

Vegetation Survey Guideline

EHTM Attachment 4A

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Government of South Australia
Department for Infrastructure
and Transport

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Abbreviations

Term / Acronym	Meaning
AH Act	Aboriginal Heritage Act 1988 (SA)
DIT or the Department	Department for Infrastructure and Transport
EHIA	Environment and Heritage Impact Assessment
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EHTM	Environment and Heritage Technical Manual
FES Act	Fire and Emergency Services Act 2005
HVV	High Value Vegetation
LG Act	Local Government Act 1999
LSA Act	Landscape South Australia Act 2019
NVC	Native Vegetation Council
NV Act	Native Vegetation Act 1991
NV Regulations	Native Vegetation Regulations 2017
PDI Act	Planning, Development and Infrastructure Act 2016
SRZ	Structural Root Zone
TPZ	Tree Protection Zone
VIA	Vegetation Impact Assessment

Glossary

Term	Meaning
Contract Documentation	Contract Scope and Technical Requirements; Functional and Operational Requirements; Contract or Project Scope
Emergency Works	Emergency works are those required to rectify an immediate hazard to users of the transport infrastructure. Further details are provided within the Vegetation Impact Assessment Guideline
Landscape Board	Landscape South Australia Board under the LSA Act
Multi-Stemmed	Trees for which there are multiple stems at 1.0 m above the natural surface. Refer to Figure 1 and Figure 2 in Appendix A for visual definition.
Non-Frangible Plant	A plant with rigid, large or sturdy stems which will not readily break, bend or crash upon impact by a typical passenger vehicle, and which could be expected to inflict significant damage to the vehicle and possibly cause injury to vehicle occupants
Tree	A non-frangible plant with a stem diameter at maturity of 100mm or greater, measured at 1m above the natural ground level.
Shrub	A frangible plant not exceeding 3.5 m in height
Project Area	Area in which a project can have an effect on environmental and heritage aspects. Includes the construction, operational and maintenance footprints

1 Introduction

The Vegetation Survey Guideline (the Guideline) applies to a range of Department for Infrastructure and Transport (DIT, the Department) programs and projects including road, rail, marine and other infrastructure, as required.

The purpose of the Guideline is to identify the requirements of vegetation surveys undertaken to facilitate the Department's construction and maintenance projects/ programs. The Guideline applies to employees of the Department (direct or contracted) and others operating under the direction of the Department.

It is expected that, unless otherwise approved by the Department, Contractors undertaking vegetation surveys are suitably qualified professionals, listed on, or eligible to meet the requirements to be listed on, the Department's Professional and Technical Services Prequalification for Vegetation Services. Further, Contractors undertaking the survey of native vegetation must be accredited by the Native Vegetation Council (NVC).

The Vegetation Survey Guideline (the Guideline) forms Attachment 5A of the Department's Environment and Heritage Technical Manual (EHTM).

1.1 Supporting Documentation

The following Departmental documentation (at a minimum) support or form part of assessments undertaken under this Guideline and are available via the Department's website:

- Vegetation Impact Assessment Guideline
- Vegetation Survey Datasheet Template
- Vegetation Survey Report Template
- Vegetation Removal Request Form
- Environmental Weeds List
- Phytophthora (Dieback) Control Environmental Instruction
- Rail and Roadside Significant Sites Environmental Instruction and Site Assessment Form
- Restricted Clearance Roads List
- Herbicide Resistance Environmental Instruction

1.2 Performance Outcome

In order to meet the performance requirements under this Guideline, unless specified otherwise in the Contract Documentation, the following shall be achieved:

- Undertake a vegetation survey to collect and document data that broadly identifies all characteristics of the existing vegetation within the Project Area to adequately inform vegetation impact assessment and approval requirements.
- Preparation of a report which describes critical aspects of the project relating to vegetation.

1.3 Legislative Context

Users of this Guideline are responsible for complying with relevant legislation and obtaining relevant approvals, permits or authorisations (where required by the Contract Documentation).

The following legislation may apply to Departmental construction, demolition, operation and maintenance activities associated with transport and building (including property) related infrastructure:

- *Native Vegetation Act 1991* (NV Act) and Native Vegetation Regulations 2017 (NV Regulations)
- *Planning, Development and Infrastructure Act 2016* (PDI Act) and Planning, Development and Infrastructure (General) Regulations 2017
- *Landscape South Australia Act 2019* (LSA Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

- *Aboriginal Heritage Act 1988* (AH Act)
- *Fire and Emergency Services Act 2005* (FES Act)
- *Local Government Act 1999* (LG Act)
- *Highways Act 1926*
- *Rail Commissioner Act 2009*

2 Vegetation Survey Requirements

The need to complete a vegetation survey shall be informed by the activities proposed to be undertaken within the Project Area and would usually be determined during a preliminary Vegetation Impact Assessment (VIA) (as detailed in the Department’s Vegetation Impact Assessment Guideline – refer to Attachment 4B of the EHTM) in accordance with the process detailed in Figure 2-1.

A vegetation survey is required where vegetation is present within the Project Area and may be impacted by project works. The survey will inform a VIA which will determine options to avoid/minimise impacts to vegetation, the extent of vegetation that will be affected by project works (i.e. if vegetation will require pruning or removal to facilitate project works) and if approval is required prior to undertaking such activities.

