



Hon Alannah MacTiernan MLC
Minister for Regional Development; Agriculture and Food; Ports;
Minister Assisting the Minister for State Development, Jobs and Trade

Our ref: 64-13332

Hon Matthew Swinbourn MLC
Chair
Standing Committee on Environment and Public Affairs
Parliament House
WEST PERTH WA 6005

Attention: Ms Maddison Evans

Dear Mr Swinbourn

PETITION NO. 123 - SOUTHERN FORESTS IRRIGATION SCHEME

Thank you for your letter dated 9 August 2019 regarding the above petition and for the opportunity to address the concerns raised in the petition and submissions.

Commencing under the previous Government, the Southern Forests Irrigation Scheme (SFIS) was developed because most of the productive horticultural areas in the Manjimup and Pemberton region have fertile land available but limited or no further access to water. I am advised, the need for the SFIS was further emphasised during 2010, a very dry year, which, if it had been repeated the following year, would have had significant detrimental impacts on the local horticultural sector. The 2010 event, coupled with the predicted effects of climate change, exposed the vulnerability of one of the State's most productive horticultural regions to water shortages.

A comprehensive business case for the SFIS was prepared by economic consultants Marsden Jacob Associates utilising engineering support from Tasmanian Irrigation (Tasmanian Government trading enterprise). Tasmanian Irrigation are arguably the national leaders in developing agricultural irrigation schemes, having already constructed some fifteen schemes with another five under development.

I understand the petitioner's concerns around the balance between environmental impact and economic development in this rural environment. As you are aware the Environmental Protection Authority (EPA) has assessed the project as requiring a Public Environmental Review, which is the highest level of environmental scrutiny. All of those with interests in the project will be able to make a submission to the open and transparent EPA process.

It is critical that the environmental risks are fully dealt with before the project proceeds. The EPA process does provide that opportunity.

A key area of concern raised in the petition is the methodology of water planning and allocation utilised by the Department of Water and Environmental Regulation (DWER). I have been briefed by DWER on its approach to determining the water available to the SFIS. I found this briefing to be useful and I would urge the Committee to seek a similar briefing as part of its investigation.

Before I respond to the specific issues raised, there are some misconceptions and recent design improvements that warrant clarification:

- The SFIS is not damming the Donnelly River; rather peak flows from the Donnelly will be pumped to an off stream storage dam 3 kilometres away on a minor tributary (Record Brook).
- There is no longer the need for a previously proposed 4 metre weir structure on the Donnelly River nor inundation of up to 2.2 kilometres upstream to allow for water to be pooled and pumped. Instead, a gauging station will be installed and submersible pumps used which means a more modest 0.5 metre structure will be required.
- Existing self-supply water licences are not impacted by the SFIS and water is not being taken away from West Manjimup farmers due to the scheme.

Specific comment to points raised in the petition

The business plan is out of date and relies on old data for the prices and supply of produce.

I believe one of the concerns is the potential of an oversupply of avocados, one of the key crops proposed to be grown. I have previously answered a similar question in Parliament (QON 2169) and believe it will be important that export markets are developed for long-term price stability.

While crop selection was used as part of the analysis in the business case, other factors such as on-farm developments (valued around \$54 million), water security and job creation substantiated the benefits of the public investment.

Furthermore, an update to the business case completed in March 2019 found the economic benefits associated with the scheme were even greater than those detailed in the original business case. The main reason was the higher than anticipated uptake of water from the scheme by local growers.

We are consulting with the Commonwealth and the Co-operative to facilitate release of the fundamentals of the revised business case.

There is no guarantee water flows will be sufficient to fill the dam.

An assessment of water availability for the proposed scheme has been completed by DWER. The assessment involved the development of a new hydrological model of the Donnelly River and its tributaries, independently developed by Hydrology and Risk Consulting and independently peer reviewed by Eco Logical Australia using best practice guidelines.

