



Queensland

Environmental Protection and Other Legislation Amendment Regulation (No. 1) 2010

Regulatory Impact Statement for SL 2010 No. 76

made under the

Environmental Protection Act 1994

Sustainable Planning Act 2009

TITLE

Regulatory impact statement for the protection of wetlands of high ecological significance in Great Barrier Reef catchments

INTRODUCTION

Purpose of a regulatory impact statement

Under the *Statutory Instruments Act 1992*, if a proposed regulation is likely to impose appreciable costs on the community or part of the community, a regulatory impact statement (RIS) must be prepared before the regulation is made final.

A RIS is designed to determine whether a proposed regulatory regime is the most efficient and effective way of achieving desired policy objectives. It does this by providing a means for clearly and concisely documenting the Government's policy proposal, which is then subject to public scrutiny.

The purpose of this document is to explain the need for the proposed regulatory regime and to present an evaluation of the potential costs and benefits that may arise from its adoption, in comparison with other options explored.

All members of the community are invited to comment on the information presented in this RIS.

How to respond to this regulatory impact statement

The closing date for providing comments on this RIS is 30 June 2010.

You can make your submission online at www.derm.qld.gov.au

Written submissions should be addressed to the Minister for Climate Change and Sustainability and sent to:

Manager, Wetlands Protection Policy
Natural Resource and Environment Division
Department of Environment and Resource Management
GPO Box 2454
Brisbane QLD 4001

Public access to submissions

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Consideration of issues raised in the regulatory impact statement

After the public consultation period closes, the Queensland Government will consider comments made by members of the community. Further consultation may occur to address any concerns raised by the community prior to the development of a final position by the Government.

Further enquiries

Further enquiries can be made by calling the Department of Environment and Resource Management on 1300 130 372.

BACKGROUND

The Queensland Government is proposing new targeted measures to provide greater protection of wetlands of high ecological significance (HES wetlands) in the Great Barrier Reef (GBR) catchments. Preventing further wetland loss will have direct and indirect benefits for these catchments. These wetlands have ecological and hydrological values that provide a range of ecosystem services, including filtering, biodiversity and recreational benefits. On a conservative estimation they provide an economic value of \$100 million a year¹.

Specifically, the Queensland Government is seeking more effective regulation of activities impacting on HES wetlands in 35 GBR catchments from the Daintree River catchment to the Baffle Creek catchment. The proposals to achieve this regulation will complement the new package of planning reforms occurring in Queensland under the *Sustainable Planning Act 2009*. These reforms include the release of the *Temporary State Planning Policy: Protecting Wetlands of High Ecological Significance in Great Barrier Reef Catchments* (SPP for GBR wetlands) and amending the *Sustainable Planning Regulation 2009* to designate high impact earthworks near HES wetlands as development that must comply with the SPP for GBR wetlands.

The 35 GBR catchments include the following catchments: Baffle, Barron, Belyando, Black, Bowen, Boyne, Burdekin Lower, Burdekin Upper, Calliope, Comet, Curtis Island, Daintree, Dawson, Don, Fitzroy, Haughton, Herbert, Hinchinbrook, Isaacs, Johnstone, Mackenzie, Mossman, Mulgrave–Russell, Murray, Nogoia, O’Connell, Other Islands, Pioneer, Plane, Proserpine, Ross, Shoalwater, Styx, Tully and Waterpark.

The proposal to make high impact earthworks assessable development under the *Sustainable Planning Act 2009* is likely to impose appreciable costs on State Government and other stakeholders. Accordingly, it is this proposal that will form the basis of this RIS. The RIS will investigate the extent and nature of the costs and benefits to industry, government and the community.

EXISTING LEGISLATIVE FRAMEWORK

The current legislative instruments that offer some protection to wetland systems in Queensland include the:

- *Sustainable Planning Act 2009*
- *Vegetation Management Act 1999*
- *Water Act 2000*
- *Coastal Protection and Management Act 1995*
- *Marine Parks Act 2004*
- *Fisheries Act 1994*
- local government planning schemes

Under the *Sustainable Planning Act 2009* the Department of Environment and Resource Management (DERM) provides non-binding advice to local government where there is a proposed material change of use or reconfiguration of a lot in or within 100 metres of a referable wetland. A referable wetland is a mapped wetland of State interest.

The *Far North Queensland Regional Plan 2009–2031* (FNQ regional plan) land use policy 7.1.3 requires that “urban development, other than for required community infrastructure, is set back from wetlands through adequate buffer zones, to maintain water quality and ecological functions and services of wetlands”.

The FNQ regional plan and local government planning schemes have a focus on urban development and do not regulate agricultural activities. The *Reef Water Quality Protection Plan 2009* (Reef plan) was developed to address non-point source pollution from broad-scale land use. Broad-scale land use includes agriculture such as grazing, cropping, horticulture and forestry) and other tenures of public land such as national parks and reserves. It does not address urban land uses.

An objective of the Reef plan is to rehabilitate and conserve areas that have a role in removing water-borne pollutants. The Reef plan includes a target aiming for no net loss or degradation of natural wetlands by 2013. This target is supported by an action to review and implement regulations to improve reef water quality and the conservation and protection of wetlands. The targets and actions recognise that retaining the natural filtering process of freshwater wetlands will help prevent increases in overland flow carrying pesticide, nutrient and sediment loads into the GBR lagoon.

A review of existing legislation found that the *Vegetation Management Act 1999* and the *Water Act 2000* provide indirect regulation of activities in non-urban areas that provide partial protection for wetlands.

DERM assesses and conditions vegetation clearing under the *Sustainable Planning Act 2009*, which can include protecting freshwater wetlands and a surrounding 200-metre buffer in remnant regional ecosystems and regulated regrowth areas. DERM assesses and conditions development activities impacting on wetlands within coastal management districts under the *Coastal Protection and Management Act 1995*, which can sometimes include freshwater lakes and swamps. A limited number of freshwater wetlands are also protected in State marine parks under the *Marine Parks Act 2004*.

