



Submission to:

PARLIAMENTARY STANDING COMMITTEE OF PUBLIC ACCOUNTS

INQUIRY INTO GOVERNMENT OWNED ENERGY ENTITIES

Launceston Flood Authority

May 2016

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Foreword

The Launceston Flood Authority took the decision to address this hearing as it offered an opportunity to raise the subject of competing water resources in an official Government forum. The LFA is not qualified to offer advice on BassLink, which is under consideration, but we draw attention to the danger of any energy policy, which relies on the assumption that allocations of water for electricity generation are somehow sacrosanct. In the case of the South Esk River, the outcomes have been disastrous and continue to be increasingly harmful.

The LFA has a number of legislated responsibilities, which are designed to protect against a repeat of floods, such as in 1929, which claimed 22 lives and caused massive property loss. These duties include maintaining the flood levees and systems, keeping flood exits free of sediment and maintaining the amenity of the river. These are onerous legislated responsibilities and we cannot be at the mercy of occasional Trevallyn Dam spills to fulfill these duties. In that respect, a policy to export power generated from local water resources has been a problem, not a solution, as it has encouraged electricity production beyond Tasmania's own needs. Exports of electricity to Victoria have been at the cost of Tasmanian reserves, as the Great Lake in particular, has for some time been drawn down to dangerously low levels. With declining heavy industry, domestic solar, lower consumption through technology improvements, gas power backup and growing wind generation, water should be more available to meet pressing environmental needs, as well as power generation.

In Launceston, the twin concerns of chronic pollution and sedimentation in the Upper Reaches of the Tamar are inexorably related to the availability of strong water flows for efficient flushing. The remedy for both of these major concerns of pollution to 3rd World levels and sedimentation are the same and would enjoy in equal measure a return of the South Esk River to the Cataract Gorge. The shocking facts of over 2,000 raw sewage overflows in 2013/14 with no attempt to dilute or flush them, are mentioned in the foreword to this paper and a return of the river is a permanent cure for both serious maladies.

The electricity generated at Trevallyn power station is less than 4% of the State's total output. It is suggested in this submission, that this small generating loss can be easily afforded and is of small economic importance when measured against the immediate rectification of two environmental nightmares, which are embarrassing handicaps in the heart of our beautiful regional city.

On Page 17 of Hydro Tasmania's 2015 Annual Report eight reasons are given for a decline in future profitability, including "Declining Electricity demand and surplus supply in the National Electricity Market (NEM)." It goes on to suggest, that the solution to this situation is "growing the Mainland customer base". The wholesale offering price of electricity has halved, while Tasmanian tourism has grown by over 9%. So should the strategy of a State Government GBE, be to pursue a declining market with declining prices for poor or negative returns when there is such an urgent alternative need for that water? This strategy is recorded as Hydro's choice, but should it be Tasmania's choice?

On the 2nd May 2016, the Examiner newspaper ran a report on its front page, which showed that during 2013 and 2014 there were a total of 2,168 raw sewage spills from the Margaret Street station alone. None of these were diluted or flushed, they flowed to and fro in the upper reaches within the asymmetric tidal cycle and made nonsense of Tasmania's claims to be Clean and Green. Over the same period,

Hydro Tasmania exported a significant share of its electricity production for a total of 5,406 GWh and imported only 271 GWh. The LFA was told at that time, that water could not be spared for sediment removal or flushing and if it could, there would have to be a commercial agreement. It is surely bizarre to suggest that Launceston should now rectify the consequences of the removal of its river 60 years ago, by buying back the water arbitrarily taken.

These two matters of sediment and pollution are the constant hot topic in the press, talk back radio, letters to the Editor and will remain on the agenda as they are genuine problems. Few of the solutions suggested by callers and writers in these public forums are soundly based. TasWater is invariably blamed for the disaster, but they are not the main problem. They have yet to secure the \$285m funding for their major upgrade project, which is worthwhile and will transfer sewerage treatment out of the suburbs to an enlarged plant at Ti Tree Bend. But that project will take 10 years from the time it is funded and will reduce the incidence of the raw sewage spills by only 18%. It is also doubtful that sewage spills can ever be eradicated entirely and flushing will always be essential to river health and amenity. Much more expensive tertiary treatment, would have a similar outcome, as the spills occur before treatment, not after. The current public outcries are against the outcomes and rarely the cause, which was the removal of Launceston's greatest natural asset, the South Esk River and Cataract Gorge.

Alan Birchmore
Chairman

Executive Summary

Introduction

The Launceston Flood Authority (Authority) is charged under the Launceston Flood Risk Management Act 2015 with the primary function:

6.(1).(a) to take action to reduce the likelihood, severity and duration of flooding in the flood-prone area, including (but not limited to including), if it thinks fit, dredging for such purposes;

thus, the Authority is inextricably linked to the South and North Esk Rivers and the Tamar Estuary.

River management in Tasmania today is largely controlled by a government business enterprise (GBE) which uses the rivers extensively for the generation of hydroelectricity. Today this GBE is known as Hydro Tasmania.

In 2016 Tasmania finds itself in a position where water storages have been reduced to 13% of capacity (as at 2 May 2016) and the lifeline to the mainland, Basslink, has failed, rendering the State dependent upon diesel generation of electricity with severely depleted river flows for environmental and socioeconomic purposes.

Relevant to the Authority is the diminished flows of the South Esk River below the Trevallyn Dam which is contributing to the build-up of sediments in the Upper Tamar Estuary with potentially dangerous consequences for Launceston's flood protection.

It is for this reason the Authority presents this paper to the Parliamentary Standing Committee of Public Accounts' inquiry into Government owned energy entities.

Strategic Direction

The Authority's primary function of flood protection for the City of Launceston is dependent upon several factors including maintaining sediment at a level that does not increase the risk of flooding. The Authority performs this function by undertaking an annual sediment raking campaign that disperses excessive sediment quantities in the upper estuary.

By selling power into the National Energy Market (NEM), Hydro has allowed the State's water resources to diminish to alarmingly low levels where it is apparent that safety and environmental considerations are now taking second place to the essential service of providing sufficient power generation, with the result that flows to the South Esk below the Trevallyn Dam have now been reduced to 1.25 cumecs.

It has been demonstrated over recent years that the efficiency, or success, of sediment raking is massively influenced by the river flows supplementing the tides to carry the dispersed sediments downstream. Under the present flow regime sediment raking is not viable and the sediment levels are increasing to a concerning level.

Historical water management practices in the South Esk River and upper reaches of the Tamar estuary at Launceston are no longer adequate or consistent with current day community expectations. Generation of electricity at the Trevallyn Power Station is occurring without thought of regional development and community wellbeing, both of which are fuelled by tourism, investment in infrastructure and a healthy environment.

Environmental gains in the Yacht Basin and First Basin on the South Esk River from flushing the anthropogenic pollutants on a regular basis will promote increased recreational and sporting usage, and improve the amenity of the riverside precincts, increasing the community sense of wellbeing and satisfaction with their environment.

Promoting increased tourism and regional development availed from a healthier and more vibrant river is consistent with a number of Government policies and would ensure ongoing increased economic activity in the form of additional jobs and increased business turnover.

It is the Authority's position that the Trevallyn Power Station should be closed to return the full flow of the South Esk River to the Cataract Gorge and the upper Tamar Estuary.

River Health

The environmental health of the Tamar River is monitored and reported by NRM North under the Tamar Estuary and Esk Rivers (TEER) Ecosystem Health Assessment Program (EHAP). The EHAP operates on a four year cycle which includes intensive monthly monitoring of the Tamar Estuary for two years with the release of annual report cards.

The EHAP report divides the Tamar River into five Zones; Zone 1 being the upper estuary and Zone 5 the mouth. The 2015 Tamar Estuary Report Card has just been issued. It has rated the water quality in the upper catchment as a D. This is a poorer result than in the previous report where it scored a D+. D is defined as:

“Poor ecosystem health. Overall conditions in this zone only meet the water quality targets 54% of the time. Poor water quality is due to high nutrient levels and turbidity which meet the water quality targets less than 5% of the time. Chlorophyll a only meets the target 30% of the time. Elevated levels of dissolved metals are present particularly aluminum and copper which are likely sourced from historic mining sites in the upper catchment and urban stormwater runoff. Zone 1 is influenced by high loads of contaminants delivered directly to the zone from the North and South Esk rivers and discharges from sewage treatment plants, urban stormwater run-off and a twice daily tidal regime which traps pollutants in this zone”

It is notable that in Zone 2, below the Tailrace where the water is returned to the river, the water quality was rated as B, demonstrating the impact of the South Esk flow on water quality.

Returning full flows to the South Esk River below the Trevallyn Dam will flush pollutants and sediments from the upper reaches and improve water quality.

Policy and Legislative Context

The management of water in Launceston's rivers is being undertaken within the context of a number of policy and legislative directions. It is evident that the present management of the South Esk River below the Trevallyn Dam contravenes these policies and is arguably unlawful.

The Water Management Act 1999 requires that “a person who has lawful access to a watercourse or lake may use water from the watercourse or lake for the purpose of generating electricity if the use **does not**:

- cause material environmental harm or serious environmental harm or significant detrimental effects to other users; and
- contravene any other Act.”

The current water management is arguably unlawful as it imposes a significant detrimental effect to other users and is causing serious environmental harm.

There were three pieces of legislation enacted in the 1990's that empowered the Hydro-Electric Corporation to utilise the rivers in Tasmania for the generation of electricity. They are the *Water Management Act 1999*, the *Government Business Enterprises Act 1995 (GBE Act)* and the *Hydro-Electric Corporation Act 1995*

Whilst the *Water Management Act 1999* and the *Hydro-Electric Corporation Act 1995* provide Hydro with the License for Water and provide the Powers and Functions respectively, it is the GBE Act that facilitates the State Government to instruct Hydro to undertake community service obligations, and to levee fees, taxes and dividends upon Hydro.

