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C4 Land Management

A. Background

Need for Land Management

Land degradation and the associated loss of agricultural potential has been a serious problem since the advent of European settlement. Land degradation is not restricted to the rural environment. Urban environments also suffer from introduced weeds, erosion and contamination of soil and water, including pollution from run-off. As the population expands, pressure on land from urban development intensifies and the agricultural industry increasingly must use marginal lands, thereby increasing the threat of significant land degradation.

Key Issues

Some of the key issues associated with land management in the Penrith Local Government Area (LGA) include:

- a) Impacts of changing the natural landform through excavation and filling;
- b) Erosion and sedimentation;
- c) Salinity;
- d) Contamination of land;
- e) Landfill and leaching of contaminants;
- f) Land rehabilitation;
- g) Sustainable land use practices, including sustainable farm management;
- h) Native vegetation cover, especially near watercourses;
- i) Appropriate intensities of agricultural land uses; and
- j) Balancing land for rural and urban development.

Benefits of Sustainable Land Use

Sustainable land use is about taking a holistic approach to managing our natural resources based on ecological, social and economic considerations. It requires, among other things, integrating land, water, vegetation and biodiversity management so land uses can occur without damaging ecological processes or reducing biodiversity over the long term. Sustainable land use practices can improve profitability, maintain the productive capacity of land and improve the capacity of land to cope with severe climatic conditions, while maintaining or enhancing the natural resource base.

B. General Objectives

- a) To promote sustainable land use practices for all land use types;
- b) To minimise land degradation in the Penrith LGA and promote restoration of degraded lands;
- c) To control erosion, sedimentation and dust to maintain soil and water quality and protect amenity;

- d) To minimise land contamination through inappropriate landfill or pollution of land and maximise remediation of contaminated land; and
- e) To reduce the likelihood of salinity and its impact on land and development.

C. Other Relevant Sections of this DCP

This DCP is a multi-layered document that recognises the relationship of a number of issues to achieving sustainable outcomes. Therefore, when addressing land management issues, it is important to read all relevant parts of this DCP to ensure they are aware of all land management issues.

4.1. Site Stability and Earthworks

A. Background

This section seeks to ensure that site planning for any proposed development takes into account the topography, geology and soils of the site and surrounding land. This is necessary to minimise disturbance to existing landforms and costly earthworks, to protect existing and proposed development from becoming unstable, and to minimise erosion.

B. Objectives

- a) To take into account the stability of land having regard to its topography, geology and soils as part of site planning principles;
- b) To minimise the extent of earthworks when creating a building site; and
- c) To minimise disturbance of vegetation that stabilises land, particularly on sloping sites.

C. Controls

1) Development Consent

- a) In accordance with the earthworks provisions of the LEP, development consent is required for any earthworks unless:
 - i) The work is exempt development under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*; or
 - ii) The work is ancillary to other development for which development consent has been given.
- b) Consent is required when material is imported or removed from a property or is relocated on the same property.

2) Matters to be Considered

- a) The LEP contains clauses that list the matters that must be considered before granting development consent for earthworks.
- b) These matters must be addressed in the supporting documentation submitted with the development application.

3) Development Application Requirements

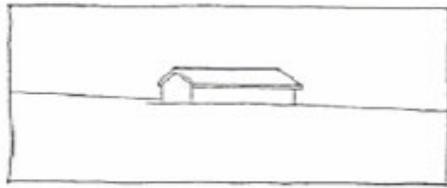
- a) Any development application that proposes earthworks and therefore changes to the levels of a site, is required to clearly address the following in the Statement of Environmental Effects or a Geotechnical Report (if required, see 3 b)):

- i) The location and extent of the earthworks on the site;
 - ii) Justification for the need to change the land levels in terms of the overall development;
 - iii) Any other impacts from the changed land levels as a consequence of the earthworks.
- b) Where a building is proposed on land where the existing slope gradient is higher than 15% (or the land is likely to be subject to any land stability issues), the development application may be required to include a Geotechnical Report (prepared by a suitably qualified consultant).
- c) Council will not permit a building to be placed on land where the existing slope gradient before development is greater than 20%.
- d) Applicants should refer to the following sections of this DCP:
- i) Vegetation Management, to ensure vegetation is protected on the site, particularly where the vegetation is important to site stability;
 - ii) Site Planning and Design Principles, to ensure any proposed development responds to the natural topography of the site; and
 - iii) The other sections of this section relating to landfill, erosion and sedimentation, contaminated lands and salinity to determine if any additional information is required to address these issues.

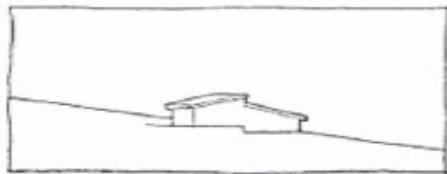
4) Limitations on Earthworks

- a) Earthworks to create a building platform shall not be undertaken where excavation and/or filling would exceed 1m from the existing natural ground level of the site.
- b) On sloping sites, site disturbance is to be minimised by using split level or pier foundation building designs (see Figure C4.1).
- c) All retaining walls proposed for the site are to be identified in the development application for the proposed development. Retaining walls are to be kept to a minimum to reduce earthworks. Use of materials that complement the natural environment is encouraged.
- d) During any earthworks, any topsoil should be preserved on site for re-use and should be stockpiled and covered to avoid dust or loss of topsoil. Refer to the Landscape Design Section of this Plan for controls on stockpiling topsoil on site.