Under the *Water Act 2000*, DERM has two roles that apply to freshwater wetlands: it assesses and conditions activities related to taking and interfering with water, and it regulates clearing, excavating and filling in of streams. However, this latter role does not focus specifically on wetland protection. Overland flow codes under the *Sustainable Planning Act 2009* prohibit works that allow the taking of overland flow within 1,000 metres of a wetland if the works are prescribed under a water resource plan, a wild river declaration or prescribed under a regulation.

Under the *Fisheries Act 1994*, the Department of Employment, Economic Development and Innovation, Queensland Primary Industries and Fisheries assesses and conditions activities that impact on declared fish habitat areas. However, this activity principally helps manage estuarine wetlands not freshwater wetlands.

Some local government planning schemes in GBR catchments address the impacts on freshwater wetlands. For example, the Hinchinbrook Shire planning scheme regulates activities that are within 100 metres of a coastal wetland. Other local governments outside of the GBR catchments also address impacts to wetlands including the Brisbane City Council and the Sunshine Coast Regional Council whose *Maroochy Plan 2000* includes management strategies for protecting wetlands. However, the level of protection for freshwater wetlands provided by local government planning schemes is highly variable.

The current legislative framework is complemented by a suite of non-regulatory measures aimed at protecting wetlands in the GBR catchments. These include:

- the Queensland Wetlands Program (QWP), which commenced in 2003 and is designed to develop and implement measures for the conservation and management of wetlands in Queensland, with a focus on the GBR catchments. The QWP is responsible for over 30 projects that have delivered new mapping, information and decision-making tools; other initiatives include working with private landholders to increase the number of voluntary nature refuge agreements under the *Nature Conservation Act 1992*; and working with industry to develop guidelines on wetland rehabilitation, farm management systems for managing wetlands in intensive agriculture as well as case studies and economic assessment tools. There has also been an extensive education campaign including workshops, exhibits at local events and a new wetlands curriculum that can be delivered to school children
- the Reef plan that commenced in 2003 and was updated in 2009 focuses on actions to address pollutants for diffuse agricultural land use sources entering the GBR
- other government and non-government partnerships and initiatives such as Wetland Care Australia (a not-for-profit charity) and Conservation Volunteers Australia who undertake practical rehabilitation and restoration activities and other initiatives such as the development of 'Best management practices guidelines for riparian and wetlands areas on cane farms'.

Existing regulation, non-regulatory measures, voluntary programs and various Government regulatory roles provide some degree of protection for freshwater wetland systems in Queensland but the protection is uneven. Gaps in the current regulatory regime leave some HES wetlands without adequate protection and exclude some activities, such as high impact earthworks, from assessment processes under the *Sustainable Planning Act 2009*.

Accordingly, the Queensland Government is proposing to introduce targeted regulatory measures to improve the protection of HES wetlands in the GBR catchments.

PROPOSED COURSE OF ACTION

The package of wetland regulatory measures includes:

- amendments to the *Sustainable Planning Regulation 2009* to make high impact earthworks within or near HES wetlands assessable development and to strengthen the role of DERM in assessing and conditioning impacts on HES wetlands
- a *Temporary State Planning Policy for Wetlands: Protecting Wetlands of High Ecological Significance in Great Barrier Reef Catchments* (SPP for GBR wetlands) to ensure high impact development is appropriately planned, located and designed within or near HES wetlands
- a development assessment code within the new SPP for GBR wetlands to be used by DERM to assess high impact earthworks
- amendments to the *Environmental Protection Regulation 2008* to define wetland environmental values and establish development application fees.

These reform proposals will ensure that impacts in these areas are managed through a more consistent legislative framework and that development decisions related to high impact earthworks protect the environmental values of wetlands in GBR catchments.

AUTHORISING LAW

Sustainable Planning Act 2009:

- Section 232 of the *Sustainable Planning Act 2009* provides a regulation may prescribe categories of development or require code or impact assessment
- Chapter 6 Part 1 Subdivision 2 of the *Sustainable Planning Act 2009* provides the head of power to make regulations about referral agency roles and jurisdictions. A referral agency is an advice agency or a concurrence agency.

Environmental Protection Act 1994:

- Section 9 of the *Environmental Protection Act 1994* provides that a regulation may declare a quality of the environment to be an environmental value
- Section 580(4) of the *Environmental Protection Act 1994* provides that the administering authority (being the chief executive (environment)) may set fees for development applications under the *Sustainable Planning Act 2009*.

POLICY OBJECTIVES

The overall policy objectives are to:

- provide effective and sustainable regulation of high impact earthworks impacting on HES wetlands to meet the strategic direction of the Queensland Government, which is to ensure the GBR catchments are resilient and protected into the future
- ensure new proposals do not duplicate management frameworks in place through existing legislation
- provide targeted measures to respond to identified regulatory gaps
- provide a comprehensive approach to managing HES wetlands
- achieve the Reef plan management practice target that by 2013 there will have been no net loss or degradation of natural wetlands.

LEGISLATIVE INTENT

The intended effect of the proposal is to ensure the effective regulation of activities impacting on HES wetlands. This will be achieved by:

- providing maps to identify HES wetlands
- identifying important environmental values to be protected and enhanced through amendments to the *Environmental Protection Regulation 2008*
- improving the regulation of development (including operational works such as high impact earthworks) with potential impacts on HES wetlands under the *Sustainable Planning Regulation 2009*
- enhancing the State Government's role in assessing and making conditions on planning approvals affecting HES wetlands under the *Sustainable Planning Regulation 2009*
- providing a transparent basis for assessing development through codes within a new SPP for GBR wetlands
- providing consistent planning direction to be included in local government planning schemes with respect to HES wetlands.

It is reasonable and appropriate to take a legislative approach to this issue. This is the best option available to protect freshwater wetlands while embracing the interests of stakeholders. A legislative approach provides a consistent management framework for the protection of HES wetlands on different tenures throughout the GBR catchments, and ensures compliance with a consistent set of regulations to achieve the policy objective.

