

Gwydir Valley Irrigators Association Inc

Submission to the

Independent Pricing and Regulatory Tribunal

Review of Bulk Water Prices
from 2005/06

April 2005

Gwydir Valley Irrigators Association Inc (GVIA):

The GVIA represents in excess of 170 irrigators in the Gwydir Valley of NSW, centred on the town of Moree.

The organisation is voluntary, funded by a cents/ megalitre levy on regulated unregulated and groundwater irrigation entitlement. In 2003/04 the levy was paid on in excess of 93% of the entitlement.

The Association is managed by a committee of 11 irrigators and employs a full-time executive officer and a part-time administrative assistant.

All members of the GVIA are customers of State Water, and a number of GVIA members sit on State Water's Gwydir Customer Service Committee.

The GVIA welcomes the opportunity to provide input into the Review of Bulk Water Prices from 2005/06, through the NSW Independent Pricing and Regulatory Tribunal process.

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Executive Summary

The Gwydir Valley Irrigators Association has considered Independent Pricing and Regulatory Tribunal Bulk Water Prices from 2005/06 Issues Paper, State Water's submission, and the Department of Infrastructure Planning and Natural Resources (DIPNR) submission.

The GVIA would like to express its disappointment in the lateness and brevity of the DIPNR submission, and indicate its deep concern that through its action DIPNR appears to be directing the timetable of the IPART pricing determination.

The GVIA urges IPART to ensure that there is no doubling up of costs and services by DIPNR and State Water.

The GVIA completely rejects the price path proposed by State Water for regulated water in the Gwydir Valley.

Given the previous price determination set in 2001 was to have the Gwydir at full-cost recovery, the GVIA has seen nothing in the State Water submission that would justify the significant price increases that it proposes.

The GVIA is very concerned that the State Water submission concentrates almost entirely on ways to increase revenue, yet fails to address the need to ensure it is operating as efficiently as possible.

The GVIA believes that there is significant ability for State Water to cut costs, and also to increase revenue by maximising the volume of water delivered to irrigators (within the constraints of Water Sharing Plans).

The GVIA remains unconvinced of the merit of moving away from an annuity approach to capital financing and adopting the "building-block" approach, and urges IPART to commission an independent report on the most efficient method for State Water and its customers to meet State Water's capital requirements.

With regards to DIPNR's submission, its lack of detail makes it very hard to constructively comment on.

However, the GVIA sees no reason why IPART should support DIPNR's request for a continuation of current level funding (plus CPI) while it prepares a detailed submission due in September.

The corporatisation of State Water, the finalisation of many of the State's Water Sharing Plans, the formation of the Catchment Management Authorities and the creation of the Natural Resources Commission have all greatly reduced DIPNR's Water Resource Management (WRM) role.

The GVIA urges IPART not to determine any increase DIPNR's WRM charges until it can comprehensively identify and cost it on going WRM activities.

If IPART intends to allow DIPNR the extra time it has requested to provide detail information, the GVIA believes IPART should provide an interim pricing determination for 1-7-05 to 30-6-06, effectively rolling over the 2004/05 pricing levels for State Water and DIPNR.

This would be a lot more effective than requiring a split determination for 05/06, and further determination for the medium term price path commencing 1-7-06.

The GVIA has prepared a number of recommendations for IPART's consideration.

Recommendations:

- 1. In the event of IPART accepting DIPNR's position of not providing a detailed submission till September 2005, IPART should roll-over the 2004/05 pricing determination for 05/06 (covering both State Water and DIPNR), and amend it's timetable so that it determines a medium term price path to commence July 2006.**
- 2. IPART commission an independent report on the best method of capital raising for State Water, taking in regard the interests of both the business and its customers.**
- 3. That IPART carefully consider, and take into account, State Water's capital expenditure history prior to making its 2005 pricing determination.**
- 4. Government should meet 100% of all dam upgrade costs, until all dams meet 2005 safety standards**
- 5. That IPART recognise the rectification of the Copeton Soft Rock problem as a 100% Government cost.**
- 6. Copeton Dam should be considered to have a flood mitigation role when determining government/user shares of upgrade costs, once 2005 standards are met.**
- 7. IPART should commission a study on the flood mitigation effect of Copeton Dam.**
- 8. Government should meet 100% of the cost of OH&S compliance up to 2005 standards.**
- 9. After the achievement of 2005 OH&S standards, OH&S be considered a cost of doing business, but these costs should be monitored by IPART to ensure they are efficient.**
- 10. Environmental compliance costs on existing and replacement structures should be a 100% Government cost.**
- 11. Rectification of thermal pollution should be a 100% Government cost.**
- 12. The maximum fixed proportion of State Water's charges should be capped at 50%, with the view of reducing it further over time.**
- 13. That State Water should review its formula for calculating the appropriate ratio for general security and high security charges, and the reviewed formula should transparently reflect the true additional costs of storing high security water.**
- 14. Any resulting changes in charges for general security and high security water should be revenue neutral.**
- 15. IPART should maintain the average use figures as the basis for making State Water's pricing determination.**
- 16. That following consultation with State Water, and with wide stakeholder participation, IPART determine a pricing structure for supplementary water. The new pricing structure is to be revenue neutral to State Water.**
- 17. That IPART supports State Water's position that users only pay for gauges required for the efficient delivery of water.**
- 18. That State Water should charge other users for accessing information from gauges identified as being critical for water delivery.**

- 19. That IPART should instruct DIPNR and State Water, in consultation with the CSC's, to undertake a comprehensive review of gauging requirements and locations.*
- 20. That water quality data collection should be a 100% government cost.*
- 21. That IPART instruct State Water to look at alternative arrangements that ensure efficient cost recovery from the administration of temporary transfers.*
- 22. IPART should determine that the government be charged as a user for the Environmental Contingency Allowance and the replenishment flows stored in Copeton Dam.*
- 23. IPART should determine that an appropriate pricing and metering structure should be developed for delivered stock and domestic supplies, and the charges met by a transparent Community Service Obligation payment.*
- 24. Bulk water discounts to the corporations should be reviewed, and discounts only apply to customers where State Water can demonstrate savings resulting from the scale of the customer.*
- 25. Any service provided by a customer to State Water should be costed and charged at commercial rates.*
- 26. IPART should carefully scrutinise State Waters claim of additional cost associated with corporatisation, and determine whether the costs are genuine and efficient.*
- 27. Should a Community Consultative Committee be a requirement by State Water's operating licence, and then it should be funded through a transparent CSO payment.*
- 28. IPART take in account Gwydir Valley irrigation farmers' reduced capacity to pay when setting the bulk water price determination.*
- 29. Any shortfall between the costs of maintaining lands, and the revenue raised through commercial activities on those lands be made up by a CSO, rather than be added to user charges.*
- 30. Users should be extensively consulted on the level of service agreements between State Water and DIPNR.*
- 31. That IPART consider revenue received by State Water from hydro generation, and assign, in a transparent manner, that revenue to the costs associated with the operation and maintenance of the dams.*
- 32. Prior to any costings that include the usage of DIPNR water use figures, a thorough, independent audit of DIPNR's water usage figures and accounting systems be conducted.*
- 33. DIPNR widely consults, and include in its detailed submission, information requested by stakeholders.*

Introduction

The Gwydir Valley Irrigators Association (GVIA) is pleased to provide this submission as part of the Determination of Bulk Water Prices from 2005/06.

