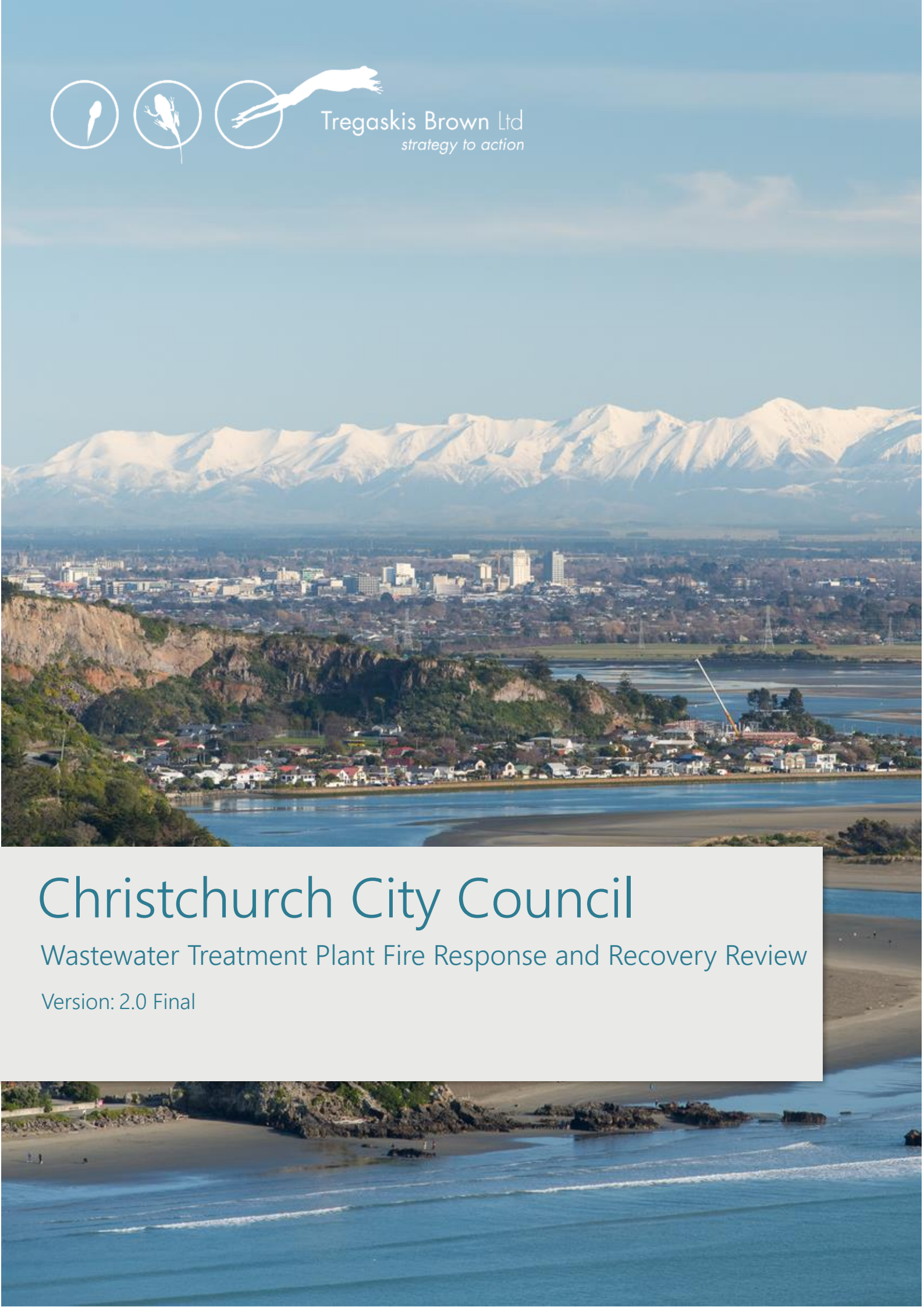

Tregaskis Brown Ltd
strategy to action

Christchurch City Council

Wastewater Treatment Plant Fire Response and Recovery Review

Version: 2.0 Final

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1 Executive Summary

1.1 Introduction

On 1 November 2021, a major fire destroyed the trickling filters at the Christchurch Wastewater Treatment Plant (CWTP), knocking out approximately 60 percent of the treatment capacity of the plant. This meant that the treatment ponds were significantly overloaded during the colder winter months, when they are at their most vulnerable.

