

DALHOUSIE
UNIVERSITY

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Acknowledgements

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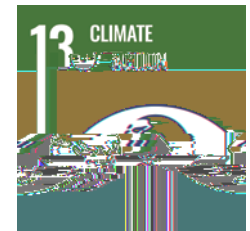


Table of Contents

Acknowledgements	2
Executive Summary	4
1.0 Current Context	5
1.1 Sustainable Procurement	5
1.2 Waste Management in Nova Scotia	6
1.3 Management Drivers	6
2.0 Plan Development and Management Timeline	10
3.0 Dalhousie Management Structure	11
4.0 Vision, Principles and Scope	16
5.0 Goals, Actions and Targets	17
6.0 Implementation & Evaluation	18
7.0 References	18

This document provides a planning framework for advancing sustainable procurement and waste management goals in university operations. Academic and research interests are not captured in this plan; however, they are reflected in university-wide strategic plans and international reporting frameworks that Dalhousie participates in. The document supports and adheres to the vision and principles identified in the Dalhousie University Sustainability Plan and is primarily focused on, but not limited to, sustainable purchasing, natural resources reduction, pollution prevention, and solid waste management. Particular purchasing and waste policy directives are found in the University sustainability policy.

Dalhousie recognizes and reports on the UN Sustainable Development Goals through reporting frameworks. This plan addresses Goal 11 Sustainable Cities and Communities, Goal 12 Responsible Consumption and Production, Goal 13 Climate Action, and connects to all the other 14 goals.





1.0 Current Context

1.1 Sustainable Procurement

Sustainable procurement aims to guide purchasing decisions to reflect life cycle costs and environmental, social, and health impacts. The International Standards Association identifies sustainable procurement as “the process of making purchasing decisions that meet an organization’s needs for goods and services in a way that benefit not only the organization but society as a whole, while minimizing its impact on the environment.”¹

Some procurement initiatives focus on a core component of sustainable procurement such as social procurement or green procurement. Social procurement has been highlighted in recent years as a strategy to support strategic equity, social and workforce development goals.

In Canada, the Federal government has introduced policies and programs to support sustainable procurement efforts including the policy on green procurement, federal contractor program, and procurement strategy for Aboriginal business.² Indigenous, territorial, provincial and municipal government also feature sustainable purchasing guidance and/or policies as demonstrated by examples such as the University of Toronto’s social purchasing program.³ In Nova Scotia, sustainable procurement strategies are highlighted in policies and guidelines.⁴

Within businesses and organizations, including higher education, sustainable procurement is an important strategy for advancing sustainability goals through the goods and services we produce or consume. It connects to goals of reducing

1.2 Waste Management in Nova Scotia

In 1995, the province of Nova Scotia introduced the *Solid Waste Management Strategy* in response to public concern regarding the social (such as environmental racism) and environmental issues associated with the implications of landfills and the incineration of waste. At that time, the provincial government officially adopted a solid waste diversion target of 50% by 2000 as identified in the *Environment Act* (1995). Major initiatives came into place including landfill bans on materials such as organics, the creation of Divert Nova Scotia (formerly the Resource Recovery Fund Board), creation of waste management regions and centralization of second-generation landfills, and the launching of enviro-depots, product stewardship programs, deposit refund systems, and centralized composting.

Nova Scotia achieved its diversion target of 50% by 2000. To further the commitment, a per capita waste disposal target of 300kg by 2015 was legislated in the *Environment Act* in 2006. This target is also recognized in the *Environmental Goals and Sustainable Prosperity Act* (EGSPA) (2007) and the *Environmental Goals and Climate Change Reduction Act* (2022). In 2011, the province released a revised strategy, *Our Path Forward*, that includes a commitment to future regulatory reviews to help meet waste objectives.