The State Government has the ability to determine the funding of Community Service Obligations by Section 63 and Section 65. It is the Treasurer's prerogative to direct that a community service obligation be undertaken and how it is to be funded.

The *State Policy on Water Quality Management (1997)*, also known as the Water Quality Policy, provides a framework for the development of ambient water quality objectives and the management and regulation of point and diffuse sources of emissions to surface waters (including coastal waters) and groundwater.

The environmental values to be protected under the Water Quality Policy that are relevant to this paper include:

- protection of aquatic ecosystems;
- recreational water quality and aesthetics;

The Tasmanian Government's primary means of supporting the growth of tourism in the State is through the activities of Tourism Tasmania. Tourism Tasmania is a Statutory Authority operating under the *Tourism Tasmania Act 1996*, and its role is to maximise the contribution of tourism to Tasmania's economic growth.

Tourism 21 was a landmark partnership agreement between the local tourism industry and the State Government. It identifies ambitious shared long term goals to grow the value of tourism in the state as well as agreed priorities and actions by the tourism industry and Tourism Tasmania to achieve those goals.

Specifically, this Paper aligns with Goal No.3 of *Tourism 21*, Product Development by:

- Creating and applying destination management plans for all Tasmanian tourism regions
- Supporting a successful regional tourism structure and the industry-led programs needed to develop tourism in each region

It is evident that the present management of the South Esk River below the Trevallyn Dam contravenes these policies.

Environmental flows

What is adequate 'environmental flow' for a river? This has been debated and discussed at many forums across the globe in recent years. Below is an extract from a paper titled *FLOW The essentials of environmental flows*¹ that sums up the discussion:

"Environmental flows' is an easy concept. It means enough water is left in our rivers, which is managed to ensure downstream environmental, social and economic benefits."

Given the worldwide overuse of water resources and the related degradation of ecosystems and their services, environmental flows is not a luxury, but an essential part of modern water management. It is an approach that deserves widespread implementation."

In the context of the South Esk River and the Upper Tamar Estuary, it is apparent the concept of enough water to ensure "downstream environmental, social and economic benefits" is not evident. As quoted, environmental flow is not a luxury, but an essential part of modern water management.

Sedimentation Management

There has been a long history of dredging in the upper reaches of the Tamar Estuary due to the high rate of constantly occurring sedimentation and the consequences on navigation, flood events, recreational activities and aesthetic values.

Today, sediment management in the upper reaches of the estuary is undertaken by the Launceston Flood Authority using a method of sediment raking which was identified as viable, affordable and effective following a trial in 2012.

In 2013 the raking campaign relocated more than 240,000 m³ from the Tamar River south of the Hydro Tailrace. The success of this campaign was partly attributed to high river flows in the South Esk River where the Trevallyn Dam experienced overflows for 41 days during the sediment raking.

¹[FLOW. The essentials of environmental flow; Dyson et al; 2003](#)

In 2014, the sediment raking campaign managed to relocate a reduced quantity of sediment, down to just over 100,000m³. There are two predominant reasons for the reduced production. The first being the volume of sediment at the commencement of the program being much reduced compared to 2013, and secondly, the dominant factor, the very dry weather during the campaign where there were no overflows from the Trevallyn Dam and North Esk river flows were characteristic of dry summer flows.

The difference between the two years of sediment raking demonstrates the importance of peak flows in a river system. In the South Esk River between the Trevallyn Dam and the Hydro Tailrace the flow regime is greatly reduced in both summer and winter flows by the construction of the Trevallyn Dam and the use of the water for hydro-electricity generation.

In 2015 a trial water release of 25 cumecs for three days demonstrated a 995% increase in sediment raking production over the standard flow of just 2.5 cumecs.

Further observations since the 2015 raking campaign during this period of low river flows record sediment accretion at its maximum rate, demonstrating the importance of natural flows in the South Esk River and upper reaches of the Tamar estuary in reducing sediment accretion.

River Management, Hydro Tasmania and Trevallyn Dam

River management in Tasmania today is largely controlled by Hydro Tasmania, which uses the rivers extensively for the generation of hydroelectricity.

Hydro Tasmania operates under water management guidelines that: establish long-term storage targets; follow storage operating rules; manage storage risks; and protocols for communication with stakeholders.

Hydro have a total generating capacity of over 2600 megawatts² (MW) and operate 30 hydro-electric power stations, 2 wind farms on mainland Tasmania, a gas powered generation plant, and two wind farms and two diesel powered stations on Bass Strait islands. Each year Hydro produces about 9000 GWh. Due to the current crisis, as at 29 April 2016, seven temporary diesel generation sites are either online or being installed

Trevallyn Power Station has a maximum capacity of 95.8 MW generated by four turbines. Each turbine returns approximately 25 cumecs to the river when operating. As such to maintain maximum capacity the Trevallyn Dam must have inflows approaching 100 cumecs else the power station will draw down the water level in the Trevallyn Lake.

When operating at capacity, the Trevallyn Power Station can contribute approximately 3.8% of Hydro's total capacity.

Based on actual water flows established by the CSIRO it is unlikely that the Trevallyn Power Station can operate at more than 60% capacity averaged annually thus reducing its actual output to approximately 2.3% of Hydro's total capacity

Launceston and its Economy

Launceston is the largest City in the north of the State with a Greater Launceston population³ of 107,000 people of which about 67,000 live in the municipality. Employing approximately 31,800 people it contributes an industry output of \$7.25 billion toward Tasmania's economy.

Launceston is located at the confluence of the South Esk and North Esk Rivers at the head of the Tamar River estuary approximately 70km from the ocean in the north east of Tasmania. Launceston, including the Tamar Valley, is one of the major tourist destinations in Tasmania with the Cataract Gorge ranked No.1 for experiences in Launceston. The region boasts 3 of the top 10 restaurants and has the two top ranked golf courses in the region⁴.

The economy of both Launceston and the Northern Tasmanian region is primarily dependent on manufacturing, health, community and government services and tourism related services, with agriculture becoming increasingly significant.

² <http://www.hydro.com.au/energy>

³ <http://www.economicprofile.com.au/launceston/>

⁴ http://www.tasmaniatopten.com/lists/tasmanian_attractions.php

Tourist expenditure is the States 2nd largest economic contributor, inputting \$331.5 million into the northern region in the year to September 2014⁵. Tourism in the North employs 4,800 people with approximately 2550 of those employed in Launceston⁶ generating direct wages valued at \$174 million and \$97 million respectively⁷.

Key findings in Deloitte Access Economics (DAE) report⁸ highlight the importance of tourism to Tasmania's economy, and state "

"Tourism is an important industry to Tasmania's economy and potential exists for it to play a greater role over time. Survey data reveals that the State's tourism offering shows significant appeal to potential visitors and visitation to the state has outpaced national performance over the last decade. "

Socio-economic Values

Key points derived from the socio-economic observations are:

- ▶ Returning flows to the South Esk River will contribute to the socio-economic value of the community by:
- ▶ Enhancing the tourist experience and improving regional tourism
- ▶ Providing opportunity for regional development to support and cater for increased tourism
- ▶ Improving the recreational activities and the amenity of the river-side and on-water precincts
- ▶ Imparting a greater sense of community wellbeing through increased prosperity from new employment opportunities.
- ▶ Increasing the level of community satisfaction.

Noting the figures where it is estimated that the collective net worth of tourism in the Northern Region, when value added, is worth \$321 million to the economy, even a modest 3% increase in activity would potentially add \$9.6 million in value each year.

Public Interest

There are sufficient procedures and controls in place or being planned to provide the required level of public interest protection in respect of the proposal presented in this paper.

Conclusion

The Flood Authority's primary function of flood protection can be reliably achieved by increased water flows to enhance sediment raking.

Historical water management practices in the South Esk River at Launceston are no longer adequate or consistent with current day community expectations.

The beneficial gains from the regional development and improved tourism significantly outweigh the financial return to the State from the hydroelectric generation at the Trevallyn Power Station.

Environmental gains in the Yacht Basin and First Basin on the South Esk River from traditional river flows flushing the anthropogenic pollutants on a regular basis will promote increased recreational usage and improve the amenity of the riverside precincts increasing the community sense of wellbeing and satisfaction with their environment.

Existing legislation can facilitate the necessary changes at the discretion of the Treasurer and in some cases, jointly with the portfolio Minister.

⁵ <http://www.economicprofile.com.au/launceston/tourism/value-added>

⁶ <http://www.economicprofile.com.au/launceston/tourism/employment>

⁷ <http://www.economicprofile.com.au/launceston/tourism/wages-salaries>

⁸ Deloitte Access Economics; Economic impact of tourism marketing expenditure in Tasmania; Tourism Industry Council Tasmania, March 2013

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1. The Opportunity

Key points

- ▶ South Esk River flows are integral to removing sediments from the upper Tamar estuary
- ▶ Flushing of the South Esk River will address serious environmental problems of the river system
- ▶ Launceston and the Tamar Valley are key tourist destinations in Tasmania
- ▶ The Cataract Gorge is Launceston's primary tourist experience
- ▶ A clean South Esk River and Tamar River are essential contributors to the visitor experience
- ▶ Tourism is a significant economic contributor to the Northern Eastern Region economy
- ▶ Past and recent developments that increase the prosperity and economic health of the North Eastern Region are centred around the Tamar and Esk Rivers
- ▶ Sediment Management is a key concern for local residents and increased water flows are crucial

1.1 The Tamar River at Launceston

1.1.1 Launceston Flood Authority

The Launceston Flood Authority (Authority) was established in 2008 under Section 30 of the Local Government Act 1993 as a Single Authority.

