



Catchment Management Authority Namoi

30th January 2013

Department of Planning and Infrastructure
GPO Box 39
Sydney NSW 2001

Attention: Ms Lisa Mitchell, Manager Water Infrastructure Assessments

Dear Lisa,

**Re: Chaffey Dam Augmentation and Safety Upgrade (SSI-5039)
Review of Environmental Impact Assessment**

Thank you for the opportunity to review and comment on the Environmental Impact Statement for the Chaffey Dam Augmentation and Safety Upgrade.

Namoi CMA is primarily interested in major developments such as the Chaffey Dam Augmentation from the perspective of catchment impacts especially in the areas of soil and water management, protection of biodiversity, management of riparian areas and enhancement of social and economic values. Namoi CMA advocates the protection, maintenance and improvement of the Catchment for the benefit of all community members.

Namoi CMA has two documents which serve to guide major developments in the Catchment:

- Namoi Catchment Action Plan 2010-2020 (Namoi CAP).
- Biodiversity Offsets Policy (BOP 2011).

1. Namoi Catchment Action Plan 2010 - 2020

The Namoi Catchment Action Plan 2010-2020 (Namoi CAP 2010-2020) was developed by Namoi CMA in conjunction with the Catchment community and guides natural resource management within the Namoi Catchment. The Namoi CAP 2010-2020 was developed in accordance with the Catchment Management Authorities Act 2003 and received Ministerial approval in July 2012.

The Namoi CAP 2010-2020 aims at managing and protecting the Catchment assets including biodiversity, land, water and people through identifying targets and actions.

It is noted that the Namoi CAP 2010-2020 and targets are considered in the EIS Project Description, section 4.10.

In regard to the Chaffey Dam Augmentation, Namoi CMA believes that three Catchment assets will be impacted, namely biodiversity, water and people. The applicable asset targets that will be impacted include:

Biodiv 1: By 2020 there is an increase in native vegetation extent and vegetation does not decrease to less than 70% in less cleared sub-catchments and 30% in over cleared sub-catchments and no further Regional Vegetation Community decreases to less than 30% extent as identified by 2010 baseline.

Biodiv 3: By 2020 contribute to the recovery of priority viable threatened species, populations and communities.

Water 1: By 2020 there is an improvement in the condition of those riverine ecosystems that have not crossed defined geomorphic thresholds as at the 2010 baselines.

People 1: Natural resource management decisions contribute to social well being.

More detail regarding the Namoi CAP 2010-2020 can be found at Namoi CMAs website (www.namoi.cma.nsw.gov.au).

Reference will be made to the Namoi CAP 2010-2020 targets in the following review together with comments on specific environmental and development issues.

2. Namoi CMA Biodiversity Offsets Policy 2011

In 2011, Namoi CMA developed a 'Biodiversity Offset Policy' for the Namoi Catchment. This Policy highlights some of the inadequate biodiversity outcomes that are contained within the current NSW State and Commonwealth Government's approaches to biodiversity offsets. It also provides guidance for proponents to enable the achievement of beneficial biodiversity offsets. The current Government approaches have significant implications on Namoi CMA's ability to meet the biodiversity targets under the Namoi CAP 2010-2020 for the following reasons:

- Insufficient Gain – the amount of land apportioned for offset to compensate for loss of native vegetation is insufficient. Simply setting aside an area that already exists and only changing its conservation status still results in net loss of vegetation and can result in critical "vegetation extent" thresholds being crossed.
- Equivalence - even when the same vegetation types are replanted or regenerated as part of an offset, planted or restored vegetation will take many generations to achieve biodiversity richness when compared to the natural vegetation communities that are removed.
- Time Lags – the timeframes for biodiversity increments to occur in assisted regeneration or new plantings are lengthy. It may take hundreds of years to achieve the biodiversity richness of the natural vegetation that is removed.

