Part C Justification and Environmental Management

19 Ecologically Sustainable Development Principles

Section 19 details how the development will incorporate ESD principles in the design, construction and ongoing operation phases. This responds directly to the DGEAR and considers the ESD drivers within the Redfern-Waterloo BEP.

Ecologically sustainable development aims to sustain and conserve natural resources through 'using, conserving and enhancing the communities' resources so that the ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased' (Commonwealth Government of Australia, 1990).

The following presents the fundamental principles of ecologically sustainable development followed by the economic, social, environmental and governance benefits associated with the proposed EHW and the RWA's renewal program.

19.1 Redfern-Waterloo Built Environment Plan ESD Strategy

An ecologically sustainable development strategy forms part (Section 3.7) of the Redfern-Waterloo BEP and is applicable to each of the RWA sites. Initiatives outlined in the strategy relate more to the building design, being concerned with: energy efficiency; passive design principles; water conservation and grey water reuse; waste management; reduced car dependence; and compliance with BASIX.

Although the ESD strategy is focused on building design, there are a number of elements that can be applied to the proposed EHW.

19.2 Principles

Precautionary principle

The precautionary principle was developed in response to the limitations of scientific methods. The precautionary principle adopts the notion that lack of full scientific certainty is not a valid reason for postponing measures that prevent environmental degradation if the uncertainty and level of associated risk is considered in decision making.

Intergenerational equity

The intergenerational equity principle requires the present generation to ensure that the diversity, health and productivity of the environment is maintained or enhanced for future generations.

Conservation of biological diversity

Biological diversity refers to the variety and abundance of species, their genetic composition, their communities, and the ecosystems and landscapes of which they are a part. Biological resources provide food, medicines, fibres and industrial products for human consumption.

Improved valuation and pricing of environmental resources

This principle established the need to quantify the economical value of services provided by the natural environment including cultural values, visual amenity and the ability of the atmosphere to receive gaseous emissions. This is often complex due to the intangible nature of much of the natural environment. A common approach is to consider the costs involved in formulating and implementing mitigation measures to provide a broad estimate of the value of these natural resources.

19.3 Assessment

The proposed EHW will optimise ESD with a range of social, economic, environmental and governance benefits. This is demonstrated in the following assessment which outlines the ESD principles incorporated in the design, construction and operational phases of the proposed EHW.

Social Advantages

- Promote an increase in the proportion of trips using active modes of transport (i.e. walking and cycling).
- Increase proportion of trips by public transport with its alternative link and access to the Redfern Railway Station.
- Improve community safety and security through activation of public spaces and linking of the public realm.
- Promote indigenous culture through interpretation of the fishing net motif within the EHW structure.
- Provide training opportunities through the RWA's EEP program.
- Increase employment of Aboriginal people with regard to the Aboriginal Participation in Construction Implementation Guidelines.
- Provide enhancement to the public realm (that comply with DDA) and connectivity of the public realm.
- Improve community health outcomes through the promotion of active modes of transport.
- Integrate land use (North Eveleigh) and transport (Redfern railway station).
- Promotes indigenous and non-indigenous heritage through interpretation and provide the ability to appreciate the Eveleigh Railway Yards (by also acting as a viewing platform).
- Facilitate visual amenity by introducing contemporary high quality design.

Economic advantages

- Job creation (and particularly for the local community with regard to the RWA's EEP).
- Operating costs are limited with anti-graffiti design and the avoidance of elevators.
- Provide employment to the unemployed.
- Create a landmark feature that will stimulate economic investment in the RWA's Operational Area.
- Delivery of public infrastructure in the local area.
- Deliver more benefits than costs (environmental and social costs of renewal).

Environmental advantages

- Reduce greenhouse gas emissions through the promotion of active transport.
- Life cycle cost minimised as a result of the bridge design and materials.
- Remediation of contaminated land at the North Eveleigh landing.
- Steel tonnage will be reduced as much as possible (by optimising the EHW geometry, organisation of the diagonals and the section sizes).

