5.1.7 Construction traffic movements

Construction traffic primarily comprising spoil trucks and delivering concrete and other materials will be required to use a number of local roads within the State Park and around Keepit Dam during the construction period. The entrance to Keepit Dam will be from the Oxley Highway via Rushes Creek Road and Keepit Dam Road. Orange Grove Road (to the dam wall), Rushes Creek and Keepit Dam Roads are all sealed, undivided two lane roads with open shoulders. These roads are generally considered satisfactory for use by construction traffic. Some movements on internal roads, for example between construction worksites, may require some improvements to be made. These will be considered at the time a construction contractor is engaged. Any improvements required will be discussed with the State Park Trust with a view to making the improvements final for the betterment of the State Park.

Existing traffic volumes

The number of vehicles entering Keepit State Park for recreational activities and servicing of the facilities is highly variable and depends on factors such as the water level in the dam, seasonal and holiday factors, special events and weather conditions. It can vary from a low of 20 vehicles per day to a peak of over 1,000 vehicles per day. The total number of vehicles entering the State Park on an annual basis is in the order of 16,000 which equates to an average of about 40 per day. The summer weekend average including service vehicles would be in the order of 200 vehicles per day.

Estimation of construction traffic

Construction traffic volumes have been estimated based on concept design quantities and the preliminary construction program (refer Appendix B). These may change following detailed design and engaging a construction contractor.

Construction traffic will utilise different roads at different times depending on the active work areas and activities being undertaken. Construction activities within the caravan park eg saddle dams at the Boat Ramp and Sailing Club will be undertaken during the off-peak (winter) season to lessen any potential impacts. Table 5-8 presents a summary of proposed construction traffic movements which are also shown graphically on Figure 5-2.

The greatest volume of truck movements impacting on the State Park would occur along the perimeter of the dam between the subsidiary dam wall and the Boat Ramp saddle dam with peak daily one way traffic movements estimated at 20 vehicles. This will occur over a short period up to 6 months and would be undertaken in the off-peak period. Longer duration but less intensive truck movements would occur between the southern and northern sides of the main dam wall and from the right-hand abutment to the northern stockpile area. These movements will occur over a period of approximately 32 months.

Delivery of construction materials and trips by workers not resident at the State Park will also generate traffic movements. A maximum of around 25 one way

trips per day is estimated to be required and likely to use Keepit Dam Road to enter the construction site. This would reduce after the peak construction period (about month 20 of approximately 34 months).

The average number of workers at the site would be around 30 persons, therefore generating about 30 one way vehicle trips external to the site per day (assuming the bulk of workers do not reside on-site). These external vehicle trips would enter and exit the site via Keepit Dam Road, however some traffic will use State Park roads. There would be some additional traffic generated on a Sunday associated with workers who have chosen to reside at the State Park.

Management of construction traffic

A construction traffic management sub-plan would be prepared prior to the commencement of construction as part of the Construction Environment Management Plan. This would address issues including the timing of construction activities, safety, access and traffic issues. Road dilapidation surveys would be prepared for all public roads likely to be used by construction traffic. These would be used to identify any damage caused by construction vehicles.

Table 5-5 Summary of construction traffic movements and routes

Road utilised	Route (depart— arrive)	Construction month start to month finish	Estimated daily movements	
			Average (each way)	Peak (each way)
Unnamed road from sub-wall spillway Orange Grove Road	Concrete batching plant to sub-wall spillway	8 – 12	8	50
Unnamed road along and around spillway	Around sub-wall spillway	18 – 20	126	160
		28 – 30	140	160
Roadway north of dam wall	RH abutment spillway/new road	2 – 12	170	200
Unnamed road Orange Grove Road	RH abutment spillway to concrete batching plant	2 – 12	2	15
	RH abutment spillway to sub wall spillway	6 – 8	1	5
	RH abutment to concrete batching plant	13 – 16	6	50
	Unnamed road from RH abutment to LH abutment at dam wall	33 – 34	1	5
Unnamed road alongside dam	Sub-wall spillway to Boat ramp saddle dam Sailing Club saddle dam Caravan Park saddle dam	6 – 12	4	20
Unnamed road to Dam wall	Concrete batching plant to Dam wall	28 – 30	7	50
Orange Grove Road Unnamed road to Dam wall	Unnamed road from sub-wall spillway to LH abutment at dam wall	31 – 32	5	10

Note: Does not include construction deliveries or trips by workers estimated to require up to an additional 25 and 30 one way trips respectively per day during the construction period. Entry for these vehicles would be from Rushes Creek Road and Keepit Dam Road.

