

# WHAT CAUSED THE LOSSES FROM THE WOLLONGONG FLOODS OF AUGUST 1998?

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## Abstract

Wollongong's flooding could be attributed to the intense rain, but it was not an extreme event. Even so, the losses were greater than Wollongong had ever suffered.

We were so horrified by the widespread poor planning and the suffering this was causing to thousands that we determined that something had to be done. We wrote to the Government that there was serious maladministration with floodplain management in Wollongong. The Government started an investigation, but we are informed that this has been in abeyance for over a year.

We cannot blame all that happened on Wollongong Council. The Department of Land and Water Conservation and the Land and Environment Court must also take responsibility.

We suggest that councils lobby to upgrade the capacity of DLWC; insist that DLWC helps councils more with difficult developments; lobby the L&E Court to have experts hear cases involving flooding; and involve the community more in managing the floodplain.

**Key Words: floodplain management, floodplain planning, Wollongong, Department of Land and Water Resources, Land and Environment Court, flood losses, flood damage.**

## Introduction

Our title is provocative, and the question can be answered at several levels.

Certainly, the intense rain on catchments that were already saturated was a causative factor. But heavy rain over catchments, which have no assets in or adjacent to flow paths, will generally cause some erosion but no damage to property. Analyses by the Bureau of Meteorology indicate that the rainfall intensities were not remarkable. Some of the areas that were flooded had experienced comparable flooding several times over the last fifty years. No area seems to have experienced a flood larger than a realistic estimate of the fifty-year

flood this time.

We cannot remove all property - residential, recreational, commercial, and public infrastructure - from flood-labile areas, especially in the urban coastal areas of Australia. To do so would result in even lower densities and increase the dependence on cars. But there is a balance that must be sought, and a price to be paid for locating assets in the path of high-energy water flowing down steep creeks. This is particularly the case where these creeks are filled in and alternative overflow paths not provided for when the capacity of the piped system is exceeded, or the pipe becomes blocked.

Another explanation for the extensive damage in the Wollongong region could

be a lack of due caution of engineers and planners. Having calculated their estimate of the hundred-year flood peak discharge for a site, they may come to believe that it is precise. Since their designs are rarely subjected to anything approaching the design flow during commissioning (unlike the work of many other engineers), there are rarely sufficient warnings that they may not have exercised adequate caution to take account of their lack of knowledge. Our knowledge of how hydraulic structures perform under large flows, large sediment loads, and on steep slopes is very imprecise.

We do not think that Wollongong has worse floodplain managers than other councils. In many ways, Wollongong has a relatively high standard. Wollongong's problem may be more to do with the fact that its land is less forgiving of poor floodplain management. Thus, when the August 1998 flood came, its poor decisions could be quickly sheeted home.

As a result, Wollongong Council is subject to a number of pending and potential legal actions. But is it all Wollongong's fault?

## **2 The Letter**

What we saw, as we started to assess these flooded properties for insurance claims, horrified us. We had seen instances of poor planning on floodplains before, but the scale of what was wrong in Wollongong was so extreme, and the suffering that this was causing to thousands of people was so widespread, that we felt something had to be done.

While both of us had been advocating flood insurance publicly and privately for one and two decades respectively, we knew that flood insurance alone was not the answer. People might get insurance companies to pay this time. What would happen in the next flood? and the next?

and the next?

We decided that we should alert the NSW Government that something needed to be done, and wrote to the Director-General of Local Government, that, in our opinion, there was serious maladministration with floodplain management in Wollongong. The points made are elaborated on below. In all, six experienced floodplain-management professionals agreed to the letter, and many others strongly supported it.

### **2.1 Housing within watercourses**

It was in the early 1980's that the State Government first put forward a policy that houses should not be built in floodways. The high depths and velocities of the flows in floodways were hazardous to life as well as property, and should be avoided. Since then, this has been codified in the NSW Floodplain Development Manual.

We were prepared to find some houses that had been built in such hazardous areas many years before. We were not prepared to find housing that was still being built like this even after the August 1998 flood came and went. We were even less prepared to find under construction housing which had part of the property in the creek. Sometimes, by the time we got to see them, this part of the property had washed away.

### **2.2 Watercourses piped**

We had all seen instances of subdivisions where the watercourse had been piped, so that the land could be filled and sold. Where Wollongong differed was that this was on such a massive scale. The consequences were devastating for the owners and occupiers since their homes were virtually in what used to be creeks.

