ACHIEVING IMPACT REDUCTIONS FOR TEXTILE-BASED GOODS PURCHASED BY THE CITY OF NEW YORK

Analysis and Recommendations for the Implementation of Local Law 112 of 2021

Prepared by the New York City Local Law 112 Task Force

August 2024

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Executive Summary

Summary

Local Law 112 of 2021, effective April 24, 2022, is concerned with City agency purchase, use, and disposal of textiles and requires the collection and reporting of agency purchases of textile goods for the four year period from April 24, 2018 - April 24, 2022. It additionally requires establishing a task force for the purpose of projecting City agency textile needs, developing and recommending environmentally preferable purchasing guidelines for textiles according to a series of delineated metrics, and recommending legislation and policy regarding agency textile use and waste management in support of the goals of the Local Law 112. These projections and recommendations are required to be provided in a report to the Mayor and Speaker of the City Council no later than August 14, 2024.

This report offers a thorough review of the provided data about City agency purchasing, use, and disposal of textile-based goods. The report found that not all of the goals and obligations outlined by Local Law 112 were feasible at this time as the ambitions of the Law outpace the available infrastructure, products, processes, and data. The Law may be the first of its kind within the U.S. and should be viewed as an important foundational step to advancing textile sustainability and procurement efforts by the City and more broadly for the global textile industry. Local Law 112 offers a model for other municipalities and regions seeking to mitigate and manage negative environmental, social, and economic impacts of textiles and the textile industry.

This report, despite the aforementioned limitations, offers meaningful recommendations to reduce the negative impact of City-purchased textile goods. It identifies key areas where the City can reduce its environmental footprint through procurement, including:

- Reducing total volume of textile-based products purchased;
- reducing single use textile-based products;
- identifying and implementing methods to extend the lifespan of textile-based products; and
- identifying and shifting to preferred materials for textile-based products.

The report also offers recommendations for ways the City can better support the ultimate achievement of the Law including:

- Increased transparency through more comprehensive and robust textile procurement, use, and end-of-life data collection and reporting;
- improved local textile management and innovation infrastructure and investment;
- implementation of textile-focused education campaigns for City procurement professionals; and
- new and existing supportive policy opportunities.

Key Findings

Data Limitations:

- The data collected and provided to date is inadequate for identifying and managing environmental impacts effectively. Data must be more specific, robust, complete, and validated to be fully useful. This is exacerbated by broader industry and subject-specific issues related to textile-focused data.

Opportunities for Impact:

- The data collected and provided to date indicates that high volumes of synthetic materials, single-use products, and lack of end-of-life management are the primary areas contributing to the negative impacts of City-purchased textile goods outlined by the Law.

Recommendations for Reduced Impacts

Improve Collected Data

- Define the most impactful textiles by product type and use to track and analyze during the procurement process;
- collect detailed information on those product types, including material composition and vendor information;
- ensure that vendor information is associated with individual products to improve tracking and transparency; and
- assess and require relevant material certifications as applicable to validate impact reduction claims.

Reduce Volumes Purchased

- Reduce the purchase of single-use items and promotional products where at all possible; and
- implement strategies to reduce the overall textile volume and enhance operational efficiencies.

Extend the Lifespan of Purchases

- Develop programs to facilitate the repair of textiles, particularly uniforms and other city-purchased items; and
- work with local businesses to provide repair services to extend the lifespan of textile-based goods and reduce the purchase volumes of new goods.

Identify and Prioritize Preferred Materials

- Prioritize the purchase of textile-based goods made from preferred raw materials, prioritizing non-animal natural fibers and mono-materials while reducing reliance on high-impact synthetic materials; and

- use the provided material matrix found in Appendix A to guide decisions, favoring materials with lower environmental and social impacts.

Improve End-of-life Management

- Collect detailed information on textile-based product lifespan, relinquishment, disposal, and diversion data from City purchased textile-based goods;
- develop targeted initiatives to enable responsible disposal strategies of City purchased textile-based goods; and
- explore partnerships with local and regional organizations specializing in responsible textile waste management to support local business innovations, beneficial reuse, and recycling solutions.

Additional Opportunities and Recommendations:

- Consider enacting additional textile-focused local laws that complement these efforts, inspired by international strategies such as the European Union's sustainable textiles strategy, to address areas like durability, repairability, and recycling requirements.
- Develop tax incentives, grants, and other financial support mechanisms to foster local innovation in textile recycling, next-generation materials, and green manufacturing technologies. Partner with the private sector to build necessary infrastructure for managing textile waste and developing sustainable materials.
- Develop Environmentally Preferable Purchasing (EPP) rules to ensure purchases meet a minimum standard for environmental impact and data transparency.
- Leverage the commitments with the Law to boost local manufacturing, create green jobs, and transition textile waste from a cost burden to a valuable economic resource, positioning the City as a leader in sustainable textile practices.
- Develop educational programs for city agency staff to enhance their understanding of textile issues and the importance of data accuracy and compliance with Local Law 112. This includes equipping them to manage the EPP process with vendors, ,and navigate the complexities of textile procurement and relinquishment.
- Identify and support individual coordinators or ‘champions’ within City staff to oversee implementation, provide support to agency staff, and ensure that the goals of the Law are achieved effectively.
- Leverage existing policies related to agriculture, water stewardship, and localization to support the goals of the Law.
- Prioritize sourcing textile goods and services from local or domestic providers to support the local economy, ensure supply chain transparency, and reduce environmental impacts associated with off-shoring.

1.0 Introduction

Local Law 112 of 2021 (“Local Law”), effective April 24, 2022, is concerned with City agency purchase, use, and disposal of textiles. The Local Law requires a series of activities and deliverables which serve to achieve a discrete list of objectives.

The Local Law requires:

1. Preparing a report that gathers certain information regarding agency purchases of textile goods for the four-year period preceding the effective date of the Local Law;
2. Establishing a task force to develop and recommend environmentally preferable purchasing guidelines for textiles, make recommendations for legislation and policy regarding agency textile use and waste management, and regulation of textile goods; assessing agency textile needs and forecast, as practicable, future needs in the 10 years following the effective date of the Local Law; and
3. The publication of a report to the Mayor and the Speaker of the City Council offering in detail the Task Force’s findings and conclusions, and any supporting methodology and analysis that form the basis of the Task Force’s guidelines for environmentally preferable purchasing (EPP) of textiles no later than August 14, 2024.

The Local Law outlines several objectives which must be considered in the achievement of the above mandates:

1. To conserve, protect and rehabilitate resources, including land, timber, water and energy, and to promote the efficient use of these resources;
2. To reduce, to the greatest extent possible, reliance on virgin textiles, with an emphasis on virgin textiles that require intensive land and water resources for production, and to increase the use of recycled and reused textiles, recyclable and reusable textiles, and biodegradable textiles;
3. To reduce, to the greatest extent possible, reliance on textiles that have significant negative environmental impact as can be assessed along the supply-chain and the life-cycle of the textile based on criteria provided in Appendix C;
4. To reduce, to the greatest extent possible, the use of and exposure to hazardous substances, including bioaccumulative and toxic chemicals found in textiles, including chromium, formaldehyde and polyvinyl chloride;
5. To decrease greenhouse gas emissions;
6. To promote environmentally responsible use and end-of-life management of agency-purchased textiles;
7. To reduce, to the greatest extent possible, waste;
8. To reduce, to the greatest extent possible, public spending on textiles that are the result of environmental degradation;
9. To educate textile-purchasing agencies of false or misleading claims of environmentally preferable textiles; and

10. Any other objective, as determined by the Task Force, that is intended to account for and reduce the negative effects on the environment, or to generate positive effects on the environment, caused by city purchases of textiles.

This report is provided by members of the Task Force in compliance with the Local Law using data provided by the City in the April 2023 Report On Agency Purchases of Textiles.[1] Additional supportive information useful to the understanding of this report, including definitions of technical terminology, can be found in the Appendix.

[1] "Report On Agency Purchases of Textiles." New York: City of New York; Mayor's Office of Contract Services, April 21, 2023. https://a860-gpp.nyc.gov/concern/nyc_government_publications/td96k551v?locale=en.

2. Assumptions

It is clear that all of the goals and obligations outlined in the Local Law are not feasible at this time. The infrastructure, products, and data necessary to achieve the range of tasks are simply absent or nascent, unscaled, or untested, resulting in progress limitations. Given this, significant context was offered about these limiting conditions within this report, and the goals of the Task Force were narrowed to the scope of what is reasonably achievable given the priorities outlined in the law while retaining the aim of making as much progress as is possible today and supporting conditions where the achievement of all goals of the Law are more possible in the future.

In accordance with the instructions laid out by the Local Law, this section aims to outline the assumptions made in the effort to meet the delineated goals of the Task Force and provide meaningful suggestions forward. The below assumptions are informed by the expertise of the Task Force members, the context shared about the fashion, apparel, lifestyle, and textile sectors, and the limitations of collected and available data.

These outlined assumptions impact the methodological approach of the Task Force to its mandate, the synthesis of collected data, and the basis of all recommendations forward.

1. Not all items broadly categorized under textiles in the current agency purchasing activity data collected as a result of the passing of the Local Law should be considered together. This is because not all categories of goods have the same

    a. data availability and quality,
    b. production impacts,
    c. procurement considerations,
    d. use phase impacts,
    e. intended and functional lifespan, and
    f. end-of-life or disposal considerations.

2. The impacts of textile purchases are best understood at this time in two ways:

    a. through production and procurement impacts and
    b. through disposal, end-of-life, and waste management impacts.

3. Missing or inappropriately categorized data within City databases is a significant limiting factor to the swift achievement of the requirements of the Local Law and must be addressed by this Task Force if the goals are to be achievable in the future.

4. Outside the selection of textile materials, changing the manner and means of agency procurement activities is outside the reach of this Task Force. However, supporting the

improvement of current processes to better align to the mandate of the Law is within Task Force reach and feasible.

5. The requirements outlined within the Local Law focused on end-of-life and waste management considerations are hindered by the absence of infrastructure, viable supply chains and supportive policy, and thus are largely impossible as of today. As such, the Task Force should primarily focus recommendations on mitigating:

    a. Production and procurement impacts according to the Criteria for Negative Impact Assessment included in the Law (see Appendix C) and
    b. relinquishment, disposal, end-of-life, and waste management only where possible as of today.

    Any recommendations for disposal, end-of-life, and waste management will focus on making these options more possible in the future.

6. Within the obligations outlined in § 3(b)(2) of LL112, the six (6) criteria outlined for consideration should not be weighed equally by the Task Force. (a) Ability to meet agency needs, (b) financial cost, and (c) availability cannot be sufficiently understood at this time and thus to impose meaningful recommendations on agency partners would be inappropriate. These considerations differ significantly by agency and existing agency procurement processes are already oriented to these considerations. Accordingly, the Task Force will narrow its considerations to (d) environmental impact, as can be assessed along the supply-chain and the life-cycle of the textile by the 21 factors listed within the goals, (e) whether such textile is made of virgin or recycled materials, and such textile's capability to be recycled by any means, including mechanical or chemical, in whole or in part, and (f) the potential for end-of-life management of such textile that will eliminate reliance on landfill, ensure conditions for environmentally and socially responsible disposal, and promote recycling, reuse, and repair where practicable.

7. The reduction of negative environmental and social impacts of City textile purchases is still possible despite the limitations present at this time.

8. Given the limitations present at the time, and the uniqueness of each agency operations relative to textile procurement and use, the Task Force will focus its official recommendations on providing the following:

    a. Agency-agnostic best practices aimed at achieving the greatest potential reduction of negative environmental and social impacts associated with textiles-based goods procured by the City using data available at this time; and
    b. process-based recommendations aimed at supporting a future where the achievement of all goals outlined by the Local Law are more possible.

3. Data, Methods and Findings

3.1 Collected Data and Projections

The data provided within the April 21, 2023 Report On Agency Purchases of Textiles, while robust in some ways, is incomplete for the purpose of evaluating textile impacts for the City. The data as collected and provided is missing important details about product information within broad category designations, specific unit information by product and category, material composition of products, information about product use, among other gaps which are integral to report to achieve the full scope of aims of the law. Despite the limitations of the data as collected and provided, the available data is still useful to reduce negative impact in the spirit of the law, albeit in more generalized ways.

The available data most robustly addresses volume and contract value by agency and textile category, and also includes helpful information about average or usual use time and end-of-life management. This data has allowed for the synthesis of projections of volume and contract value by category and agency for the 10-year period following the effective date of the Local Law as seen in Tables 1 and 2 (below) and Table 3 (Appendix D). For purposes of this report, the Task Force set the 10-year period as beginning October 25, 2021 and ending October 25, 2031.

Table 1

Projections of Contract Value and Volume by Category for October 25, 2021-October 25, 2031

Contract Value and Volume by Category Between April 24, 2018, to April 24, 2022 with Projections for October 25, 2021-October 25, 2031

Category	4 Year Value (2018-2022)	4 Year Unit Volume (2018-2022)	1 Year Avg Value	1 Year Avg Volume	Avg Value Per Unit	10 Y Projected Total Contract Value (2021-2031)	10 Y Projected Unit Volume Total (2021-2031)
Agriculture and Animals	$17,099.55	596	$4,274.89	149	$28.69	$47,023.76	1,639
Apparel - Accessories	$237,131.88	12,725	$59,282.97	3,181	$18.64	$652,112.67	34,994
Apparel - Clothes	$1,329,975.31	41,297	$332,493.83	10,324	$32.21	$3,657,432.10	113,567
Apparel - Shoes	$51,989.42	119	$12,997.36	30	$436.89	$142,970.91	327
Bags	$588,383.97	1,042,080	$147,095.99	260,520	$0.56	$1,618,055.92	2,865,720
Carpets and Flooring†	$504,155.91	1,614	$126,038.98	404	$312.36	$1,386,428.75	4,439
Curtains, Blinds, Drapery‡	$345,986.86	779	$86,496.72	195	$444.14	$951,463.87	2,142
Fabrics and Sewing Accessories	$126,027.28	100,028	$31,506.82	25,007	$1.26	$346,575.02	275,077
Facilities - Cleaning and Laundry Supplies	$130,183.58	8,942	$32,545.90	2,236	$14.56	$358,004.85	24,591
Flags	$207,826.51	22,719	$51,956.63	5,680	$9.15	$571,522.90	62,477
Furniture¶	$557,206.01	11,890	$139,301.50	2,973	$46.86	$1,532,316.53	32,698
Office Supplies - Desk Supplies§	$276,989.45	5,589	$69,247.36	1,397	$49.56	$761,720.99	15,370
PPE, Medical, and Dental*	$144,438,740.57	41,894,899	$36,109,685.14	10,473,725	$3.45	$90,274,212.86	26,184,312
Tools, Equipment, and Supplies	$44,190,726.31	186,256	$11,047,681.58	46,564	$237.26	$121,524,497.35	512,204
Other	$252.75	0	$63.19	0	$0.00	$0.00	0
Grand Total	**$193,002,675.36**	**43,329,533**	**$48,250,668.84**	**10,832,383**	**-**	**$223,824,338.47**	**30,129,555**

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,036). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.

Table 2

Projections of Contract Value and Volume by Agency for October 25, 2021-October 25, 2031

Contract Value and Volume by Agency Between April 24, 2018, to April 24, 2022 with Projections for October 25, 2021-October 25, 2031							
Category	**4 Year Value** (2018-2022)	**4 Year Unit Volume** (2018-2022)	**1 Year Avg Value**	**1 Year Avg Volume**	**Avg Value Per Unit**	**10 Y Projected Total Contract Value** (2021-2031)	**10 Y Projected Unit Volume Total** (2021-2031)
ACS Administration for Children's Services†‡	$181,578.70	9,270	$45,394.68	2,318	$19.59	$499,341.43	25,493
BIC Business Integrity Commission‡ ¶	$11,472.43	24	$2,868.11	6	$478.02	$31,549.18	66
CCHR City Commission on Human Rights‡ ¶	$17,722.03	178	$4,430.51	45	$99.56	$48,735.58	490
CCRB Civilian Complaint Review Board§	$972.00	0	$243.00	0	$0.00	$2,673.00	0
DCAS Department of Citywide Administrative Services*‡¶	$160,709,103.20	35,128,767	$40,177,275.80	8,782,192	$4.57	$101,686,763.29	22,227,307
DCLA Department of Cultural Affairs§	$0.00	0	$0.00	0	$0.00	$0.00	0
DCP Department of City Planning¶	$4,012.04	26	$1,003.01	7	$154.31	$11,033.11	72
DDC Department of Design & Construction¶§	$214,071.81	2,201	$53,517.95	550	$97.26	$588,697.48	6,053
DEP Department of Environmental Protection*‡¶§	$355,389.59	115,732	$88,847.40	28,933	$3.07	$238,399.48	77,634
DFTA Department for the Aging*¶§	$43,556.01	8,557	$10,889.00	2,139	$5.09	$119,746.58	23,525
DOB Department of Buildings*‡§	$487,687.89	10,902	$121,921.97	2,726	$44.73	$383,418.99	8,571
DOC Department of Correction*¶	$426,818.44	102,713	$106,704.61	25,678	$4.16	$1,160,796.62	279,343
DOF Department of Finance*‡¶§	$94,524.96	3,653	$23,631.24	913	$25.88	$234,649.87	9,068
DOHMH Department of Health and Mental Hygiene‡	$76,191.72	24,458	$19,047.93	6,115	$3.12	$209,527.23	67,260
DOI Department of Investigation¶§	$22,891.47	129	$5,722.87	32	$177.45	$62,951.54	355
DOP Department of Probation*¶	$57,175.78	17,141	$14,293.95	4,285	$3.34	$50,910.66	15,263
DORIS Department of Records and Information Services*¶§	$11,890.21	493	$2,972.55	123	$24.12	$31,365.55	1,301
DOT Department of Transportation*‡¶ §	$560,440.09	506,014	$140,110.02	126,504	$1.11	$1,538,706.06	1,389,278
DPR Department of Parks & Recreation*†‡¶§	$2,966,514.07	445,631	$741,628.52	111,408	$6.66	$8,156,782.02	1,225,315
DSNY Department of Sanitation*‡§	$467,296.41	84,764	$116,824.10	21,191	$5.51	$1,237,033.89	224,389
DSS Department of Social Services*†¶§	$271,282.35	172,702	$67,820.59	43,176	$1.57	$178,570.68	113,681
DVS Department of Veterans Services	$17,667.20	20,432	$4,416.80	5,108	$0.86	$48,584.80	56,188
DYCD Department of Youth & Community Development‡	$17,699.54	3,391	$4,424.89	848	$5.22	$48,673.74	9,325
FDNY Fire Department*§	$5,011,253.67	6,523,255	$1,252,813.42	1,630,814	$0.77	$3,132,583.68	4,077,751
HPD Department of Housing Preservation & Development‡¶	$69,658.55	5,543	$17,414.64	1,386	$12.57	$191,561.01	15,243
HRA Human Resources Administration¶	$13,844.14	10	$3,461.04	3	$1,384.41	$38,071.39	28
Law Law Department†§	$45,548.68	519	$11,387.17	130	$87.76	$125,258.87	1,427
Mayoralty‡§	$95,431.68	547	$23,857.92	137	$174.46	$262,437.12	1,504
NYPD Police Department*†‡	$20,234,083.38	71,391	$5,058,520.85	17,848	$283.43	$55,450,397.16	195,643
OATH Office of Administrative Trials and Hearings*‡	$5,115.00	3,008	$1,278.75	752	$1.70	$3,225.78	1,897
OCME Office of Chief Medical Examiner*¶§	$231,291.94	57,706	$57,822.99	14,427	$4.01	$233,698.81	58,307
OEM Office of Emergency Management*†§	$156,943.22	5,185	$39,235.81	1,296	$30.27	$235,093.23	7,767
OTI Department of Technology and Innovation‡ ¶§	$88,749.51	2,853	$22,187.38	713	$31.11	$244,061.15	7,846
SBS Department of Small Business Services§	$0.00	0	$0.00	0	$0.00	$0.00	0
TLC Taxi & Limousine Commission*	$34,797.65	2,332	$8,699.41	583	$14.92	$32,117.32	2,152
Grand Total	**$193,002,675.36**	**43,329,527**	**$48,250,668.84**	**10,832,382**	**-**	**$176,517,416.31**	**30,129,539**

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

Some of the provided data was inconsistent across information provided by category and by agency, and was unable to be completely validated. Specifically, volume for the Carpets and Flooring and Curtains, Blinds and Drapery categories were reported differently within the different views; agency volume of Carpets and Flooring was reported as n=1,349 while category volume was reported as n=1,614 (a difference of n=265), and agency volume of Curtains, Blinds and Drapery was reported as n=1,038 while category volume was reported as n=799 (a difference of n=259). These inconsistencies affected the projections for these categories within these two views and thus reported projections for these categories by category and by agency

are inconsistent. In instances where a consistent number was required, the higher of the two choices was used.

Smaller inconsistencies of +/- n=1 were found within the Furniture and Office Supplies - Desk Supplies categories across both views; both were rectified to the number reported by agency.

Projections were limited by the depth of the data and were calculated in simple terms. Volume by category and volume by agency for the four-year period of April 24, 2018 through April 24, 2022 was divided by four to yield a one-year average volume. That one-year average was then multiplied by 10. Finally, a 10% total growth rate was added to provide a total volume projection for the 10-year period of October 25, 2021 through October 25, 2031. The same was done for contract value.

One exception to this calculation was made for the PPE, Medical and Dental category; because the data collection period overlapped with the COVID-19 pandemic during which the City of New York made many purchases within this category which are likely higher than typical and broadly inconsistent with average purchasing or use activity for that category. Without a precedent for such purchasing activities or greater access to granular data about specific products within this category, a 75% reduction was assumed for any and all projections for this category across any reported data. The Task Force acknowledges this may not be fully accurate but believes this is a reasonable assumption.

The projections synthesized from the provided data were able to be analyzed further to produce additional comparable data points including average unit value by category and agency, contract value by agency, percent of total category volume by agency by category, and percent of total category contract value by agency by category. It is important to note that the Average Value Per Unit data point used in several of the provided tables, including the 10-year projections, is assumed stable and does not reflect a 10% growth rate as other value and volume indicators do within this report.

3.2 Analysis Methods

A primary way to determine negative impact for textile and textile based products is material content.[2] This information has yet to be collected by the City and thus was not included in any reported data. In the absence of that information, assumptions were made based upon the expertise of Task Force members, available research, and practices common to the use of textiles across any number of sectors.

Chief among the assumptions used in the analysis of this Task Force was that negative impact of any type increases at higher volumes, that volume tends to increase at lower unit values adding to impacts by volume, that a longer product lifespan is less negatively impactful than a shorter lifespan, and that any product intended or used in a single-use capacity is highly

[2] Wiedemann, Stephen G., Simon J. Clarke, Quan V. Nguyen, Zhong Xiang Cheah, and Aaron T. Simmons. “Strategies to Reduce Environmental Impacts from Textiles: Extending Clothing Wear Life Compared to Fibre Displacement Assessed Using Consequential LCA.” Resources, Conservation and Recycling 198 (November 1, 2023): 107119. https://doi.org/10.1016/j.resconrec.2023.107119.

negatively impactful. To supplement these assumptions, information about common textile practices were considered, including most frequently used material types across any textile use generally and specifically within categories or presumed agency activities when it was possible to make reasonable inferences.

These assumptions and textile-specific knowledge were used to create metrics to judge the likely negative impact by category and by agency, as seen in Table 4 and Table 5.

