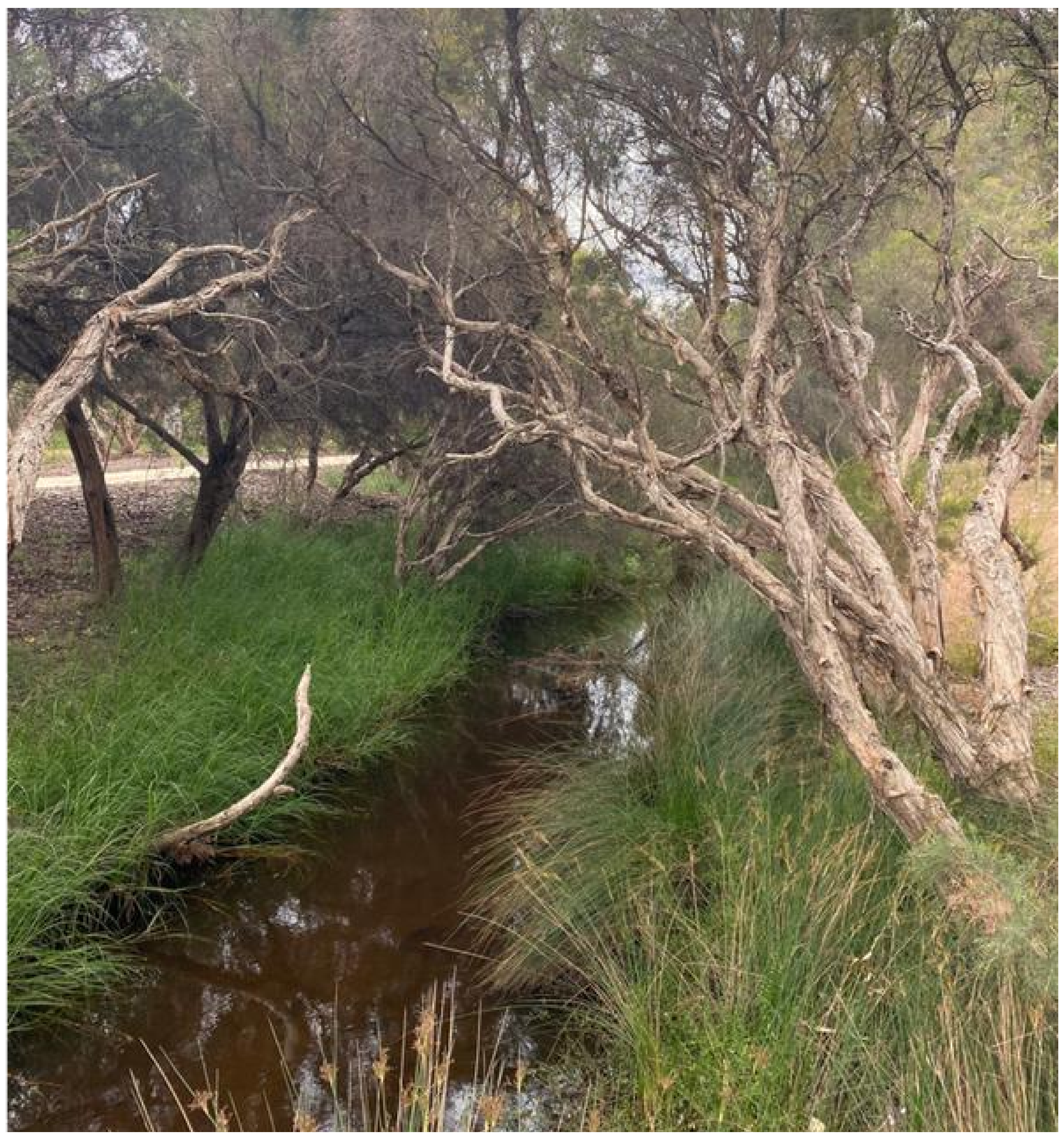
LIVING STREAM LITE
Practical Support Tool

PART 2 OF 2

PURPOSE

The following tool was developed in response to requests from local governments for permission to plant trees (only) in Water Corporation drainage areas.