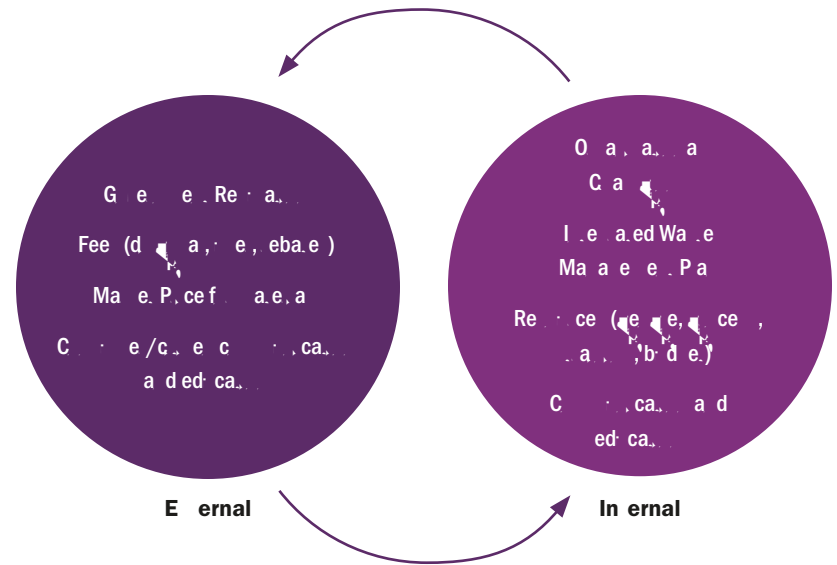
Scale and organics diversion at the university warehouse



1.3 Management Drivers

There are many factors, both external and internal, that impact waste management at the University (Figure 1).

Figure 1. External/Internal Influences⁶



(Davidson & Owen, 2011)

Global Trends

The 20th century experienced a widespread change in consumption and waste disposal patterns. The invention of new products (such as ready-to-serve meals) contributed to significant alterations in purchasing behaviour. In addition, the end of the century ushered in enhanced globalization, and emerging technology and science provided new opportunities for increased consumption and waste.⁷

Although a product's life cycle is typically considered in the product design stage, an important, but often overlooked consideration is the end-of-life cycle. Upon retiring, many products are sent for disposal, contributing to waste streams. Rather than accepting that products have a single life cycle, planning ensures products can have multiple life cycles through low energy recovery, reuse, refurbishment, remanufacture, or recycling.⁸

Municipal Legislation

Section 325 of the *Municipal Government Act* (1998) permits the municipality to create by-laws regarding solid waste management. HRM and Colchester County have developed by-laws that influence solid waste management at each of Dalhousie's campuses.

SOLID WASTE BY-LAWS

HRM By-law 600: Solid Waste Resource Collection and Disposal By-law ²²

States limits, restrictions, and eligibility requirements for private, industrial, commercial, and institutional disposal of waste.

Identifies storage and bin standards, waste separation expectations, and appropriate transportation of waste.

Outlines specifications (allowances) and preparation requirements for the collection.

Highlights prohibitions, disposal fee structure, and penalties for violations of the By-law.

Colchester County Solid Waste By-law ²³

States limits, restrictions, and eligibility requirements for the disposal of waste.

Identifies storage and bin standards, waste separation expectations, and preparation requirements for collection.

Identifies requirements and expectations of waste collectors.

Highlights prohibitions, disposal fee structure, and penalties for violations of the By-law.

Construction and Demolition (C&D) By-laws ²⁴

HRM has committed to a C&D diversion rate of 75%, Colchester County does not have specific C&D targets, and Dalhousie University abides by the 75% diversion target across all campuses.

