
REPORT 1
1215/52/IM

PROJECT A008 HAZARDOUS TREES, TINAKORI HILL CLEAN UP

1. Purpose of Report

Opex project A008 Hazardous Tree Removal is currently overspent due to the high cost of cleaning up unanticipated storm damage throughout Wellington City. The project is forecast to be overspent by \$150,000 in total by 30 June 2005.

This report seeks Council approval for an additional \$350,000 in this Annual Plan project in the 2004/2005 financial year, to complete the clean-up of trees on Tinakori Hill. This will mean the Project will have a projected year end overspend of \$500,000.

2. Executive Summary

Severe storms in February and August 2004 caused substantial damage to mature conifer trees throughout Wellington's Town Belt and reserves. The cost of cleaning up this damage means Opex Project A008 is projected to be overspent by \$150,000 this financial year. The impact of the two storms will result in a two-year delay to the Parks and Gardens Business Unit's pro-active tree management programme, targeting the removal of previously identified hazard trees.

The Parks and Gardens Business Unit is seeking an additional \$350,000 this financial year for the removal of trees from seven sites on Tinakori Hill that currently pose an unacceptable health and safety risk. The work is urgent. Another storm is highly likely to severely exacerbate existing damage and lead to greatly increased costs and risk.

3. Recommendations

It is recommended that the Committee:

- 1. Receive the information.*
- 2. Note the costs incurred by the Parks and Gardens Business Unit arising from the August 2004 storms.*
- 3. Approve a funding increase of \$500,000 to Opex Project A008 in order to remove storm damaged trees on Tinakori Hill.*
- 4. Note The Parks & Gardens Business Unit is seeking a further \$350,000 in the 2005/06 financial year as a new initiative to put the hazardous tree program of work back on track.*

4. Background

Wellington City weathered two major storms in February and August 2004 which caused many slips and significant damage to trees throughout the inner Town Belt and reserve land, including Tinakori Hill.

Tinakori Hill has had a history of problems with hazardous trees along the Thorndon boundary since the mid 1990s. This has seen trees removed along the boundary at various times to mitigate the risk to residential property. The work has always involved the use of helicopter extraction due to the poor access and desire to retain as much existing vegetation as possible.

While the immediate damage on tracks on the Hill has been cleared, unacceptable levels of risk remain for seven sites within the ageing conifer forest on the lower slopes of Tinakori Hill. The work is now considered urgent. The longer it is deferred, the bigger the problem will become and the greater the risk.

The Parks and Gardens Business Unit now face two major issues. First, responding to storm damage throughout Wellington City has demanded significant unforeseen financial resources and means the 2004/05 budget for Project A008 is projected to be overspent by \$150,000. The total budget for Project A008 in the 2004/05 financial year is \$418,000. Further funding will be required to continue with the cleanup in this financial year this is estimated at \$350,000, the total projected overspend will be \$500,000.

Second, to help with the clean up, the Business Unit's programmed arboricultural work was put on hold while immediate hazards caused by downed and damaged trees were dealt with. This means pro-active management to mitigate possible damage from future storms is now two years behind schedule. To address this issue Parks & Gardens have a new initiative to be considered as part of the draft Annual plan process for a further \$350,000 in the 2005/06 financial year.

The western side of the Berhampore Golf Course was another area extensively damaged in February 2004 at the time costing the Council \$30,000 to clean up wind thrown trees. Further significant damage occurred in August 2004. Clear felling the western side of Berhampore Golf Course will be at little cost to the Council. Parks & Gardens Business Unit will be clear felling 4.5 hectares of the block. (Map2) This will provide a break even scenario for Council from the sale of wood. This will avoid future costs while removing the risk these trees now pose. The site has relatively good access and has several existing track that can be utilised for harvesting. Extraction of logs will be over the Golf course. This temporary access will be reinstated at the end of the job. Costs for re-vegetation will need to spread over several years with some reprioritising of the existing work program required. As much existing native vegetation will be retained as practical during the operation

5. Discussion

5.1 Risks

The risks to Council of deferring a pro-active programme of work for trees on Tinakori Hill are multi-faceted and significant, and at a higher level than normally considered acceptable.

There are a large number of mature trees on Tinakori Hill, the terrain is steep and difficult, and it has been significantly disturbed. The age of the Tinakori trees makes them highly susceptible to accelerated damage, especially those left standing among the wind-throws. These trees are now exposed to the wind and, because of the de-stabilised earth around them, have a high probability of being downed, even in moderate storms. If wind-thrown, the potential for these trees to slide down the now-exposed slope is high. This potentially threatens the residential housing and arterial roadways at the foot of the Hill, as well as numerous recreational tracks through the forest.

Other hazards include:

- A significantly increased fire hazard caused by the amount of wood on the ground
- Erosion and increased risk of slips due to de-stabilised and exposed earth
- Exposed rocks, which may roll down the hill during storms and/or earthquakes
- The risk to the health and safety of people who visit the areas

The hazard the remaining trees pose is dramatically higher than before last year's storms. To not deal with the clean up before another storm happens will expose Council to greatly increased costs.

