MINIMIZED OR PHASED LAND CLEARING

The preservation of vegetated areas on active construction sites is a practice that offers several advantages from an erosion control and runoff management perspective. The topsoil, vegetation and root systems that are part of pre-existing vegetated areas make them effective at intercepting and infiltrating rainfall and keeping soil in place.

Figure B1-1: Buffer of vegetation retained at site perimeter

Minimizing clearing involves the identification of site areas where vegetation can be preserved throughout the entire construction period. Areas cleared are smaller and more manageable with respect to control erosion and sediment migration. Phased clearing, by contrast, does not completely avoid stripping but instead requires strategic planning to schedule clearing, development and re-stabilization of the site so that the total amount of time that bare soils are left exposed is minimized as much as possible. When development is phased, only a portion of the site is stripped and developed at any given time, and the next parcel/phase is only initiated once the earlier phase is complete, including re-stabilization.

Application

- Parcels designated for later development (e.g. school blocks, parks).
- Any areas of a site where construction activity is not planned for an extended period of time. On stripped areas that are inactive for 30 days or longer, stabilization measures should be applied.
- Phasing is most appropriate for larger sites (>10 ha), where it is more feasible to divide the development into smaller phases.
- It is particularly import to retain a buffer of vegetation along the site perimeter and around natural features.

Prioritizing ***Sustainability***

The preservation of existing vegetation is a highly sustainable practice as it does not generate significant solid or liquid waste or air pollution, nor does it require the consumption of natural resources.

Design

- Consider minimizing stripping first. Early in the planning process, identify areas where vegetation can be retained. Where minimized clearing can be planned and executed efficiently, it can be more cost-effective than stripping vegetation that must later be re-established.
- The maximum amount of land stripped at a given time should be limited by the area that can reasonably be expected to be developed and stabilized within the same construction season (before freezing conditions set in).
- Identify any areas that will be inactive in the long term (longer than one construction season) for designation as vegetation preservation areas.
- Avoid using vegetation preservation areas for soil stockpiling. If these areas are used for stockpiles or other materials storage, their erosion control and infiltration benefits cannot be fully realized.
- Vegetated buffers, as established in the approved draft plan of subdivision or site plan for the subject property, should be preserved around the site

DON'T FORGET TO STABILIZE!

Any areas of the site where no active construction is planned for 30 days or longer should be stabilized

perimeter and adjacent to natural features. For specific requirements on buffers around natural features and hazards, consult with the local regulatory agency (i.e. municipality, CA). Recommended buffers applicable within the TRCA jurisdiction are detailed in *The Living City Policies for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority* (TRCA, 2014), and within the CVC jurisdiction in *Credit Valley Conservation Watershed Planning and Regulation Policies* (CVC, 2010).

- Preserved areas should be fenced off to provide protection from vehicle tracking.
- Plans should identify trees and shrubs that have been designated for protection. Trees should be surrounded by sturdy tree protection fencing (Figure B1-2), which should be placed far enough from the trunk that the root systems are also protected. Root systems can extend more than 3 times the dripline distance (City of Toronto, 2016). Local municipal policies and bylaws on tree protection should be referenced prior to creating topsoil stripping plans in order to establish appropriate tree protection zones. A tree inventory / preservation plan may be required for removal and preservation of species. Consultation with a qualified arborist is recommended.
- Where phasing is being implemented it should be considered at the early stages of planning and design. Co-ordination of workplans, construction schedules and permitting/approvals timelines is key.
- Identify effective, low-cost temporary stabilization options and implement on areas that have already been subject to stripping and earth moving, and which are expected to remain inactive for longer than 30 days.

Inspection and maintenance

- Inspect vegetation preservation areas and re-stabilized areas on a weekly basis, and before and after significant rainfall (see definition in Section 10.1.2) or snowmelt events, and keep a record of the inspection. Beyond this routine inspection, additional inspections of seeded areas may be needed when the seed is newly planted as well as during periods of drought.
- Ensure vehicles and equipment are not driving over vegetation preservation areas or other areas that have been re-vegetated.
- Inspect vegetation protection fencing to determine if maintenance is required (Figure B1-2).
- Visually evaluate the condition of vegetation preservation areas, including buffers, trees and shrubs.
- Identify any observed decline in vegetation health that could be attributable to construction activities and recommend ESC improvements to mitigate any further harm. Common impacts to trees can include structural damage, root cutting and soil compaction, while other vegetated areas may be subject to erosion and/or sediment deposition due to altered site hydrology and vehicle tracking.
- If re-stabilization measures have been implemented (e.g. seeding, rolled erosion control products, mulching), refer to the BMP specific guidance in this chapter for detailed inspection and monitoring requirements.
- Look for any evidence of erosion on vegetation preservation areas or re-stabilized areas. Where erosion is occurring, determine whether the areas should be reinforced with additional erosion control measures (e.g. seeding, blankets, mats), or if flows should be re-routed around the area.
- Any repair or maintenance needs identified should be repaired within 48 hours or sooner if natural receptors are at imminent and foreseeable risk of adverse impact. If buffers around natural features are compromised due to erosion or sediment deposition, their restoration should be set as a high priority, particularly when they are failing to protect the natural area from construction activities.

