

Near-Term Options to Reduce the Burden of Proper Elm Disposal

ISSUE

This report responds to an inquiry on options to reduce the burden of proper elm wood disposal. In July 2021, Saskatoon recorded its third case of Dutch elm disease (DED), this one was in Leif Erickson Park. Provincial legislation requires all elm wood to be immediately disposed of at the closest designated disposal site to mitigate the spread of DED. The Saskatoon Regional Waste Management Centre (landfill) is a designated disposal site and accepts elm wood for disposal based on the fees outlined in Schedule B of The Waste Bylaw, Bylaw No. 8310. The inquiry requested options to reduce these fees to help minimize barriers to proper disposal.

BACKGROUND

At its regular business meeting in December 2019, the Landfill Infrastructure Replacement and Recovery Park Site Design Options report was presented. It provided options for the design of Recovery Park including a prioritized list of materials to be accepted. The approved design option included space designated for elm wood collection.

At its regular business meeting in March 2021, City Council approved the Urban Forestry Management Plan (Urban Forestry Plan) in principle. The Urban Forestry Plan examines the current state of the urban forest and outlines a strategy to plan, grow, manage, and protect the trees and tree canopy. It identifies DED as one of the main risks to the overall canopy cover and resilience of the urban forest.

At its regular business meeting on August 9, 2021, the Standing Policy Committee – Environment, Utilities and Corporate Services received correspondence on landfill fees for the disposal of elm trees and resolved:

“That the Administration report back to the appropriate committee regarding near-term options to reduce the burden of proper elm disposal and other forestry materials required for prevention of disease spread on citizens, including waiving landfill fees.”

CURRENT STATUS

In July 2021, Saskatoon confirmed the third case of DED, at Leif Erickson Park. The second DED case was confirmed in September 2020, in the Montgomery neighbourhood and the first case was confirmed in July of 2015. The immediate response to the DED case at Leif Erikson Park has been completed, as outlined in Appendix 1 - Dutch Elm Disease in Saskatoon and Measures to Mitigate Spread, with the year 2 response being planned for 2022. During the immediate response, over 13 tonnes of stored wood were removed from 160 locations within a 2 km radius of the DED case in Leif Erickson Park.

Over 24% of Saskatoon's urban forest is elm and vulnerable to DED. While the Urban Forestry Plan puts forward a strategy to diversify Saskatoon's forest, develop an invasive species management strategy and expand public education, the implementation of the Urban Forestry Plan is reliant on resources and sustained efforts to achieve results. In May 2021, and again in September 2021, the City of Saskatoon (City) launched a DED awareness and education campaign for residents on how to prevent DED and the requirements to properly dispose of all elm wood immediately instead of storing. This campaign included News Releases/PSAs, social media ads, targeted door hangers, utility bill inserts, Community Association ads and website updates.

Schedule B of The Waste Bylaw, Bylaw No. 8310, allows for a special handling fee for landfilling materials that are cumbersome and require additional resources to landfill appropriately or have special regulations regarding their disposal. To ensure consistency and clarity for users, criteria to determine which types of loads would require the special handling fee was developed, and in May 2021, the Saskatoon landfill began applying a special handling fee for stumps and logs greater than 10 inches in diameter and 3 feet in length. Wood received at the landfill greater than this size interferes with the equipment and process to compact and bury waste, which results in a greater operational cost to handle the larger materials.

Related to this issue, the Recovery Park project has issued a Request for Information (RFI) in market at the time this report was being written. The goal of the RFI is to identify diversion options for specific materials, including those outlined in the December 2019 materials prioritization for design, so that an operations plan and budget can be brought forward. Construction of Recovery Park is expected to be completed by the end of 2023.

DISCUSSION/ANALYSIS

DED poses a significant risk to Saskatoon's urban forest. It is spread by several species of elm bark beetle that are attracted to decaying and freshly cut elm. Prohibiting pruning at times when the beetle is active, as well as restricting the storage, transportation and use of elm wood are the primary methods to reduce the spread of DED. The provincial government prohibits the storage or use of elm wood and requires it to be transported to a designed disposal site. Additional information on DED and provincial regulations is provided in Appendix 1. At present, no other tree disease or pest that is present in Saskatoon requires immediate burial of wood waste as a method to mitigate spread. In the future, ash tree disposals at the landfill may be required should Emerald Ash Borer arrive, which may have the same requirements as elm (immediate burial).

The City provides information to residents on elm and elm disposal through a variety of programs, as well as uses a screening process at the City's two compost depots to identify inappropriate materials brought to the depots. When a positive case of DED has been identified in an elm tree, there is a comprehensive and multi-year response process.