Table 4

Metrics for Determining Category Negative Impact by Rank According to Volume, Value, and Lifespan

Category Negative Impact Risk Scale by Volume, Value, and Lifespan						
Volume Rank	Description	Value Rank	Description	Lifespan Rank	Description
1 ↑ Impact	Highest	1 ↓ Impact	Highest	1 ↓ Impact	Longest
2	Near highest	2	Near highest	2	Near longest
3	Near highest	3	Near highest	3	Near longest
4	Moderately high	4	Moderately high	4	Moderately long
5	Moderately high	5	Moderately high	5	Moderately long
6	Moderate	6	Moderate	6	Moderate
7	Moderate	7	Moderate	7	Moderate
8	Moderate	8	Moderate	8	Moderate
9	Moderate	9	Moderate	9	Moderate
10	Moderately low	10	Moderately low	10	Somewhat short
11	Moderately low	11	Moderately low	11	Somewhat short
12	Near lowest	12	Near lowest	12	Near shortest
13	Near lowest	13	Near lowest	13	Near shortest
14	Lowest	14	Lowest	14	Shortest

Table 5

Metrics for Determining Agency Negative Impact by Rank According to Volume and Value

Agency Negative Impact Risk Scale by Volume and Value			
Volume Rank	Description	Value Rank	Description
1	Highest	1	Highest
2	Highest	2	Highest
3	Highest	3	Highest
4	Near highest	4	Near highest
5	Near highest	5	Near highest
6	Near highest	6	Near highest
7	Moderately high	7	Moderately high
8	Moderately high	8	Moderately high
9	Moderately high	9	Moderately high
10	Moderately high	10	Moderately high
11	Moderately high	11	Moderately high
12	Moderately high	12	Moderately high
13	Moderate	13	Moderate
14	Moderate	14	Moderate
15	Moderate	15	Moderate
16	Moderate	16	Moderate
17	Moderate	17	Moderate
18	Moderate	18	Moderate
19	Moderate	19	Moderate
20	Moderate	20	Moderate
21	Moderately low	21	Moderately low
22	Moderately low	22	Moderately low
23	Moderately low	23	Moderately low
24	Moderately low	24	Moderately low
25	Moderately low	25	Moderately low
26	Moderately low	26	Moderately low
27	Near lowest	27	Near lowest
28	Near lowest	28	Near lowest
29	Near lowest	29	Near lowest
30	Lowest	30	Lowest
31	Lowest	31	Lowest
32	Lowest	32	Lowest

Impact ↑ (Volume Rank) Impact ↓ (Value Rank)

For each category, unit volume, average unit value, and average or usual lifespan were each ranked according to the scale in Table 4. Each category was then analyzed to produce an overall category impact rank using the metrics in Table 6.

Table 6

Metrics for Determining Overall Category Negative Impact

Overall Negative Impact Risk Scale for Categories	
Score	**Description**
High	High volume Low Cost Short Lifespan
Moderate high	A blend of High and Moderate Impacts
Moderate	Average Volume Average Cost Average Lifespan
Moderate low	A blend of Moderate and Low Impacts
Low	Low Volume High Cost Long Lifespan

The same was done for each agency with category detail by unit volume, average unit value, and leveraging the category overall impact ranks according to agency category assortment and percentage of total category volume to produce an overall negative impact rank by agency.

Table 7

Metrics for Determining Overall Agency Negative Impact

Overall Negative Impact Risk Scale for Agencies		
Score	**Description**	**% Total Volume**
High	High volume Low Cost High Assortment Impact	30-100%
Moderate high	A blend of High and Moderate Impacts	15-29.99%
Moderate	Average Volume Average Cost Average Assortment Impact	7-14.99%
Moderate low	A blend of Moderate and Low Impacts	3.5-6.99%
Low	Low Volume High Cost Low Assortment Impact	0-3.49%

3.3 Findings by Category

Using the methods described, the impact of each category was assessed according to projected unit volumes, average unit value, and category lifespan average to determine an overall category impact rank. See Table 8 below.

Table 8

Negative Impact by Category Assessed by Volume, Value, and Lifespan in Ranked Order

Negative Impact by Category Assessed by Volume, Value, and Lifespan in Ranked Order							
Category	10 Y Projected Unit Volume Total	Rank by Volume	Avg Per Unit Value	Rank by Value	Usage Lifespan in Months	Rank by Lifespan Length	Overall Negative Impact
PPE, Medical, and Dental*	26,184,312	1	$3.45	12	31.93	11	High†
Bags	2,865,720	2	$0.56	14	59	3	High ‡
Fabrics and Sewing Accessories	275,077	4	$1.26	13	-	14	Moderate high
Apparel - Clothes	113,567	5	$32.21	7	22.55	13	Moderate high
Tools, Equipment, and Supplies	512,204	3	$237.26	4	38.06	6	Moderate
Flags	62,477	6	$9.15	11	46.5	5	Moderate
Apparel - Accessories	34,994	7	$18.64	9	32	10	Moderate
Facilities - Cleaning and Laundry Supplies	24,591	9	$14.56	10	34	7	Moderate
Furniture	32,698	8	$46.86	6	114.61	1	Moderate low
Office Supplies - Desk Supplies	15,370	10	$49.56	5	32.46	8	Moderate low
Carpets and Flooring	4,439	11	$312.36	3	51	4	Moderate low
Agriculture and Animals	1,639	13	$28.69	8	32.33	9	Moderate low
Apparel - Shoes	327	14	$436.89	2	24	12	Moderate low
Curtains, Blinds, Drapery	2,142	12	$444.14	1	79.5	2	Low

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = High volume, low cost, short lifespan and signifiant single use product not accounted for in lifespan while accounted for in volume and cost

‡ = High volume, low cost, among longest lifespan with signifiant single use product not accounted for in lifespan while accounted for in volume and per unit value. The bags are commonly used for promotional and branded giveaways so it is reasonable to assume the unaccounted for single use product would lead to a substantial reduction in the lifespan reported for the catgeory, thus ultimately leading to a lower actual rank by lifespan length than reported here.

The data by category revealed many interesting and useful findings. Of the 14 categories outlined (ignoring the largely unused category of ‘Other’), a determination of the top five categories by total projected volume, total protected contract value, highest per unit value, and lowest per unit value was made. These determinations align to the assumption that volume and average unit value are useful factors to infer overall impact in the absence of material-specific data. Overall contract value does not necessarily directly correlate to potential negative impact, but rather helps to illustrate any connection between impactful categories and overall cost to the City, supporting a potential case for reinvestment of funds towards less negatively impactful or potentially positively impactful alternatives.

Table 9

Top Five Categories by Total Projected Volume

Top Five Categories by Total Volume				
Rank	Category	10 Y Projected Unit Volume Total	Rank by Volume	Overall Negative Impact
1	PPE, Medical, and Dental	26,184,312	1	High
2	Bags	2,865,720	2	High
3	Tools, Equipment, and Supplies	512,204	3	Moderate
4	Fabrics and Sewing Accessories	275,077	4	Moderate high
5	Apparel - Clothes	113,567	5	Moderate high

The top five categories by total projected volume are PPE, Medical, and Dental; Bags; Tools, Equipment, and Supplies; Fabric and Sewing Accessories; and Apparel - Clothes. The PPE, Medical, and Dental category alone, even considering the 75% reduction applied to projections to account for anomalies in the volume caused by the COVID-19 pandemic, accounted for 86.91% of all volume across all categories. The Bags category accounted for 9.51% of total projected volume across all categories. The top five categories by volume combined accounted for 99.41% of all volume across all categories. The PPE, Medical, and Dental and Bags categories accounted for an unknown but presumed significant volume of single-use products, as noted in the data provided to the Task Force.

The top five categories by projected volume overwhelmingly represent significant negative impact as four of the five categories represent High or Moderate High negative impact, in part due to the total volume projected.

Table 10

Top Five Categories by Total Projected Contract Value

Top Five Categories by Total Contract Value				
Rank	Category	10 Y Projected Contract Value Total	Rank by Avg Unit Value	Overall Negative Impact
1	Tools, Equipment, and Supplies	$121,524,497.35	4	Moderate
2	PPE, Medical, and Dental	$90,274,212.86	12	High
3	Apparel - Clothes	$3,657,432.10	7	Moderate high
4	Bags	$1,618,055.92	14	High
5	Furniture	$1,532,316.53	6	Moderate low

The top five categories by total projected contract value are Tools, Equipment, and Supplies; PPE, Medical, and Dental; Apparel - Clothes; Bags; and Furniture. The Tools, Equipment, and Supplies category accounted for 54.29% of total projected contract value and the PPE, Medical, and Dental category accounted for 40.33%. The combination of the top five categories by total projected value accounted for 97.67% of all projected contract value across all categories. The top five categories by total projected contract value represent a range of average unit values (and accordingly a range of total projected volumes by category which support the overall projected contract values) and a blend of overall category impacts.

Average unit value is a better indication of negative impacts by category than overall projected contract value. The top five categories by average unit value are Curtains, Blinds, and Drapery; Apparel - Shoes; Carpets and Flooring; Tools, Equipment, and Supplies; and Office Supplies - Desk Supplies. The highest average per unit cost is $444.14 for the Curtains, Blinds, and Drapery category.

Table 11

Top Five Categories by Average Unit Value

Top Five Categories by Average Unit Value					
Rank	Category	10 Y Projected Contract Value Total	Per Unit Value	Rank by Avg Unit Value	Overall Negative Impact
1	Curtains, Blinds, Drapery	$951,463.87	$444.14	1	Low
2	Apparel - Shoes	$142,970.91	$436.89	2	Moderate low
3	Carpets and Flooring	$1,386,428.75	$312.36	3	Moderate low
4	Tools, Equipment, and Supplies	$121,524,497.35	$237.26	4	Moderate
5	Office Supplies - Desk Supplies	$761,720.99	$49.56	5	Moderate low

The bottom five categories by average unit value are Bags; Fabrics and Sewing Accessories; PPE, Medical, and Dental; Flags; and Facilities - Cleaning and Laundry Supplies. The lowest average per unit cost is $0.56 for the Bags category, a category representing significant disposable or single-use products.

Table 12

Bottom Five Categories by Average Unit Value

Bottom Five Categories by Average Unit Value					
Rank	Category	10 Y Projected Contract Value Total	Per Unit Value	Rank by Avg Unit Value	Overall Negative Impact
1	Bags	$1,618,055.92	$0.56	14	High
2	Fabrics and Sewing Accessories	$346,575.02	$1.26	13	Moderate high
3	PPE, Medical, and Dental	$90,274,212.86	$3.45	12	High
4	Flags	$571,522.90	$9.15	11	Moderate
5	Facilities - Cleaning and Laundry Supplies	$358,004.85	$14.55	10	Moderate

3.4 Findings by Agency

Using the methods described, the impact of each agency was assessed according to projected unit volumes, average unit value, and category assortment to determine an overall agency impact rank. See Table 13 below. For greater category detail by agency, see Table 14 in Appendix E. CCRB, DCLA, and SBS were not included as these agencies were not projected to have any volume of textile-based goods in the 10-year period from October 25, 2021-October 25, 2031.

Table 13

Negative Impact by Agency Assessed by Volume, Value, and Category Assortment in Ranked Order

Negative Impact by Agency Assessed by Volume, Value, and Category Assortment in Ranked Order							
Category	10 Y Projected Unit Volume Total	Rank by Volume	10 Y Projected Unit Value Total	Avg Per Unit Value	Rank by Value	Rank by Total Category Assortment Impact	Overall Agency Impact
DCAS Department of Citywide Administrative Services*	22,227,307	1	$101,686,763.29	$4.57	22	Moderate high	High
FDNY Fire Department*	4,077,751	2	$3,132,583.68	$0.77	32	Moderate high	High
DOT Department of Transportation*	1,389,278	3	$1,538,706.06	$1.11	30	Moderate high	High
DPR Department of Parks & Recreation*	1,225,315	4	$8,156,782.02	$6.66	18	Moderate high	Moderate high
DOC Department of Correction*	279,343	5	$1,160,796.62	$4.16	23	Moderate	Moderate high
DSNY Department of Sanitation*	224,389	6	$1,237,033.89	$5.51	19	Moderate	Moderate high
DSS Department of Social Services*	113,681	8	$178,570.68	$1.57	29	Moderate low	Moderate high
DEP Department of Environmental Protection*	77,634	9	$238,399.48	$3.07	27	Moderate	Moderate high
DOHMH Department of Health and Mental Hygiene	67,260	10	$209,527.23	$3.12	26	Moderate	Moderate high
DVS Department of Veterans Services	56,188	12	$48,584.80	$0.86	31	Moderate	Moderate high
NYPD Police Department*	195,643	7	$55,450,397.16	$283.43	3	Moderate	Moderate
OCME Office of Chief Medical Examiner*	58,307	11	$233,698.81	$4.01	24	Moderate low	Moderate
ACS Administration for Children's Services	25,493	13	$499,341.43	$19.59	15	Moderate	Moderate
DFTA Department for the Aging*	23,525	14	$119,746.58	$5.09	21	Moderate low	Moderate
DOP Department of Probation*	15,263	15	$50,910.66	$3.34	25	Moderate low	Moderate
HPD Department of Housing Preservation & Development	15,243	16	$191,561.01	$12.57	17	Moderate low	Moderate
DYCD Department of Youth & Community Development	9,325	17	$48,673.74	$5.22	20	Moderate low	Moderate
DOF Department of Finance*	9,068	18	$234,649.87	$25.88	13	Moderate low	Moderate
DOB Department of Buildings*	8,571	19	$383,418.99	$44.73	10	Moderate low	Moderate low
OTI Department of Technology and Innovation	7,846	20	$244,061.15	$31.11	11	Moderate low	Moderate low
OEM Office of Emergency Management*	7,767	21	$235,093.23	$30.27	12	Moderate	Moderate low
DDC Department of Design & Construction	6,053	22	$588,697.48	$97.26	8	Moderate	Moderate low
TLC Taxi & Limousine Commission*	2,152	23	$32,117.32	$14.92	16	Low	Moderate low
OATH Office of Administrative Trials and Hearings*	1,897	24	$3,225.78	$1.70	28	Moderate low	Moderate low
Mayoralty	1,504	25	$262,437.12	$174.46	5	Moderate low	Moderate low
Law Law Department	1,427	26	$125,258.87	$87.76	9	Moderate low	Moderate low
DORIS Department of Records and Information Services*	1,301	27	$31,365.55	$24.12	14	Moderate low	Moderate low
CCHR City Commission on Human Rights	490	28	$48,735.58	$99.56	7	Moderate low	Moderate low
DOI Department of Investigation	355	29	$62,951.54	$177.45	4	Low	Low
DCP Department of City Planning	72	30	$11,033.11	$154.31	6	Low	Low
BIC Business Integrity Commission	66	31	$31,549.18	$478.02	2	Low	Low
HRA Human Resources Administration	28	32	$38,071.39	$1,384.41	1	Low	Low

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

Of the thirty-two city agencies included in the reported data, a determination of the top five agencies by total projected volume, total protected contract value, highest per unit value, and lowest per unit value was made. As with the findings by category, these determinations align to the assumption that volume and average unit value are useful factors to infer overall impact in the absence of material-specific data. Also as with category findings, overall contract value does not necessarily directly correlate to potential negative impact, but rather helps to illustrate any connection between impactful categories and overall cost to the City, supporting a potential case for reinvestment of funds towards less negatively impactful or potentially positively impactful alternatives.

Table 15

Top Five Agencies by Total Projected Volume

Top Five Agencies by Total Volume					
Rank	Category	10 Y Projected Unit Volume Total	Rank by Volume	Overall Negative Impact	Notes
1	DCAS Department of Citywide Administrative Services	22,227,307	1	High	Driven by PPE and Tools Categories
2	FDNY Fire Department	4,077,751	2	High	Driven by PPE Category
3	DOT Department of Transportation	1,389,278	3	High	Driven by Bags Category
4	DPR Department of Parks & Recreation	1,225,315	4	Moderate high	Driven by Bags Category
5	DOC Department of Correction	279,343	5	Moderate high	Driven by Fabrics Category

The top five agencies by total projected volume are DCAS, FDNY, DOT, DPR, and DOC. DCAS projected volume was driven by significant volume from the PPE, Medical and Dental and Tools, Equipment, and Supplies categories. PPE represented 98.42% of total DCAS projected unit volume, 83.54% of overall category projected unit volume, and 72.60% of total projected unit volume of any category. Tools represented 1.49% of total DCAS projected unit volume, 64.59% of overall category projected unit volume, and 1.10% of total projected unit volume of any category. PPE also represented 99.98% of total FDNY projected unit volume, 15.57% of overall category projected unit volume, and 13.53% of total projected unit volume of any category. The PPE, Medical, and Dental category accounted for an unknown but presumed significant volume of single-use products, as noted in the data provided to the Task Force.

The Bags category represented 99.07% of total DOT projected unit volume, 48.03% of overall category projected unit volume, and 4.57% of total projected unit volume of any category and 96.55% of total DPR projected unit volume, 41.28% of overall category projected unit volume, and 3.93% of total projected unit volume of any category. The Bags category accounted for an unknown but presumed significant volume of single-use products, as noted in the data provided to the Task Force.

The Fabrics and Sewing Accessories category represented 98.45% of total DOC projected unit volume, 99.97% of overall category projected unit volume, and 0.91% of total projected unit volume of any category.

The top five agencies by total projected volume accounted for 96.91% of total projected unit volume across all agencies. The top five agencies by projected volume overwhelmingly represent significant negative impact as all five represent High or Moderate High negative impact, in part due to the high total volume projected by each agency.

Table 16

Top Five Agencies by Total Projected Contract Value

Top Five Agencies by Total Contract Value					
Rank	Category	10 Y Projected Contract Value Total	Rank by Avg Unit Value	Overall Negative Impact	Notes
1	DCAS Department of Citywide Administrative Services	$101,686,763.29	22	High	57.61% of Total Contract Value
2	NYPD Police Department	$55,450,397.16	3	Moderate	31.41% of Total Contract Value
3	DPR Department of Parks & Recreation	$8,156,782.02	18	Moderate high	4.62% of Total Contract Value
4	FDNY Fire Department	$3,132,583.68	32	High	1.77% of Total Contract Value
5	DOT Department of Transportation	$1,538,706.06	30	High	0.87% of Total Contract Value

The top five agencies by total projected contract value are DCAS, NYPD, DPR, FDNY, and DOT, accounting for 57.61%, 31.41%, 4.62%, 1.77% and 0.87% of total projected contract value, respectively. The combination of the top five agencies by total projected value accounted for 92.85% of all projected contract value across all agencies. The top five agencies by total projected contract value represent a largely low average unit value; four of the five agencies rank 18 or below in average unit value, overwhelmingly indicating low average unit value (and accordingly a likely high unit volume) and largely high overall agency negative impact.

The top five agencies by average unit value are HRA, BIC, NYPD, DOI, and Mayoralty. The highest average per unit cost is $1,384.41 for HRA.

Table 17

Top Five Agencies by Average Unit Value

Top Five Agencies by Average Unit Value					
Rank	Category	10 Y Projected Unit Value Total	Per Unit Value	Rank by Avg Unit Value	Overall Negative Impact
1	HRA Human Resources Administration	$38,071.39	$1,384.41	1	Low
2	BIC Business Integrity Commission	$31,549.18	$478.02	2	Low
3	NYPD Police Department	$55,450,397.16	$283.43	3	Moderate
4	DOI Department of Investigation	$62,951.54	$177.45	4	Low
5	Mayorality	$262,437.12	$174.46	5	Moderate low

The bottom five agencies by average unit value are FDNY, DVS, DOT, DSS, and OATH. The lowest average per unit cost is $0.77 for FDNY, an agency with significant volume within the PPE, Medical, and Dental category, which represents significant disposable or single-use products. DVS average unit cost of $0.86 is driven disproportionately by the Flags category. DOT average unit cost of $1.11 is driven disproportionately by the Bags category, a category with significant single-use product. DSS average unit cost of $1.57 is driven by the PPE, Medical, and Dental category, and OATH average unit cost of $1.70 is also driven by PPE.

Table 18

Bottom Five Agencies by Average Unit Value

Bottom Five Agencies by Average Unit Value					
Rank	Category	10 Y Projected Unit Value Total	Per Unit Value	Rank by Avg Unit Value	Overall Negative Impact
1	FDNY Fire Department	$3,132,583.68	$0.77	32	High
2	DVS Department of Veterans Services	$48,584.80	$0.86	31	Moderate high
3	DOT Department of Transportation	$1,538,706.06	$1.11	30	High
4	DSS Department of Social Services	$178,570.68	$1.57	29	Moderate high
5	OATH Office of Administrative Trials and Hearings	$3,225.78	$1.70	28	Moderate low

3.5 Categories and Agencies of Greatest Negative Impact

Using the category and agency metrics provided in order to judge likely negative impact according to several dimensions including volume, unit value, lifespan and considering evidence, expert knowledge, and assumptions about material composition, use, and end-of-life, categories and agencies with the greatest likely negative impact were determined.

Table 19

Top Five Categories by Greatest Overall Negative Impact

Greatest Overall Negative Impact by Category					
Rank	Category	Rank by Volume	Rank by Avg Unit Value	Rank by Lifespan	Overall Negative Impact
1	PPE, Medical, and Dental	1	12	11	High
2	Bags	2	14	3	High
3	Fabrics and Sewing Accessories	4	13	14	Moderate high
4	Apparel - Clothes	5	7	13	Moderate high
5	Tools, Equipment, and Supplies	3	4	6	Moderate

The top five categories by overall negative impact were PPE, Medical, and Dental; Bags; Fabrics and Sewing Accessories; Apparel - Clothes; and Tools, Equipment, and Supplies. On average, these categories represented the highest overall volumes, lower average unit values, and shorter lifespans.

3.5.1 PPE, Medical, and Dental

The PPE, Medical, and Dental category had many factors which resulted in it having the largest likely negative impact including the highest overall projected volume of any category, near lowest average unit value, and among the shortest lifespans without considering the high proportion of single-use product within this category which was not considered in lifespan calculations.

The specific requirements for materials for the purpose of ensuring patient and worker health can limit the potential for more environmentally preferred textile purchasing, however investigation into solutions is still essential. PPE used for healthcare, medical, or dental

applications is typically made of synthetic materials including polypropylene, polyester (or sometimes blended with cotton) to limit the risks of exposure to hazardous substances, including body fluids, and may be used to make products such as coveralls, footwear covers, sleeves, scrubs, gowns, bedding, drapes, masks, and head coverings.[3] Many PPE products are intended to be disposed of after single-use in order to maintain a sterile environment or limit infection; this requires PPE products to be cheaply manufactured, typically using low-cost synthetic materials.[4]

PPE waste has been acknowledged as a significant environmental issue.[5] Due to a challenging combination of factors including reliance on cheap and synthetic petroleum-based materials to produce, valid concerns about contamination driving single-use consumption and disposal, limited shelf life of PPE due to medical expiration, shedding of per- and polyfluoroalkyl substances (PFAS) through use and disposal, and lack of viable circular solutions to manage high volumes of waste, the negative impact of PPE goods is significant.

The PPE category is negatively impactful through manufacture, use phase, and end-of-life results in the PPE category ranking as having the greatest negative impact across all categories.

3.5.2 Bags

The Bags category was ranked as the second most impactful category. Bags were ranked second by total projected volume, lowest by average unit value, and among the longer category lifespans, however this was without considering the high proportion of single-use products within this category which was not considered in lifespan calculations.

The data collected and shared with the Task Force did not provide context for what a bag might be used for within the broad category designation or within specific agencies which reported volumes within the Bag category. It is reasonable to assume that the Bag category may comprise a high volume of promotional goods, especially considering the inclusion of the vendor 4imprint, a provider of customizable promotional goods including bags, in the approved vendor list (see Appendix J). A cursory search of promotional totes and drawstring backpacks on the 4imprint website indicated that the product assortment of these categories is made up overwhelmingly of petroleum-based synthetics including polyester, polypropylene, vinyl, and nylon. Of the 1,029 products listed within the totes and drawstring backpack categories, 80% (n= 823) were made of petroleum-based synthetic materials and 20% (n=201) were made of cotton, or in some instances, jute.

The impacts of promotional totes has also been broadly acknowledged.[6] Petroleum-based synthetic materials, a common material used in promotional bags, are a

[3] Karim, Nazmul, Shaila Afroj, Kate Lloyd, Laura Clarke Oaten, Daria V. Andreeva, Chris Carr, Andrew D. Farmery, Il-Doo Kim, and Kostya S. Novoselov. "Sustainable Personal Protective Clothing for Healthcare Applications: A Review." ACS Nano 14, no. 10 (October 27, 2020): 12313–40. https://doi.org/10.1021/acsnano.0c05537.
[4] Karim, Afroj, Lloyd, Oaten, Andreeva, Carr, Farmery, Kim, and Novoselov, "Sustainable Personal Protective Clothing for Healthcare Applications", 12313–40.
[5] Wangtrakuldee, Phumvadee. "Combatting the Hidden Environmental Crisis of PPE Waste." World Economic Forum, February 29, 2024. https://www.weforum.org/agenda/2024/02/the-hidden-environmental-crisis-ppe-waste/.
[6] Cook, Grace. "The Cotton Tote Crisis." The New York Times, August 24, 2021. https://www.nytimes.com/2021/08/24/style/cotton-totes-climate-crisis.html.

non-renewable resource, result in shedding of microplastics and PFAS, and are unable to decompose when thrown away at end-of-life. Cotton materials bear significant environmental impacts as well, especially at high volumes, including high use of natural resources to cultivate. The intended use comes with impacts as well; promotional materials including bags are often disposed of quickly, if used at all, resulting in an overwhelming volume of goods going directly to landfill. Few solutions exist to manage the deluge of textile waste produced from promotional bags.