The steep topography of Tinakori Hill means the work will be slow and heavy machinery will have to be used to deal with some wind-throws – further wind-throws will only exacerbate the complexity and increase the need for more heavy machinery use.

5.2 Methodology

Tailored and detailed logging methodologies for seven sites on Tinakori Hill are being prepared. The plans will determine priorities, the logging process for each site and the required resources.

Preliminary investigations point to a mix of predominately helicopter with some ground-based logging on Tinakori Hill

Helicopter logging, although more expensive, will be the preferred option in sites where scouring the earth will cause unacceptable erosion and run-off, where there may be resource consent issues with creating access tracks, or where the costs of replanting the denuded area are too high.

5.3 Issues

Harvesting plans will have to be prepared to meet the Codes of Practice for Forestry. On Tinakori Hill, in some places the work will be a slow, a tree-by-tree operation because of the steepness, debris and damage from wind-throws. The removal of wind-thrown trees is a hazardous operation as a significant number of stems are lying

precariously on the steep slopes, intertwined and often suspended above the slope by semi-detached or snagged root balls.

Because of the extent of the wind-throw on Tinakori Hill and the ensuing health and safety risks, it will be necessary to receive approval from the Department of Labour for the methodology for clean up and extraction. This may increase the cost to Council, as safety standards may require heavy machinery to be used in areas of heavy wind-throw.

To complete the work, vehicle access will have to be re-established along the Town Belt ridgeline in Northland, and some sections of the Northern Walkway will have to be widened by up to a metre. (Map 3) A public notification process will be required involving affected residents and further consultation with the Friends of the Town Belt is required. There may well be adverse publicity.

Earthwork and resource consents will be sought where needed to complete the proposed work.

Availability of contracting resources could prove to be an issue. The work is high risk requiring specialised skills and equipment; there is a shallow market for arboricultural services in the City with only one larger company in the market. The work will present a number of challenges to traditional forestry and Helicopter logging companies who may well prefer to stick with the continuity of lower risk contract work outside of an urban environment.

5.4 Timeframe

While Wellington can experience storms at any time of year, trees in the identified sites should be removed as soon as practicable and, if possible, before winter because access to the affected areas is easiest during summer and the longer available working day is an advantage. Any further damage will make it nearly impossible to clean up some areas without extensive earth works and machinery. This would also greatly increase the health and safety risk and the cost of the clean up.

5.5 Options

Council has several options for action:

a) **Log selected blocks on Tinakori Hill:** This is Parks & Gardens preferred option. The chosen sites cover approximately 10 hectares (Map 1) of tall exotic forest along the lower slopes of Tinakori Hill. Most sites have already suffered extensive wind-throw, or are vulnerable to future damage. Tree removal is the only viable mechanism to minimise the hazard the trees pose and mitigate potential erosion and slope instability.

A tree removal programme will be designed for each site, with a combination of ground-based extraction and/or using helicopters. Helicopter logging is the preferred option for the majority of the work as it avoids the significant cost of re-vegetation as existing native trees will recover quickly following logging operations. It will also avoid the requirement to establish extensive access tracks and skid sites for ground based logging.

b) **Clear-fell Tinakori Hill:** This option is not recommended. The prime time to gain an economic return from harvesting the exotic trees on Tinakori Hill has passed. The high level of wind damaged trees in some blocks has significantly reduced the potential economic return. A preliminary Harvest report based on a large scale ground based logging operation report has been prepared for Parks and Gardens.¹ Estimates a return to Council of \$125,000 if storm damaged areas on Tinakori hill were logged now. However, the report did not address the costs of removing forestry waste and re-planting the area. Disposal of forestry waste in an urban environment can be 20 to 30 % of the cost of a job and costs for re-vegetation per hectare are as much as \$68,000 for supply and planting.

On top of the re-vegetation costs, the clear-felling option for Tinakori Hill is also likely to cause erosion and run-off due to the steep topography, adverse community response to the aesthetics of a bare backdrop to Wellington, the loss of 30 years worth of naturally occurring regeneration, and a major problem with pest weed incursions from garden escapes.

c) **Do nothing:** This option is the least viable due to the high and growing level of risk of further wind-falls and damage, not all of them obvious. For example, a geological consultant² advises that up to 30 per cent of wind-throws at some sites on Tinakori Hill have large root plates which have significantly disturbed the soil, increasing water infiltration and reducing soil strength. These sites have also lost the tensile strength provided by the tree roots. The outcome during heavy rain could be severe erosion, slips and flows of debris.

Doing nothing also exposes the Council to greater costs because the expense of reacting to storm damage is higher than pro-active management.

While risks could be mitigated by restricting public access and/or closing some recreational areas, this has been difficult to achieve in the past, increasing public safety risks.

Overall, the do nothing option presents the highest level of risk and is not recommended.

