economy businesses gleaned from news articles and group brainstorming.

[1] **List of Keywords**: Secondhand OR Second-Hand OR Second Hand OR Rental OR Rentals OR Renting OR Rent OR Repairing OR Repair OR Reuse OR Reusing OR Reused OR Thrift OR Vintage OR Consignment OR Tailor OR Tailoring OR Alterations OR Metalwork OR Smithing OR Renovate OR Renovations OR Sharpening OR Sharpen OR Refurbish OR Refurbishing OR Mend OR Mending OR Restore OR Restoring OR Restoration OR Fix OR Fixing OR Rebuild

- ***Keywords - Business Name***
  Another keyword search of the D&B Hoovers database was conducted to identify businesses in Washington containing any of the selected set of keywords in its business name. Any duplicate businesses identified using this search method were automatically omitted when added to the list.

Refining the business list

Between the results of the NAICS code searches and the search for relevant keywords in business names, 14,568 businesses were identified, not all of which fell within the project's scope. Therefore, the next step was to find and remove irrelevant businesses from the list. Before downloading the D&B dataset, some NAIC segments were manually reviewed, which resulted in the deleting of at least 300 irrelevant businesses to reduce the list size before downloading.

We did additional extraction of more businesses at this point. For example, the second Minnesota report (which was completed during our study process) expanded to additional categories such as auto repair. This brought the list up to 19,106 businesses.

The downloaded D&B dataset was then manually assessed to remove additional businesses that were not in the scope of the project. This involved reviewing businesses names, reviewing many of the Urls for the businesses, and comparing with Washington Department of Revenue business license list for July 2021. Many businesses were misclassified (i.e., the incorrect NAICS code was associated with the business), the business had closed, or the business had moved out of state. The number of businesses manually removed was over 3900. The final list of businesses totaled 15,197 locations.

Adjusting business revenue

Unfortunately, the Dun and Bradstreet dataset uses revenue for the entire company, rather than by business site or the sites within one state. This means that businesses in Washington that are part of a national or international corporation are listed with a revenue that is too high, many times orders of magnitude too high. Thus, the project team conducted a further refinement to adjust the revenue for each business listing (each of which represents a unique Dun Number and usually a unique address). The team determined, through an online search, the number of sites (usually retail locations) globally for the corporation and then pro-rated the revenue to the number of sites in Washington.

Weighting

Some businesses engage in commerce that is fully within the reuse sector. For many businesses, rental, re-selling, and repair is only a portion of their activity. Thus, the team weighed the revenue of the businesses to take this into account (Table 1), matching the Minnesota study except for lowest weighting. Minnesota used 5% but for this study, 2% was used as it was felt to be more realistic, especially considering some of the corporations are large corporations such as Home Depot and Lowes, where the reuse component is small.

Table 1. Weighting of business categories

Category	Wt	Includes:
Auction	100%	Auctions, including auto auctions
Auto & Rec veh repair	100%	Auto, truck, RV, boat, trailer, small aircraft repair
Books	20%	Book Stores (not publishers) including comics, childrens books, specialty books, university, religious
Bridal+	20%	Bridal, wedding, costume, party attire
Businesses w reuse	2%	Businesses with rental, repair or resale as component appliances, electronics, health devices, tailoring, dry cleaners, hobb jewelry, furnishings, hobby, minimarts (videos+), grocery
Home Centers	2%	Home centers, including hardware, nurseries, paint stores,
Music	2%	Musical instrument retailer and repairers
Car dealer w used	2%	New car with reuse
Party & event rentals	100%	Party and event rentals
Car rental	2%	Passenger Car, Truck and Van Rental
Pawn	100%	Pawn
Public library		Public library
Rec Vehicles	20%	Recreational vehicles & boats dealers, leasing and rentals (includes trailers, campers, vans) and & motorcycle & small aircra rentals
Rental businesses	100%	Rental businesses, including videos, plants, appliances, electronics, equipment, furniture, home health equipment, goats, an more
Repair businesses	100%	Repair businesses, including tailoring, shoe, appliances, equipment, carpet, jewelry, watches, furnishings, handyman, tire retreading, sharpening, and more (not otherwise called out)
Resellers	100%	Resellers, including thrift, consignment, estate sale, antiques, vintage, "used" sellers, used book sellers, architectural sa and more
Sporting Goods	20%	Sport retailers, including bikes, kayaks, rockclimbing, motorcycles, guns, surf, ATM, hiking/camping, ski area
Used Cars	100%	Used Car Dealers
Water delivery	2%	Water delivery (rental of equipment and reuse of large bottles)
Zero Waste Mission	60%	Zero waste stores, refilleries, tool libraries…

Economic impact Results

The team totaled the weighted revenue from D&B. Initially, the study also was planned to include employment numbers, but a review of the job numbers listed in the D&B dataset revealed that they were unrealistically low.

