Department of Primary Industries

primefact

Infrastructure proposals on rural land

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Introduction

The purpose of this Primefact is to help consent authorities to maintain sustainable primary production and development opportunities and minimise land use conflict when assessing infrastructure proposals affecting rural resource lands.

This guideline relates to infrastructure facilities for: electricity and gas transmission and distribution, telecommunication facilities, railways, sewage systems, air transport facilities, wind farm proposals and other small scale renewable energy developments. Secondary minor local government work on roads, road realignments and associated facilities such as bridges) are also included.

This guideline does not address classified road and road traffic facilities or waste or resource management facilities[1].

Specific guidance should be sought for facilities which will increase the numbers of people living or working in rural lands such as housing, group homes and educational facilities due to the high risk of land use conflict.

This document is part of a guidelines series that helps streamline the Development Application (DA) process, by setting out the key agricultural issues, impacts and recommendations for consent authorities to consider.

The guideline may also help applicants, developers, consultants and the general public identify issues to be addressed.

The guidelines focus on agricultural issues rather than the full range of issues that consent authorities must address.

Integrated development proposals that trigger provisions of the *Fisheries Management Act 1994*, the *Mining Act 1992*, or the *Plantations and Reafforestation (Code) Regulation 2001* should still be routinely referred to the relevant section of Department of Primary Industries (DPI).

Development assessment guidelines

Well planned infrastructure developments, such as electricity transmission lines or communication towers can be compatible with ongoing agricultural land use. Lease fees or access agreements may also provide a supplementary income source.

Landholder consultation, good design and effective planning controls are critical for such outcomes.

To minimise impacts on agricultural resources and enterprises from infrastructure development proposals, DPI recommends that:

- ❑ Proposals are clearly justified in a regional context and identify the merits and community benefit of the proposal.
- ❑ Agricultural resource lands are identified and avoided. New infrastructure is located within existing infrastructure corridors wherever possible.
- ❑ Land use conflicts are minimised.
- ❑ Landholders are effectively consulted during planning, construction and rehabilitation works and the expectations of local communities are managed.
- ❑ Development proposals identify suitable mitigatory / remediation responses for all likely agricultural impacts.

[1] issues related to landfills in rural areas are outlined in the Primefact *Agricultural Issues for Landfill Developments available on the Department's web site (see further information).*

Infrastructure impacts that are of particular significance for sustainable agriculture are:

- Resource loss and fragmentation
- Impacts on farming operations and livestock
- Increased weed, biosecurity and bushfire risks
- Site rehabilitation

Recommended considerations and possible consent conditions for the above specific issues are set out in the following sections.

A rail loop for coal loading designed to avoid productive alluvial farm lands. Photo: D Barnes.

Resource loss and fragmentation

Infrastructure that fragments rural resource lands can permanently reduce the economic and environmental sustainability of the farming enterprise and constrain future development options. Ideally infrastructure developments should be directed away from rural resource lands and critical farming infrastructure (eg buried irrigation pipes, pumps, livestock yards).

To minimise resource losses and impacts on farm productivity consent authorities are advised to verify that infrastructure developments:

- ❑ Consider agricultural land use and holding patterns in the locality, existing infrastructure and primary industry resources.
- ❑ Identifies important agricultural resources and farm infrastructure, including surface and groundwater resources on which agriculture depends.
- ❑ Minimises the footprint of proposed works and easements.
- ❑ Minimises further resource fragmentation and does not create lots smaller than the current minimum lot size for that zone.
- ❑ Where possible facilitates the consolidation of existing lots and any isolated farm lands.
- ❑ Co-locates infrastructure within existing corridors (e.g. road or rail reserves or existing easements) where ever possible.
- ❑ Buries pipelines and cables where feasible, subject to appropriate land rehabilitation considerations.

Impacts on farming operations and livestock

Infrastructure proposals can result in interruptions to internal or external farm access and to farm services that may affect the efficient operation and sustainability of agricultural businesses.

Farm businesses rely on access to road networks for supplies, employees, specialist support services and selling products. Access to infrastructure such as power, communication and water can also be critical for animal welfare and business survival.

Reliable, effective access to the road network and services is particularly critical at peak selling or harvesting times and for intensive livestock operations (eg dairies, poultry), horticultural and vegetable enterprises.

Internal access to water, pastures, feed storage and farm infrastructure (eg irrigation equipment) can also be vital for animal welfare and sustainable farming. Operating farms often comprise more than one allotment and need to access resources, livestock and crops spread across the holding.