- Reduce the negative effects of light spill on surrounding residents.
- Energy usage during operation is minimised by the avoidance of the use of lifts and use of low voltage lighting.
- Protect the noise environment during construction as much as possible.
- Makes use of redundant brownfield land (North Eveleigh).
- Prevent export of pollutants to receiving waters.
- Improve efficiencies of resource use.

Governance

- EHW location reflects proposed site identified in the BEP.
- Community has been engaged in decision making as part of the development of the BEP and will have opportunities to comment on the project application.
- Participation from the Metropolitan Local Aboriginal Land Council.

19.4 Conclusion

Through the initiatives outlined above and the various management measures identified throughout this environmental assessment the EHW has considered and incorporated the principles of ESD.

20 Environmental Management and Draft Statement of Commitments

The Environmental Assessment for the proposed EHW has identified a range of environmental outcomes and management measures that would be required to avoid or reduce its environmental impacts. These have been converted to specific commitments which are described in Table 20.1.

Table 20.1 Draft statement of commitments

Reference No.	Objective	Commitment	Timing
1. Rail Corridor and Operations	To minimise impacts on the rail corridor and its operations	a) Access arrangements for construction are to be agreed to between RailCorp and RWA.	Prior to Construction
		b) Anti-throw barriers are to be fixed on either side of the EHW.	Prior to Construction
		c) Anti-climb facilities are to be integrated into the EHW design.	Prior to Construction
		d) The design of the stormwater drainage system of the EHW shall ensure that stormwater is collected and discharged off the rail corridor.	Prior to Construction
		e) Undertake a study to determine whether any lightening arrest system is required.	Prior to Construction
		f) Consider the location of the northern abutment in consideration of its location and potential loads of a future underground station beneath.	Prior to Construction
		g) The detailed design will consider, in consultation with RailCorp, train impact loading in event of collision on the bridge structure.	Prior to Construction
		h) Propose an accurate survey locating the development with respect to the rail boundary and rail infrastructure.	Prior to Construction
		i) Request service searches from RailCorp, to establish the existence and location of any RailCorp Services and structures. Where RailCorp services are identified the proponent is to discuss and agree with RailCorp how these services are to accommodated in the development.	Prior to Construction
2. Signage (Way Finding)	To ensure the design is driven by design excellence and coordinate signage across the RWA Operational Area.	A Signage Strategy for the EHW and its surrounds will be prepared prior to commencement of use.	Prior to commencement of use
3. Accessibility	To provide access	The proponent will ensure the EHW is	Prior to

Reference No.	Objective	Commitment	Timing
	for mobility impaired and disabled persons.	designed to comply with the requirements of Australian Standards AS 1428 Parts 1 and 2.	Construction
4. Construction Management	To ensure works are undertaken to a high quality, are safe and appropriate environmental controls are in place.	a) A Construction Management Plan (CMP, outline provided in Appendix E) will be prepared to provide management commitment and procedures, relating to: • Safety (see SoC 4b). • Tree protection measures (see SoC 6). • Hydrology and water quality (see SoC 8). • Noise and vibration (see SoC 9). • Indigenous heritage (see SoC 10). • Traffic management (see SoC 15). • Hazardous materials (see SoC 19). • Site contamination and remediation (see Soc 5). • Waste management (see SoC 16). • Landscaping (see SoC 7). • Air quality. • Incident response. The CMP is to be submitted and approved by the certifying authority.	Prior to Construction
		b) A detailed Safe Work Method Statement for the construction works will be provided including a detailed risk analysis with respect to rail operations.	Prior to Construction
5. Site Contamination and Remediation	To provide for a safe work and public domain environment.	a) Prior to construction at the EHW North Eveleigh site the RAP for this area will be implemented according to the site auditor's requirements.	Prior to Construction
		b) Prior to construction at the ATP site, validation including subsurface soil sampling and analysis for contaminants will be undertaken by a suitably qualified consultant to ensure that the site has been remediated and/or any residual contaminated material disposed of appropriately.	Prior to Construction
6. Tree Management	To protect existing trees identified to be retained.	Protection measures to be undertaken to minimise potential impacts (to trees to be retained) during construction of the EHW in accordance with the recommendations outlined by Landscape Matrix.	During Construction
7. Landscape Plan	To provide for acceptable public domain.	The proponent is to prepare a detailed Landscape Plan. The Landscape Plan will be included in the CMP.	Prior to Construction
8. Hydrology	To ensure drainage associated with the EHW has minimal	Impacts during the construction phase will be managed using an appropriate erosion and sediment control plan	During Construction