The Launceston Flood Authority (Authority) is charged under the Launceston Flood Risk Management Act 2015 with the primary function:

6.(1).(a) to take action to reduce the likelihood, severity and duration of flooding in the flood-prone area, including (but not limited to including), if it thinks fit, dredging for such purposes;

To discharge that function the following distinct tasks are involved:

- ▶ Design, construct and maintain the Invermay Flood Levees to increase the resilience of flooding by withstanding a 1 in 200 year ARI flood;
- ▶ Maintain all publicly owned flood levees in the Launceston Flood Protection Scheme (LFPS);
- ▶ Management of the sediments in the upper reaches of the Tamar River estuary including development of longer term management strategies for the benefit of flood protection.

1.1.2 Launceston

Founded in 1806, Launceston is the nation's third-oldest city⁹ servicing a population (greater urban and statistical sub division) of 106,153¹⁰. Launceston is the ninth largest non-capital city in Australia. It is the only inland city in Tasmania.

Launceston is located at the confluence of the South Esk and North Esk Rivers at the head of the Tamar River estuary approximately 70km from the ocean in the north eastern region of Tasmania.

⁹ <http://www.visitlauncestontamar.com.au/pages/about-launceston-tamar-valley/>

¹⁰ 3218.0 – Regional Population Growth, Australia, 2009–2010: Population Estimates by Statistical District, 2001 to 2010". Australian Bureau of Statistics. 31 March 2011. Retrieved 20 January 2015

Launceston is the largest City in the north of the state with a Greater Launceston population¹¹ of 106,000 people of which about 67,000 live in the municipality. Employing approximately 31,800 people it contributes an industry output of \$7.25 billion toward Tasmania's economy.

It is generally recognised that the Cataract Gorge and the Tamar Valley are key drawcards to bring visitors to Launceston.

1.1.3 The Tamar River Estuary and its Tributaries

The Tamar River estuary is approximately 70km long with its entrance at Low Head and its head water at the confluence of the North and South Esk Rivers at Launceston.

1.1.3.1 Tamar River Estuary

The estuary is subject to a semi-diurnal tide (2 cycles per day) which has a significant impact on sediment transport within the River. Each tidal cycle amplifies as it travels up the estuary, commencing with a tidal range at Low Head of approximately 1.8m which increases in magnitude to become a tidal range in Launceston of approximately 3.5m.

The estuary causes the tides to be asymmetric, where the incoming flood tide period is shorter than the outgoing ebb tide period. This asymmetry causes the flood tide to flow faster than the ebb tide. The faster flowing flood tide picks up and carries more sediments than the ebb tide which results in an ongoing sediment build-up in the upper estuary around Launceston, seen as mud flats at low tide.

1.1.3.2 North Esk River

The North Esk River is the smaller of the Tamar River's two contributories and is approximately 82km from its head-waters at Ben Nevis to its confluence at the Tamar River. The River becomes tidal below Hobblers Bridge and carries a considerable quantity of sediment into the estuary, particularly during flooding which happens periodically.

North Esk floods have the capacity to inundate low-lying areas of Launceston's inner suburbs and CBD.

1.1.3.3 South Esk River

The South Esk River has a catchment amounting to approximately 10% of the landmass of Tasmania and has the potential to cause significant flooding in Launceston. The River is 255km in length with headwaters in the north east of the State at the Mathina Plains. The river is dammed at Trevallyn and used for the production of electricity with only a small moderated flow of 2.5 cumecs (cubic metres per second) entering the river below the dam. Average mean flow in the South Esk River at Launceston is 77.8 cumecs¹².

Located on the river within Launceston's precinct are the Cataract Gorge and the First Basin, which are Launceston's premier tourist attractions.

During flooding, the South Esk River has the potential to cause devastation in Launceston, as it did in 1929, rendering 4000 people homeless and causing 22 deaths. Flood resilience has been provided in the form of a levee system which recently has invested \$58 million into rebuilding the system. A flood of the magnitude of the 1929 flood flows at approximately 4,000 cumecs.

1.1.4 Flows of the South Esk Region

In 2009, CSIRO¹³ modelled the flows into the South Esk River at Launceston by undertaking a study of the Meander, Brumbys, Macquarie and South Esk catchments.

It was summarised that the South Esk region has a mean annual flow of 2614 GL/year, and a relatively low level of extraction, with a mean annual extraction of 158 GL/year (6.0 percent of total water in the region). There is however a large annual range, with flows varying between 1000 GL/year to 5,300 GL/year.

¹¹ <http://www.economicprofile.com.au/launceston/economy/output>

¹² CSIRO: River modelling for Tasmania Volume 4: the South Esk region, 2009

¹³ CSIRO: River modelling for Tasmania Volume 4: the South Esk region, 2009 (pg.40 & 54)

The net mean annual flow of $2,614 - 158 = 2,456$ GL/year equates to a mean flow in the South Esk River at Launceston of 77.8 cumecs.

The mean summer flow of the South Esk River at Launceston during the period between December to March, according to this study, is 741GL (annualised) which equates to 23.5 cumecs.

1.2 Dredging and Sediment Management

1.2.1 Dredging

Sediment in the Upper Tamar River has been present since before European settlement. There has been a long history of dredging in the upper reaches of the Tamar Estuary due to the high rate of sedimentation and its consequences on navigation, flood events, recreational activities and aesthetic values.

As shipping increased in size and importance during the 1880's, dredging was undertaken on an increasing scale until the 1960's when the port facilities were relocated downstream to Bell Bay.

Prior to 1966, dredging was important to maintain port access. Records¹⁴ indicate that between 1947 and 1966 an average of 160,000m³ per annum was dredged by the Port Launceston Authority (PLA). This was dredged mainly around the City Wharf area and channels to the north with dredging spoil taken by barge and deposited in the vicinity of Tamar Island.

Following the relocation of port activities to Bell Bay, dredging recommenced in 1988 and, as summarised in the GHD study¹⁶, "dredging by the Council was reduced to approximately 42,400 m³ per year and mainly taken from the area south of the ship lift." Dredging by the council ceased in July 2009 due to the costs being unsustainable.

1.2.2 Sediment Raking

Sediment raking is a technique of agitating the cohesive sediments in the estuary to allow the river flows to disperse them down stream. The sediments on the mud flats are naturally cohesive and resistant to relocation from high flow velocities, even in a flood, and must be mechanically agitated to allow them to be disbursed by the river's currents. Sediment Raking was undertaken in the 1970's by the Port of Launceston Authority.

In 2012, after obtaining the appropriate permit, the Flood Authority trialled sediment raking as a means of managing the build-up of shoals in the upper Tamar. The ten day trial was considered successful by relocating over 22,000m³ of sediment out of the upper reaches of the estuary at 3% of the cost of dredging.

The following year, a five year sediment raking permit was obtained and the raking campaign that year relocated more than 240,000 m³ from the Tamar River south of the Hydro Tailrace. The success of this campaign was greatly assisted by high river flows in the South Esk River where the Trevallyn Dam experienced overflows for 41 days during the sediment raking.

In 2014, the sediment raking campaign relocated a reduced quantity of sediment, down to just over 100,000m³. There are two reasons for the reduced production: The first being the volume of sediment at the commencement of the program being much reduced compared to 2013; and secondly, the dominant factor, the very dry weather during the campaign where there were no overflows from the Trevallyn Dam and North Esk river flows were characteristic of dry summer flows.

The difference between the two years of sediment raking demonstrates the importance of peak flows in a river system. When a river is impounded for hydroelectric production the flow regime of the river is dramatically altered, particularly between where the impoundment is constructed and the outfall of the hydro plant. In this area base-flows or summer flows are generally reduced and peak winter flows are moderated and occur less often. This has an effect on river morphology and sediment transport¹⁵. This sums up the present parlous state of the lower South Esk River and Upper Tamar Estuary in Launceston.

¹⁴ Report for Upper Tamar River Sediment Evaluation Study; Options for Siltation Mitigation, GHD, September 2009.

¹⁵ G Morris & J Fan; Reservoir Sedimentation Handbook, 1997

In 2015 a trialed water release of 25 cumecs for three days demonstrated a 995% increase in sediment raking production (measured in M³ per shift).



Figure 1: Tamar River before sediment raking, May 2012. (photo courtesy The Examiner)

The impact of the use of the water for generation of electricity upon sediment accretion can now be accurately assessed by the bathymetric surveys undertaken for the sediment raking program. Surveys of the upper reaches of the Tamar are conducted at approximately two month intervals and the volume of sediment in the river is calculated. By comparing periods of higher river flow against the low flow periods, we can demonstrate the impact of river flows on sediment accretion and sediment dispersion during raking.

1.3 Significance to the Regional Economy

Launceston is the largest city in the north of Tasmania serving a considerable hinterland by providing community facilities and services.

Although not within the function of the Flood Authority, the regional northern economy is worthy of consideration to comprehend the significance in order to appreciate the potential opportunity that the return of the South Esk River might make.

1.3.1 Economic Significance of Launceston and the Northern Region

The economy of both Launceston and the Northern Tasmanian region is primarily dependent on manufacturing, health, community and government services and tourism related services.

The output generated by the Launceston economy is estimated at \$7.251 billion. Launceston represents 57.45 % of the \$12.622 billion in output generated in Northern Region, 13.85 % of the \$52.364 billion in output generated in Tasmania and 0.22 % of the \$3.349 trillion in output generated in Australia.

Definition: Output data represents the gross revenue generated by businesses/organisations in each of the industry sectors in a defined region. Gross revenue is also referred to as total sales or total income

Source: <http://www.economicprofile.com.au/launceston/economy/output>. The industrial economic data presented in this profile has been sourced from REMPLAN. The City of Launceston has access to the full version of REMPLAN with economic data for 111 industries and an economic impact modelling capability.

1.3.1.1 Tourism

Tourist expenditure is the States 2nd largest economic contributor, contributing \$331.5 million into the northern region in the year to September 2014¹⁶.

¹⁶ <http://www.economicprofile.com.au/launceston/tourism/value-added>

Over 1,060,000 interstate and international visitors to Tasmania amassed 9.35 million nights and stayed on average 8.8 nights¹⁷.