The Bags category is negatively impactful through manufacture, use phase, and end-of-life. The high volume of units within the Bag category, which are projected to be purchased by the City of New York through 2031, and the high instance of single-use goods within this category, results in significant negative impact when compared to other product categories.

3.5.3 Fabrics and Sewing Accessories

The Fabrics and Sewing Accessories category was ranked fourth by total projected unit volume and among the lowest ranked for average unit value and lifespan, in part because no information was provided for lifespan. The Department of Corrections (DOC) is almost entirely responsible for the total projected volume for the category. While use information was not provided, given the information about volume and lifespan, it is reasonable to assume Fabrics and Sewing Accessories are being used by the DOC in service of onsite production of goods (clothing or bedding is most likely produced, though this too is not disclosed) by the incarcerated population.

Pre-consumer textile waste produced during the manufacturing process is a significant issue. A reported 18% of textiles used for the production of garments are wasted through the cutting and manufacturing process.[7] This level of waste is doubly impactful as the cultivating, manufacturing, and production of raw materials for fabrics comes with its own set of negative impacts which vary by fabric type. A 2023 report from Textile Exchange, a leading textile industry support organization, reported that polyester continues to be the most widely used fiber for textiles, making up 54% of the global market and growing in 2022, while cotton makes up 27%.[8] Both of these fibers have a significant impact on people and the environment, particularly at the volumes which they are currently produced.

Because of the lack of use information, end-of-life management is difficult to determine. It is nonetheless reasonable to infer that the cutting waste in any production setting is thrown away and sent to landfill, and any goods produced through the fabrics purchased, too, makes it to landfill at the end-of-life. While unique factors specific to the DOC setting may affect the likely

[7] Abou-Chakra, Karina, Karina Archipov, Simone Berkovitz, Elena Perry, and Rachel Spellenberg. “Examining Cut-and-Sew Textile Waste within the Apparel Supply Chain.” Santa Barbara, California: University of California Santa Barbara Bren School of Environmental Science and Management, 2024. https://bren.ucsb.edu/sites/default/files/2024-04/Examining%20Cut-and-Sew%20Textile%20Waste%20within%20the%20Apparel%20Supply%20Chain%204.10.24.pdf.
[8] Textile Exchange. “Textile Exchange’s Annual Materials Market Report Shows Further Growth in the Overall Production of New Materials, Including Fossil-Based Synthetic Fibers,” December 1, 2023. https://textileexchange.org/news/textile-exchanges-annual-materials-market-report-shows-further-growth-in-the-overall-production-of-new-materials-including-fossil-based-synthetic-fibers/.

lifespan of any goods produced from the fabrics purchased, a person on average wears a garment only seven times before discarding it,[9] a metric which continues to trend downward since 2000.[10] As of 2018, the U.S. Environmental Protection Agency reported 11.3 million tonnes of textiles were ending life in landfills across the country.[11]

3.5.4 Apparel - Clothes

The Apparel - Clothes category ranked fifth by total volume, seventh by unit value, and near last in lifespan. Clothing is impactful for all the same reasons which were outlined to explain the impact of the Fabric and Sewing Accessories category. An additional use factor which contributes to the impact of this category is the likely inclusion of promotional or short-term use garments within the category, in addition to the presumption that uniforms make up a significant portion of this category.

3.5.5 Tools, Equipment, and Supplies

The Tools, Equipment, and Supplies category was third by total projected volume, fourth by average unit value, and sixth by lifespan. This yields a blended rank for this category. However, the lack of information about what might constitute a textile-based tool, piece of equipment, or supply, and the high projected volume, contribute to the judgment that this category likely has significant negative impact in comparison to other categories. While higher average unit value tends to balance the potential for high volumes, this does not seem to have as direct of a relationship within this category as the volumes reported were among the highest of the reported categories.

Table 20

Top Five Agencies by Greatest Overall Negative Impact

Greatest Overall Negative Impact by Agency					
Rank	Category	Rank by Volume	Rank by Avg Unit Value	Rank by Category Assort	Overall Negative Impact
1	DCAS Department of Citywide Administrative Services	1	22	Moderate high	High
2	FDNY Fire Department	2	32	Moderate high	High
3	DOT Department of Transportation	3	30	Moderate high	High
4	DPR Department of Parks & Recreation	4	18	Moderate high	Moderate high
5	DOC Department of Correction	5	23	Moderate	Moderate high

Moving now to speak of the impact of agencies, the top five agencies by overall negative impact were DCAS, FDNY, DOT, DPR, and DOC. On average, these agencies represented the highest overall volumes, lower average unit values, and higher category assortment impact ranks. Broadly, these agencies were judged to have the greatest negative impact because their

[9] Chua, Jasmin Malik. “The Environment and Economy Are Paying the Price for Fast Fashion — but There’s Hope.” Vox, September 12, 2019. https://www.vox.com/2019/9/12/20860620/fast-fashion-zara-hm-forever-21-boohoo-environment-cost.
[10] Ellen MacArthur Foundation. “Fashion and the Circular Economy.” Accessed May 19, 2024. https://www.ellenmacarthurfoundation.org/fashion-and-the-circular-economy-deep-dive.
[11] “Textiles: Material-Specific Data.” US Environmental Protection Agency, January 22, 2023. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/textiles-material-specific-data.

volumes and product assortment were disproportionately made up of categories judged to be of greatest negative impact and because their overall projected volumes were in some cases magnitudes higher than other agencies reported volumes.

3.5.6 DCAS Department of Citywide Administrative Services

DCAS had many factors which resulted in it having the largest likely negative impact, including the highest overall projected volume of any agency, a lower average unit value, and a category assortment which had a high proportional representation of high-impact categories and high volumes within those categories. DCAS reported eight categories within its assortment, five of which were the top five most negatively impactful categories. PPE made up 98.42% of projected volume for the agency and 83.54% of total projected volume for the category, illustrating the influence of DCAS in driving shifts for this negatively impactful category. DCAS holds similar influence for the Tools, Equipment, and Supplies category which makes up 1.49% of DCAS total projected volume, but 64.59% of total category volume, and for the Apparel - Clothes category which makes up on 0.07% of projected total DCAS volume, but 12.87% of total projected category volume.

Further, because of the very nature of DCAS as an agency in service of procurement on behalf of other agencies, its impact is necessarily greater and its influence in driving different purchasing activities Citywide is potentially most impactful.

3.5.7 FDNY Fire Department

The impact of FDNY, like that of DCAS, is driven by total overall projected volume and its high proportion of negatively impactful categories within its category assortment. FDNY was ranked second by projected volume, last in average unit value, and three of the four categories within its assortment were within the top five categories with greatest negative impact. The vast majority of total projected volume for FDNY is made up by the PPE, Medical, and Dental category which comprises 99.98% of total agency projected volume and 15.57% of total projected volume by category.

3.5.8 DOT Department of Transportation

The negative impact of DOT, as with the other agencies within this section, is driven by total overall projected volume and its high proportion of negatively impactful categories within its category assortment. DOT was ranked third by projected volume, near last in average unit value, and four of the eight categories within its assortment were within the top five categories with greatest negative impact. The vast majority of total projected volume for DOT is made up by the Bags category which comprises 99.07% of total agency projected volume and 48.03% of total projected volume by category.

3.5.9 DPR Department of Parks and Recreation

DPR was ranked fourth by projected volume, in the bottom half of agencies by average unit value, and four of the nine categories within its assortment were within the top five categories with greatest negative impact. Like DOT, the vast majority of total projected volume for DPR is made up by the Bags category which comprises 96.55% of total agency projected volume and 41.28% of total projected volume by category. Additionally, DPR owns a significant portion of projected volume for other categories including Apparel - Clothes (13.58% of total projected category volume), Carpet and Flooring (63.82% of total projected category volume), and Flags (15.33% of total projected category volume).

3.5.10 DOC Department of Corrections

The negative impact of DOC, as with the other agencies within this section, is driven by total overall projected volume and its high proportion of negatively impactful categories within its category assortment. Specifically, DOC owns the highly impactful Fabrics and Sewing Accessories category: it makes up 98.45% of total projected agency volume and 99.97% of total projected category volume. Additionally, of the eight categories within the DOC assortment, four were within the top five ranked by negative impact.

3.6 Categories and Agencies of Least Negative Impact

Using the category and agency metrics provided in order to judge likely negative impact according to several dimensions including volume, unit value, lifespan and considering evidence, expert knowledge, and assumptions about material composition, use, and end-of-life, categories and agencies with the least overall negative impact were determined.

Table 21

Top Five Categories by Least Overall Negative Impact

Least Overall Negative Impact by Category					
Rank	**Category**	**Rank by Volume**	**Rank by Avg Unit Value**	**Rank by Lifespan**	**Overall Negative Impact**
1	Curtains, Blinds, Drapery	12	1	2	Low
2	Apparel - Shoes	14	2	12	Moderate low
3	Agriculture and Animals	13	8	9	Moderate low
4	Carpets and Flooring	11	3	4	Moderate low
5	Office Supplies - Desk Supplies	10	5	8	Moderate low

The five categories with the least overall negative impact were Curtains, Blinds, and Drapery; Apparel - Shoes; Agriculture and Animals; Carpets and Flooring; and Office Supplies - Desk Supplies. On average, these categories represented lower overall volumes, higher average unit values, and longer lifespans.

3.6.1 Curtains, Blinds, Drapery

Curtains, Blinds, and Drapery was the only category ranked as low impact. Volume for this category was among the lowest, value per unit the highest, and lifespan length near longest. This leads to the belief that this category is purchased and disposed of infrequently, reducing potential impacts. The volume of this category is less than 0.01% of total projected volume across all categories.

3.6.2 Apparel - Shoes

Apparel - Shoes were classified as moderately low impact. Volume for this category was among the lowest and value per unit the highest; however, lifespan was ranked among the lowest. This leads to the assumption that this category is likely part of various City employee uniforms and that items within this category are likely worn until they have exhausted their useful life. Useful life for this category may be necessarily shorter than a general consumer-based number due to the nature of specific roles. The volume of this category is less than 0.001% of total projected volume across all categories.

3.6.3 Agriculture and Animals

Agriculture and Animals was classified as moderately low impact. Volume for this category was among the lowest, value per unit and lifespan were ranked in the middle. This category is wholly owned by the NYPD agency and the assumption is that the items within this category are likely supplies for NYPD horses. The volume of this category is less than 0.005% of total projected volume across all categories.

3.6.4 Carpets and Flooring

Carpets and Flooring was classified as moderately low impact. Volume for this category was among the lowest, value per unit among the highest, and lifespan among the longest. This leads to the belief that this category is purchased and disposed of infrequently, reducing potential impacts. The volume of this category is less than 0.01% of total projected volume across all categories.

3.6.5 Office Supplies - Desk Supplies

Office Supplies - Desk Supplies was classified as moderately low impact. Volume for this category was among the lowest, value per unit relatively high, and lifespan ranked in the middle. It is unclear what may be within this category product assortment. The volume of this category is less than 0.05% of total projected volume across all categories.

Table 22

Top Five Agencies by Least Overall Negative Impact

Least Overall Negative Impact by Agency					
Rank	Category	Rank by Volume	Rank by Avg Unit Value	Rank by Category Assort	Overall Negative Impact
1	HRA Human Resources Administration	32	1	Low	Low
2	BIC Business Integrity Commission	31	2	Low	Low
3	DCP Department of City Planning	30	6	Low	Low
4	DOI Department of Investigation	29	4	Low	Low
5	CCHR City Commission on Human Rights	28	7	Moderate Low	Moderate Low

Moving now to speak of the agencies with the least overall negative impact, the five agencies with the least overall negative impact were HRA, BIC, DCP, DOI, and CCHR. On average, these agencies represented lower overall volumes, higher average unit values, and low category assortment impact ranks. Broadly, these agencies were judged to have the least negative impact because their volumes and product assortment were disproportionately made up of categories judged to be the least negatively impactful, fewer total categories including fewer negatively impactful categories, and because the overall projected volumes were magnitudes lower than other agencies reported volumes.

3.6.6 SBS Department of Small Business Services; DCLA Department of Cultural Affairs; CCRB Civilian Complaint Review Board

SBS, DCLA, and CCRB each reported zero units across one category: Office Supplies - Desk Supplies. These agencies thus have little negative impact relative to textile purchases.

3.6.7 HRA Human Resources Administration

It is projected that HRA will purchase 28 total units across the Furniture category through 2031. It thus has little negative impact relative to textile purchases.

3.6.8 BIC Business Integrity Commission

It is projected that BIC will purchase 66 total units across Apparel - Clothes, Curtains, Blinds, and Drapery, and Furniture categories through 2031. It thus has little negative impact relative to textile purchases.

3.6.9 Summary

In the absence of more specific data reported by City agencies and by category, including product types, specific unit values, and material composition, metrics such as volume and unit value serve to help determine likely negative impact according to category and agency. Additional inferences which leverage the expertise of those within the Task Force and available research helps to fill in some blanks where breadcrumbs help to lead to reasonable assumptions.

Categories with the greatest negative impact have a significant single-use component within their volumes, highest projected overall volumes, and lowest per unit value, all combined to support a throwaway culture and disposability. Additionally, the categories of most significant negative impact overwhelmingly rely on products made of non-renewable sources, including oil and petroleum, which contribute to many issues across the environment and human health.

It was the assumption of members of this Task Force that clothing would be a significant leading contributor to negative impacts across City textile purchasing. While clothing is within the top five categories with greatest negative impact, in part because of its range of destructive environmental and social impacts, Apparel - Clothing is many magnitudes lower in total projected unit volume and higher in unit value than the top three impact categories. This result is at least in part because agencies often do not purchase clothing from vendors directly. It is common for City agencies to require employees to purchase uniforms. In some cases, the purchase by the employee is reimbursed by the City; however, outside of this process, the procurement, care, and disposal of uniforms is not tracked nor reported by the City. Accordingly, this Task Force was unable to comprehensively assess the agency purchase, use, and disposal of textiles within the Apparel-Clothing category. However, in accordance with Local Law 112 of 2021, § 3(b),[12] data was collected from City employees who are required to wear uniforms.

Agencies with the greatest negative impact also report the highest projected volumes, lower on average per unit values, and have a disproportionate volume of high-impact categories within their category assortment.

Low impact categories can make meaningful improvements to their impacts. However, due to low volumes and high unit costs, these categories may be lower priority,as goods purchased within these categories seem to be used longer and replaced less often due to cost, potentially reducing overall negative impact. Materials are not necessarily better in these categories.Thus, negative impacts, particularly those produced in the manufacturing phase, persist on a significantly smaller scale compared to the high volume categories.

Low impact agencies overwhelmingly do not purchase items which qualified to be counted and/or did not report items. Those that did, reported very low volume, higher unit costs, and tended to have longer lifespans within the category assortments and less dependence on high-impact product categories.

[12] Kallos, Barron & Gennaro. Local Law 112 of 2021, § 3(b).

4. Context

4.1 Economic Impacts of Textiles

The economic value of the global textile sector is challenging to discreetly quantify due to a range of factors, chief among them the fact that textiles are a component part of many goods produced globally. According to the World Trade Organization (WTO), textiles as a stand-alone export category was valued at $339B USD for 2022, or 2% of total global exports across all categories of manufacturing.[13] China produced and exported the vast majority of global textiles that year (43.6% of global exports, valued at $148B USD), followed by the European Union (E.U.) (21.1%, $71B USD), India (5.7%, $19B USD), Turkey (4.3%, $15B USD), and the United States (U.S.) (4.1%, $14B USD). The U.S. imported 10.3% of total global textile imports at a cost of $39B USD in 2022.[14]

Textiles are commonly lumped in with data reported for the clothing and apparel sector, which have a combined conservatively estimated market value of $1.7T USD as of 2021.[15] The WTO reported the 2022 export value of clothing at $579B USD, or 4% of total global exports. In the clothing market, China is also the lead producer and exporter (31.4% of global clothing exports, valued at $182B USD), followed by E.U. (26.9%, $156B USD), Bangladesh (7.8%, $45B USD), and Vietnam (6%, $35B USD).[16] As mentioned, textiles are a meaningful component for the automotive industry (10% of total global manufacturing exports, valued at $1.52T USD) and office equipment (16%, $2.51T USD).[17]

The U.S. domestic textile industry is one of the oldest domestic manufacturing sectors, originally concentrated along the East Coast during the 19th and early 20th centuries, with New York City serving as the industrial export hub.[18] During its heyday in the 1930s, the City was considered the center of textile and garment manufacturing for the world;[19] while that mantle has been passed to other global regions, the impact of the domestic textile industry remains significant. Fiber cultivation and manufacture to final sewn products exist within the domestic industry and employed 501,755 across the U.S. in 2023.[20] The industry is important to national security; the U.S. has developed a range of textile innovations with military applications and currently provides 8,000 different textile products to the U.S. military,[21] in part driven by the imperatives outlined in the Buy American Act of 1933.[22]

New York City quantifies textiles within its fashion industry, which, in 2017, accounted for 4.6% of the total domestic workforce in the U.S., more than $11.3B in wages, and $3.2B in

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[13] *World Trade Statistical Review 2023*. World Trade Organization, 2023, 14. https://www.wto.org/english/res_e/booksp_e/wtsr_2023_e.pdf.
[14] *World Trade Statistical Review 2023*, 79.
[15] Fashion United. “Global Fashion Industry Statistics.” Accessed June 1, 2024. https://fashionunited.com/global-fashion-industry-statistics.
[16] *World Trade Statistical Review 2023*, 79.
[17] *World Trade Statistical Review 2023*, 14.
[18] Thanhauser, Sofi. *Worn: A People’s History of Clothing*. New York: Vintage Books, 2022.
[19] “The Economic Impact of the Fashion Industry.” U.S. Congress Joint Economic Committee, 2016. https://www.jec.senate.gov/public/_cache/files/66dba6df-e3bd-42b4-a795-436d194ef08a/fashion---september-2016-final-090716.pdf.
[20] National Council of Textile Organizations. “U.S. Textile Industry.” Accessed June 1, 2024. http://www.ncto.org/facts-figures/us-textile-industry/.
[21] National Council of Textile Organizations. “US Textile Industry.”
[22] Koehl, G. Matthew, and Victoria L. Strohmeyer. “Buying American: Country of Origin Requirements in US Government Contracts.” Thomson Reuters, 2014. http://us.practicallaw.com/7-573-3545.

taxes.[23] While offshoring has been a significant strategy for domestic textile and fashion manufacturing since at least the 1970s and in earnest following the removal of the Multifiber Agreement (MFA) in 1994 and Agreement on Textiles and Clothing (ATC) in 2005,[24] between 2010 and 2017 the industry was the third largest re-shoring industry in the manufacturing sector[25] and the supply chain disruptions experienced during the COVID-19 pandemic has only added momentum to that trend.[26]

The textile sector continues to grow. Textile Exchange reports global fiber production for textile use across all sectors increased 3.6% from 112 million tonnes in 2021 to 116 million tonnes in 2022.[27] This continues a trend: global fiber production has almost doubled from 58 million tonnes in 2000 to 116 million tonnes in 2022 and is expected to grow to 147 million tonnes in 2030 if business as usual continues.[28] This growth is due in significant part to continued growth in the fashion and apparel industries driven by greater consumption and lower utilization; between 2000 and 2015, clothing production doubled globally, while at the same time the number of times an item of clothing is worn before it is thrown away decreased by 36%.[29]

4.2 Known Environmental Impacts of Textiles

The manufacture, use, and disposal of textiles is responsible for a broad range of negative environmental impacts including overuse of natural resources, greenhouse gas emissions, water pollution, and landfill waste.[30] Polyester is the most used material across textiles, comprising 54% of all textiles produced in 2022, followed by cotton (27%), nylon (5%) and wool (4.3%), with the range of other fibers making up less than 10% combined.[31] The high volume of textiles produced, and particularly textiles used for clothing, lead to overconsumption of the natural resources required to meet the demand. Land and water overuse and abuse is common, making the textile sector the third highest consuming water and land use sector globally.[32] Fashion and textiles combined contribute approximately 10% of total global carbon emissions[33] and are slated to consume 26% of the total carbon budget by 2050.[34] The sector is responsible for a reported 20% of global clean water pollution and is the leading cause of microplastic pollution.[35]

Textiles encompass a broad range of raw materials and manufacturing processes, each with their own impacts. Textile cultivation, manufacture, use, and end-of-life all have a significant

[23] "The Economic Impact of the Fashion Industry." U.S. Congress Joint Economic Committee, 2019. https://www.jec.senate.gov/public/index.cfm/democrats/2019/2/the-economic-impact-of-the-fashion-industry.
[24] "U.S. Clothing and Textile Trade with China and the World: Trends Since the End of Quotas." Washington, D.C.: Congressional Research Service, July 10, 2007. https://crsreports.congress.gov/product/pdf/RL/RL34106/3.
[25] "U.S. Clothing and Textile Trade with China and the World."
[26] "The State of Fashion 2023." Business of Fashion and McKinsey & Company, November 30, 2022. https://www.mckinsey.com/~/media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2023/the-state-of-fashion-2023-holding-onto-growth-as-global-clouds-gathers-vf.pdf.
[27] "Materials Market Report." Textile Exchange, December 2023. https://textileexchange.org/app/uploads/2023/11/Materials-Market-Report-2023.pdf.
[28] "Materials Market Report."
[29] "A New Textiles Economy: Redesigning Fashion's Future." Ellen MacArthur Foundation, 2017. https://ellenmacarthurfoundation.org/a-new-textiles-economy.
[30] European Parliament. "The Impact of Textile Production and Waste on the Environment," March 21, 2024. https://www.europarl.europa.eu/topics/en/article/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographics.
[31] "Materials Market Report."
[32] European Parliament. "The Impact of Textile Production and Waste on the Environment."
[33] European Parliament. "The Impact of Textile Production and Waste on the Environment."
[34] Ellen MacArthur Foundation. "Fashion and the Circular Economy."
[35] Ellen MacArthur Foundation. "Fashion and the Circular Economy."

role in driving negative impact and climate change.[36] See Appendix A for a non-exhaustive list of textile fiber categories, types, benefits of use, and their impact risks.

Raw materials by and large fall into three classifications: natural materials, semi-synthetic materials, and synthetic materials.[37] Natural materials contain two main types, animal or protein fibers and plant or cellulose fibers, along with animal skin. Examples of natural fibers include cotton, wool, silk, or flax, as well as animal skin referred to as leather and fur. Cotton, the second most used fiber in the world across all industries,[38] is a commodity crop for many countries including the United States. The top cotton producing countries in the world as of 2020 are India, China, U.S., Brazil, and Pakistan which produce 75% of global cotton production.[39] Environmental risks include high freshwater usage, high usage of chemical fertilizers which can contribute to eutrophication, marine ecotoxicity, and terrestrial ecotoxicity, among other issues, and monocropping cotton has resulted in biodiversity loss.[40] The cotton supply chain is also often at high risk for modern slavery and unjust labor practices.[41] While most natural fibers would biodegrade in the right environment , current waste management practices, the volume of textiles currently produced, and various finishes or chemicals applied to natural fibers or textiles make natural decomposition impossible, resulting in additional negative environmental impacts at the end-of-life stage.[42]

While leather and fur fall within this class of raw materials, they are derived from the processed skins of animals including bovines, ovines, pigs, foxes, minks, reptiles, kangaroos, and other wild animals, and accordingly, are not cultivated or manufactured like other raw materials within this classification. Leather is more commonly used than fur and is known for its broad range of negative environmental impacts, as well as animal welfare concerns and labor risks.[43] Global deforestation, particularly in the Amazon, is driven by the inefficient land use needed to rear cattle for the dual purpose of leather and meat.[44] Any material which relies on rearing farmed animals, such as leather and wool, comes with a range of issues including potent methane emissions and land use which negatively impact the climate, biodiversity and wildlife, as well as high water usage for both raising animals and processing their hides. Conventional tanning of animal skins requires toxic heavy metals including chromium and formaldehyde, which have implications on marine and terrestrial ecotoxicity, and often render the skins no longer effectively biodegradable.[45]

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[36] European Parliament. “The Impact of Textile Production and Waste on the Environment.”
[37] Chan, Charlotte, and Jane Kwan, eds. *Textilepedia: The Complete Fabric Guide*. Hong Kong: Fashionary International, Ltd, 2022.
[38] “Materials Market Report.” 4.
[39] “Physical Climate Risk for Global Cotton Production: Global Analysis.” Cotton 2040. London: Forum for the Future and Acclimatise, 2021. https://www.wtwco.com/en-gb/insights/campaigns/cotton-2040.
[40] “Physical Climate Risk for Global Cotton Production.”
[41] Walk Free. “Global Slavery Index Spotlight: Stitched with Slavery in the Seams.” Accessed August 4, 2024. https://www.walkfree.org/global-slavery-index/findings/spotlights/stitched-with-slavery-in-the-seams/.
[42] Zambrano, Marielis C., Joel J. Pawlak, Jesse Daystar, Mary Ankeny, and Richard A. Venditti. “Impact of Dyes and Finishes on the Aquatic Biodegradability of Cotton Textile Fibers and Microfibers Released on Laundering Clothes: Correlations between Enzyme Adsorption and Activity and Biodegradation Rates.” *Marine Pollution Bulletin* 165 (April 1, 2021): 112030. https://doi.org/10.1016/j.marpolbul.2021.112030.
[43] Hakansson, Emma, Sydney Gladman, and Naomi Bailey-Cooper. “Under Their Skin: A Report Series on Leather.” Collective Fashion Justice and Material Innovation Initiative, 2023. https://static1.squarespace.com/static/5f5f02dd9b510014eef4fc4f/t/6447013fc313933929b754c0/1682375029994/CFJ+a+just+transition+beyond+leather.pdf.
[44] Hakansson, Gladman & Bailey-Cooper. “Under Their Skin: A Report Series on Leather.”
[45] Ahmed, Md Dipu, and Kazi Madina Maraz. “Benefits and Problems of Chrome Tanning in Leather Processing: Approach a Greener Technology in Leather Industry.” *Materials Engineering Research* 3, no. 1 (October 4, 2021). https://doi.org/10.25082/MER.2021.01.004.