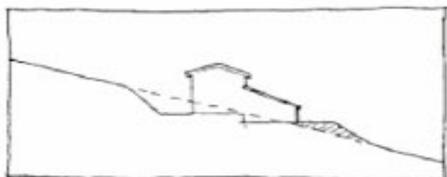
Figure C4.1: Building on Sloping Land



Flat land provides a great range of opportunities for variations in siting and the design of buildings. On flat land interesting development can be created through good building design and landscaping.



Gentle slopes require split level designs. The costs associated with building and access are higher. Sloping sites can provide interesting building design and landscape opportunities.



Steep slopes can become very difficult and expensive to build on. Access can also be difficult. Choosing the best site requires considerable thought. Advice from council will be of value.



On very steep slopes you have very limited building opportunities. Specialized building engineering and drainage advice will be required. The cost of building will be much higher.

4.2. Landfill

A. Background

In determining applications for landfill (either on its own or as part of another development), Council will consider the possibility of land contamination and the implications it has for any proposed future use of the land (Refer to the Contaminated Lands Section of this Plan). Council will also have regard to the method, nature and effect of landfill to ensure all material is managed appropriately and in accordance with:

- relevant legislation; and
- The Environment Protection Authority (EPA) requirements and guidelines.

The use of waste building materials as landfill is not permitted apart from the use of crushed bricks or similar for vehicular access areas.

B. Objectives

- a) To require an applicant to justify the use of landfill on any site and ensure that it enhances the use of a property;
- b) To ensure that any landfill utilises appropriate materials that do not result in pollution or contamination of land or water on a site;
- c) To ensure that landfill does not adversely impact on local drainage characteristics; and
- d) To ensure that landfill will not increase flood hazard or risk to other properties.

C. Controls

1) Development Application Requirements

- a) Applicants seeking Council's consent for landfill must provide a Landfill Validation Report (written by an appropriately qualified person).
- b) Council may require a further detailed investigation to occur if contamination is, or may be, present in the fill material to prove that the fill material is suitable for the proposed use. (Refer to the Contaminated Land Section of this Plan for further requirements).

2) Landfill Requirements

- a) Imported fill shall not include putrescible waste (i.e. waste that breaks down) or building material. Clean fill including soil, sand or virgin excavated natural material (VENM) is generally acceptable.
- b) The filled area shall be drained to Council's satisfaction and not impact upon the drainage characteristics of other properties in the catchment area.
- c) The material shall be suitably compacted and treated to prevent runoff and siltation of watercourses.
- d) Compaction of filled areas is to be 98% standard compaction and in accordance with relevant Australian Standards, including AS1289 Method of testing soils for engineering purposes and AS3798 Guidelines on earthworks for commercial and residential development, and Council's engineering standards. Compaction certificates are to be submitted to the private certifier or Council.
- e) The finished area shall be revegetated and stabilised to blend the filled area and natural surfaces.

- f) Earth moved from areas containing noxious weed material must be disposed of at an approved waste disposal facility and transported in compliance with the *Noxious Weed Act 1993*.
- g) Fill within 10m of adjoining bushland must not be carried out. Any fill in the vicinity of bushland must only use material from the local area (in order to minimise spread of weeds) and must be carried out in a manner that does not cause adverse impacts to surrounding properties, local drainage systems and existing vegetation. Material which is likely to have an adverse environmental effect due to it being combustible, toxic, hazardous or dangerous must not be used.
- h) Fill must not be carried out within the drip line of existing trees.

4.3. Erosion and Sedimentation

A. Background

One of the major impacts of erosion is the removal of the topsoil, which results in the loss of essential nutrients for plant development and animal nutrition, and the loss of soil structure and permeability to water. This reduces the viability of plants and soil habitats which support ecosystems, agriculture and the natural landscape.

Another major impact is the relocation of the eroded soil to other locations, called sedimentation. Sedimentation can damage natural vegetation, block stormwater drains and flowpaths, and cause significant impacts on natural watercourses and other waterbodies such as wetlands. The impact on natural waterbodies includes the smothering of aquatic plants and animals, with additional nutrient loads promoting rapid growth of invasive organisms and species such as blue-green algae and water hyacinth. This reduces water quality and the recreational value of these water systems.

This section applies to all land where any proposed development or land use:

- a) Involves disturbing the existing ground surface or placing fill, and/or results in changes to the shape of the land; and
- b) Involves changes in the velocity and/or volume of water runoff entering directly or indirectly into a watercourse or wetland, or flowing over the land.

While this will include the excavation and filling of land, it may also include significant landscaping works and topsoil stockpiling.

This section also seeks to supplement the controls set out in clauses relating to earthworks of the LEP.

B. Objectives

- a) To minimise site disturbance during the construction and operation of developments and land uses;
- b) To reduce the amount of erosion and/or sedimentation of land within the Penrith LGA;
- c) To maximise the amount of vegetation retained on development sites and ensure its protection during construction and operation of the development;
- d) To protect the natural environment, particularly natural water bodies, from erosion and sedimentation; and

- e) To encourage prompt rehabilitation of development sites by the implementation of revegetation strategies.