It has considered IPART's Bulk Water Prices 2005/06 Issues paper, State Water's and DIPNR's submissions, and has participated in consultation sessions with State Water.

It urges the Independent Pricing and Regulatory Tribunal to pay particular attention to the separation of State Water and the Department of Infrastructure, Planning and Natural Resources, and ensure there is no doubling up of either roles or charges.

The GVIA wishes to congratulate State Water on the professional approach it has taken in preparing and delivering its submission on time, and engaging with its stakeholders.

However, the GVIA wishes to express its extreme disappointment in the performance of DIPNR, with its submission in excess of three months overdue.

The GVIA believes DIPNR's performance with regard to this determination is indicative of its overall level of competency and efficiency.

Performance efficiency should be a key focus of IPART when determining the price path for Bulk Water. The GVIA insists that all of State Water's operations should occur at a level equivalent to, or in excess of, private industry best practice, and its cost base should reflect that level of performance.

It greatly disturbs the GVIA that State Water's submission at no stage seriously addresses the issue of efficiency gains or cost control, but only focuses on efforts to increase income through increases in charges. All businesses that have to work in the commercial world, as a corporatised State Water must, need to address both the cost and income sides of their ledger.

Likewise DIPNR needs to operate in an effective and transparent manner, with a clear costing structure, and accountability to stakeholders.

DIPNR's submission, by its own admission fails to provide transparency, and IPART should seriously consider the validity of DIPNR's request to simply roll-over 2001 funding levels (adjusted to CPI), when DIPNR's role in natural resource management has decreased with the creation of the Catchment Management Authorities and the Natural Resources Commission, the corporatisation of State Water and the finalisation of many of the State's Water Sharing Plans.

The DIPNR submission fails to identify how these changes will impact on expenditure, and the GVIA does not believe it is good enough for DIPNR to simply dictate to IPART that it will provide an in-depth submission later in the year.

This action by DIPNR will no doubt lengthen the entire price setting process, and it makes members of the GVIA question the independence of the Tribunal if DIPNR can effectively ignore the directions of the Tribunal, and put in place its own pricing timetable.

If IPART accepts DIPNR's position of providing a detailed costing submission in September, then IPART should delay making its medium term pricing determination for State Water and DIPNR so that it will commence July 2006.

In the interim, IPART should rollover 2004-05 prices, for 2005/06.

The GVIA has identified a number of specific issues, which it requests IPART to take into consideration. These are discussed throughout the submission.

The Association welcomes any opportunity to participate in the Determination process, and appreciates the fact a hearing/workshop is planned to be held in the North-West of the State.

Recommendation:

1. In the event of IPART accepting DIPNR's position of not providing a detailed submission till September 2005, IPART should roll-over the 2004/05 pricing determination for 05/06 (covering both State Water and DIPNR), and amend it's timetable so that it determines a medium term price path to commence July 2006.

Financial Performance

While State Water has provided Customer Service Committees with historical financial reports, and provided some explanation, the degree of consultation in this area merits improvement.

It is unclear to the GVIA just how some of the revenue was accounted for, particularly with regard to government funding of capital works.

However, State Water's performance far exceeds DIPNR's who provided no financial data.

The GVIA's confidence in future submissions from DIPNR and State Water would greatly improve if they were required to report on actual revenues received during the period covered by the last determination, what volumes of water were charged for, what capital expenditure was undertaken, how much money was provided by government as its defined share, and how much was provided by government as operational subsidies.

This information needs to be provided on a valley-by-valley basis, and broken down into product codes where appropriate.

Responses Arising from State Water's Submission

The GVIA totally rejects State Water's proposed pricing path for the Gwydir Regulated River supply.

The application of IPART's 2001 Pricing Determination should have delivered full-cost recovery in the Gwydir Regulated system by the conclusion of the 2003/04 water-year.

Given that full-cost recovery was achieved through the last price determination, and State Water is seeking "lower bound" pricing in this submission, there should be no need for any significant price increases for regulated water in this determination.

The GVIA would regard any significant increases in charges as a pre-emptive move towards "upper bound" pricing, which is not a requirement of the National Water Initiative (NWI) during the period of the pricing determination.

Alternatively, significant water charge increases could be an attempt by State Water to subsidise under-recovering valleys, by inflating charges in valleys already at full cost recovery.

If this is the case, under-recovering valleys should be subsidised by fully transparent Community Service Obligation (CSO) payments as required by the NWI.

While the drought clearly has had impact on State Water's projected revenue, as it has had on its customers, State Water business has always been subject to the long-term cyclical nature of climate and it is unacceptable to argue for a large increase in charges, when the next three years are just as likely to result in higher than average deliveries, as the last three years resulted in lower than average deliveries.

Table 1.1 shows State Water's proposed pricing path. It must be remembered that the 2003/04 figures include DIPNR'S Water Resource Management Charges, while the subsequent years only show State Water's operation charges.

Table 1.1

Proposed Increase to Charges
Actual and Proposed Water Charges

Year	General Security Fixed	% Increase	High Security Fixed	% Increase	Delivery Charge	% Increase
04/05*	\$3.65		\$5.50		\$4.26	
05/06	\$3.10	-15%	\$5.54	.007%	\$4.01	-6%
06/07	\$3.50	13%	\$7.39	33%	\$5.01	25%
07/08	\$3.95	13%	\$9.88	34%	\$6.27	25%

* Includes DIPNR's Water Management Charges (not included in prices for 05 to 08)

Notwithstanding whatever is the true increase in prices between 04/05 and 05/06 when DIPNR's WRM charges are included, it is entirely unacceptable for general security fixed charges to increase by 13% for 06/07 and again in 07/08, when the Valley is already at full-cost recovery, and the nation's inflation rate is expected to remain low, at less than five per cent per year. The 25% increases in proposed delivery charges are beyond explanation.

The GVIA accepts there may be some justification for significant increases in High Security Fixed Charges, and will deal with that issue in greater detail later, but it cannot accept that any business can be expected to survive 33% increases in consecutive years.

The GVIA is very concerned that part of State Water's strategy is to try and achieve State-Wide Full-Cost Recovery, by achieving greater than full cost recovery in valleys such as the Gwydir, and using the excess revenue to cross-subsidise underperforming coastal valleys.

The GVIA believes any shortfalls in full-cost recovery should be clearly identified, and paid for by a transparent CS0 grants.