Semi-synthetic materials are made up of a class of fibers called man-made cellulosics which are typically natural-material derived, specifically wood or bamboo pulp, but are synthesized for fiber use using a synthetic process which breaks down the raw material to an extrudable pulp using chemicals.[46] Fibers within this class include rayon viscose and acetate.[47] These fiber types come with risks related to deforestation, particularly use of old growth forests as raw material inputs and chemical usage during the raw material processing stage which leverage toxic chemicals such as hydrogen sulfide and carbon disulfide.[48] Semi-synthetic materials have a significant impact on waterways when not produced using a closed-loop chemical process, as the toxic chemicals used in the processing of the pulp are released in effluent water and have catastrophic effects on marine and ecotoxicity and human health.[49]

Synthetic materials are the most commonly used fiber type globally and have significant negative environmental impact.[50] These include polyester, nylon, elastane, and others.[51] Almost all synthetic fibers are crude oil derived and are essentially plastic.[52] These fibers are not biodegradable at end-of-life, and instead live on within landfills and waterways throughout the world, as well as within human bodies.[53] These plastic fibers have a range of other environmental impacts including microfiber pollution, heavy emissions, fossil depletion, chemical leaching from landfills to local waterways and soil, and a range of catastrophic effects on wildlife and natural ecosystems.[54] Utilizing recycled content does not alleviate many of these impacts and may introduce other issues,[55] potentially neutralizing any positive effects of utilizing recycled feedstocks.

Managing textiles at the end-of-life has its own challenges. In New York State alone, approximately 6% of all material solid waste within landfills comes from textiles.[56] According to the 2023 NYC Waste Characterization Study, the average City household disposed of 92 pounds of textiles in 2023, amounting to 5% of the total residential waste stream in 2023.[57] New York State estimates that only 15% of all post-consumer textiles are diverted from local landfill through reuse and recycling.[58] Of that, only 20% is sold locally for reuse through second hand stores; 36% is sold, overwhelmingly overseas for export; 16% is recycled for insulation or shoddy; and 24% are reused for wiping cloths or cleaning rags.[59] These numbers do not account for pre-consumer waste generated by the industry through manufacturing, sales, and

[46] "Materials Market Report."
[47] Chan & Kwan. *Textilepedia.*
[48] CFDA. "Rayon (Viscose)." Accessed June 9, 2024. https://cfda.com/resources/materials/detail/rayon-viscose.
[49] Tonti, Lucianne. "Rayon Unravelled: Fashion's Most Confusing Fibre Has a Dark Past but Hopeful Future." *The Guardian*, August 1, 2022, sec. Fashion. https://www.theguardian.com/fashion/2022/aug/20/rayon-unravelled-fashions-most-confusing-fibre-has-a-dark-past-but-hopeful-future.
[50] "Materials Market Report."
[51] Chan & Kwan. *Textilepedia.*
[52] Trunk, Urska, George Harding-Rolls, Ximena Banegas, and Nusa Urbancic. "Fossil Fashion: The Hidden Reliance of Fast Fashion on Fossil Fuels." Changing Markets Foundation, 2021. https://changingmarkets.org/wp-content/uploads/2021/02/CM-Fossil-Fashion-online-reports-layout.pdf.
[53] Trunk, Harding-Rolls, Banegas & Urbancic. "Fossil Fashion."; Pinto-Rodrigues, Anne. "Microplastics Are in Our Bodies. Here's Why We Don't Know the Health Risks." Science News, March 24, 2023. https://www.sciencenews.org/article/microplastics-human-bodies-health-risks.
[54] Trunk, Harding-Rolls, Banegas & Urbancic. "Fossil Fashion."
[55] Sataman, Sirima. "What You Need To Know About Microplastics and Textile." Fibershed, January 11, 2022. https://fibershed.org/2022/01/11/what-you-need-to-know-about-microplastics-and-textile/. ; Tonti, Lucianne. "How Green Are Your Leggings? Recycled Polyester Is Not a Silver Bullet (Yet)." *The Guardian*, March 21, 2021. https://www.theguardian.com/fashion/2021/mar/22/how-green-are-your-leggings-recycled-polyester-is-not-a-silver-bullet-yet.
[56] Cline, Elizabeth. "Where Does Discarded Clothing Go?" *The Atlantic*, July 18, 2014. https://www.theatlantic.com/business/archive/2014/07/where-does-discarded-clothing-go/374613/.
[57] "2023 NYC Waste Characterization Study." New York: NYC Department of Sanitation (DSNY), 2023. https://www.nyc.gov/assets/dsny/downloads/resources/reports/waste-characterization-studies/2023/wcs-2023.pdf.
[58] New York State Department of Environmental Conservation. "Textile Reuse And Recycling." Accessed August 4, 2024. https://dec.ny.gov/environmental-protection/recycling-composting/more-things-you-can-recycle/textile-reuse-recycling.
[59] New York State Department of Environmental Conservation. "Textile Reuse And Recycling."

returns. Once materials are sold, there is little transparency in what is processed locally or exported.[60] Goods sold and exported to the Global South can overwhelm local waste management systems and further increase the global environmental impact of the textile industry.[61]

Current methods for recycling textiles include mechanical and chemical recycling for both pre- and post-consumer waste.[62] Mechanical recycling involves physically deconstructing fibers through shredding, crushing, or melting before reprocessing back into textiles; this process weakens the fibers and reduces use applications.[63] Chemical recycling utilizes chemical solutions to dissolve materials to their molecular components in order to use in the development of new fibers of similar quality.[64] Mechanical recycling methods are the most common process used for collected textiles intended for recycling in the U.S., however this process is limited by blended fibers used in textile-based goods and textile sorting remains a time consuming process[65]. Further, many argue that mechanical recycling processes should be considered downcycled because the resulting end product is of lower value than the feedstock and generally can only be mechanically recycled once.[66] At this time, chemical recycling potential is also limited by the presence of blended fiber material in textile-based goods.[67]

4.3 Known Social Impacts of Textiles

The manufacture, use, and disposal of textiles is responsible for a broad range of human or social impacts.[68] Across all textile and fiber classifications and categories, the social impacts are remarkably consistent: depletion or contamination of local natural resources resulting in water scarcity; marine and terrestrial ecotoxicity impacting local agriculture and food supplies; dangerous working conditions and environments; workers paid less than living wages without the right to collectively bargain; unsafe working conditions with added risk for women resulting from sexual harrassment, rape, and sexual slavery; and common use of child and forced labor.[69]

Textile categories which require use of heavy chemicals including leather and fur as well as man-made cellulosics come with acute negative human health impacts including respiratory issues, cognitive issues, and cancers.[70] Additionally, the dyeing and finishing processes used across most textile types result in similar negative health impacts.[71] End-of-life management of textiles within landfills or informal dumpsites come with a range of negative community impacts on health and local natural resources through the breakdown of the fibers, particularly

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[60] Chiu, Allyson. "What Really Happens to Your Clothes after You Donate Them." *Washington Post*, January 4, 2023. https://www.washingtonpost.com/climate-solutions/2023/01/04/how-to-donate-clothes-waste-environment/.
[61] Shipley, Julia, and Muriel Alarcón. "Burn After Wearing: A Mountain of Used Clothes Appeared in Chile's Desert. Then It Went up in Flames." Grist, January 4, 2024. https://grist.org/international/burn-after-wearing-fashion-waste-chile/.
[62] "Science & Tech Spotlight: Textile Recycling Technologies." Washington, D.C.: Government Accountability Office, July 2024. https://www.gao.gov/assets/gao-24-107486.pdf.
[63] "Science & Tech Spotlight: Textile Recycling Technologies."
[64] "Science & Tech Spotlight: Textile Recycling Technologies."
[65] "Science & Tech Spotlight: Textile Recycling Technologies."
[66] McCauley, Evan, and Iva Jestratijevic. "Exploring the Business Case for Textile-to-Textile Recycling Using Post-Consumer Waste in the US: Challenges and Opportunities." *Sustainability* 15, no. 2 (2023). https://doi.org/10.3390/su15021473.
[67] Science & Tech Spotlight: Textile Recycling Technologies, 2024
[68] Roy Choudhury, A. K. "Environmental Impacts of the Textile Industry and Its Assessment Through Life Cycle Assessment." In *Roadmap to Sustainable Textiles and Clothing: Environmental and Social Aspects of Textiles and Clothing Supply Chain*, edited by Subramanian Senthilkannan Muthu, 1–39. Singapore: Springer Singapore, 2014. https://doi.org/10.1007/978-981-287-110-7_1.
[69] Bédat, Maxine. *Unraveled: The Life and Death of a Garment*. New York: Portfolio / Penguin, 2021.
[70] Hakansson, Gladman & Bailey-Cooper. "Under Their Skin: A Report Series on Leather." ; CFDA. "Rayon (Viscose)."
[71] Manzoor, J., and M. Sharma. "Impact of Textile Dyes on Public Health and the Environment." In *Impact of Textile Dyes on Human Health and Environment*, edited by K. Wani, N. Jangid, and A. Bhat, 162–69. IGI Global, 2020. https://doi.org/10.4018/978-1-7998-0311-9.ch008.

petro-chemical based textiles such as polyester, which make their way into the waterways and eventually bodies of humans and animals in the food chain, causing cancer, reducing lifespan, and disrupting hormonal processes.[72] Additionally, animal welfare risks associated with animal-derived materials should also be considered social impacts, as animals are routinely subject to mutilation practices without pain relief, as well as confinement, and other cruel treatment.[73]

See Appendix A for a non-exhaustive list of textile fiber categories, types, benefits of use, and their impact risks.

4.4 Current Textile Sector Landscape

Despite the complex global supply chain, distribution, and consumer base, the textiles and apparel sector is underappreciated and underinvested. The industry is often seen as beneath serious consideration because of the close tie to apparel and fashion and the high concentration of women who work across the global sector.[74] Accordingly, the textile sector has not benefited from the same attention that other sectors have been paid within academia, government, consulting, and research over the last several decades. As a result, available data is limited, of varying quality, and often incomplete.[75] Similarly, infrastructure meant to improve, innovate, or manage the range of known impacts of this sector suffers from underinvestment and underdevelopment.[76] The work of this Task Force and the production of this report is an important and meaningful step forward in bringing attention to the issues outlined.

The textile, apparel, and lifestyle industries face a challenging data landscape. Lack of transparency, siloed data, data paywalls, and misinformation keep these industries from making effective progress towards impact reduction targets[77]. The lack of accessible, usable, and credible data[78] as well as lack of consensus and in some instances, acumen, about how to best leverage available data has hindered the industry's ability to benchmark and make strategic decisions,[79] and has made long term accountability nearly impossible. The industry, especially in the U.S., has only recently benefited from any policy consideration at all, but the data landscape has made advancing useful policies slow and challenging. It is similarly challenging for consumers to make educated choices without meaningful sustainable regulations or standards. Currently efforts meant to align the textile industry to shared climate goals is unfeasible.

The City of New York is not immune to the data challenges which characterize the textile sector. While the Local Law required the collection and sharing of data related to City

[72] Trunk, Harding-Rolls, Banegas & Urbancic. "Fossil Fashion."
[73] Collective Fashion Justice. "Non-Human Animals." Accessed August 4, 2024. https://www.collectivefashionjustice.org/non-humans.
[74] Bédat. *Unraveled.*
[75] Lanfranchi, Marzia, and Elizabeth Cline. "Cotton: A Case Study in Misinformation." New York: Transformers Foundation, 2021. https://static1.squarespace.com/static/5efdeb17898fb81c1491fb04/t/61de9a24d5a36752adcbf737/1641978418846/CottonPaper_120122_TransformersFoundation_.pdf.
[76] Hohmann, Laura, Lindita Xhaferi-Salihu, and Richard Oliveras. "Fashion Industry Charter for Climate Action: Progress Report 2023." United Nations Climate Change Global Climate Action and CDP, 2023. https://unfccc.int/sites/default/files/resource/230329%20BLS23055%20UCC%20Climate%20Action%202023%20v06.pdf.
[77] Lanfranchi & Cline. "Cotton."
[78] Doyle, Megan. "Stats about Fashion's Global Impact Are Wrong – Here's Why." Harper's BAZAAR, September 30, 2022. https://www.harpersbazaar.com/uk/fashion/a41028986/fashion-sustainability-statistics/.
[79] Kent, Sarah. "Fashion's Greenwashing Problem Begins with Bad Data." The Business of Fashion, September 16, 2020. https://www.businessoffashion.com/articles/sustainability/fashion-sustainability-data-greenwashing/.

textile-related procurement, use, and end-of-life, there are clear limitations on how agencies collect and retain information on contracts.[80] Understanding and reducing the range of impacts requested by the Law (see Appendix C) requires more specific data captured during procurement, including material composition of all textile goods,[81] better use categorization, more transparent vendor information, country of origin, material supply chain traceability, among other facets. As mentioned, this lack of data is not unique to the City, but it does provide the City with an opportunity to be a leader and put pressure on the industry to provide this information.

Infrastructure and investment are similarly scattershot and underdeveloped, further limiting the goals of the Local Law and reducing the negative impacts of textiles more broadly.[82] Many portions of a more environmentally and socially sustainable textile supply chain are simply absent,[83] and as a result the conventional caustic textile supply chain persists. This is pronounced for effective and sustainable end-of-life management of textiles and textile waste; machinery, technology, processes, or markets are not yet created or scaled to meet the needs of the current volume of textile waste[84] and what is available tends to result in outcomes of less value than the original textile, slowing further investment and limiting the use of high value waste materials.[85] Investment is not yet consistent in the space, even for large textile innovators, and as a result, many potentially impactful innovations which could provide new, more sustainable material options, less negatively impactful production inputs, or new processes for managing textile volumes have not yet made it to commercial viability or large scale availability.[86]

These conditions persist due to several persistent factors. Global supply chain opacity,[87] inequities between Global South producing regions and Global North consuming regions,[88] and lack of historical governmental intervention[89] all have had an impact on shaping the available solutions and persistent challenges of the textile sector. The lack of governmental attention is particularly impactful; the absence of historical interest in the textile sector from lawmakers and governments has resulted in a persistent absence of regulations meant to shape the sector towards better competitive, environmental, and social ends.[90] The absence of mandates results in a sector which operates with impunity and without the necessary pressures to drive innovation, resulting in chronic underdevelopment. As a result, the technology of the sector has not markedly advanced from what was present at the dawn of the Industrial Revolution nearly

[80] "Report On Agency Purchases of Textiles."
[81] Drew, Deborah, and Genevieve Yehounme. "The Apparel Industry's Environmental Impact in 6 Graphics," July 5, 2017. https://www.wri.org/insights/apparel-industrys-environmental-impact-6-graphics.
[82] Kent, Sarah. "Fashion Faces Massive Shortage of More Sustainable Raw Materials." The Business of Fashion, October 26, 2023. https://www.businessoffashion.com/articles/sustainability/fashion-sustainable-materials-gap-2030/.
[83] Kramers, Peter. "Whitepaper: Fashion Sustainability and the Investment Decision." Green Angel Syndicate, June 12, 2020. https://greenangelsyndicate.com/blog/whitepaper-fashion-sustainability-and-the-investment-decision/.
[84] Kramers. "Whitepaper: Fashion Sustainability and the Investment Decision."
[85] McCauley & Jestratijevic, "Exploring the Business Case for Textile-to-Textile Recycling."
[86] McCauley & Jestratijevic, "Exploring the Business Case for Textile-to-Textile Recycling."
[87] Simpliciano, Liv, Ciara Barry, Delphine Williot, Ysabl Marie Dobles, and Isabella Luglio. "Fashion Transparency Index 2023." London: Fashion Revolution CIC, 2023.
[88] Russell, Martin. "Textile Workers in Developing Countries and the European Fashion Industry: Towards Sustainability?" European Parliament, July 2020. https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/652025/EPRS_BRI(2020)652025_EN.pdf.
[89] McCauley & Jestratijevic, "Exploring the Business Case for Textile-to-Textile Recycling."
[90] Gabriel, Michelle Blair. "Endeavoring Policy for the Global Fashion Industry: Learnings from the New York State Fashion Act." In *Fashion for the Common Good*, edited by Isabel Cantista, Elaine L. Ritch, Linda Shearer, Silvia Pérez-Bou, and Sonika Soni Khar, 275–90. Cham: Springer Nature Switzerland, 2024. https://doi.org/10.1007/978-3-031-50252-1_15.

300 years ago and thus is ill equipped to manage the range of environmental, social, and market considerations which define our current world.

4.5 An opportunity for NYC to lead

The textile procurement activities of the City are a mirror to the greater textile industry, with global issues quickly becoming local issues with local impacts. In the absence of uniform best practices or policy mandates at the national or international level, New York City has taken the opportunity to enact a first of its kind law with Local Law 112 of 2021. The Law supports the greater goals of PlaNYC, the climate action plan which coordinates City agencies in service of combating climate change and enhancing the quality of life for all New Yorkers, among other specific goals.[91] According to the 2023 PlaNYC report, The City aims to "be a model for other cities and nations and for the private sector, which is central to New York's economy" through the setting of "ambitious policies across the public and private sectors" and "charting new pathways and testing new technologies."[92]

PlaNYC also outlines a transition plan for the City to become a more circular economy, producing goods more sustainably and eliminating unnecessary waste across a range of processes, and categories.[93] The Law positions New York City as a global leader in the management of the range of fiscal, municipal, and community impacts of textiles and supports the achievement of PlaNYC 2023 goals as outlined. The work of this Task Force and the Law is an important first step to developing circular economy policies for textiles that mitigate the effects of climate change, support entrepreneurship, and position New York City as the center of infrastructure innovation, industry profitability, and green jobs.

Other recent City efforts illustrate both leadership and future opportunity. New York City Climate Budgeting was introduced for the first time within the City of New York Executive Budget for fiscal year 2025, outlining a new process to align City resources and decisions with sustainability and resiliency goals.[94] This leading, progressive effort by the City offers potential resources and additional alignment in support of the reduction of City-purchased textile impacts and the ultimate achievement of the Law.

The City can lead nationally and internationally by illustrating the role local governments can play through municipal procurement policy and provide a framework for Environmentally Preferable Purchasing (EPP) rules for textiles. The Local Law is an important first step to uncover and analyze the acute impacts of City textile purchases. The suggestions from the Task Force provide the groundwork for EPP for textiles through the improvement of data collection and reporting, procurement strategies which can reduce environmental and social impacts of textiles purchased by the City, and a range of other policies which can support the goals of the

[91] "PlaNYC: A Greener, Greater New York." New York: The City of New York, 2007. https://www.nyc.gov/html/planyc/downloads/pdf/publications/full_report_2007.pdf.
[92] "PlaNYC: Getting Sustainability Done." New York: The City of New York, 2024, 15. https://climate.cityofnewyork.us/wp-content/uploads/2023/06/PlaNYC-2023-Full-Report.pdf.
[93] "PlaNYC: Getting Sustainability Done."
[94] "New York City Climate Budgeting: The City of New York Executive Budget Fiscal Year 2025." New York: City of New York, Mayor's Office of Management and Budget, 2024. https://www.nyc.gov/assets/omb/downloads/pdf/exec24-nyccb.pdf.

Law. This Law is the impetus for a cascade of positive effects for the City, the members of its community, the greater global textile sector, and in turn, our shared environment.

5. Environmentally Preferable Purchasing Recommendations

Missing data is a significant limitation for offering targeted solutions to manage, mitigate, or reduce impacts according to the twenty one metrics outlined by Local Law112 of 2021[95] and the greater intent of the Law. However, the synthesized data and resulting findings provide sufficient insight into agency and category impacts for textile purchasing activities across the City such that meaningful recommendations can be made which will result in progress towards the goals of the Local Law. These recommendations should be considered 'best practices'. While recommendations may not be highly specific to agency or category activities as reported by the City, they do offer generalized yet meaningful ways to progress towards achieving necessary impact reductions.

It is worth noting that due to the limitations in the reported data and the resulting generalized recommendations for shifting textile purchasing activities, it is suggested that the City take additional actions while engaging the following recommendations to ensure continued progress towards the objectives of the Law. These include changes which may be simply administrative, such as changing how data is collected within City-owned procurement platforms, and more complex needs such as developing policies to support infrastructure investment and textile-focused business innovation. These are included in the Additional Recommendations section of this report. Without earnest pursuit of the additional recommendations outlined, the goals of Local Law 112 will not be realized.

Despite the challenges of the sector and the data collected and reported by the City, the analysis provides meaningful direction for next steps. Overall, high volumes of synthetic materials, high volumes of single-use products, and lack of end-of-life considerations for textile goods illustrate the areas of most significant impact, and thus the areas of most significant opportunity for meaningful reduction of negative impacts. Accordingly, the Task Force recommends four areas of strategic engagement to begin the process of reducing the impacts of City textile purchases: volume reduction, preferred materials, extending lifespan, and end-of-life management.

5.1 Data Collection and Reporting

As has been outlined, data remains a significant limitation to achieving the stated goals of Local Law 112. And while this challenge persists today, it is an issue which is able to be remedied and in so doing, the ability to affect change in line with the goals of the Local Law will become more possible.

It is suggested that considering, collecting, and reporting product type within categories, collecting and reporting material composition, collecting specific unit metrics for specific types and categories, and collecting and reporting vendor information for each product be urgently prioritized. Generalized information for these areas of data is not sufficient and is a distinct

[95] Kallos, Ben, Inez D. Barron, and James F. Gennaro. Local Law 112 of 2021, Pub. L. No. 2021/112 (2021), § 3(b)(2)(d). https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=4908136&GUID=393524CE-1911-46F7-A3AB-4471FEC0C898&Options=ID|Text|&Search=.

limiting factor for advancing the goals of the Local Law . Product type by category should be first considered and validated using the data collected to date. Accurate category information will reveal much about use phase and end-of-life activities, and can be analyzed to determine additional ways to extend lifespan and appropriate alternate low-impact materials, among other benefits.

Material composition for every product is imperative to collect and report. The material make up of textile-based products is the primary method of determining the scope of and developing remedies for negative environmental and social impacts. The percentage and material(s) must be included in the collection and reporting. This is data vendors currently have. The City should collect this data in an accurate and easily validatable way so the data can be easily reported and ultimately useful. It is suggested that the designations outlined by the material matrix in Appendix A be used to validate material types for input.

While vendor information was collected and reported, it was not associated with individual products. For vendor information to be usable for the purposes of collecting and validating data, and ultimately reducing the City's textile impact, individual products must be traced to the correct vendor. This ensures product transparency, lets agencies know where to go for missing information, and will show which vendors are correlated to the most impactful products. This allows the City to work directly with those vendors to provide less impactful options and potentially drive impact reductions across many product types or categories, and eventually gain more thorough supply chain information about each product.