The data is reported in these categories:

- Total number of businesses
- Total revenue from the reuse sector
- Overall business revenue per person

Limitations/Assumptions

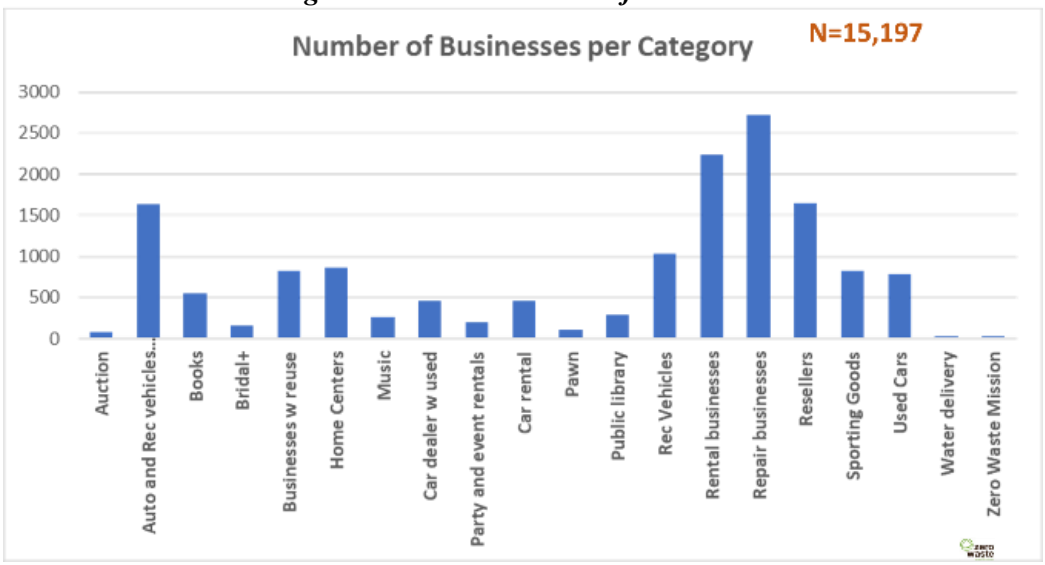
- The D&B dataset includes some financial actuals, but the revenue for most businesses, especially small businesses, is modeled based on industry subsector.
- The D&B dataset includes some businesses under their headquarter location and thus some businesses in Washington are not identified in a way that the state-level impact can be determined.
- Overall, using the D&B dataset overestimates the economic impact of some businesses and underestimates for others.
- Assumptions were made about the percentage of activities for retail businesses for which their primary activity is sale of new products:
  - Recreational and sports retailers, who also do rental and repair
  - Website: jewelry (% of repair-based).
- Total revenues for businesses includes online sales. The approach assumes that this revenue would be roughly proportional to the brick and mortar sales.
- The approach we took resulted in both over-estimates and under-estimates and so, it is assumed that the study roughly balances out, as a first cut for these data for Washington. The approach missed some businesses but, on the other hand, included businesses that are misclassified or are closed.

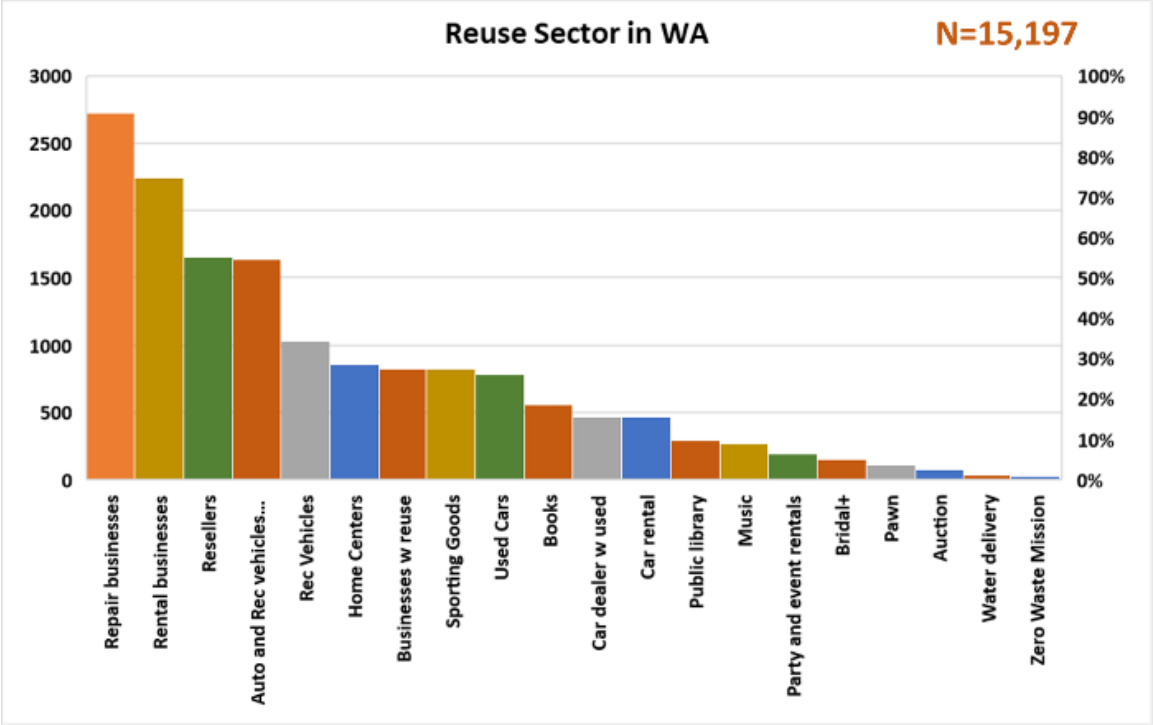
Economic Results

The study identified 15,197 locations, generating a total of over $4.8 billion. Full data results are in Appendix 1.