CONSISTENCY WITH THE AUTHORISING LAW

There are two authorising laws: the *Sustainable Planning Act 2009* and the *Environmental Protection Act 1994*.

The objective of the *Sustainable Planning Act 2009* is to achieve ecological sustainability by managing the process by which development takes place, including ensuring the process is accountable, effective and efficient and delivers sustainable outcomes.

The objective of the *Environmental Protection Act 1994* is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

The SPP for GBR wetlands contributes to the achievement of both objectives of the authorising laws by delivering effective and targeted measures that will help enhance the protection of freshwater wetlands.

CONSISTENCY WITH OTHER LEGISLATION

The new proposals will not duplicate existing regulatory regimes and will only have effect where high impact earthworks are carried out in or near HES wetlands. Existing processes under the *Vegetation Management Act 1999*, *Coastal Protection and Management Act 1995*, *Water Act 2000* or the *Fisheries Act 1994* will remain. Additionally, artificial wetlands, domestic and other low impact activities will be excluded from this framework of assessment.

IMPACTED STAKEHOLDERS

Some stakeholders will be impacted by the proposed regulatory regime. These are:

- rural stakeholders undertaking assessable development activities, including operational works, within or near HES wetlands within the GBR catchments
- urban developers undertaking assessable development activities, including operational works, within or near HES wetlands within the GBR catchments
- the community
- Queensland Government
- local government.

OPTIONS AND ALTERNATIVES

The 2007 State of the Environment Report (SoER) stated that over 7,000 hectares of wetlands were lost per year between 1997 and 2003, with riverine and palustrine (freshwater swamp) wetlands in Queensland's east coast basins suffering one of the greatest losses in area, at the rate of 2,600 hectares per year. The SoER gives the example of the Boyne catchment in which only 7 per cent of its palustrine wetlands remain. Impacts are caused by both vegetation clearing and changes to hydrology resulting from earthworks.

A review of regulations and policies for conserving and protecting wetland and riparian areas found there are still gaps in the current regulatory arrangements to protect wetlands. The review found there was no existing regulation or state planning instrument that could be extended to provide catchment-wide controls for development near HES wetlands.

The SPP for GBR wetlands should be seen as a companion to the *Great Barrier Reef Protection Amendment Act 2009*, which commenced in January 2010. This Act amended the *Environmental Protection Act 1994* to regulate the use of pesticides and fertilisers in priority GBR catchments but does not deal with development. As a result of recent changes to the *Vegetation Management Act 1999* made to protect certain classes of regrowth vegetation the SPP for GBR wetlands does not need to regulate vegetation clearing.

Although urban use generally requires planning and development approvals, few planning schemes regulate earthworks associated with intensification of agriculture. Consequently, a new assessable development trigger is required to deal with high impact earthworks that may significantly impact on HES wetlands assessable development.

Consideration has been given to two options for achieving the desired policy objectives. An overview of the options is given below:

Option 1: Maintain the status quo (no change to the current management arrangements).

Option 1 involves retaining the existing legislative framework (as described above), which would maintain DERM's advisory role to local government where there is a proposed material change of use or reconfiguration of a lot within 100 metres from a referable wetland.

Option 2: Introduce a new concurrence role for DERM in the Sustainable Planning Regulation 2009 to target assessment of impacts to HES wetlands.

Option 2 focuses on providing DERM with authority to assess and manage activities that occur within zones designated as Great Barrier Reef wetland protection areas (GBR wetland protection areas). GBR wetland protection areas include wetlands that have been classified as having high ecological significance and the surrounding 100 metres in urban areas or the surrounding 500 metres in non-urban areas. The option includes a role for DERM to assess and condition development that involves high impact earthworks in GBR wetland protection areas under the *Sustainable Planning Regulation 2009*.

Analysis of Options

Despite the existing regulatory controls wetlands are still being lost at a rate of 3–5 per cent per year. To achieve the Reef plan target of no net loss in extent or condition of non-urban wetlands by 2013 further action is required.

Therefore, continuing with Option 1 would be inappropriate because this course of action would leave a gap in the assessment of high impact earthworks in non-urban areas and would result in inconsistent regulation of development involving high impact earthworks in urban areas by local governments.

Option 2 is the more appropriate and effective means of achieving the policy objectives. This option is also the most logical regulatory approach to assess impacts on wetlands because industry and government are familiar with the processes attached to the concurrence system.

The SPP for GBR wetlands does not apply retrospectively. Development that does not fully achieve the policy outcome is acceptable if the development either provides for an overriding need in the public interest or is a development commitment that achieves the development outcomes under the SPP to the maximum extent practicable having regard to the intrinsic characteristics of the development.

The SPP for GBR wetlands is a State planning instrument that sets out transparent and consistent policy outcomes or assessment criteria for proposed development near HES wetlands.

BENEFIT–COST ANALYSIS

The proposal to designate high impact earthworks as assessable development and to provide a greater State Government role in assessing and conditioning these activities under the *Sustainable Planning Regulation 2009* is likely to impose appreciable costs on State and local governments in the form of administration and assessment costs. It is also likely to impose appreciable costs on industry and rural landholders in the form of an assessment fee and application costs.

However, the proposed changes to the *Sustainable Planning Regulation 2009* are a proportional response to the failure of the current legislative environment to comprehensively manage all wetlands in the GBR catchments. The amendments will provide benefits including

greater certainty that the environmental values of wetlands are managed and protected into the future to ensure the reef remains healthy and resilient.

DERM identified HES wetlands using the Aquatic Biodiversity Assessment and Mapping Method (AquaBAMM). A 500-metre boundary was drawn around HES wetlands in non-urban areas to identify the areas in which development would be assessed. This boundary was reduced to 100 metres in urban areas recognising that the natural drainage of the land has been substantially altered in urban areas. These trigger areas for development assessments are known as GBR wetland protection areas.