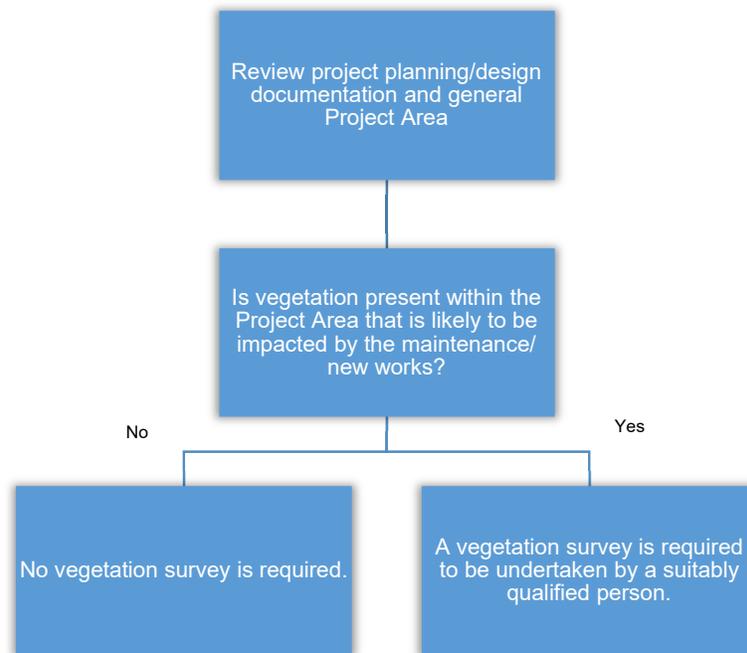


Figure 2-1 Process for Determining Level of Vegetation Survey Required

2.1 Undertaking a Vegetation Survey

Vegetation surveys are to be undertaken by suitably experienced persons in accordance with these Guidelines as well as guidelines specifically issued by a regulating body (for example, the Native Vegetation Council) for a particular vegetation type. All arborist assessments (to inform vegetation impact assessments) are to be undertaken in accordance with Australian Standard 4970-2009 *Protection of trees of development sites*.

2.1.1 Prior to On-ground Works

Prior to undertaking on-ground survey works, the following should be understood:

- the scope and/or design drawings for the proposed construction/maintenance works including the extents of ground disturbing works;
- the location of the project in relation to areas covered by the NV Act, PDI Act, etc;
- the extent of the project area to be surveyed i.e. the survey boundary. Commonly this will include a buffer surrounding the expected footprint of project works to limit the need to return to site following an amendment to the design (i.e. to survey additional nearby areas not previously captured) and to establish protection requirements for adjacent vegetation;
- background information on the types of vegetation to be expected within the Project Area. This may inform the timing of the survey if the lifecycle of a particular species must be targeted; and
- any site access requirements or restrictions.

2.1.2 During On Ground Works

Information recorded during a vegetation survey must satisfy the requirements of the Department's vegetation survey datasheet (refer to Section 2.2) as well as any data requirements prescribed by a regulating body.

Aside from when specified by a regulating body, the determination of whether vegetation should be surveyed as an individual tree or an area should consider the following:

Survey as an Individual Tree

- Where vegetation meets the definition of a tree. This includes dead trees.
- If the tree meets the size requirements for a regulated or significant tree (in accordance with the PDI Act) regardless of proximity to other vegetation.

Survey as an Area

- Where the vegetation does not meet the definition of a tree including saplings and shrubs; or
- Where vegetation meets the definition of a tree, however, the canopy of the trees are overlapping and there are multiple storeys of vegetation.
 - In metropolitan Adelaide and townships (e.g. Mount Barker, Hahndorf), individual trees within the area must be captured separately.
 - Outside metropolitan Adelaide, individual trees within an area must be captured separately if they are distinctly different in size (i.e. larger) or if they hold particular significance value (including habitat for listed species).

When surveying an area, an estimate of the number of trees or shrubs should be recorded (if possible/vegetation spacing allows). Declared plants/environmental weeds would generally be surveyed as an area unless there are trees that potentially provide amenity value.

During a vegetation survey, under no circumstances should paint or other visible methods be used to mark individual trees.

Photographs are required for all vegetation included within a survey to communicate data and to provide a visual record of the vegetation. The following is required:

- Photographs should be presented in a document and the following must be demonstrated:
 - Regardless of the vegetation type, photographs should be captured in accordance with Native Vegetation Council (NVC) assessment guidance for individual (i.e. scattered) trees and areas of vegetation;
 - Photographs (corresponding to vegetation identification numbers) are to be numbered sequentially, directly relating to the identification numbers shown on the corresponding datasheet(s);
 - The subject vegetation (tree and/ or area) being recorded on the Datasheet must be clearly identified in the photograph (including annotation, where required).

For all vegetation surveys, evidence of the presence and/or potential presence of fauna and/or fauna habitat (including hollows) is to be assessed. Additionally, the presence of scars or cultural modification should be noted.

With reference to the Department's Rail and Roadside Significant Sites Environmental Instruction, the vegetation surveyor should provide recommendation of whether the site should be entered into the Rail and Roadside Significant Site Database.

2.2 Vegetation Survey Datasheet

The Department has prepared a vegetation survey datasheet which must be utilised for the survey of all vegetation, except where a regulating body (for example, the Native Vegetation Council) has issued specific vegetation survey datasheets.

The Department's vegetation survey datasheet template as well as instructions for its use are available on the Department's website. This Guideline and associated datasheet have been developed to ensure that vegetation survey outputs:

- record and display the vegetation survey data;
- provide sufficient information to determine vegetation impact assessment and approval requirements; and
- provide geospatial information.

All photograph locations and directions should be noted in the Department's vegetation survey datasheet and/or the NVC datasheets in a remarks/comments column.

Tree reference numbers are to be consistent between the datasheet, reporting and design drawings.

2.3 Vegetation Survey Report Template

The Department has prepared a vegetation survey report template which can be utilised to report the survey of all vegetation types with the exception of those for which the respective regulator has its own preferred reporting format (i.e. NVC reporting templates for native vegetation subject to the NV Act). The Department's vegetation survey report template is available on the Department's website.