As shown in Figure 1, repair businesses is the largest category (2724 locations), followed by rental businesses (2239), and resellers (1649).

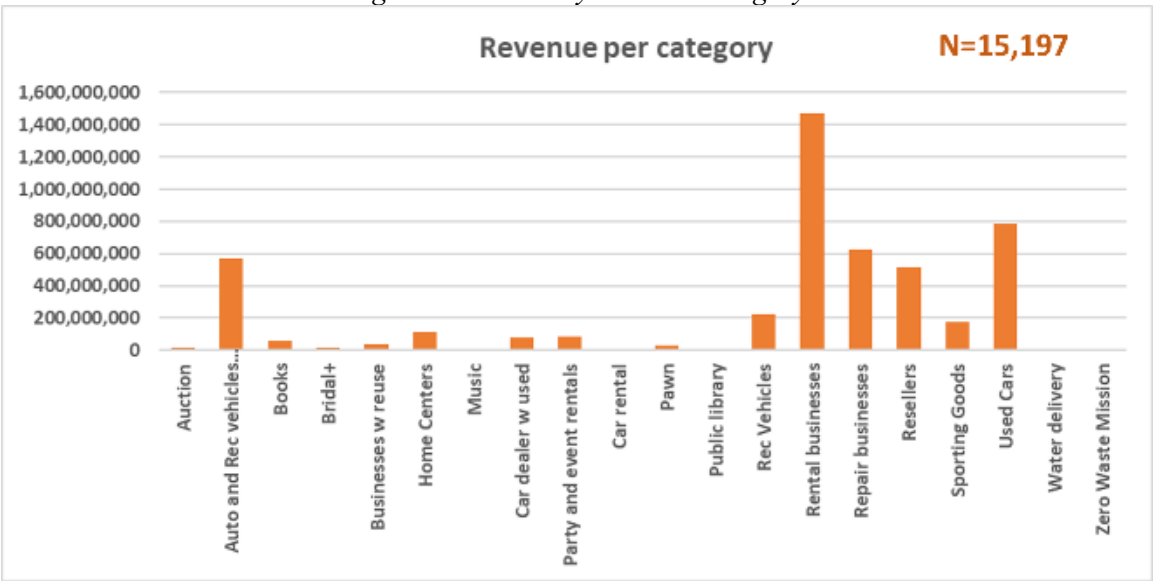
Figure 1. a and b. Number of businesses





The revenue for each category (figure 2) generally follows the same trends as the number of businesses in categories.

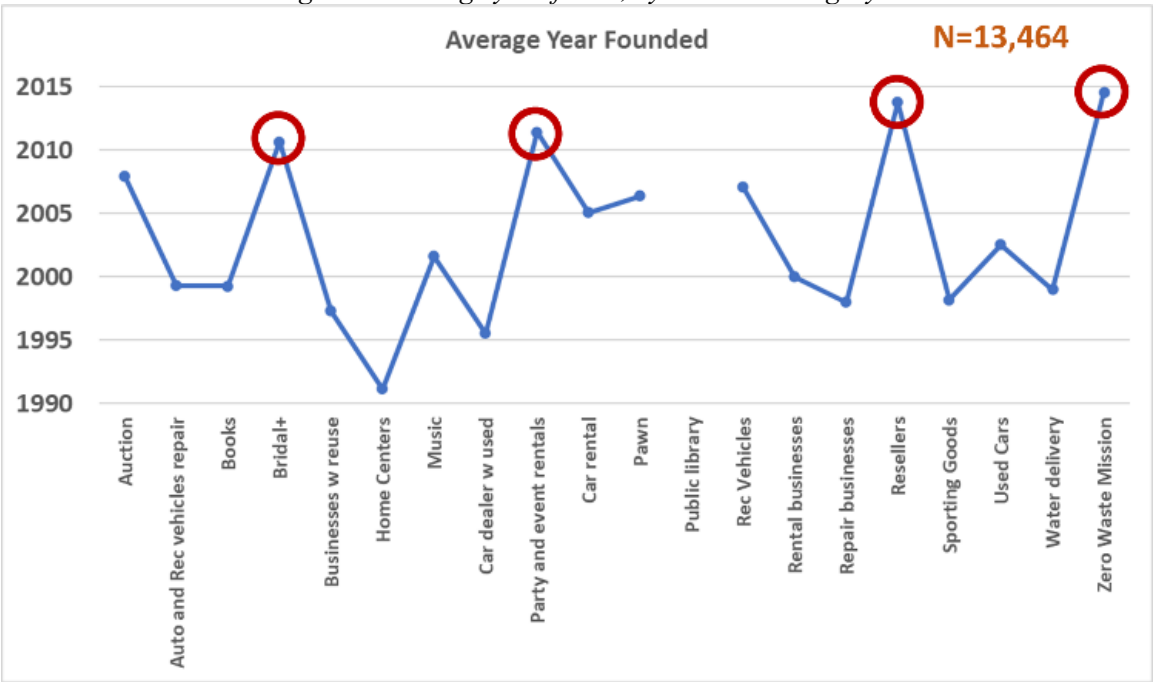
Figure 2 Revenue by business category



Year founded

In the D&B dataset, for most businesses, the year founded is included. As shown in Figure 3, the average year founded is younger for some categories that are "newer" categories in our economy, including Bridal+ (which includes costumes along with bridal and tuxedo), party and event rentals, resellers, and zero waste businesses.