This practical support tool, jointly developed by the Water Corporation and NatureLink Perth, provides the basic practical information required to implement Living Stream Lite tree planting projects in suitable Water Corporation assets.

For councils that see value in taking this opportunity to improve tree canopy for their local communities, this tool outlines the roles and responsibilities for the relevant parties, the design requirements, and provides the selection criteria to be used for identifying appropriate sites.

This tool may be used as a guide to support the implementation process, from approval through to maintenance, and should be paired with the Living Stream Lite: Information Support Tool document.

This program is provided to support the planting of Melaleuca rhaphiophylla (Noongar: Bibool Boorn, Yowarl, or Yiembak; or M. preissiana) species only. The tool refers to 'the tree/s' or 'tree planting' for ease of reading.

ORGANISATIONAL RESPONSIBILITIES

WATER CORPORATION TO:

- Review the prospective installation locations
- Consider APRA and CTW applications for approval
- Ensure any trees installed are not removed by WC, except where required for safety, asset operability, or fire management purposes
- Report all maintenance issues and intended tree removals to the relevant LG

LOCAL GOVERNMENT TO:

- Complete and submit APRA/CTW
- Develop a MOU covering the care and maintenance of any trees installed as part of this program over their lifespan
- Fund installation of all trees
- Ensure appropriate insurance and liability cover is in place for all trees
- Develop an appropriate inspection and maintenance program for the trees (expected to be equivalent to the council's verge tree programs)
- Ensure all fire and security matters are considered as part of the proposed location of tree planting.
- Provide safe working documents that cover the maintenance of trees installed, and working within the drainage corridor
- Remove all trees and tree matter at EOL (where tree is in senescence and is considered unsafe)

Note: It is recommended that the application be housed under a single agreement with the Water Corporation to encompass all prospective sites, rather than creating a new application for each individual site.

ACRONYMS

WC - Water Corporation
LG - Local Government
EOL - End of Life
APRA - Asset Protection Risk Assessment
CTW - Clearance to Work
MOU - Memorandum of Understanding
CPTED - Crime Prevention Through Environmental Design
DFES - Department of Fire and Emergency Services
DPLH - Department of Planning, Lands and Heritage

PLANTING PRINCIPLES

The following principles are designed to align with the Design Considerations in the Information Support Tool.

LOCATION

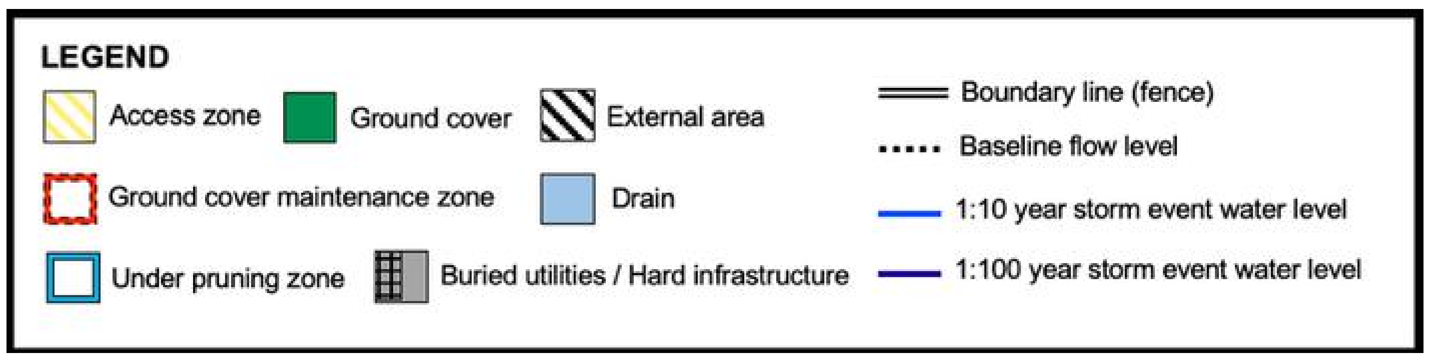
- Tree planting should be limited to a single side of the drain (the access-restricted side)
- Planting should not occur on any side where there is buried infrastructure (e.g., sewerage pipes)
- Tree planting should have a minimum setback of 15 metres from any underground WC infrastructure which may transect the site
- Tree planting should occur with a minimum 20 metre offset from any above ground WC hard infrastructure → including pipes, inlets, outlets, drop structures and bridges
- Trees should be planted above the 1:10 year storm event water level
- It is recommended that trees are planted above the 1:100 year storm event water level (noting that this flood event is the responsibility of the local government)
- Trees should be spaced at a minimum of 10 metre intervals
- Trees should be of an appropriate size when planted (e.g., >140mm pots, not tube stock) and should be clearly marked with guards and/or stakes as required during establishment