To apply the triggers areas and differentiate the costs that apply to urban and non-urban areas DERM mapped urban and non-urban areas in the 35 GBR catchments. For areas covered by the FNQ regional plan the urban footprint category were used to identify urban areas. In other areas state planning scheme data was categorised into urban and non-urban areas on the basis of existing zones. In urban areas small lots in built-up areas and areas that have no hydrological influence on a GBR wetland due to the presence of a barrier, such as a river or watershed, were excluded from the GBR wetland protection areas. Table 1 shows the area of GBR wetland protection areas and HES wetlands.

Table 1: Area of GBR wetland protection areas and HES wetlands

Areas	Hectares
GBR urban area	96,268
GBR non-urban Area	33,171,833
Total GBR urban & non-urban areas	33,268,101
Urban GBR wetland protection area	1,453
Non-urban GBR wetland protection area	783,128
Total GBR wetland protection area	784 581
Urban GBR wetland	656
Non-urban GBR wetland	161,229
Total GBR wetland	161,886

It is difficult to estimate the expected number of applications. There is no historical assessment data for this type of development. Based on past rates of applications where DERM had an advice role for change of use and subdivisions it is estimated that there may be about 50 applications per year. This assumes that there is the same rate of referrals for non-urban wetlands as urban wetlands. If the rate of applications for non-urban wetlands is greater than for urban wetlands then there may be up to 100 applications per year. If the rate for non-urban wetlands is less than urban wetlands then there may only be 20 applications. The following analysis includes scenarios for 20, 50 and 100 applications per year.

The number of applications received will be determined according to the operational works trigger, including exclusions for minor works. A review of the SPP for GBR wetlands, prior to making the permanent State Planning Policy, will provide for an evaluation of the trigger and whether adjustments are required.

Benefits

The new regulatory provision will ensure the maintenance of the flow of ecosystem services from wetlands in the GBR catchments.

Wetlands provide many services at the local, regional and global scale. Ecosystem services provided by wetlands include: flood mitigation, water supply, water filtering and nutrient removal, erosion control, support for biodiversity, recreational and amenity benefits, climatic stabilisation and carbon sequestration. Some services, such as flood control and water supply, will be of benefit to landholders and local residents while other services, such as recreation and carbon sequestration, will accrue to the broader community.

There have been no assessments of the total economic value of these services for wetlands in the GBR catchments but studies from elsewhere provide indicative values for the flow of these services.

For example, Table 2 provides median economic values by wetland function derived from a meta-analysis of peer reviewed worldwide studiesⁱⁱ. As many of these services are jointly provided by a wetland the values should not be added to provide a total value. However, these joint functions provide significant benefits.

Table 2: Median economic values by wetland function

Wetland function	Median wetland economic value (A\$ per hectare per year, 2008)
Flood control	1,023
Water filtering	635
Water supply	99
Biodiversity	472
Amenity/recreation	1,085

The only study of the value of wetlands in the GBR catchments estimates that one hectare of wetlands in the Lower Herbert region provides a community benefit of between \$1,915 and \$4,315 or an average of \$3,826 per yearⁱⁱⁱ. If this value was applied to the total area of HES wetlands in the GBR catchments, which is 161,886 hectares, this would provide a total value of between \$310 million and \$698 million. A more conservative estimate using the worldwide data on the value of wetlands for water filtering provides an approximate value of \$102 million per year and for amenity and recreation the value would be \$175 million per year.

Preventing further wetland loss will also have indirect benefits for the GBR catchments in the future. Without the wetlands providing ecological and hydrological functions the value of these services would be lost. Tourism is a major contributor to the local economy of the GBR region worth an estimated \$3,060 million in 2004–05^{iv} and the loss of the recreational and amenity value of wetlands could have flow-on impacts for this sector. Converting wetlands to alternative land uses, such as cropping, also has the potential to cause erosion, which may lead to increased nutrient and sediment runoff to the GBR. This in turn could lead to degradation of the Great Barrier Reef.

Costs

Application fees

The average DERM assessment cost per development application involving operational works is \$5,000.00 (see Table 6). Fees for development applications for urban purposes have been set at \$5,000.00. Fees for non-urban purposes are structured to provide an incentive for those applicants proposing to develop more than 200 metres from a wetland; therefore having less impact on the GBR wetland.

High impact earthworks that drain, fill or divert water to or from a GBR wetland can be undertaken anywhere in a GBR wetland protection area apart from the wetland itself. Earthworks up to 100 cubic metres can be undertaken in the wetland area and the surrounding 200 metres without any assessment. High impact earthworks outside the wetland will need to demonstrate that they can be undertaken without impacting on the hydrological and ecological values of a wetland.

The fee for development that is not for urban purpose and is less than 200 metres from a wetland is set at \$2,000. To encourage earthworks outside the default 200-metre buffer the fee structure has been set at \$500 for applications more than 200 metres from the wetland. Also the threshold for earthworks not requiring assessment is increased from 100 cubic metres to 1,000 cubic metres.

An acceptable solution for a developer would be to develop more than 200 metres from a wetland or demonstrate that an alternative natural or engineered structure is adequate. For example, the high impact earthworks may be down stream of the wetland and not have any hydrological connection to the wetland. Alternatively, the high impact earthworks may be a consequence of an industrial estate development on cleared land outside the wetland. The proponent may be able to successfully demonstrate that the surface drainage through the site can be managed so that no negative effects would impact on the wetland area. This will be more difficult to demonstrate depending on the nature of the development, its proximity to the wetland area and the degree of engineering required to achieve an acceptable solution.

Fees for assessment of a development application for operational work, the reconfiguration or material change of use of a lot in a Great Barrier Reef wetland protection area, if the work is—

(a) more than 200 metres from a wetland and not for an urban purpose	\$500
(b) less than 200 metres from a wetland and not for an urban purpose	\$2,000
(c) for an urban purpose	\$5,000

Rural stakeholders and urban developers

Both rural stakeholders and urban developers will incur costs from development application fees and any additional costs associated with site, ecological and hydrological assessments. Costs to industry will differ depending on the type of activity and where in the GBR wetland protection area the activity is undertaken.