Figure 3. Average year found, by business category



Environmental Impact Results

Environmental impacts were quantified using the US Environmentally Extended input Output (USEEIO) model v 2.0, made publicly available by the USEPA. This model is a form of life cycle assessment that aggregates national level economic data from the bureau of economic analysis with publicly available environmental data

on emissions and pollutants (Ingwersen, 2022). The team's approach combined the economic value of the reuse sector (as described in the economic impact results) with impact factors to estimate GHG emissions, water usage, and other environmental indicators for the production of a new good in the equivalent sector of the economy. In other words, by spending money to keep these products in circulation, consumers are avoiding the environmental impacts of producing new products.

Model outputs

Name	Description	Reference unit
EUTR	Eutrophication	kg N eq
GCC	Global Climate Change	kg CO2 eq

Model steps

The model is set up to quantify the avoided environmental impacts by industry sector.

The steps we took were:

- The team compiled and made corrections (see Data Collection and Refinement section) to create a dataset of businesses and organizations (e.g., public libraries) for Washington State. This included using NAICS codes to represent the sectors of the economy that that make up the repair, reuse, and rental economy in the state.
- Next, the team developed weightings to adjust the category revenue to only account for the portion of economic spending within the reuse sector (see Adjusting Business Revenue section).
- Then the team mapped the revenue categories to their comparative **US BEA** code for manufacturing of new products in the USEEIO model. A 1:1 dollar value was used since we assume that if consumers did not choose to spend their money on reuse, repair, and resale items, they would instead spend that same dollar value towards the purchase of new goods.
- The D&B data was downloaded in 2022 and is assumed to represent 2020 dollars. The team made a **Currency Year adjustment to 2020 dollars** from the models 2013 base year using the US-EEIO Rho matrix, which provides sector specific inflation values (USEEIO v2.0.1-411).

- The D&B data represents net revenue, which is assumed to be equivalent to purchaser price. The team made a **Price type adjustment** to translate the USEEIO multipliers from their native producer price to purchaser price using the USEEIO Phi matrix, which provides sector and target year specific adjustment factors (USEEIO v2.0.1-411).
- The direct and indirect impact coefficients were then applied to the adjusted revenue for each modeled category to estimate the environmental impacts. Environmental impact measurements reported include:
    - Greenhouse Gas (GHG) Emissions Avoided: Total amount of greenhouse gas production avoided as a result of reuse business activities, measured in metric tons.
    - Water Withdrawals Avoided: Total amount of water withdrawals avoided as a result of reuse business activities, measured in kilograms.

Limitations/Assumptions

- This model does not attempt to quantify the environmental impacts of the reuse activities, but rather looks at the impacts avoided of producing new products in an equivalent category.
- This translation compares reuse sector product service costs to new costs without attempting a value conversion. As noted in Reuse Minnesota's 2020 report "Reuse sector product and service cost can vary drastically from new product costs (e.g., new couch, versus used couch, versus reupholstered couch). This can result in both overestimations, typically with reused products that have a lower market value, and underestimations, typically for repaired or refurbished products, which may have a higher market value given the additional skilled-labor costs."
- The USEEIO model aggregates across sectors and thus generalizes and does not take into account differences in the specific materials, manufacturing techniques, amount and type of energy used at production facilities, etc.
- The USEEIO model does not take the global supply chain into account and is simplified to assume that all production and emissions take place within the United States.

Environmental Results

Using the USEEIO model, the team calculated freshwater withdrawals avoided of 35,025,265,062 liters and greenhouse gases avoided of 777,256 metric tons CO2 eq. The amounts by business category are shown in Figure 4 (Freshwater withdrawals) and Figure 5 (Greenhouse gases).