Consequently, any offsets proposed by proponents need to compensate for the predicted impacts, ensure that there is no net loss of native vegetation, ensure that the development does not cross any critical ecological thresholds and be consistent with the existing NSW Government and Commonwealth legislative biodiversity offset requirements as a minimum standard.

As such, offsets proposed for the Chaffey Dam Augmentation must also meet the following principles:

- Offsets should be considered as a last resort, after consideration of the alternatives to avoid and/or mitigate impacts.
- Offsets must be based on sound ecological principles and deliver on priorities identified in the draft Namoi Biodiversity Conservation Plan.
- Offset areas must be within the Namoi Catchment boundaries (wholly or in part – as a contiguous area of native vegetation).
- Offsets must be beneficial and of the same vegetation type and be at least the size, equivalent biodiversity value & configuration of the vegetation lost and additional to existing native vegetation areas.
- Offsets must be in perpetuity and be registered on title.
- Offset conditions must be monitored, enforceable, clearly mapped, recorded and publicly available.
- An offset area, once designated, cannot be used for further offsetting of subsequent developments in future.

The NCMA Biodiversity Offsets Policy 2011 and Namoi Biodiversity Conservation Plan can be downloaded from our website www.namoi.cma.nsw.gov.au

It is noted that the NSW Government and Commonwealth legislative biodiversity offset requirements are considered in the EIS in section 8.2.6 Offset Strategy

Reference will be made to the NCMA Biodiversity Offsets Policy 2011 in the following review and comments on specific environmental and development issues.

3. Specific Comments

The following specific comments are provided as a consequence of the review of the EIS and relevant sections and appendices.

Namoi CMA is aware of the project, its components, objectives and description. Raising the full supply level will result in inundation of an additional 185ha of foreshore land including 1.7km of the Peel River and relocation of a number of roads and bridges.

Namoi CMA does not object to the proposed development, however we have a number of concerns and issues that need to be further addressed.

Namoi CMA acknowledges consideration in the EIS of the Catchment Management Authorities Act 2003 and the Native Vegetation Act 2003.

We are aware that an overall Construction Environmental Management Plan (CEMP) will be prepared to address environmental issues within the project construction area. Namoi CMA request as a condition of approval that it be consulted during the preparation of the CEMP especially in regard to soil conservation and vegetation management.

Section 8.1 Soil and Water

Section 8.1.1 Existing Environment

Namoi CMA notes that within the description of the existing soils and geology that the EIS has referred to AUSLIG 1990, DEC 2004 and Natural Resource Atlas 2012 for soil mapping. Namoi CMA has a number of publicly available datasets including Soil Landscape Mapping for the Namoi Catchment which provides greater detail and accuracy on soils while also providing information on the soil limitations and best management practices. The soil landscape mapping for the areas surrounding Chaffey Dam can be downloaded from our website www.namoi.cma.nsw.gov.au

The information provided in the EIS on soils is sufficient, however, for future reference please be aware of the soils data held by Namoi CMA.

Section 8.1.2 Potential Construction Impacts

Namoi CMA realises that as a consequence of an additional 185ha of inundation that there will be a loss of land available for agriculture especially on the southern and western foreshores. The inundation and resultant road construction will mean a loss of prime agricultural land, as well submergence of soils and terrestrial vegetation.

The additional inundation will also result in a decrease in aquatic stream environment, however the EIS states on page 106 the decrease is about 1.2km. Scaling from the Figure 4.4, page 26 appears to indicate that the length of inundation will be 1.7km. The length and impacts of the additional stream environment inundation needs to be clarified, especially with regard to the Booroolong frog habitat.

Section 8.1.4 Mitigation Measures

Soil and water mitigation measures proposed include the preparation of a Sediment and Erosion Control Plan for the construction phase and the revision of the Foreshore Management Plan. Namoi recommends that a condition of approval be as follows:

- that Namoi CMA be consulted during the preparation of the Sediment and Erosion Control plan, and
- that Namoi CMA is consulted during the revision of the Foreshore Management Plan.