The overloaded ponds and the burnt material remaining in the trickling filters created a stench that lasted for months. Noxious gases caused paint to blacken on some houses, and at times the smell reached right across Christchurch but, nearly every day, it badly affected people who lived in the eastern suburbs. A community who, for a range of reasons, had limited options for managing the impacts of the stench in their lives.

Even before the fire, the relationship between the communities of the eastern suburbs and the Council was strained. These communities don't have the same depth of advocacy resources as others in Christchurch. This meant it took a long time for the Council to hear the message and understand just how badly these communities were suffering.

Temporary repairs to the plant were completed in late July 2022, some nine months after the fire, and the stench was gone by mid-September.

Christchurch City Council (the Council) commissioned this independent review into the response and recovery operations to help it understand what happened, what went well, what could have been done better, and what needs to be improved or changed to ensure its response to future significant events is better managed.

Please note that our terms of reference explicitly excluded the **technical** responses to the fire, and instead were focused on the community response. Our findings are based on the conversations we had [Appendix 3] and the documents that were made available to us [Appendix 4]. Our findings and focus for the review was to provide voice to the community's frustrations, and therefore is based on how it *seemed* from outside the organisation. For example, while the Council's staff may have been aware of the likely timeframes for the stench to persist, if that wasn't *communicated* to residents and neighbours, then it is evidence that either it was being downplayed or wasn't a focus of the response.

1.2 Overview

To inform the findings and recommendations presented in this report, we undertook 33 interviews and/or meetings with 54 people, including:

- past and present Elected Members (Ems)
- Iwi/Māori representatives
- Council staff
- representatives from partner agencies
- members of the affected community

The strongest theme from all the interviews was that the Council was too slow to recognise this was a community wellbeing issue. For the first six months (November 2021 to April 2022), the Council's focus was on the technical issues of repairing the plant. There was not enough consideration given to the potential impact of the odours from the ponds on the communities in the eastern suburbs and what information and support they needed.

In late April, there was a discernible improvement in the level of engagement and community support. Public communications started referring to the smells as "stench" rather than "unpleasant odour", air quality monitoring started, health advice was provided, information about paint discolouration was developed and a community support package was rolled out. In the end, Council recognised the impacts and responded, but it was too late. The harm to the relationship between the Council and the communities it serves was done.

To identify the key issues and shape our recommendations, feedback from the interviews was sorted into themes. We identified ten themes which were then assessed to establish whether they were primarily a symptom, an underlying cause, or a contributing factor. We were also keen to identify what worked well, so those elements could be retained and strengthened.

1.3 Key findings

The conclusions and recommendations are presented within the report. However, there are two key findings that are important to highlight.

1.3.1 Non-existent or poor relationships with the affected communities.

Based on the feedback provided by people we interviewed, the Council had a poor relationship with many of the affected communities in the eastern suburbs well before the CWTP fire. From the community's perspective, there had been an extensive list of prior missteps that all fed into their perception that Council didn't value them or take their issues seriously enough. This included perceived

underinvestment in earthquake repairs, odours from the Organic Processing Plant, insect/midge infestations from the wastewater treatment ponds, and coastal adaptation discussions. Worries about COVID-19, vaccine mandates, and fear of no income had added to stress levels.

Advocates for the affected communities reminded us that people who live in the eastern suburbs are assumed to be poor and uneducated, and perhaps this was why their concerns and experience weren't taken seriously by Council. The point was made several times during the interviews that if this odour had been affecting any other area of Christchurch it wouldn't have taken so long for the Council to react.