C. Controls

1) Erosion and Sediment Controls Plans (ESCP)

- a) All applications for subdivision and development which involve site disturbance must be accompanied by an Erosion and Sediment Control Plan (ESCP), except in the following circumstances:
 - i) The construction of minor structures including carports, pergolas, verandahs, garden sheds and the like; and
 - ii) Dwelling additions and alterations which are deemed by Council as not likely to cause erosion and sediment loss from the site.
- b) An ESCP is necessary to ensure that a strategy to manage erosion and sedimentation is considered at an early stage in the planning process. The ESCP must consider the potential for soil erosion and sedimentation during all stages of the development – demolition, construction and operation of the development. The ESCP must demonstrate that appropriate controls have been planned which will, when implemented, minimise erosion of soil from the site and, accordingly, sedimentation of drainage systems and waterways.
- c) The ESCP must be submitted in accordance with best practice guidelines for erosion and sediment control, including Landcom's, *Managing Urban Stormwater – Soils and Construction*, 2004.
- d) Where the applicant is uncertain of the most suitable method of control for a particular situation, the applicant is requested to consult with Council officers to discuss the proposal prior to the submission of an ESCP.

2) Requirements for Erosion and Sediment Control

- a) Soil erosion and sediment control measures are to be provided on-site before the commencement of any earthworks or development activity, in accordance with the approved ESCP. These must be maintained throughout the course of construction until disturbed areas have been revegetated and the soil stabilised. The applicant will be required to provide certification to this effect, which is to be lodged with Council prior to construction.
- b) All erosion and sediment control measures are to be installed to the satisfaction of Council or the proposed Certifier, in accordance with best management practices recommended by recognised authorities (including *Managing Urban Stormwater – Soils and Construction*).
- c) The work supervisor is responsible for ensuring that all erosion and sediment control measures are implemented in accordance with conditions of approval and are maintained until a final inspection has indicated that the site is sufficiently rehabilitated and stabilised.
- d) The decision to install a particular mechanism to prevent erosion and/or sedimentation depends on the location and type of activity proposed and may vary from site to site.
- e) Council may require erosion and sediment control works to be carried out in addition to, or in variation from, the approved ESCP, should circumstances necessitate it. Any variations are to be approved by Council and implemented in accordance with this

section and current best practice guidelines (including *Managing Urban Stormwater – Soils and Construction*), where relevant.

- f) All erosion and sediment control measures should be maintained for the duration of the specified maintenance period. An established, stabilised ground cover must be in place and approval should be obtained from the Certifying Authority before removing erosion and sediment control measures.

3) Additional Measures for Large Sites

Where an application is for a site over 2,500m² and there will be substantial earthworks, the applicant is required to address a number of additional measures in the ESCP, including:

- a) Identify all areas likely to cause pollution of waterways from the transport of stormwater run-off containing sediment and silt and implement appropriate devices to stop the risk of pollution;
- b) Divert clean water around the construction site to prevent contamination;
- c) Retain as much natural vegetation as possible and limit site disturbance;
- d) Control stormwater that enters the construction site from upstream;
- e) Divert stormwater from undisturbed upper slopes onto stable areas;
- f) Retain and stockpile all excavated topsoil on site for future landscaping and to minimise risk of erosion;
- g) Prevent sediment/silt from entering adjoining public or private property (especially drains) by installing sediment control devices at the low side of sites and wash down areas;
- h) Provide a single, stabilised entry/exit point to the site;
- i) Prevent sediment, including building materials, from reaching the road or Council's stormwater system. Sediment is to be removed by sweeping, shovelling or sponging. Under no circumstances shall sediment be hosed;
- j) Where a work zone permit over public property is applicable, ensure that appropriate debris control devices are implemented to prevent spillage of building materials into stormwater drains;
- k) Compact all drainage lines when backfilling;
- l) Connect downpipes to the stormwater system as early as possible;
- m) Revegetate all disturbed areas, after on-site works are completed, in order to stabilise the surface; and
- n) Maintain all sediment control devices during earthworks and construction to standards acceptable to Council.

4) Implementation, Monitoring and Maintenance

- a) Requirements for erosion and sediment control will be incorporated in approval conditions for development consents. The supervisor of the development is responsible for ensuring that all conditions are implemented and maintained throughout the development process. All control measures are to be regularly inspected and maintained by the work supervisor in accordance with current best practice (including *Managing Urban Stormwater – Soils and Construction*).

- b) In the case of new dwellings, the frame inspection will not be carried out by Council unless erosion and sediment control measures are satisfactorily installed and gutters and downpipes are connected to direct roof water to the stormwater system approved by Council.
- c) The consent holder, owner, contractor builder and all persons on site are responsible for controlling soil erosion and preventing the discharge of sediment from the building site.
- d) Erosion and sediment control measures will be inspected in the course of Council site inspections following issue of a construction certificate.
- e) The Landscape Design Section of this Plan also contains requirements relating to erosion and sedimentation control during landscape works.

5) Penalties for Non-Compliance

- a) An environmental bond/security may be required to be lodged with Council and may be used to make good any damage that has the potential to cause pollution.
- b) Where there is non-compliance with any controls in this DCP relating to erosion and/or sedimentation, Council may charge a reinspection fee, claim the environmental bond, or issue a Clean-up Notice, Prevention Notice or Penalty Infringement Notice if a pollution incident has occurred or has the potential to occur.
- c) Any person(s) who fails to satisfactorily implement erosion and sediment controls may be subject to action under state or federal legislation.
- d) In more serious cases, legal action may be considered under legislation dealing with environmental protection.