5.6 Costs

Cost recovery options via the sale of timber will be explored for each site on Tinakori hill to help mitigate costs and maximise the return from saleable logs. However, the Business Unit proposes to log the minimum number of trees possible to avoid the risk of accelerated erosion, damaging regenerating bush and adverse community reactions. This means the logging will not be an economic proposition, but will balance the Council's costs and the various risks in the most effective and efficient way.

The costs of dealing with the storms are recorded in three Parks & Gardens Annual Plan Opex projects – A008, C006 and C564. They cover the use of sub-contractors, the hire of heavy plant and tip fees. The Parks and Gardens Business Unit have attempted to make savings across its portfolio to minimise the impact on Council. However, because much of the cost relates to the need to use external contractors, who have heavy

¹ Rob Calder, Transcontinental Forest Products Limited, December 2004

² Report by Nick Perrin, Geological & Nuclear Sciences commissioned by Parks & Gardens

machinery and expertise the Council does not have, our ability to contain costs has been limited.

The current position and forecasts are in the table below.

	31 Jan 2005 Actual	31 Jan 2005 Budget	31 Jan 2005 Variance	Year End Forecast
A008 Hazardous Tree Removal	\$477,131	\$204,305	(\$272,826)	(\$150,000)
Proposed A008 Budget increase (\$350,000)				(\$350,000)
Total				(\$500,000)

While there would be some capacity in Opex Project, A011 (Reserves and Unplanned Maintenance) to assist with tree removals and cleanups, this project has had to cover the costs of remedying landslips at Oriental Bay which occurred during the February 2004 storms.

Further reductions in internal labour costs in project A008 by not replacing staff is also planned to help reduce the deficit.

6. Conclusion

The storms of 2004 caused a great deal of damage throughout Wellington City's Town Belt and reserves. With the initial clean-up work complete, it is now critical for further work to be done on Tinakori Hill

It is imperative that this work be completed before another storm strikes and exacerbates existing damage, as this would make it more difficult to clear some sites and significantly increase the risks associated with clean up and the natural hazards the area pose.

The current level of health and safety risk at some sites on Tinakori Hill is already above the levels acceptable to the Council. A \$500,000 overspend is required to mitigate these health and safety risks and reduce likely higher costs to Council if a storm comes before the work is done.

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Supporting Information

1) Strategic Fit / Strategic Outcome

The proposal supports Council's activities in providing open spaces and recreational opportunities. Agreement to the proposal will contribute to Council meeting the outcomes of accessible open spaces and a diverse range of recreational opportunities and leisure activities (Outcomes 5.3 and 7.1)

The proposal supports Council's activities in safeguarding communities by mitigating natural hazards (Outcome 2.7)

2) LTCCP/Annual Plan reference and long term financial impact

The proposal relates to operating project A008 in the Council Plan. A separate new initiative for a increase in Opex expenditure of \$350,000 in the coming year to cover other deferred work will be considered by the Annual Plan working Party.

3) Treaty of Waitangi considerations

The proposal relates to Town Belt land and is therefore likely to be of known interest to the Tenth Trust. The Trust will be approached as part of the wider community notification. There are no sites of significance to Tangata Whenua or other Maori on the District Plan heritage list in the area of proposed work.

4) Decision-Making

This is a significant decision in as much as, if Council does not approve the increase, it will remain exposed to unacceptably high levels of financial and health and safety risks. The report sets out a number of options and reflects the expert advice from arboricultural and geotechnical experts who have provided reports to the Parks and Gardens Business Unit.

5) Consultation

a) General Consultation

All affected parties have been identified. Informal discussions have already occurred with the chair of Friends of the Town Belt. Further consultation with the friends of the Town Belt is planned. A communication plan and notification of the residents and owners of neighbouring properties will take place. This will include at least two public meetings and a letter box drop. Council is not required under legislation to consult on this matter.

b) Consultation with Maori

This is not considered to be relevant to this proposal, beyond what has been covered in (3) above.

6) Legal Implications

Under the Health and Safety in Employment Act, Council has a responsibility to manage hazards by either isolating, minimising or eliminating them

As a landowner Council has a duty of care to ensure that the trees on its land are in a healthy and safe condition and don't pose a hazard or cause damage to a neighbouring property. Failure to attend to trees which a landowner knows or ought reasonably to know, are likely to cause damage to a neighbouring property amounts to a breach of a duty of care, even before any damage occurs.

The Local Government Act 2002 requires the Council to:

- Adopt a long term Council Community Plan setting out how it will manage assets,*

including the estimated expenses of maintaining their service, capacity and integrity, and the future replacement of significant assets (s93, Subpart 1, Schedule 10).

- *Adopt a policy that must list the assets considered by the local authority to be strategic assets (s90).*
- *Manage its assets, liabilities, investments and general financial dealings prudently and in a manner that promotes the current and future interests of the community (s101).*

7) Consistency with existing policy

This proposal recommends certain measures which are entirely consistent with both the Town Belt Management Plan and the Town Belt Implementation Plan.