2.4 Survey Methods for Vegetation Types

This section details the types of vegetation that may be encountered during a vegetation survey. Vegetation removal approval processes and offset requirements vary for the different types of vegetation and level of impacts, hence, all vegetation encountered must be accurately categorised. For all vegetation types, evidence of the presence and/or potential presence of fauna and/or fauna habitat is to be reported in the vegetation survey report.

2.4.1 Native Vegetation Subject to the NV Act

Definition: Vegetation indigenous to South Australia that is located in an area covered by the NV Act and meets the definition of 'native vegetation' as defined in the NV Act which is subject to exclusions. See the NV Act for exclusions.

Where preparing a vegetation survey report which may eventually inform a native vegetation clearance application, survey and reporting works are required to be undertaken by Accredited Consultants, endorsed by the NVC.

Depending on the project location (Landscape Board) and type of vegetation present, the following vegetation survey and assessment methods may apply:

- Scattered Tree Assessment Method;
- Bushland Assessment Method;
- Rangeland Assessment Method;
- Marine Assessments

The minimum information required in a vegetation survey using the above methods is detailed in the respective assessment manuals developed by the NVC (July 2020, or as subsequently updated). The NVC have also developed field datasheets and the use of these is mandatory for native vegetation assessments. It should be noted that at times, an additional measurement of the diameter just above the buttress (or at stem taper) may be required, for instance to quantify whether there will be impacts within the Structural

Root Zone (SRZ) or the Tree Protection Zone (TPZ) as determined in accordance with AS 4970. An example of this is where guard rail or shoulder sealing works are proposed and post hole boring or excavation may impact roots. This information should be recorded in the Department's vegetation survey datasheet or in the vegetation survey report.

2.4.2 Native Vegetation Not Subject to the NV Act

Definition: Vegetation indigenous to South Australia which is located in an area not covered by the NV Act or which is located in an area covered by the NV Act but is excluded from the definition of 'native vegetation' as defined in the NV Act. See the NV Act for exclusions.

Vegetation survey data is to be recorded in the Department's vegetation survey datasheet.

2.4.3 Regulated & Significant Trees Subject to the PDI Act

*Definition: A tree(s) located in an area covered by the PDI Act **and** which meets the requirements of the PDI Act and/ or Planning & Design Code which is subject to exemptions. Refer to the PDI Act and the Department's Vegetation Impact Assessment Guideline for exemptions.*

Additional information recorded to address requirements of the PDI Act should be detailed in the datasheet or vegetation survey report (wherever is more suitable). The following must be recorded for regulated or significant trees:

- An actual measurement in metres (not estimated or converted from the butt diameter except where access is hazardous or unavailable) must be obtained. Measurements of circumference must be recorded at the following points on the tree:
 - At 1m above natural surface;
 - At the point just above the buttress or stem taper; and
 - At 1.4m above natural surface.

Where the tree is multi-stemmed, the number of stems, the measured circumference of each stem in metres, and the average stem size, is required.

- SRZ and TPZ for all regulated and significant trees shall be recorded in the datasheet and annotated on plans.

If the tree is considered 'exempt' the supporting rationale must be stated in the Department's vegetation survey datasheet (and associated reporting).

2.4.4 Amenity Vegetation

Definition: Vegetation that, by virtue of its size and/or aesthetic qualities, provides amenity. Amenity vegetation does not include native vegetation as defined by the NV Act or declared plants or environmental weeds with the exception of those that are planted and/or have amenity value. Amenity vegetation is usually planted, but may include self-sown plants if they have high amenity value.

Vegetation survey data is to be recorded in the Department's vegetation survey datasheet.

2.4.5 Declared Plants and Environmental Weeds (including Self-Seeded Plants)

Definition: Vegetation is considered to be a declared plant or environmental weed if it satisfies any of the following:

- is listed as a "declared" plant under the LSA Act 2019;
- is listed as an environmental weed under the DIT Environmental Weed List; and/ or
- is self-seeded (excluding indigenous vegetation) and is not of high amenity value.

Vegetation survey data is to be recorded in the Department's vegetation survey datasheet.

2.5 High Value Vegetation

High Value Vegetation (HVV) is considered to be:

- Vegetation covered under the NV Act;
- Regulated or significant tree under the PDI Act (including those that may be exempt from Development Approval);
- Native and non-native vegetation located in and on the margins of waterways;
- Vegetation covered by any other environmental/ heritage legislation;
- Railside or Roadside Significant Sites;
- Vegetation that is located on third party land (i.e. land not owned by the Department); and/ or
- Any other vegetation that may be identified by the Department or the community as providing localised amenity or ecological value.

The information gathered as part of the vegetation survey will inform consideration of HVV during future project phases including options assessments, design and eventually construction activities.

2.6 Phytophthora Risk Assessment

Phytophthora is a parasitic pathogen that lives in soil and water and attacks the roots and basal stems of plants. As part of the vegetation survey, an assessment of the Phytophthora risk in accordance with the Department's Phytophthora (Dieback) Control Environmental Instruction is required. The following general process applies:

- determine the threat risk area and assess the Phytophthora risk of the survey site;
- discussion of the likelihood of Phytophthora being present within the survey site and make comment on the condition of any indicator species present; and
- indicate whether hygiene procedures will be required and the need for specific testing within the site.

The outcomes of the risk assessment and recommended level of management should be detailed in the vegetation survey report and the Environment and Heritage Impact Assessment (EHIA) Report for the project.

2.7 Hazardous Vegetation

When vegetation within, adjacent or overhanging the road corridor, infrastructure or the public realm presents a hazard, a judgment must be made by the vegetation surveyor as to whether it poses an immediate or potential danger to life and property. Vegetation may pose a hazard when it has been damaged, is structurally unsound, is diseased or is likely to fall.