D. Other Information

This section must be read in conjunction with:

- a) *Guidelines for Engineering Works for Subdivisions and Developments* (Penrith City Council, November 2013)
- b) *Managing Urban Stormwater – Soils and Construction* ('The Blue Book') (Landcom, March 2004)

4.4. Contaminated Lands

A. Background

Impacts of Contamination

There are a number of activities that use, store and dispose of contaminants which can potentially impact on soils, groundwater, surface water and air. The Technical Information Appendix of this DCP lists key uses/activities that may result in contamination and the likely chemicals used in such activities. Such contamination can impact on the health and well-being of the community and on the integrity of buildings, structures and service facilities.

Adverse impacts from contamination can occur as a result of accidents or of ongoing poorly managed industrial, agricultural or commercial activities. Accordingly, steps need to be taken to minimise the creation of contaminated sites and to prevent the further contamination of already contaminated sites. Contaminated land is to be remediated before development can occur on that land. Remediation involves the treatment and/or mitigation of the contaminants.

Addressing Contamination

Under the *Environmental Planning and Assessment Act 1979*, Council has a duty of care, when considering development proposals, to fully consider the possibility of land contamination and the implications it has for any proposed future use of land. In particular, this section refers to, and formally adopts, the *Managing Land Contamination - Planning Guidelines* (Department of Urban Affairs and Planning & NSW Environmental Protection Authority, 1998) and other relevant legislative requirements.

In recognition of its duty of care, Council will adopt a precautionary approach to its consideration of applications involving contaminated or potentially contaminated land. The object of this approach is to enable any land contamination issues to be identified and dealt with at an early stage in the planning process.

In order for this to occur, Council has developed a set of procedures to be followed for development proposals. These procedures allow for a merit-based consideration of land contamination issues. All investigations, reporting, sampling, development of plans, etc in relation to contaminated land must be completed by a suitably qualified person in accordance with the relevant guidelines.

In considering the implications of contamination, Council will have regard for the sensitivity of a proposed land use, in addition to any technical standards or requirements published by:

- The NSW Environment Protection Authority (EPA);
- National Health and Medical Research Council (NHMRC);
- National Environment Protection Council (NEPC); and
- Any other relevant authority.

B. Objectives

- a) To prevent or minimise the risk of contamination of land and any associated impacts or harm from any such contamination;
- b) To enable Council to more adequately identify, record and manage known and potentially contaminated land;
- c) To provide direction for Council in the gathering and assessment of information in relation to previous land use activities that may have resulted in contamination;
- d) To assist Council in the discharge of its functions and responsibilities in relation to existing and potential contaminated land with reasonable care and due diligence to minimise potential risk to both public health and the environment;
- e) To inform the community, particularly those interested or involved in the planning and development process, of Council's procedures relating to existing or potential contaminated land; and
- f) To ensure that all stakeholders are aware of their responsibilities for the ongoing management of contaminated land.

4.4.1. Preventing Contamination

A. Background

A proactive approach which ensures that the potential for contamination is reduced or prevented must be linked to the nature of an activity on a particular site. Contamination of

land may often be associated with new developments that involve potentially contaminating activities. Such activities may result in accidental releases of chemicals to land which, in turn, will render the land contaminated.

B. Controls

- 1) Development applications for new or for expanding existing developments may be required to include information on the potential for the activity to contaminate.
- 2) Environmental impact assessments are required to address the potential and likelihood of contamination.
- 3) In assessing development applications for activities which could be potential sources of contamination, Council will ensure it is satisfied that the proposed technical and management controls will be adequate to prevent contamination. Conditions of consent may be imposed by Council to ensure adequate controls are applied to an activity or development.
- 4) Periodic environmental audits of activities may be required as a condition of consent by Council.

4.4.2. Triggers for Contamination Investigation

A. Background

A contamination investigation is triggered when a land use change is proposed on lands which have previously been used for certain purposes that have the potential to result in contamination. A list of activities and land uses that could potentially result in contamination is included in the Technical Information Appendix of this DCP.

In determining applications for development proposals, Council will fully consider the possibility of land contamination and the implications it has for any proposed future use of the land. A precautionary approach will be taken to ensure that any land contamination issues are identified and dealt with early in the planning process. Accordingly, Council will:

- a) Proceed with the application according to its usual practice if the site has been proven suitable for the proposed uses without the need for further testing or treatment; or
- b) Proceed with the application according to its usual practice if the site has been proven to be capable of being remediated to a standard that is suitable for the proposed use either in its contaminated state or after remediation; or
- c) Request the applicant to provide additional information; or
- d) Refuse the application with stated reasons.

B. Controls

- 1) Any application must provide appropriate information relating to past, present and proposed land uses.
- 2) Council will evaluate the site's potential for contamination in accordance with procedures established by this section. If there is any indication of a past land use or activity that may have caused contamination, Council will require additional information to prove that the site is suitable for the proposed use.
- 3) Council may require any site investigation report or similar information submitted in support of an application to be referred to a site auditor for an independent review. The

auditor shall be nominated by Council. All costs associated with the review shall be borne by the applicant. All communication with the auditor shall be either with the knowledge of Council or in the presence of Council officers.