### **2.3 Houses too close to watercourses**

Some houses were built so close to a

watercourse that the velocities of the floodwaters, running through the houses, were dangerously high. We heard many stories of people being washed away and being saved by neighbours. Had the floods come six hours later when people were asleep, many would not have been saved.

#### **2.4 Floodplains narrowed**

Often watercourses would be narrowed to create more land for other developments. Not only did this increase the height of the flood, but it also made it more difficult upstream for the waters to drain away, so that the flood levels were raised there too. We saw several such developments still under construction after the August 1998 Flood.

#### **2.5 Wetlands, swamps and waterbodies filled**

Some modern developments filled swamps, wetlands and ponds, in contravention of Council's own policy on urban waters. Not only were these environmental assets destroyed, but this also increased the flooding elsewhere, and all too often resulted in the development itself being flood-prone.

#### **2.6 Drainage diverted**

Sometimes, natural drainage was diverted to allow extra land to be developed. This caused existing housing to become inundated, because the new drainage path was not as effective as the old. Sometimes the drainage was not diverted, but severely restricted. For example, an open watercourse might drain into a pipe whose size was less than the size of the watercourse.

Many of us have learned in high-school Physics that water does not compress. When the pipe was flowing full, the excess water coming down the watercourse could not compress to squeeze into the pipe, and had to go

somewhere else. This somewhere else was often through residences that would normally have been clear of the floods.

#### **2.7 Dangerous street drainage**

Street drainage was often poorly designed. Sometimes the speed and depth of drainage waters were so great that cars were swept off the road. One person drowned this way. Many more were lucky to avoid drowning.

#### **2.8 Dangerous nursing homes and retirement villages**

The NSW Floodplain Development Manual states that accessibility is an important consideration in planning the development of floodplains. It follows that one needs to take particular care when siting nursing homes and retirement villages. The occupants are often restricted in their mobility and it can be very difficult for them to evacuate without assistance. Some of the occupants of one nursing home that was flooded were lucky to escape drowning. Many of these residents now become apprehensive whenever it rains, and will do so for the rest of their lives.

#### **2.9 Dangerous houses**

Some flood-prone houses could have been death traps, as they have no escape routes. Some of these houses were partially destroyed. A larger flood could have washed them and their occupants away. Some dwellings were quickly demolished in the wake of the flood.

As late as December 1999, senior Council management was defending the safety of a proposed multi-storey housing development to be built on top of a creek, just near where a woman was rescued in the August 1998 flood.

## 2.10 Aggravating the flooding of neighbours

We found many developments which were built sufficiently high to escape most floods. However, because they took up important space on the floodplain, they made it worse for the neighbours. These neighbours had complained long and loud to Council, but had been assured repeatedly that there was no cause for alarm.

## 2.11 Councillors ignoring advice

There were many cases where Councillors ignored the advice of their professional floodplain managers. This may mean that they were no longer exculpated from liability under Section 733 of the Local Government Act.

## 3 Responses to our Letter

### 3.1 NSW Government

In response, to our letter, the Minister for Local Government announced that there would be an Inter-Departmental Committee (IDC) to investigate our allegations. This IDC consisted of a representative each from: -

- Department of Local Government
- Premiers Department
- Department of Urban Affairs and Planning
- Department of Land and Water Conservation

We showed the IDC a selection of "horror sites", all but one either new or *still* under construction, in November 1998. The IDC also received a response from Wollongong Council.

At the time of writing this paper (March, 2000), there has been no report by this IDC. Also, we have requested, but not been given, a copy of Wollongong Council's response. We would be very surprised if the IDC has met at all in the

last six months, and suspect that they have not met in the last 12 months either.

### 3.2 The Media

The letter was shown to the media (but not by us), and they took great interest in it, particularly the Wollongong media. It was still an issue in November 1999, although the flood in October 1999 helped renew interest.

### 3.3 Wollongong Council

Council was also interested, but its response was more robust, and at times slanderous. At times too, incorrect statements were made. This certainly helped raise the profile of floodplain management.

Despite the noise, heat and correspondence generated by our letter, we have yet to receive from Council any reasoned argument that our letter was unbalanced, unfair or wrong.