The site assessment costs^v, including ecological and hydrological reports, will vary depending on the site, size and complexity. Rural landholders may face additional costs with the requirement for the site, hydrological and ecological assessments. For urban development it is considered that these costs will be undertaken as a normal part of the subdivision activity and there will be minimal extra compliance costs.

The following scenarios illustrate the indicative cost of applications and assessments for rural landholders and urban developers.

Scenario 1

The development application for high impact earthworks is made for an area outside a GBR wetland protection area.

Application fee	Not required
Assessment studies	Not required
Total cost	\$0

The requirement to develop outside the wetland and maintain appropriate buffers is consistent with existing and proposed policies for protecting areas of high ecological significance under regional plans.

Scenario 2

A development application for high impact earthworks not associated with an urban purpose is made for an area within the GBR wetland protection area but more than 200 metres from the GBR wetland. The applicant can easily demonstrate that the proposal meets the acceptable outcomes in the SPP for GBR wetlands.

Application fee	\$500
Assessment studies	Not required
Total cost	\$500

If all applications in GBR wetland protection areas were for works in this area only, that is there were no works in the buffer area, then the total cost for per year is estimated to be \$10,000 for 20 applications, \$25,000 for 50 applications and \$50,000 for 100 applications.

Scenario 3

A development application for high impact earthworks is made for an area within the GBR wetland protection area and less than 200 metres from a GBR wetland. In order to demonstrate compliance with the code the recommended assessments should also be undertaken and are included in the costs.

		Not for an urban purpose	For an urban purpose
Application fee		\$2,000	\$5,000
Assessment studies	Site design and layout	\$5,000	\$5,000
	Hydrological assessment	\$20,000	\$20,000
	Ecological assessment	\$10,000	\$10,000
Total cost		\$37,000	\$40,000

Further possible impacts

In addition to assessment cost associated with Scenario 3, there may be additional impacts arising from the protection of buffer areas for applications seeking to drain and fill wetlands. The development scenario below describes a hypothetical development proposal that gives one example of a negotiated outcome that meet the SPP for GBR wetlands code requirements.

DEVELOPMENT SCENARIO

Site context

The entire site is located within the wetland protection area. Almost 50 per cent of the site is mapped as containing a palustrine GBR wetland area. The GBR wetland on the subject site forms part of a much larger GBR wetland complex.

The site has limited vegetation, none of which is mapped as a regional ecosystem (RE). The site contains a natural drainage line that intermittently flows during major rainfall events into the wetland complex. To the north and east of the site, land is currently used for agricultural purposes (cropping). Land adjoining the western and southern boundaries of the site is also largely devoid of vegetation and is currently used for grazing and horse agistment purposes.

Hypothetical development proposal

The property owner is seeking to expand cropping activity (currently undertaken to the north) into the subject site. In order to do this, a range of operational works involving excavation, filling and drainage works are proposed to prepare the site and make it suitable for planting. Due to the location of the mapped HES wetland and associated GBR wetland protection area, the property owner lodges an application with the DERM seeking approval for the following works:

- constructing a system of drains involving the excavation of more than 100 m³ of fill to modify the drainage of the land that will be used for agriculture. The proposed drainage system encroaches within the HES wetland and buffer area. The effect of the drainage works will be to divert water from the natural drainage line that currently flows into the wetland and to provide flood immunity to the proposed area to be cropped
- filling of the natural drainage line to make the land suitable for cropping
- constructing a bund wall along part of the southern and eastern property boundaries to provide some flood protection to the land to be planted, from the broader wetland complex.

Applicant's approach

In preparing the application, the applicant did not seek technical advice from a consultant team to prepare the necessary supporting information to accompany the application. A basic application was provided including a description of the proposed works that satisfies the minimum information requirements under the *Sustainable Planning Act 2009*.

In the application's supporting information, the applicant contended that given the overall wetland's size, the scale of the proposed works would not affect the ecological values and hydrological functioning of the site. While some of the mapped wetland would be removed (through the filling of the drainage line and the bunding works which would prevent normal wetting and drying of the land), this represented only 0.002 % of the overall wetland extent.

The applicant also identified that there were various surface water inflows into the wetland and that commensurate inflows would be maintained from the adjoining properties to supply the wetland, such that the bunding works and filling of the drainage line (on the subject site) were not going to have any measurable impact.

In the assessment of the application, DERM made a request for further information in relation to the following matters:

- a further map showing the extent of the GBR wetland that would be removed and converted into agricultural land
- an assessment demonstrating that the proposed drainage system and bund wall would not have unacceptable impacts on surface flows into the wetland. In particular, demonstrating how natural drainage would be maintained to the wetland
- an assessment identifying wetland ecological values and potential threats from the proposed works, including impacts on the broader wetland areas adjoining the site
- given the proposed drainage system encroached within the GBR wetland area and would result in the loss of and/or substantial modification to the wetland, an assessment demonstrating how the proposal achieves the purpose of the code, in particular, how the proposal would protect the ecological values, hydrological functioning and extent of a GBR wetland and its buffer.

The applicant elected to meet with DERM on site to discuss the information request and to gain further explanation of DERM's concerns with the application. As a result of on-site discussions, the applicant chose to modify the application to reduce the extent of proposed works and sought professional advice from a suitably qualified consultant about how the hydrological functions of the site could be maintained while still allowing some cropping use outside the wetland. In response to this advice, the applicant proposed changes to the application, which involved removal of the bund wall, retaining the natural drainage line and filling only those parts of the subject land outside of the wetland buffer. The effect of these changes meant that some of the subject land could still be converted for the intended agricultural use without significant modification of the natural flow regime into and out of the wetland.