It is also true that some people who live in these suburbs don't have the skills, resources, or confidence to engage with Council. People with access to significant financial resources may have been able to manage the impact of stench on their wellbeing, for example, by temporarily relocating their family. However, this was a community not well equipped to cope with this stench over so many months.

The stench was appalling. It was bad enough for people who experienced it occasionally, but this community experienced it for months on end. They were living in it, working in it, exercising or playing sport in it, and trying to sleep in it. Their children were going to school in it. The physical symptoms experienced included nausea, vomiting, coughing, sore/watering eyes, headaches/migraines and sleeplessness.

Stress was a health impact that was not initially acknowledged by Council. The issues the community described included the inability to socialise, lack of physical activity, physical isolation, and worry. Even in our interviews we encountered people who still reported suffering from symptoms of stress.

It wasn't until late April 2022 that the Council acknowledged just how bad the problem was. From this point on things improved but the Council was already on the back foot and spent the next five months trying to recover. The relationship with the affected communities in the eastern suburbs could now be described as non-existent.

If the relationship between the communities of the eastern suburbs and the Council had been in a better state prior to the fire it might not have taken so long for the Council to hear the message and understand how badly these communities were suffering. Then the Council could have responded faster with a more comprehensive understanding of the impacts on community.

Recommendation

That the Council:

1) **Prioritises** strengthening and sustaining effective and respectful relationships with the affected communities, so as to regain their trust and confidence. This should include:

    a) An agreed relationship management strategy
    b) Appropriate mechanisms for monitoring the health of the relationship
    c) Effective and appropriate channels for communication and engagement
    d) Clear accountability for the Chief Executive to ensure this is implemented within the Council organisation

1.3.2 The response and recovery structure was not appropriate.

A full-scale Incident Management Team (IMT) should have been established very early on in the process. The structure for the IMT should have been based on the standard Coordinated Incident Management System (CIMS) model, with fine tuning to meet the circumstances.

The establishment of a Programme Management Steering Committee provided a structure that was not fit-for-purpose and significantly hampered the Council's ability to deal with the issues affecting the community appropriately.

An IMT structure would have ensured that everyone in the organisation understood the priority, scale and urgency of the work enabled non-business-as-usual approaches and policies to be deployed, and ensured a broader and more contextual risk lens was applied to planning and prioritising work effort. Regular attendance by the Chief Executive would have reinforced this message.

There needs to be formal processes that help shape the decision about when to make use of an IMT structure.

Recommendations

That the Council:

1) **Endorses** the use of an Incident Management Team (based on the CIMS model) as the standard response structure for significant/large scale events, recognising that fine tuning to the structure may be required in some circumstances,

2) **Requires** the Chief Executive to develop a process for determining when the IMT will be deployed, including:

    a) Assessment criteria,
    b) Delegations, and
    c) The mechanisms for ensuring Elected Members have timely visibility of the decision, and

3) **Requires** the Chief Executive to ensure the IMT model includes sufficient oversight such that Elected Members can be assured that:

a) Resources and processes are sufficiently expedited,
b) Community voice is being sought and considered in decision making, and
c) Risks and issues are being escalated appropriately.

1.4 Implementation Plan

In addition to the recommendations provided above, there are also fifteen suggestions for improvement. Council is unlikely to have the resources to implement all the changes at the same time, so recommendations have been made about priorities. The two recommendations are a top priority for implementation.

Once the Council has considered this report and decided which recommendations and suggestions it wishes to implement, staff should be asked to present a proposed program of work. It is expected that all work should be underway within eighteen months.

2 Introduction

2.1 Background

A major fire at the Christchurch Wastewater Treatment Plant (CWTP) on 1 November 2021 destroyed the trickling filters and knocked out approximately 60 percent of the treatment capacity of the plant. This loss of capacity meant that the treatment ponds were badly overloaded during the colder winter months when daylight hours are shorter.

The overloaded ponds and the burnt material remaining in the trickling filters created a stench that lasted for months. Some houses showed signs of paint discolouration. At times the smell reached right across Christchurch, but nearly every day it badly affected residents in the eastern suburbs.