Launceston including the Tamar Valley is one of the major tourist destinations in Tasmania with the Cataract Gorge ranked No.1 for experiences in Launceston. It boasts 3 of the top 10 restaurants and has the two top ranked golf courses in the region¹⁸.

Tourism in the North employs 4,800 people with approximately 2550 of those employed in Launceston generating direct wages valued at \$174 million and \$97 million respectively¹⁹. These figures are expected to increase in 2016-2017 when current business developments commence operating.

Domestic visitors to Launceston stay an average of 3 nights, spending on average \$486 each per stay, whilst international visitors stay an average of 12 nights and spend \$902 per trip each²⁰.

1.3.2 Riverside Development

Recent and current developments in Launceston, which have contributed to regional prosperity, are centred around the rivers.

All these investments have been made or planned in good faith and with the expectation that the main drawcard, the River, will be returned to full health and amenity.

1.3.2.1 Old Launceston Seaport.

Constructed between 2001 & 2004, the Old Launceston Seaport complex utilises the North Esk River for its marina and river-side amenity. The construction of the facility injected \$30 million into the community and since then the facility and the business operating there employ approximately 100 staff. It is estimated²¹ the annual wages, property expenses and business turnover contributes \$11 million per annum to the regional economy.

The Seaport development included the construction of a Marina which now successfully operates under its own business structure since the sediment that previously choked the marina has been cleared.

1.3.2.2 Silo Development

The Silo Development is currently under construction to convert the dis-used grain silos to a hotel and conference facility with restaurants and cafes overlooking the Tamar River, Seaport and the Cataract Gorge. Discussions with developer, Errol Stewart, indicate the proximity to the River and the amenity it provides was instrumental in his business case for the development.

This river-side amenity has already injected \$1.5 million into the economy for the construction of the levee to protect the facility. Another \$15 million will be spent to construct and fit out the hotel and restaurants. It is anticipated the business turnover will exceed \$5 million per annum.

1.3.2.3 North Bank Development

Funded by the Australian Government, State Government and the City of Launceston to the sum of \$9.3 million the North Bank Development is currently in its planning phase. To be constructed over three years this development will convert previous industrial land into a community river-side asset incorporating play structures, entertainment spaces and linking Seaport with the north side of the river.

1.3.2.4 Penny Royal

Josef Chromy's company, JAC Group, is currently undertaking \$10 million development of the Penny Royal site. The development will be a free-entry, food, wine and adventure precinct offering cliff face climbing adventure, a whisky distillery, cellar-door wine sales, restaurants, cafes and children's rides. When completed, the complex will offer 100 FTE jobs.

¹⁷ http://www.tourismtasmania.com.au/_data/assets/pdf_file/0007/25927/snapshot-sep14.pdf

¹⁸ http://www.tasmaniatopten.com/lists/tasmanian_attractions.php

¹⁹ <http://www.economicprofile.com.au/launceston/tourism/wages-salaries>

²⁰ <http://www.economicprofile.com.au/launceston/tourism/visitor-expenditure>

²¹ Per comms Errol Stewart 27 January 2015

1.3.2.5 *Stillwater*

One of Launceston's icon restaurants nestled on the bank of the Tamar River owes its heritage and existence to the river. Once a mill and silo, now converted to an art space, gift shop and restaurant, the river was instrumental in its original construction and is now a factor in its ongoing success.

1.3.2.6 *Rowing Clubs*

Four rowing clubs operate on the rivers within Launceston contributing significant resources to sporting and recreational pursuits. The North Esk Rowing Club recently invested in a new clubhouse/function centre and has now become a substantial business in its own right.

When sediment levels are reduced, as of 2013, the Home Reach provided an excellent 2000 metre rowing course for return of Tamar regattas.

2. The Context

Key points

- ▶ Hydro Tasmania is the largest water manager in Australia.
- ▶ The Government Business Enterprises Act 1995 (GBE Act) facilitates the state government to instruct Hydro to undertake community service obligations.

2.1 River Management

River management in Tasmania today is largely controlled by a government business enterprise (GBE) which uses the rivers extensively for the generation of hydroelectricity. Today this GBE is known as Hydro Tasmania.

Hydro Tasmania is the largest water manager in Australia, utilising six major river catchments to channel 15,364 GL of water through its power stations annually²². Hydro operates under water management guidelines that: establish long-term storage targets; follow storage operating rules; manage storage risks and protocols for communication with stakeholders.

Hydro have a total generating capacity of over 2600 gigawatts²³ and operate 30 hydro-electric power stations, 2 wind farms on mainland Tasmania, a gas powered generator, and two wind farms and two diesel powered generation plants on Bass Strait islands. Each year Hydro produces about 9000 GWh. Of the total 2600 GW, 2281 GW is capable of being produced by Hydro-electric generation.

There are three power stations on the Great Lake - South Esk system that are directly relevant to this Paper. From the Great Lake water is piped to the Poatina Power Station which then makes its way via Brumbys Creek and the Macquarie and South Esk Rivers to Trevallyn Dam where it is piped to the Trevallyn Power Station and discharged through the tailrace into the Tamar River just north of Launceston. The third station is Tods Corner Power Station which is used to pump water back up to the Great Lake from Arthurs Lake.

Trevallyn Power Station has a maximum capacity of 95.8 MW generated by four turbines²⁴. Each turbine when operating returns approximately 25 cumecs to the river after Home Reach. As such to maintain maximum capacity the Trevallyn Dam must have inflows approaching 100 cumecs else the power station will draw down the water level in the lake.

Hydro manages the water level in the Trevallyn Dam by balancing water inflows from Poatina and natural flows against the number of, and duration of, operating turbines.

When operating at capacity, the Trevallyn Power Station can contribute approximately 3.7% of Hydro's total capacity, or 4.2% of the hydro-generated capacity. Based on water flows as discussed above, it is unlikely that the Trevallyn Power Station can operate at more than 60% capacity averaged annually thus reducing its actual output to approximately 2.3% of Hydro's total capacity or 2.6% of hydro-generated capacity.

²² <http://www.hydro.com.au/water/water-management>

²³ <http://www.hydro.com.au/energy>

²⁴ <http://www.hydro.com.au/energy/our-power-stations/great-lake-south-esk>

2.2 Policy Context

The policy environment in which the Launceston Flood Authority operates incorporates a range of economic, social and environmental strategies relating to regional development, infrastructure and tourism. This section identifies how the Flood Authority's objectives align with the key Government policies.

2.2.1 Tasmanian Government Policy Context

2.2.1.1 *State Policy on Water Quality Management*

The *State Policy on Water Quality Management (1997)*, also known as the Water Quality Policy, provides a framework for the development of ambient water quality objectives and the management and regulation of point and diffuse sources of emissions to surface waters (including coastal waters) and groundwater.

Provisions of the Water Quality Policy include:

- purpose and objectives;
- protected environmental values and water quality objectives;
- measures to achieve policy objectives;
- management of point sources of pollution;
- management of diffuse sources of pollution; and
- monitoring.

The environmental values to be protected under the Water Quality Policy that are relevant to this Paper include:

- protection of aquatic ecosystems;
- recreational water quality and aesthetics;

It is evident that the current river management of the South Esk is not in accordance with this policy.

2.2.1.2 *Tourism 21*

The Tasmanian Government's primary means of supporting the growth of tourism in the state is through the activities of Tourism Tasmania. Tourism Tasmania is a Statutory Authority operating under the *Tourism Tasmania Act 1996*, and its role is to maximise the contribution of tourism to Tasmania's economic growth.

Specifically, Tourism Tasmania's goals are to maximise the state's tourism potential, drive tourism demand for Tasmania and enhance the tourism industry's competitive position with market-leading research and sound policy advice.

Tourism 21 was a landmark partnership agreement between the local tourism industry and the State Government. It identifies ambitious shared long term goals to grow the value of tourism in the state as well as agreed priorities and actions by the tourism industry and Tourism Tasmania to achieve those goals.

Specifically, this Paper aligns with Goal No.3 of *Tourism 21*, Product Development by:

- Creating and applying destination management plans for all Tasmanian tourism regions
- Supporting a successful regional tourism structure and the industry-led programs needed to develop tourism in each region

With an economic outcome as the primary driver of current river management it is evident this policy is not being observed.

2.2.2 Department of Primary Industry, Parks, Water & Environment

2.2.2.1 *Parks and Wildlife Service*

The Parks and Wildlife Service operate under the *National Parks and Reserves Management Act 2002* which is an Act to provide for the management of national parks and other reserved land. An objective of the Parks and Wildlife Service is to conserve the State's natural and cultural heritage while providing for sustainable use and economic opportunities for the Tasmanian community.

Parks and Wildlife Service are empowered under the *National Parks and Reserved Land Regulations 2009* to issue an Authority to undertake works within the Tamar River Conservation Area.

The Tamar River Conservation Area is an area of 4,670 Ha on the Tamar River extending from St Leonards to the Batman Bridge and is proclaimed under the *Nature Conservation Act 2002*.

2.2.2.2 Environment Protection Authority (EPA)

The EPA for Tasmania is established under the *Environmental Management and Pollution Control Act 1994*, which is the primary environment protection and pollution control legislation in Tasmania, with the fundamental basis being the prevention, reduction and remediation of environmental harm. The clear focus of the Act is on preventing environmental harm from pollution and waste.

The EPA comprises a Board and Director. Both the Board and the Director exercise powers at arm's length from State Government and have independent statutory powers under the Act. The EPA is supported by the EPA Division of the Department of Primary Industries, Parks, Water and Environment.

The EPA's goals are clean air, clean water, clean land, acceptable noise levels and sustainable use of resources.

Under no circumstances can the upper Tamar estuary be described as having clean water.

2.2.3 City of Launceston

2.2.3.1 Strategic Plan 2014 - 2024

The *Local Government Act 1993* requires the City of Launceston, in consultation with the community, to prepare a 10 year Strategic Plan that will be reviewed at least every four years. The Strategic Plan articulates the City of Launceston's key directions for the next 10 years.