4.4.3. Stages of Contamination Investigation

A. Background

If contamination is, or may be, present the applicant must investigate the site and provide Council with the information it needs to carry out its planning functions.

There are four main stages in the investigation of contaminated or potentially contaminated land. At each stage, it is the applicant's responsibility to provide the necessary documentation to Council and to fund the work required to prepare such documents. Not every site will require all four stages of investigation. The appropriate level of investigation will depend on the circumstances and may involve one or more stages. In providing the necessary information to Council, the applicant must engage an appropriately qualified person, experienced in contaminated site assessment and management.

B. Controls

The four stages are as follows:

Stage 1 - Preliminary Investigation

- a) To identify any past or present potentially contaminating activities;
- b) To provide a preliminary assessment of any site contamination; and
- c) To provide the basis for a more detailed investigation, if required.

This stage involves the investigation and reporting of the site history and is typically based on readily available information such as historical records of land use, aerial photographs, consultations with previous occupants and relevant authorities, and a site inspection.

Where contaminating activities are suspected to have had an impact on the land, some initial sampling and analysis will need to be undertaken to confirm and support any conclusions reached from the site history appraisal.

Stage 2 – Detailed Investigation

A detailed investigation is only necessary when a preliminary investigation indicates that the land is contaminated or is, or was, formally used for a potentially contaminating activity.

The objectives of a detailed investigation are to:

- a) define the nature, extent and degree of contamination;
- b) assess potential risk posed by contaminants to health and the environment; and
- c) obtain sufficient information for the development of a Remedial Action Plan (RAP), if required.

Should the initial investigations fail to clearly demonstrate that the land is suitable for its proposed use, a more detailed assessment and evaluation must be undertaken. This detailed evaluation stage involves formal sampling. Typically, a site specific work plan is developed during this stage, based on previous investigations.

Stage 3 - Remedial Action Plan

The objectives of a RAP are to:

- a) Set remediation objectives; and
- b) Document the process to remediate the site.

The RAP or plan of remediation should demonstrate how the applicant or their consultant proposes to reduce risks to acceptable levels and achieve the desired clean-up levels. The ultimate goal of site clean-up is to ensure that the site is remediated to a level where the proposed development/land use can occur on that land and there will be no risk of harm to human health or any other aspects of the environment in accordance with that use.

Stage 4 - Validation and Monitoring

The objectives of validation and monitoring are to demonstrate whether the objectives stated in the RAP and any conditions of development consent have been achieved.

The purpose of validation is to confirm whether the pre-determined clean-up objectives have been attained and whether any further remediation or restrictions on land use are required. Ideally, validation should be conducted by the same consultant that conducted the rest of the site investigation and remediation process.

Depending on the extent of contamination and the method of remediation (e.g. containment), there may be a need for continual site monitoring and/or restrictions on the development potential of the land. A proper monitoring program should include a monitoring strategy, the parameters to be monitored, the monitoring locations, the frequency of monitoring and the appropriate reporting requirements. Any restrictions on the land's development potential would normally be imposed by Council at the stage the application is determined.

As a general rule, Council prefers remediation strategies that do not rely on site monitoring or land restrictions. Such strategies may include the removal of contaminants and their off-site disposal or their in-situ treatment (e.g. bio-remediation). (See the Technical Information Appendix of this DCP for further details).

4.4.4. Site Audit

A. Background

In determining applications for development proposals, Council may require an independent review (Site Audit) of any or all stages of the site investigation, remediation or validation process, conducted in accordance with the *Contaminated Land Management Act 1997* (CLM Act).

A site audit will lead to the provision of a site audit statement, stating for what use the land is suitable, including any conditions that should be adhered to for that land use. Only site auditors accredited by the EPA under the *Contaminated Land Management Act 1997* can issue site audit statements. A site audit statement must be prepared in accordance with the *Guidelines for the NSW Site Auditor Scheme* and must be in a prescribed form.

B. Controls

- 1) Council may require a site audit if it:
 - a) Believes on reasonable grounds that the information provided by the applicant is incomplete;

- b) Wishes to verify whether the information provided by the applicant has adhered to appropriate standards, procedures and guidelines; or
 - c) Does not have the internal resources to conduct its own technical review.
- 2) Council will inform the applicant if a site audit is required, after Council has conducted a review of the contamination reports and associated documents submitted to Council.
 - 3) The applicant is responsible for engaging an EPA accredited site auditor for contaminated land to perform a site audit.
 - 4) If Council requires a site audit to make its planning decision, the cost shall be fully borne by the applicant and not Council.
 - 5) The *Guidelines for the NSW Site Auditor Scheme* outline what may be included in a site audit, however, the guidelines state that, in some situations, Councils may also need to contribute to defining the scope of the site audit.
 - 6) When Council requests a site audit, Council will specify any issues that shall be included within the scope of the site audit. Either the applicant or the appointed EPA accredited site auditor shall liaise with Council during the preparation of the site audit to ensure that the scope of the site audit addresses the concerns raised by Council.
 - 7) A copy of all statutory site audit statements must be given to the EPA and Council at the same time as the site auditor gives the statutory site audit statement to the person who commissioned the site audit.
 - 8) A request for a site audit included as a condition in any development consent is a statutory site audit.
 - 9) The “Guidelines for the NSW Site Auditor Scheme” indicate the content and format of Site Audit Statements.
 - 10) Before issuing a site audit statement, the site auditor must prepare and finalise a summary site audit report. The *Guidelines for the NSW Site Auditor Scheme* outline what must be included in a site audit report.