The temporary repairs to the plant were completed in late July 2022 and the stench was gone by mid-September.

Christchurch City Council (the Council) has commissioned an independent review into the response and recovery operations. The purpose of the review is to understand what happened from a systems and process point of view, what went well, what could have been done better, and provide practical recommendations for improvement.

2.2 Review process

Over a period of fourteen weeks, we carried out 33 interviews and/or meetings with 54 people, including past and present Elected Members (EMs), Iwi/Māori representatives, Council staff, representatives from partner agencies, and members of the community (including immediate neighbours and members of the Community Communications Reference Group).

We reviewed:

- Briefings and reports to Council, committees, community boards, and the Executive Leadership Team
- Communications strategies
- Newsline articles and information flyers
- Five hours of footage of Council meetings

We undertook a site visit to the CWTP.

The report is solely based on information provided by Council, feedback from the interviews, and the site visit. The report does not analyse events based on their

chronology. To help readers who are not familiar with what happened the Council's "*Timeline of key events and decisions*" is attached as Appendix 2.

We were not able to interview Jane Davis (GM Infrastructure, Planning and Regulatory Services) or Helen Beaumont (Head of Three Waters). While it would have been desirable to interview these two key staff members, we were able to obtain a good understanding of what happened from a systems and process point of view.

A full list of the people that we did talk to is included as Appendix 3.

We provided all interview participants with an undertaking that their comments would not be attributed to them in our report, and that they would not be identifiable in the report. To this end italics have been used to indicate a direct (or very nearly direct) quote from one of the interviewees.

Please note that our terms of reference explicitly excluded the **technical** responses to the fire, and instead were focused on the community response. Our findings are based on the conversations we had [Appendix 3] and the documents that were made available to us [Appendix 4]. Our findings and focus for the review was to provide voice to the community's frustrations, and therefore is based on how it *seemed* from outside the organisation. For example, while the Council's staff may have been aware of the likely timeframes for the stench to persist, if that wasn't *communicated* to residents and neighbours, then it is evidence that either it was being downplayed or wasn't a focus of the response.

2.3 Acknowledgements

We would like to thank everyone who met with us – they were generous with their time and frank with their feedback. Thank you to the Ngā Hau e Whā National Marae for hosting the second round of interviews.

We would like to acknowledge the work of Min Jang and Nicholas Hill who acted as a liaison between us and the Council. In particular, we would like to thank Min, who spent countless hours arranging meeting schedules that worked for us and the interviewees.

3 Overview

This was a long event that started with the fire at the start of November 2021 and, from a community point of view, finally ended in mid-September 2022 when the terrible smell finally abated. There was a remarkable consistency in the conversations over the many hours of interviews – the community wellbeing response was sadly lacking.

The technical situation was that the fire knocked out approximately 60% of the biological oxygen demand treatment capacity of the plant. Biological oxygen demand (BOD) is a measure of the amount of oxygen required to treat the organic matter in the wastewater. Meeting the BOD of the incoming wastewater is a key part of the treatment process.

The resulting high loads on the remaining treatment processes had a detrimental effect on wastewater effluent quality and on odours coming from the site. At times the standard of the wastewater being discharged to the ocean outfall deteriorated to the point that Environment Canterbury had to be formally notified.

After the fire was extinguished, burnt plastic/sewage smells extended across neighbouring areas over the rest of November and the start of December 2021. The odours from the plant eased over January and February 2022 but never completely went away. Complaints started ramping up in March as a putrid stench developed. The neighbouring eastern suburbs were the worst affected but depending on the wind direction and strength, the stench was very noticeable right across the city.

There were two sources of odour, the trickling filters (TFs) and the treatment ponds (the ponds). The odour from the burnt material in the TFs started in March 2022 and had ended by the end of April 2022. The ponds started creating putrid odours in April. The temporary repairs to the plant itself were completed in late July, and the stench from the ponds had ceased by mid-September. Aerators were installed in Pond 1 in April 2023.