Section 8.2 Terrestrial Biodiversity

Section 8.2.1 Existing Environment

Namoi CMA has reviewed this section of the EIS and is satisfied with the identification of the threatened flora and fauna and ecological communities.

As stated in the EIS, Namoi CMA is continuing its work to assess and protect the habitat for the Booroolong frog. Additional frog surveys along the Peel River are currently occurring with results expected by mid February. Namoi CMA is keen to protect the frog and its habitat in line with Namoi CAP 2010-2020 targets **Biodiv 3** and **Water 1**.

Namoi CMA has reviewed the identified vegetation communities within the study area and is satisfied with the communities mapped and their alignment with Regional Vegetation Communities. The community descriptions as detailed in the EIS and Appendix 8 are mostly satisfactory. However, there is little information regarding the condition status of the vegetation communities and their assessment against RVC ecological condition benchmarks and the Namoi CAP 2010-2020 critical thresholds.

Namoi CMA understands that further information on vegetation condition, meeting benchmarks and thresholds will be included in the Biodiversity Management Plan.

Section 8.2.2 Potential Construction Impacts

It is noted that as a consequence of dam construction and realignment of roads that 68ha of native vegetation will be cleared, of which 63ha is EEC Box Gum Woodland. It is stated in the EIS that most of the Box Gum Woodland is in low condition with only 4ha meeting EPBC criteria. Furthermore, it is also stated in the EIS that there may be significant areas of Queensland Bluegrass that may be cleared as a result of road realignment activity.

Also, as a consequence of inundation there will be 135ha of native vegetation that will be ecologically changed and eventually decay and die. Once changed this terrestrial vegetation will have very little ecological value. Of the 135ha, 117ha is considered to be EEC Box Gum Woodland with only 6ha meeting the EPBC criteria.

Namoi CMA realises that it is proposed to offset the land clearance areas with the conservation of significant areas of nearby woodlands and grasslands, however even with the proposed offsets there will be a net loss of native vegetation from the Namoi Catchment. The net loss of native vegetation is of concern to Namoi CMA and our ability to meet Namoi CAP 2010-2020 target **Biodiv1** and the NCMA Biodiversity Offset Policy 2011.

Namoi CMA is especially concerned with regard to CAP target **Biodiv 1** as the current extent of Box Gum Woodland Community within the Namoi Catchment as at the 2010 threshold is just below the 30% threshold (27% extent).

Additionally, Namoi CMA is concerned with the net loss of native vegetation and the project's ability to comply with the NCMA Biodiversity Offset Policy 2011 as the offsets proposed will only result in the change of conservation status of existing woodlands or

an improvement in the condition of pre-existing vegetation providing for insufficient gain.

Namoi CMA is also concerned with the loss of habitat resulting from inundation of hollow bearing trees, artificial man made habitats and Booroolong frog habitat.

We are especially concerned with the loss of Booroolong frogs and their habitat. Our research and surveys have indicated that the river reach directly above the existing full supply level contains the most robust and resilient population of Booroolong frogs within the Namoi Catchment. We know that the frog's habitat is constrained by geomorphic and topographic conditions and they already occupy all of the existing and potential optimal habitat upstream of Chaffey Dam. Importantly, Booroolong frogs are dependent on permanent water as well as basking areas.

Our research and investigations reveal that Booroolong frogs do not migrate or translocate very well. We believe that with the increased inundation over the 1.7km of river reach will result in a decline of the Booroolong frog population and a loss of habitat critical for the frog's survival.

We agree with the statements in the EIS that 'inundation to the new FSL ... the project is likely to have a significant impact on the population of the endangered Booroolong frog previously recorded immediately upstream of Chaffey Dam on the Peel River'. However we disagree with the statement that 'the impact to the species across its range is unlikely to be significant.'