4.4.5. Remediation Procedures

A. Background

It is the policy of Council that all remediation required to be carried out will be done so in such a manner that will not cause any adverse impact or harm to the environment. The preferred remediation method should result from a consideration of the cost benefit analysis of options, including their practicability, reliability and impact.

Remediation of contaminated land will require development consent, even if the proposed land use does not require consent. A RAP must be submitted to Council for approval with the development application for remediation.

All remediation work must be consistent with the *Managing Land Contamination – Planning Guidelines* and be carried out in accordance with *Sydney Regional Environmental Plan No.20 Hawkesbury-Nepean River* (SREP 20), *State Environmental Planning Policy No.55 - Remediation of Land* (SEPP 55), the *Contaminated Land Management Act 1997*, all relevant EPA guidelines and this section.

B. Controls

1) When is Consent Required for Remediation?

- a) Council consent is required for the remediation of all contaminated land within the Penrith LGA. This requirement is prescribed by SREP20 and SEPP 55.

2) Determination Procedures

- a) For land which has been previously remediated, Council may still require further investigation and a statement from the applicant's consultant that the site has been remediated in accordance with applicable guidelines and standards, and other appropriate regulatory requirements to allow the intended use.
- b) If Council considers that contamination makes the land unsuitable for the proposed use and requires remediation, Council may enforce remediation requirements by:
 - i) Requiring the applicant to amend the development application to include a remediation proposal; or
 - ii) Requiring a new and separate development application for the remediation before the development application for the use is considered.
- c) If Council considers that contamination makes the land unsuitable for the proposed use and the land may not be appropriately remediated or the applicant does not wish to remediate:
 - i) The proposal may be modified to a use that is suitable for the land without remediation; or
 - ii) The application may be withdrawn; or
 - iii) The application may be refused.
- d) In issuing any development consent, Council may impose conditions relating to contaminated land. Such conditions will be consistent with the requirements of this section and any relevant legislation or guidelines.
- e) Where Council requires further information prior to the commencement of a development activity, it may issue a deferred or staged consent incorporating relevant conditions.
- f) Applicants are advised to carefully read any consent issued to them and identify all matters requiring attention.
- g) Council will not refuse consent to a development application to carry out remediation work on land unless the work would present, or result in, a more significant risk of harm to human health or some other aspect of the environment (whether or not the harm would occur on the same land) than not proceeding with that work.

3) Advertised Development

A development application for Category 1 remediation work is advertised development in accordance with SEPP 55.

4) Remedial Action Plan (RAP)

- a) A RAP shall be prepared for all remediation proposals and shall be submitted to Council with a development application for assessment. The RAP may form part of an environmental impact statement if the remediation work is designated development.
- b) The RAP shall:

- i) establish remediation goals that ensure the site will be suitable for the proposed land use and will pose no unacceptable risk to human health or to the environment;
 - ii) determine the most appropriate remedial strategy;
 - iii) provide details of the selected remedial strategy;
 - iv) identify all necessary approvals or licences required from all relevant regulatory authorities; and
 - v) provide details of monitoring to be undertaken both during and after the remedial works.
- c) The RAP shall demonstrate how the risk posed by contamination will be reduced to acceptable levels and how the remediation goals could be met. The objectives of the remediation strategy and the clean-up criteria recommended shall be clearly stated in the RAP. Applicable EPA guidelines provide details of what the RAP should cover.

5) Independent Review of the RAP

- a) Council may require the RAP to be reviewed by an EPA accredited site auditor. All costs associated with the review shall be borne by the applicant.
- b) Council may require the applicant to incorporate the comments of the site auditor into their RAP and to provide evidence that all necessary licences and permits have been obtained.

6) Monitoring of Remediation

- a) All remediation work must be carried out in accordance with:
 - i) the *Managing Land Contamination – Planning Guidelines*;
 - ii) any guidelines made under the *Contaminated Land Management Act 1997*;
 - iii) applicable OEH/EPA guidelines; and
 - iv) the RAP submitted to and approved by Council with the development application.
- b) Council may undertake visits to the site during the remedial works to monitor the progress of such works. These visits may be carried out with personnel from the EPA, other relevant regulatory authorities or the site auditor. All costs (as described in Council's approved Fees and Charges Schedule) associated with such visits shall be borne by the applicant.

7) Validation Report

- a) Council will require the applicant to submit to Council a validation report confirming that the remediation goals established in the RAP have been achieved. (The degree of validation required will depend on the degree of contamination originally present on the site, the type of remediation processes that have been carried out and the proposed land uses).
- b) The validation report must confirm statistically that the remediated site complies with the clean-up criteria, and does not pose an unacceptable risk to human health or the environment.
- c) The validation report shall assess the results of the post-remediation testing against the clean-up criteria nominated in the RAP. Where these have not been achieved, reasons for such failure must be stated and additional site work shall be proposed that will achieve the original objectives. The validation report shall also detail any ongoing

monitoring requirements for the site. If clean-up criteria cannot be achieved, other development options may need to be considered.

- d) Development applications for sites where remediation has been undertaken prior to lodgement must include a validation report.