There are eight overarching goals within the Strategic Plan of which the following are relevant to this Paper:

- A city where people choose to live - "Recognising the importance of the river being an iconic feature of Launceston", the Plan has several key indicators of success with the following relevant:
 - Increased community satisfaction with parks, open spaces and facilities.
 - A positive perception of Launceston.
 - Increasing population numbers, visitor numbers and visitor satisfaction.
 - Increasing usage of the riverfront precinct.
- A city that values its environment - "Launceston's location, at the intersection of the North Esk, South Esk and Tamar Rivers, defines the character of the City. The air and river water quality have improved dramatically in recent times. Launceston will strengthen its image as a healthy and attractive city." The key indicators of success relevant here are:
 - Air and river water quality improvements.
 - Well managed stormwater flooding events.
- A city that stimulates economic activity and vibrancy - "Tourism is an increasingly important industry for Launceston. We will work with tourism bodies and operators to continually improve the quality and diversity of Launceston's tourism offering. We will promote Launceston as a tourism destination with a range of high profile signature experiences to attract both local people and visitors." Key success indicators are:
 - Increased tourist numbers.
 - Increased event, conference and festival visitor numbers.

2.2.4 Launceston Flood Authority

The Launceston Flood Authority has, in undertaking its primary objectives of flood protection and sediment management in the Tamar River, strived to bring the people back to the rivers. It has done this by using the principles of 'place making' to create people friendly riverside walking paths and cycle-ways along and around

the newly constructed levees, and by clearing the upper estuary of unsightly mudflats that have been the focus of continued community dis-satisfaction for many years.

The Flood Authority is frustrated in its attempts improve the health of the rivers, assist in the management of the sediments and facilitate sporting, training and regatta events by the absence of the South River.

2.3 Alignment with Government Policy

As summarised in Table 1, the objectives of the Flood Authority align with the policy and strategies of the Tasmanian Government, Department of Primary Industry, Parks, Water and Environment, City of Launceston and the Launceston Flood Authority.

Table 1: Alignment with strategic objectives

Strategic Objective	Alignment	Evidence
Tasmanian Government		
State Policy on Water Quality Management		
Protected environmental values and water quality objectives; <ul style="list-style-type: none"> • protection of aquatic ecosystems; • recreational water quality and aesthetics; 	High	This policy is currently not being met as evidenced by the 2015 Tamer River Report Card. The objectives of the Flood Authority directly align with the strategic objective by improving the water quality to meet recreational usage and to protect ecosystems. Increased water flows will restore the aesthetics of the once mighty Tamar River
Tourism 21		
Supporting a successful regional tourism structure and the industry-led programs needed to develop tourism in each region.	High	The depletion of the River for hydro generation is contrary to this policy. The objectives of the Flood Authority will foster continued economic prosperity in the Launceston region by expanding and permitting the commencement of new river based activities for commercial and recreational purposes.
Creating and applying destination management plans for all Tasmanian tourism regions.	Medium	
DPIPWE		
Parks and Wildlife Service		
To conserve the State's natural and cultural heritage while providing for sustainable use and economic opportunities for the Tasmanian community.	High	The objectives of the Flood Authority will enhance the natural values with the Tamar River Conservation Area by contributing to improved water quality and facilitate an increase in economic and social opportunities for the community.
EPA		
The EPA's goals are clean air, clean water, clean land, acceptable noise levels and sustainable use of resources.	Medium	The activities proposed will contribute to healthier water in the South Esk and upper Tamar Estuary
City of Launceston		
City of Launceston Strategic Plan 2014 - 2024		
A city where people choose to live.	High	By returning the South Esk River flows, the amenity and river experience will be enhanced for tourists and the general community as well as facilitating additional river based events that will stimulate economic activity of the region.
A city that values its environment.	High	
A city that stimulates economic activity and vibrancy.	High	

Strategic Objective	Alignment	Evidence
	Launceston Flood Authority	
Bringing people back to the Rivers	High	Increased South Esk River flows will maximise the benefits of sediment management practices and improve water quality which will enhance the river 'experience' for both tourists and the Launceston community.

2.4 Legislative Context

There were three pieces of legislation enacted in the 1990's that empowered the Hydro-Electric Corporation to utilise the rivers in Tasmania for the generation of electricity. They are the *Water Management Act 1999*, the *Government Business Enterprises Act 1995 (GBE Act)* and the *Hydro-Electric Corporation Act 1995*, which are discussed briefly above in Section 2.3.

2.4.1 Water Management Act 1999

The objectives of this Act are to further the objectives of the resource management and planning system of Tasmania and in particular to provide for the use and management of the freshwater resources of Tasmania having regard to the need to:

- promote sustainable use and facilitate economic development of water resources; and
- recognise and foster the significant social and economic benefits resulting from the sustainable use and development of water resources for the generation of hydro-electricity and for the supply of water for human consumption and commercial activities dependent on water; and
- maintain ecological processes and genetic diversity for aquatic and riparian ecosystems; and
- provide for the fair, orderly and efficient allocation of water resources to meet the community's needs; and
- increase the community's understanding of aquatic ecosystems and the need to use and manage water in a sustainable and cost-efficient manner; and
- encourage community involvement in water resource management.

Importantly this Act provides for Licenses to take water.

Subject to this Act, a person who has lawful access to a watercourse or lake may use water from the watercourse or lake for the purpose of generating electricity if the use **does not**:

- cause material environmental harm or serious environmental harm or significant detrimental effects to other users; and
- contravene any other Act.

The current water management is arguably unlawful as it imposes a significant detrimental effect to other users and is causing serious environmental harm.

2.4.2 Hydro-Electric Corporation Act 1995

The Hydro-Electric Corporations Act provides the function and powers of Hydro-Electric Corporation (Hydro) to do all things necessary for and related to, the generation of and to sell electricity. The Act empowers Hydro to build power stations and own Basslink and to participate in the National Electricity Market.

2.4.3 Government Business Enterprises Act 1995 (GBE Act)

The GBE Act provides the principal objectives of a Government Business Enterprise (GBE) which are:

- To perform its functions and exercise its powers so as to be a successful business
- Perform on behalf of the State its community service obligations
- Perform any other objectives specified in the Portfolio Act.

Whilst the *Water Management Act 1999* and the *Hydro-Electric Corporation Act 1995* provide Hydro with the License for Water and provide the Powers and Functions respectively, it is the GBE Act that facilitates the state

government to instruct Hydro to undertake community service obligations, and to levee fees, taxes and dividends upon Hydro and thus determines the return to the State from Hydro Tasmania.

Specifically, the following sections of the GBE Act are relevant to this Paper:

2.4.3.1 Community Service Obligations

The State Government has the ability to determine the funding of Community Service Obligations by Section 63 and Section 65, which state, in part:

63. Funding of community service obligation

(1) The method and basis on which a Government Business Enterprise will be funded in whole or in part for undertaking a community service obligation is to be determined by the Treasurer in accordance with the Treasurer's Instructions.

(2) Before determining the method and basis on which a Government Business Enterprise will be funded, the Treasurer is to consult the Portfolio Minister and the Government Business Enterprise.

65. Ministerial direction to perform community service obligation

(1) The Portfolio Minister and Treasurer, jointly, may give a direction to a Government Business Enterprise to perform, provide or allow a function, service or concession that they are satisfied would not be performed, provided or allowed if the Government Business Enterprise were a business in the private sector acting in accordance with sound commercial practice.

(2) A Government Business Enterprise must comply with a direction given under subsection (1).

(3) The Portfolio Minister and Treasurer, jointly, may amend or revoke a direction given under subsection (1).

(4) The amendment or revocation must specify the date on which it takes effect.

(5) Within 21 days after receiving a direction given under subsection (1), the Government Business Enterprise may object to the direction on any ground.

(6) An objection -

(a) is to be in.....(and so on)

Clearly, subject to the Act, it is the Treasurer's prerogative to direct that a community service obligation be undertaken and how it is to be funded.

2.4.3.2 Liability to pay income tax equivalent

The GBE Act also provides, by listing Hydro in Schedule 2, the State Government the powers to instruct Hydro to pay an income tax equivalent, and to waive that payment, as it sees fit under Section 68 and Section 75, respectively.

Whilst the GBE Act provides that an income tax equivalent payment by the GBE must be made, it again is the Treasurer's option to waive the payment in part or in full at the request of the Portfolio Minister.

2.4.3.3 Dividend Payment

By listing Hydro in Schedule 4, the GBE Act, under Section 83, requires the Board of Hydro to determine the dividend it will pay the government for the financial year gone. Section 84 of the Act gives the Treasurer and Portfolio Minister, jointly, the power to vary or waive the payment of that dividend.

3. Hydro Tasmania's Strategic Direction

Key points

- ▶ Hydro Tasmania's 2014-15 financial performance was less than optimal
- ▶ Hydro Tasmania's profit forecast in coming years is predicted to be a loss or at low levels
- ▶ Hydro Tasmania operating in the highly dynamic and competitive NEM invites reassessment
- ▶ Operations of Basslink 1 and or 2 raise serious water capability concerns.

Hydro Tasmania operates with excellent inherited infrastructure, water at no cost and a captive market of Tasmanian consumers. However in the 2015 Hydro Tasmania Annual Report, a revaluation gain saved a poor result and cash flow fell by \$218m. Hydro's Chairman forecast a loss for 2015/16 and if the current expensive generation costs are overcome by June 2016, perhaps the forecast of returns to Government over the following two years of \$39m and \$62m will hopefully be achieved. But as further quoted in the report, that would represent a return on equity of only 1.68% and 1.67%.

It will be said that Hydro's trading is none of the LFA's business and that is true. It is only raised here as past efforts to obtain water have been met with the response that it can't be afforded.