With this information, more targeted strategies can be developed to achieve impact reduction targets as outlined by the Local Law. Following these efforts, supplier information and more granular material information collection and stewardship efforts should be prioritized. Supplier information should aim to collect and provide all component supplier information including name, facility, and country of origin. This includes fabric suppliers, trim or component part suppliers, processing facilities including dyeing and finishing for any fabrics, and ultimately raw material suppliers. This process will be necessarily ongoing; it is common practice within the textile industry for the designated material or component parts suppliers to frequently change as vendors are under no obligation to engage consistently with a finite set of suppliers. It should never be assumed that the suppliers listed for products on one purchase order will be the same ones the next time that purchase order is issued for that same product. This information will assist in providing a clearer picture of negative impacts throughout the production process of textile goods purchased by the City.

Further, upon gaining a clearer and more specific picture of the negative environmental and social impacts of textiles produced for and purchased by the City via the above listed data points, it will be important to assess any material certifications which may be important to request as a means to guarantee a requested standard is met. A range of material and production standards exist for textile-based goods such as the Global Recycled Standard ,

Global Organic Textile Standard, and Fairtrade Certified, among many others, and may be important to require from vendors as a means to validate impact reduction claims.

5.2 Volume Reduction

The primary way the City can meaningfully reduce the negative social and environmental impact of City-purchased textiles is to reduce the total volume of goods purchased. It is clear that the highest volume of textile goods purchased with the greatest negative impact come from categories disproportionally made up of single-use products. The vast majority of single-use products fall within the PPE, Medical and Dental and Bags categories. While PPE will likely remain a challenging category to manage impacts within due to sterility considerations, Bags illustrate a clear dependance on promotional materials which can be reduced or eliminated to save money and reduce impact.

While single-use products are an area of primary focus, all categories should seek to reduce volumes when possible. Engaging in conscientious and considered purchasing behavior is the most meaningful way to reduce impacts throughout the value chain and create operational efficiencies and cost savings more broadly. It is a common strategy within textile-based businesses to approach impact reductions through the lens of efficiency and effectiveness. The City is no different, and cost savings from efficiencies, including reducing unnecessary purchases, can be strategically redirected to areas of cost increases, such as preferred materials and end-of-life management, potentially neutralizing transition costs.

5.3 Extending Lifespan

An important facet of volume reduction is to extend the lifespan of textile-based products purchased or currently in use. Repairability, use of second hand goods, and the collection and distribution of goods purchased and used by the City for second hand use by third parties are important tools for reducing impacts. It is recommended that the City consider developing a repairability program aimed at serving City employees, especially those required to wear a uniform. While some of these items may not be repairable due to safety performance concerns (for example, ballistic vests), the vast majority could be easily and economically repaired to successfully extend the useful life of the item. It is presumed that when a city-procured textile or employee uniform is damaged or compromised (for example, a button is lost, a small tear or rip occurs, a shoe heel is eroded), employees discard the item and request another, or have the responsibility of repair themselves. This contributes to textile waste and to high purchase volumes, and adds unnecessary cost.

The vast majority of wear and tear are repairable and New York City is in a unique position to connect local industry, including local cobblers, local tailors, and local seamstresses, with City employees to have items quickly repaired at a low cost. It is recommended that the City develop a program to support local small businesses through nominated supplier partnership and negotiated pricing where goods can be repaired instead of being discarded and replaced. To support this, policies should be adopted across agencies where City supported or

funded repair must be attempted for any uniform, clothing, shoe, or accessory before a replacement will be considered. This will result in lifespan extension, reduced volumes of newly purchased items, and overall textile impact reduction across several categories of goods and agencies.

5.4 Preferred Materials

To reduce the negative impacts of textile-based goods purchased, used, and discarded by the City, it is necessary to shift as soon as possible and as comprehensively as possible to goods produced using preferred raw materials. As mentioned, nearly all textiles come with some negative environmental and social impacts, particularly at the current volume produced, consumed, and discarded globally; there is no perfect choice to be made in the current textile industry and so better, or preferred, material choices must be made given the limitations.

Preferred material choices require knowing the material composition of any textile-based good purchased by the City. As of today, this data is not currently being collected nor reported by city agencies. Reasonable and grounded assumptions have been made about material content from the available reported data; it will be necessary to collect and report this data moving forward. It is recommended that the City use a simple matrix to guide material decisions: prioritize lower impact materials and avoid higher impact materials when possible.

Prioritizing lower impact materials should include prioritizing use of non-animal natural fibers (see Appendix A for natural fiber type, their benefits and risks) including the most common and low-cost natural fiber, cotton. While it would be even more beneficial to choose the lowest impact option available within those fiber types, such as organic or recycled, this can be a longer term goal. Shifting the material portfolio for textile-based goods to a greater proportion of recommended natural fibers is the primary goal in order to reduce the concentration of high-impact synthetic materials which are presumed to dominate the current material portfolio. Further, goods made of mono materials should be prioritized and dependence on goods made from fiber blends should be reduced. Blends add complexity for end-of-life management with current technologies where mono materials are more able to be recycled within currently available systems (see Appendix A for details on fiber types and classifications).

Deprioritizing high-impact materials, specifically petroleum-based materials such as polyester and nylon as well as animal-based materials such as leather and wool is an equally important strategy for reducing City textile purchase impacts. These materials by far have the most significant negative impact at all stages – from manufacture, through use, to end-of-life – and reducing dependency on these materials can reduce negative impacts significantly. While petroleum-based synthetic materials do have some unique performance characteristics, the most common reason they dominate the material portfolio is their low cost, which makes them prime material choices for single-use goods. A reduced dependency on petroleum based synthetic materials will likely support a correlating reduction in single-use products, another important step to reducing the impacts of textile-based purchases.

5.5 End-of-Life Management

At this time, making appropriate end-of-life choices for textile-based goods is challenging as infrastructure is absent, underdeveloped, or difficult to leverage. Data is an issue for this strategy as well, as the reported lifespan data by category is incomplete, limiting usefulness. Nonetheless, this stage of textile-based products is an important one to focus on if overall impact reduction targets are to be achieved. A targeted initiative to collect, report, and analyze use and lifespan data for textile-based purchases should be undertaken. Data collected will be highly valuable and have a significant impact on aggregate costs; understanding how end-of-life decisions are made and when they are made will reveal clear opportunities to extend useful life of City purchased textile goods, adjust material content to support lifespan extension, and target strategies for specific categories or agencies. DSNY may be a powerful internal thought and action partner to lead this effort as they are leading the charge to understand the material solid waste collected and managed by the City and all its citizens in order to devise better practices to reduce reliance on landfill.

Additionally, despite systemic challenges, it is imperative to prioritize responsible disposal strategies. Many private firms or non-profit organizations have sought to monetize the collection, management, and recyclability potential for specific waste streams which might otherwise go to landfill including textiles, e-waste, and niche products like wine corks. These organizations, many of which are local to the tri-state region, are strong candidates for partnership with the City to help divert specific waste streams from landfill. It is recommended that the City consider developing pilot partnerships with these types of organizations in order to create a mutually beneficial dynamic. The City can divert meaningful quantities of city-procured or mandated textiles from landfill while supporting innovative local or domestic organizations and novel technologies aimed at managing the world’s textile waste.

6. Additional Recommendations

Complexity, missing data, absent infrastructure, lack of attention, and many other factors make targeted solutions for the range of environmental and social impacts of textiles extremely challenging. But challenging today does not necessarily mean challenging tomorrow; targeted solutions are stymied by systemic challenges which cannot be remedied as quickly as may be prudent. However, the future we hope to have requires active crafting, and as such, there is much to be done today to improve those challenges and make targeted solutions more possible in the near future.

While the text of Local Law 112 asks for targeted recommendations to adjust agency purchasing behavior in service of reducing environmental impacts, as has been discussed thoroughly, these aims are not fully possible without additional efforts. This section outlines a range of additional recommendations which align to the spirit of the Law, support the stated goals of the Law, and are necessary to consider if the goals of the Law are to be successfully achieved in the foreseeable future. These recommendations focus on data collection and reporting, additional textile-focused regulation, infrastructure and investment, education, and overlapping policy opportunities.

6.1 Additional Textile Regulation

An exciting range of laws are coming into force at state, federal, and international jurisdictions which target the textile industry and its environmental and social impacts. Once in force, many of these laws may support the achievement of the goals of Local Law 112 of 2021. The space of introduced and imminent policy is extremely dynamic at this time but with a broad range of interconnected challenges and a complex, diffuse, global supply chain, many more will be needed. Without additional policy efforts, the full realization of the goals of the Local Law will be challenging to achieve. The City can expand its leadership by considering additional legal mechanisms or work closely with New York State and federal leaders to enact additional laws which complement the efforts of Local Law 112.

Laws that have been successfully passed which must be better understood and may have impact on the achievement of the Law include New York State Carpet Collection Program law and the Prohibition Against the Use of PFAS Substances in Apparel and Outdoor Apparel for Severe Wet Conditions law. The Carpet Collection law will go into effect on December 28, 2024 and requires carpet producers to fund carpet collection at no cost to State consumers with program launch set for July 1st, 2026.[96] Thislaw requires increasing rates of recycling which must be achieved, requires PFAS to be phased out of new carpet production, requires an increasing percentage of post-consumer recycled content to be used in newly manufactured carpets, and sets goals for the advancement of closed-loop recycling processes.

[96] New York State Department of Environmental Conservation. “Carpet Recycling.” Accessed June 10, 2024. https://dec.ny.gov/environmental-protection/recycling-composting/carpet.

The PFAS law goes into effect on January 1, 2025 and requires that no person shall sell new apparel of any type containing intentionally added PFAS.[97] Further components of the law go into effect over time; as of January 1, 2028, the law will apply to the more technical category of clothing used in outdoor and extreme wet conditions which tend to have a greater dependance on PFAS for their performance.

State bills such as the State Fashion Sustainability and Social Accountability Act, known as the Fashion Act supports transparency and due diligence across environmental and social metrics for textiles and clothing,[98] extended producer responsibility (EPR) for textiles bill S6654, PFAS disclosure bill S227B, and others have not yet been successfully adopted by the State. If passed, these bills would likely have a positive impact on the achievement of the Local Law. It may be prudent for the City to collaborate in support of such bills or to ensure these bills complement the objectives adopted by Local Law 112. Provisions within federal bills such as the Americas Act, if passed, may support the achievement of the Local Law through fundings and infrastructure support.[99] Should that not be possible or should these bills not make it to established law, it is suggested that the City consider legislative action forwarding the goals of these bills.

The City should also look to the European Union (E.U.) for models of sustainable and circular textile policy. The E.U. strategy has a multipronged approach to reducing the environmental impacts of the textile sector including: setting design requirements for durability, repair, and recycling; requiring clear comparable information provided through product passports; eliminating the destruction of unsold goods; addressing microplastic pollution from synthetic textiles; tackling greenwashing claims to empower consumers; restricting the export of textile waste to Global South regions; and incentivizing reuse and repair businesses.[100]

The City should consider tax-based incentives like those within the Inflation Reduction Act[101] to support established local textile-oriented businesses and incentivize the creation of new, innovative businesses focused on addressing the missing infrastructure which contributes to the reduction of environmental and social impacts of the textile sector. This should specifically address and incentivize green manufacturing, green technology, and green waste management opportunities which can be established within the local region and within the City.

6.2 Infrastructure and Investment

The City should consider public-private partnerships and government incentives to build the necessary local industry that would be required to achieve the goals of Local Law 112. Incentives could take the form of tax breaks, grants, subsidized rent, and investment matching

[97] New York State Department of Environmental Conservation. “PFAS In Apparel Law.” Accessed June 10, 2024. https://dec.ny.gov/environmental-protection/help-for-businesses/pfas-in-apparel-law.
[98] Kelles, Anna, and Brad Hoylman-Sigel. NY State Assembly Bill 2023-A4333C, Pub. L. No. A4333 (2023). https://www.nysenate.gov/legislation/bills/2023/A4333/amendment/C.
[99] Cassidy, Bill. S.3878 - Americas Act, Pub. L. No. S.2878 (2024). https://www.congress.gov/bill/118th-congress/senate-bill/3878/text/is.
[100] European Commission Energy, Climate Change, Environment. “EU Strategy for Sustainable and Circular Textiles,” February 23, 2024. https://environment.ec.europa.eu/strategy/textiles-strategy_en.
[101] The White House. “Inflation Reduction Act Guidebook.” Accessed June 10, 2024. https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/.

focused on three distinct approaches: fostering innovative business models, textile recycling, and next generation materials.

Broadly, incentives in the form of tax breaks, grants, subsidized rent, and investment matching should be developed and targeted at textile-based businesses which aim to tackle issues of the textile sector both locally and globally. This will support the necessary business innovation to develop missing infrastructure using the stability of local government and the expertise of local businesses. In particular, these incentive structures should target opportunities which may be developed to support the creation of textile recycling processes and technology in order to manage the deluge of waste which is currently managed by local landfills and dump sites across the Global South. Additionally, the development and scaling of next generation materials which can eliminate the environmental issues present in the range of conventional materials which dominate the market today is of paramount importance.

In alignment with New York City Climate Budgeting introduced for fiscal year 2025[102] City investment in textile innovations or textile waste management infrastructure may align with allocated funds ($10M USD) for the Brooklyn Army Terminal Climate Innovation Hub and support the achievement of broader PlaNYC and Climate Budgeting goals for the City. Currently, the Climate Budget does not specifically address textile procurement or waste management budgetary considerations. In the future it would be advisable to consider these efforts within the annual executive budget to drive investments in necessary infrastructure for textile production, processing, and end-of-life management that can reduce the emissions of the City and support the overall achievement of the Law.

Further, it may be prudent to consider what additional mechanisms, be it laws or other tools available to the City, can be employed to incentivize or compel compliance with the requirements of Local Law 112 of 2021. It may be useful to utilize incentives or deterrents common to the private sector to facilitate vendor participation in compliance .

These efforts will have a range of virtuous effects for the City. First, the City can incentivize domestic manufacturing, allowing for the creation of high-value green jobs for City residents, and the development of important local infrastructure which supports domestic manufacturing independence and national security. Second, these efforts will result in more means to manage waste which currently takes up significant landfill space at a high environmental, social and economic cost to New Yorkers. Removing textile waste from landfill and instead converting waste into high value input for green manufacturing processes shifts textile waste from a cost burden for the City to an economic driver, providing sustainable growth to the local economy and reducing environmental impacts at the same time. Lastly, these efforts will firmly place the City at the center of a green revolution for one of the largest global industries, allowing the City to be a leader in the next phase of green manufacturing and technology for the global textile and apparel industry.

[102] “New York City Climate Budgeting.”

Without this support from the government, the global textile industry will likely continue to move slowly, driven overwhelmingly by voluntary commitments which have fallen woefully short and plagued by funding and innovation gaps. This will likely continue to limit the effectiveness of laws such as Local Law 112 if not sufficiently addressed.

6.3 Education

Achieving the goals of the Local Law will require active participation from City agencies. Agency employees are likely unfamiliar with textiles or the issues stemming from the textile industry. To ensure the goals of the Local Law are achieved, it is suggested that the City provide educational support to agency employees, especially procurement professionals, so they might effectively probe vendors for accurate data, understand their important role in achieving the goals of the Local Law, and help them understand the necessary changes and tasks added to their role so they might see themselves as stakeholders and support a continuous improvement process.

Additionally, the processes and goals required by Local Law 112 are progressive and far reaching. Such strategic efforts within businesses tend to require the support of a leading champion to ensure momentum and progress continue until all goals are achieved. While the Director of Citywide Environmental Purchasing oversees the implementation of the Local Law, they are also tasked with the implementation of various other laws and initiatives across the City's massive operations. It is suggested, if possible, to nominate or appoint an individual specifically tasked with serving as the champion of the Local Law and serving as the point of contact and reference for agency leadership who may need support in operationalizing the requirements of the Law.

If similar efforts within businesses can be a guide, the process of operationalizing this Law will take concerted time and effort. It is not likely, once engaged, that vendors have all of the information the City may require or request in service of the Law. In such a case, it will be important for city employees who work with these vendors to support and shepherd them as partners working toward the goals of the Local Law. This will require a nuanced understanding of the needs and recommendations of the Local Law and Task Force by agency employees who then can use this understanding and nuance to support vendors. The practices required by Local Law 112 are best practice for uncovering and remedying the negative impact of the textile industry; however it is important to be clear that these are not yet standard practice across this global industry and vendors may not be prepared for such requests. Agencies will have to work with vendors to create systems and set expectations in order to meet the data collection and reporting requirements.

6.4 Overlapping Policy Opportunities

There are many policy decisions made across all levels of domestic and international government that may not on its face involve textiles but are complementary and must be engaged if the goals of Local Law 112 are to be realized. Agriculture, water stewardship, and

localization focused policies all can and should be meaningfully engaged in service of reducing textile impacts.

New York State has a robust farming community that is largely located in its upstate regions. These farmers have dynamic relationships with City-based food providers, including marketplaces and restaurants. The farming sector may be leveraged in service of cultivation of low impact or regenerative raw materials. Hemp, wool, and other materials are already produced in-state and can be cultivated to support a local green textile economy. Policies which incentivize the local growth and cultivation of preferred materials and next-generation material inputs would improve supply chain transparency with regional oversight, keep funds in the local economy, and complement other regenerative or sustainable farming efforts already in place via intercropping and low or no pesticide plants commonly used with food crops.

New York State and New York City proudly have one of the most effectively managed watersheds in the world. The upstate-downstate coordination illustrates a deep commitment by local governments to long-term environmental management policies, incorporating diverse stakeholders and complex processes to protect our local water with limited reliance on chemicals.[103] With this approach, policies could focus on reducing microplastics and PFAS from textiles to protect the New York watershed. Policies focused on reducing certain chemicals in City-owned or managed laundry facilities under NYCHA, DOC or other agencies that support public housing, shelters, schools, or correctional would help manage the use phase of much of the textiles covered under Local Law 112 and reduce the proliferation of these pollutants in our water systems.

Lastly, it is worth considering policies focused on prioritizing locally sourced products. Similar to the federal Buy American Act of 1933,[104] the City could leverage its significant market size,contract size, and consistency to incentivize domestic industry towards the goals of Local Law 112, including the City's own garment district. While price is always a meaningful consideration and the main driver of the off-shoring of the domestic textile industry, it seem logical for the City to prioritize goods, manufacturing, or services which are produced in or offered by business within the City or State, particularly textile goods given the City's textile and clothing manufacturing legacy and global leadership in this space. This can have the effect of lowering prices for domestic goods, manufacturing, and services by offering large scale consistent business to local stakeholders and making the domestic industry in New York more price competitive, further driving additional growth for local businesses. This will add good quality green jobs to the local economy and support both an important local industry and New York's middle class. It will also support needed supply chain transparency for City purchased textile goods.

[103] Hu, Winnie. "A Billion-Dollar Investment in New York's Water." *The New York Times*, January 18, 2018, sec. New York. https://www.nytimes.com/2018/01/18/nyregion/new-york-city-water-filtration.html.
[104] Koehl & Strohmeyer. "Buying American,"

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8. Appendices

8.1 Appendix A. Material Impact Matrix

8.2 Appendix B. Important Definitions

8.3 Appendix C. Criteria for Negative Impact Assessment

8.4 Appendix D. Projected Contract Value and Volume by Agency

8.5 Appendix E. Negative Impact by Agency with Category Detail

8.1 Appendix A - Material Impact Matrix

Table 23

Material Impact Matrix

Material Impact Matrix										
Material Class	**Fiber Type**	**Material**	**Also Known As**	**Sourced From**	**% of Global Fiber Production (2022)**	**Risks**	**Benefits/Reason for Use**	**Available Solutions**	**Horizon options**	**Overall Risk Rating**
Natural Materials	Plant Fibers	**Cotton**	-	Cotton plant	27%	Biodiversity impacts Chemically intensive Emmissions Forced labor Large complex supply chain Limitations to traceability Water intensive Worker exploitation	Biodegradable Breathable Low-moderate cost Renewable Strong	Genetic tracers available Organic cotton uses less water and chemicals	-	Moderate
		Flax	Linen	Flax Grass	5% combined	-	Biodegradable Grows quickly using few chemicals Naturally pest resistent Naturally small supply chain No irrigation needed	Organic linen uses less water and chemicals	-	Low
		Hemp	-	Hemp plant		Chemical retting can be harmful to aquatic ecosystems Not widely available due to cannabis stigma While not required, can use pesticides	Biodegradable Good intercrop fiber Hypoallergenic Naturally mildew and pest resistent Renewable Reduces soil erosion Strong	Organic hemp uses less water and chemicals	-	Low
		Jute	-	Corchorus plant		Chemical retting can be harmful to aquatic ecosystems	Biodegradable Grows quickly using few chemicals	-	-	Low
		Bamboo	-	Bamboo plant		Typically produced as viscose (see viscose)	Biodegradable Grows quickly using few chemicals Hypoallergenic Rapidly renewable	-	-	Moderate
	Animal Fibers	**Wool**	-	Sheep hair	4.3%	Animal Cruelty and slaughter Biodiversity impacts Deforestation Emissions Energy intensive Heavy chemical use in fiber processing Land use / inefficiency Muesling and other mutilation practices Scouring / processing eflluent waste Worker exploitation	Biodegradable Robust Thermoregulation	Mechanical Recycling	Plant based alternatives from Ecosimple, Ecopel, Spinnova, and Keel labs	High
		Silk	-	Silkworm cocoons	<1%	Animal Cruelty Biodiversity impacts Emissions Forced labor Worker exploitation	Strong Only natural filament fiber Unique performance and handfeel	Cupro Peace or Tussah silk does not kill the worm to extract the fiber	Bolt Threads Orange Fiber Spider Silk	Low
		Cashmere	-	Goat undercoat hair		Animal Cruelty and slaughter Biodiversity impacts Desertification Emissions Land use Over grazing Worker exploitation	Hypoallergenic	Mechanical Recycling	KD NY Vegetable cashmere	Moderate
		Alpaca	-	Alpaca hair		Animal Cruelty and slaughter Emissions Land use	Hypoallergenic	Mechanical Recycling	Plant based alternatives from Ecosimple, Ecopel, Spinnova, and Keel labs	Moderate
		Mohair	-	Goat Hair		Animal Cruelty and slaughter Emissions Land use	Biodegradable	-	-	Moderate
	Animal Skin	**Leather**	-	Animal skin, commonly bovine but may be from a range of species	-	Animal cruelty and slaughter Biodiversity impacts Deforestation Emissions Eutrophication Forced labor Heavy Metals Land use Toxic chemical exposure Water intensive Worker exploitation	Historical use Lack of comparable alternative materials Long lasting Repairable Robust	Cork based alternatives PU based alternatives Veg tanned leather (vs chrome tanned)	Mycelium based alternatives such as Mylo Plant based alternatives such as Pinatex, Desserto, Vegea, or Ohoskin Plastic free alternatives such as Mirum Bacterial cellulose such as Celium	High
		Fur	-	Animal skin from a range of species	-		Historical use Luxury status	Synthetic-based faux fur	Man made cellulosic synethetic fur such as Ecopel Koba and Cannaba Plant fiber based synthetic such as Flora Fur Bio-based synthetic furs such as Ecopel Plastic-free fur solutions such as BioFluff	High
Semi-Synthetic Materials	Manmade Fibers	**Rayon**	Viscose Lyocell Tencel Modal Cupro	Wood pulp or cotton lint	6% combined	Deforestation Emissions Forced labor Heavy chemical use in fiber processing Heavy metals Land use Source of wood pulp including old growth forests Worker exploitation	Breathable Inexpensive Silk-like Strong	Closed loop branded processes from Lenzing, Renewcell, Birla, etc Post consumer or post production waste sources Responsibly sourced wood pulp	-	Moderate
		Acetate	Triacetate	Wood pulp or cotton lint			Mildew and mold resistent	-	-	Moderate
Synthetic Materials	Synthetic Fibers	**Polyester**	-	Crude oil	54%	Biodiversity impacts Crude oil feedstock, primary source of climate change Emissions Energy intensive High volumes Human toxicity Microfiber pollution Very few end of life solutions Worker exploitation	Can be made to mimic other fibers Good performance wet and dry Inexpensive Robust	Recycled or non-virgin inputs	Bio-based synthetics	High
		Nylon	Polyamide		5%		Good performance wet and dry Inexpensive Robust			High
		Spandex	Lycra		5% combined		Stretch properties			High
		Olefin	Alkene				-			High
		Acrylic	-				Can be made to mimic wool, cashmere, or mohair Inexpensive Robust			High
		Aramids	Kevlar				Extremely strong	-	-	High
		PVC	-				Inexpensive Robust	-	-	High

8.2 Appendix B - Important Definitions

The goal of this section is to provide generally agreed upon definitions for terms outlined in the language of LL112, along with terms that this Task Force thought would provide additional clarity to their recommendations.

