# The Story of the LAPP Fund

## SUBMISSION TO THE

## LGNZ INSURANCE REVIEW WORKING PARTY

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LAPP
Local Authority Protective Programme

## BACKGROUND

Due to the extraordinary series of earthquake events in the Canterbury region in 2010 and 2011, the New Zealand Local Authority Protection Programme Disaster Fund (LAPP) was exhausted whilst endeavouring to meet the needs of members affected: Christchurch City Council and Waimakariri District Council. As a result questions have been asked as to whether the LAPP Fund is viable and whether it is the most appropriate solution for the future.

This paper has been prepared for the information of members of the Local Government New Zealand Working Party Insurance Review to describe the LAPP Fund's challenges, successes and shortcomings over its 21 year history of serving the needs of its members. It has been prepared in a spirit of collaboration on which LAPP was founded to help ensure that whatever direction the sector takes, whether it includes LAPP or not, that the best elements of LAPP carry forward and that lessons are learned from the past.

## THE CORE BENEFITS OF A MUTUAL FUND

Collaboration. While all the regular benefits of a mutual such as being not-for-profit and collective buying strength are often quoted, collaboration is the prime benefit of a mutual fund. It is the bringing together of like-minded people with similar challenges to pool their knowledge, expertise and their financial and other resources to meet their challenges head on.

In 1993, Central Government established the New Zealand Civil Defence Emergency Management Plan. It forced increased financial responsibility for local authorities for the recovery of infrastructure assets damaged by natural disaster events. Central Government intentionally made their 60 percent financial support contingent on local authorities making appropriate provision to cover the remaining 40 percent of recovery costs.

How did Local Government respond? Collaboration. In 1993 commercial insurance cover for underground infrastructure was not readily available in New Zealand for local authorities and hence a working party, similar to the current working party, was formed by the New Zealand Local Government Insurance Corporation Limited (now trading as Civic Assurance) and LGNZ.

The working party concluded that with the unreliability / lack of availability of commercial insurance a mutual insurance fund in the form of a charitable trust was the most appropriate response and so the LAPP Fund was born. It was, and still remains to the best of our knowledge, one of the only mutual funds in the world which provides cover for underground infrastructure assets. It is definitely the only one that has responded to a series of events the like of the Canterbury Earthquakes.

# A BRIEF HISTORY OF THE LAPP FUND

## 1993 – Ground Zero

In 1993 the sophistication of Local Government infrastructure management was by today's standards poor. There was little mapping of assets (pre modern GIS capabilities), there was a lack of maintenance (out of sight out of mind) and there was very limited understanding of the risk posed by natural hazards (it was early days for the Lifeline groups established for the major cities of New Zealand). What was available was an asset list (for many councils no more than a half dozen lines) with values assigned often well-below replacement values.

**What was LAPP's greatest challenge in 1993?**

LAPP's greatest challenge was to obtain a picture of the assets it was covering clearly enough to provide information to the reinsurance market to purchase sufficient insurance at the best possible price and to pass on those costs, along with administration costs, to LAPP Members in a fair and equitable way.


In the absence of a better alternative, the LAPP Fund utilised insurance industry "CRESTA Zones", which are reinsurance risk accumulation zones which reflect perceived level of natural hazard risk, to communicate to reinsurers and to determine the contribution level to be paid by each member. The amount of insurance cover it purchased was necessarily based on how much it could afford while building the Fund, not on how much it estimated it needed.

Source: GfKGeoMarketing Map Edition World

## 1996 – Foundations Built

By 1996 LAPP, through engaging external risk management expertise, had worked with key entities such as the Institute of Geological and Nuclear Sciences (GNS) and the various Lifeline Groups to gain a much better appreciation of the risk from natural hazards to underground infrastructure. It had built its own risk models, had its first estimates of the extent of potential losses and had developed a risk-based approach to identifying contribution levels for members.

**What was LAPP's greatest challenge in 1996?**

While LAPP had developed a risk model for earthquake, it was still very crude by today's standards and no model for flood risk had been devised.

*Earthquake*

LAPP responded by engaging GNS to research and investigate natural hazard risk to the assets of interest to the LAPP Fund. It was soon evident that very little was available globally and LAPP financed a GNS research program that included investigating impacts on underground infrastructure and flood control schemes when GNS visited earthquake locations in the days and weeks immediately following the events. This research, coupled with the pooling of data from LAPP members, resulted at that time in the most sophisticated risk models for underground infrastructure available anywhere in the world.

*Flood*

LAPP responded by forming the first of what resulted in three Flood Special Focus Groups (SFG) to be convened over the next decade. Each SFG formed by LAPP consisted of representatives of members authorities and administered by the Fund Administrator (Civic Assurance) and advised by the Fund Risk Advisors (Risk Management Partners).