Reference No.	Objective	Commitment	Timing
	impact on the site and no impact on the rail corridor.	(E+SCP), as outlined in the Landcom's *Soils and Construction Manual* . The ESC&P will be provided in the CMP.	
9. Noise and Vibration	Ensure nuisance from noise is minimised and neighbours of the work sites are informed of works.	a) A Noise Management Plan will be prepared as part of the CMP to minimise the impacts of noise and vibration.	Prior to Construction
		b) Prepare a Construction Communications Plan which will inform adjoining business / residents of activities for particularly noisy construction activities.	Prior to commencement of works
10. Indigenous Heritage	To preserve any cultural heritage artefacts and values present in the area.	Ongoing consultation with MLALC with be maintained.	During construction
		Monitoring for the placement of piers within the area of PAD be undertaken by members of the MLALC.	During construction
		Disturbance or excavation required for the placement of piers or other associated works within the zones of PADs be monitored by members of the local Aboriginal community.	During construction
		Should an AHIA be required in the event of design changes, then the Aboriginal community consultation is to be undertaken in accordance with DECC's requirements.	During construction
		Should any historical relics be discovered on the site during excavation, all excavation or disturbance to the area is to stop immediately and the Redfern-Waterloo Authority informed.	During construction
		Should any Aboriginal relics be discovered then all excavation or disturbance of the area is to stop immediately and the National Parks and Wildlife Service is to be informed in accordance with Section 91 of the National Parks and Wildlife Act, 1974.	During construction
11. Non-Indigenous Heritage	To maximise exposure of local non- indigenous heritage.	Interpretation Panels to be prepared and located on EHW.	Prior to Commencement of Use
12. Employment	To provide local jobs.	To prepare and implement an Aboriginal Participation Plan.	Prior to Commencement of works and during construction
13. Visual Privacy	To minimise impacts on adjoining	To incorporate into the landscape treatments for the North Eveleigh public plaza a screen of advanced trees along	Prior to commencement of use

Reference No.	Objective	Commitment	Timing
	residential properties.	the northern edge of the EHW landing. Landscape Plan to be prepared.	Prior to Construction
14. Lighting	To minimise impacts on adjoining residential properties.	Lighting of the EHW to be designed in detail to meet the following standards: • AS/NZS 1158.3.1 Lighting for roads and public spaces Part 3.1 pedestrian area (Category P) lighting – performance and design requirements. • AS 4282 Control of the obtrusive effects of lighting.	Prior to Commencement of Use
15. Traffic Management	Minimise disruption to local traffic.	A Construction Traffic Management Plan (CTMP) will be prepared as part of the CMP. The CTMP will document the following details for the project. • The proposed construction workforce at each of the main construction stages of the project and measures to reduce car usage and parking demand at the project worksites. • The project worksite boundaries and vehicular access arrangements including car parking areas and internal and external manoeuvring areas for deliveries by large trucks. • The maximum size of trucks which should be permitted for general construction delivery access on the nominated project northern and southern worksite construction access routes. Special event traffic management arrangements and Traffic Control Plans for the EHW launching activity which will take place during a weekend rail shutdown in early 2010 and will require “one off” worksite access arrangement to be determined for a high peak construction workforce and large trucks, potentially including a number of oversize vehicles and mobile cranes.	Prior to Construction
16. Waste Management	To minimise waste arising and minimise environmental impact of waste.	Waste Management Plan to be prepared and approved. To minimise waste generated during construction and to ensure that waste is disposed of appropriately and with the maximum amount of recycling possible, thus avoiding unnecessary use of landfill as a	Prior to Construction