Building Block vs Annuity Charge

The GVIA does not believe sufficient information has been provided to accurately assess the advantages and disadvantages of the two proposed methods of capital raising.

However, the GVIA is very concerned that State Water's submission has failed entirely to consider the merits of debt financing as a method of capital raising.

The GVIA urges the Tribunal to commission an independent study of the most appropriate way to meet State Water's capital requirements, taking regard of both State Water and its customers positions.

Despite the limited information available from State Water's submission, GVIA would like to raise the following concerns it has with the 'Building Block' approach.

1. The Annuity approach was accepted by IPART, after much consultation during previous determinations, as the most appropriate method for funding State Water's capital requirements. State Water's submission does not make it clear what factors have significantly changed with corporatisation, which would justify a move away from the annuity approach.
2. The GVIA is concerned with the manner State Water appear to have determined its Regulatory Asset Base. Given the "Line In the sand", which saw all capital expenditure, which occurred before 1997 as a "sunk" cost, the RAB shouldn't equal any more than expenditure on capital, less depreciation since 1997, which would result in a RAB estimated at \$75 million, instead of the \$300 million proposed by State Water. The RAB appears to have been determined to fit State Water's requirements, rather than the asset-based principles determined by IPART.
3. Despite the requirement for "Valley Based Accounting", the State Water submission does not clearly demonstrate how the RAB was determined for each valley, and how the revenue stream generated by the RAB was calculated for each valley.
4. GVIA is very concerned how adopting the Building Block Approach could lead to a rapid increase in prices. For example, with a RAB, of \$300 million on the 1-7-2004, and a six percent return, \$18 million would be generated, yet State Water is estimating that because of additional capital expenditure in 2005 the revenue generated for that year would increase to \$26.6 million, a 48% increase.
5. The method used by State Water to achieve the result mentioned in Point 4 above does not appear to match with State Water's Capital Expenditure program. To lift the return from \$18 million to \$26 million, an additional \$150 million (approx) would of needed to be added to the RAB during 2004/05, which is three times the capital expenditure planned for 2005/06, and over eight times State Water's estimate of capital expenditure for 2004/05 (SW Submission p58)

Recommendations:

2. IPART commission an independent report on the best method of capital raising for State Water, taking in regard the interests of both the business and its customers.

Capital Expenditure

On page 58 of State Water's submission is a table outlining proposed and actual capital expenditure during the last determination period.

Proposed expenditure amounted to \$122.3 million, but actual expenditure equalled \$66.9 million, or 60% of the proposed.

How is this accounted for when IPART makes its determination? Presumably the proposed expenditure was included when IPART made its 2001 determination, and therefore users have been contributing to capital works that haven't occurred. Has this excess money been kept in a capital fund, or has it been used on operational expenditure? Has the government made its payments based on actual or proposed expenditure? If based on actual, will it have to make up the differences when the capital works are undertaken? Were the works not undertaken because the expected revenue stream had not occurred, or were there other reasons?

Recommendation:

3. That IPART carefully consider, and take into account, State Water's capital expenditure history prior to making its 2005 pricing determination.

Dam Upgrades

The GVIA believes Government should be 100% responsible for all dam safety upgrades to bring them up to 2005 standards, not 1997 standards. Government funding of upgrades has been sporadic at best, and the only way irrigators can have confidence in the asset base a corporatised State Water is taking over, is if the government guarantees that it is up to contemporary standards.

In particular the GVIA believes IPART must make a clear determination that the Government will be 100% responsible for fixing the soft rock problem in Copeton Dam's spillway.

This clearly is the result of a design fault, and irrigators should not have to meet any of the costs associated with rectifying this defect.

While Copeton Dam may not be officially considered a flood mitigation dam, its role in mitigating floods should be recognised, and the government and users should share any upgrades above 2005 standards.

It is clear that since its construction in 1976 Copeton has mitigated the effect of a number of serious floods, saving the government and community many millions of dollars on flood relief expenditure.

With this in mind it would be inequitable to saddle users with 100 per cent of dam upgrade costs.

It may be helpful for IPART to commission a study on the flood mitigation effects of Copeton Dam.

Recommendations

4. Government should meet 100% of all dam upgrade costs, until all dams meet 2005 standards.

5. That IPART recognise the rectification of the Copeton Soft Rock problem as a 100% Government cost.

6. Copeton Dam should be considered to have a flood mitigation role when determining Government/User shares of upgrade costs, once 2005 standards are met.

7. IPART should commission a study on the flood mitigation effect of Copeton Dam.

OH&S Upgrades

The GVIA acknowledges the excellent work undertaken by State Water in improving the OH&S standards of its assets in the Gwydir Valley.

However, the GVIA believes Government should be 100% responsible for OH&S costs associated with bringing all assets up to 2005 standards.

The GVIA recognises that once the above is achieved, OH&S is a normal cost of doing business. However, to protect against an abuse of monopoly powers IPART must ensure these, and all other State Water costs, are constantly monitored to ensure they are efficient and equal to world's best practice.

IPART should take note of the Government's own message to business that OH&S should not be a financial burden on industry, but should actually lead to greater efficiencies and cost savings.

The GVIA would be very concerned if it cannot be shown by State Water that OH&S expenditure has reduced total costs.

Recommendations:

8. Government should meet 100% of the cost of OH&S compliance up to 2005 standards.

9. After the achievement of 2005 OH&S standards, OH&S be considered a cost of doing business, but these costs should be monitored by IPART to ensure they are efficient.

Environmental Compliance Costs

The GVIA maintains that environmental compliance costs on existing and replacement structures should be a 100% cost of Government.

These works should have been done when the original structures were constructed, and as such should be paid for by Government.

Users, as contributors to government revenue, would be meeting some of the costs of compliance as members of the broader tax paying community.

The GVIA believes this principal needs to be extended to "big ticket" items, such as structural works to prevent thermal pollution from dam releases.

The Government contribution should extend to providing funding for ongoing maintenance of the works.

Users are neither, direct beneficiaries or impactors with regard to environmental compliance works triggered by legislation.

While in many cases remedial work to structures can be justified on environmental grounds, the GVIA insists that any work done to improve the environmental performance of the system, is subject to the same level of scrutiny and scientific justification that would be applied to any proposal to improve the operational performance of the system.

Recommendations

10. Environmental compliance costs on existing and replacement structures should be a 100% Government cost.

11. Rectification of thermal pollution should be a 100% Government cost.

Ratio of Fixed Costs/Variable Costs

The GVIA is very concerned about any proposal that increases the overall percentage of charges that are collected as fixed costs.

While the Association understands many of State Water's cost are effectively fixed, the variable charge component is an absolutely critical driver in ensuring State Water strives to deliver the maximum amount of water it can to its paying customers, while remaining within the Water Sharing Plan rules.