Figure 4. Freshwater withdrawals avoided, by business category

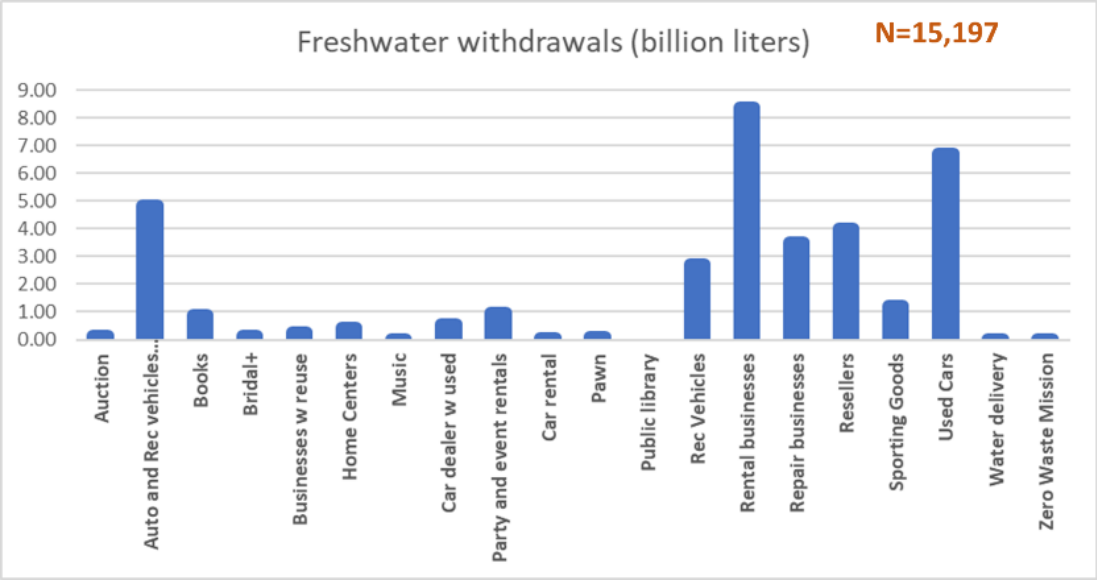
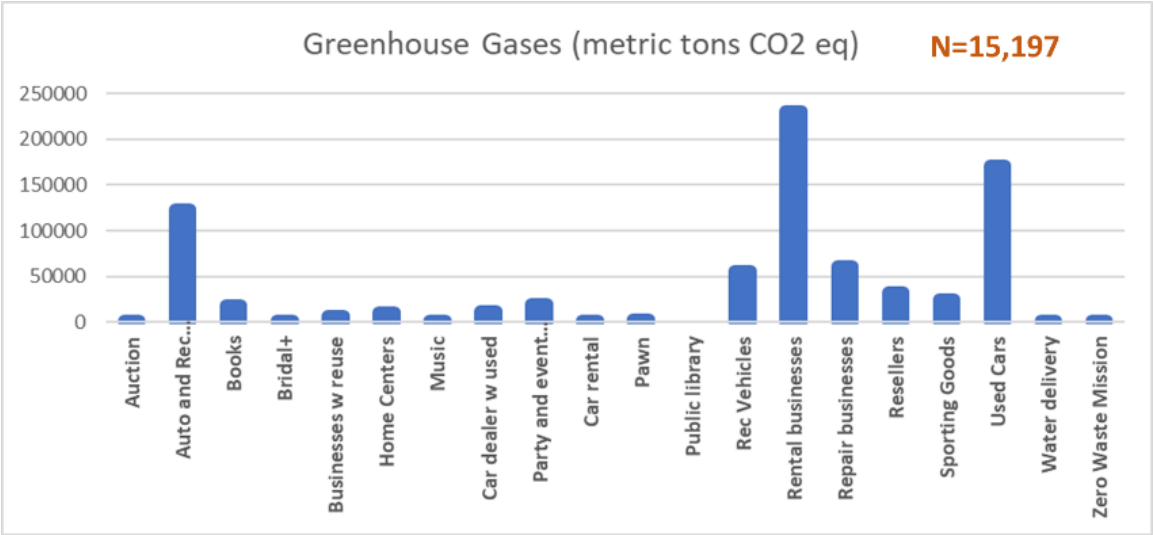


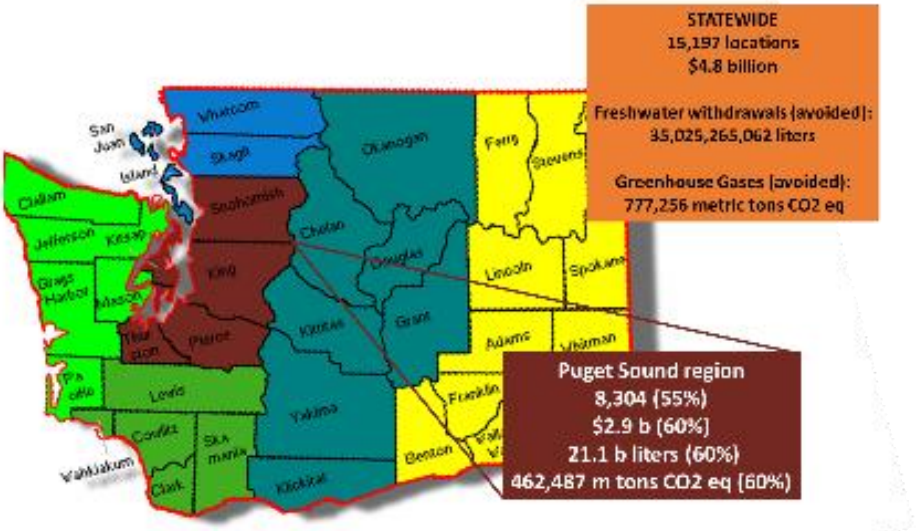
Figure 5. Greenhouse gases avoided, by business category



Summarizing Economic and Environmental Impacts

Summarizing the economic and environmental data for the state (Figure 6), we found 15,197 business locations are participating in the reuse sector, generating over $4.8 billion in revenue. Collectively, their activities help avoid 35,025,265,062 liters in freshwater withdrawals and 777,256 metric tons CO2 eq greenhouse Gases. In the five counties of the Puget Sound region – Snohomish, King, Pierce, Thurston and Kitsap), as expected from the concentrated population, there are 8,304 business locations (55% of the total), generating over $2.9 billion in revenue and avoiding 21.1 billion liters of freshwater withdrawals and 462,487 metric tons of CO2 eq.