The study incorporated DWER's guidelines on climate change¹. The assessment found that under the predicted 2030 climate, the scheme can provide 9.3GL of water in 80-97 per cent of years.

The scheme design is to pump water from the Donnelly River to a 15GL storage dam located on Record Brook, providing 9.3GL per annum of irrigation water at high reliability. Although it would be preferable for the dam to be filled each season, it is recognised this will not be possible in dry years and hence the storage dam has been sized to provide a 5.7GL buffer to assist in maintaining reliability of supply.

The costs of the pipeline installation and routing across private land is out of date.

The business case for the SFIS was completed in December 2016. The estimation of pipeline installation costs were based on the known costs of installing thousands of kilometres of pipelines for irrigation schemes in Tasmania. To ensure parity with a Western Australian setting, a 30 per cent allowance for infrastructure items and a contingency of \$10 million was applied.

A significant component of the pipeline installation is the cost of the pipe itself. A recent check of current pipe prices indicated that the unit costs have fallen and are lower than the figures used in the business case.

One of the submissions supporting the petition quoted the costs for installing a drinking water pipeline as evidence that the cost estimates for the scheme pipeline were too low. It is important to note that the scheme pipeline will be of "agricultural standard" and not drinking quality standard. The costs for installing drinking water pipelines are significantly higher and therefore not comparable with the installation of agricultural pipelines.

The destruction of forest for the dam, weir and pipeline is unnecessary and will destroy native bushland, habitat and culturally significant sites.

It is anticipated the SFIS will have a 312 hectare (ha) clearing footprint, nominally consisting of:

- 10 ha for the Donnelly River offtake and pump station;
- 160 ha Record Brook Dam and associated transmission pipeline; and
- 142 ha for the pipeline corridor.

It should be noted that it is expected that more than 100 ha of the 142 ha clearing within the pipeline corridor will be temporary and will be revegetated post construction.

The route of the pipeline network has been adjusted to reduce the potential impacts on native vegetation and fauna habitat. More than 70 per cent of the 250 kilometres pipeline network is located on land already cleared, with only 142 ha within the 481 ha corridor containing vegetation. The dam area covers approximately 160 ha, of which 23 ha was recently mapped as in degraded condition having been subject to recent logging (estimated 5-10 years) or other disturbance.

¹ Department of Water 2015, *Selection of future climate projections for Western Australia*, Water Science Technical series, report no. 72, Department of Water, Western Australia

Reduction of the nominal width of the pipeline corridor development envelope from 30 metres to 20 metres resulted in a reduction in the maximum potential area of native vegetation clearing associated with the pipeline network from an estimated 210 ha to 142 ha with approximately 100 ha of cleared native vegetation within the pipeline corridor to be revegetated post construction.

It is not anticipated that culturally significant sites will be impacted by the scheme. An independent Aboriginal Heritage survey report of the dam site completed in 2018 did not identify any culturally significant sites.

The EPA has assessed the project as requiring a Public Environmental Review, which is the highest level of environmental scrutiny. The impacts of native vegetation clearing and cultural heritage will be assessed through the Public Environmental Review process.

The water flows past the dam and weir will be altered and have a subsequent impact downstream.

An environmental flow assessment for the Donnelly River has been undertaken to determine the volume, timing and duration of the flow required to maintain the downstream environment. The study is based on a peer reviewed methodology² that has been applied in catchments across South West WA. This study has been used to inform the environmental values in the river and to inform the potential water licencing requirements of the scheme under the *Rights in Water and Irrigation Act 1914*.

As part of the environmental flow assessment, water level monitoring equipment was installed at four locations along the Donnelly River and one location further downstream. Surveys of river cross-sections were undertaken at each location and identification of over 24 important environmental flow thresholds. Environmental conditions reports were undertaken by DWER in 2016-2017 and by Murdoch University in 2017-2018. River health assessments were also undertaken in 2016-2017. This monitoring information all contributed to the assessment of water requirements and environmental water requirements.