It is a major concern of the GVIA that State Water is yet to demonstrate the cultural change from government department to an aggressive delivery service business.

One way to encourage this change is to increase State Water's reliance on the variable portion of its charge. The more water it delivers, the more revenue it receives.

Many businesses have relatively high fixed cost components, yet they do not have the luxury of receiving any of their income on a fixed basis.

The GVIA proposes that the fixed component of State Water's regulated charges should not exceed 50%.

A reduction in the fixed component of the charges, coupled with a corresponding increase in the variable charge will deliver three positive outcomes:

1. It will act as an effective driver to ensure State Water maximises its deliveries under the Water Sharing Plans, and therefore maximises its revenue.
2. It will act as an efficiency driver for irrigators (in the same way usage charges have greatly encouraged urban water use efficiency).
3. It will help put State Water's/DIPNR's economic cycle in synch with its customers.

Case Study 1 November Marshall Ponds Flow

The GVIA has long been concerned that State Water's lack of commercial focus has resulted in it failing to make available to irrigators supplementary water in the volumes that irrigators are entitled to and therefore have failed to maximise its own revenue opportunities.

A recent example occurred in November 2004 when supplementary flows were generated by inflows into the regulated Carole Creek from the unregulated Marshall Ponds.

The Gwydir River Regulated Water Sharing Plan allows for the sharing of these supplementary flows to be 50/50 between the environment and irrigators.

Irrigators concerns were raised early in the event when despite significant Carole Creek flows State Water made only very small supplementary water access announcements.

While announcements varied from section to section along the Carole Creek, access was generally limited to 2-4% of general security licences on the Tuesday and Wednesday. Then on the Thursday, when the flow was in significant decline, an announcement of 10% access was made. As the flow volume was in decline,

irrigators were not physically able to access anywhere near the amount the announcement theoretically allowed.

Post event analysis by State Water determined the volume that passed by the downstream gauge at Garah during the event was 4195 megalitres, and extractions upstream were 4816 megalitres, so 50/50 sharing was approximately achieved.

However, an independent flow assessment commissioned by the Gwydir Valley Irrigators Association Inc, and carried out by SMK Consultants (copy of report attached – Appendix A), assessed the total flow at approximately 24,840 megalitres, which should of allowed irrigators to access approximately 12,500 megalitres.

If announcements had been made to allow irrigators to take their full entitlement, irrigators could have accessed an additional 7684 megalitres, increasing State Water/DIPNR's revenue by \$32,733.

In State Water's defence the flows were assessed correctly under Water Sharing Plan rules, which require the downstream gauge to be used, when an upstream one does not exist. However, measuring using the downstream gauge does not account for the considerable amount of flow that leaves the system through creeks and flood-runners.

If State Water was commercially focussed it would have installed an upstream gauge a long time ago, with the lost revenue from this event alone more than paying for the cost of installation.

Recommendation:

12. The maximum fixed proportion of State Water's charges should be capped at 50%, with the view of reducing it further over time.

General Security/High Security Charges

The GVIA supports State Water's proposal that it is equitable for the fixed proportion of State Waters charges to accurately reflect the relative costs of storing High Security and General Security water provided that any changes made are revenue neutral.

However, the GVIA believes State Water has failed to develop the correct ratio for general security and high security water in the Gwydir Valley, because of two wrong assumptions.

Firstly, State Water has assumed a High Security Access Premium of 1.75, yet the Gwydir Regulated River Water Sharing Plan has not yet determined a premium. Secondly State Water has claimed a two-year reserve of high security water, yet the Gwydir Resource Assessment criteria currently allows for a 18 month reserve for essential supplies, including high security water.

The GVIA requests IPART to ensure State Water re-assess its proposed high security/general security ratios, and that it is done in a transparent manner that reflects each valley's water sharing plans.

Recommendations:

13. That State Water should review its formula for calculating the appropriate ratio for general security and high security charges, and the reviewed formula should transparently reflect the true additional costs of storing high security water.

14. Any resulting changes in charges for general security and high security water should be revenue neutral.

Average Use Data

The GVIA is very concerned about State Water's proposal to base pricing not on average use data, but on average use data less one standard deviation.

According to State Water the long-term average diversion in the Gwydir Valley is 309GL, and the standard deviation is 124GL.

If State Water's proposal was adopted the new average use figure would be 185GL, and would result in a considerably higher usage charge being set.

However, using usage figures supplied by DIPNR in its submission average annual regulated river extractions in the Gwydir for the period 2001/02 – 2003/04 were 279GL, despite this period being characterised by an extremely serious drought.

For the 11 year period between 90/91 and 00/01 average use was 292GL.

The GVIA would see any attempt by State Water to adjust the average use figure by one standard deviation in the Gwydir Valley has nothing more than a knee jerk reaction to a drought period, and one that would put significant extra cost pressures on irrigators.

State Water must be able to budget for a variable cash flow, and if necessary should investigate other market base instruments to assist in doing so.

Recommendation:

15. IPART should maintain the average use figures as the basis for making State Water's pricing determination.

Supplementary Water Charges

State Water's submission is silent on separate charges for supplementary water. Following the gazettal of the Water Management Act 2000, and the implementation of the Gwydir regulated River Water Sharing Plan, on July 1, 2004, Gwydir Valley regulated river irrigators have been issued with supplementary water access licences.

In the past, access to supplementary water (off-allocation) was a right, informally attached to regulated water licences. With the new act and licensing arrangements it is now possible for supplementary access licences to be held and traded completely separately from general security access licences.

In the Gwydir, supplementary access licences were issued to irrigators on a pro-rata basis determined by their general security entitlement (this arrangement was not constant through valleys), however, it is expected as trade progresses there will be no consistency between general security entitlements and supplementary water entitlements among irrigators.

It is now possible for an irrigator to only hold only supplementary licensing, or only general security licensing. If a licence holder only held supplementary licensing, under the current arrangements the licence holder would not be contributing to the fixed costs of the valley, and if no supplementary water was made available during a water year, would not contribute at all to State Water's costs.

The GVIA believes this is inequitable, and believes State Water should determine the true cost of delivering supplementary water, and develop a charging structure with both a fixed and usage component.

The GVIA does recognise that although there is no cost in storing supplementary water, there are costs associated with its distribution, assessment and metering. The weir system in the Gwydir is used to distribute supplementary water, and staff are required to make daily assessments of its availability.

Any pricing proposal must be revenue neutral, but accurately reflect the cost of delivering the various classes of water.

Recommendation:

16. That following consultation with State Water, and with wide stakeholder participation, IPART determine a pricing structure for supplementary water. The new pricing structure is to be revenue neutral to State Water.

Hydrometric and Water Quality Services

The GVIA urges IPART to pay particular attention to areas of service provided by either DIPNR to State Water, or State Water to DIPNR.

GVIA is very concerned that double accounting may occur, with both organisations including the cost of identical services within their submissions.