8) Review of Validation Report

Council may require the validation report to be reviewed by an EPA accredited site auditor. All costs associated with the review shall be borne by the applicant.

4.4.6. Clean Up Notices

A. Background

Clause 21 of SEPP 55 states that the SEPP 55 provisions do not apply to clean-up notices. At present, all appropriate regulatory authorities (including Penrith City Council), as defined in the *Protection of the Environment Operations Act 1997* can issue a clean-up notice.

B. Controls

Any development or activity carried out for the purpose of complying with a clean-up notice:

- a) May be carried out without development consent; and
- b) To the extent that it involves carrying out any remediation work must be carried out in accordance with:
 - i) the *Managing Land Contamination – Planning Guidelines*; and
 - ii) any guidelines in force under the *Contaminated Land Management Act 1997*.

4.4.7. Council Records and Community Information

Council does not hold comprehensive information about land contamination. In the past, little information was kept about contaminated land. Council holds specific information about contamination on only a very small number of sites.

Land contamination is dynamic and no information system can record the nature of all contamination within the local government area at any one time. Council records will change over time as information comes to light. Specifically, the following information will be added to the record for individual parcels of land from time to time:

- a) Information contained in development applications, indicating the use of a site for a potentially contaminating activity listed in the Submission Requirements Appendix of this DCP.
- b) Reports submitted to Council, including preliminary investigation, detailed investigation, remedial action plans, validation and monitoring reports, and site audit statements.
- c) EPA declarations and orders issued under the *Contaminated Land Management Act 1997* (including voluntary management proposals approved by EPA).
- d) Notification of completion of Category 1 and Category 2 remediation work.

Information about land contamination held within the Council's records will be supplied to the public by the following means (subject to payment of any prescribed fees):

- a) By issuing planning certificates (Section 149 certificates) on application.

- b) By providing access to documents in accordance with the Freedom of Information Act 1989 and other legislation.

Total reliance should not be placed on Section 149 certificates. Interested parties should request a detailed search by Council of its records in regard to previous uses of a site and/or have a contamination assessment conducted by a qualified consultant.

C. Other Information

People seeking further information on contaminated lands or preparing development applications may wish to refer to the following:

- a) NSW Department of Urban Affairs and Planning and the NSW Environment Protection Authority (1998) – *Managing Land Contamination - Planning Guidelines SEPP 55 – Remediation of Land*.
- b) NSW EPA (2003) *Contaminated Sites: Guidelines for Assessing Service Station Sites*.
- c) NSW EPA (1995) *Contaminated Sites: Guidelines for the Vertical Mixing of Soil on Former Broad-Acre Agricultural Land*.
- d) NSW EPA (1995) *Contaminated Sites: Sampling Design Guidelines*.
- e) NSW EPA (2003) *Contaminated Sites: Guidelines for Significant Risk of Harm from Contaminated Land and the Duty to Report*.
- f) Department of Environment and Conservation NSW (2005) *Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens*.
- g) Department of Environment and Conservation NSW (2007) *Guidelines for the Assessment and Management of Groundwater Contamination*.
- h) ANZECC & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000) *Australian and New Zealand guidelines for fresh and marine water quality: Volume 1 – The Guidelines*.
- i) NHMRC Natural Resource Management Ministerial Council (NRMMC) (2011) *Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy*.

Council considers these guidelines to be a mandatory reference for consultants assessing contamination levels and undertaking remediation works. Consultants preparing contamination reports should also have a practical working knowledge of the various EPA and National Environment Protection Council (EPC) publications on contaminated land including:

- a) NSW EPA (2006) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme*.
- b) National Environment Protection Council (NEPC) (2013) *National Environmental Protection (Assessment of Site Contamination) Measure 1999*.
- c) NSW OEH (2011) *Guidelines for Consultants Reporting on Contaminated Sites*.

4.5. Salinity

A. Background

Salinity is increasingly recognised as an issue that can potentially cause significant economic, environmental and social costs in both rural and urban areas. Some areas in the Penrith LGA are affected by levels of salinity that are high enough to damage buildings and

corrode concrete structures. Salinity can also result in the degradation of vegetation and soils, including the loss of productive agricultural land.

Salinity occurs when salts naturally found in soil or groundwater mobilise and rise to concentrate at the ground's surface. This is due to changes in the natural water cycle caused by such activities as vegetation removal and replacement with shallow rooted, high water using plants; concentrated stormwater flows; leaking underground water pipes; and over-watering of parks and gardens.

This section seeks to ensure that consideration is given to the impact of new development on salinity processes, as well as the impact of salinity on new development. It seeks to supplement the salinity controls set out in the LEP.

B. Objectives

- a) To avoid or mitigate the impacts of development on salinity processes to prevent any degradation in soils, groundwater or vegetation;
- b) To avoid or mitigate the impacts of salinity on development, including damage to buildings and infrastructure and the loss of productive agricultural land; and
- c) To ensure development will not significantly increase the salt load in existing watercourses.