Likely indicative costs

The application fee of \$2,000 payable to DERM and the commissioning of a hydrological assessment and associated engineering advice were the main costs incurred for the project assessment. The indicative, rough order of magnitude (ROM) costs for these services would be:

- 1) Site design and layout including technical drawings with appropriate survey levels registered by a registered professional engineer of Queensland (RPEQ) (\$5,000) – To meet the SPP acceptable outcomes AO1 and AO2 site design and layout drawings were required to illustrate that the extent of the proposed works would not impact on the GBR wetland or buffer area. The applicant is not proposing an alternative buffer, and is adopting the default of 200 m, therefore an ecological assessment is not required.

2) Water and hydrology report including hydrological assessment (\$10–15,000) – To meet the SPP specific Outcome 3 (SO3) and due to the nature of the proposed works, a hydrological assessment was required to demonstrate that the proposed works would not significantly effect the flow of water to and from the wetland.

Total cost for applicant: \$17,000 – \$22,000

Assessment and likely decision

Based on the scenario described above, it is considered likely that the application would be approved in accordance with the amended proposal plans. The applicant demonstrated that the works and resultant agricultural use will be outside of the GBR wetland, and that a suitable buffer between the edge of the intended cropping land and the GBR wetland will be provided. The amended proposal enables the retention of the existing flow regime in and out of the wetland while allowing some use of the subject land for the intended agricultural use.

The approval would be subject to the imposition of reasonable and relevant conditions.

Discussion and implications

While the applicant was unable to fully utilise the land for agricultural purpose as was originally intended, this case study is an example of a negotiated outcome between the applicant and DERM in accordance with the intent of the code.

While it is not possible to forecast the impacts on individual applications, the catchment-level impacts can be estimated. Indications of the quantum of costs are outlined below by category of impacted stakeholders.

Rural stakeholders undertaking development in non-urban areas

The total area of land in the 35 GBR catchments is 33,268,101 hectares, of which HES wetlands in non-urban areas cover 161,229 hectares or 0.5 per cent. The total amount of non-urban areas covered by the 500-metre trigger area of a GBR wetland protection areas is 621,899 hectares or approximately 1.9 per cent of the non-urban areas in the 35 GBR catchments that the SPP for GBR wetlands applies to.

However, the costs and benefits of additional regulation requirements protecting wetlands through buffers will be distributed unevenly across the GBR catchments and will only impact on a very small area of wetlands that are not already regulated by other mechanisms such as the *Vegetation Management Act 1999* and the FNQ regional plan. The FNQ regional plan prohibits urban development outside the urban footprint so rural land holders may not develop land for urban purposes.

Rural land holders particularly agriculturalists will be impacted to differing degrees. Earthworks to maintain existing agricultural practices such as grazing, cropping, horticulture and forestry are exempt from regulation. Only high impact earthworks will be regulated. Vegetation clearing or planting not associated with high impact earthworks will not be further regulated.

The sugar and horticulture sectors stand to be most affected if expansion into wetlands is proposed. The grazing and dry land cropping sectors should not be affected. New irrigation ventures are already regulated by DERM under the *Water Act 2000* to ensure areas of ecological significance, including wetlands, are not significantly impacted by such development.

For a very significant proportion of wetlands (those containing or buffered by woody vegetation) the *Vegetation Management Act 1999* provides significant constraints to further development involving high impact earthworks. In the 35 GBR catchments remnant vegetation or high value regrowth comprises approximately 72 per cent of GBR wetland protection areas. Clearing of woody vegetation is restricted in approximately 90 per cent of the HES wetlands. The *Vegetation Management Act 1999* therefore indirectly protects the ecological values of this component of the GBR wetland protection areas by retaining woody vegetation. The *Vegetation Management Act 1999* only provides limited protection in urban areas and for grass and sedge type wetlands.

The following assessments show there would be further limited impacts from lost opportunities for production for rural landholders. However, new impacts will be marginal because the *Vegetation Management Act 1999* already places restrictions on the clearing of native vegetation within the suggested buffer zone.

Table 3 provides the calculations to determine the extent of the area that will have an opportunity cost. Approximately 27 per cent of trigger zone is not regulated under the *Vegetation Management Act 1999*.

The new development assessment code for operational works code will not restrict current agricultural activities. It will mainly impact on landholders who want to convert from grazing to intensive agriculture such as horticulture or sugar cultivation. The current rate of wetland loss can be used as an indicator of the demand for intensification. The current estimates of wetland loss of between three and five per cent provide an indication of this rate of conversion. Currently, only 12 per cent of non-urban GBR wetland area and 27 per cent of the GBR wetland 500 m trigger area is not regulated by *Vegetation Management Act 1999*. As indicated in Table 3, applying a rate of five percent conversion to this 187,260 hectares gives an estimated area of impact of 9,363 hectares.

Table 3: Potential area impacted – non-urban

Non-urban wetlands	Area (ha)	% GBR catchment
GBR wetland – non-urban	161,229	0.5000
GBR wetland 500 m trigger – non-urban	621,899	1.8694
GBR wetland – non-urban – 12% unregulated	19,348	0.0582
GBR setland 500 m trigger – non-urban unregulated (27%)	167,913	0.5047
Total area unregulated	187,260	0.5629
5% loss per annum of unregulated area	9,363	0.0281

The opportunity costs of restricting alternative uses in this area will impact on rural landholders. The most likely alternative use is the intensification of agriculture and the higher gross margins that might be achieved. This may in turn have an impact on property values for properties that contain large areas of HES wetlands.

The opportunity to intensify will vary across the GBR catchments depending on the availability of water and land type. However, advances in technology might provide alternative uses that are currently unknown. There may also be potential to develop tourism industries.

Planning schemes restrict urban development in non-urban areas hence urban development is not considered an opportunity cost. The provision of offsets is not constrained in the wetland protection areas. This means that there is the potential to place a conservation covenant over the area and earn income from offsets, where appropriate.