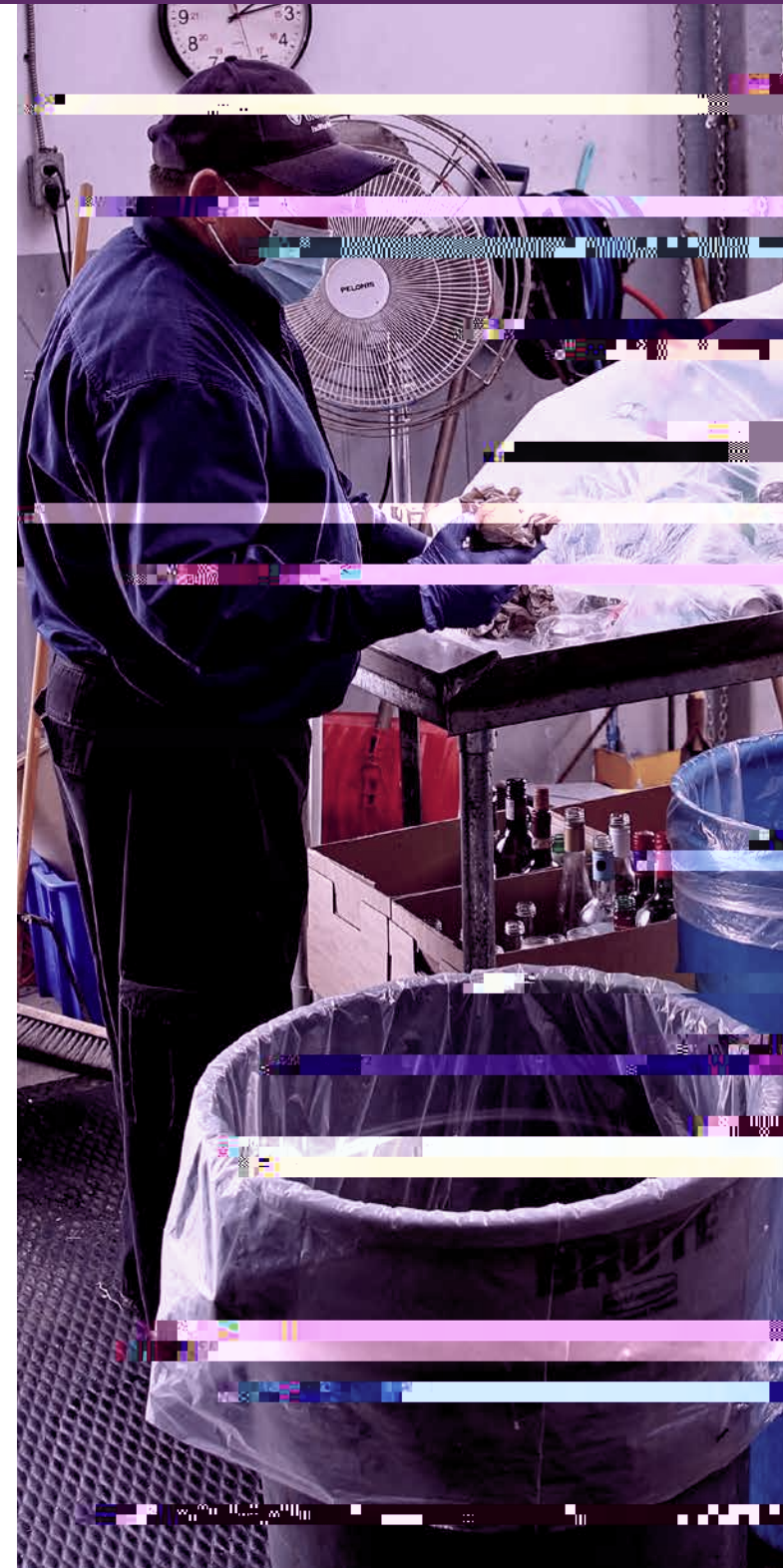
Colchester County Construction and Demolition By-law ²⁵

States license requirements and associated fees.

Highlights the necessity for recording and reporting on the C&D load details.

States offenses under the By-law and the associated penalties.

Challenges to waste reduction and diversion at Dalhousie include the size, scope, and diversity of players at the university, which results in products arriving on campus across many departments and specialized users. Dalhousie is a research-intensive university with hundreds of labs requiring specialized packaged products and the use of items such as disposable gloves and chemical wipes. Additionally, each year brings thousands of new people to campus from around the world.





3.0 Dalhousie Management Structure

There are over 7,000 employees and 21,000 students at Dalhousie’s three urban campuses (Halifax) and agricultural campus (Bible Hill). Each year thousands of new students and visitors arrive to attend and visit the university. The university has residence accommodations, public library spaces, food services, athletics venues, research labs from multiple disciplines, a farm, agricultural lands, and thousands of offices. The breadth of the activity on campus results in a wide variety of waste types and volumes. Several departments are involved in aspects of sustainable purchasing and waste management on campus (Figure 5).

Figure 5: Dalhousie University—Sustainable Purchasing and Waste Management.