Facilities such as proposed overhead electricity lines may also create concerns about air safety for agricultural operations such as crop spraying or the safe movement of agricultural machinery movement where ground clearance may be limited.

Infrastructure proposals should:

- ❑ Assess potential impacts on the safe use of farm machinery and routine farm activities.
- ❑ Assess the potential impacts on the ability to undertake aerial agricultural activities such as the aerial application of seed, fertilisers or chemicals. Surrounding land owners may also be impacted.

- ❑ Avoid, or promptly mitigate significant changes to access to the road network, internal farm tracks and critical farm infrastructure (eg buried irrigation systems or phone lines).
- ❑ Locate infrastructure developments in consultation with landholders. Siting facilities parallel to or immediately adjoining to existing farm infrastructure (e.g. fence lines or irrigation lines) is usually preferred.
- ❑ Plan the timing of construction operations and the location / design of temporary fencing and temporary access routes to minimise impacts on farm operations and livestock.
- ❑ Where the proposal will divide existing farm operations or properties the proposal should include measures to ensure ongoing access between each section.
- ❑ Access must be of an appropriate design standard to support ongoing agricultural use and should be developed in consultation with the landholder.

Develop site access protocols that lists the relevant landholder contact details and includes measures to minimise adverse impacts such as:

- Leaving gates open or shut as found.
- Driving carefully to minimise disturbance to livestock, crops and pastures, and
- Minimising disturbance to the environment e.g. land clearing.

Increased biosecurity, pest and weed risks and impacts on livestock

Biosecurity for agriculture, including genetically modified crops, relies on limiting vehicle and people movements on rural properties and being able to trace vehicle, people and stock movements if any disease outbreaks arise.

Infrastructure developments typically result in temporary, but significant increases in vehicle movements on and off rural properties. This risk is increased if new access points are created and if machinery moves across multiple rural properties.

Pest animals may also be encouraged by food sources from construction works and new access tracks. The additional vehicle movements and development activities may also increase the risk of bushfires.

Construction activities may also increase the risk of straying livestock, especially if gates are left open or if fences need to be cut or replaced.

Livestock can also be panicked or stressed by rapid vehicle movements or sudden noises which may result in injury or escape.

Consent authorities are advised to verify that development proposals appropriately identify:

- ❑ Potential biosecurity risks such any increased vehicle movement onto and off farms that could spread animal or plant material or diseases. This is particularly critical if genetically modified (GM) crops or organic crops occur within or adjoining the proposed development route.
- ❑ Significant weed species within the proposed development footprint and risks of spread.
- ❑ The location, status and management of current and former livestock dip sites and other potentially contaminated sites within the infrastructure corridor or area.
- ❑ Bushfire or other emergency management risks.
- ❑ Impacts on livestock including the pollution of waterways and noise risks that may result in injury or escape.

Where infrastructure proposals transect more than one property DPI recommends that consent conditions require the development of a Weed management plan in consultation with relevant Weed Authorities.

A Weed Management Plan should identify:

- ❑ Notifiable and problematic environmental weeds that could affect farm productivity.
- ❑ The additional risks resulting from the proposed development and their assessment. Advice is available from the local council weeds officer or on the website listed at the end of this guideline.
- ❑ State, regional or local plan or strategies for relevant to specific weeds that occur on the property area or that may be transported to the proposed works from surrounding areas.
- ❑ Weed suppression, management and containment strategies for all disturbed areas. For instance soil stockpiles, roadsides leading to the landfill site and disturbed areas.
- ❑ Measures to limit the spread of existing weeds include cleaning vehicle tyres before moving from property to property,

footwear checks, minimising and monitoring soil movement between properties.

- ❑ Monitoring programs for noxious and problematic weeds on site and in the surrounding areas and proposed follow up controls if weed problems occur.

I&I NSW also recommends that consent authorities require infrastructure proponents on rural lands to develop protocols to:

- ❑ Ensure effective consultation with landholders regarding the timing of operations, site access needs and any special measures to minimise impacts on livestock and crops. For instance the project design should seek to avoid or minimising the need to cut farm fences or traverse crops.
- ❑ Manage vehicle movements onto and across farms. This might include separating work sites from farm areas, restricting the number of vehicles accessing farm properties and monitoring vehicle movements on farms.
- ❑ Avoid biosecurity risks and ensure appropriate decontamination of vehicles moving between properties if necessary.
- ❑ Manage wastes and pollution risks.
- ❑ Manage, mitigate and monitor emergency risks as part of emergency management planning for the proposed development.