The GVIA supports State Water's argument that water users should only be paying the costs associated with services that are actually required to deliver water.

In regards to hydrometric services State Water contends that out of 57 gauging stations in the Gwydir Valley, only 40 stations are required, corresponding to 70% of the gauges.

While GVIA accepts the costs of running these essential gauges as a user charge, should any other government department or private body other than irrigators, access the data then State Water must charge a fee for providing the information, and this fee is to be applied to reducing user costs.

In addition State Water and DIPNR should be instructed by IPART to undertake a comprehensive review of their gauging requirements, with the decommissioning of redundant gauges and the installation of appropriately located new gauges a likely outcome.

With regard to water quality data collection, GVIA argues that this should be a 100% Government cost. Irrigators are neither specific impactors nor beneficiaries of water data collection.

Irrigators have no control over the quality of water that is collected in State Water's dams, and have no control over what water they receive from State Waters Dams.

Recommendation:

17. That IPART supports State Water's position that users only pay for gauges required for the efficient delivery of water.

18. That State Water should charge other users for accessing information from gauges identified as being critical for water delivery.

19. That IPART should instruct DIPNR and State Water, in consultation with the CSC's, to undertake a comprehensive review of gauging requirements and locations.

20. That water quality data collection should be a 100% government cost.

Temporary Transfer Fees

The GVIA supports State Water's fee structure recovering the full cost of administering temporary transfers. However, it believes in reality there is little difference in the administration of a large temporary transfer and a small one.

An alternative, may be to set a minimum fee, with several volume bands, or address the issue from the point of view of the degree of difficulty involved in a transfer i.e.: transfers on the same stream may be cheaper than across stream transfers that may require an additional degree of assessment.

Buyers lodging multiple applications at the same time, that apply to same licences and works, should be able to "bundle" the applications and benefit from a discount that reflects the reduced costs.

21. That IPART instruct State Water to look at alternative arrangements that ensure efficient cost recovery from the administration of temporary transfers.

Environmental Water/Loss of Irrigator Access

The GVIA strongly believes that all water users should be subjected to IPART determined charges, not just irrigators and town water users.

In particular, it is concerned that there still is no charging mechanism for water that has been stored and put aside for the environment.

The Gwydir Environmental Contingency Allowance (ECA) is a significant volume of water, and though technically it is not an entitlement, it does have many of the characteristics of an entitlement, including:

- It holds an account (airspace) in Copeton Dam.
- Available Water Determinations (AWDs) accrue to it at the same rate as general security increments.
- Its release can be ordered from the dam, and State Water must manage its releases.
- Its volume helps determine the volume of the delivery loss account.
- It has a 200% storage component.
- State Water must manage the integrity of the account.

The only significant difference between the ECA and a general security water access licence is the ECA cannot be traded.

In fairness to all water users IPART must impose a transparent charge onto the Government comparable to the charges borne by irrigators. These charges should also apply to water stored in Copeton Dam to meet replenishment flow provisions of the Gwydir River Water Sharing Plan.

It is totally unacceptable for government decisions to erode by the reliability of supply to irrigators by increasing environmental allocations, and at the same time allow State Water and DIPNR to recover costs associated with the environmental allocations from irrigators.

The GVIA totally rejects State Water's proposal (pg 16 State Water's Submission) "State Water therefore recommends to the Tribunal that a reduction in the water entitlement base of 2% resulting from transfer of water to the non-chargeable environmental licences should cause an automatic or progressive adjustment of per-unit prices within the relevant valley, to maintain the revenue base".

The GVIA recognises the need for State Water to maintain its revenue base, but this must be done by the community (government) paying charges for the environmental water, and not by increasing charges to other users.

It is essential that all that can be possibly done, be done, to identify and pay for the true cost of environmental water.

Case Study 2 – The Gwydir ECA

The Gwydir Valley Environmental Contingency Allowance has grown in a two-stage process.

Prior to 1996 there was no Allowance, but in 1996 a 25,000 megalitre allowance was created, with irrigator support. This allowance had a 150% storage component, giving the ECA a 37,500 megalitres share in Copeton Dam's airspace. Increments to the ECA accrued at the same rate as general security entitlements.

The creation of the ECA effectively issued the equivalent of 25,000 megalitres of extra general security entitlement, while clearly not increasing the total amount of run-off captured by the dam.

Given a total general security entitlement of 509,500 megalitres, the addition of an extra 25,000 megalitres had a 5% negative impact on the amount of water accruing to general security accounts.

This would of resulted in a 5% drop in the usage metered and charged for by State Water and DIPNR, but their policy to date has been to increase the charges to irrigators to make up for the loss, rather than charging government an entitlement and usage charge for the ECA.

With the implementation of the Gwydir Regulated River Water Sharing Plan last year, the ECA was increased to 45,000 megalitres, with a 200% storage component.

This as had a further 4% impact on irrigator supply, and again State Water and DIPNR are planning on recovering lost revenue from irrigators.

This is unacceptable. The ECA now accounts for 9% of the Valley's regulated water supply, yet it makes no contribution to the costs of State Water and the WRM charges of DIPNR.

Recommendation:

22. IPART should determine that the government be charged as a user for the Environmental Contingency Allowance and the replenishment flows stored in Copeton Dam.

Stock and Domestic Supplies

The NWI calls for “full cost recovery of all rural surface and groundwater based systems” and calls for CSO payments to be reported, and steps taken to remove the need for a CSO over time.

Given these two requirements the GVIA believes State Water needs to develop a pricing structure that reflects the true cost of storing and delivering stock and domestic water.

This transparent structure needs to be funded by Government as a CSO, until Government moves to charge stock and domestic users directly.

Recommendation:

23. IPART should determine that an appropriate pricing and metering structure should be developed for delivered stock and domestic supplies, and the charges met by a transparent Community Service Obligation payment.

Bulk Water Discounts

No bulk water discounts currently apply in the Gwydir Valley. However, the GVIA does not see any justification for discounts to apply to water corporations, but not to large private diverters.

The GVIA believes any exchange of service between State Water and its customers should be commercially costed, and charged for.

Bulk water discounts should only be applied if it can be shown that the servicing of particular customer, because of scale, offers genuine and transparent savings.

For example should a large customer in the Gwydir Valley be able to demonstrate that its operation provides State Water with costs savings concerning ordering, metering, or billing, then these saving should be able to be past onto the customer.

The discounts should reflect these savings.

Recommendation:

24. Bulk water discounts to the corporations should be reviewed, and discounts only apply to customers where State Water can demonstrate savings resulting from the scale of the customer.

25. Any service provided by a customer to State Water should be costed and charged at commercial rates.

Cost of Corporatisation

The GVIA is very concerned that State Water is trying to abuse its monopoly powers by attempting to pass what it has identified as extra costs associated with corporatisation.

State Water has identified a net increase in its cost base of \$2.7 million.