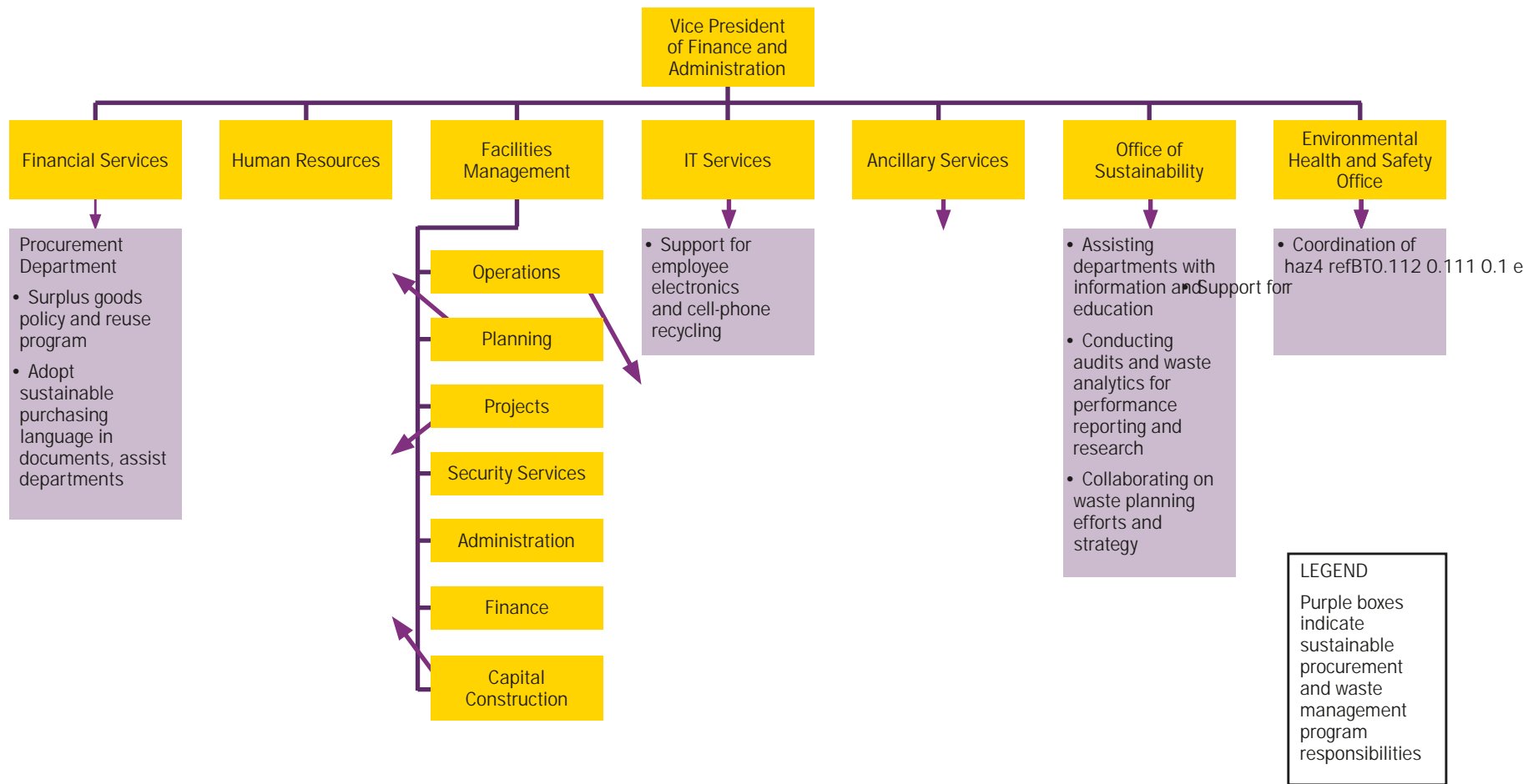


Table 1: Summary Sheet from Material Categorization Guide²⁷**Fibre**

Corrugated cardboard
Office paper
Miscellaneous paper
Other mixed / composite paper

Organic

Food
Boxboard / soiled paper
Agricultural crop residues
Manures
Cooking oil / grease
Leaf and yard waste
Remainder / composite organic

Plastic: Containers, Bags and Products

1. Polyethylene terephthalate
2. High-density polyethylene
3. Poly (vinyl chloride)
4. Low-density polyethylene
5. Polypropylene
6. Polystyrene
7. Any combination of plastics 1 through 6

Glass

Glass bottles and containers (refundable)
Glass bottles and containers (non-refundable)
Remainder / composite glass