Hydro's technical expertise and achievements over almost a Century are a credit to them, but it is now clear that Launceston can make better economic and strategic use of water from the South Esk than Hydro is currently able to do. The company is surely not so fragile that it could not comfortably sustain the mothballing of one of its 30 generating stations which contributes only 3.7% of electricity production.

On the figures, the Company can, without Trevallyn Power Station, continue to fulfil its base responsibility of meeting Tasmania's energy needs and no doubt it can do that without faltering. On the other hand, Launceston and the North will blossom as Government environmental requirements are met and the chronic pollution and choking sedimentation problems are solved.

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4. Impact on the Environment

Returned flows in the South Esk River will have a positive environmental impact by:

- ▶ Improving the water quality of the South Esk and Tamar Rivers by a return to constant flushing of nutrients and other pollutants.
- ▶ Assisting and enhancing the current sediment management of the Tamar's upper reaches at Launceston

4.1 Water Quality

As discussed earlier the Tamar Estuary and Esk Rivers (TEER) Ecosystem Health Assessment Program (EHAP) collects water quality data and assesses 5 Zones in the Tamar estuary. Zone 1, being the upper estuary in Launceston received a score of D, described as:

“ Poor ecosystem health. Overall conditions in this zone only meet the water quality targets 56% of the time. Poor water quality is due to high nutrient levels, particularly phosphorous which fails to meet the target all of the time. High turbidity levels which only meet the water quality target 13% of the time. Chlorophyll A only meets the target 28% of the time. Elevated levels of dissolved metals are present particularly aluminium which fails to meet the target all of the time at the two monitoring sites closest to Launceston. Dissolved metals are likely sourced from historic mining sites in the upper catchment and urban stormwater runoff. Zone 1 is influenced by high loads of contaminants delivered directly to the zone from the North and South Esk rivers and discharges from sewage treatment plants, urban stormwater run-off and a twice daily tidal regime which traps pollutants in this zone.”

An increase in South Esk River flows will assist the 'flushing' of the river to varying degrees, which will contribute to an improvement of water quality in the Tamar Estuary.

The First Basin on the South Esk River will also be a major beneficiary improving the recreational water quality by flushing nutrients and bacteriological materials from the Basin, reducing the propensity for algal blooms and a threat to health and reputation.

It should be noted that the Prospect sewerage plant emits its treated product into the reduced flow after the Trevallyn Dam and before the First Basin.

It is particularly relevant that the water quality of the adjoining Zone 2, below where the tailrace discharges into the estuary, rates a B in the 2015 Report Card.

4.2 Sediment Management

Over the past few years sediment management activity has appeased the long-standing community concern over the unsightly mud-flats in the upper estuary by lowering their level below the low tide level. However the particularly low flows over the summer of 2014-15, combined with the reduced flows due to the valve replacement at the base of the Trevallyn Dam since February, have caused an increase in the sediment accretion levels above the normal rate.

By comparison the raking campaigns of 2013 and 2014 demonstrate clearly that higher river flows contribute significantly to the productivity of sediment raking. In 2013 when there was high flow with over 41 days where water spilled over the Trevallyn Dam, the \$300,000 sediment raking campaign moved over 240,00m³ of sediment from the Yacht Basin.

Conversely in 2014 when there was only one small overflow of the Trevallyn Dam during a very dry period of low flows, the same scale raking campaign only managed to move 101,00m³ from the Yacht basin.

A trial release in September 2015 when 25 cumecs was released for a three day period demonstrated a 995% increase in sediment raking productivity.

Now in May 2015, the flow has been reduced to 1.5 cumecs and the sediment is accumulating at a rate never before recorded by the Flood Authority and the community is demonstrating its displeasure through the continual publication of opinion.

4.3 Environmental Flows

The Flood Authority's requests for an increase in flows, be it total return of the South Esk River or just a periodic release of water targeted to assist the sediment management, have, apart from a three day release in 2015, have been refuted on economic grounds, going so far as to propose that a financial return is relevant to the cost of the water released. This attitude ignores the present worldwide concurrence of returning water to river systems for environmental flow purposes.

What is adequate 'environmental flow' for a river? This has been debated and discussed at many forums across the globe in recent years. Below is an extract from a paper titled *FLOW The essentials of environmental flows*²⁵ that sums up the discussion:

"Environmental flows' is an easy concept. It means enough water is left in our rivers, which is managed to ensure downstream environmental, social and economic benefits. Yet, pioneering efforts in South Africa, Australia, and the United States have shown that the process to establish them, especially when part of an integrated management approach, poses great challenges.

Environmental flows requires the integration of a range of disciplines, including engineering, law, ecology, economy, hydrology, political science and communication. It also requires negotiations between stakeholders to bridge the different interests that compete for the use of water, especially in those basins where competition is already fierce. The reward is an improved management regime that guarantees the longevity of the ecosystem and finds the optimal balance between the various uses.

Given the worldwide overuse of water resources and the related degradation of ecosystems and their services, environmental flows is not a luxury, but an essential part of modern water management. It is an approach that deserves widespread implementation."

In the context of the South Esk River and the Upper Tamar Estuary, it clear the concept of ensuring "downstream environmental, social and economic benefits" are being ignored. As quoted, environmental flow is not a luxury, but an essential part of modern water management.

It is apparent that Governmental leadership is required to facilitate the negotiations between the stakeholders to provide equity to the current water management practices of the Lower South Esk and the Upper Tamar.

²⁵ [FLOW, The essentials of environmental flow; Dyson et al; 2003](#)

5. Stakeholder Comment

Key points

- ▶ Siltation of the upper Tamar River is a significant community concern
- ▶ River health is a serious community concern
- ▶ A range of consultation activities identified issues relevant to the development of the Flood Authority objectives. Respective views included:
 - ▶ Sporting clubs welcomed improved sediment management
 - ▶ Developers encouraged better sediment management and improved riverside amenity
 - ▶ Water quality is impacted by restricted water flows in the South Esk River resulting in poor flushing of the system.
 - ▶ Van Diemen Aquaculture production is impacted by poor water quality exacerbated by irregular flows
 - ▶ Improvements in the riverside amenity receive favourable feedback comments
- ▶ Usage surveys of riverside walking paths and cycle ways demonstrate strong community support
- ▶ The Federal Government supports improvement in the environmental health of the Tamar River for socio-economic benefits through the Tamar River Recovery Plan.

5.1 Consultations

5.1.1 Sediment Management

Launceston Flood Authority since 2012 has been undertaking sediment raking as an effective means to manage sediments in the upper Tamar. Prior to and during this period consultation has taken place with a range of stakeholders in regard to their involvement with the Rivers. The following list identifies these stakeholders and summarises the stakeholder interest and where applicable their comments.

- ▶ Parks and Wildlife Service - P&WS are empowered under the *National Parks and Reserved Land Regulations 2009* to issue an Authority (a permit) to undertake works within the Tamar River Conservation Area. The sediment management activities are undertaken under this permit.
- ▶ EPA - responsible for administering the Environmental Protection Act and relevant to the sediment management to consider environmental impacts of the activities.
- ▶ NRM North's Tamar Estuary and Esk Rivers Scientific and Technical Advisory Committee - This committee is a partnership of the organisations listed below that advises on matters impacting, or likely to impact the Tamar and Esk Rivers.
- ▶ The members of the TEER S&TC are: the Tasmanian Government, Launceston City Council, West Tamar Council, George Town Council, Meander Valley Council, Northern Midlands Council, Hydro Tasmania, TasWater and NRM North. The Launceston Flood Authority participates in TEER meetings.
- ▶ Australian Maritime College (AMC) - The AMC has had considerable input into matters of the Tamar River in conjunction with the Launceston Flood Authority and NRM North. The Authority partnered a study into the acid potential of the sediments as an Honours project in 2012.
- ▶ The AMC coordinated the sediment tracing study in 2014 on behalf of the Flood Authority with the aim to determine the extent of dispersion of the sediments during normal tidal movements and during the sediment management activities.

- ▶ The AMC also assist NRM North under the Environmental Health Assessment Program (EHAP).
- ▶ Van Diemen Aquaculture (VDA) - VDA was concerned that sediment raking may have detrimental impacts on fish production at Long Reach.
- ▶ Tamar Rowing Club - TRC is one of several rowing clubs on the Tamar and North Esk Rivers with whom the Flood Authority hold regular communications. In 2014 their ex-president wrote:
 - ▶ "Just a brief note to let you know that the TRC had an in house club fun regatta this morning which was magnificent. This was only possible because you have with the raking program given us our river back. Not only was it successful from our point of view but the tourists on the boardwalk were very impressed, and commented to me about it. The vibe was very positive. Many thanks for your support"
- ▶ Keep up the good work. Cheers, Jim Guy
- ▶ Tamar River Cruises operates a charter service on the Tamar and South Esk Rivers. The Flood Authority communicates regularly with Tamar River Cruises and in 2013 received the following accolade:
 - ▶ "I would like to thank you all at the City Council for getting Karl in to do the raking; it is really good to see water all the way across the North and South Esk at low tide. Not only can we navigate safely, but it is a real positive for the City and all local business. I am looking forward to the upcoming season to showcase the area to all our visitors. Forward bookings are good and winter was exceptional. Once again, many, many thanks to all concerned in the raking clean-up" Alfred Gude, Director Tamar River Cruises.
- ▶ Community Groups; Rotary, Probus, etc.
- ▶ Communication with this cohort of the community usually took the form of the Flood Authority delivering a short presentation followed by an open forum question session at a regular meeting of the groups. Topics usually covered the two primary activities of flood protection and sediment management.

5.1.2 Tamar River Recovery Plan Project Governance

The Tamar River Recovery Plan was launched as an election promise by Andrew Nikolic in July 2014 to draw together an alliance recently formed between the Launceston Flood Authority, NRM North and TasWater and to fund on-ground activities that would improve the water quality and amenity of the Tamar River in the Yacht Basin at Launceston. In 2014 Federal Minister for the Environment, Greg Hunt MP announced \$3 million over three years for works that included erosion control, sediment management, riparian re-vegetation, short term works to reduce stormwater/untreated wastewater from entering the rivers and longer term plans for resolution of the longstanding combined stormwater/sewerage system issues.