Reference No.	Objective	Commitment	Timing
		waste disposal option.	
17. RailCorp Occupations and Easements.	To provide for protection of RailCorp services requirements.	Resolution of easements, occupations and services belonging to or servicing the needs of RailCorp to the satisfaction of RailCorp.	Prior to Construction
18. Consultation with Utilities.	To ensure adequate utility services for the EHW.	Compliance with the requirements of all utility suppliers to service the EHW (e.g. substations etc)	Prior to Commencement of Use
19. Hazardous materials.	To ensure the health and safety of workers and the general public.	The generation, storage, transport, treatment or disposal of industrial, hazardous or Group A waste must be in accordance with the requirements of the Protection of the Environment Operations Act 1997 and the NSW Department of Environment and Conservation's (DECC) waste tracking requirements.	During Construction
20. Structural Certification for Design	Design compliance.	Structural details and a Structural Certificate for Design in accordance with Clause A2.2(a)(iii) of the Building Code of Australia must be submitted to the satisfaction of the Certifying Authority. A copy of the certificate will be submitted to the Redfern-Waterloo Authority.	Prior to Construction
21. Geotechnical Report and Certification	Ensure appropriate foundation design.	Prior to commencement of any foundation or bulk excavation, a Geotechnical Report is to be submitted to the satisfaction of the Principal Certifying Authority (an accredited certifier) and a copy submitted to the Redfern-Waterloo Authority.	Prior to Construction
22. Notification of Excavation Works	Ensure relevant authorities are notified of excavations.	Redfern-Waterloo Authority and City of Sydney is to be given a minimum of 48 hours notice that excavation, shoring or underpinning works are about to commence.	Prior to Commencement of Works
23. Connection to Sydney Water Corporation infrastructure.	Timely notification and approval for any works to Sydney Water infrastructure.	Details of the Sydney Water Corporation are required to be obtained.	Prior to Construction
24. Covering of Loads	Minimise dust emissions.	All vehicles involved in the excavation and/or demolition process and departing the property with demolition materials, spoil or loose matter are to have their loads fully covered before entering the public roadway.	During Construction
25. Vehicle	Minimise water	Prior to the commencement of work,	During

Reference No.	Objective	Commitment	Timing
Cleansing	pollution.	suitable measures are to be implemented to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site. It is an offence to allow, permit or cause materials to pollute or be placed in a position from which they may pollute waters.	Construction
26. Safety Management Strategy	Maintenance and Condition of EHW	Prepare a safety management strategy.	Prior to commencement of use

21 Justifications and Conclusions

This section addresses the DGEAR by identifying the suitability of the site and whether or not the project is considered to be in the public interest. It also reiterates the strategic need for the proposed EHW, including how the proposed EHW would meet the identified project needs and that of the RWA's BEP.

21.1 Site Suitability

The EHW has been designed to address connectivity and access issues in the area as identified in the BEP. The design process has examined the extensive movement network, transport options and connectivity for pedestrians and cyclists to key destinations and has been designed and located to overcome these restrictions and disconnected suburban structure. As well as an analysis of the local conditions, the EHW's role in the wider urban context has been considered, in particular its function with the future regional bicycle route and its strategic links with other large city development sites that are soon to be transformed by urban renewal.