Metal

Iron / steel
Tin / steel cans
Aluminum
Aluminum cans
Copper
Other non-ferrous
Remainder / composite metal

Construction and Demolition

Concrete
Asphalt paving
Asphalt roofing
Lumber
Gypsum board
Carpet
Rocks and soils
Remainder / composite

Hazardous

Class 1 – explosives
Class 2 – gases
Class 3 – flammable and combustible liquids
Class 4 – flammable solids
Class 5 – oxidizing substances; organic peroxides
Class 6 – poisonous (toxic) and infectious
Class 7 – radioactive materials
Class 8 – corrosives
Class 9 – miscellaneous products, substances
Class 3 – /00 -1.44 corr8 (e me)7yClasionsCla

| Baseline Estimation

Procurement data is examined to identify key campus purchasers by commodity group. These commodity analyses have been used to aid in the development

4.0 Vision, Principles and Scope

Vision

Dalhousie University is actively minimizing waste, applying ethical and sustainable purchasing practices, reducing pollution and materials to landfill, and increasing knowledge of sustainable purchasing and waste management issues of students and employees.

Principles

Various waste management principles were considered in the development of this plan. The concept of zero-waste, cradle-to-cradle (closed loop systems), and eco-efficiency were assessed. The concept of zero-waste is a goal that Dalhousie will ultimately strive to achieve; however, until zero-waste is more attainable, efforts will focus on reducing and managing the waste created. The Four R's



5.0 Goals, Actions and Targets

To meet the university's sustainable procurement and solid waste management vision key goals, objectives, actions, and targets have been re-confirmed and expanded based on recent literature reviews, campus surveys, focus groups, and meetings (Table 2).

Table 2: Goals, Objectives, Actions and Targets

GOALS	OBJECTIVES	ACTIONS	TARGETS
Minimize waste generation	<p>Reduce the quantity of materials purchased going to disposal</p> <p>Target problematic materials by volume, tonnage, pollution, contamination, and cost.</p>	<p>Update and communicate comprehensive waste audit results for all campuses.</p> <p>Eliminate the use of problematic material if possible (e.g., avoid single-use plastics in food services, labs, and clinical areas)</p> <p>Explore strategies to reduce contamination.</p> <p>Explore user-pay models for contractor waste in areas like food and building projects.</p> <p>Enhance reuse and sharing programs where feasible (e.g., fleet, furniture, equipment, chemicals)</p> <p>Target education, behavioural programs and monitoring efforts in key areas with high volume and contamination rates.</p> <p>Avoid over producing physical reports, manuals, and documents.</p> <p>Support and enhance existing reuse and recycling programs (where they are more beneficial than disposal) for organics, fibre, C&D, recyclable material, electronics...</p> <p>Pilot incentives and governance projects by commodity type (e.g., take back program with vendors)</p>	<p>Reduce campus disposal rate (per tonne); normalized by building type and population year over year.</p> <p>Increase diversion rate for solid, liquid, and hazardous waste from landfills.</p> <p>75% by 2030.</p>
Establish a management strategy that positively impacts human, environmental, and social health	<p>Invite community feedback and adapt waste management plans as required</p>	<p>Update ethical and sustainable purchasing and waste management policies and directives</p> <p>Maintain a waste management committee and ad hoc sustainable purchasing commodity groups</p> <p>Ongoing engagement, research, education, and participation of campus community</p> <p>Conduct staff training for key groups including custodial, grounds, health and safety, trades, purchasing and sustainability staff</p> <p>Identify targets and track progress through annual campus reports and higher education sustainability reporting frameworks</p> <p>Examine the cost/efficacy impact of additional resources in meeting waste management and sustainable purchasing goals</p> <p>Implement programs and initiatives such as best value and local and short supply chain purchasing</p>	<p>Increase in the number of social and environmental purchasing initiatives that support equity, diversity, inclusivity, and accessibility goals</p> <p>Sustainable purchasing targets created for all commodities.</p> <p>Products and programs delivered</p> <p>Commodities that have traceable, verifiable sustainability features (e.g., third-party certified programs).</p> <p>Meeting high standards in sustainability reporting frameworks.</p>