A more positive outcome has been that the (new) Lord Mayor of Wollongong has recently stated that the issue of flooding will need to be tackled differently.

## 4 Lesson Learned

What happened at Wollongong cannot be blamed wholly on Wollongong Council. Similar - though not so extreme - examples can be found in other local government areas in NSW.

Councils are subject to many financial, political and regulatory pressures. On top of this, they must pay strong heed to Government policy, since if they do not adhere to this, they leave themselves exposed in any ensuing legal action.

It follows that the Department of Land and Water Conservation (DLWC) could often have applied pressure on councils to conform to good floodplain-management practice, or given Council critical support to resist expedient disregard of DLWC's

policies. In this task, we believe DLWC has failed.

#### **4.1 DLWC has failed**

Indeed, we came across a number of instances in Wollongong where one of the predecessors of DLWC, the Department of Water Resources, had refused unwise developments using its powers under the Rivers and Foreshores Improvement Act. Five years later, DLWC was approving even worse developments in nearly the same locations. The upshot is that DLWC has also breached its condition of exculpation from liability under Section 733 of the Local Government Act. In other words, the people of Wollongong could sue DLWC and in our opinion, they could win.

What has gone wrong?

In the last five years, we have seen the State Government's capacity to manage its floodplains becoming weaker and weaker. Its staff has been more than halved. Its main office has been moved to Newcastle, where it is far less able to influence the Government. Finally, its willingness to assist councils with advice and support has declined. We can report that our exhortations to DLWC to give more help to councils has met the response that it is not going to get involved in every development in the State. We would suggest that this misses the point. A few test cases and examples would help councils a lot.

Unscrupulous developers have quickly realised that councils are standing alone, and that councils may be inclined to give way when threatened with an appeal in the Land and Environment Court (L&E Court). Till now, most have got away with it, as by the time the next flood comes, they have moved on.

Some may argue that the balance is now in favour of enterprises and against regulators. But in the U.K., the Health

and Safety Executive (HSE) is held in such high regard that its recommendations on the tolerability of proposed hazardous industries are rarely challenged. An examination of several thousand planning appeals showed that the advice of HSE inspectors was upheld in every case. Each inspector has considerable autonomy as well as status. Competition for entry to this public service is intense, and entrants undergo considerable further training, even though most have considerable experience and a doctorate. Do our professional floodplain managers and advisers command equivalent respect? If not, why not and what is being done to rectify this?

#### **4.2 The Land and Environment Court has failed**

Many of us attending this Conference have witnessed instances of the failure of the L&E Court to promote the principles of ecologically sustainable development. Too many of us have witnessed this with cases concerning management of our floodplains. Too many of us have been horrified to observe how some assessors have made determinations on imagined merits or legal technicalities when they plainly do not understand the principles of floodplain management.

Of course, councils have often come into Court ill prepared, and they should be liable for this.

In Wollongong's case the problem seems no longer confined to one of poor preparedness for Court cases. It is nowadays reported as defending its decisions less often than other councils undergoing similar pressures for development.

Nevertheless, the L&E Court should have mechanisms to overcome this. Certainly, the judge or assessor can examine witnesses. The problem is that with so few of them having a good understanding

of floodplain management, they too rarely know the proper questions to ask. Perhaps the EP&A Act should be amended to provide a presumption of reasonableness in respect of council decisions on technical matters.

Alternatively, specialist assessors could be appointed, or a specialist tribunal established. In Victoria, matters relating drainage and planning to flooding are heard by such a tribunal. The assessor has a strong background in such matters, so that few unmeritorious cases are brought.

### **4.3 What Should be Done?**

We have a few suggestions.

#### **4.3.1 Stop being nice to DLWC**

As a start, we would suggest that the NSW Flood Mitigation Authorities should stop being nice to DLWC. Councils have tended to treat DLWC with respect because:-

- it had expertise; and
- it advises government on the priorities for access to subsidies.

We would suggest that neither reason is all that important now.

##### **4.3.1.1 DLWC has expertise**

Considering the first reason, we have seen how DLWC's overall capacity to provide expert advice has decreased markedly.

An example is the Brokers Road Retarding Basin approved recently for Wollongong Council. It costs \$1.3 million dollars and will prevent only about five houses from being flooded over the floor in a 1% AEP flood. The benefit-cost ratio is about 10%. That is, the benefits are about 10% of the costs, even if we take account of the social benefits. Those five houses could just about have been voluntarily acquired for this much money.