Formation of the Flood SFG saw the drawing together of Local Government expertise which in turn led to the group conducting a survey of all local authorities across New Zealand to get a better understanding of the cost of flood damage to infrastructure assets in the past.

Floods in Manawatu Region, 2004. LAPP paid claims to district and regional council.

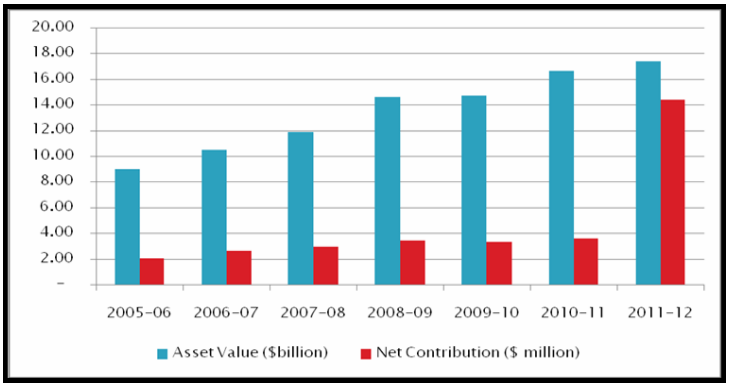
The Flood SFG identified the unique nature of each council's assets based on their location in proximity to flood plains and the wildly varying nature of flood plains. This led to a recommendation from the group that third-party risk assessment was cost prohibitive and the flood risk self-assessment methodology that is still in use today was born.

## 2000 – 2010 Information, Education and Member Growth

During this period LAPP worked with GNS, the National Institute of Water and Atmospheric Research (NIWA) and experts from local authorities on further developing an understanding of a range of natural hazards. This included financing the development of more sophisticated risk

models for earthquake, volcanic and, following the 2004 Boxing Day catastrophe, tsunami risk. This greatly improved the understanding of damage ratios and their relationship to soil types for example as well as the potential extent of blocked pipelines from ash deposits mixed with rainfall solidifying like concrete. This information is shared with members in the form of risk profile reports and is available for the likes of GNS and NIWA to utilise in their ongoing research and consulting for local government.

In 2004 LAPP had its first major claim, the Manawatu Floods. From this event LAPP learned about the undervaluation of assets, the challenges of replacing assets like-for-like when the landscape had moved, literally, and LAPP gained first-hand experience of adjusting a complex large claim and the effects of demand surge.




Through this period contributions remained low relevant to the increase in asset values covered as a result of the introduction of Local Government three-yearly long term plans which brought in formal asset valuation practices and the production of asset management plans.

Consequently LAPP's member numbers swelled to 58 compared to the 46 members back in 1993.

**What was LAPP's greatest challenge during this period?**

Remaining relevant to LAPP's membership was its greatest challenge. The LAPP Fund was established as a catastrophe pool and set deductibles accordingly as had Central Government with their threshold for access to funds. Members were feeling they were paying for something they would never see any benefit from. Questions were being asked as to how large the Fund had to get? Should it be capped now, soon or much later or should it start covering other risks such as the gap in funding for the restoration of roads and bridges following a disaster event?

LAPP responded by lowering deductibles which lead to a number of small claims on the Fund in addition to the large claim from the Manawatu floods. This provided an opportunity to demonstrate the difference between what is effectively an industry managed insurance programme and a commercial insurance programme. LAPP paid out on elements of claims that an insurer would not have. For example, LAPP acknowledged that although assets may have been undervalued, it recognised the challenges local government had in valuing for replacement after an event when compared to orderly replacement as part of asset maintenance planning and accepted and paid sums well in excess of the value declared for the underlying asset.

**Actual claims experience has shown that local authorities are exposed to significant and difficult to quantify additional costs which would become apparent only after a major disaster. The LAPP Fund has paid these additional costs, including unforeseen costs, from its reserves and reinsurer funds. It is highly unlikely that commercial insurers would provide such consideration.**

## 2010 – 2014 Shock, Response, Rebuilding

Without doubt the earthquakes in the Canterbury region came as a surprise in terms of their severity and multiplicity. Through this period LAPP has been focussed on delivering for its members, both through payment of claims and rebuilding the Fund to provide adequate protection. LAPP has also learned a great deal and continued financing research in the sector while participating in the OPUS Advisory Group which is researching and disseminating information for increased resilience of infrastructure assets and providing feedback on the IPWEA review of valuation of infrastructure assets for insurance purposes. That is, LAPP continues to learn and share what it has learned.

### What is LAPP's greatest challenge during this period?

Whilst focussing on delivering for its members through re-building the Fund and settling the Christchurch City Council and Waimakariri District Council claims, see below, LAPP's greatest challenge during this period has been getting relevant staff in member and non-member councils, especially where staff turnover is high, to take a long-term view of the problems that LAPP was set up to solve.