Figure 6. Statewide results compared with Puget Sound region results



SOCIAL RESULTS

Social Impacts

Reuse businesses contribute to the community by improving the lives of individuals who engage with them. By providing opportunities for employment, skill development, and community identity, and removing barriers of cost and accessibility, reuse empowers people to have life-changing experiences they would otherwise be unable to have.

We researched social impacts of reuse by conducting a questionnaire which was deployed by email and by phone (Appendix 2).

Limitations/Assumptions

The study started with the hypothesis that since reuse organizations and business are local, and even hyper-local, the businesses might have similar characteristics. The questionnaire, thus, was designed to test these ideas.
These starting assumptions were:

- Build a community of like-minded individuals, encouraging community identity and involvement.
- Enhance the ability of the community to meet their needs in challenging times (disasters, economic downturns, lack of resources)
- Benefit individuals by keeping treasured items in use; make people feel good about their choice; empowering people
- If small businesses impact each other; create synergies (unique beneficial relationships)
- Create sectors that develop within sectors
- Have a low market entry cost and can be started small and scaled

- Provide on-the-job skills training;
- Hire inclusively
- Create a positive and rewarding place to work
- Are prosocial role models (e.g., gathering clothing for donation, volunteer in the community)
- Take an active leadership role in the community

Social impact survey results

A total of 43 total responses were received. Most of the respondents were owners (70%) and 86% of the respondents stated they were responding on behalf of the one and only location in the state.

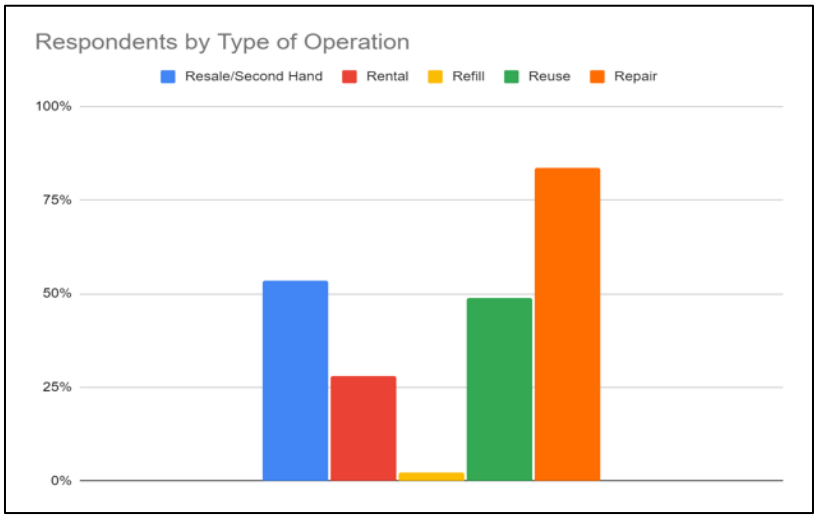
Business features

Many of these businesses had multiple **operation types** within the reuse sector (Figure 7). Specifically, 74% of respondents identified their business as being more than one type of operation.

The type of operation identified by respondents:

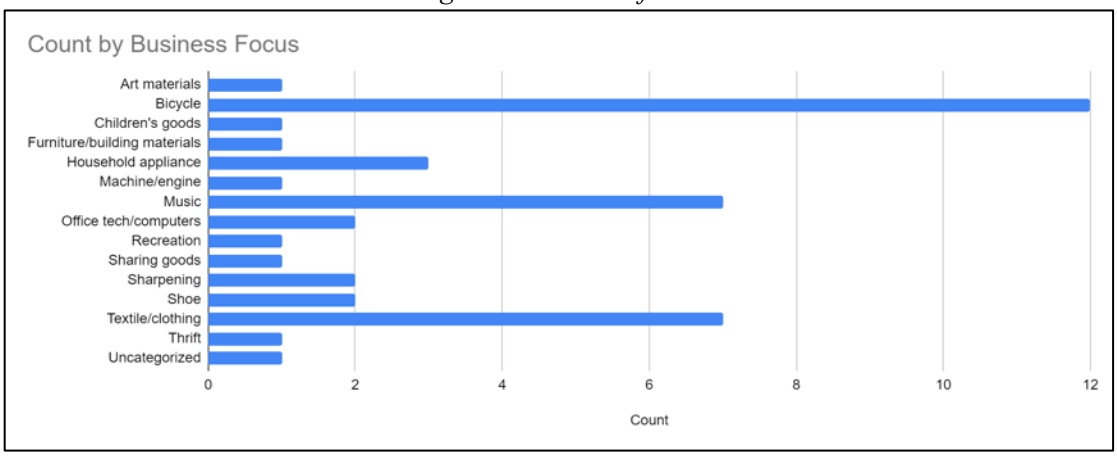
- 84% (36) of the respondents said their business was focused on repair
- 53% (23) on resale/second hand
- 49% (21) on reuse
- 28% (12) on rental
- 2% (1) on refill