The following people and organisations are provided regular communications:

- ▶ Greg HUNT MP, Federal Member for Flinders, Minister for the Environment, announced the funding for the Tamar River Recovery Plan under the Coastal Rivers Recovery Programme.
- ▶ Member for Bass, Andrew Nikolic AM CSC MP is a supporter of cleaner and healthier rivers. He was instrumental in establishing the Tamar River Recovery Plan which received Australian Government funding over three years commencing July 2014.
- ▶ General community through distribution of a regular newsletter on the NRM North and City of Launceston websites.

5.1.3 Community

In addition to the above organisations, other consultations undertaken in the preparation of this paper include:

- ▶ Property Developers

- ▶ Old Launceston Seaport - In 2002 - 2004 this group constructed the Seaport Development on the old shipyard site on the North Esk River. This was a \$30 million development that contributed 85 FTE jobs generating an annual turnover in the vicinity of \$11 million per annum.
- ▶ The Old Launceston Seaport is currently developing the old Silo site in Lindsay Street, Launceston on the banks of the Tamar River. This \$15 million development will create another 50 FTE positions and inject an estimated \$10 million per annum into the economy. (per coms; Errol Stewart, 27/01/2014)
- ▶ The Silo development has already injected \$1.5 million into the economy through the construction of a perimeter levee that will protect the development from floods.
- ▶ Clearing sediments from the berths at the Marina at the Seaport has enabled the business to become an active business after being almost empty for many years.
- ▶ JAC Group - Currently developing the Penny Royal site. This \$10 million development will offer 100 FTE positions. The development will be a free-entry, food, wine and adventure precinct offering cliff face climbing adventure, a whisky distillery, cellar-door wine sales, restaurants, cafes and children's rides.
- ▶ The Group is also in discussion with the City of Launceston for a future development to construct an \$8 million chairlift between Penny Royal and the First basin in Cataract Gorge. The chairlift is anticipated to attract a minimum 50,000 additional visitors annually. (per coms; Dean Cocker, JAC Group 11/02/2014)
- ▶ City of Launceston (CoL) - CoL is currently in the planning phase for a \$9.3 million development of the North Bank site, converting an industrial precinct into a public open river-side recreation and performing space.
- ▶ Usage surveys of the new walking paths and cycle ways by the City of Launceston, constructed during the Launceston Flood Risk Management program alongside levees and riverbanks, demonstrate strong community recreational support.

The socio-economic implications of these consultations and river-dependent developments are discussed in section 6.

5.2 Key Government and Community Stakeholder Issues

Table 2 below provides a summary overview of key Government and community stakeholders of the Launceston Flood Authority.

The overview highlights the interests identified for each stakeholder in addition to anticipated actions to maximise opportunities and resolve conflict.

Table 2: Stakeholder issues and actions

Stakeholder	Interest	Actions
Greg Hunt MP Minister for Environment	The Minister announced funding for Tamar River Recovery Plan	▶ Maintain regular communications.
Andrew Nikolic AM CSC MP Member for Bass	Local Member Tamar River Recovery Plan.	▶ Maintain regular communications ▶ Media Releases
City of Launceston	Municipal Council North Bank Developer Economic development facilitator Greater Launceston Plan Board membership of Launceston Flood Authority	▶ Tamar River Recovery Plan Recipient and Program Steering Committee member ▶ Maintain regular communications ▶ Posts media on its website for community distribution ▶ Facilitates public access for comment
Utas/AMC	Facilitates student research	▶ Maintain regular communications
AMC Search	Manages sediment tracing program	▶ Maintain regular communications
NRM North	Tamar River Recovery Plan partner Manager of the TEER program Undertakes the EHAP program	▶ Program Steering Committee member ▶ Maintain regular communications ▶ Publishes water quality reports

Stakeholder	Interest	Actions
TasWater	Tamar River Recovery Plan partner Manager of wastewater treatment plants	<ul style="list-style-type: none"> ▶ Program Steering Committee member ▶ Maintain regular communications ▶ Media releases
Karmin Pty Ltd	Sediment raking contractor	<ul style="list-style-type: none"> ▶ Communicates via the Flood Authority
Old Launceston Seaport	Developer of old silo site in Launceston Owner of Seaport	<ul style="list-style-type: none"> ▶ Maintain regular communications
JAC Group	Developer of Penny Royal	<ul style="list-style-type: none"> ▶ Maintain regular communications
Tamar Rowing Club	Community rowing club	<ul style="list-style-type: none"> ▶ Maintain regular communications
North Esk Rowing Club	Community rowing club	<ul style="list-style-type: none"> ▶ Maintain regular communications
Southern Marine Shiplift	Commercial river user	<ul style="list-style-type: none"> ▶ Maintain regular communications
Tamar River Cruises	Charter service on Tamar and South Esk Rivers	<ul style="list-style-type: none"> ▶ Maintain regular communications
Parks & Wildlife	Responsibility for Tamar Conservation Area	<ul style="list-style-type: none"> ▶ Maintain regular communications
EPA	Manages environmental regulations	<ul style="list-style-type: none"> ▶ Maintain regular communications ▶ Report on sediment raking activities

6. Socioeconomic Values

Key points

- ▶ Returning flows in the South Esk River will create an immediate drawcard of a rushing river through a cataract and will contribute substantially to the socio-economic value of the community by:
 - ▶ Enhancing the tourist experience and improving regional tourism
 - ▶ Providing opportunity for regional development to support and cater for increased tourism
 - ▶ Improving the recreational activities and the amenity of the river-side and on-water precincts
 - ▶ Imparting a greater sense of community wellbeing through increased prosperity from new employment opportunities.
 - ▶ Increasing the level of community satisfaction.
- ▶ Indigenous community values will be enhanced by returning flows to the lower South Esk River

6.1 Introduction

The socio-economic impacts against criteria considered relevant to Flood Authority's objectives are illustrated in the follow Table. The provision of greater flows may assist with the following socio economic values as indicated.

Table 3: Socioeconomic Criteria

Criterion	Description
Regional Industry support and development	
Regional tourism	Providing opportunity for increased regional tourism activity
Supporting regional development	Facilitates further investment and economic activity in the northern Tasmanian regional economy
Impact on community	
Recreational impacts and amenity	Accommodates forecast growth in demand for recreational services and amenity
Community wellbeing	Supports the local economy and employment prospects
Community Satisfaction	Increases the level of community satisfaction in the City's amenity and with management of the City's iconic rivers.

6.2 Regional Industry Support and Development

6.2.1 Regional Tourism

Adoption of the objectives of the Flood Authority in this paper will enhance regional tourism in varying degrees by providing an enhanced visitor experience.

The enhanced experience will result from range of activities that could include promenading in the Gorge to increased tourism business numbers that will avail the opportunity of increased tourist numbers driven by returning the flow in the South Esk River. New businesses could include a white-water rafting experience; a new chairlift (as proposed by JAC Group); guided tours in the Cataract Gorge centred around the spectacle of natural flows; Indigenous tours of the First Basin and river environs educating the community on cultural usage of the river; and increased operations of charter vessels.

An increase in visitation numbers will have flow-on impacts for accommodation houses, restaurants, regional tour operators, airlines and other events in Launceston.

Noting the figures quoted above where it is estimated that the collective net worth of tourism in the Northern Region, when value added, is worth \$321 million to the economy, even a modest 3% increase in activity would potentially add \$9.6 million in value each year.

6.2.2 Supporting Regional Development

With tourism being the 2nd largest economic contributor to the Tasmanian economy, an increase in tourism will drive other sectors of the economy such as construction and development. Already we have the Old Launceston Seaport investing \$30 million into the Seaport development in 2002 to 2004. The Seaport employs approximately 85 FTE employees contributing an ongoing \$5 million per annum in wages contributing to an annual turnover of \$15 million.

Developments already commenced but not yet operational include the Silo hotel, conference and restaurant development at \$16 million, with ongoing employment of an estimated 50 FTE employees and a turnover estimated to be \$10 million per annum, and the City of Launceston undertaking the \$9.3 million North Bank Project, both absolutely reliant upon the amenity and health of the Tamar River estuary.

The JAC Group has now opened the \$10 million Penny Royal Development in proximity to the Tamar River, contributing yet another tourism experience. This development is a free entry, food, wine and adventure precinct offering cliff face climbing adventure, a whisky distillery, cellar-door wine sales, restaurants, cafes and children's rides. The development is estimated to provide an additional 100 FTE jobs and contribute a turnover of \$15 million annually.

These current developments that are dependent upon a clean and healthy riverside environment will create ongoing employment of an estimated 150 FTE positions, and provide annual turnovers estimated to be \$45 million per annum, driving increased prosperity for regional development.

The JAC Group is also in discussion with the City of Launceston to construct an \$8 million chairlift from Penny Royal to the First Basin in Cataract Gorge with expectation of an additional 50,000 visitors each year.

Old Launceston Seaport's director, Errol Stewart, has stated:

"This photo (not provided) was taken in 2003 shortly after the Trevallyn Dam was emptied down the Gorge for maintenance purposes. It shows the Home Point and Gorge sections of the river with clear blue freshwater. The photo has not been enhanced.

Given the Flood Authority have the task of removing the Silt I think a good argument can be made for a regular release of water from Trevallyn Lake to carry the Silt further downstream. At the time of the release of water in 2003 we were building the Seaport Hotel and the existing board walks on the North Esk. The water quality over this short period was incredibly good with vision through the water to a depth of a couple of meters.

The purpose of my note is to provide you with some evidence to approach the Government to seek for a regular release of water to improve water quality and more importantly to significantly aid the carrying of Silt further downstream during your raking program.