Vegetation may pose an immediate hazard if the following applies, or is highly likely to apply within the next 6 months:

- there is an immediate danger that a tree or limb will fall because of disease, wind damage or any other cause; and
- there is a real risk of personal injury or damage to property if that occurs; and
- the state of the tree has been assessed by a person with expertise in the area of plant health, or by any other person acting in an emergency situation or in any other situation that gives rise to an immediate risk of personal injury or damage to property.

Upon a preliminary assessment of the potential hazard, if the vegetation surveyor does not hold the required qualifications to make a full assessment of the hazard, a recommendation to engage a qualified arborist/tree health specialist is to be made.

Vegetation outside this definition may be considered a potential hazard, if any part of it is structurally unsound and may fall onto the road/walkway or shared use path.

Any potentially hazardous vegetation recommended for removal or pruning must:

- be individually recorded according to Maintenance Marker/Road Running Distance, and/or Global Positioning System location coordinates;
- have a corresponding photograph; and,

- state one or more of the criteria against which removal/ pruning has been recommended.

2.8 Vegetation Impact Assessment (VIA)

The purpose of a vegetation survey is to inform a vegetation impact assessment for a required scope of works. All vegetation impact assessments are to be undertaken in accordance with the Department's Vegetation Impact Assessment Guideline. Commonly a preliminary VIA would be undertaken based on an early iteration of design followed by a more detailed VIA when the project design has progressed to a level generally reflective of final construction impacts. The impact assessment would require input from the Department's Project Manager, the project design and/or construction team as well as a qualified arborist/ tree health specialist where care of remaining vegetation is required and/or if the vegetation surveyor (or other professional undertaken assessment) has insufficient qualification to determine the potential impact to vegetation.

3 Reporting

Unless specified as otherwise in the Contract Documentation or required by the regulating authorities, the following reporting is required when undertaking a vegetation survey. Completed reporting shall be provided to the Principal for review and acceptance by the Department's Technical Services Environment Unit and Independent Design Certifier (where specified in Contract Documentation).

Vegetation Survey Documents

The vegetation surveyor is required to prepare a report that outlines the methodology and findings of the vegetation survey. The Department provides a vegetation survey report template which can be utilised for all vegetation types except where the respective regulator has its own preferred reporting format (i.e. NVC reporting templates for native vegetation subject to the NV Act).

The report shall contain the following information as a minimum:

- A completed Vegetation survey datasheet (refer to Appendix A) and/or the NVC's Scattered Tree, Bushland or Rangeland Datasheet(s)/ Scoresheet(s) (as required).
- Photographs providing a visual record of the vegetation. All photographs are to be numbered sequentially, logically, and with minimum sub-numbering, and correspond with numbers shown on the Datasheet(s) and plan(s);
- Plans and/or aerial imagery and shapefiles showing numbered vegetation corresponding with the datasheet(s) and photographs;
- General site and project information including the location or project area, local government area , Landscape Board region and a general description of the vegetation (in terms of category, plant communities present, condition);
- A summary of relevant legislation;
- A summary of any High Value Vegetation identified;
- A summary of declared plants/weeds present;
- A phytophthora risk assessment in accordance with Phytophthora (Dieback) Control Environmental Instruction;
- A summary of the ecological value of the vegetation in terms of conservation status and wildlife value (i.e. presence of hollows, fauna corridors, significant fauna habitat);
- A summary of any historical or landscape value of the vegetation;
- A summary of any hazards posed by the vegetation; and
- The vegetation impact assessment (VIA), undertaken in accordance with Department's Vegetation Impact Assessment Guideline. It should identify the magnitude of vegetation impact and the associated approvals required, as well as indicative timeframes for obtaining approvals.

Further detail on the requirements for a vegetation impact assessment are provided in the Department's Vegetation Impact Assessment Guideline and are not repeated here.

AND

Notification of Hazardous Vegetation

Should the vegetation surveyor identify vegetation that poses an immediate hazard (refer to Section 2.6 for further details) the Principal must be notified as soon as possible. The notification must include information relating to the location of the vegetation, the nature of the hazard and the recommended treatment.

Appendix A – Vegetation Survey Datasheet Instructions

The vegetation surveyor shall prepare a worksheet that records relevant information; facilitates a summary of the findings of the site investigation; and informs impact assessment and removal approval applications. The datasheet is a suite of worksheets in Microsoft Excel format contained in a single template file and has been developed to:

- record and display the vegetation survey data;
- provide vegetation impact information;
- provide approval and offset information; and
- provide GIS information.

The vegetation surveyor may use the Departmental workbook, or provide an alternative (subject to approval by the Principal). Where native vegetation subject to the NV Act is present, the field and datasheets administered by NVC are to be utilised for such vegetation.

A description of each worksheet and its use is below.

Worksheet Tab 1 – “Guide”

This worksheet briefly describes each of the other worksheets and their uses. It also contains link (“buttons”) to each worksheet.

	A	B	C	D	E	F	G	H	I	J	K
1	VEGETATION SURVEY DATASHEET FOR AMENITY VEGETATION, REGULATED/ SIGNIFICANT TREES AND WEEDS/ DECLARED PLANTS										
2	<i>Note that this vegetation survey datasheet and impact assessment process can be used for native vegetation that is not subject to the Native Vegetation Act only. For native vegetation that is subject to the Native Vegetation Act, datasheets and impact assessment processes administered by the Native Vegetation Council must be utilised.</i>										
3											
4	Use the buttons below to take you directly to the spread sheet you require. Note if the spread sheets are blank, then the Vegetation Survey Data Sheet ("Main" tab) may not have been "run". Go to the Vegetation Survey Data Sheet and activated the "Create Impacts Table" button (top left corner). If the spread sheets are still blank then the impact information on the Vegetation Survey Data Sheet has not been completed.										
5											
6	Vegetation Survey Data Sheet		Data sheet containing all information collected during the field inspection and includes impacts and recommendations. The Impacts Table is automated based on inputs in this sheet. Significant manual input is required. (Tab or Sheet name "Main")								
7											
8											
9											
10											
11	Impacts Table		Automatically created Impacts Table individually listing all impacts including amenity vegetation, regulated/ significant trees and weeds/ declared plants. Also shows Offset amounts and trees recommended for including in the Department's Monitoring Program. Minimal manual input is required. (Tab or Sheet "Impact")								
12											
13											
14											
15											
16	GIS Data		If required, a format free export of the entire vegetation survey (information from the Vegetation Survey Data Sheet) which makes for an easier data transfer into GIS. (Tab or Sheet name "GIS Dump")								
17											
18											
19											