When the odours started to ramp up in March 2022 the seriousness of the situation wasn't acknowledged. The public communications showed little understanding of how bad the situation was getting – residents felt they were still trying to convince the Council there was a problem. Frustrations were rising - the first five months were a wasted opportunity.

In April 2022, community pressure on the mayor and councillors ramped up and they made it clear to staff that the organisational response needed to address the social needs of the affected communities. The mayor started using the word "stench" in her communications. The turning point acknowledged by many of the

residents we interviewed was the first public meeting in mid-May, which was not organised by the Council.

From that point on there was a definite improvement in the level of engagement and community support. Public communications ramped up and started talking about stench rather than unpleasant odour, air quality monitoring got underway, health advice was provided, answers were provided on paint discolouration and a community support package was rolled out.

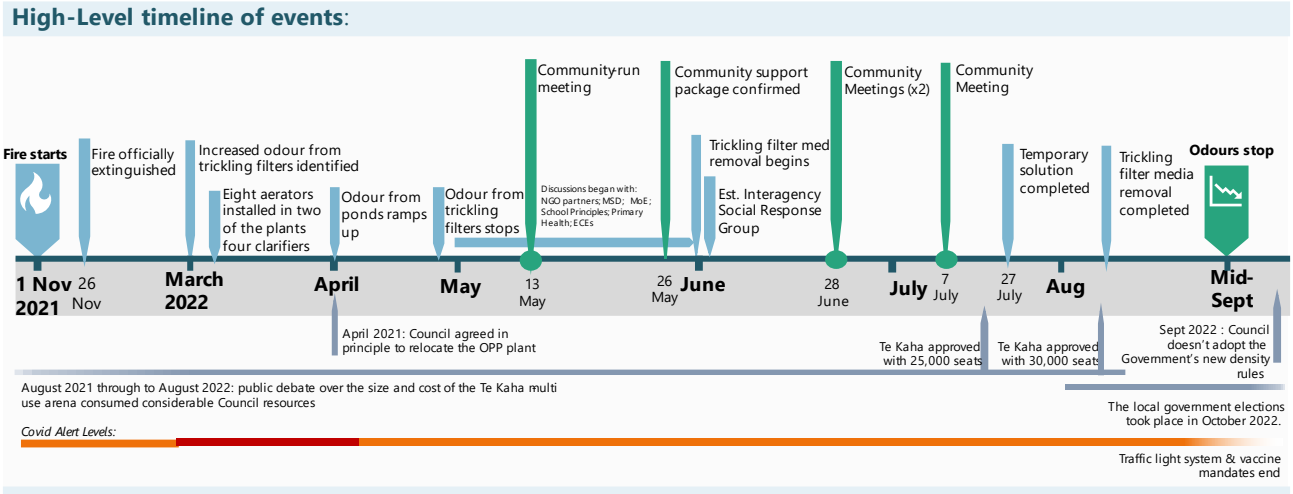
In the end Council got it right, but it was too late. Months had been lost at the start of the process and the Council was always playing catch-up. For some in the community *it was too little, too late*.

The consensus from those that understood the challenge was that the Three Waters team did an amazing job of keeping a badly damaged plant operating, delivering the service to the residents of Christchurch, ensuring that the wastewater continued to flow, and the CWTP continued to mostly meet the discharge standards.

Unfortunately, there were not many who understood the technical challenge. The Council had downplayed the significance of the damage to the trickling filters and the potential consequences. There was an opportunity to tell the story before it happened, to share the problems and the risks with the community and help build their understanding of what lay in front of them, but it was lost.

An overview and high-level timeline is provided below, and a larger image can be found in Appendix 1:

High-Level timeline of events:



4 Review Findings

This report is based on what we heard from the people we interviewed. To help with the discussion and evaluation, issues that were consistently raised have been sorted into overarching themes. We identified ten themes which were then assessed to establish whether they were a symptom, a contributing factor, an underlying cause. We also identified that some things went well. This is important because we want to ensure Council is able to retain or further strengthen these aspects of its response.