*Christchurch City Council and Waimakariri District Council Claims*

The complexity of the Canterbury claims make the complexity of the Manawatu Flood claim look like a pre-schooler's building block set. The complexity of managing such a claim, coupled with the complexity of reinstating assets post-disaster vs orderly replacement has driven up the cost of reinstatement to unimagined proportions. Working with reinsurers, loss adjusters and affected councils during this period has been incredibly challenging for all concerned.

Conveniently for below-ground assets, LAPP was able to settle the claim with payment by reinsurers for two events to the full extent of the reinsurance policy limit. While settlement of the above-ground element of the claim is taking a long time because of the complexities, LAPP fully expects a satisfactory outcome for members.

*Rebuilding*

In rebuilding the Fund to provide cover for members, the need for immediate cash injections and the initial high cost of reinsurance has meant that the LAPP offering has looked expensive. In truth, around half the cost is for rebuilding the Fund. Now that the Fund is well on the way to rebuilding (currently the disaster fund is $17m compared to $40m just before the September 2010 earthquake), the cost to asset relativities will restore and the advantages of a not-for-profit mutual with low administrative costs versus the for-profit commercial insurance sector will be a lot more obvious.

Slumping and lateral spreading observed on stopbanks on Waimakariri River following earthquakes in Sept 2010, Source: Environment Canterbury

Because LAPP on a short-term view has recently looked expensive and some without a proper understanding of how LAPP works have cast doubt over LAPP's viability due to the outstanding Christchurch claims, some councils have sought alternative solutions for their underground assets from the commercial sector. These solutions are untested in terms of an insurer's willingness to pay for damage in full and the long term availability of the product at a fair price.

## LAPP Today

What does the LAPP of today look like?

### Fund Reserves

In the three years since the LAPP Fund was depleted by the extraordinary Canterbury earthquake events, the Fund has re-built to more than $17m in reserves and provides protection for its members' 40% share of infrastructure damage, which combined with Central Government funds, caters for a $125m event. While fewer members means the Fund receives less in contributions it also has a much lower reinsurance cost and the value of the Fund per member is much higher. As of today the Fund exceeds three times the members' annual contributions; a great result given that three years ago the net value of Fund was close to zero.

### Extent of Cover

Because LAPP is not a commercial insurer and because it has listened to its members, it has taken decisions to provide cover for assets and for circumstances where an insurer would not. These include:

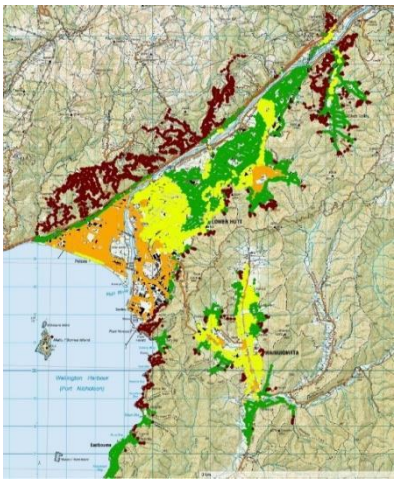
- Cover for sacrificial assets including trees on berms and land adjacent to stopbanks
- Cover for optimised replacement of assets

- Reinstating for loss of service in the absence of actual asset damage such as silt build up in flood control works or replacing a pump station because it had lost its water source (the river bed had shifted).

### Natural Hazard Risk Assessment

The seismic models developed with GNS provide the best estimates now available and are based on type of asset and location with respect to mapped seismic faults and by soil type, including the impact of liquefaction. The results of the latest modelling which overlay GIS maps of reticulation assets on soil maps in Hutt City is shown here. This is the result of work which combines the expertise and pooled data from LAPP members with that of GNS.

**The formation of LAPP and its willingness to work with world-leading research organisations such as GNS has resulted in risk models that lead global standards.**



Mapping of reticulation networks at Hutt City Council and soil types for more accurate assessment of loss following a major earthquake

### Equitable allocation of contributions

Contributions by members are allocated equitably by an actuarial firm, on the basis of asset value and the natural hazard risks of each member authority. **Managing the perceptions of members as to their risk profiles for flood, earthquake, volcanic and tsunami when compared to other members continues as one of LAPP's greatest challenges.**

### Claims Handling

The LAPP Fund now has unique experience in handling large complex natural catastrophe claims. As a fund for its members LAPP understands local authorities and has moved swiftly after a natural disaster to provide:

- Financial support to support cash flows after a major natural disaster[1].
- Administration support for members making large claims[2].

## SUMMARY

The story of the LAPP fund is a success story and LAPP is ready to help with the next disaster.

[1]The LAPP advanced millions of dollars to both Christchurch City Council and Waimakariri District Council in the weeks following the Darfield earthquake to facilitate emergency response and temporary repairs and before a formal claim was lodged.

[2] Christchurch City Council, Waimakariri District Council and Horizons Regional Council received such support.

**Disclaimer**

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