Worksheet Descriptions

Short-cut Buttons to various Worksheets

Worksheet Tab 2 – “Main Datasheet”

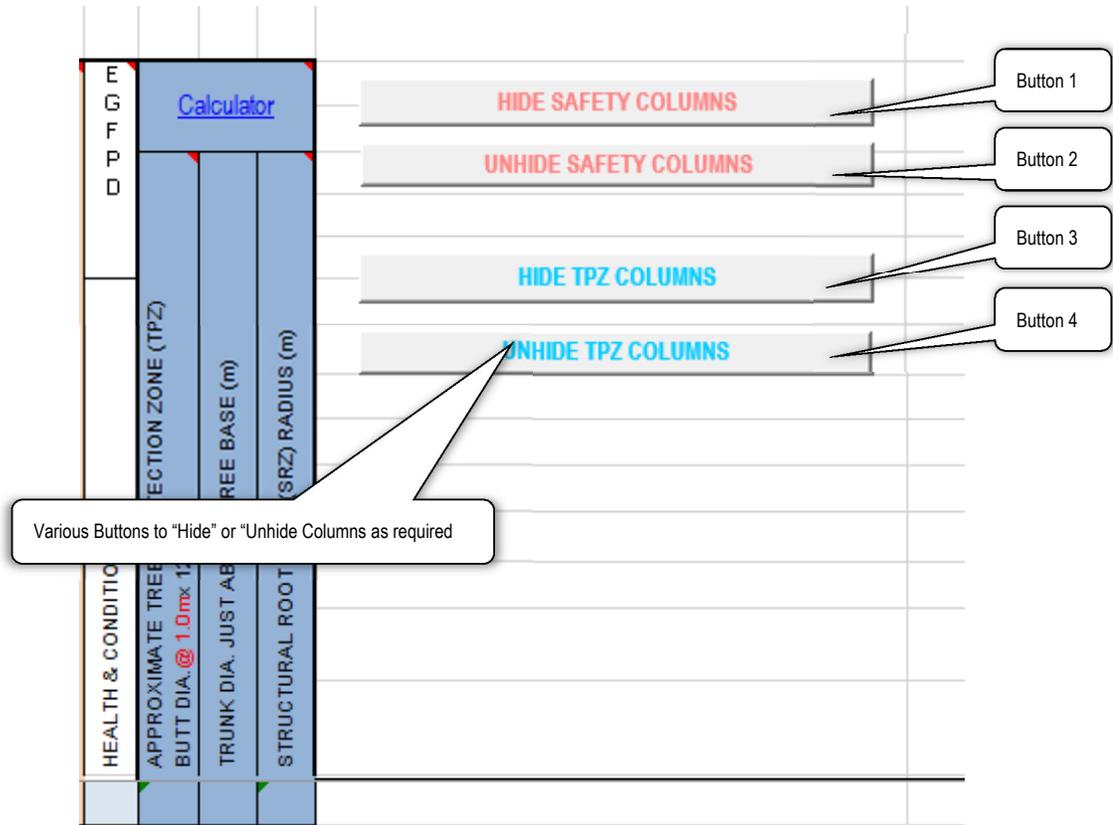
This worksheet tab is the primary input sheet and is generally known as the “Datasheet”. When completed it will contain all data collected during the field inspection, including assessed impact and approval information for individual entries and other information. Most of the automated inputs on other worksheets originate from this sheet. Significant manual input is required.

Operating Tips

- If, after population of the main worksheet, other sheets are blank, then the vegetation survey datasheet may not have been ‘run’. Go to the ‘main’ tab and activate the ‘create impacts table’ button. Note that when the ‘create impact table’ is run, all information in the existing impact table will be overwritten.
- For projects including shoulder sealing, guard rail installations, clear zones, sight line clearances or are associated with public safety, ensure that the Safety Projects columns (columns G to L, inclusive) are visible and populated.
- **Beware!** - There are many “hidden” columns and rows, which are an integral part of the “running” of this workbook. Care should be taken not to inadvertently delete any of these columns or rows.
- Cells which show a small green triangle in the top left corner contain formulas. Do not over-write. If inadvertently over-written copy/paste formula from another cell in the same column.
- Always try to use the “Insert Row” button at the top left of the sheet to insert rows onto the bottom of the sheet. Rows can be inserted well ahead of your input. If a row(s) needs to be inserted elsewhere, use the normal Excel “insert row” then copy/paste an entire row which is known to contain the formulas.
- Some “on screen” comments are available (indicated by a small red triangle in the top right corner) and can be accessed by passing the mouse over the relevant cell. See following example.