4.1 Symptoms

4.1.1 Too slow recognising this was a wellbeing issue

Scale and impact of the stench

Given the terrible impact of the stench and the size of the area affected, it is significant that it took so long for the organisation to realise it was dealing with a major community wellbeing issue.

Several of the people we interviewed were emphatic that the odours never went away after the fire. The smell was there over the 2021/22 summer and then ramped up in March 2022.

While residents in areas that were affected to a lesser extent by the odours from the CWTP might be able to get away for the weekend, this was not a realistic option for many in the worst affected areas. They were affected by the stench for months on end.

Some were more sensitive to the smell than others. While most people were able to live with it, some suffered serious physical symptoms. Nausea, vomiting, coughing, sore/watering eyes, headaches/migraines and sleeplessness were the physical symptoms most mentioned.

We can't hang washing outside – the smell sticks to it. People had to run tumble dryers for months on end or use laundromats. Extra costs of $50 - $150/month were mentioned. This was a considerable cost burden, but there was no choice.

Even with the windows shut, the smell gets in the house. Consistent feedback was that the use of heat-pumps seemed to stir things up and make the smell even worse inside the house. Purchasing and running air purifiers was unaffordable for many.

One person went to visit their adult child who lived out of the zone. They were told that their clothes had a bad smell that the wearer could no longer detect. This was both embarrassing and worrying.

Stress is a health effect that was not initially acknowledged. Some residents were experiencing stress symptoms. The issues described included the inability to socialise, lack of physical activity, physical isolation, and worry:

- *My paint has gone black – what is that stuff doing to my lungs, to my children's lungs, to my pet's lungs?*
- *Our house is our retirement investment and now we can't sell. When will we know the Council's plan – when can we sell?*

Even in our interviews we encountered people who were still experiencing things that they attributed to stress.

It took them a long time to attract Council attention. This was the community least equipped to cope with this appalling stench over so many months. This is covered in more detail in section 4.2.2 - Poor relationship with the affected communities.

Poor communications and engagement

Up until late April 2022, the Council downplayed the significance of the damage and potential consequences. They didn't want to say this is an unknown space and we are working through it.

When the smell did become apparent, there was no acknowledgement of how bad it was. Describing the smell as 'unpleasant odours' simply demonstrated a lack of empathy for those suffering. This minimising language and no recognition of the stress being experienced made the situation worse. Realistic expectations should have been set around how long the odour from the ponds would continue.

The situation changed in late April 2022 as the mayor and councillors became aware of how bad the problem was. Staff were requested to develop advice on ways which support could be provided for affected residents. The mayor started using the word "stench" in her communications and publicly apologised for the Council's poor response to the odour complaints and the lack of communication.

The first public meeting didn't take place until 13 May 2022, and it was not organised by the Council. The Council should have been meeting with the community from the beginning of 2022. At this meeting and the following meetings, there was too much focus on technical issues and not enough on wellbeing issues. Stress was one of the biggest factors affecting the community. Counselling support should have been available.

From this point on, things did improve but the Council was now firmly on the back foot and spent the next five months trying to catch up. The Council was too slow with answers around odour and paint discolouration – this left a void that the community tried to fill.

One thing that did attract positive comment was that when people contacted the Council to talk about paint discolouration, a site visit was offered. This opportunity for a face-to-face meeting made the residents feel that the Council was taking an interest and did care.

4.1.2 No sense of urgency

Throughout the interviews there were two phrases that were used more than any others to describe the first six months of the response:

- *There was no sense of urgency*
- *No sense of desperation*

Even when the odours started to ramp up in March 2022 the seriousness of the situation wasn't acknowledged. It was only in late April/early May that things changed. From that point on there was a sense of urgency and a definite improvement in the Council response.

In the end Council got it right, but it was too late. Months had been lost at the start of the process and the Council was always playing catch-up. For some in the community it was too little, too late.

Much of the analysis in this report is dedicated to addressing this symptom.