DLWC is so short-staffed, that it did not pick up on the fact that this project was not worth doing: an experienced floodplain manager could have worked this out in a very short time.

##### **4.3.1.2 DLWC controls the money**

We would like to pose the question, are the government's subsidies doing more harm than good?

Before the reader responds to this outrageous suggestion, we would like to offer up one example: -

- Few of Wollongong's catchments have completed flood studies, and even fewer have floodplain-management plans. As a result, Council is constrained in its regulation of unwise developments. Its floodplain managers may know that certain developments should be refused, but without proper studies, it has difficulty in enforcing good practice.

Wollongong is a wealthy council, and it could have readily funded all its studies itself. We suspect that it did not do so, in part because it wanted to save money by getting government subsidies, which were slow in coming. It has certainly saved money, but because it allowed unwise developments in the floodplain in the meantime, Council's ratepayers have lost much more.

We are wondering if councils might do better to ask the State Government to: -

- divert more of its funds towards increasing its own capacity and expertise in floodplain management,
- make this renewed capacity available to councils to help them follow good floodplain-management practices and wise planning, and
- support them in cases before the L&E Court.

DLWC could start making an improvement in its performance tomorrow. It could agree to help councils in test cases before the L&E Court, and to use its powers under the Rivers and Foreshores Improvement Act more proactively.

#### **4.3.2 Use Floodplain Management Committees and the community more**

At present, Floodplain Management Committees (FMCs) only operate while a council prepares a floodplain-management plan. If they were to continue indefinitely, they could be a great help to councils in promoting good floodplain-management practices.

FMCs can contain people with an abiding stake in the flooding problem, and can help with their long knowledge of past floods. They can provide a useful counterweight to the pressures applied by unscrupulous developers, and they can lobby for better funding of floodplain management. Too often, funds for floodplain management increase after the flood, then die off over the next decades until the next flood, by which time Council will be unprepared again. FMCs could help to keep the pressure for adequate funding on.

By no means are all developers unscrupulous. All that many of them want are firm and reasonable rules to guide them in working out how best to develop on the floodplain. Councils could do worse than spend time with developers and estate agents, explaining the principles of sound floodplain management.

With good information and a good understanding of how best to tackle the flooding problem, developers and estate agents could help councils manage the floodplain better.

#### **4.3.3 Expert Tribunal in L&E Court**

The L&E Court should be asked to appoint a panel of part-time assessors with expertise in floodplain management. There are flood engineers and flood planners with a good understanding of the environmental legislation and water law. They could help transform the L&E Court from an appeal mechanism with seemingly arbitrary outcomes to one which helps promote wise use of the floodplain.

## **5 Conclusions**

Wollongong Council has suffered bigger *floods* in the past, but the moderate flood of August 1998 has caused bigger *losses* than ever. Our investigation of insurance claims brought us face-to face with widespread, severely deficient management of the floodplain.

Not all the blame can be sheeted home to Wollongong Council. The State Government appears to have shelved the problem. At the same time, we can observe that DLWC is itself responsible for some of the losses in August 1998.

Many of the decisions of the L&E Court have been a disruptive influence in floodplain management, in part because many of its decision-makers do not understand this topic.

We would advocate the following measures to improve floodplain management in NSW.

1. Lobby hard to upgrade the expertise and capacity of DLWC in floodplain management.
2. Insist that DLWC helps councils more in test cases before the L&E Court.
3. Request DLWC to help councils more pro-actively, using its powers under the Rivers and Foreshores Improvement Act.
4. Lobby the L&E Court to appoint part-

- time assessors with expertise in floodplain management.
5. Set up permanent Floodplain Management Committees.
  6. Work towards making estate agents and developers part of the solution of floodplain management.

## Author Biography

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Long ago when the world was young, Terry and Jim met as young, idealistic water engineers working for Public Works Department, one of the forerunners of DLWC. Nowadays, Terry sometimes consults in environmental management in Australia and elsewhere, while Jim is into his second decade of a doctorate in environmental risk management and teaches it in his spare time. Both are saddened by the decline of floodplain management in NSW and both want to see it become sustainable. They are a bit slow to catch on to reality.

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