		A	B	C	D	E	F														
		N; D; E; O; M	Y N	Y N	Y N	Y N															
		Total Number of Individuals Surveyed																			
		0	0																		
EASTING																					
NORTHING																					
NUMBER IN GROUP SATISFYING DEFINITION OF TREE																					
WEED SPECIES & OTHERS (N; D; E; O; M)																					
AMENITY PLANTING OR HAS AMENITY VALUE																					
NATIVE VEGETATION NOT SUBJECT TO MV ACT																					
NATIVE VEGETATION SUBJECT TO																					
SUBJECT TO PDI ACT																					
REGULATED (R) OR SIGNIFICANT TH																					
BUTT DIA (M) IN GROUP AND/OR MS																					
INSERT HIGHEST RANGE READING																					
BUTT DIA (M). ONLY USE THIS COLL																					
SITUATION INSER LOWEST RANGE																					
CIRCUMFERENCE (M) DEVELOPMEN																					
HEIGHT (m) - InGROUP situations inse																					
HEIGHT (m) - InGROUP situations inse																					
SPREAD (m) - InGROUP situations inse																					
SPREAD (m) - InGROUP situations inse																					
HEALTH & CONDITION *																					

Refer to definition in Vegetation Survey Guideline/ Vegetation Impact Assessment Guideline.
 Note: if weed species and others with amenity values are included here, select "N" for previous column.



- Buttons are also provided in the top right of the sheet which allows certain columns to be hidden/unhidden. Use these buttons to modify the appearance of the Datasheet to suit the information being provided for a particular survey. A description of each button is as follows:

Button	Button Description
1	<u>Hide Safety Columns</u> <i>Refers to columns "G" to "L" inclusive. Use this button to "hide" the safety columns if you are not undertaking a safety type survey.</i>
2	<u>Unhide Safety Columns</u> <i>Refers to columns "G" to "L" inclusive. Use this button to "unhide" the safety columns if hidden and required.</i>
3	<u>Hide TPZ & SRZ Columns</u> <i>Refers to columns "BD" to "BF" inclusive. Use this button to "hide" these columns if not relevant to the survey.</i>
4	<u>Unhide TPZ & SRZ Columns</u> <i>Refers to columns "BD" to "BF" inclusive. Use this button to "unhide" the TPZ & SRZ columns if hidden and required.</i>

The image shows a spreadsheet interface with three main tabs: 'CREATE IMPACT TABLE', 'INSERT ROW', and 'CREATE GIS DATA'. The 'CREATE IMPACT TABLE' tab is active. Callouts point to various fields: 'Excel column ID' points to the top row; 'Insert Vegetation Survey Number' points to the 'VS 2021/ ###' field; 'Insert DIT file number if provided' points to the 'File No : 2021/' field; 'Check relevant boxes' points to the 'PLANNING, DEVELOPMENT AND INFRASTRUCTURE ACT 2016?' and 'NATIVE VEGETATION ACT 1991?' sections; 'Insert information provided' points to the 'Project Name', 'Road Number', 'Location', 'Surveyed By', and 'Date' fields; and a larger callout points to the 'LOCAL GOVERNMENT AREA(S) (LGA)' section, stating: 'Allocate a Local Government Area(s) to each number. May be more than one Council Note not all numbers need to be used. If outside council areas write "Out of Council" next to number "1".'

- Add information to the following columns if relevant to the survey. Note the completion of some columns is compulsory for the successful running of the worksheets. The table below lists each column by Excel column ID (refer image above) and describes the information required to be entered.

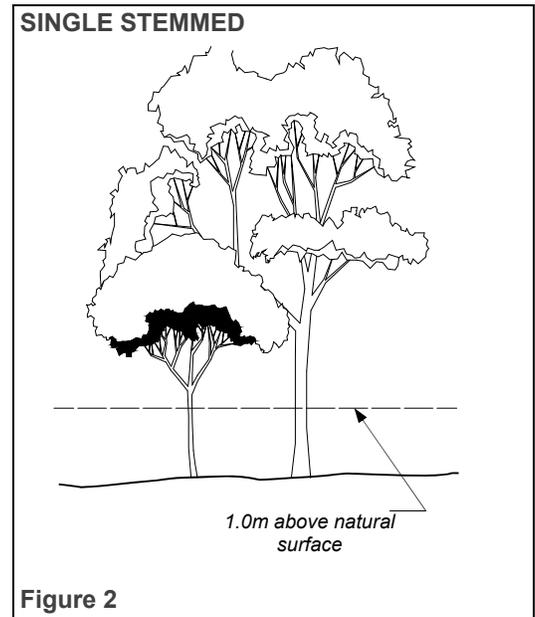
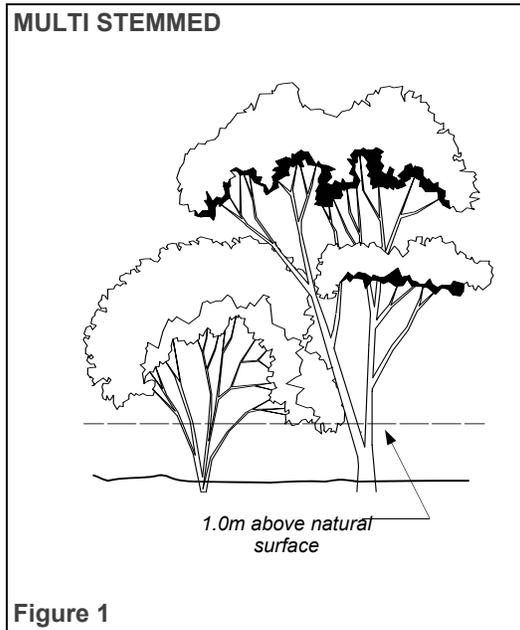
Column	Column Input Description
A	LGA (Allocated Number) – Compulsory Input Column - If outside council areas, insert "1". Insert the "allocated" Local Government number as per cell F8
B	Plan Reference - Compulsory Input Column Insert the Plan Reference (either photo number or chainage). The Plan Reference is normally the same as the photographic reference number.
C	Photo Reference - Compulsory Input Column Refers to the numbers allocated to photographs. This should also correspond with the numbers shown on any plans (see above). This unique number is used for specific identification and location on site, and for identifying impacted vegetation for approvals. Numbers should be allocated in a logical manner; sequential, avoiding subservient numbering/lettering. Note - if, for whatever reason, the field work was undertaken more randomly (i.e. return visits) then the numbering for data entry, photos and plans may need to be redone.
D	RRD or MM Location - Compulsory Input Column Insert either the Maintenance Marker Location (MM) or Road Running Distance (RRD) MM or RRD are generally used when plans are not available. At least 2 decimal points should be provided for a MM reference.
E	Species or Group/Area Description - Compulsory Input Column Describe one of the following: <ul style="list-style-type: none"> • if a general photo – give a general vegetation description; photo direction etc • if information pertains to an individual tree/shrub or group of trees/shrubs – give species using correct botanical nomenclature: <ul style="list-style-type: none"> ○ Native vegetation (subject to NVA) species identification should be to sub species ○ Amenity vegetation, where known or easily identified, should be to species, else genus ○ Regulated/ Significant trees should be to species ○ Weeds and others, where known or easily identified, should be to sub species, else species ○ Native vegetation (not subject to NVA), where known or easily identified, should be to species, If a group photo is taken and a mix of vegetation is being reported then a separate line will be required for each vegetation type/species