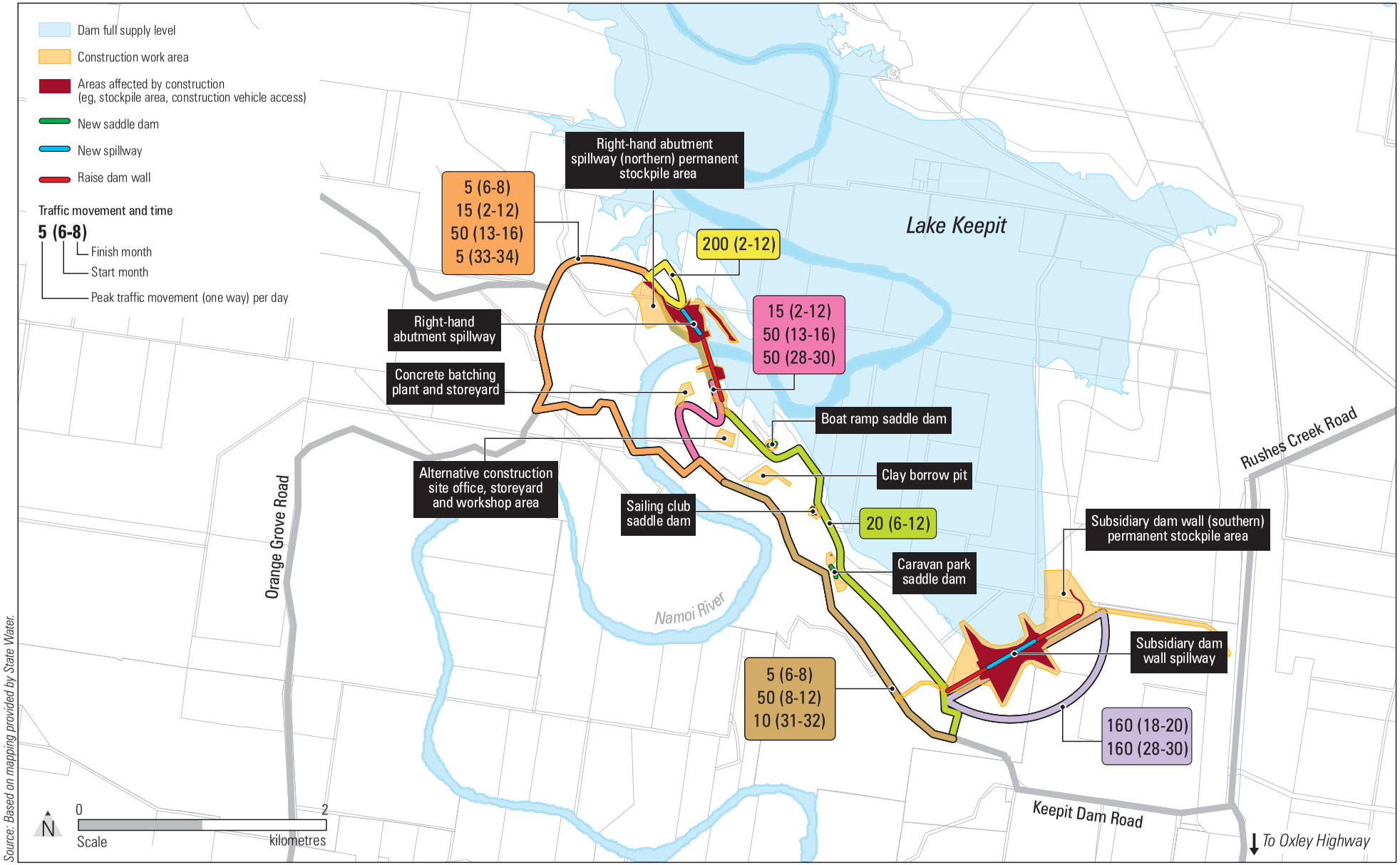

Figure 5-2 **Summary of construction traffic movements and routes**

5.2 Project modifications

5.2.1 Fish passage

Section 8.2.3 of the Environmental Assessment indicated that, while a concept design had been completed and was included as part of the project, implementation of fish passage at the dam wall would be subject to ongoing assessment of feasibility and further studies and research conducted jointly by State Water and the Department of Primary Industries (Fisheries). A source of funding for the fish passage was also to be identified to enable implementation.