For example, the cost of protecting this very small proportion of land within the GBR catchments by removing it from intensive agriculture activity can be estimated as the difference in gross margins between grazing and sugar production. However, the gross margins fluctuate depending on world commodity prices and growing conditions. One study by CSIRO in the Tully–Murray region reports that grazing returns \$215 per hectare per year and sugar returns \$1,200 per hectare per year^{vi} so the difference is \$985 per hectare per year.

If these gross marginal costs from the CSIRO study are applied to the total number of hectares affected by the proposed regulation, which is 9,363, this equates to an opportunity cost of \$9.2 million per year across all the landholders who wish to conduct earthworks in the buffer area. See Table 4.

A similar cost would apply to those who are restricted from converting wetlands to cultivation areas. This opportunity cost is a conservative estimation, for example there will be a one-off capital cost to landholders to fill in the wetlands of approximately \$1,500 per hectare, which will reduce the profits from conversion. However, not all land may be suitable for conversion.

Table 4: Potential opportunity costs from restriction of earthworks in buffer areas

Opportunity cost per hectare/year	\$985
Total hectares impacted	9363
Total cost/year	\$9.2 million

Urban Developers

In the 35 GBR catchments urban areas cover 96,268 hectares of which 656 hectares are HES wetlands. The total amount of urban area covered by GBR wetland protection areas is 1,453 hectares or 0.7 per cent of the total GBR urban areas. The SPP for GBR wetlands reinforces the FNQ regional plan requirement that urban development other than for required community infrastructure, is set back from wetlands through adequate buffer zones. The SPP for GBR wetlands sets a default buffer of 50 metres. This is less than the 200-metre default buffer in non-urban areas. The reduced buffer area recognises that the natural hydrology of the land has often been substantially altered in urban areas.

Development costs incurred to meet the SPP for GBR wetlands requirements in urban areas would be consistent with those incurred to meet the requirements of local governments when considering urban development in sensitive environments. Having a uniform requirement should reduce the costs of the urban development sector.

There may be opportunity costs for urban developers who are limited from developing in the suggested buffer zone around urban wetlands under the new regulatory reforms proposed in this RIS. As shown in Table 5, the GBR wetland protection areas in urban areas accounts for a total of 1,453 hectares or less than 0.002 per cent of the GBR region. However, there are already limits on clearing in these buffer areas by the FNQ regional plan, some local area planning schemes and for endangered remnant regional ecosystems greater than 2 hectares by the *Vegetation Management Act 1999*. Accordingly, it is difficult to estimate the extra limits on earthworks imposed by the proposed regulation but it will be less than the total buffer area.

What is known, is that the current estimates of wetland loss are between three and five per cent per annum. As shown in Table 5, assuming that a 5 per cent conversion rate were to continue, and given that 55 per cent is protected under the *Vegetation Management Act 1999* then there is a potential impact on 32.7 hectares per annum in GBR wetland protection areas.

While this area potentially removed from new urban development activities is equal to less than 0.03 per cent of the total GBR urban areas, restrictions on operational works may lead to lost urban development opportunities particularly in the regional centres of Cairns, Townsville, Mackay and Rockhampton, where demand from growing population and changing peri-urban land patterns is greatest.

Table 5: Potential area impacted – urban

Urban wetlands	Area (ha)	% GBR urban areas
GBR wetland protection area – urban	1 453	<1.5
45% unregulated by the VMA	654	<0.002
Annual loss at 5% rate of conversion	32.7	<0.03

The opportunity costs for urban developers can be estimated by looking at the difference between the value of the next best use of the land (current use) and the value of the land as part of an urban development. However, it is not possible to estimate an average for these values as each lot of land will have a unique value dependent on its location, characteristics, market demand and local land planning provisions.

Arguably, potential individual opportunity costs will be reduced by the additional costs arising from filling in the wetlands and providing alternative stormwater treatment and flood control structures previously provided by the wetland. Overall, given current restrictions on developing in and around wetlands and the ability to reconfigure developments the extra impact per housing lot is considered minor.

Overall, there is the potential for additional impacts on both rural land holders and urban developers from the proposal to increase the regulation of HES wetlands in the GBR catchments. The costs will be unevenly distributed with impacts more likely in coastal areas suitable for alternative land uses and for urban development.

It is not possible to estimate the total cost to urban development but given the very small area of impact, coverage of existing regulation on native vegetation clearing and the benefits of maintaining the wetlands, potential costs are considered minimal.

The cost to rural land holders will arise from lost opportunities of converting to a more intensive land use. This is estimated to be \$9.2 million per year and must be considered against an estimate of over \$175 million per year of benefit provided by maintaining the wetlands.

Community

Given there this no proposal to restrict or impact on current activities there will be little flow-on impacts to local communities. Instead the economic benefits and local job opportunities provided by the tourism industry within the GBR catchments are likely to be more secure through greater protection of the recreational and amenity value of HES wetlands.

There is the potential that there will be an increase in the cost of housing in GBR wetland protection areas due to increased assessment costs. However, assessment studies are required as a normal part of development assessment and any increases would be minimal over the development site. Further, the amenity of a site with wetlands and wooded buffers would be higher than a fully cleared site so any price increase would be offset.

In addition, the small potential cost for some housing developments needs to be considered against the benefits provided by the wetlands through the provision of ecosystem services. The benefits of flood control, biodiversity, recreation and amenity are estimated at over \$1,000 per hectare or over \$175 million per year across the GBR catchments.

State Government

The proposal to amend the *Sustainable Planning Regulation 2009* to provide DERM with a concurrence role in assessing and conditioning activities impacting on HES wetlands within the GBR catchments will impose an appreciable cost on State Government.

The cost to assess applications will vary depending on the site, size and complexity. However, to estimate the cost to State Government it is assumed that the average length of assessment is 70 hours. The default hourly wage rate of \$71.60 provided by the Australian Government's Office of Best Practice Regulation business cost calculator is applied.

The analysis of costs is based on an estimated number of 20, 50 and 100 applications. It is also assumed for determining compliance costs that a site visit will occur for 15 per cent of the applications and 10 per cent may require further follow up.