The GVIA recognises there are additional corporate governance costs associated with running a board, which State Water has costed at \$.5 million.

Having said the above, it should be expected that the additional corporate rigour a board provides, should transfer into cost savings and efficiency gains, and the board should infact result in net saving being achieved.

The other identified costs are costs State Water has voluntarily accepted. For example it has decided to have its own legal team, rather than contract DIPNR's or other providers, and it has leased commercial office space rather than continue with sub-leasing offices from DIPNR.

No regard has been given to finding the most efficient method of delivering these services. These additional costs should not be accepted by IPART.

Recommendation:

26. IPART should carefully scrutinise State Waters claim of additional cost associated with corporatisation, and determine whether the costs are genuine and efficient.

Community Consultative Committee

The GVIA has made it clear in its submission to IPART regarding State Water's Operating Licence that it sees no value for customers in the operation of the Community Consultative Committee (CCC).

If a CCC is to be it is to be part of the operating licence, then it must be deemed a Community Service Obligation and funded by government accordingly.

Recommendation:

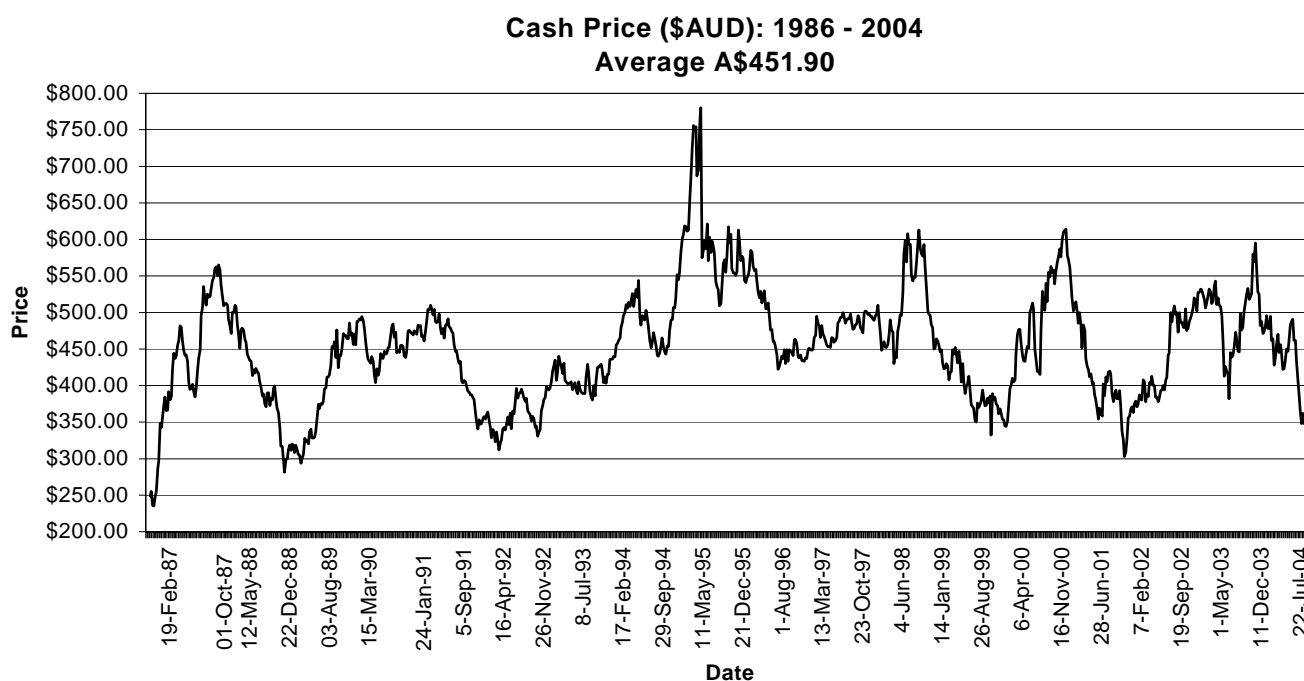
27. Should a Community Consultative Committee be a requirement of State Water's operating licence, then it should be funded through a transparent CSO payment.

Capacity to Pay

The State Water submission makes much of the current drought's impact on its revenue stream, yet it is silent on the effect it has had on its customers.

In the Gwydir Valley low water availability saw the 2003/04 crop reduced to 20% of full valley production, and the 2004/05 crop reduced to 50% of full valley production.

This has been coupled with historically low cotton prices (see graph 1).



With the cotton price trading in the order of \$375 per bale (March 05) and cottonseed at \$100 per tonne, it can be seen from the NSW Department of Primary Industry Cotton Gross Margin figures (next page) that there is no or very little return to irrigators.

Using current prices, but maintaining the rest of the DPI's figures the gross margin per hectare drops to \$695.

It needs to be noted the DPI figures make no allowance for labour costs, and as they are gross margin budgets they do not allow for overhead costs or provide any return on capital, or interest payments for the land and water investment.

When these costs are taken into account, most cotton growers are struggling to break-even at best, and there are no higher profit alternative crops that at this stage present a realistic option for most growers.

In making its determination IPART needs to bear in mind the “price taker” nature of agriculture, and also consider the primary irrigated product of the Gwydir Valley cotton, is almost completely sold on the world market in a heavily subsidised climate.

Australian growers, who are effectively unsubsidised, can only survive by constantly striving to maximise output and minimise costs, a lesson State Water should well adopt for its own operation.



SURFACE IRRIGATED COTTON (Bollgard II®)

Farm Enterprise Budget Series - Northern Zone
Summer 2004-2005

1. GROSS MARGIN BUDGET: INCOME:

Lint - 7.00 bales/ha at \$380 /bale (at gin).....
Seed - 2.52 tonnes/ha at \$176 /tonne (at gin).....

Sample Budget \$/ha	Your Budget \$/ha
\$2,660.00	
\$443.52	

A. TOTAL INCOME \$/ha:

\$3,104	
----------------	--

VARIABLE COSTS:

see following pages(s) for details

	Bollgard II®	Your budget
Cultivation.....	\$205.06	
Sowing.....	\$103.00	
Crop insurance.....	\$55.00	
Fertilizer & application.....	\$116.10	
Herbicide & application.....	\$239.46	
Insecticide & application.....	\$71.57	
Irrigation.....	\$116.27	
Contract harvesting.....	\$440.59	
Cartage to gin.....	\$68.97	
Ginning charges.....	\$420.00	
ACF and Research Levy.....	\$29.75	
Bollgard II® licence fee.....	\$250.00	
Other (eg consultant).....	\$45.00	
Pigeon pea refuge crop, 5% of cotton area.....	\$21.00	
B. TOTAL VARIABLE COSTS \$/ha:	\$2,182	

C. GROSS MARGIN (A-B) \$/ha:

\$922	
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D. GROSS MARGIN (A-B) \$/MI:

\$132	
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SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