As a result of ongoing feasibility investigations, the Department has provided advice to State Water (refer Appendix D) that the provision of fish passage at the dam wall is unlikely to be cost-effective. The Department also identifies that it supports the construction of fishways at three weirs downstream of Keepit Dam on the Namoi River; at Weeta, Mollee and Gunidgera, as an offset for the need to provide fish passage at Keepit and Split Rock dams as a result of proposed dam safety upgrades. State Water has therefore removed this element from the project.

The provision of fishways at these three downstream locations will be dealt with as separate projects as part of State Water's Dam Upgrade Program. A final decision to undertake fish passage works at these three weirs will still be subject to an assessment of their cost-effectiveness. Item 26.1 and 26.2 of the Statement of Commitments refers.

5.2.2 Multi-level offtake

Section 8.1.1 of the Environmental Assessment indicated that the multi-level offtake would be implemented subject to further studies of cost-effectiveness and the availability of funding.

State Water has adopted the roller-shutter concept presented in the Environmental Assessment which means that the multi-level offtake will proceed as part of the Keepit Dam Upgrade. The estimated cost of the multi-level offtake is $5 million and is additional to the capital cost identified in Table 5-2. Item 37.1 and 37.2 of the Statement of Commitments refers.

5.2.3 Private property acquisition

As a result of a constructability review of the subsidiary dam wall spillway, State Water has confirmed the need to acquire a portion of private property adjacent to the subsidiary dam wall. The land is required to ensure construction of the subsidiary dam wall spillway and relocation of the Gliding Club access road.

The land is approximately 16 hectares in size and is described as Lot 2, DP 834485. The area is shown in Figure 5-3.