Many imperatives, terms, or metrics outlined within LL112 are not absolute and are subject to interpretation, potentially jeopardizing the long term success of LL112. Accordingly, this Task Force defined to the extent possible any terminology which was foundational to understanding the success or failure of the goals outlined by LL112. Where possible, sources for definitions are included.

Agricultural land occupation. "Agricultural land occupation" is defined as the land area that is occupied by either arable land, permanent crops, or permanent pastures. Arable land includes land under temporary crops such as cereals, temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow.[105]

Bioaccumulative substances. The term "bioaccumulative substances" refers to the contaminants accumulated within animals and plants from the surrounding environment through the organic phases necessary to life. Bioaccumulation occurs as the net result of all uptake and loss processes, such as respiratory and dietary uptake, and loss by egestion, passive diffusion, metabolism, transfer to offspring and growth.[106]

Biodegradable textile. "Biodegradable textile" refers to a textile that can be disintegrated into its natural base elements by bacteria, fungi, or some other biological process under the right biological conditions. Dyes, chemical treatments, material type, and common disposal processes, and lack of standardized meaning make biodegradability an unreliable standard for evaluating the sustainability of textiles.[107]

Biodiversity. "Biodiversity" refers to the variability among living organisms from all sources including but not limited to terrestrial, marine, and, other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.[108]

Climate change. The term "climate change" refers to the changes to the Earth's weather, oceans, and ecosystems due to a buildup of greenhouse gasses in the atmosphere and the warming of the planet due to the greenhouse effect. Noted changes include changing temperature and precipitation patterns; increases in ocean temperatures, sea level, and acidity; melting of glaciers and sea ice; changes in the frequency, intensity, and duration of extreme weather events; and shifts in ecosystem characteristics, such as the length of the growing season, timing of flower blooms, and migration of birds; among others.[109]

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[105] OECD. "Agricultural Land." Accessed August 4, 2024. https://www.oecd.org/en/data/indicators/agricultural-land.html.
[106] Borgå, K. "Ecotoxicology: Bioaccumulation." In *Reference Module in Earth Systems and Environmental Sciences*. Elsevier, 2013. https://doi.org/10.1016/B978-0-12-409548-9.00765-X.
[107] Krosofsky, Andrew. "Which Fabrics Are Biodegradable? You Can Compost These All-Natural Materials." Green Matters, January 4, 2021. https://www.greenmatters.com/p/what-fabrics-are-biodegradable.
[108] Mace, Georgina M., Ken Norris, and Alastair H. Fitter. "Biodiversity and Ecosystem Services: A Multilayered Relationship." *Trends in Ecology & Evolution* 27, no. 1 (2012): 19–26. https://doi.org/10.1016/j.tree.2011.08.006.
[109] United States Environmental Protection Agency (EPA). "Basics of Climate Change," April 2, 2024. https://www.epa.gov/climatechange-science/basics-climate-change.

Conventional textile. "Conventional textile" refers to a textile composed of material which is not produced to the specifications of a sustainability program including standards, certifications, regulations, initiative or process.[110]

End-of-life. "End-of-life" in the context of this report refers to the end of the useful life of a product. Useful life is a subjective concept which may end due to product damage, product exhaustion (worn out), or lack of need on the part of the user.[111]

Endangered or threatened species. Under the U.S. federal Endangered Species Act (ESA), plant and animal species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction and "threatened" means a species is likely to become endangered within the foreseeable future. Additionally, species may be noted as "imperiled" or "at risk"; there are not legal terms and refer to animals and plants that are in decline and may be in danger of extinction and can include species that are at low populations and near extinction but still not legally protected under ESA.[112]

Environmental degradation. "Environmental degradation" refers to any change or disturbance to the environment perceived to be deleterious or undesirable. These changes are often, but not exclusively, caused by human activity.[113]

Environmentally Preferable Purchasing. "Environmentally Preferable Purchasing" or EPP refers to the governmental purchasing policy that focuses on the human health and environmental impact of goods and products purchased by selecting products that are more environmentally preferable to others. This environmental purchasing program takes into account several factors, such as waste production, energy and water use, greenhouse gas emissions, indoor air quality, recycled and reused content and the presence of hazardous substances.[114]

Eutrophication. The term "eutrophication" refers to the process by which a waterway becomes enriched with nutrients, increasing the amount of plant and algae growth to estuaries and coastal waters, resulting in harmful algal blooms and low-oxygen waters which can kill aquatic plants and animals and reduce viable habitats. This process sets off a chain reaction within the ecosystem, eventually lowering the pH of seawater, a process known as "ocean acidification."[115]

Fibers. "Fibers" are the raw materials that can be converted into textile yarns and fabrics. Fibers can be broadly classified into three types: natural, regenerated, and synthetic. Fibers are chosen for their specific properties and can be used alone or in combination depending on the desired properties.[116]

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[110] "Materials Terminology Guide 2020." Textile Exchange, December 2020. https://textileexchange.org/app/uploads/2022/08/Materials-Terminology-Guide.pdf.
[111] Vanson, Gautier, Pascale Marangé, and Eric Levrat. "End-of-Life Decision Making in Circular Economy Using Generalized Colored Stochastic Petri Nets." *Autonomous Intelligent Systems* 2, no. 1 (March 12, 2022): 3. https://doi.org/10.1007/s43684-022-00022-6.
[112] United States Geological Survey (USGS). "What Are the Differences between Endangered, Threatened, Imperiled, and at-Risk Species?" Accessed August 4, 2024. https://www.usgs.gov/faqs/what-are-differences-between-endangered-threatened-imperiled-and-risk-species.
[113] Johnson, D. L., S. H. Ambrose, T. J. Bassett, M. L. Bowen, D. E. Crummey, J. S. Isaacson, D. N. Johnson, P. Lamb, M. Saul, and A. E. Winter-Nelson. "Meanings of Environmental Terms." *Journal of Environmental Quality* 26, no. 3 (1997): 581–89. https://doi.org/10.2134/jeq1997.00472425002600030002x.
[114] New York City Mayor's Office of Contract Services. "Environmentally Preferable Purchasing (EPP)." Accessed August 4, 2024. https://www.nyc.gov/site/mocs/regulations/epp.page.
[115] US National Oceanic and Atmospheric Administration (NOAA). "What Is Eutrophication?," June 16, 2024. https://oceanservice.noaa.gov/facts/eutrophication.html.
[116] Chan & Kwan. *Textilepedia,* 15.

Fossil depletion. "Fossil depletion" refers to the reduction in future availability of fossil fuels caused by the primary extraction of fossil fuels linked to fuel use, energy use and to produce other inputs, such as synthetic textiles. Extraction of crude oil, hard coal, and natural gas bears external societal costs because the stock of these materials is reduced for present and future generations.[117]

Freshwater ecotoxicity. Following the below definition of "marine ecotoxicity", "freshwater ecotoxicity" refers to the measurement which provides information on adverse effects of chemical pollutants on freshwater organisms and ecosystems.

Greenhouse gas emissions. "Greenhouse gas emissions" or GHG refers to a group of gasses contributing to global warming and climate change, including carbon dioxide, methane, and fluorinated gasses, and nitrous oxide.[118]

> ***Scope 1 emissions.*** Direct GHG emissions that occur from sources that are controlled or owned by an organization.
>
> ***Scope 2 emissions.*** Indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling.
>
> ***Scope 3 emissions.*** Indirect GHG emissions that are the result of activities from assets not owned or controlled by the reporting organization but generated from activity across their supply chain.[119]

Greenwashing. The term "greenwashing" can be defined as selective disclosure of positive information about a company's environmental or social performance, without full disclosure of negative information on these dimensions, so as to create an overly positive corporate image.[120]

Hazardous substances. "Hazardous substances" are defined as a physical or chemical agent capable of causing harm to persons, property, animals, plants or other natural resources. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive.[121]

Human toxicity. "Human toxicity" refers to the measurement which provides information on adverse health effects on humans due to exposure to carcinogenic and non-carcinogenic chemical pollutants released into the immediate or broader environment.[122]

Ionizing radiation. "Ionizing radiation" is a type of energy released by atoms that travels in the form of electromagnetic waves (gamma or X-rays) or particles (neutrons, beta or alpha). The spontaneous disintegration of atoms is called radioactivity, and the excess energy emitted is a form of ionizing radiation.[123]

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[117] Galgani, Pietro, Geert Woltjer, Reinier de Adelhart Toorop, and Adrian de Groot Ruiz. "Fossil Fuel and Other Non-Renewable Material Depletion," December 2021. https://edepot.wur.nl/558072.
[118] Eurostat. "Glossary: Greenhouse Gas (GHG)." Accessed August 4, 2024. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Greenhouse_gas_(GHG).
[119] United States Environmental Protection Agency (EPA). "Scope 1 and Scope 2 Inventory Guidance," March 8, 2024. https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance.
[120] Freitas Netto, Sebastião Vieira de, Marcos Felipe Falcão Sobral, Ana Regina Bezerra Ribeiro, and Gleibson Robert da Luz Soares. "Concepts and Forms of Greenwashing: A Systematic Review." *Environmental Sciences Europe* 32, no. 1 (February 11, 2020): 19. https://doi.org/10.1186/s12302-020-0300-3.
[121] UNEP Law and Environment Assistance Platform. "Hazardous Substance." Accessed August 4, 2024. https://leap.unep.org/en/knowledge/glossary/hazardous-substance.
[122] McKone, Thomas E., and Edgar G. Hertwich. "The Human Toxicity Potential and a Strategy for Evaluating Model Performance in Life Cycle Impact Assessment." *The International Journal of Life Cycle Assessment* 6, no. 2 (March 1, 2001): 106–9. https://doi.org/10.1007/BF02977846.
[123] World Health Organization. "Ionizing Radiation and Health Effects," July 27, 2023. https://www.who.int/news-room/fact-sheets/detail/ionizing-radiation-and-health-effects.

Manmade cellulosic fiber textiles. "Manmade cellulosic fiber textiles" are textiles produced using regenerated fibers usually made from the dissolved wood pulp or "cellulose" of trees. Viscose, lyocell, and modal are all kinds of manmade cellulosics.[124] Also referred to as semi-synthetic regenerated fibers.[125]

Marine ecotoxicity. The term "marine ecotoxicology" is a measurement which provides information on adverse effects of chemical pollutants on marine organisms and ecosystems, which can be measured as mortality rate or specific sub-lethal changes on physiology and behavior.[126]

Marine eutrophication. "Marine eutrophication" or simply "eutrophication" occurs when the environment becomes enriched with nutrients, increasing the amount of plant and algae growth to estuaries and coastal waters which sets off a chain reaction which results in low-oxygen or hypoxic waters that can kill marine life.[127]

Metal depletion. "Metal depletion" refers to the reduction of the naturally occurring supply of minerals in the Earth's crust through human mining and extraction.[128]

Natural fiber textile. "Natural fiber textile" refers to textile or textile goods made from fibers derived from either animals or plants including bast, skin, seeds or shells. There are two main types of natural fibers, animal or protein-based and plant or cellulose-based.[129]

> ***Animal-based textile.*** "Animal-based textile" refers to textiles derived from protein-based material sourced from animals including hide or skin-derived leather, wool fiber, down, mohair, cashmere, silk, yak, horsehair, and camel, among others.[130]
>
> ***Plant-based textile.*** "Plant-based textile" refers to textiles derived from cellulose-based materials sourced from plants including cotton, flax, hemp, jute, bamboo, and abaca, among others.[131]

Natural land transformation. "Natural land transformation" refers to the process whereby the biotic community of an area is substantially altered or substituted by another, along with the underlying ecological and human processes responsible for its persistence, often as a result of a deliberate decision to change the purpose for which the land is used.[132]

Negative environmental impact. "Negative environmental impact" refers to impacts that compromise ecosystem integrity in a manner that impairs the ability of species to replace themselves and that degrade long-term natural productivity of habitats or causes a significant loss of species richness, habitat or community types.[133]

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[124] Textile Exchange. "Manmade Cellulosic Fibers." Accessed August 4, 2024. https://textileexchange.org/manmade-cellulosics/.
[125] Chan & Kwan. *Textilepedia,* 16-17.
[126] Ferreira, Nícollas Menezes, Ricardo Coutinho, and Louisi Souza de Oliveira. "Emerging Studies on Oil Pollution Biomonitoring: A Systematic Review." *Marine Pollution Bulletin* 192 (2023): 115081. https://doi.org/10.1016/j.marpolbul.2023.115081.
[127] US NOAA. "What Is Eutrophication?"
[128] "Mineral Resources and Sustainability: Challenges for Earth Scientists." Washington, DC: National Research Council, Committee on Earth Resources, 1996. https://doi.org/10.17226/9077.
[129] Chan & Kwan. *Textilepedia,* 16-17.
[130] Chan & Kwan. *Textilepedia,* 16-17, 29-42.
[131] Chan & Kwan. *Textilepedia,* 16-17, 18-28.
[132] "The IPBES Assessment Report on Land Degradation and Restoration." Bonn, Germany: Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 2018. https://doi.org/10.5281/zenodo.3237392.
[133] United Nations Economic and Social Commission for Western Asia. "Significant Adverse Environmental Impact," 2008. http://www.unescwa.org/sd-glossary/significant-adverse-impact-significant-adverse-environmental-impact.

Organic textile. Organic fibers are natural fibers grown without the use of synthetic pesticides (such as insecticides), or herbicides and GMOs (Genetic Modified Organisms) according to the principles of organic agriculture. Organic agriculture is a production process that sustains the health of ecosystems, soils and people.[134]

Ozone depletion. "Ozone depletion" refers to the gradual thinning of Earth's naturally occurring ozone layer in the upper atmosphere caused by the release of chemical compounds containing gaseous chlorine or bromine from human activities resulting in increased exposure to ultraviolet (UV) radiation at the Earth's surface.[135]

Particulate matter formation. "Particulate matter formation" also called "particle pollution" refers to the mixture of solid particles and liquid droplets found in the air formed from emissions such as sulfur dioxide or nitrogen dioxide resulting from human activity which pose serious health risks when inhaled.[136]

Photochemical oxidant formation. "Photochemical oxidant formation" are secondary pollutants that develop as a result of sunlight reacting to petro-chemical fuel combustion and include nitrogen dioxide, ozone, peroxyacetyl nitrate (PAN).[137]

Product lifecycle. "Product lifecycle" refers to the complete cycle from conception, through manufacturing and usage to end-of-life and disposal of any product.[138]

Recycled or recyclable textile. A "recycled textile" refers to a textile made from recycled materials using either a chemical or mechanical process. A "recyclable textile" refers to a textile capable of being chemically or mechanically recycled into a new, valued material.

Reused or reusable textile. A "reused textile" refers to a textile which can be used for an alternate purpose after first being used for its primary intended purpose. A "reusable textile" refers to a textile capable of being reused after its primary use cycle.

Shoddy. "Shoddy" refers to a new textile material produced from old rags and tailors' clippings.[139]

Supply Chain. "Supply chain" refers to the interconnected journey that raw materials, components, and goods take before their assembly and sale to customers in the form of a finished product.[140]

Synthetic fiber textile. "Synthetic fiber textile" refers to textiles produced by humans through chemical processes and typically derived from petroleum or coal based polymers including polyester, nylon, spandex, olefin, acrylic, PVC, and Kevlar.[141]

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[134] Global Organic Textile Standard (GOTS). "Organic Fibres." Accessed August 4, 2024. https://global-standard.org/the-standard/gots-key-features/organic-fibres.
[135] Wuebbles, Donald. "Ozone Depletion." Britannica, April 9, 2024. https://www.britannica.com/science/ozone-depletion.
[136] *United States Environmental Protection Agency (EPA). "Particulate Matter (PM) Basics," April 19, 2016. https://www.epa.gov/pm-pollution/particulate-matter-pm-basics.*
[137] Rahman, Shakeelur, Sahil Mehta, and Azamal Husen. "Plants and Their Unexpected Response to Environmental Pollution: An Overview." In *Plants and Their Interaction to Environmental Pollution*, edited by Azamal Husen, 1–23. Elsevier, 2023. https://doi.org/10.1016/B978-0-323-99978-6.00004-2.
[138] Niemann, Jörg, Serge Tichkiewitch, and Engelbert Westkämper. *Design of Sustainable Product Life Cycles*. Berlin: Springer Science & Business Media, 2008.
[139] Shell, Hanna Rose. *Shoddy: From Devil's Dust to the Renaissance of Rags*. Chicago: University of Chicago Press, 2020. as quoted in Harvard Magazine. "Excerpt from 'Shoddy,' by Hanna Rose Shell," February 9, 2021. https://www.harvardmagazine.com/node/75447.
[140] McKinsey & Company. "What Is Supply Chain?," August 17, 2022. https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-supply-chain.
[141] Chan & Kwan. *Textilepedia,* 16-17, 47-54.

Terrestrial acidification. "Terrestrial acidification" is characterized by changes in soil chemistry following the presence of acidified nitrogen, sulfur and other nutrients from human activities resulting in lowered soil pH which impact the viability of plants, plant diversity, and ultimately ecosystem quality.[142]

Terrestrial ecotoxicity. The term "terrestrial ecotoxicology" is a measurement which provides information on adverse effects of chemical pollutants on land-based organisms and ecosystems, which can be measured as mortality rate or specific sub-lethal changes on physiology and behavior.[143]

Textile. The term "textile" is a general term used to refer to fibers, yarns, or fabrics or anything made from fibers, yarns or fabrics[144]. Local Law 112 of 2021 defines textile as cloth, fabric and other flexible materials made of animal skin, hair, fur or fleece; plants; minerals; or synthetic materials.[145]

Textile good. The term "textile good" means a good made in whole or in part of textiles, including, but not limited to, clothing and other apparel, including footwear, regalia and other accessories; carpets; upholstery; blankets; and industrial use textiles.[146]

Textile recycling. The process of recovering fiber, yarn, or fabric and reprocessing the material into new, useful products.[147]

Urban land occupation. The term "urban land occupation" refers to land area used as residential, industrial, commercial, and institutional land; construction sites; public administrative sites; railroad yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; water control structures and spillways; other land used for such purposes; small parks (less than 10 acres) within urban and built-up areas; and highways, railroads, and other transportation facilities if they are surrounded by urban areas. Also included are tracts of less than 10 acres that do not meet the above definition but are completely surrounded by urban and built-up land.[148]

Virgin textile. Materials derived from resources that have not been used before.[149]

Waste. "Waste" is a general concept which refers to an object the holder discards, intends to discard or is required to discard[150]. What is considered waste is highly contextual; what is waste to one entity may not be considered waste by another. The presence of waste is considered an inefficiency and results in high environmental and social costs for individuals and communities.[151]

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[142] Azevedo, Ligia B., Pierre-Olivier Roy, Francesca Verones, Rosalie von Zelm, and Mark A. J. Huijbregts. "Terrestrial Acidification," 2014. https://lc-impact.eu/doc/method/Chapter7_Terrestrial_Acidification_20160926.pdf.
[143] Circular Ecology. "Environmental Impacts." Accessed May 31, 2024. https://circularecology.com/environmental-impacts.html.
[144] Kadolph, Sara J., and Anna L. Langford. *Textiles*. 9th edition. Upper Saddle River, New Jersey: Prentice Hall, 2002, 412.
[145] Kallos, Barron & Gennaro. Local Law 112 of 2021, § 1.
[146] Kallos, Barron & Gennaro. Local Law 112 of 2021, § 1.
[147] Hawley, J.M. "Understanding and Improving Textile Recycling: A Systems Perspective." In *Sustainable Textiles*, edited by R.S. Blackburn, 179–99. Woodhead Publishing, 2009. https://doi.org/10.1533/9781845696948.1.179.
[148] United States Environmental Protection Agency (EPA). "Report on the Environment (ROE): Definitions of Land Use Categories," February 6, 2015. https://www.epa.gov/report-environment.
[149] Hodakel, Boris. "What Is Virgin Wool Fabric: Properties, How It's Made and Where." Sewport. Accessed August 4, 2024. https://sewport.com/fabrics-directory/virgin-wool-fabric.
[150] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, Pub. L. No. 2008/98/EC (2008). https://eur-lex.europa.eu/eli/dir/2008/98/oj/eng.
[151] Doron, Assa. *Waste of a Nation : Garbage and Growth in India*. Harvard University Press, 2018.

Waste management. "Waste management" refers to the total supervision of waste production, handling, processing, storage, and transport from its point of generation to its final disposal[152]. Management strategies are ranked in four categories from most preferred to least: Source reduction & reuse, recycling/composing, energy recovery, and treatment & disposal.[153]

Water depletion. "Water depletion" refers to the reduced availability of freshwater sources, particularly groundwater, within a watershed due to sustained pumping and consumption.[154]

Yarns. "Yarns" refers to a long, continuous length of interlocked fibers. There are two main types of yarn: staple yarn made with shorter fibers, and filament yarn made from long continuous filament fibers. The process of bringing fiber together to produce yarn can be done by machine or by hand. Factors such as fiber length, yarn count, and twist direction can all contribute to the properties of a yarn.[155]

[152] UNEP Law and Environment Assistance Platform. "Waste Management." Accessed May 31, 2024. https://leap.unep.org/en/knowledge/glossary/waste-management.
[153] United States Environmental Protection Agency (EPA). "Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy," February 21, 2024. https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy.
[154] The Groundwater Foundation. "Groundwater Overuse and Depletion." Accessed May 31, 2024. https://groundwater.org/threats/overuse-depletion/.
[155] Chan & Kwan. *Textilepedia,* 61.

8.3 Appendix C - Criteria for Negative Impact Assessment

According to Local Law 112 § 3(b)(2)(d), 21 metrics are to be used to assess environmental impact along the supply chain and life cycle of a textile item, and reduced to the greatest extent possible. Items noted with an asterisk (*) carry the greatest weight.[156]

(1) Climate change*
(2) Ozone depletion
(3) Human toxicity*
(4) Photochemical oxidant formation
(5) Particulate matter formation
(6) Ionizing radiation
(7) Terrestrial acidification
(8) Freshwater eutrophication
(9) Marine eutrophication
(10) Terrestrial ecotoxicity
(11) Freshwater ecotoxicity
(12) Marine ecotoxicity
(13) Agricultural land occupation*
(14) Urban land occupation
(15) Natural land transformation*
(16) Water depletion*
(17) Metal depletion
(18) Fossil depletion
(19) Biodiversity*
(20) Impact on endangered or threatened species
(21) Any other indicator of environmental impact for which a methodology of measurement is available, as agreed upon by the Task Force

Metrics of greatest weight are consolidated here:

(1) Climate change*
(3) Human toxicity*
(13) Agricultural land occupation*
(15) Natural land transformation*
(19) Biodiversity*

[156] Kallos, Barron & Gennaro. Local Law 112 of 2021, § 3(b)(2)(d).