Figure 7. Type of operation of respondents



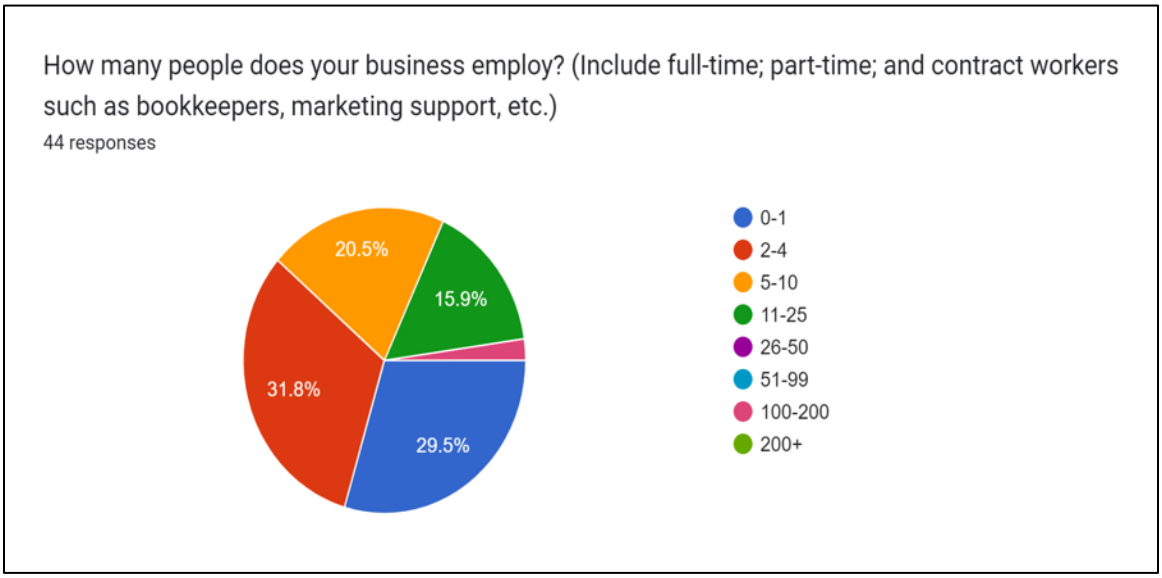
The most respondents by **business type** (Figure 8) were from businesses that were bike, textile/clothing and music-related.

Figure 8. Business focus



Most of the respondents were from **small businesses**. 61% of the respondent businesses employ 4 or fewer employees. Nearly 30% employ none or 1 employee (Figure 9).

Figure 9. Number of employees



Motivators and Community benefits

Reuse businesses impact greatly communities they operate in and serve their neighbors beyond professional services they provide. “I participate in weekly meetings for community outreach and educational opportunities for uneducated people” – one of the respondents shared. Growing deep community roots was a common trend among respondents. Other examples are: “we donate refurbished bicycles to needy families”, “we provide tech support for a local elementary school's bike program annually”, “we sponsor arts programs in local schools by purchasing space in their performance programs”, “we volunteer with our local trail organization to clean and maintain a section of our local trails.”

Over half of the respondents stated that they believed one of the **top motivations** for people using their business was “To lengthen the lifespan of something that has personal value.” Nearly half (45%) stated the other top two reasons people used their businesses were “To support a local business” and “To receive hands-on advice.”

Over one-third stated additional reasons as: “To save money;” “To make a more environmentally friendly choice;” or “Our reputation.” [136 responses (where 129 would be the maximum if each respondent had only selected their top 3 as instructed)]

In describing additional individual or community **benefits derived from the business**, over half of the respondents said they “Provide on-the-job technical skill training.” Twenty-five percent offer volunteer and apprenticeship opportunities and 22% provide workshops for skill development.

Other individual and community benefits included: donating “to local special events and/or provide in-kind resources for community events” (56%); “volunteer in the community” (40%); “Support sports teams, scouts, school activities, or similar through sponsorships” (34%).

As places of employment, a significant percentage of the businesses were minority/women-owned (31%) and a slightly lower percentage (20%) “Employ veterans, people from marginalized or historically underserved populations, or people who may be classified as having disabilities.”

Interactions with other businesses include: “Collaborating and partnering with other businesses” (43%); “Encourage synergies and mutual benefit by receiving and/or providing products and services to or from another business” (38%); and more than 20% “Share resources, space and/or infrastructure” and “Participate in Chamber of Commerce, Grange, etc.” From interviews, more specific examples of synergies and partnerships, were described as: “I try to prioritize purchasing my materials from other local small businesses,” “Right before the pandemic, we had an event in the community, which celebrate all the businesses on our street. Which are all women of color owned businesses. We are hoping to bring the event back,” and “the bridal shops in the area recommend me for alterations.”

Challenges faced by businesses

More than half (56%) identified COVID-related supply chain issues as being a current challenge. “Lack of technically skilled workers” (43%) and “Rent or building costs” (43%) were the other top challenges. The “Cost of labor” was mentioned by over one-third (36%) of the respondents as a challenge.