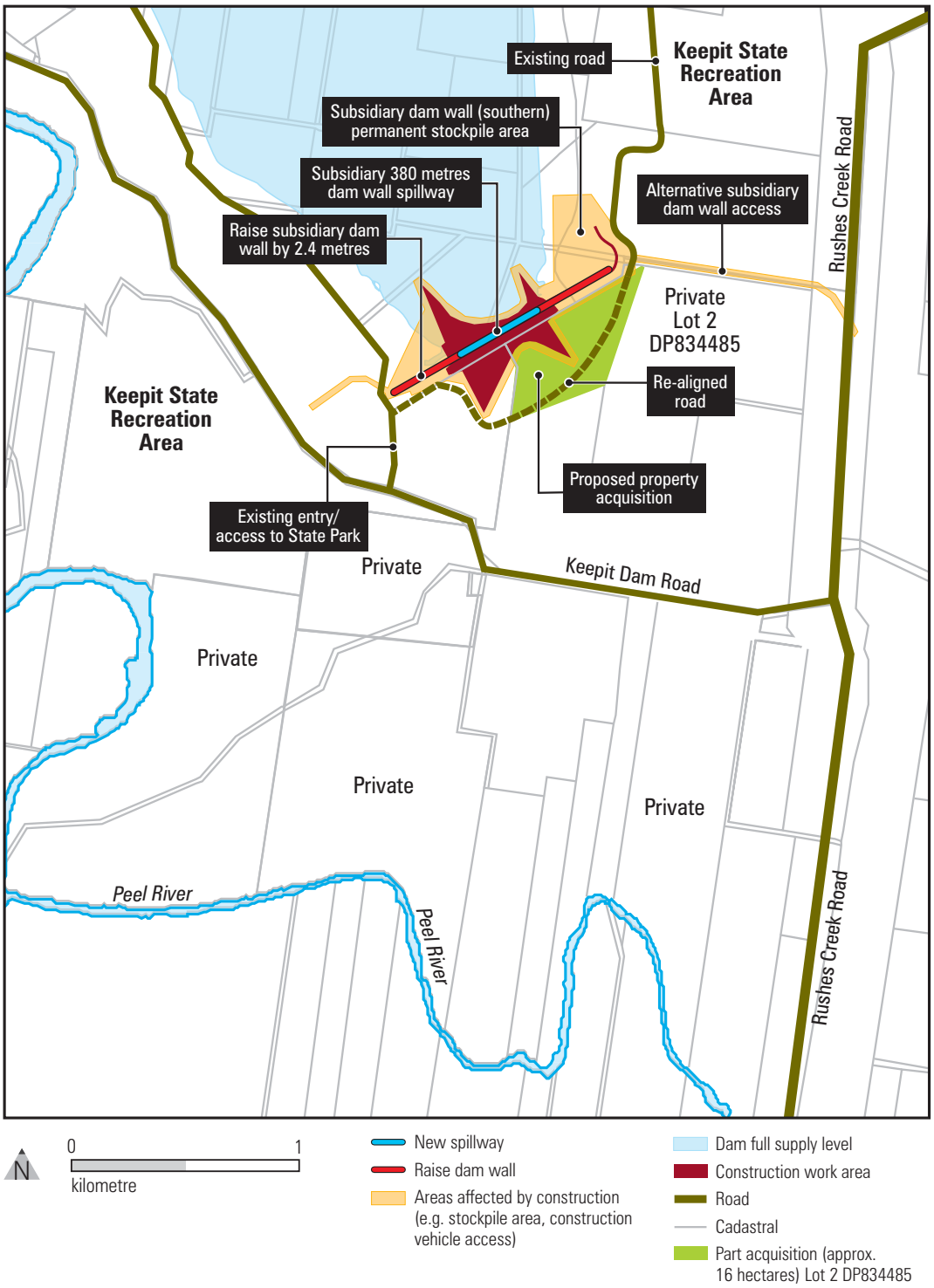

Figure 5-3 **Proposed property acquisition**

The landowner has been contacted both informally and formally and advised of State Water's intention to acquire a portion of the property. Negotiation is continuing in parallel with the assessment of the project. State Water proposes to acquire the land in accordance with the *Land Acquisition (Just Terms Compensation) Act*, 1991.

5.2.4 Form of approval

On 25 January 2006, the NSW Minister for Planning authorised the submission of a Concept Plan for the Keepit Dam upgrade pursuant to Section 75M(1) of Part 3A of the *Environmental Planning and Assessment Act* 1979. A concept plan outlines the scope, development options and staging of a project for which a proponent is applying for approval.

The concept plan outlined in the Environmental Assessment included 3 options for the dam safety upgrade as well as two environmental improvement measures which, if the project were approved, would only be implemented if they could be shown to be cost-effective and funding secured from the NSW Government and State Water's Namoi Valley customers.

Following exhibition of the concept plan for the Keepit Dam Upgrade and after reviewing the submissions received, conducting additional studies and consultation with key stakeholders, State Water has identified a preferred dam safety upgrade option - Option B1 - as envisaged in the Environmental Assessment. The NSW Department of Primary Industry (Fisheries) has also advised that the fish passage would not be cost-effective and this component has therefore been removed from the proposal.

Under Section 75P of the EP&A Act, the Minister, in determining a proposal for a concept plan, has the discretion to require, or not require, any further environmental assessment of the project. If the Minister determines that no further environmental assessment is required, then any approval may have the effect of an approval granted under Section 75J (a Project approval), notwithstanding that the proponent originally sought approval for a concept plan. This would essentially provide State Water with the ability to immediately commence construction of the project, once detailed design and other necessary licenses and any conditions of approval have been satisfied.

The Keepit Dam Upgrade project has been underway for a number of years and has encountered significant complexity concerning both the project technical issues as well the community and stakeholder context. The upgrade is a requirement of the NSW Dams Safety Committee and is required to avoid potentially devastating downstream consequences should a very large to extreme flood event occur.

The uncertainty regarding the selection of the preferred dam safety option has been able to be resolved during preparation of the submissions report and additionally, the fish passage component of the project has been removed on advice from the Department of Primary Industries (Fisheries). State Water therefore consider that the overall level of uncertainty associated with the

project has been substantially reduced. In addition, State Water have, in this report, provided more detailed information on the construction activities and program and conducted additional detailed environmental impact assessment studies to further delineate the level of environmental impact and residual risk of the project. State Water therefore consider it appropriate to modify the form of approval sought from a Concept Plan, as originally envisaged, to Project Approval under the legislative framework outlined above. Granting project approval will allow State Water to more quickly bring to fruition a complex, community safety project.

5.2.5 Caravan Park saddle dams

The Environmental Assessment described the need to construct a number of saddle dams or auxiliary spillways in the vicinity of The Gums Caravan Park.

For all options, a saddle dam was required to be constructed at the rear of the caravan park. The height of the saddle dam would be dependent upon the height of main dam wall raising and would differ between the options. Option B1 would require the lowest height and smallest footprint saddle dam and would therefore have a comparatively lower affect on existing facilities than the other options.