4.2 Underlying causes

4.2.1 A culture that didn't help with a strong response

Funding of the Communications Team

At the time of the fire front line services were seen as having priority over support services, such as communications. Initially the Communications Team was listed as a support group to the Program Management Steering Committee (PMSC). It did not become a stand-alone work stream until Mar/Apr 2022.

The Communications Team does not have its own corporate budget and is reliant on project funding from its internal customers. If the customer is unwilling to fund a particular message the Communications Team wants to put out, then funding has to be found from elsewhere or the situation can be escalated to the Executive Leadership Team for review. This makes it difficult for the Communications Team to properly fulfill its role of protecting the Council's reputation.

The Council should be enabling those with relevant professional expertise to contribute to and ideally make, communication decisions.

Cost management/risk avoidance.

When the CE stated that extra resources could be made available, some interpreted that this only applied to the project team, or if you needed extra staff they should be reassigned from other roles. As a result, the organisation mostly made do with the resources it had, and some key staff carried very large workloads for the best part of a year.

There was a clear expectation that procurement processes would be complied with. The importance of *prudent financial management* was mentioned several times by staff in the interviews and it did affect procurement decisions. There was no sense of urgency or desperation.

The Council could not afford to risk its insurance cover over careless public comment or premature action. As a result, the cleaning out of the trickling filters (TF) was delayed and public statements about what was happening were constrained. Phrases like "commercial sensitivity" only frustrated an already inflamed community. A less risk averse approach here might have helped calm things down a little and sped up the response to the TF odours.

Compliance with cultural norms regarding resourcing, procurement [redacted] dominated over a sense of urgency or desperation. These issues are discussed further under the recommendations relating to the Response Recovery Structure (Section 4.3.5).

Council staff that front the community must wear two hats. Sometimes they are there to help the community and sometimes they are expected to minimise the Councils exposure to legal / financial risk.

Several community representatives we interviewed considered that the default position for staff was to reduce costs by denying responsibility – prove it. This meant the community had to win two arguments before progress could be made on addressing the problem - firstly that there was an issue and secondly that it was caused by Council. It was felt that this culture of reluctance to accept responsibility contributed to the slow response.

4.2.2 Key Finding: Poor relationship with the affected communities

Based on our interviews with staff and the communities' description of their engagement with Council, it appears that staff initially involved with the response didn't fully appreciate the depth of feeling that already existed in the eastern suburbs, and that this was the community least equipped to cope with this stench over so many months. This was discussed by nearly every community representative we talked to.

Background issues

Staff involved with the response didn't fully appreciate the stressors that existed in the eastern suburbs before the CWTP fire occurred.

There is a very strong feeling that the Council has underinvested in earthquake repairs in the eastern suburbs. Council staff and Elected Members talked about a considerable investment in underground infrastructure, but the community noted that while streets were repaired, the final standard was barely functional and not to the standard of beautification that they saw in other suburbs.

The Bromley community had been experiencing awful odours from the Organics Processing Plant (OPP) for nearly ten years. It took those ten years for the residents to convince Council that the OPP was the source of the smell and for Council to agree in principle (in April 2022) to relocate the plant.

For many we interviewed, it was the last straw, that just as the Council agreed in principle to relocate the plant (April 2022), residents found themselves trying to convince Council there was a far worse odour problem and it was coming from the CWTP. Midges from the ponds were also a source of frustration for residents that lived close to the plant.

There was a consistent view that if these issues had been affecting other areas of Christchurch they would have been addressed much more quickly.

Other issues such as coastal adaptation discussions, COVID-19 and vaccine mandates had taken their toll. Residents in the eastern suburbs were more likely to be experiencing symptom of stress, and their relationship with Council could only be described as low trust.

Day-to-day challenges

We were told repeatedly that the eastern suburbs are not affluent communities. Computer ownership is not universal. Website updates, blogs, Facebook updates and emailed newsletters would not reach everybody. Newspaper subscriptions are not always affordable.

Literacy skills are not always strong, and for some English is a second language. Those who could advocate for their community found it mentally and emotionally exhausting - some are stepping back from this role.