15. Canada Gazette. (2022). Single-use plastics prohibition regulations: SOR/2022-138. *Canada Gazette*, 156 (13). www.gazette.gc.ca/rp-pr/p2/2022/2022-06-22/html/sor-dors138-eng.html

16. *Environment Act*, SNS 1994–95, c 1 canlii.ca/t/51zv1

17. Solid Waste Management Act, R.S.C. (1985), c. 42

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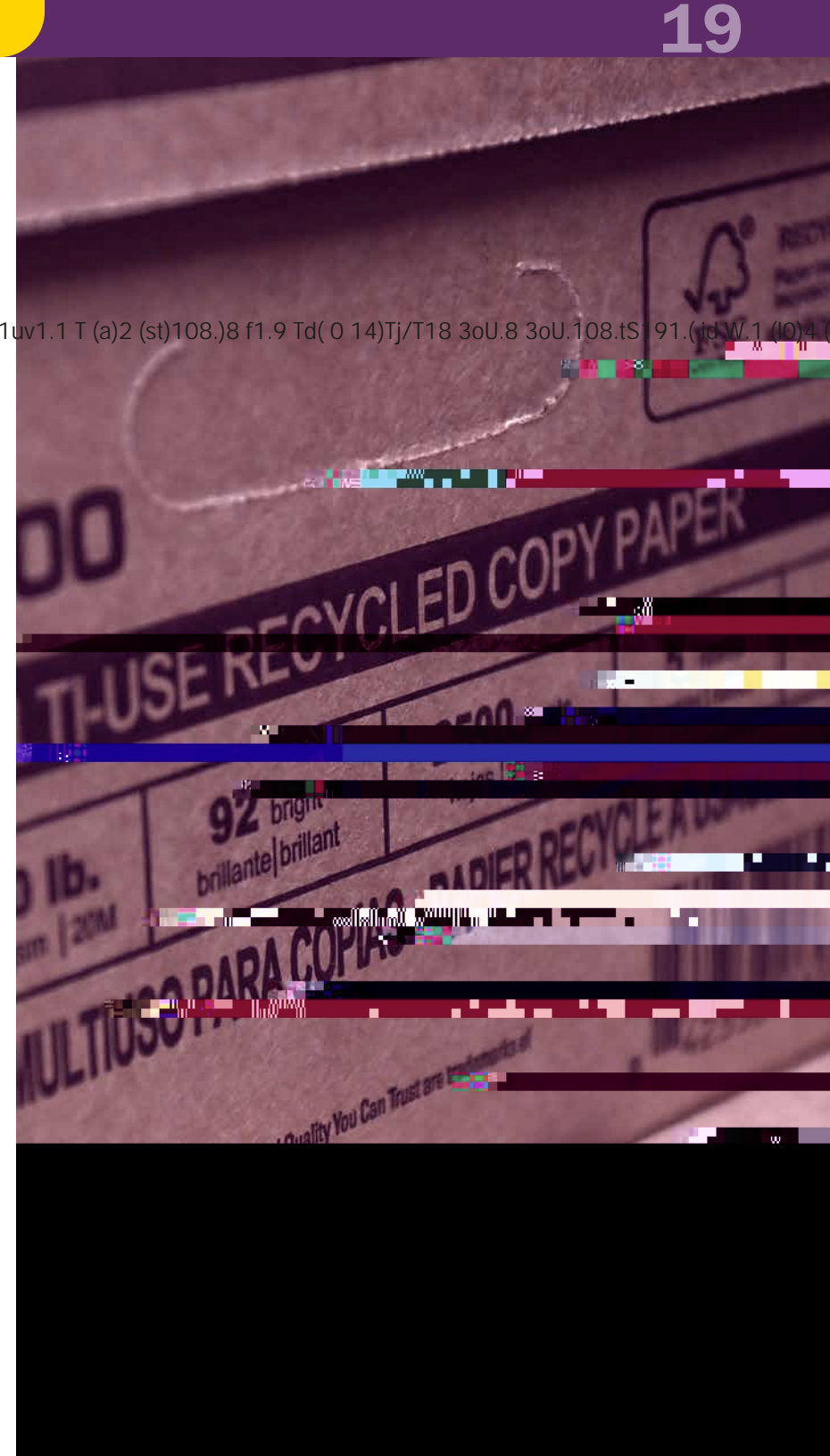
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