DWER will place conditions on the water licence regarding the timing and magnitude of abstraction that the scheme will have to comply with. Regulating how the scheme abstracts water will ensure the flow within the river is maintained. This will ensure the flow regime still consists of a range of important flow events that support the downstream riverine environment.

The SF Irrigation Co-operative Ltd (SFIC) is responsible for the environmental approvals through the EPA and DWER will not make a decision on the licensing of water for the scheme until the Minister for Environment has approved the project, at the completion of the EPA assessment.

The environments in the dam and the river above the weir will be altered.

A site specific environmental flow assessment for the Donnelly River was undertaken to determine the environmental water requirements for the river. This included identification

² University of Melbourne 2010, *Peer review of Ecological Sustainable Yield Methods in South-West Australian Stream*, prepared for the Department of Water, Western Australia

of aquatic flora and fauna along the river, surveys of river channels and local monitoring of streamflow. The environmental flow requirements were tailored and specific to the local environmental conditions of the river. The study is based on a peer reviewed methodology³ that has been applied in other catchments across South West WA.

The project has been refined over the last 12 months to reduce potential environmental impacts. Changes include:

- A gauging station will be required to ensure stream flow can be accurately recorded to feed data to the downstream pumps. A natural river control point may be suitable, however, if no suitable sites are identified, then a low concrete weir resembling the photo attached to this submission (Figure 1) will be installed.
- Approximately 130 metres downstream of the gauging station, submersible pumps will be installed to harvest water. It was initially thought that a 4 metre weir would be required at this site however pumps have been selected such that there are minimal changes needed to the current river height – likely 0.5m maximum. Originally it was thought there would be up to 2.2 kilometres inundation upstream at this site, however, no inundation will be required due to the use of submersible pumps.

As noted previously, the SFIS is not damming the Donnelly River; rather peak flows from the Donnelly will be pumped to an off stream storage dam 3 kilometres away on a minor tributary (Record Brook).

The water flows have not been proven to come from the forest rather than from cleared agricultural land above the Donnelly River weir, where water restrictions impede opportunities to develop these properties.

The volume of water proposed for allocation to the SFIS is equivalent to that generated from forested catchment areas.

A model of the Donnelly River estimates the spatial and temporal variability in flow across the catchment. The model is calibrated to monitored streamflow and the model parameters are calibrated to reflect the different hydrological response from cleared and forested areas. The modelling indicated that the volume required by the scheme is equivalent to that generated from the forested areas. The cleared areas have reached a level of sustainable development and are capturing the additional flow generated from clearing the land. Observed streamflow is used to indicate the proportion of flow from different areas across the catchment.

The hydrological model built for the assessment of water availability also considered the proportion of flow captured in the agricultural areas by farm dams. The cleared agricultural land contains the majority of self-supply farm dams. The flow off farmland is captured in self-supply dams before it contributes to the Donnelly River. A study by Sinclair Merz Knight⁴ identified that farm dams intercepted on average more than half of the flow generated from land clearing and in dry years capture all flow generated from cleared

³ University of Melbourne 2010, *Peer review of Ecological Sustainable Yield Methods in South-West Australian Stream*, prepared for the Department of Water, Western Australia

⁴ Sinclair Merz Knight (2008), *Impacts of farm dams on streamflow, impacts of farm dams in Lefroy Brook upstream of Channybearup*, report for the Department of Water, Perth.

agricultural land. The forested sections of the catchment contain limited infrastructure and flow into the Donnelly River is unimpeded.

In regard to restrictions impeding opportunities to develop the agricultural areas, water has been allocated across the region in accordance with DWER's *Warren Donnelly surface water allocation plan*. Allocation limits are determined to provide a sustainable abstraction for high reliability licenses in a dry or low flow year. In a number of subareas of the plan these allocation limits have been reached, indicating a level of sustainable development has also been reached. Further allocation of water in the agricultural areas may impact the security of supply to existing licensees or the local environment.