Well rehabilitated rural road bridge at Kywong. Photo: M Dingham.

Site rehabilitation

Rehabilitation is important to prevent erosion and the sedimentation of waterway or dams, limit weed germination and restore productive land use options.

Consent authorities are advised to ensure that proponents:

- ❑ Develop appropriate rehabilitation objectives and strategies in consultation with landholders and relevant agencies (eg the local government weed authorities and catchment management authorities).

DPI additionally recommends that proponents are required to develop a comprehensive Environmental Management Plan that documents:

- ❑ Environmental policies, rehabilitation objectives and strategies.
- ❑ Specific measures to protect catchment values and productive capacity including soil and erosion mitigation proposals.
- ❑ Any residual (i.e. permanent) impacts on agricultural or other primary industries.
- ❑ Project staging and the timeframes for site rehabilitation. Progressive site rehabilitation is encouraged.
- ❑ Topsoil management proposals to make best use of this resource and maximise rehabilitation and revegetation success. Recommended practices include:
  - the removal of topsoil before disturbing sub-soils or erecting permanent structures.
  - The immediate reuse of topsoil. If this is not feasible, topsoils should be temporarily stored in accord with best practices.
- ❑ Critical Best Practice actions focus on maintaining soil health and the vigour of native seed, limiting weed germination, and avoiding soil loss and catchment impacts.
- ❑ Proposals to reform the landscape to blend with surrounding landforms and avoid land use conflicts.
- ❑ Vegetation re-establishment strategies and actions. Recommended practices include:
  - De-compaction of areas traversed by heavy machinery to encourage plant growth and minimise run off.

- Consideration of seasonal conditions and timing revegetation efforts to maximise success.
- Sowing of cover crops or pastures to stabilise disturbed sites and reduce weed growth.
- Using species suitable for the proposed end use and locality. A particular priority should be the use of clean seed and species with a low risk of contributing to weed problems.
- Rehabilitating unwanted tracks to reduce pest animal problems.
- Allowing for soil settling and provisions to refill disturbed sites.

❑ Monitoring proposals to asses the effectiveness of rehabilitation efforts and repair as required.

❑ The responsible person and organisation for site management and remediation during and post construction.

Additional issues

DPI recommends that consent authorities ensure that proponents:

❑ Consult with relevant agencies such as the local government weed authorities and catchment management authorities on the design, construction and operation of the proposed infrastructure.

❑ Consult with the owners and managers of affected and adjoining agricultural operations in a timely and appropriate manner about the proposal, the likely impacts and suitable mitigation measures or compensation.

❑ Provide sufficient documentation to demonstrate that all significant impacts on current and future agricultural developments and resources have been identified and can be reasonably avoided or adequately mitigated.

❑ Minimise land use conflict. The publication 'Living and Working in Rural Areas: A handbook for managing land use conflict issues on the NSW North Coast' outlines conflict issues and suggestions on dealing with land use conflict. It also provides a guide for conflict risk assessment and mitigation that may be useful.

Strategic planning for infrastructure in agricultural areas

Councils are encouraged to strategically review desired planning outcomes for rural lands; and identify important resources and sustainable development opportunities for agricultural enterprises.

Strategic studies should identify infrastructure needs and preferred infrastructure corridors or locations to minimise the risk of land use conflict.

Further information

NSW DPI has additional web based information and publications on pasture and weed management and minimising conflict risks with adjoining agricultural land uses.

This includes information on:

- Weeds
- Land Use Conflict Risk Assessment (Living and Working in Rural Areas)
- Agricultural Issues for Landfill Developments - a guideline for Assessing agricultural impacts related to Waste Management (landfill) facilities in rural areas.

Additional information on animal diseases and pests can be sourced from local Livestock Pest and Health Authorities.

Other information in relation to these developments are available at the register for development guidelines.

Some relevant guidelines found at this site include:

Department of Water and Energy 2008 *Guidelines for controlled activities: Instream Works and Guidelines for controlled activities: Laying pipes and cables in water courses.*

Department of Infrastructure, Planning and Natural Resources 2004 *Guideline for the Preparation of Environmental Management Plans.*

State of NSW and Department of Environment and Climate Change 2009 *Interim Construction Noise Guide.*

NSW Rural Fire Service 2006 *Planning for Bushfire Protection.*

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