Recent surveys have found Booroolong frogs occurring in the headwater streams of the Namoi Catchment between 400 to 700 metres above sea level. Within the Namoi Catchment there is evidence of the frog in the mid to low elevation streams in the Cockburn and Peel River sub-catchments above Chaffey Dam. The population is conservatively estimated to be between 600 and 800 frogs. Thus the Namoi Catchment is an important area for the survival of this species.

The range for the Booroolong frog in the Namoi catchment is very limited, so the likely impact on the frog and its habitat across its range will be significant.

Section 8.2.5 Proposed Mitigation Measures

Namoi CMA agrees that if the project proceeds the impacts on biodiversity given the increased FSL are unavoidable. The land clearance impacts can largely be offset with appropriate mitigation measures, however we believe the impacts on the Booroolong frog and its habitat will be extremely difficult, if not impossible, to completely mitigate.

Our research and investigations indicate that mitigation measures like habitat creation and the translocation of Booroolong frogs is highly unlikely to succeed because of the species dependence upon permanent water, shallow riffles, island rock structures, shade and basking sites. Therefore, we believe that whatever mitigation measures are employed, they will not completely offset the negative impact on this species. We have explored a few options for habitat re-creation including rock placement, riffle creation and tree planting near the point where the Peel River would enter the dam in

the future, however we are very cautious with this suggestion as there is little evidence to suggest this would be an effective or long term mitigation for habitat loss. We believe that this needs to be investigated further, however we are not confident that it would provide an acceptable offset measure.

Activities which address Key Threatening Processes impacting the Booroolong frog may allow for population increases in already populated areas, reducing population decline. The activities which may achieve this include reduction/removal of stock pressure and improvement in native vegetation on channel buffers to reduce sedimentation and nutrient pollution. The purchase of land adjacent to the Peel River upstream of Chaffey Dam would be the most effective way to achieve this. Control of foxes, feral goats and pigs to limit unnatural predation could also be undertaken. Carp control measures have been proven to be futile in reducing riverine carp numbers in the medium to long term.

We believe that if the project proceeds in it's current form there will be a decline in the Booroolong frog population and a guaranteed loss of habitat.

Namoi CMA requests that additional research and investigation be undertaken prior to project approval into possible mitigation measures for the protection and conservation of the Booroolong frog and its habitat.

Terrestrial biodiversity mitigation measures proposed in the EIS include the preparation of a Biodiversity Management Plan. The Biodiversity Management Plan is proposed to include a Booroolong Frog Management Plan and a Vegetation Management Plan. Namoi CMA recommends that a condition of approval be as follows:

- that Namoi CMA is consulted during the preparation of the Biodiversity Management Plan including the Booroolong Frog Management Plan and the Vegetation Management Plan.

Section 8.2.6 Offset Strategy

Namoi CMA realises that it is difficult to determine offset strategies until all relevant data is obtained including the potential areas of Queensland Bluegrass. Current surveys will obviously assist with determining offset strategies. Namoi CMA looks forward to being consulted during the preparation of the Offset Strategy.

Namoi CMA recommends the following be included in the preparation of the Offset Strategy:

- that the proponent consider the Namoi CMA Biodiversity Offset Policy 2011 when preparing the Offset Strategy,
- that offsets achieve multiple identifiable benefits,
- that the whole 203ha of native vegetation including 180ha of Box Gum Woodland be adequately offset through conservation and management of pre-existing vegetation,

- that Biobanking Assessment Methodology be used to determine both the number and type of credits required to offset impacts,
- that an appropriate area of at least 203ha be planted to native vegetation to offset the loss of native vegetation thus ensuring there is no net loss of native vegetation in the Namoi Catchment,
- that a pro-rata area of native vegetation be planted to offset the loss of equivalence and functional time lags compared to the native vegetation cleared,
- that an Offset Monitoring Plan is included in the Offset Strategy,
- that processes are in place to complete a Conservation Property Vegetation Plan to secure the biodiversity offsets.