Elm Wood Disposal and Resident Behaviour

Elm wood in Saskatoon is required to be disposed of at the Saskatoon landfill, which is the closest designated disposal site. Over the past three years, there have been between 4,000 and 6,000 loads of Clean Wood Waste or Wood Chips brought to the landfill each year, resulting in the collection of between \$285,000 and \$376,000 in landfill fees. In two of the past three years, most of the fees were from the commercial sector, and for one year the fees were roughly even for the residential and commercial sectors. The proportion of Clean Wood Waste or Wood Chips brought to the landfill that are elm are not currently tracked. Elm wood is not permitted to be disposed of in black carts during the elm pruning ban (April 1 to August 31). Outside of this, only small shearings of less than 1cm in diameter are permitted.

Saskatoon's residents have a mixed understanding of how to properly dispose of elm wood. The 2019 Waste and Recycling Survey found that while the majority of residents do not report having elm wood to dispose of; of those that did, 56% of green cart subscribers, 40% of curbside residents without a green cart, and 33% of residents with elm wood reported using a proper disposal method. The improper disposal methods included placing elm wood in the green cart, hauling it to the City's compost depot, placing it in their black cart, or other ways not listed in the survey.

Identification of elm during compost depot screenings and investigations following confirmed DED cases further demonstrates that residents are not properly disposing of elm wood. In the last four years, screening found between 245 and 821 loads per year have been brought to the compost depots containing elm wood and in the two most recent DED investigations combined; over 25 tonnes of improperly stored elm wood was found within the 2 km radius of the two DED cases. Further information on wood received at the landfill and the indicators of resident knowledge and behaviour outlined above are expanded on in Appendix 2 - Elm Wood Disposal in Saskatoon.

Best Practices in Encouraging Proper Disposal

The [Solid Waste Reduction and Diversion Plan](#) identified that behaviour is determined by many factors and that a variety of tools are available to municipalities to encourage behaviours that are needed to lead to a successful waste program. These tools include:

- Partnerships and collaboration;
- Leading by example;
- Education and research, including community based social-marketing and building a waste brand;
- Enforcement;
- Economic incentives; and
- Triple bottom line approach.

A scan of other jurisdictions showed that education is the predominant approach used to encourage proper disposal of elm wood. Regulation and enforcement are typically led by the provincial level; however, many municipalities also provide additional enforcement. Most jurisdictions require residential and commercial loads of elm to be disposed of at the landfill and apply general tipping fees. Some did offer economic

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incentives for proper disposal of elm wood, such as Winnipeg covering the cost of residential elm loads, Charlottetown providing a service to remove and landfill trees, and Edmonton offering collection at its Eco-Centres (similar to the City's planned Recovery Park facility) for residential loads under a half-ton truck. A table of disposal options in each jurisdiction and fees for elm wood, as well as other education programs is provided in Appendix 3 - Best Practices for Encouraging Proper Waste Disposal Behaviour.

The City currently offers several solid waste drop-off services for proper disposal of various materials other than elm that users can access either for a fee or at no direct cost. A variety of funding approaches are used by the City to operate these programs as outlined in the table below.

Drop-off Service	User Fees	Program Funding Model
Landfill - Disposal	\$15 entrance fee \$105/tonne for loads over 150kg \$130/tonne special handling (min \$275/load)	User fees
Landfill – Diversion		User fees Stewardship program (MMSW)
Household Hazardous Waste Events	No charge	Property tax (mill rate)
Recycling Depots	No charge	Recycling utility and stewardship program (MMSW)
Compost Depots	\$150 annual fee for commercial, no charge residential	User fee, mill rate

Additional information on these programs is available in Appendix 3.

Near Term-Options to Reduce the Burden on Proper Elm Disposal

The Administration identified a number of options that could help reduce the cost for elm wood disposal for landfill users, as summarized in the table below and expanded on in Appendix 4 - Near-Term Options to Reduce the Burden of Proper Elm Disposal. The Status Quo was included as a baseline for comparison.

Option	Level of Burden for Disposal	Impact on Landfill Revenues
1 – Status Quo	High	No Impact
2 – Eliminate Special Handling Fees for Elm	Medium	\$30,000*
3 – Flat Fee or Reduced Tipping Fee for Elm Disposal	Medium	Dependent on the fee structure

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4 – Exempt Elm from Tipping and Special Handling Fees; option to also exempt elm wood from entrance fees	Low	\$300,000**
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*based on special handling fees collected since May 2021 extrapolated over 1 year

**based on revenues of \$285,000-\$376,000 for wood waste collected in 2018-2020, factoring in a reduction for non-Elm wood waste

All four options are feasible without any additional approvals by other levels of government. One additional option was explored but not considered feasible in the near-term. The additional option was to reduce special handling fees through operational changes, specifically the temporary storage of elm wood. This option would require provincial approvals before being implemented, which means unclear timelines and the risk that it would not be permitted. The Administration also does not recommend this additional option due to the increased risk of DED from storing elm wood.

Additional Initiatives to Encourage Proper Elm Disposal

The following additional options have been identified by the Administration after review of best practices in behaviour change and approaches from other jurisdictions. These initiatives could be further developed by the Administration, including proposed scope and budget implications. Any of these initiatives could be implemented in addition to the user fee, Options 1 through 4.