The EHW location will form a strategic link across the regeneration area. One of the EHW landings (ATP) is close to the southern most platform of the Redfern Railway Station where there is an existing station entrance. It will complement the proposed upgrade to the station by providing access for disabled and mobility impaired near the station entrances, enhance safety through activation of the public realm surrounding the station and create a more functional and appealing entry / exit to the station. All of which are important, particularly as the station increases in capacity. It will also ease pedestrian congestion along Lawson Street which is expected to intensify with the expansion of the University and redevelopment of sites within the Operational Area. The EHW ATP site also connects with the gateway to the ATP as well as the local street network (Cornwallis Street) which links with Gibbons Street (a major pedestrian route).

The northern landing will interface with the proposed mixed use development at North Eveleigh. This site is surplus to RailCorp's needs and will transform a brownfield site into a significant residential and employment precinct. The EHW is a key component in connecting this underutilised site with public transport options and the Redfern Town Centre. It will also provide a connection from Wilson Street towards Abercrombie Street which is a preferred route taken by Sydney University students. The proposed EHW will also connect directly with existing on and off road cycle routes.

The siting of the EHW is also appropriate from a number of environmental considerations. The landings are within existing and former brownfield sites, North Eveleigh and ATP respectively. It will have minimal environmental adverse impacts and a number of positive benefits not only within the public realm itself, but play a significant role in the BEP revitalisation strategy.

21.2 Public Interest

The EHW is considered to be in the public interest owing to the following:

- Connects the surplus RailCorp lands proposed for redevelopment with the Redfern Railway Station, ATP and Redfern town centre.
- Contribute to inward economic benefit through local employment, as well as general investment in the Operational Area by both the public and private sectors.
- Increase general safety and activation of the public realm at the gateway to the ATP and eastern end of North Eveleigh.
- Encourage active modes of transportation for existing and new residents.

- Provide a link in the regional cycling network.
- Introduces contemporary high quality design which has been demonstrated to create a positive relationship between aesthetic qualities and investor confidence.
- Enhances the setting of the surrounding heritage buildings and overall townscape and spatial characteristics of the adjoining conservation areas.
- Assist in achieving the objectives outlined in the RWA BEP.

21.3 Conclusion

The justification for the project draws on the objectives of the project, the planning and statutory context of the project, and the outcomes of the environmental assessment that has been undertaken.

The objectives of the proposal are to achieve improved north-south access over the rail corridor by creating a pedestrian and cycle EHW which responds to the heritage qualities of the context and considers safety, security and equitable access. In addition, the proposed EHW responds to the needs of rail operations and structures.

The location of the EHW and its landings are permissible in the zones it traverses of the BEP with the exception of the Public Zone – Public Recreation which forms a narrow band along the southern edge of the rail corridor. Although access facilities such as the proposed EHW are not strictly permissible in the zone, the proposed EHW meets a number of the zone's objectives. Namely, the EHW will form part of the public realm and increase the public's ability to use and enjoy the area. Further, the EHW will form a link between the ATP public space and the North Eveleigh plaza. The EHW concept is also guided by the RWA's BEP and is consistent with the guidelines and desired strategic outcomes referred to in Section 4 of the Plan.

In a broader strategic context, the proposed EHW enhances the existing cycling network routes identified in the *NSW Government Action for Bikes – Bike Plan 2010* and in the City of Sydney council *Cycle Strategy and Action Plan 2007- 2017*. Additionally, it will form part of the emerging regional cycling route.

This EA has identified that environmental impacts will be within acceptable guidelines or can be managed to be so. Impacts on the rail network and infrastructure are acceptable in principle to RailCorp. Further negotiations with RailCorp are expected during the detailed design to address specific design considerations.

Measures have been proposed to ensure suitable mitigation and management provisions are employed during construction and operation of the EHW. The RWA has committed to these measures by their inclusion into the draft Statement of Commitments.

The EHW is also consistent with the principles of Ecologically Sustainable Development and a number of environmental, social, economic and governance benefits have been identified ranging from assisting in the efficient use of redundant brownfield landing (North Eveleigh) to enhancing active modes of transport and connectivity within the Operational Area.

Based on the assessment provided for this Project Application, the RWA seeks favourable consideration of the EHW from the Minister of Planning.