The properties with access to the scheme are gaining personal benefit from a very targeted government handout that could be used more equitably by a greater cross section of the community.

Participation in the SFIS was open to all growers willing to purchase a water entitlement. Every effort was made (subject to capital cost and design practicalities) to design the scheme with maximum connections. Extensive consultations and public meetings were held and an expression of interest phase, followed by formal water sales concluded in March 2018. The decision to sell water entitlements is based on Tasmania's funding model which successfully secured both State and Commonwealth Government funding.

It is important to note that the decision by a grower to purchase water is a commercial one and not a social equity matter. The decision is dependent on the circumstances of each particular farming enterprise. It would be unrealistic to expect that all farming enterprises in the district were seeking to expand at the same time or have the same commercial objectives.

Unlike the Murray-Darling Scheme, the water entitlement is not disconnected from the land – and trading of water is limited to members of the Co-operative. Membership of Co-operative is determined with reference to holding, or having access to, land in the area.

The State and Federal Governments' investment is supported by the potential public benefits, which include a Benefit Cost Ratio of 2.2, the creation of 225 jobs and a strategic response to climate change and reduced rainfall in one of Western Australia's most productive horticultural precincts. Government funding is designed to support and develop the entire region and is not a targeted handout for the benefit of any specific individuals.

Other opportunities

Apart from the strategic horticultural importance of the Southern Forests region, the SFIS has the potential to add to the recreational amenity of the area. Record Brook dam, with a surface area of around 160 hectares, could lend itself to a range of water and non-water based recreation. The Manjimup Shire has shown a keen interest in this potential along with other tourism/recreational bodies and, while this is separate to the irrigation project, it does show the strategic synergies across portfolios.

Further to this, the SFIC has been working with Bibbulmun Track Foundation to develop ways the scheme can improve the recreational experience of visitors. Options being

with other tourism/recreational bodies and, while this is separate to the irrigation project, it does show the strategic synergies across portfolios.

Further to this, the SFIC has been working with Bibbulmun Track Foundation to develop ways the scheme can improve the recreational experience of visitors. Options being considered include extending the Bibbulmun Track to include a walking trail around the Record Brook dam-site and a new campsite. Recfishwest has also recently shown interest in working with the SFIS to explore opportunities to promote freshwater fishing experiences.

There is also strong potential to promote Aboriginal engagement, employment, training and business development opportunities. Preliminary engagement with the Southwest Aboriginal Land and Sea Council has demonstrated their willingness to work collaboratively with the Government and the project proponent, SFIC, to deliver real benefits for the Traditional Owners of the land.

Closing comments

Matters around the science of environmental flows, water allocation and climate change are complex and detailed. For the purpose of this submission I have attempted to summarise these, however, for completeness I would urge the Committee to review source documents if unclear on any aspects and seek a briefing from DWER.

Clearly there are some in the community concerned about this project. We have not taken those concerns lightly. But on balance, our analysis so far shows that the project is sustainable and the investment of public funds can be justified in securing a viable horticulture industry for Manjimup.

The Government and the SFIC understands the need to work with all parties as the project proceeds. Federal and State Government funding has been committed to enable the project to complete the environmental approvals process and move to a final investment decision. Further consideration in respect to capital funding can be made should the project receive all necessary approvals. This approach is consistent with the current Commonwealth Government commitment of \$39.72 million.

Yours sincerely



**HON ALANNAH MACTIERNAN MLC
MINISTER FOR REGIONAL DEVELOPMENT; AGRICULTURE AND FOOD; PORTS;
MINISTER ASSISTING THE MINISTER FOR STATE DEVELOPMENT,
JOBS AND TRADE**

28 AUG 2019

Figure 1 – Likely gauging structure across the Donnelly River

