WINDBREAK THINNING

Many windbreaks in the upper Thames River watershed are approaching an age where thinning would benefit tree health and windbreak longevity.

Thinning should be considered 10 to 15 years after the windbreak is planted, or when the crowns of the trees are touching.

Thinning benefits the remaining trees:

- Additional resources, such as nutrients and water
- Increased space to grow
- Reduced mortality rate
- Increased foliage and reduced die off of lower branches
- Decreased risk of disease or pest infestation

Thinning demonstration using track harvester

Two 30 year old, double row, Norway Spruce windbreaks were thinned in April 2017.

- The original spacing was 6 ft between trees and 6 ft between rows, which is too close.
- Trees are now planted at 9 ft between trees and 8 ft between rows.
- Consideration is being given to widening the spacing for new windbreaks to 10 ft x 10 ft to reduce future thinning.

Every other tree was removed from a single row within the windbreak, using a track harvester.

- This spacing was chosen to minimize stress on the remaining trees by avoiding potential wind damage or altering their environment too quickly.

Tree tops and branches were chipped back into the windbreak or pushed into burn piles.

Forwarder used to move large logs.

Time commitment

- Single day to remove approximately 300 trees using track harvester.
- Five hours to chip 180 metres of windbreak (50 trees or 1/3 of a single windbreak).
- Brush was moved by the forwarder and three people putting it through the chipper.
- The remaining brush was pushed into piles and burned.
- Six hours per windbreak to pile brush using skid steer loader.

Disposing of the excess brush by creating burn piles was the most time and cost effective method for clean up.

Project Costs

Harvester and Forwarder: $7,350
Chipper: $450
Loader: $800
Labour: $900
Total Cost of Project: $9,500

Lessons Learned

Track harvester is a cost effective method to remove trees if the windbreak is longer than 1.5 km. Alternative methods should be considered for shorter windbreaks to improve cost effectiveness:

- Chainsaw: Low cost of equipment, but cost effectiveness may be impacted by greater time requirement to remove individual trees and rental costs associated with clean up.
- Excavator with mulching head: Permits quick tree removal with little clean up; however, cost effectiveness may be reduced by overall cost of hiring contractor.

For more information:

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UPPER THAMES RIVER CONSERVATION AUTHORITY