Table 6: Estimated costs to State Government per application

Average length of assessment	70 hours
Default hourly wage rate	\$71.60
Cost per application	\$5,012.00

Table 7 provides an estimate of the total costs to government for assessment and compliance with costs ranging from \$103,240 to \$516,200.

Table 7: Estimated costs to government per year

Number of applications	Total assessment cost	Total compliance cost	Total cost
20	\$100,240	\$3,000	\$103,240
50	\$250,600	\$7,500	\$258,100
100	\$501,200	\$15,000	\$516,200

There will be costs to stakeholders associated with the introduction of new regulation to improve the management and assessment of HES wetlands in the GBR catchment. It is anticipated that there will be costs to local government for incorporating additional criteria into the assessment of development applications; however, the *State Planning Policy for GBR Wetlands Guideline* and associated technical guidelines should minimise these additional costs.

The quantum of costs is minimal given that potential benefits that will continue to follow to the region from tourism, which is based on the recreational and amenity values of the GBR catchments and the collective benefits provided by the ecosystem functions of wetlands. Table 8 is a summary of the cost and benefits.

Table 8: Summary of benefits and costs

Stakeholder	Benefits	Costs scenario 1	Costs scenario 2	Costs scenario 3
Rural landholders	Maintain services at a property level. <ul style="list-style-type: none"> • Flood control • Water supply • Water filtering • Biodiversity <p>Minimum benefit \$1,000/hectare</p>	Assessment Nil	Assessment \$500	Assessment Extra cost \$37,000 per application Opportunity cost \$9.2 million/year for GBR catchment.
Urban developers	Maintain services at development site: <ul style="list-style-type: none"> • Flood control • Water filtering • Amenity and recreation <p>Minimum benefit \$1,000/hectare</p>	Assessment Nil	Assessment \$500	Assessment Extra cost \$40,000 per application Opportunity cost Minimal extra cost depending on site and location.
Government	Maintain conservation, tourism, recreational and amenity benefits of the GBR.	Nil Application is made for an area outside of the GBR wetland protection area	Assessment \$103,240 to \$516,200/year	Assessment \$103,240 to \$516,200/year
Local government	Maintain conservation, tourism, recreational and amenity benefits of the local area and GBR.	Nil	Nil	Nil
Community	Maintain the full suite of ecosystem services from the wetlands of high ecological significance. <ul style="list-style-type: none"> • Flood control • Water supply • Water filtering • Biodiversity • Amenity and recreation • Climatic stabilisation • Carbon sequestration <p>Minimum benefit \$100 million/year</p>	Nil	Nil	Nil

FUNDAMENTAL LEGISLATIVE PRINCIPLES

The *Legislative Standards Act 1992* requires that legislation has sufficient regard to rights and liberties of individuals and the institutions of Parliament.

The regulatory proposals are consistent with the principles of

- natural justice
- appropriate review and delegation of administrative power
- clarity and precision of legalisation
- adequacy of the head of power to make subordinate legislation and consistency with the authorising acts.

CONCLUSION

The reform initiatives being proposed are needed to provide targeted and effective solutions to identified gaps in existing regulation for management and protection of wetlands in Queensland. These proposed reforms will help prevent future impacts on the health of the GBR and ensure the wetlands of high ecological significance are protected and enhanced for future generations.

GLOSSARY (and abbreviations)

DERM Department of Environment and Resource Management

Development commitment means any of the following:

- development with a valid preliminary approval or development that arises from and is necessary to give effect to a valid development approval; or
- development that is:
 - a) consistent with the relevant regional plan or any applicable State Planning Regulatory Provision; and
 - b) explicitly anticipated by and consistent with the specific relevant zone (or equivalent), all applicable codes, and any other requirements of the relevant planning scheme; or
- development that is located within a state development area¹ and is consistent with the development scheme prepared for the state development area¹; or
- development consistent with a designation for community infrastructure.

Note: A development commitment does **not** include circumstances where the planning scheme makes the principle use subject to further planning or environmental assessment.

FNQ regional plan *Far North Queensland Regional Plan 2009–2031*

Great Barrier Reef (GBR) catchments include the following catchments: Baffle, Barron, Belyando, Black, Bowen, Boyne, Burdekin Lower, Burdekin Lower, Burdekin Upper, Calliope, Comet, Curtis Island, Daintree, Dawson, Don, Fitzroy, Haughton, Herbert, Hinchinbrook, Isaacs, Johnstone, Mackenzie, Mossman, Mulgrave–Russell, Murray, Nogoia, O’Connell, Other Islands, Pioneer, Plane, Proserpine, Ross, Shoalwater, Styx, Tully and Waterpark

High Ecological Significance (HES) wetlands comprise wetlands that have been identified as high ecological significance in accordance with criteria set out in the SPP guideline.

High impact earthworks has the meaning provided under the *Sustainable Planning Regulation 2009*, Schedule 26 (Dictionary).

Lacustrine wetlands means large, open, water-dominated systems (for example, lakes) larger than 8 hectares. This definition also applies to modified systems (for example, dams), which possess characteristics similar to lacustrine systems (for example, deep, standing or slow-moving waters).

‘Map of referable wetlands’, a document approved by the chief executive (environment) under the *Sustainable Planning Regulation 2009*.

Palustrine wetlands means primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks, etc, and have more than 30 per cent emergent vegetation.

Reef plan Reef Water Quality Protection Plan 2009

RIS Regulatory Impact Statement

¹ See glossary for definition of state development area

Urban purposes means purposes for which land is used in cities or towns, including residential, industrial, sporting, recreation and commercial purposes, but not including environmental, conservation, rural, natural or wilderness area purposes.

GBR wetland protection area means an area shown as a wetland protection area on ‘Map of referable wetlands’, a document approved by the chief executive (environment).

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ENDNOTES

- 1 Laid before the Legislative Assembly on . . .
- 2 The administering agency is the Department of Environment and Resource Management.

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