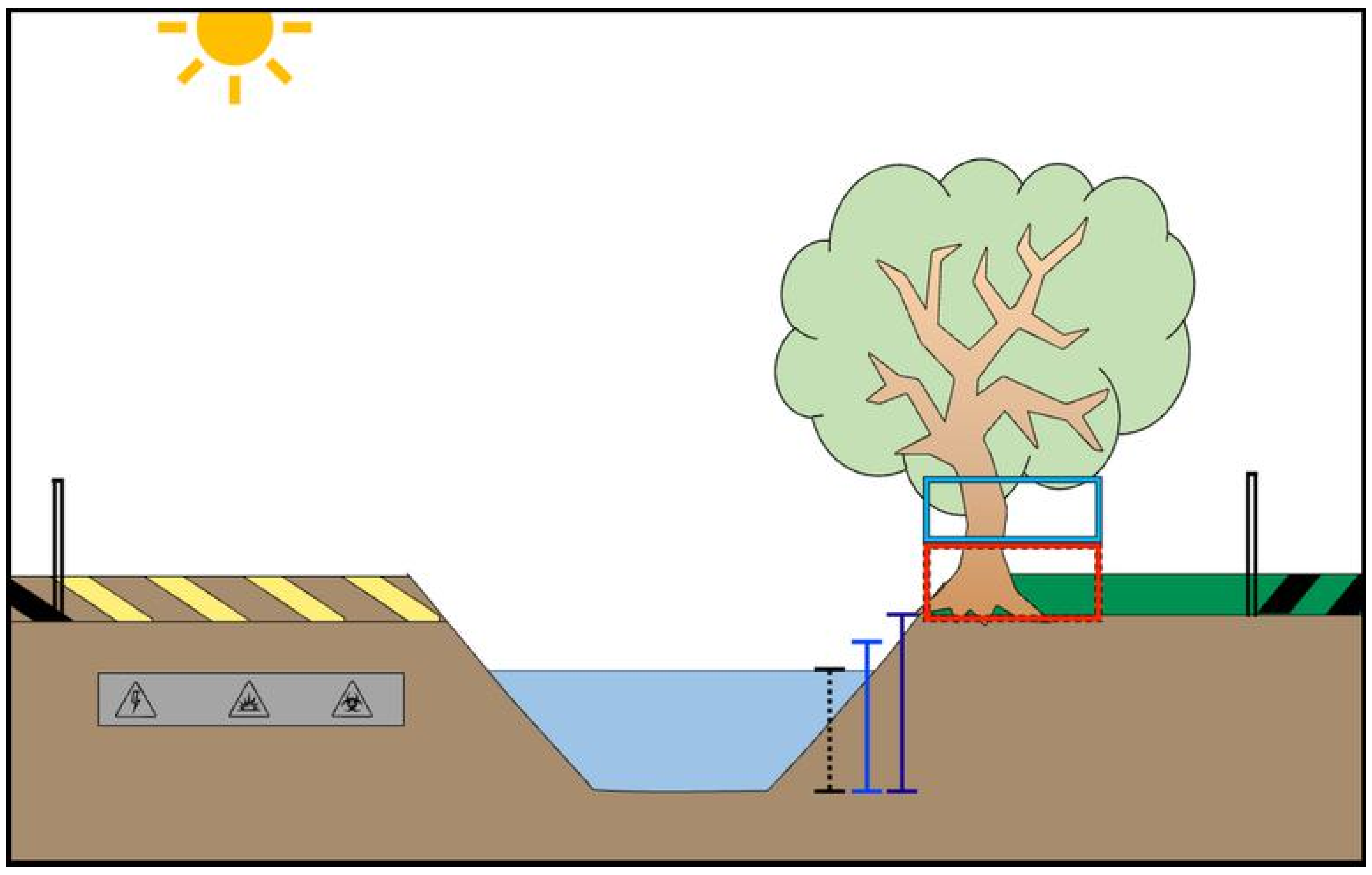
MAINTENANCE

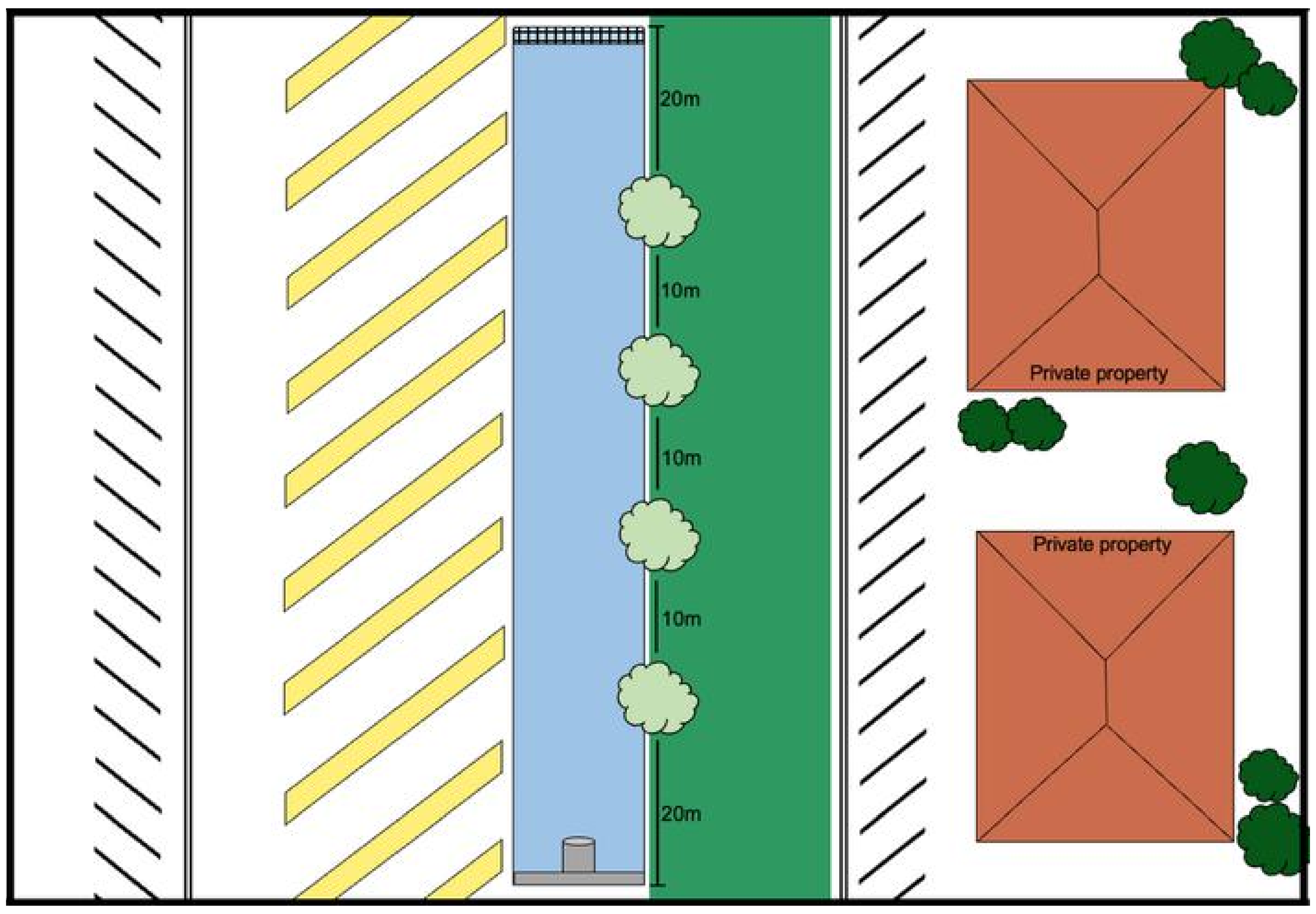
- Weed control around trunk base and beneath canopy should be carried out for the first three years after tree installation or until the tree has grown to 2 metres tall (whichever comes first)
- Tree pruning should be carried out as required, where branches block maintenance access or obstruct the waterway
- Tree pruning and maintenance must be undertaken within 5 days by the proponent if considered urgent and 30 days if considered non urgent
- Under pruning of trees should be carried out as required to maintain fire safety and CPTED standards (to remove ladder fuels and maintain visual permeability)