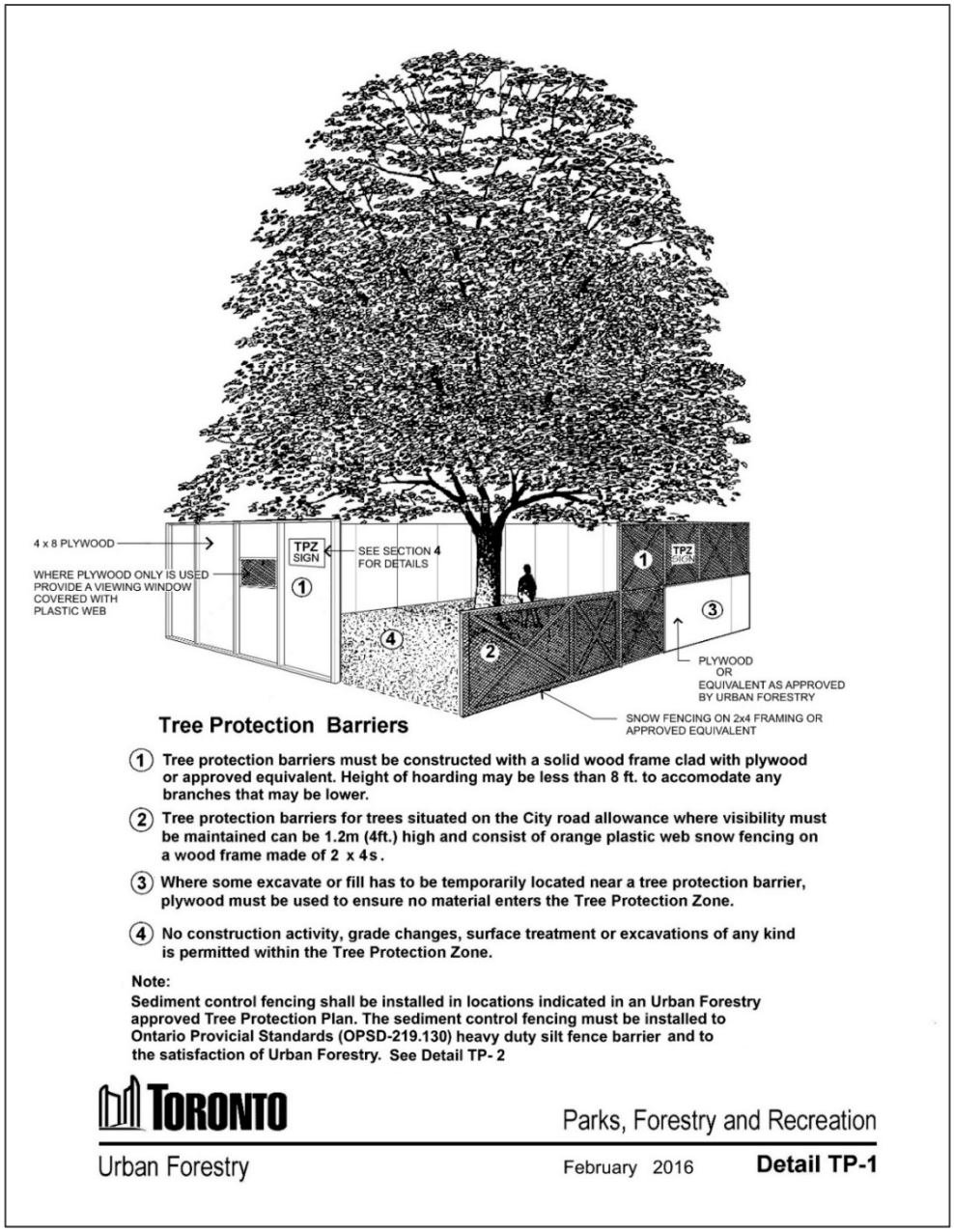

Figure B1-2: City of Toronto tree protection barrier detail (City of Toronto, 2016)