C. Controls

1) Salinity Analysis

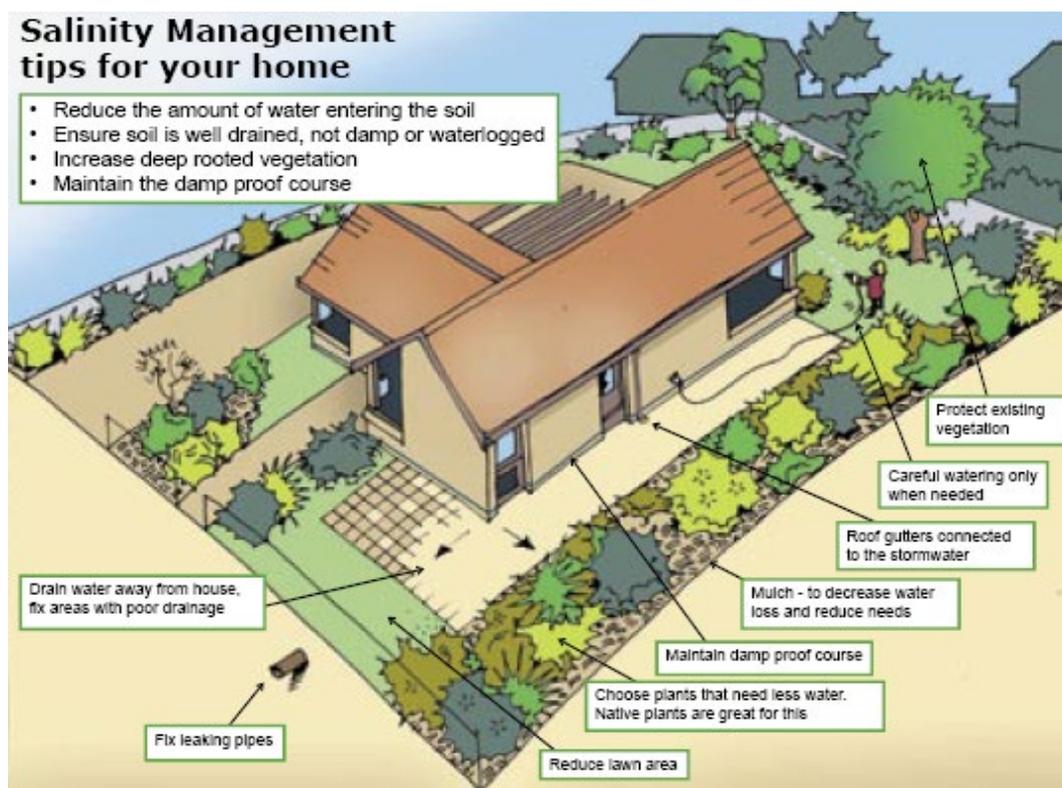
- a) A detailed salinity analysis will be necessary if:
 - i) The site of the proposed development has been identified as being subject to a potential risk of salinity (refer to the map *Salinity Potential in Western Sydney 2002*), or
 - ii) An initial investigation shows the site is saline or affected by salinity.
- b) Investigations and sampling for salinity are to be conducted in accordance with the requirements of *Site Investigations for Urban Salinity*.
- c) The author of the salinity analysis must sign off on the project on completion of works and submit this to Council prior to an occupation certificate being issued, if required.

2) Salinity Controls

- a) Disturbance to the natural hydrological system shall be minimised by maintaining good drainage and reducing water logging on the site.
- b) Groundwater recharge shall be minimised by such measures as:
 - i) Directing runoff from paved areas (roads, car parks, domestic paving, etc) into lined stormwater drains rather than along grassed channels as necessary;
 - ii) Lining or locating any water storages/ponds/drainage basins higher in the landscape to avoid recharge where proximity to the water table is likely to create groundwater mounding; and
 - iii) Encouraging on site detention of roof water runoff.
- c) Soil erosion and sediment control measures, in accordance with erosion and sedimentation controls in this section, shall be incorporated into the development during its construction and following its completion.

- d) Construction techniques shall be employed that prevent structural damage to the development as a result of salinity (see “Building in a Saline Environment”). For example, building footings shall be constructed so as not to impede groundwater movement and building materials that are resistant to salt effects shall be used.
- e) The removal of vegetation, particularly native vegetation, on the site shall be minimised.
- f) All landscape designs should undertake the following practices:
- i) Select salt tolerant plant species (generally native trees and shrubs);
 - ii) Use mulch in all garden beds;
 - iii) Minimise the area of lawn as this requires large quantities of water;
 - iv) Use ‘water wise’ garden and landscape design (including timers, selection of plants with low water needs, grouping plants of similar water usage together, etc); and
 - v) Use non-corrosive materials when constructing pipes and channels.
- g) All works are to conform with the *Western Sydney Salinity Code of Practice*, June 2003.
- Figure C4.2 below illustrates some of these controls.

Figure C4.2: Salinity Management Tips



(Source: WSROC 2005, *Good Housekeeping to Manage Urban Salinity*)

C. Other Information

People seeking further information on salinity or preparing development applications may wish to refer to the following:

- Department of Planning, Infrastructure and Natural Resources 2002, *Map of Salinity Potential in Western Sydney* and accompanying *Guidelines*
- Western Sydney Regional Organisation of Councils (WSROC) 2003, *Western Sydney Salinity Code of Practice*
- WSROC 2005, *Good Housekeeping to Manage Urban Salinity*
- Local Government Salinity Initiative series by the former Department of Natural Resources (2002) including:
 - *Site Investigations for Urban Salinity*
 - *Land Use Planning and Urban Salinity*
 - *Building in a Saline Environment*
 - *Roads and Salinity.*