CONCEPTUAL DESIGN

Vertical cross-section view and aerial view of the Living Stream Lite design. These diagrams represent the design within a basic trapezoidal drain form. See Summary Report for representation of basin form design.







Note: Whilst the Water Corporation makes all reasonable attempts to retain trees, the proponent agrees that trees may be removed in future for Water Corporation asset works. This approach allows the Water Corporation to be less risk averse in approving planting locations.

SITE GRADING SYSTEM

SIMPLE

Drains that possess **no or few** elements of complexity, that require no additional planning or consideration. These drains can be considered directly suitable for this program.

MODERATE

Drains that possess **some** elements of complexity, and require some additional planning or consideration. These drains can be considered suitable for this program where additional issues are addressed.

COMPLEX

Drains that possess **many** elements of complexity, that require much additional planning and consideration. These drains would not be considered suitable for this program.

EXAMPLE SITES

SIMPLE

SIMPLE

LEGEND
B = Baseline flow level **1:10** = 1:10 year storm event water level **1:100** = 1:100 year storm event water level = Planting location

MODERATE

COMPLEX

Note: This tool does not replace the local government seeking advice from the Drainage for Liveability Team. The local government is still required to seek the following where applicable: ***1)*** *APRA,* ***2)*** *CTW approval,* ***3)*** *Land Agreement to use and access Water Corporation land,* ***4)*** *other local, state, or federal approvals as required by regulations and laws.*

Use of this tool assumes the local government is confident it has the capacity and capability to partner in the program.

CRITERIA

All primary criteria must be 'yes' to proceed.
The total number of criteria marked 'yes' (primary plus secondary) determines site grading:

Primary

YES	NO	Drain Function & Maintenance
☐	☐	There is a safe location to plant the tree above the 1:10 year modelled drain level at the prospective site. Note: the preference is to be above 1:100
☐	☐	There are no current sediment or hydraulic capacity challenges with the prospective drain.
☐	☐	Vehicle access through the prospective site can be maintained along one side of the drain following tree planting, and this access is clearly defined
☐	☐	The size and shape of the prospective site is such that pedestrian access can be maintained following tree planting
☐	☐	The prospective site is of sufficient width that tree planting can be carried out as per spacing guidelines to prevent infrastructure interaction

Secondary

YES	NO	Safety
☐	☐	The land of the prospective site is not categorised as bush fire prone (as per DFES map https://maps.slip.wa.gov.au/landgate/bushfireprone/)
☐	☐	There is no significant ground cover or understory vegetation present at the prospective site → **OR** if present, vegetation is well maintained
☐	☐	The prospective site is of sufficient size that tree planting can be carried out as per spacing guidelines to allow for CPTED requirements
		Land Agreements and Insurance Risk
☐	☐	The land of the prospective site is free hold or vested to the LG (note: Crown land requires >12 months processing time by the DPLH
		Community Engagement
☐	☐	To the satisfaction of the LG, tree planting is supported by the adjacent residents of the prospective site

GRADE	☐ 10 SIMPLE	☐ 6 - 9 MODERATE	☐ ≤ 5 COMPLEX