8.4 Appendix D - Table 3, Projected Contract Value and Volume by Agency

Table 3

Projections of Contract Value and Volume by Agency with Category Detail for October 25, 2021-October 25, 2031

Contract Value and Volume by Agency with Category Detail Between April 24, 2018, to April 24, 2022 with Projections for October 25, 2021-October 25, 2031									
Agency	**4 Year Value** (2018-2022)	**4 Year Unit Volume**	**1 Year Avg Value**	**1 Year Avg Volume**	**Avg Value Per Unit**	**10 Y Projected Total Contract Value** (2021-2031)	**10 Y Projected Unit Volume Total** (2021-2031)	**% of All Contract Value**	**% of Total Unit Volume**
ACS Administration for Children's Services	**$181,578.70**	**9,270**	**$45,394.68**	**2,318**	**$19.59**	**$499,341.43**	**25,493**	**0.28%**	**0.08%**
-- Apparel – Accessories		160		40			440		0.00%
-- Apparel – Clothes		9,100		2,275			25,025		0.08%
-- Carpets and Flooring†		8		2			22		0.00%
-- Curtains, Blinds, Drapery‡		2		1			6		0.00%
BIC Business Integrity Commission	**$11,472.43**	**24**	**$2,868.11**	**6**	**$478.02**	**$31,549.18**	**66**	**0.02%**	**0.00%**
-- Apparel – Clothes		18		5			50		0.00%
-- Curtains, Blinds, Drapery‡		5		1			14		0.00%
-- Furniture¶		1		0			3		0.00%
CCHR City Commission on Human Rights	**$17,722.03**	**178**	**$4,430.51**	**45**	**$99.56**	**$48,735.58**	**490**	**0.03%**	**0.00%**
-- Apparel – Clothes		80		20			220		0.00%
-- Curtains, Blinds, Drapery‡		95		24			261		0.00%
-- Furniture¶		3		1			8		0.00%
CCRB Civilian Complaint Review Board	**$972.00**	**0**	**$243.00**	**0**	**$0.00**	**$2,673.00**	**0**	**0.00%**	**0.00%**
-- Office Supplies – Desk Supplies§		0		0			0		0.00%
DCAS Department of Citywide Administrative Services*	**$160,709,103.20**	**35,128,767**	**$40,177,275.80**	**8,782,192**	**$4.57**	**$101,686,763.29**	**22,227,307**	**57.61%**	**73.77%**
-- Apparel – Accessories		500		125			1,375		0.00%
-- Apparel - Clothes		5,315		1,329			14,616		0.05%
-- Bags		1,500		375			4,125		0.01%
-- Curtains, Blinds, Drapery‡		40		10			110		0.00%
-- Fabrics and Sewing Accessories		22		6			61		0.00%
-- Furniture ¶		248		62			682		0.00%
-- PPE, Medical, and Dental *		35,000,848		8,750,212			21,875,530		72.60%
-- Tools, Equipment, and Supplies		120,294		30,074			330,809		1.10%
DCLA Department of Cultural Affairs	**$0.00**	**0**	**$0.00**	0	**$0.00**	**$0.00**	**0**	**0.00%**	**0.00%**
-- Office Supplies – Desk Supplies§		0		0			0		0.00%
DCP Department of City Planning	**$4,012.04**	**26**	**$1,003.01**	**7**	**$154.31**	**$11,033.11**	**72**	**0.01%**	**0.00%**
-- Facilities – Cleaning and Laundry Supplies		24		6			66		0.00%
-- Furniture¶		2		1			6		0.00%
DDC Department of Design & Construction	**$214,071.81**	**2,201**	**$53,517.95**	**550**	**$97.26**	**$588,697.48**	**6,053**	**0.33%**	**0.02%**
-- Apparel – Clothes		861		215			2,368		0.01%
-- Apparel – Shoes		87		22			239		0.00%
-- Furniture¶		132		33			363		0.00%
-- Office Supplies – Desk Supplies§		1,120		280			3,080		0.01%
-- Tools, Equipment, and Supplies		1		0			3		0.00%
DEP Department of Environmental Protection*	**$355,389.59**	**115,732**	**$88,847.40**	**28,933**	**$3.07**	**$238,399.48**	**77,634**	**0.14%**	**0.26%**
-- Apparel – Clothes		1,096		274			3,014		0.01%
-- Bags		702		176			1,931		0.01%
-- Curtains, Blinds, Drapery‡		33		8			91		0.00%
-- Facilities – Cleaning and Laundry Supplies		592		148			1,628		0.01%
-- Flags		3		1			8		0.00%
-- Furniture¶		20		5			55		0.00%
-- Office Supplies – Desk Supplies§		14		4			39		0.00%
-- PPE, Medical, and Dental*		113,237		28,309			70,773		0.23%
-- Tools, Equipment, and Supplies		35		9			96		0.00%
DFTA Department for the Aging*	**$43,556.01**	**8,557**	**$10,889.00**	**2,139**	**$5.09**	**$119,746.58**	**23,525**	**0.07%**	**0.08%**
-- Fabrics and Sewing Accessories		6		2			17		0.00%
-- Furniture¶		8,548		2,137			23,507		0.08%
-- Office Supplies – Desk Supplies§		0		0			0		0.00%
-- PPE, Medical, and Dental*		3		1			2		0.00%
-- Other N/A		0		0			0		0.00%
DOB Department of Buildings*	**$487,687.89**	**10,902**	**$121,921.97**	**2,726**	**$44.73**	**$383,418.99**	**8,571**	**1.27%**	**0.00%**
-- Apparel – Accessories		252		63			693		0.00%
-- Apparel – Clothes		200		50			550		0.00%
-- Bags		250		63			688		0.00%
-- Curtains, Blinds, Drapery‡		118		30			325		0.00%
-- Flags		1		0			3		0.00%
-- Office Supplies – Desk Supplies§		6		2			17		0.00%
-- PPE, Medical, and Dental*		10,075		2,519			6,297		0.02%

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.

8.4 Appendix D - Table 3, Projected Contract Value and Volume by Agency, cont'd.

Table 3, cont'd.

Projections of Contract Value and Volume by Agency with Category Detail for October 25, 2021-October 25, 2031, cont'd.

Contract Value and Volume by Agency with Category Detail Between April 24, 2018, to April 24, 2022 with Projections for October 25, 2021-October 25, 2031, cont'd.									
Agency	4 Year Value (2018-2022)	4 Year Unit Volume	1 Year Avg Value	1 Year Avg Volume	Avg Value Per Unit	10 Y Projected Total Contract Value (2021-2031)	10 Y Projected Unit Volume Total (2021-2031)	% of All Contract Value	% of Total Unit Volume
DOC Department of Correction*	**$426,818.44**	**102,713**	**$106,704.61**	**25,678**	**$4.16**	**$1,160,796.62**	**279,343**	**0.66%**	**0.93%**
-- Apparel – Accessories		27		7			74		0.00%
-- Apparel – Clothes		504		126			1,386		0.00%
-- Fabrics and Sewing Accessories		100,000		25,000			275,000		0.91%
-- Facilities – Cleaning and Laundry Supplies		12		3			33		0.00%
-- Flags		20		5			55		0.00%
-- Furniture¶		48		12			132		0.00%
-- PPE, Medical, and Dental*		1,467		367			917		0.00%
-- Tools, Equipment, and Supplies		635		159			1,746		0.01%
DOF Department of Finance*	**$94,524.96**	**3,653**	**$23,631.24**	**913**	**$25.88**	**$234,649.87**	**9,068**	**0.13%**	**0.03%**
-- Apparel – Clothes		10		3			28		0.00%
-- Bags		7		2			19		0.00%
-- Curtains, Blinds, Drapery‡		24		6			66		0.00%
-- Furniture¶		0		0			0		0.00%
-- Office Supplies – Desk Supplies§		3,120		780			8,580		0.03%
-- PPE, Medical, and Dental*		460		115			288		0.00%
-- Tools, Equipment, and Supplies		32		8			88		0.00%
DOHMH Department of Health and Mental Hygiene	**$76,191.72**	**24,458**	**$19,047.93**	**6,115**	**$3.12**	**$209,527.23**	**67,260**	**0.12%**	**0.22%**
-- Apparel – Accessories		5,107		1,277			14,044		0.05%
-- Apparel – Clothes		569		142			1,565		0.01%
-- Bags		12,750		3,188			35,063		0.12%
-- Curtains, Blinds, Drapery‡		18		5			50		0.00%
-- Facilities – Cleaning and Laundry Supplies		6,000		1,500			16,500		0.05%
-- Tools, Equipment, and Supplies		14		4			39		0.00%
DOI Department of Investigation	**$22,891.47**	**129**	**$5,722.87**	**32**	**$177.45**	**$62,951.54**	**355**	**0.04%**	**0.00%**
-- Furniture¶		2		1			6		0.00%
-- Office Supplies – Desk Supplies§		1		0			3		0.00%
-- Tools, Equipment, and Supplies		126		32			347		0.00%
DOP Department of Probation*	**$57,175.78**	**17,141**	**$14,293.95**	**4,285**	**$3.34**	**$50,910.66**	**15,263**	**0.03%**	**0.05%**
-- Apparel – Clothes		1,866		467			5,132		0.02%
-- Bags		250		63			688		0.00%
-- Furniture¶		25		6			69		0.00%
-- PPE, Medical, and Dental		15,000		3,750			9,375		0.03%
DORIS Department of Records and Information Services*	**$11,890.21**	**493**	**$2,972.55**	**123**	**$24.12**	**$31,365.55**	**1,301**	**0.02%**	**0.00%**
-- Bags		350		88			963		0.00%
-- Facilities – Cleaning and Laundry Supplies		2		1			6		0.00%
-- Furniture¶		1		0			3		0.00%
-- Office Supplies – Desk Supplies§		114		29			314		0.00%
-- PPE, Medical, and Dental*		26		7			16		0.00%
DOT Department of Transportation*	**$560,440.09**	**506,014**	**$140,110.02**	**126,504**	**$1.11**	**$1,538,706.06**	**1,389,278**	**0.87%**	**4.61%**
-- Apparel – Accessories		2,011		503			5,530		0.02%
-- Apparel – Clothes		305		76			839		0.00%
-- Bags		500,500		125,125			1,376,375		4.57%
-- Curtains, Blinds, Drapery‡		59		15			162		0.00%
-- Furniture¶		0		0			0		0.00%
-- Office Supplies – Desk Supplies§		75		19			206		0.00%
-- PPE, Medical, and Dental*		1,064		266			665		0.00%
-- Tools, Equipment, and Supplies		2,000		500			5,500		0.02%
DPR Department of Parks & Recreation*	**$2,966,514.07**	**445,631**	**$741,628.52**	**111,408**	**$6.66**	**$8,156,782.02**	**1,225,315**	**4.62%**	**4.07%**
-- Apparel – Clothes		5,606		1,402			15,417		0.05%
-- Bags		430,201		107,550			1,183,053		3.93%
-- Carpets and Flooring†		1,030		258			2,833		0.01%
-- Curtains, Blinds, Drapery‡		41		10			113		0.00%
-- Flags		3,482		871			9,576		0.03%
-- Furniture¶		618		155			1,700		0.01%
-- Office Supplies – Desk Supplies§		24		6			66		0.00%
-- PPE, Medical, and Dental*		80		20			50		0.00%
-- Tools, Equipment, and Supplies		4,549		1,137			12,510		0.04%

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.

8.4 Appendix D - Table 3, Projected Contract Value and Volume by Agency, cont'd.

Table 3, cont'd.

Projections of Contract Value and Volume by Agency with Category Detail for October 25, 2021-October 25, 2031, cont'd.

Contract Value and Volume by Agency with Category Detail Between April 24, 2018, to April 24, 2022 with Projections for October 25, 2021-October 25, 2031, cont'd.									
Agency	**4 Year Value** (2018-2022)	**4 Year Unit Volume**	**1 Year Avg Value**	**1 Year Avg Volume**	**Avg Value Per Unit**	**10 Y Projected Total Contract Value** (2021-2031)	**10 Y Projected Unit Volume Total** (2021-2031)	**% of All Contract Value**	**% of Total Unit Volume**
DSNY Department of Sanitation*	**$467,296.41**	**84,764**	**$116,824.10**	**21,191**	**$5.51**	**$1,237,033.89**	**224,389**	**0.70%**	**0.74%**
-- Apparel – Clothes		0		0			0		0.00%
-- Bags		80,620		20,155			221,705		0.74%
-- Curtains, Blinds, Drapery‡		0		0			0		0.00%
-- Fabrics and Sewing Accessories		0		0			0		0.00%
-- Facilities – Cleaning and Laundry Supplies		6		2			17		0.00%
-- Flags		13		3			36		0.00%
-- Office Supplies – Desk Supplies§		1		0			3		0.00%
-- PPE, Medical, and Dental*		4,100		1,025			2,563		0.01%
-- Tools, Equipment, and Supplies		24		6			66		0.00%
DSS Department of Social Services*	**$271,282.35**	**172,702**	**$67,820.59**	**43,176**	**$1.57**	**$178,570.68**	**113,681**	**0.10%**	**0.38%**
-- Apparel – Accessories		186		47			512		0.00%
-- Apparel – Clothes		16		4			44		0.00%
-- Bags		15		4			41		0.00%
-- Carpets and Flooring†		24		6			66		0.00%
-- Flags		73		18			201		0.00%
-- Furniture¶		2,006		502			5,517		0.02%
-- Office Supplies – Desk Supplies§		382		96			1,051		0.00%
-- PPE, Medical, and Dental*		170,000		42,500			106,250		0.35%
-- Tools, Equipment, and Supplies		0		0			0		0.00%
DVS Department of Veterans Services	**$17,667.20**	**20,432**	**$4,416.80**	**5,108**	**$0.86**	**$48,584.80**	**56,188**	**0.03%**	**0.19%**
-- Apparel – Clothes		2,000		500			5,500		0.02%
-- Flags		18,432		4,608			50,688		0.17%
DYCD Department of Youth & Community Development	**$17,699.54**	**3,391**	**$4,424.89**	**848**	**$5.22**	**$48,673.74**	**9,325**	**0.03%**	**0.03%**
-- Apparel – Accessories		3,230		808			8,883		0.03%
-- Curtains, Blinds, Drapery‡		65		16			179		0.00%
-- Fabrics and Sewing Accessories		0		0			0		0.00%
-- Tools, Equipment, and Supplies		96		24			264		0.00%
FDNY Fire Department*	**$5,011,253.67**	**6,523,255**	**$1,252,813.42**	**1,630,814**	**$0.77**	**$3,132,583.68**	**4,077,751**	**1.77%**	**13.53%**
-- Bags		101		25			278		0.00%
-- Office Supplies – Desk Supplies§		200		50			550		0.00%
-- PPE, Medical, and Dental*		6,522,918		1,630,730			4,076,824		13.53%
-- Tools, Equipment, and Supplies		36		9			99		0.00%
HPD Department of Housing Preservation & Development	**$69,658.55**	**5,543**	**$17,414.64**	**1,386**	**$12.57**	**$191,561.01**	**15,243**	**0.11%**	**0.05%**
-- Apparel – Accessories		625		156			1,719		0.01%
-- Apparel – Clothes		129		32			355		0.00%
-- Bags		4,500		1,125			12,375		0.04%
-- Curtains, Blinds, Drapery‡		265		66			729		0.00%
-- Furniture¶		4		1			11		0.00%
-- Tools, Equipment, and Supplies		20		5			55		0.00%
HRA Human Resources Administration	**$13,844.14**	**10**	**$3,461.04**	**3**	**$1,384.41**	**$38,071.39**	**28**	**0.02%**	**0.00%**
-- Furniture¶		**10**		3			28		0.00%
Law Law Department	**$45,548.68**	**519**	**$11,387.17**	**130**	**$87.76**	**$125,258.87**	**1,427**	**0.07%**	**0.00%**
-- Apparel – Clothes		221		55			608		0.00%
-- Bags		17		4			47		0.00%
-- Carpets and Flooring†		60		15			165		0.00%
-- Office Supplies – Desk Supplies§		87		22			239		0.00%
-- Tools, Equipment, and Supplies		134		34			369		0.00%
Mayoralty	**$95,431.68**	**547**	**$23,857.92**	**137**	**$174.46**	**$262,437.12**	**1,504**	**0.15%**	**0.00%**
-- Apparel – Accessories		187		47			514		0.00%
-- Apparel – Clothes		79		20			217		0.00%
-- Bags		257		64			707		0.00%
-- Curtains, Blinds, Drapery‡		15		4			41		0.00%
-- Flags		7		2			19		0.00%
-- Office Supplies – Desk Supplies§		1		0			3		0.00%
-- Tools, Equipment, and Supplies		**1**		0			3		0.00%

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.

8.4 Appendix D - Table 3, Projected Contract Value and Volume by Agency, cont'd.

Table 3, cont'd.

Projections of Contract Value and Volume by Agency with Category Detail for October 25, 2021-October 25, 2031, cont'd.

Contract Value and Volume by Agency with Category Detail Between April 24, 2018, to April 24, 2022 with Projections for October 25, 2021-October 25, 2031, cont'd.									
Agency	**4 Year Value** (2018-2022)	**4 Year Unit Volume**	**1 Year Avg Value**	**1 Year Avg Volume**	**Avg Value Per Unit**	**10 Y Projected Total Contract Value** (2021-2031)	**10 Y Projected Unit Volume Total** (2021-2031)	**% of All Contract Value**	**% of Total Unit Volume**
NYPD Police Department*	**$20,234,083.38**	**71,391**	**$5,058,520.85**	**17,848**	**$283.43**	**$55,450,397.16**	**195,643**	**31.41%**	**0.65%**
-- Agriculture and Animals		596		149			1,639		0.01%
-- Apparel – Accessories		140		35			385		0.00%
-- Apparel – Clothes		49		12			135		0.00%
-- Bags		10,000		2,500			27,500		0.09%
-- Carpets and Flooring†		27		7			74		0.00%
-- Curtains, Blinds, Drapery‡		105		26			289		0.00%
-- Facilities – Cleaning and Laundry Supplies		1,836		459			5,049		0.02%
-- Flags		595		149			1,636		0.01%
-- PPE, Medical, and Dental*		321		80			201		0.00%
-- Tools, Equipment, and Supplies		57,722		14,431			158,736		0.53%
OATH Office of Administrative Trials and Hearings*	**$5,115.00**	**3,008**	**$1,278.75**	**752**	**$1.70**	**$3,225.78**	**1,897**	**0.00%**	**0.01%**
-- Apparel – Clothes		7		2			19		0.00%
-- Curtains, Blinds, Drapery‡		1		0			3		0.00%
-- PPE, Medical, and Dental*		3,000		750			1,875		0.01%
OCME Office of Chief Medical Examiner*	**$231,291.94**	**57,706**	**$57,822.99**	**14,427**	**$4.01**	**$233,698.81**	**58,307**	**0.13%**	**0.19%**
-- Apparel – Clothes		10,000		2,500			27,500		0.09%
-- Bags		60		15			165		0.00%
-- Facilities – Cleaning and Laundry Supplies		200		50			550		0.00%
-- Flags		1		0			3		0.00%
-- Furniture¶		204		51			561		0.00%
-- Office Supplies – Desk Supplies§		1		0			3		0.00%
-- PPE, Medical, and Dental*		47,240		11,810			29,525		0.10%
OEM Office of Emergency Management*	**$156,943.22**	**5,185**	**$39,235.81**	**1,296**	**$30.27**	**$235,093.23**	**7,767**	**0.13%**	**0.03%**
-- Apparel – Accessories		100		25			275		0.00%
-- Apparel – Clothes		649		162			1,785		0.01%
-- Apparel – Shoes		32		8			88		0.00%
-- Carpets and Flooring†		200		50			550		0.00%
-- Facilities – Cleaning and Laundry Supplies		270		68			743		0.00%
-- Office Supplies – Desk Supplies§		353		88			971		0.00%
-- PPE, Medical, and Dental*		3,055		764			1,909		0.01%
-- Tools, Equipment, and Supplies		526		132			1,447		0.00%
OTI Department of Technology and Innovation	**$88,749.51**	**2,853**	**$22,187.38**	**713**	**$31.11**	**$244,061.15**	**7,846**	**0.14%**	**0.03%**
-- Apparel – Clothes		2,500		625			6,875		0.02%
-- Curtains, Blinds, Drapery‡		152		38			418		0.00%
-- Flags		92		23			253		0.00%
-- Furniture¶		18		5			50		0.00%
-- Office Supplies – Desk Supplies§		90		23			248		0.00%
-- Tools, Equipment, and Supplies		1		0			3		0.00%
SBS Department of Small Business Services	**$0.00**	**0**	**$0.00**	**0**	**$0.00**	**$0.00**	**0**	**0.00%**	**0.00%**
-- Office Supplies – Desk Supplies§		**0**		0			0		0.00%
TLC Taxi & Limousine Commission*	**$34,797.65**	**2,332**	**$8,699.41**	**583**	**$14.92**	**$32,117.32**	**2,152**	**0.02%**	**0.01%**
-- Apparel – Accessories		200		50			550		0.00%
-- Apparel – Clothes		117		29			322		0.00%
-- PPE, Medical, and Dental*		2,005		501			1,253		0.00%
-- Tools, Equipment, and Supplies		10		3			28		0.00%
Grand Total	**$193,002,675.36**	**43,329,527**	**$48,250,668.84**	**10,832,382**		**- $176,517,416.31**	**30,129,539**	**-**	**-**

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.

8.5 Appendix E - Table 14, Negative Impact by Agency with Category Detail and Rankings

Table 14

Negative Impact by Agency with Category Detail Assessed by Volume, Value, and Category Assortment in Ranked Order

Negative Impact by Agency with Category Detail Assessed by Category Impact, Agency Category Volume, and Category Assortment Impact													
Agency	**4 Year Value** (2018-2022)	**4 Year Unit Volume**	**1 Year Avg Value**	**1 Year Avg Volume**	**Avg Value Per Unit**	**10 Y Projected Total Contract Value** (2021-2031)	**10 Y Projected Unit Volume Total** (2021-2031)	**% of Total Agency 10 Y Projected Unit Volume**	**% of Total Category 10Y Projected Unit Volume**	**Category Impact Rank**	**Impact Rank by Agency Category Volume**	**Agency Category Impact Rank**	**Rank by Total Category Assortment Impact**
ACS Administration for Children's Services	**$181,578.70**	**9,270**	**$45,394.68**	**2,318**	**$19.59**	**$499,341.43**	**25,493**	**100%**	-	-	-	-	**Moderate**
-- Apparel – Accessories		160		40			440	1.73%	1.38%	Moderate	Low	Moderate low	
-- Apparel – Clothes		9,100		2,275			25,025	98.17%	24.24%	Moderate high	Moderate high	Moderate high	
-- Carpets and Flooring†		8		2			22	0.09%	0.65%	Moderate low	Low	Moderate low	
-- Curtains, Blinds, Drapery‡		2		1			6	0.02%	0.21%	Low	Low	Low	
BIC Business Integrity Commission	**$11,472.43**	**24**	**$2,868.11**	**6**	**$478.02**	**$31,549.18**	**66**	**100%**	-	-	-	-	**Low**
-- Apparel – Clothes		18		5			50	75.00%	0.05%	Moderate high	Low	Moderate	
-- Curtains, Blinds, Drapery‡		5		1			14	20.83%	0.53%	Low	Low	Low	
-- Furniture¶		1		0			3	4.17%	0.01%	Moderate low	Low	Moderate low	
CCHR City Commission on Human Rights	**$17,722.03**	**178**	**$4,430.51**	**45**	**$99.56**	**$48,735.58**	**490**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Clothes		80		20			220	44.94%	0.21%	Moderate high	Low	Moderate	
-- Curtains, Blinds, Drapery‡		95		24			261	53.37%	10.05%	Low	Moderate	Moderate low	
-- Furniture¶		3		1			8	1.69%	0.03%	Moderate low	Low	Moderate low	
DCAS Department of Citywide Administrative Services*	**$160,709,103.20**	**35,128,767**	**$40,177,275.80**	**8,782,192**	**$4.57**	**$101,686,763.29**	**22,227,307**	**100%**	-	-	-	-	**Moderate high**
-- Apparel – Accessories		500		125			1,375	0.01%	4.32%	Moderate	Moderate low	Moderate	
-- Apparel - Clothes		5,315		1,329			14,616	0.07%	14.16%	Moderate high	Moderate	Moderate high	
-- Bags		1,500		375			4,125	0.02%	0.16%	High ‡	Low	Moderate	
-- Curtains, Blinds, Drapery‡		40		10			110	0.00%	4.23%	Low	Moderate low	Moderate low	
-- Fabrics and Sewing Accessories		22		6			61	0.00%	0.02%	Moderate high	Low	Moderate	
-- Furniture ¶		248		62			682	0.00%	2.29%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental *		35,000,848		8,750,212			21,875,530	98.42%	83.54%	High†	High	High	
-- Tools, Equipment, and Supplies		120,294		30,074			330,809	1.49%	71.04%	Moderate	High	Moderate high	
DCP Department of City Planning	**$4,012.04**	**26**	**$1,003.01**	**7**	**$154.31**	**$11,033.11**	**72**	**100%**	-	-	-	-	**Low**
-- Facilities – Cleaning and Laundry Supplies		24		6			66	92.31%	0.30%	Moderate	Low	Moderate low	
-- Furniture¶		2		1			6	7.69%	0.02%	Moderate low	Low	Moderate low	
DDC Department of Design & Construction	**$214,071.81**	**2,201**	**$53,517.95**	**550**	**$97.26**	**$588,697.48**	**6,053**	**100%**	-	-	-	-	**Moderate**
-- Apparel – Clothes		861		215			2,368	39.12%	2.29%	Moderate high	Low	Moderate	
-- Apparel – Shoes		87		22			239	3.95%	79.75%	Moderate low	High	Moderate high	
-- Furniture¶		132		33			363	6.00%	1.22%	Moderate low	Low	Moderate low	
-- Office Supplies – Desk Supplies§		1,120		280			3,080	50.89%	22.02%	Moderate low	Moderate high	Moderate	
-- Tools, Equipment, and Supplies		1		0			3	0.05%	0.00%	Moderate	Low	Moderate low	
DEP Department of Environmental Protection*	**$355,389.59**	**115,732**	**$88,847.40**	**28,933**	**$3.07**	**$238,399.48**	**77,634**	**100%**	-	-	-	-	**Moderate**
-- Apparel – Clothes		1,096		274			3,014	3.88%	2.92%	Moderate high	Low	Moderate	
-- Bags		702		176			1,931	2.49%	0.07%	High ‡	Low	Moderate	
-- Curtains, Blinds, Drapery‡		33		8			91	0.12%	3.49%	Low	Moderate low	Moderate low	
-- Facilities – Cleaning and Laundry Supplies		592		148			1,628	2.10%	7.28%	Moderate	Moderate low	Moderate	
-- Flags		3		1			8	0.01%	0.01%	Moderate	Low	Moderate low	
-- Furniture¶		20		5			55	0.07%	0.18%	Moderate low	Low	Moderate low	
-- Office Supplies – Desk Supplies§		14		4			39	0.05%	0.28%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		113,237		28,309			70,773	91.16%	0.27%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		35		9			96	0.12%	0.02%	Moderate	Low	Moderate low	
DFTA Department for the Aging*	**$43,556.01**	**8,557**	**$10,889.00**	**2,139**	**$5.09**	**$119,746.58**	**23,525**	**100%**	-	-	-	-	**Moderate low**
-- Fabrics and Sewing Accessories		6		2			17	0.07%	0.01%	Moderate high	Low	Moderate	
-- Furniture¶		8,548		2,137			23,507	99.92%	79.02%	Moderate low	High	Moderate high	
-- Office Supplies – Desk Supplies§		0		0			0	0.00%	0.00%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		3		1			2	0.01%	0.00%	High†	Low	Moderate	
-- Other N/A		0		0			0	0.00%	0.00%	Low	Low	Low	
DOB Department of Buildings*	**$487,687.89**	**10,902**	**$121,921.97**	**2,726**	**$44.73**	**$383,418.99**	**8,571**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Accessories		252		63			693	8.09%	2.18%	Moderate	Low	Moderate low	
-- Apparel – Clothes		200		50			550	6.42%	0.53%	Moderate high	Low	Moderate	
-- Bags		250		63			688	8.02%	0.03%	High ‡	Low	Moderate	
-- Curtains, Blinds, Drapery‡		118		30			325	3.79%	12.48%	Low	Moderate high	Moderate	
-- Flags		1		0			3	0.03%	0.00%	Moderate	Low	Moderate low	
-- Office Supplies – Desk Supplies§		6		2			17	0.19%	0.12%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		10,075		2,519			6,297	73.47%	0.02%	High†	Low	Moderate	

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.