Lint bales/ha	Seed t/ha	\$320 /bale \$156 /t	\$350 /bale \$166 /t	\$380 /bale \$176 /t	\$410 /bale \$186 /t	\$440 /bale \$196 /t	Lint price Seed price
4.00	1.44	-\$446	-\$312	-\$177	-\$43	\$92	Gross Margin (\$/ha)
6.00	2.16	\$152	\$354	\$555	\$757	\$959	
7.00	2.52	\$451	\$687	\$922	\$1,157	\$1,392	
8.00	2.88	\$750	\$1,019	\$1,288	\$1,557	\$1,826	
10.00	3.60	\$1,349	\$1,685	\$2,021	\$2,357	\$2,693	
12.00	4.32	\$1,947	\$2,350	\$2,753	\$3,157	\$3,560	

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER MEGALITRE:

Lint bales/ha	Seed t/ha	\$320 /bale \$156 /t	\$350 /bale \$166 /t	\$380 /bale \$176 /t	\$410 /bale \$186 /t	\$440 /bale \$196 /t	Gross Margin (\$/MI)
4.00	1.44	-\$64	-\$45	-\$25	-\$6	\$13	Gross Margin (\$/MI)
6.00	2.16	\$22	\$51	\$79	\$108	\$137	
7.00	2.52	\$64	\$98	\$132	\$165	\$199	
8.00	2.88	\$107	\$146	\$184	\$222	\$261	
10.00	3.60	\$193	\$241	\$289	\$337	\$385	
12.00	4.32	\$278	\$336	\$393	\$451	\$509	

This budget should be used as a GUIDE ONLY and should be changed by the grower to take account of movements in crop and input prices, changes in seasonal conditions and individual farm characteristics. Estimated prices are GST-exclusive.

Case Study 3 – The True Cost of Water

Many people fall into the trap of considering the only cost of water is the price paid to DIPNR and State Water. In reality this only a small part of the cost of water, and ignores its capital cost and the cost of developing the on-farm infrastructure to access it.

In the Gwydir Valley water access entitlements, providing access to both supplementary and regulated water, have been trading for \$2500 a megalitre of regulated entitlement.

Given the average yield from these licences is approximately 60%, 1.66 megalitres of entitlement is required for each megalitre of water actually applied.

If a cotton crop requires irrigation applications of 7 megalitres per hectare, then a Gwydir Valley irrigator requires approximately 11.66 megalitres of entitlement for each hectare of crop.

Therefore the capital cost of water entitlement per hectare (disregarding infrastructure, land development, machinery and other capital costs) is \$29, 166.

If you assume a required return on capital (or interest payment) of 6%, then the cost of holding the require water entitlement is \$1750/ha or \$250 per megalitre applied.

Another criticism often levelled at irrigation farmers is that the licences were originally issued for a minimal cost, and that irrigation farmers have made large windfall gains.

It needs to be recognised that irrigators have always paid the market price, and if they have been fortunate enough to capitalise on a rising market, it has only been because they were prepared in the first place to take risk.

Through the 1950, 60's, 70's and in some valley's even into the 80's government was actively promoting the taking up of licences, and they were available to those who were prepared to take the risk.

While the time scale is different, there is little difference between the principles of what has happened with the value of water licences, than with what occurred with the granting of land of the past two centuries.

The third myth that needs to be considered and rejected is that rural water should be subjected to a scarcity tax, to promote efficient use. The taxing of petrol by the federal Government is often cited as an example of a scarcity tax.

However, there is a fundamental difference between a petrol and rural water. With petrol there is no restriction on how much an individual can access, and so there maybe some argument supporting the application of a scarcity tax.

However, with water entitlements and shares of the consumptive pool, no individual can take no more than his/or her's licence entitlement no matter what the price, so there can be no justification in artificially inflating the price to purposely limit use.

By setting the shares, government has decided just how much use is acceptable.

Recommendation:

28. IPART take in account Gwydir Valley irrigation farmers' reduced capacity to pay when setting the bulk water price determination.

Dam Foreshore Protection Management

The GVIA welcomes State Water's confidence that it can recover the full cost of dam foreshore protection and management within four years.

However, it is opposed to water users being required to meet the shortfall through its inclusion in water charges in the meantime.

State Water confidence in its ability to recover these costs from commercial opportunities suggest the previous government management has been inefficient in this area. Therefore the shortfall should be met by a transparent CSO payment until the full commercial recovery occurs.

Recommendation:

29. Any shortfall between the costs of maintaining lands, and the revenue raised through commercial activities on those lands be made up by a CSO, rather than be added to user charges.

Service Agreements with DIPNR

The GVIA recognises the efficiencies that should result in State Water carrying out the following groundwater and unregulated river services for DIPNR :

- metering of water use,
- maintaining records of water use and data bases, or accessing such data on DIPNR data bases,
- billing for water use, water management charges and other charges,
- monitoring compliance with water use rules, and
- administering temporary transfers.

However, a process must be put in place to ensure all stakeholders have an opportunity to provide input on the desired level of service, and the cost applied to the service is commercially competitive.

The GVIA is concerned that without the above controls, no commercial discipline will be applied to the provision of these services.

The opportunity should always remain open for other commercial bodies to provide these services.

Recommendation:

30. Users should be extensively consulted on the level of service agreements between State Water and DIPNR.

Hydro Electricity Generation

IPART needs to consider the revenue generated by the leasing of sites and royalties paid to state Water as a result of hydro generation. This income should reflect the true costs of the service supplied, with costs that can be attributed to the storage and delivery of water being added to the overall user revenue stream so as to reduce overall water users' per megalitre charges.

Recommendation:

31. That IPART consider revenue received by State Water from hydro generation, and assign in a transparent manner that revenue to the costs associated with the operation and maintenance of the dams.

Responses Arising from the Department of Infrastructure, Planning and Natural Resources Submission

As mentioned earlier in this submission the GVIA is extremely disappointed in the quality and detail of the DIPNR's submission.

It has made no attempt to breakdown costs on either a product or a valley-by-valley basis.

It does acknowledge a significant movement away in its Natural Resource Management responsibilities to other organisations, such as the Catchment Management Authorities, the Natural Resources Commission and the Water Innovation Council, but makes no provision for any reduction in associated costs.

In the regulated system the issuance of access licences in perpetuity, and the completion of water sharing plans should have led again to significant cost reductions, but again DIPNR's submission is silent on this issue.

In a recent discussion with a representative of the GVIA a senior DIPNR regional staff member past the comment that he was unclear on what future role DIPNR had in Water Resource Management.

It is clear that all understand the DIPNR has a reduced role, yet by requesting a continuation of 2004 pricing (plus CPI), DIPNR has not recognised that a significantly reduced role, needs to coincide with a significantly reduced cost base.

Why should Users Pay NRM Charges at all?