Based on preliminary design information, construction of the Caravan Park saddle dam for Option B1 was expected to require the relocation of up to eight caravans, an amenities block and associated services (Section 4.4.7 p61 Volume 1). A concept design of the Caravan Park saddle dam has recently been completed and is provided in Drawing 8 of Appendix C.

As shown by the concept design drawing, the saddle dam would directly affect up to 14 caravans, an amenities block and associated services. Up to another 3 caravans would potentially be affected either by the close proximity of the saddle dam construction works or by the proposed regrading of a small depression near the centre of the saddle dam. A number of new caravans could potentially be located in this new area on completion of the construction works.

The face of the saddle dam is proposed to be constructed at a slope of approximately 1:2.5 and lined with rock, topsoiled and landscaped with grass and small shrubs. Trees cannot be planted on the saddle dam because of the potential damage from roots to the dam core and foundation.

While the slope of the saddle dam face could possibly be steepened, and the location of the saddle dam refined to remove potential impacts on up to 3 caravans, the atmosphere created by the new infrastructure would be more prominent and less desirable.

As part of the Visual Impact, Landscaping and Revegetation Sub-Plan developed in conjunction with the State Park Trust, the final form of the saddle dam will be agreed (refer Appendix A Item 40.1).

6. Preferred project report

Section 75H(6) of the EP&A Act provides that the Director-General may request the proponent to prepare a response to the issues raised in submissions, a preferred project report that outlines any proposed changes to the project to minimise its environmental impact and any revised statement of commitments. If the Director-General considers that significant changes are proposed to the nature of the project, the Director-General may require the proponent to make the preferred project report available to the public.

The preferred project for the Keepit Dam upgrade comprises the information contained in Sections 4-6 of this report including the additional information and consultation undertaken post-exhibition of the Environmental Assessment and the modifications proposed to the project.

The Environmental Assessment (p. 169) outlined that Option B1 was considered to best meet the objectives of the project. Following a review of the submissions received, the additional information/ investigations undertaken and consultation with stakeholders, State Water has reaffirmed its decision for this preferred option.

7. Request for approval

Following State Water's response to public submissions and the finalisation of all outstanding matters, it is anticipated that the Department will be in a position to prepare the Director-General's Assessment Report for the proposed development. The Director-General's Assessment Report will provide advice and recommendations for the Minister for Planning in regard to the determination of the proposed project.

The Minister will subsequently decide whether to grant approval or refuse the Concept Plan under Section 75O of the *Environmental Planning and Assessment Act* 1979. In accordance with Section 75P of the *Environmental Planning and Assessment Act* 1979, when giving an approval for a concept plan, the Minister may make any (or any combination) of the following determinations:

(a) establishment of further environmental assessment requirements for approval to carry out the project or any particular stage of the project

(b) that approval to carry out the project or any particular stage of the project is to be subject to the other provisions of the EP&A Act (for example Part 4 or Part 5)

(c) that no further environmental assessment is required for the project or any particular stage of the project.

Where the Minister determines that no further environmental assessment is required for the approval of a concept plan for a project, Section 75P(1)(c) provides that the Minister is able to grant a Project approval for the proposed development under Section 75J without further assessment or application, notwithstanding that the proponent originally sought a Concept Plan approval.

State Water proposes that a determination under Section 75P(1)(c) and Section 75J may be appropriate for the Keepit Dam Upgrade. In support of this position, it is noted that the original Director-General's requirements for the Concept plan were issued in June 2006. At this time, it was considered that a Concept Plan application would be the most appropriate approval path to follow, in light of the uncertainty surrounding specific components of the project i.e. the preferred dam safety option and environmental improvements. However, over the course of preparing the Environmental Assessment, State Water has been able to resolve these issues and provided sufficient details of the project to allow a detailed assessment of environmental impacts and residual risks to be undertaken. An example of this is the concept design drawings provided, a preliminary construction program and the additional air and noise impact assessments. The ultimate Environmental Assessment submitted in support of this Concept Plan application thus provides a comprehensive assessment, consistent with an application seeking project approval for a safety upgrade to a critical piece of community infrastructure, from which the Minister is be able to assess all impacts for the construction and operation of the dam and to formulate conditions of consent.

As such, State Water requests that the Minister approves the Concept Plan without any requirement for further environmental assessment and in turn, grants a Project approval under Section 75J for Option B1.

8. References

State Water, 2007, *Keepit Dam Upgrade Environmental Assessment*