8.5 Appendix E - Table 14, Negative Impact by Agency with Category Detail and Rankings, cont'd.

Table 14, cont'd.

Negative Impact by Agency with Category Detail Assessed by Volume, Value, and Category Assortment in Ranked Order, cont'd.

Negative Impact by Agency with Category Detail Assessed by Category Impact, Agency Category Volume, and Category Assortment Impact													
Agency	**4 Year Value** (2018-2022)	**4 Year Unit Volume**	**1 Year Avg Value**	**1 Year Avg Volume**	**Avg Value Per Unit**	**10 Y Projected Total Contract Value** (2021-2031)	**10 Y Projected Unit Volume Total** (2021-2031)	**% of Total Agency 10 Y Projected Unit Volume**	**% of Total Category 10Y Projected Unit Volume**	**Category Impact Rank**	**Impact Rank by Agency Category Volume**	**Agency Category Impact Rank**	**Rank by Total Category Assortment Impact**
DOC Department of Correction*	**$426,818.44**	**102,713**	**$106,704.61**	**25,678**	**$4.16**	**$1,160,796.62**	**279,343**	**100%**	-	-	-	-	**Moderate**
-- Apparel – Accessories		27		7			74	0.03%	0.23%	Moderate	Low	Moderate low	
-- Apparel – Clothes		504		126			1,386	0.50%	1.34%	Moderate high	Low	Moderate	
-- Fabrics and Sewing Accessories		100,000		25,000			275,000	98.45%	109.96%	Moderate high	High	High	
-- Facilities – Cleaning and Laundry Supplies		12		3			33	0.01%	0.15%	Moderate	Low	Moderate low	
-- Flags		20		5			55	0.02%	0.10%	Moderate	Low	Moderate low	
-- Furniture¶		48		12			132	0.05%	0.44%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		1,467		367			917	0.33%	0.00%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		635		159			1,746	0.63%	0.37%	Moderate	Low	Moderate low	
DOF Department of Finance*	**$94,524.96**	**3,653**	**$23,631.24**	**913**	**$25.88**	**$234,649.87**	**9,068**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Clothes		10		3			28	0.30%	0.03%	Moderate high	Low	Moderate	
-- Bags		7		2			19	0.21%	0.00%	High ‡	Low	Moderate	
-- Curtains, Blinds, Drapery‡		24		6			66	0.73%	2.54%	Low	Low	Low	
-- Furniture¶		0		0			0	0.00%	0.00%	Moderate low	Low	Moderate low	
-- Office Supplies – Desk Supplies§		3,120		780			8,580	94.62%	61.33%	Moderate low	High	Moderate	
-- PPE, Medical, and Dental*		460		115			288	3.17%	0.00%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		32		8			88	0.97%	0.02%	Moderate	Low	Moderate low	
DOHMH Department of Health and Mental Hygiene	**$76,191.72**	**24,458**	**$19,047.93**	**6,115**	**$3.12**	**$209,527.23**	**67,260**	**100%**	-	-	-	-	**Moderate**
-- Apparel – Accessories		5,107		1,277			14,044	20.88%	44.12%	Moderate	High	Moderate high	
-- Apparel – Clothes		569		142			1,565	2.33%	1.52%	Moderate high	Low	Moderate	
-- Bags		12,750		3,188			35,063	52.13%	1.35%	High ‡	Low	Moderate	
-- Curtains, Blinds, Drapery‡		18		5			50	0.07%	1.90%	Low	Low	Low	
-- Facilities – Cleaning and Laundry Supplies		6,000		1,500			16,500	24.53%	73.76%	Moderate	High	Moderate high	
-- Tools, Equipment, and Supplies		14		4			39	0.06%	0.01%	Moderate	Low	Moderate low	
DOI Department of Investigation	**$22,891.47**	**129**	**$5,722.87**	**32**	**$177.45**	**$62,951.54**	**355**	**100%**	-	-	-	-	**Low**
-- Furniture¶		2		1			6	1.55%	0.02%	Moderate low	Low	Moderate low	
-- Office Supplies – Desk Supplies§		1		0			3	0.78%	0.02%	Moderate low	Low	Moderate low	
-- Tools, Equipment, and Supplies		126		32			347	97.67%	0.07%	Moderate	Low	Moderate low	
DOP Department of Probation*	**$57,175.78**	**17,141**	**$14,293.95**	**4,285**	**$3.34**	**$50,910.66**	**15,263**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Clothes		1,866		467			5,132	33.62%	4.97%	Moderate high	Moderate low	Moderate	
-- Bags		250		63			688	4.50%	0.03%	High ‡	Low	Moderate	
-- Furniture¶		25		6			69	0.45%	0.23%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental		15,000		3,750			9,375	61.42%	0.04%	High†	Low	Moderate	
DORIS Department of Records and Information Services*	**$11,890.21**	**493**	**$2,972.55**	**123**	**$24.12**	**$31,365.55**	**1,301**	**100%**	-	-	-	-	**Moderate low**
-- Bags		350		88			963	74.01%	0.04%	High ‡	Low	Moderate	
-- Facilities – Cleaning and Laundry Supplies		2		1			6	0.42%	0.02%	Moderate	Low	Moderate low	
-- Furniture¶		1		0			3	0.21%	0.01%	Moderate low	Low	Moderate low	
-- Office Supplies – Desk Supplies§		114		29			314	24.11%	2.24%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		26		7			16	1.25%	0.00%	High†	Low	Moderate	
DOT Department of Transportation*	**$560,440.09**	**506,014**	**$140,110.02**	**126,504**	**$1.11**	**$1,538,706.06**	**1,389,278**	**100%**	-	-	-	-	**Moderate high**
-- Apparel – Accessories		2,011		503			5,530	0.40%	17.37%	Moderate	Moderate high	Moderate high	
-- Apparel – Clothes		305		76			839	0.06%	0.81%	Moderate high	Low	Moderate	
-- Bags		500,500		125,125			1,376,375	99.07%	52.83%	High ‡	High	High	
-- Curtains, Blinds, Drapery‡		59		15			162	0.01%	6.24%	Low	Moderate	Moderate low	
-- Furniture¶		0		0			0	0.00%	0.00%	Moderate low	Low	Moderate low	
-- Office Supplies – Desk Supplies§		75		19			206	0.01%	1.47%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		1,064		266			665	0.05%	0.00%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		2,000		500			5,500	0.40%	1.18%	Moderate	Moderate	Moderate	
DPR Department of Parks & Recreation*	**$2,966,514.07**	**445,631**	**$741,628.52**	**111,408**	**$6.66**	**$8,156,782.02**	**1,225,315**	**100%**	-	-	-	-	**Moderate high**
-- Apparel – Clothes		5,606		1,402			15,417	1.26%	14.93%	Moderate high	Moderate	Moderate high	
-- Bags		430,201		107,550			1,183,053	96.55%	45.41%	High ‡	High	High	
-- Carpets and Flooring†		1,030		258			2,833	0.23%	83.80%	Moderate low	High	Moderate high	
-- Curtains, Blinds, Drapery‡		41		10			113	0.01%	4.34%	Low	Moderate low	Moderate low	
-- Flags		3,482		871			9,576	0.78%	16.86%	Moderate	Moderate high	Moderate high	
-- Furniture¶		618		155			1,700	0.14%	5.71%	Moderate low	Moderate low	Moderate low	
-- Office Supplies – Desk Supplies§		24		6			66	0.01%	0.47%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		80		20			50	0.00%	0.00%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		4,549		1,137			12,510	1.02%	2.69%	Moderate	Low	Moderate low	

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.

8.5 Appendix E - Table 14, Negative Impact by Agency with Category Detail and Rankings, cont'd.

Table 14, cont'd.

Negative Impact by Agency with Category Detail Assessed by Volume, Value, and Category Assortment in Ranked Order, cont'd.

Negative Impact by Agency with Category Detail Assessed by Category Impact, Agency Category Volume, and Category Assortment Impact													
Agency	**4 Year Value** (2018-2022)	**4 Year Unit Volume**	**1 Year Avg Value**	**1 Year Avg Volume**	**Avg Value Per Unit**	**10 Y Projected Total Contract Value** (2021-2031)	**10 Y Projected Unit Volume Total** (2021-2031)	**% of Total Agency 10 Y Projected Unit Volume**	**% of Total Category 10Y Projected Unit Volume**	**Category Impact Rank**	**Impact Rank by Agency Category Volume**	**Agency Category Impact Rank**	**Rank by Total Category Assortment Impact**
DSNY Department of Sanitation*	**$467,296.41**	**84,764**	**$116,824.10**	**21,191**	**$5.51**	**$1,237,033.89**	**224,389**	**100%**	-	-	-	-	**Moderate**
-- Apparel – Clothes		0		0			0	0.00%	0.00%	Moderate high	Low	Moderate	
-- Bags		80,620		20,155			221,705	98.80%	8.51%	High ‡	Moderate	Moderate high	
-- Curtains, Blinds, Drapery‡		0		0			0	0.00%	0.00%	Low	Low	Low	
-- Fabrics and Sewing Accessories		0		0			0	0.00%	0.00%	Moderate high	Low	Moderate	
-- Facilities – Cleaning and Laundry Supplies		6		2			17	0.01%	0.07%	Moderate	Low	Moderate low	
-- Flags		13		3			36	0.02%	0.06%	Moderate	Low	Moderate low	
-- Office Supplies – Desk Supplies§		1		0			3	0.00%	0.02%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		4,100		1,025			2,563	1.14%	0.01%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		24		6			66	0.03%	0.01%	Moderate	Low	Moderate low	
DSS Department of Social Services*	**$271,282.35**	**172,702**	**$67,820.59**	**43,176**	**$1.57**	**$178,570.68**	**113,681**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Accessories		186		47			512	0.45%	1.61%	Moderate	Low	Moderate low	
-- Apparel – Clothes		16		4			44	0.04%	0.04%	Moderate high	Low	Moderate	
-- Bags		15		4			41	0.04%	0.00%	High ‡	Low	Moderate	
-- Carpets and Flooring†		24		6			66	0.06%	1.95%	Moderate low	Low	Moderate low	
-- Flags		73		18			201	0.18%	0.35%	Moderate	Low	Moderate low	
-- Furniture¶		2,006		502			5,517	4.85%	18.54%	Moderate low	Moderate high	Moderate	
-- Office Supplies – Desk Supplies§		382		96			1,051	0.92%	7.51%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		170,000		42,500			106,250	93.46%	0.41%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		0		0			0	0.00%	0.00%	Moderate	Low	Moderate low	
DVS Department of Veterans Services	**$17,667.20**	**20,432**	**$4,416.80**	**5,108**	**$0.86**	**$48,584.80**	**56,188**	**100%**	-	-	-	-	**Moderate**
-- Apparel – Clothes		2,000		500			5,500	9.79%	5.33%	Moderate high	Moderate low	Moderate	
-- Flags		18,432		4,608			50,688	90.21%	89.24%	Moderate	High	Moderate high	
DYCD Department of Youth & Community Development	**$17,699.54**	**3,391**	**$4,424.89**	**848**	**$5.22**	**$48,673.74**	**9,325**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Accessories		3,230		808			8,883	95.25%	27.91%	Moderate	Moderate high	Moderate high	
-- Curtains, Blinds, Drapery‡		65		16			179	1.92%	6.88%	Low	Moderate	Moderate low	
-- Fabrics and Sewing Accessories		0		0			0	0.00%	0.00%	Moderate high	Low	Moderate	
-- Tools, Equipment, and Supplies		96		24			264	2.83%	0.06%	Moderate	Low	Moderate low	
FDNY Fire Department*	**$5,011,253.67**	**6,523,255**	**$1,252,813.42**	**1,630,814**	**$0.77**	**$3,132,583.68**	**4,077,751**	**100%**	-	-	-	-	**Moderate high**
-- Bags		101		25			278	0.01%	0.01%	High ‡	Low	Moderate	
-- Office Supplies – Desk Supplies§		200		50			550	0.01%	3.93%	Moderate low	Moderate low	Moderate low	
-- PPE, Medical, and Dental*		6,522,918		1,630,730			4,076,824	99.98%	15.57%	High†	Moderate high	High	
-- Tools, Equipment, and Supplies		36		9			99	0.00%	0.02%	Moderate	Low	Moderate low	
HPD Department of Housing Preservation & Development	**$69,658.55**	**5,543**	**$17,414.64**	**1,386**	**$12.57**	**$191,561.01**	**15,243**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Accessories		625		156			1,719	11.28%	5.40%	Moderate	Moderate low	Moderate	
-- Apparel – Clothes		129		32			355	2.33%	0.34%	Moderate high	Low	Moderate	
-- Bags		4,500		1,125			12,375	81.18%	0.48%	High ‡	Low	Moderate	
-- Curtains, Blinds, Drapery‡		265		66			729	4.78%	28.03%	Low	High	Moderate	
-- Furniture¶		4		1			11	0.07%	0.04%	Moderate low	Low	Moderate low	
-- Tools, Equipment, and Supplies		20		5			55	0.36%	0.01%	Moderate	Low	Moderate low	
HRA Human Resources Administration	**$13,844.14**	**10**	**$3,461.04**	**3**	**$1,384.41**	**$38,071.39**	**28**	**100%**	-	-	-	-	**Low**
-- Furniture¶		**10**		3			28	100.00%	0.09%	Moderate low	Low	Moderate low	
Law Law Department	**$45,548.68**	**519**	**$11,387.17**	**130**	**$87.76**	**$125,258.87**	**1,427**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Clothes		221		55			608	42.58%	0.59%	Moderate high	Low	Moderate	
-- Bags		17		4			47	3.28%	0.00%	High ‡	Low	Moderate	
-- Carpets and Flooring†		60		15			165	11.56%	4.88%	Moderate low	Moderate low	Moderate low	
-- Office Supplies – Desk Supplies§		87		22			239	16.76%	1.71%	Moderate low	Low	Moderate low	
-- Tools, Equipment, and Supplies		134		34			369	25.82%	0.08%	Moderate	Low	Moderate low	
Mayoralty	**$95,431.68**	**547**	**$23,857.92**	**137**	**$174.46**	**$262,437.12**	**1,504**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Accessories		187		47			514	34.19%	1.62%	Moderate	Low	Moderate low	
-- Apparel – Clothes		79		20			217	14.44%	0.21%	Moderate high	Low	Moderate	
-- Bags		257		64			707	46.98%	0.03%	High ‡	Low	Moderate	
-- Curtains, Blinds, Drapery‡		15		4			41	2.74%	1.59%	Low	Low	Low	
-- Flags		7		2			19	1.28%	0.03%	Moderate	Low	Moderate low	
-- Office Supplies – Desk Supplies§		1		0			3	0.18%	0.02%	Moderate low	Low	Moderate low	
-- Tools, Equipment, and Supplies		**1**		0			3	0.18%	0.00%	Moderate	Low	Moderate low	

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.

8.5 Appendix E - Table 14, Negative Impact by Agency with Category Detail and Rankings, cont'd.

Table 14, cont'd.

Negative Impact by Agency with Category Detail Assessed by Volume, Value, and Category Assortment in Ranked Order, cont'd.

Negative Impact by Agency with Category Detail Assessed by Category Impact, Agency Category Volume, and Category Assortment Impact													
Agency	**4 Year Value** (2018-2022)	**4 Year Unit Volume**	**1 Year Avg Value**	**1 Year Avg Volume**	**Avg Value Per Unit**	**10 Y Projected Total Contract Value** (2021-2031)	**10 Y Projected Unit Volume Total** (2021-2031)	**% of Total Agency 10 Y Projected Unit Volume**	**% of Total Category 10Y Projected Unit Volume**	**Category Impact Rank**	**Impact Rank by Agency Category Volume**	**Agency Category Impact Rank**	**Rank by Total Category Assortment Impact**
NYPD Police Department*	**$20,234,083.38**	**71,391**	**$5,058,520.85**	**17,848**	**$283.43**	**$55,450,397.16**	**195,643**	**100%**	-	-	-	-	**Moderate**
-- Agriculture and Animals		596		149			1,639	0.84%	110.00%	Moderate low	High	Moderate	
-- Apparel – Accessories		140		35			385	0.20%	1.21%	Moderate	Low	Moderate low	
-- Apparel – Clothes		49		12			135	0.07%	0.13%	Moderate high	Low	Moderate	
-- Bags		10,000		2,500			27,500	14.06%	1.06%	High ‡	Low	Moderate	
-- Carpets and Flooring†		27		7			74	0.04%	2.20%	Moderate low	Low	Moderate low	
-- Curtains, Blinds, Drapery‡		105		26			289	0.15%	11.11%	Low	Moderate	Moderate low	
-- Facilities – Cleaning and Laundry Supplies		1,836		459			5,049	2.58%	22.57%	Moderate	Moderate high	Moderate high	
-- Flags		595		149			1,636	0.84%	2.88%	Moderate	Low	Moderate low	
-- PPE, Medical, and Dental*		321		80			201	0.10%	0.00%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		57,722		14,431			158,736	81.14%	34.09%	Moderate	High	Moderate high	
OATH Office of Administrative Trials and Hearings*	**$5,115.00**	**3,008**	**$1,278.75**	**752**	**$1.70**	**$3,225.78**	**1,897**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Clothes		7		2			19	1.01%	0.02%	Moderate high	Low	Moderate	
-- Curtains, Blinds, Drapery‡		1		0			3	0.14%	0.11%	Low	Low	Low	
-- PPE, Medical, and Dental*		3,000		750			1,875	98.84%	0.01%	High†	Low	Moderate	
OCME Office of Chief Medical Examiner*	**$231,291.94**	**57,706**	**$57,822.99**	**14,427**	**$4.01**	**$233,698.81**	**58,307**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Clothes		10,000		2,500			27,500	47.16%	26.63%	Moderate high	Moderate high	Moderate high	
-- Bags		60		15			165	0.28%	0.01%	High ‡	Low	Moderate	
-- Facilities – Cleaning and Laundry Supplies		200		50			550	0.94%	2.46%	Moderate	Low	Moderate low	
-- Flags		1		0			3	0.00%	0.00%	Moderate	Low	Moderate low	
-- Furniture¶		204		51			561	0.96%	1.89%	Moderate low	Low	Moderate low	
-- Office Supplies – Desk Supplies§		1		0			3	0.00%	0.02%	Moderate low	Low	Moderate low	
-- PPE, Medical, and Dental*		47,240		11,810			29,525	50.64%	0.11%	High†	Low	Moderate	
OEM Office of Emergency Management*	**$156,943.22**	**5,185**	**$39,235.81**	**1,296**	**$30.27**	**$235,093.23**	**7,767**	**100%**	-	-	-	-	**Moderate**
-- Apparel – Accessories		100		25			275	3.54%	0.86%	Moderate	Low	Moderate low	
-- Apparel – Clothes		649		162			1,785	22.98%	1.73%	Moderate high	Low	Moderate	
-- Apparel – Shoes		32		8			88	1.13%	29.33%	Moderate low	Moderate high	Moderate	
-- Carpets and Flooring†		200		50			550	7.08%	16.27%	Moderate low	Moderate	Moderate	
-- Facilities – Cleaning and Laundry Supplies		270		68			743	9.56%	3.32%	Moderate	Low	Moderate low	
-- Office Supplies – Desk Supplies§		353		88			971	12.50%	6.94%	Moderate low	Moderate low	Moderate low	
-- PPE, Medical, and Dental*		3,055		764			1,909	24.58%	0.01%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		526		132			1,447	18.62%	0.31%	Moderate	Low	Moderate low	
OTI Department of Technology and Innovation	**$88,749.51**	**2,853**	**$22,187.38**	**713**	**$31.11**	**$244,061.15**	**7,846**	**100%**	-	-	-	-	**Moderate low**
-- Apparel – Clothes		2,500		625			6,875	87.63%	6.66%	Moderate high	Moderate low	Moderate	
-- Curtains, Blinds, Drapery‡		152		38			418	5.33%	16.08%	Low	Moderate high	Moderate	
-- Flags		92		23			253	3.22%	0.45%	Moderate	Low	Moderate low	
-- Furniture¶		18		5			50	0.63%	0.17%	Moderate low	Low	Moderate low	
-- Office Supplies – Desk Supplies§		90		23			248	3.15%	1.77%	Moderate low	Low	Moderate low	
-- Tools, Equipment, and Supplies		1		0			3	0.04%	0.00%	Moderate	Low	Moderate low	
TLC Taxi & Limousine Commission*	**$34,797.65**	**2,332**	**$8,699.41**	**583**	**$14.92**	**$32,117.32**	**2,152**	**100%**	-	-	-	-	**Low**
-- Apparel – Accessories		200		50			550	25.55%	1.73%	Moderate	Low	Moderate low	
-- Apparel – Clothes		117		29			322	14.95%	0.31%	Moderate high	Low	Moderate	
-- PPE, Medical, and Dental*		2,005		501			1,253	58.22%	0.00%	High†	Low	Moderate	
-- Tools, Equipment, and Supplies		10		3			28	1.28%	0.01%	Moderate	Low	Moderate low	
Grand Total	**$193,002,675.36**	**43,329,527**	**$48,250,668.84**	**10,832,382**	**-**	**$176,517,416.31**	**30,129,539**	**-**	**-**	**-**	**-**	**-**	**-**

* = Accurate projections for the PPE, Medical and Dental category are hampered by the extreme uptick in purchasing experienced during the COVID-19 pandemic during the data collection period. Projections assume a 75% reduction in need forward.

† = Total volume data provided to the task force for the Carpets and Flooring category did not match between data provided by Category (n=1,614) and data provided by Agency with category detail (n=1,349). Accordingly, subsequent projections for this category across these two views do not match.

‡ = Total volume data provided to the task force for the Curtains, Blinds, Drapery category did not match between data provided by Category (n=799) and data provided by Agency with category detail (n=1,038). Accordingly, subsequent projections for this category across these two views do not match.

¶ = Total volume data provided to the task force for the Furniture category did not match between data provided by Category (n=11,891) and data provided by Agency with category detail (n=11,890). Both views were actualized to match n=11,890.

§ = Total volume data provided to the task force for the Office Supplies - Desk Supplies category did not match between data provided by Category (n=5,588) and data provided by Agency with category detail (n=5,589). Both views were actualized to match n=5,589.