Column	Column Input Description
F	<p>Remarks/Notes and Description of Impact or Recommendation</p> <p>Can be used to;</p> <ul style="list-style-type: none"> provide details of the potential impacts/ recommendations i.e. prune canopy back to boundary line or whole tree removal or root impacts to be assessed during construction expand the species list (i.e. include understorey species, or general comments on weed species) make comment on the condition of individual trees and/or areas of vegetation/plant associations etc provide required information for multi-stemmed regulated/ significant DAC trees any other relevant information
G	<p>Clearance Envelope</p> <p>A validated cell with a drop-down selection of either "S" for Standard or "R" for Restricted. Clearance envelope information can be found in the Vegetation Impact Assessment Guideline.</p>
H	<p>Side of Road – for clearance envelope and safety surveys</p> <p>A validated cell with a drop-down selection of either "L" for Left or "R" for Right. The side of the road/rail is left or right according to increasing maintenance markers. Note not always required if not on a roadside</p>
I	<p>Width of the Travelled way – for clearance envelope and safety surveys</p> <p>Width (m) of the pavement edgeline to edgeline or edge of seal if no edgeline is present.</p>
J	<p>Distance – Centreline to Edgeline/Edge of Seal – for clearance envelope and safety surveys</p> <p>Distance (m) to edgeline or edge of seal if no edgeline is present</p>
K	<p>Distance of Tree from the Edgeline/Edge of Seal – for clearance envelope and safety surveys?</p> <p>Distance (m) from the closest point to the road of the tree trunk to edgeline or edge of seal if no edgeline is present. Highlight cell if tree trunk is located behind guard railing</p>
L	<p>Clearance @ Edgeline OR Edge of Envelope for clearance envelope and safety surveys?</p> <p>Vertical measurement at edgeline or Edge of Clearance Envelope</p>
M-P	<p>Impact or Recommended Action - Compulsory Input Column once impacts are known</p> <p>To be completed when project impacts are known – To enter a "tick" enter a capital "P"</p> <p>Refer to the Department's Vegetation Impact Assessment Guideline for more information.</p>
Q	<p>Off-set is Negated - Compulsory Input Column once impacts are known</p> <p>A validated cell with a drop-down selection of either "Y for Yes or "N" for No. Usual input "N" – for exceptions refer to Vegetation Impact Assessment Guideline.</p>
R	<p>Area reporting selected in lieu of individual reporting - Compulsory Input Column once impacts are known</p> <p>A validated cell with a drop-down selection of either "Y for Yes or "N" for No. Annotate "Y" if an 'area' assessment method is used. For further information see attached "Main" sample.</p>
S	<p>Area Of Vegetation To Be Removed (m²)</p> <p>Complete if reporting an area of vegetation and Y is ticked in column T</p>
T	<p>Easting</p> <p>Insert GPS reading. GPS (Geographical Positioning System) to be used is WGS84</p>
U	<p>Northing</p> <p>Insert GPS reading. GPS (Geographical Positioning System) to be used is WGS84</p>
V	<p>Number in Group Satisfying Definition of Tree</p> <p>Is the number of specimens being reported on within a particular photo. Often this number is '1', but will vary when a group photo is used. As an example, a group photo of 5 trees is taken. The number in this column will be 5.</p> <p>Refer to the definition of a tree in this guideline and in the Vegetation Impact Assessment Guideline.</p>
W-AO	<p>Are Hidden Columns containing automatic formulas and are required for the successful "running" of the various worksheets.</p>
AP	<p>WEED SPECIES & OTHERS (N; D; E; O) - Compulsory Input Column</p> <p>A validated cell with a drop-down selection of the following :</p> <ul style="list-style-type: none"> N – NO – None of the following D - Declared Plant E - Environmental weed - refer to the Department's Environmental Weeds List O – Other - Self seeded plants (excluding indigenous vegetation) M - (Mixed - A range of above)]
AQ	<p>Amenity Planting or has Amenity Value - Compulsory Input Column</p> <p>A validated cell with a drop-down selection of either "Y for Yes or "N" for No.</p> <p>Refer to definition in this guideline. Note: if included here select "N" for previous column (AP).</p>