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APPENDICES

APPENDIX 1. RESULTS BY CATEGORY

Category	Ave year founded**	# of businesses	weighting	Weighted revenue	Freshwater withdrawals (billion liters)	Greenhouse Gases (metric tons CO2 eq)
Auction	2,008	79	100%	14,742,302	0.13	1,981
Auto and Rec vehicles repair	1,999	1639	100%	569,099,652	4.86	123,717
Books	1,999	555	20%	275,310,676	0.88	18,219
Bridal+	1,997	154	20%	86,074,424	0.13	1,099
Businesses w reuse	2,002	826	2%	1,892,598,680	0.26	6,937
Home Centers	1,991	859	2%	5,564,224,866	0.44	10,917
Music	1,992	264	2%	184,576,747	0.02	502
Car dealer w used	1,997	464	2%	4,024,532,796	0.56	11,778
Party and event rentals	1,994	192	100%	84,874,417	0.98	19,735
Car rental	2,008	462	2%	374,770,294	0.05	1,097
Pawn	1,996	110	100%	30,955,932	0.11	2,748
Public library*		294			0.00	0
Rec Vehicles	2,007	1031	20%	1,134,530,410	2.72	56,439
Rental businesses	2,008	2239	100%	1,472,448,138	8.39	230,389
Repair businesses	1,989	2724	100%	624,693,893	3.50	61,918
Resellers	2,014	1649	100%	515,684,279	4.00	32,919
Sporting Goods	2,005	822	20%	878,611,908	1.23	24,907
Used Cars	2,004	781	100%	785,808,504	6.71	170,827
Water delivery	2,004	31	2%	45,469,665	0.01	355
Zero Waste Mission	2,276	22	60%	3,293,426	0.03	772
TOTAL		15,197		4,816,912,116	35.03	777,256

* Unable to calculate results other than number of locations

** Average year founded is based on a subset of businesses within each category for which data were available

APPENDIX 2. SOCIAL IMPACT QUESTIONNAIRE

Audience: non-profit and business Repair, Reuse, Rental entities

1. Your Name
2. Title
3. Email or phone number
4. Entity Name
5. What services do you offer?
    - *Repair*
    - *Reuse*
    - *Rental*
    - *Resale*
    - *Refill*
6. What motivates your customers to use your business? (Select all that apply) (Do you have any stories to share about your customers' motivations?)
    - *To save money*
    - *To make a more environmentally friendly choice (e.g. - rather than buying a new item)*
    - *To support a local business*
    - *To maintain the personal connections, they have established with me or the business's volunteers or staff*
    - *To save time getting a service locally*
    - *To receive hands-on advice*
    - *To try out a product or a service without obligation*
    - *To lengthen the lifespan of something that has personal value.*
    - *Other (if selected, please describe below)*

    Space for open response:

7. At your business or organization, do you? (Please check all that describe your entity):
    - *provide on-the-job technical skill training?*
    - *provide job or training opportunities for those who have difficulty finding jobs or entering the workforce?*
    - *employ veterans, people from marginalized, or historically underserved populations, or people who may be classified as having disabilities?*
    - *offer volunteering opportunities?*
    - *offer apprenticeships?*
    - *participate in efforts to increase awareness of career opportunities that your industry offers?*
    - *provide workshops for skills development?*
    - *Other (if selected, please describe below)*

    Space for open response:

8. Are you or your staff involved in your local community through: (Select all that apply)?
    - *participating in Chamber, Rotary, or other community service organizations*
    - *participating in a trade association (in the state)*
    - *supporting sports teams, scouts, school activities, or similar through sponsorships*
    - *volunteering in the community*
    - *donating to local special events and/or providing in-kind resources for community events*
    - *assisting with community fundraising*
    - *helping with community disaster preparedness*
    - *Other*

    Please describe an example.

    Space for open response:

9. In what ways do you interact with businesses or other /entities in your area? (Select all that apply.)
    - *Conduct joint side-walk sales type of events or Co-sales*
    - *Share resources*
    - *Share space and/or infrastructure*
    - *Collaborate or partner with other businesses*
    - *Encourage synergies and mutual benefit by receiving and/or providing products and services to or from another business*
    - *Other (if selected, please describe below)*

    Space for an open response:

10. What would you consider to be the most important benefit your business provides to your community?

    Space for open response:

11. Are any of the following items a challenge for your business at this time ?
    - *Lack of technically skilled workers*
    - *Lack of workers with general skills*
    - *Less business over time*
    - *The price and availability of goods*
    - *Customer perception of costs for services*
    - *Need more suitable space*
    - *Rent or building costs*
    - *Marketing and promotion needs*
    - *Need to improve the business' use of technology*
    - *Other (if selected, please describe below)*

    Space for an open response:

12. How many people does your business employ? (Include both full-time and part-time workers.)
    - *1-4*
    - *5-10*
    - *11-25*
    - *26-50*
    - *51-99*
    - *100+*

13. What was your sales revenue for the year (not including charitable donations)?
    - *$0-$10,000*
    - *$11,000-$40,000*
    - *$41,000-$100,000*
    - *$101,000-$250,000*
    - *$250,000-$1,000,000*
    - *$1,000,000-$5,000,000*
    - *$5,000,000-$10,000,000*
    - *$10,000,000+*