- Expanded education for residential and commercial sectors.
- Establish broader education for staff in elm and DED identification, including landfill staff
- Expanded investigations and enforcement of elm wood storage and proper disposal.

Medium-Term Considerations for Proper Elm Disposal

The development of the operating plan for Recovery Park is in progress, which will finalize the accepted materials and funding model, including whether fees will apply to resident and commercial loads. Elm wood has been prioritized during the design to be an accepted material. A Request for Information from industry is in progress at the time this report was being prepared, which will help determine what diversion or processing options may be available for elm wood.

ENVIRONMENTAL IMPLICATIONS

A lack of compliance with legislated elm disposal requirements has been identified during intensive neighbourhood DED response investigations. Given that Saskatoon's urban forest is almost one quarter elm trees, which are vulnerable to DED, there is an ongoing risk of additional disease spread through improperly disposed or stored elm wood, that could result in the significant decline of the City's urban forest canopy.

While barriers to proper elm handling and disposal behaviour have not been investigated specifically, known barriers for other waste programs that encourage proper disposal frequently include knowledge, access to service, costs, and convenience. This report provides options to reduce the cost barriers for proper elm disposal, which when combined with education and communications is anticipated to

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reduce elm wood storage and improve proper disposal, and therefore mitigate the spread of DED.

FINANCIAL IMPLICATIONS

Financial barriers to the proper disposal of elm wood may have a negative impact on the City's urban canopy, which is part of the City's natural assets. The City's tree canopy is made up of almost 25% elm trees. Unlike other infrastructure, trees increase in value over time. In 2019, the value of public trees (excluding shelterbelts and afforestation areas) was estimated at more than \$530 million.

The options outlined in the report have a range of financial implications for the landfill. The implications shown below are projections based on levels of elm wood received over the past three years. If there were significant uptake of a change to the fee structure for elm wood or if DED were to begin spreading faster, the revenue loss would increase because landfill fees are directly linked to the number of customers and tonnages received. If an option other than Option 1 or 2 is directed, a funding source will need to be identified to offset revenue losses.

Annual Landfill Revenue Loss Projections by Funding Model		
Options	Low Projection (4,000 customers + 2,250 tonnes)	High Projection (6,500 customers + 3,250 tonnes)
Option 1 - Status Quo	\$0	\$0
Option 2 - Eliminate Special Handling Fee	-\$30,000.00	-\$30,000.00
Option 3a - Eliminate Special Handling Fee, add \$75 Tipping Fee	-\$97,500.00	-\$127,500.00
Option 3b - Eliminate Special Handling Fee, add \$50 Tipping Fee	-\$153,750.00	-\$208,750.00
Option 3c - Eliminate Special Handling Fee, add \$25 Tipping Fee	-\$210,000.00	-\$290,000.00
Option 3d - Eliminate Special Handling Fee, add \$50 Flat Fee	-\$66,250.00	-\$46,250.00
Option 3e - Eliminate Special Handling Fee, add \$25 Flat Fee	-\$166,250.00	-\$208,750.00
Option 4a - Eliminate Special Handling and Tipping Fees	-\$266,250.00	-\$371,250.00
Option 4b - Eliminate Special Handling, Tipping and Entrance Fees	-\$326,250.00	-\$468,750.00

Notes:

The special handling fee estimate is based on special handling fees collected since May 2021 extrapolated over 1 year.

The tipping fees are based on wood waste collected in 2018-2020, factoring in a reduction for non-Elm wood waste and a potential increase in use due to DED awareness and changes to fee structures.

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There are financial implications for the City when responding to DED cases which were not calculated for this report. There are a wide variety of factors that will impact the overall cost of each individual response, when we have a confirmed case of DED, such as the availability of staff to carry out the response during their regular work hours, the number of cases, the proximity of cases to each other, and the quantities of stored wood that require removal.

OTHER IMPLICATIONS

Other considerations for each option have been summarized above and are further detailed in Appendix 4.

NEXT STEPS

The Administration will maintain the status quo and activities outlined in the “Current Status” section above unless directed to proceed with one or more of the options presented in this report.

APPENDICES

1. Dutch Elm Disease in Saskatoon and Measures to Mitigate Spread
2. Elm Wood Disposal in Saskatoon
3. Best Practices for Encouraging Proper Waste Disposal Behaviour
4. Near-Term Options to Reduce the Burden of Proper Elm Disposal

Report Approval

Written by: Katie Burns, Education and Environmental Performance Manager
Brock Storey, Environmental Operations Manager
Konrad Andre, Operations Manager

Reviewed by: Jeanna South, Director of Sustainability
Brendan Lemke, Director of Water and Waste Operations
Darren Crilly, Director of Parks
Lynne Lacroix, General Manager, Community Services

Approved by: Angela Gardiner, General Manager, Utilities and Environment