The GVIA believes that this Pricing Determination Process provides the perfect opportunity for re-visiting the fundamental question – Why should water users have to pay NRM charges at all?

The management of the State's natural resources is a government responsibility, and it appears that it is only in the area of non-urban water that identifiable stakeholders are charged a management fee.

Users of urban water are charged a delivery service fee, but they are not charged a government Natural Resource Management Charge.

Users of roads maybe charged a toll, but are not charged a resource management fee. Users of the health system may be charged for using medical services, but they are not charged for long-term health planning.

Increasingly, the community is being asked to pay for additional policing services, but they are not asked to pay a charge to cover long-term law and order planning

In the recent IPART determination regarding ferry ticket prices, it did not appear to provide for any resource management charge for accessing the harbour resource.

The GVIA believes IPART should be open to hearing and considering the debate as to what justification there is in charging a Natural Resource Management charge to water users,

Service Level Agreements

The GVIA urges IPRT to pay particular attention to the Service Level Agreements being developed by DIPNR and State Water.

Scrutiny has to be applied to ensure the agreements are efficient and reflect genuine service needs.

For example, the GVIA points to one of its earlier recommendations calling for a full review of the adequacy of the current river-gauging network. Some efficiency discipline must be applied to DIPNR and State Water.

Likewise, the metering and monitoring requirements for unregulated water and groundwater sources must be independently reviewed and subjected to stakeholder involvement prior to being finalised.

Usage Data

The GVIA is appalled by the quality of the usage data supplied by DIPNR in the appendix of its submission.

The figures bear no relationship to the usage figures that DIPNR has supplied the GVIA over the years outlining usage in the Gwydir Valley. The degree in which the figures vary, in themselves vary enormously, however, one clear example is groundwater usage for 2002/03 (Appendix 2, Table 3) with the submission claiming usage equalled total entitlement, 71,526 megalitres, far in excess of the figure of 39,400 megalitres supplied to the GVIA.

In a similar vein, DIPNR in its projection for future use (Appendix 2 –Water Usage Information Table 1), shows a complete lack of understanding of its own Gwydir Regulated Water Sharing Plan, when it suggests the plan allows a maximum regulated river extraction of 392GL. All other figures in that row show a total of regulated river extractions and supplementary water extraction, but the plan limit column includes provisions for flood plain harvesting.

Recommendation:

32. Prior to any costings that include the usage of DIPNR water use figures, a thorough, independent audit of DIPNR's water usage figures and accounting systems be conducted.

Licensing Administration Costs

Now that most licences have been issued in perpetuity there should be very little licence administration work required.

DIPNR's submission points to the ongoing need to carry-out periodic meter accuracy auditing, yet this will be a task carried out by State Water in the normal course of its business.

Likewise, State Water in the normal course of its business will be ensuring compliance with access licence conditions, and DIPNR should only have a minimal role ensuring that State Water has diligently carried out these tasks.

The Next Stage

Assuming IPART concedes to DIPNR's request to provide a detailed costing submission later this year, the GVIA urges IPART to order DIPNR to establish a detailed consultation process with stakeholders to discuss the costs included and the make-up of the submission, prior to the lodgement of the submissions.

To affectively participate in a pricing determination stakeholders require access to detailed cost information on a product –by-product and valley by valley basis.

Recommendation

33. DIPNR widely consults, and include in its detailed submission, information requested by stakeholders.

Appendix A

Irrigation Consultants, Land, Water & Environmental Assessment

Associated Company: M.F-G Shaw & Associate Pty Ltd
Registered Surveyors & Town Planners

39 Frome Street

PO Box 774

Moree NSW 2400

Ph 02 6752 1021

Fax 02 6752 5070

Email

admin@smk.com.au

Other office: Goondiwindi

SMK

CONSULTANTS

surveying – irrigation - environmental

ABN 63 061 919 003

20-Nov 2003

Mr M. Murray

Gwydir Valley Irrigators Association

PO Box 1451

Moree 2400

Dear Mr ,Murray

Re : Storm Runoff Flows in Carole Creek From Marshall Ponds Creek.

The following is a brief investigation of the quantity of water that entered Carole Creek from Marshall

Ponds Creek on or about the 22-23rd Nov 2004. The flow entered Carole Creek near Midkin (Ashley)

from rain in Marshall Ponds Creek catchment on or about the 21st Nov 2004. No flow was recorded in

Carole creek upstream of its junction with Marshall Ponds Creek on the 23rd Nov 2004 (see sheet 1

attached). The flow was recorded at the Carole Creek gauge at Garah on the 25th Nov 2004 at a

discharge of about 1750ML /day. With a total flow past the Garah gauge of 3060ML approximately

(see sheet 2). Between where Marshall Ponds joins Carole Creek and the Garah gauge a number of

floodways leave Carole Creek on its western side along with possible floodway infiltration and pondage

will cause the flow at the Garah gauge to be significantly less than the flow at the start of Carole Creek

or at its junction with Marshall Ponds (see Sheet 3). Previous work done by me on Carole Creek has

shown that a flow of approximately 20,000ML/day at the Carole Creek offtake will result in a flow at the

Garah gauge of approximately 8000ML/day. The purpose of this report is to determine the flow rate in

Carole Creek at Midkin just downstream of its junction with Marshall ponds for the 23rd Nov 2004

runoff event.

The method used to determine the flow from Marshall Ponds on the 23rd Nov 2004 was to use the

recorded flood level at Midkin crossing for the 11th Dec 2004 flood event and the recorded water level at

the Carole Offtake. These water levels were used to determine the Manning's N value for this section of

the stream. Mr H. Gaynor and Mr T Haynes of Auscott observed the flow in Marshall Ponds at Ashley

to be the same for both events. Therefore the November flow is only from Marshall Ponds and the

December flow is a combination of the same flow from Marshall Ponds plus the flow from the Carole

offtake. The gauge readings for the November and December events are on the attached sheets 4 and 5.

Estimated peak discharge for the December event at Carole offtake was 19,000ML/day or 218cumecs.

To match the recorded flood level at Midkin Crossing a Manning's N value of 0.035 is required with

both a flow from Carole Creek and Marshall Ponds. If the flow from both events was equal then to

obtain the recorded flood level for the November event with the Manning's N value set at 0.035 a flow

of 115cumecs (9,936ML/day) would be needed from Marshall Ponds for both events.

[Page 2 of 3](#)

The HECRAS computer model was used to calculate the effect of the existing crossing at Midkin and to

arrive at the above answers. It was observed that the flow from Marshall Ponds maintained this flow for

a period of about 2.5 days. Therefore the total flow from Marshall Ponds to pass Midkin crossing would

have been $2.5 \times 9,936\text{ML/day} = 24,840\text{Megalitres}$.

The above calculation is approximate only. An estimate for the accuracy of the results could be plus or

minus 20%.

If more information is required please do not hesitate to contact me.

Yours Faithfully,

Paul Covell