Currently we are building the Silos and over the past three months have commenced the re-vegetation of the banks of the North Esk and Tamar rivers a distance of approximately 600 metres. The pedestrian and bicycle traffic on the levee has increased immensely over the past few months as the North bank project gets underway. The only blot on the river scape is the continual return of the silt close to shore along this pathway. As you may know this continues Southward from the existing Wheat wharf to the building at Kings wharf a further 600 metres. This part of the river will spring to life over the next few years as a new footbridge is opened for public access across the river and when the Silo Hotel opens.

It is vital we take a proactive approach with Government to convince them that a regular release of water will improve your raking program by a significant margin. Indeed the Silo Hotel is a \$16 million project which will ensure more development along the Tamar River in particular on the existing land owned by Bunnings which runs parallel with the river. I think there is scope for this parcel of land to be the future convention centre for Northern Tasmania overlooking the Tamar with car parking under.

Additionally I have a plan to restore the existing wharf a 10,000 square metre section of derelict wharf approximately 600 metres long by 16 metres wide which will be the gate way to Launceston for larger vessels which will come up the river.

This will also provide the best rowing course for spectators equal to anything in the world. It will be a significant undertaking but I am up to the task and believe this will happen with some private and Government investment. The river health however is the catalyst for future development.

The other significant improvements that will occur will be a potential Sea plane returning and potentially a hydrofoil. I have a commitment from a tourist operator if I can provide a reasonable transition for his craft however the silt close in to the shore is probably the only issue.”

Further opportunity through an improved river-side amenity will undoubtedly contribute to greater economic activity and regional development.

6.3 Impact on the Community

With improvements in the river's water quality and general appearance and amenity of the river-side precincts the impact on the community will be positive.

6.3.1 Recreational Impacts and Amenity

The completion of the Launceston Flood Risk Management Project has seen, during the reconstruction of the levees, the riverside precincts become highly valued areas for recreational activity. This has been achieved by constructing walking paths and cycle-ways atop and along the new levees where the community can relax, recreate and appreciate the value of the City's iconic river system.

Further increases to the amenity will result from implementing the objectives of the Flood Authority by improving the recreational opportunities gained through improvements in recreational water quality and sediment management.

It is anticipated with improvements gained through the Tamar River Recovery Plan and flushing that the water quality will improve to the point where primary contact is viable. If this can be achieved further community events can be facilitated utilising the rivers, which will add value and deliver further positive impact to the community.

Prior to the current success of the Flood Authority's sediment management regime, the sediment, or as the community called it, the mud, in the river was a major community concern with many articles written and much public discontent displayed about the level of sediment accumulation. Improvement in sediment management through utilising regular flushing aligned with the sediment raking activities will further enhance the river's amenity and enable additional on-water recreational pursuits and sporting events.

6.3.2 Community Wellbeing

Community wellbeing is recognised²⁶ as being measured by the range of indicators listed below:

1. Healthy, safe and inclusive communities
2. Culturally rich and vibrant communities
3. Dynamic resilient local economies
4. Sustainable built and natural environments
5. Democratic and engaged communities.

As discussed above in section 6.2, the increased employment and business activity gained through current and future developments will contribute significantly to the resilience and dynamics of the community, the 3rd item listed above.

Local and regional businesses will benefit from the additional spending capability created by increased tourism activity and the creation of an additional 185 full-time-equivalent positions can only bring a positive feeling of

²⁶ A. Morton & L Edwards; Community Wellbeing Indicators, Measures for local government, May 2013

community wellbeing by reducing unemployment and engendering personal esteem leading to a healthy, safe and inclusive community.

Improvements to the environmental health of the rivers gained by sustainable higher river flows will improve the natural environment; a factor that also contributes to community wellbeing.

Thus it is evident that the objectives of the Flood Authority will contribute to three of the five indicators and add to the community's wellbeing.

6.3.3 Community Satisfaction

Community satisfaction has often been linked to the level of satisfaction with a community's infrastructure, job opportunities and social support networks²⁷.

As discussed above, continued development has occurred and is continuing to occur in the riverside precincts improving the community's infrastructure and amenity. Improved employment opportunity gained by the creation of ongoing jobs is also occurring now and will continue if the objectives of the Flood Authority are implemented. And by consequence of increased prosperity there will be a reduction on the demand for support networks and thus make those services more available to those who require them.

By definition, community satisfaction will increase if the objectives of the Flood Authority are implemented. This is in addition to the satisfaction the community will have with its leaders and decision makers.

²⁷ M Birasnav, Designing community satisfaction index: an empirical study, 1997

7. Public Interest Issues

Key points

- ▶ The safety of the community is a primary responsibility
- ▶ The community is very concerned with the health of Launceston's waterways
- ▶ Environmental flows are a significant longstanding community concern

7.1 Summary of Public Interest Issues

The Public Interest Issues in Table 4 list each of the elements, the government standard to apply for each element and an assessment of whether appropriate mechanisms are available to provide an adequate level of protection. The conclusions reached from the assessment are:

- ▶ The proposal is consistent with a number of State Government objectives and policies, including those specifically Tourism 21 and the State Policy on Water Quality
- ▶ All arrangements regarding the project would be transparent and ensure that the community would be well informed about the responsibilities of the parties. The project documents would be published subject to confidentiality provisions of the Right to Information Act 2009 and the Auditor-General would have full access to any information relating to the project.
- ▶ Prior to the implementation an extensive consultative program with key government and community stakeholders will be undertaken.
- ▶ Tasmanian legislation, enforced by DPIPWE, will ensure that community health and safety will be secured.

Table 4: Public Interest Issues

Public Interest Elements	Standard, Relevant Policies and Strategies	Assessment
<p>Effectiveness Are the proposed actions effective in meeting Government objectives?</p>	<ul style="list-style-type: none"> ▶ <i>State Policy on Water Quality Management</i> ▶ <i>Tourism 21</i> ▶ <i>Water Management Act 1999</i> ▶ Parks and Wildlife Service ▶ City of Launceston Strategic Plan 2014 -2024 	<ul style="list-style-type: none"> ▶ The objectives are supported by existing government legislation, policies and initiatives. Section 2.3 outlines how the scope aligns with each of the Tasmanian Government, the Department of Primary Industries, Parks, Water and Environment, the City of Launceston's strategic objectives and the Launceston Flood Authority's identified goals.
<p>Accountability and Transparency Do the proposed arrangements ensure that:</p> <ul style="list-style-type: none"> ▶ The community can be well-informed about the obligations of Government and the GBE; and ▶ They can be overseen by the Auditor General 	<ul style="list-style-type: none"> ▶ Returns to Government can be decided by the Treasurer and relevant portfolio Minister. ▶ Role of the DPIPWE in monitoring compliance of sediment management activities with environmental standards. ▶ Auditor General Tasmania. 	<ul style="list-style-type: none"> ▶ Auditor-General retains the right to view all material. Private sector proponents will have an opportunity to identify any elements of their bid that they deem to incorporate intellectual property or other trade secret information. The only notable limitation is where the State assesses the public interest in maintaining confidentiality against the public interest in disclosure.

Public Interest Elements	Standard, Relevant Policies and Strategies	Assessment
<p>Affected Individuals and Communities Have those affected been able to contribute effectively at the planning stages, and are their rights protected through fair appeals processes and other conflict resolution mechanisms?</p>	<ul style="list-style-type: none"> ▶ The Tasmanian Government is committed to open an effective community engagement ▶ Standards may include: <ul style="list-style-type: none"> ▶ An appropriate public consultation process in relation to the development and the preferred option ▶ Local government planning requirements 	<ul style="list-style-type: none"> ▶ Wide ranging community consultation will be undertaken ensuring key stakeholders and broader community are consulted on the objectives and outcomes prior to implementation. ▶ Instigation of an appeals process at Government level.
<p>Equity Are there adequate arrangements to ensure that disadvantaged groups can effectively use the infrastructure or access the related service?</p>	<ul style="list-style-type: none"> ▶ The project will be governed by: <ul style="list-style-type: none"> ▶ <i>Antidiscrimination Act 1998</i> 	<ul style="list-style-type: none"> ▶ Promotes business opportunity and economic gain open to all entities able to meet government guidelines and planning requirements.
<p>Public Access Are there safeguards that ensure ongoing public access to essential infrastructure?</p>	<ul style="list-style-type: none"> ▶ City of Launceston will remain as the manager of municipal public assets. ▶ Launceston Flood Authority will remain responsible for maintaining sediment management for public benefit. 	<ul style="list-style-type: none"> ▶ Public assets owned by the City of Launceston and the Crown will be retained. ▶ Other than for safety reasons, public access will remain unchanged.
<p>Consumer Rights Does the project provide sufficient safeguards for service recipients, particularly those for whom Government has a high level of duty of care, and/or the most vulnerable?</p>	<ul style="list-style-type: none"> ▶ Public access and usage would be subject to service standards that are in line with community service expectations. 	<ul style="list-style-type: none"> ▶ The outcomes will incorporate sufficient safeguards for service recipients through: <ul style="list-style-type: none"> ▶ Adoption of the best value ▶ management of risk ▶ State step-in rights ▶ compliance with environmental policies and guidelines.
<p>Security Does the project provide assurance that community health and safety will be secured?</p>	<ul style="list-style-type: none"> ▶ State's duty of care to the public ▶ Relevant laws and regulations covering OH&S requirements and marine safety regulations ▶ City of Launceston's duty of care 	<ul style="list-style-type: none"> ▶ Project specific risk management procedures will be implemented. ▶ The outcomes will comply with health and safety legislation
<p>Privacy Does the project provide adequate protection of users' rights to privacy?</p>	<ul style="list-style-type: none"> ▶ Government entities comply with privacy legislation of the <i>Personal Information Protection Act 2004</i> 	<ul style="list-style-type: none"> ▶ Policies ensure that any private and/or commercially sensitive information would be protected.