Section 8.4 Aboriginal Heritage

Namoi CMA has reviewed the Aboriginal Heritage section of the EIS. We are satisfied with the description of the existing environment, levels of consultation, record of finds within the construction area and mitigation measures.

It is important that the managers of the augmented Chaffey Dam partner with the Aboriginal community and Namoi CMA to ensure Aboriginal Heritage is conserved, access to country is improved and natural resource management decisions contribute to the social wellbeing of the Catchment community (Namoi CAP 2010-2020 **People 1**).

Namoi CMA requests that it be consulted during the development of the 'Back to Country' protocol.

Section 8.11 Socio-economic

Namoi CMA has reviewed the socio-economic section of the EIS. Namoi CMA recognises the importance of Chaffey Dam to the catchment and community and commends the Chaffey Dam augmentation and safety upgrade. Chaffey Dam provides significant economic and social well being for the community, especially in terms of increased water security, dam safety, flood protection and recreational values (Namoi CAP 2010-2020 **People 1**).

Namoi CMA is satisfied with the assessment of the construction and operational socio-economic impacts.

The mitigation measures proposed include development of an Emergency Response plan in consultation with a number of emergency aid groups. Namoi CMA suggests consultation with North West Local Land Services as they will have an emergency response role with regard to agriculture and livestock management. North West Local Land Services is expected to be operational by January 2014.

4. Summary of Concerns and Recommendations

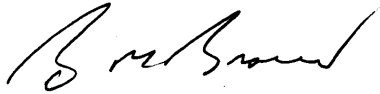
Concern and/or issue	Recommendations / Conditions of Approval
Overall environmental issues within construction area	Namoi CMA be consulted during the preparation of the CEMP
Length of aquatic environment inundated	The length and impacts of the additional stream environment inundation needs to be clarified, especially with regard to the Booroolong frog habitat.
Soil erosion and sedimentation	Namoi CMA be consulted during the preparation of the Sediment and Erosion Control Plan
Foreshore land management	Namoi CMA is consulted during the revising of the Foreshore Management Plan.
Booroolong frog population decline and habitat loss	Additional research and investigation be undertaken prior to project approval into possible mitigation measures for the protection and conservation of the Booroolong frog and its habitat.
Impacts on terrestrial biodiversity	Namoi CMA is consulted during the preparation of the Biodiversity Management Plan including the Booroolong Frog Management and the Vegetation Management Plans.
Net loss of native vegetation And compliance with the NCMA Biodiversity Offset Policy 2011	Namoi CMA is consulted during the preparation of the Offset Strategy. Recommended inclusions: <ul style="list-style-type: none"> • consideration of the Namoi CMA Biodiversity Offset Policy 2011, • offsets achieve multiple identifiable benefits, • the whole 203ha of native vegetation be adequately offset, • Biobanking Assessment Methodology be used, • at least 203ha be planted to native vegetation to offset net loss of native vegetation, • that a pro-rata area of native vegetation be planted to offset the loss of equivalence and functional time lags, • Offset Monitoring Plan and the completion of a Conservation Property Vegetation Plan.
Aboriginal Heritage	Namoi CMA requests that it be consulted during the development of the 'Back to Country' protocol
Emergency Response	Namoi CMA suggests consultation with the yet to be established North West Local Land Services.

5. Conclusion

Namoi CMA believes that if the above concerns are addressed in the Response to Submissions then Namoi CMA will support the Chaffey Dam Augmentation and Safety Upgrade Project.

If you need to discuss this matter further, please do not hesitate to contact Glenn Bailey on (02) 6742 9204 and/or Anna Cronin (02) 6764 5953 (Booroolong frog specialist).

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Bruce Brown', with a stylized, cursive script.

Bruce Brown
General Manager
Namoi Catchment Management Authority