Column	Column Input Description
AR	Native Vegetation Not Subject to the Native Vegetation Act - Compulsory Input Column A validated cell with a drop-down selection of either "Y for Yes or "N" for No Refer to definition in this guideline. Note: if included here select "N" for previous column (AQ).
AS	Native Vegetation Subject to the Native Vegetation Act - Compulsory Input Column A validated cell with a drop-down selection of either "Y for Yes or "N" for No Refer to definition in this guideline. Note if "Y" selected, alternative assessment utilising documentation administered by NVC is required.
AT	Subject to PDI Act- Compulsory Input Column A validated cell with a drop-down selection of either "Y for Yes or "N" for No. Refer to definition in this guideline.
AU	Regulated (R) or Significant Tree (S) Only complete if tree is subject to the PDI Act and meets Regulated/Significant criteria A validated cell with a drop-down selection of either "R" for Regulated or "S" for Significant.
AV	Buttress Diameter (m) - (in MS situations insert HIGHEST range reading – refer to Figure 1 and 2) Diameter to be measured at 1m above natural ground level. Insert butt diameter in metres. In multi-stemmed (MS) situations insert largest buttress diameter (eg if the range of butt diameters in a group and/or for a multi-stemmed specimen is between 0.05m and 0.20m insert the number '0.20')
AW	Buttress diameter (m) - (in MS situations insert LOWEST range reading – refer to Figure 1 and 2) Diameter to be measured at 1m above natural ground level. Insert butt diameter in metres. Only use this column in a multi-stemmed (MS) situation insert smallest buttress diameter
AX	Circumference (m) PDI Act Requirement Only This column is specifically related to trees covered by the Development Act. Insert the trunk circumference measurement (metres). A physical measurement (not estimated or converted from the butt dia. measurement) of circumference of the trunk at 1m above natural surface is required. Where the tree is multi-stemmed (refer to Figure 1 and 2) the number of stems, the measured circumference of each stem and the average stem size is to be provided in the Remarks Column (Column F). The total of stems circumferences should be recorded in Column BM
AY	Height (m) Height of the specimen can be measured by various means but the accuracy shall be + 10%.
BA	Spread (m) Spread of the specimen can be measured by various means but the accuracy shall be + 10%.
BC	Heath & Condition Insert one or a combination of the following: E – Excellent G – Good F – Fair P – Poor D - Dead Some of the things to considered when assessing health and condition : * Structural stability (excluding hollows), * Form and structure * Growth patterns atypical * Nutrient deficiency * Suppression by other vegetation * Disease and/or insect attack * Heavy scarring and/or damage * Arboriculture work required. * Vigour, age and ULE (useful life expectancy) * Any other observations
BD	Approximate Tree Protection Zone (TPZ) – Butt Diameter @ 1.0m x 12 <i>Automatic Input Column – Do not over write</i> Approximate measurement is based on 1m instead of 1.4m (breast height- standard). This is done to reduce data collection requirements on site. Consequently the approximate TPZ shown here will normally be slightly larger than an accurate calculation.
BE	Trunk Diameter Just Above Stem Taper/ Buttress (m) Insert measurement

Column	Column Input Description
BF	Approximate Structure Root Zone (SRZ) <i>Automatic Input Column – Do not over write</i>
BG	<i>Are Hidden Columns containing automatic formulas and are required for the successful “running” of the various worksheets.</i>

Definitions



Worksheet Tab 3 – “Impact”

Automatically created table individually listing all impacts to amenity vegetation, native vegetation not subject to the NV Act, regulated/ significant trees and declared plants/ weeds. This table is populated when the impacts are completed on “Main” and the “Create Impacts Table” button is activated (top left corner of “Main”). Also shows approvals, offset amounts and trees recommended for Monitoring. Minimal manual input is required.

Operating Tips

- Only the cells highlighted in yellow, are manual input to be completed (if required).
- Note, if discrepancies are observed, go back to ‘main’ sheet, unhide columns AB to BB, check all cells have a figure and a green triangle. If not, copy from a complete row and insert into blank row, then run ‘create impacts table’ button again.
- The output from this table should directly inform the vegetation removal request form.

	B	C	D	E	Q	R	S	V	AP	AQ	AR	AS	AT	AU	BG	BH	BI	BJ	BK	BL	BM	
1	Department for Infrastructure and Transport				Y	N			VEGETATION CATEGORY					APPROVALS		OFFSETS						
2	Transport Planning and Program Development								N, D, E, C, M	Y	N	Y	N	Y				PDI Act	Amenity - non native veg and weeds/ declared plants with amenity value		Amenity - Native veg. not covered by NVA	
3	VS 2021/ ###																					
6	IMPACT TABLE																					
8	PLAN REFERENCE OR MM LOCATION	PHOTO REFERENCE	Project Name:		OFFSET IS NEGATED - REFER TO VEGETATION IMPACT ASSESSMENT AREA REPORTING SELECTED IN LIEU OF INDIVIDUAL REPORTING	Y	N	AREA OF VEGETATION TO BE REMOVED (m ²)	NUMBER IN GROUP SATISFYING DEFINITION OF TREE	WEED SPECIES & OTHERS (N, D, E, C, M)	AMENITY PLANTING OR HAS AMENITY VALUE	NATIVE VEGETATION (NOT SUBJECT TO NV ACT)	NATIVE VEGETATION SUBJECT TO NV ACT	SUBJECT TO PDI ACT	REGULATED (R) OR SIGNIFICANT TREES (S)	PDI ACT	DIT Vegetation Impact Assessment Guideline (Y= YES for area)	NUMBER	AREA (m ²) 1:1	NUMBER 1:1	AREA (m ²) 2:1	NUMBER 2:1
Road Number :																						
Location :																						
Date of Vegetation Impact Assessment: ## / ## / 2021																						
29			REMOVALS																			
30																						
31																						
32			MAJOR PRUNING																			
33																						
34																						
35			MINOR PRUNING																			
36																						
37																						
38			ADD TO MONITORING PROGRAM																			
39																						
40																						

Worksheet Tab 4 – “GIS Data”

If required, a format free export of the entire vegetation survey (information from the Vegetation Survey Data Sheet) which makes for an easier data transfer into GIS. This sheet is populated by activating the “Create GIS DATA” button located in the top left corner of the “Main” spreadsheet. No manual input is required.