Poverty was discussed as a barrier to healthcare - residents in the eastern suburbs are less likely to seek medical advice. Offering to pay for a doctor's visit was never going to be a solution for all. *Even if Council paid for the visit, I couldn't afford the time off work*.

Engaging with this community to understand what was happening was always going to require extra effort.

The 2018 Census found that compared with all of Christchurch, the suburbs of Bromley South[1] and Linwood East[2]:

- have a higher proportion of people living with 'activity limitations'[3],
- have a higher unemployment rate, lower medium incomes and only 7% earn more than $70,000 compared to 16.5% across Christchurch,
- have a higher percentage of people with no access to telecommunications and internet, and
- have a higher proportion of those without a qualification - double the percentage of Christchurch.

Relationship with immediate neighbours

There are residential dwellings (and a marae) within 200m of the CWTP. We met with some of those residents. They were some of the worst affected and are disappointed that this hasn't been acknowledged by the Council.

There was no contact on the night of the fire or the days following. There was no warning that noise and significant vibration would be experienced as work started on constructing the access ramp into the trickling filters. *Work continued to midnight - at times the vibration shook the whole house*. Council is not considered to be a good neighbour.

These immediate neighbours are adamant that odours from the plant continued through the 2021/22 summer. They are confident they know the difference between the smells of the CWTP, the OPP and the estuary, and are tired of being told they are wrong.

4.2.3 Risks not properly recognised and reported

Poor monitoring and reporting of complaints

There were multiple sources of information about the extent and impact of the stench. A total of approx. 12,300 complaints were logged, with 10,560 coming via the ECAN Smelt-It App, 1,280 via the Council Genesys Interaction system and 460 via the Council Hybris Complaints system. Appendix 5 presents this information in more detail.

The data does support the comments from community members that the odours never went away from December 2021 – February 2022. The data also shows

[1] https://www.stats.govt.nz/tools/2018-census-place-summaries/bromley-south#education-and-training
[2] https://www.stats.govt.nz/tools/2018-census-place-summaries/linwood-east#telecommunications
[3] Those who have 'a lot of difficulty' or 'cannot do at all' one or more of the following activities: walking, seeing, hearing, cognition, self-care, and communication

complaints ramping up in March, presumably in response to the odours from the TFs. This was important information as the walls of the TFs are 8m high, which meant the odour they generated was not readily discernible on site.

Complaints/notifications were also received via the Council Wastewater email address, and comments on the Council Facebook page, the Sewer Crisis Facebook page and on various news platforms.

Monitoring and reporting of these complaints was not coordinated. There appears to have been no effort made to maintain a central register and report on the results. This would have been a valuable source of intelligence on what was happening in the community and staff would have had earlier warning of developing problems.

One of the techniques Emergency Management is using successfully is to monitor social media sites for useful information that might save a site visit by overly stretched staff. There was an opportunity lost here.

Use of the risk register

Internal risk register/s should have provided a channel for operational staff to escalate concerns to senior managers who, in turn, should have been reviewing across project and programme risks to understand the *overall* risk profile of the work. We cannot find evidence that this occurred.

There doesn't appear to have been any attempt to reconcile the different risk assessments for pond odours and supply chain issues. The risk register wasn't given the attention it deserved.

Risk of odours understated

The staff responsible for repairing the CWTP were aware that there was a risk of the plant becoming overloaded, the ponds crashing, and odour becoming an issue, particularly during autumn as sunshine hours reduced and pond temperatures dropped.

One of the challenges they faced in conveying this message was that the plant continued to run without signs of serious stress for the first 3 – 4 months. Getting this risk message through was made more difficult by the fact that no one with a Three Waters infrastructure background sits above fourth tier of management within the Council. We could not interview Jane Davis or Helen Beaumont to explore this further.

In addition, technical staff had the distinct impression that bad news was not wanted. Everything was to be positive, hence their description of the situation in key briefings and documents was overly positive – *a programme of work that will progressively improve the odour problems.*

The potential for odours from the plant and ponds was foreseen in the risk register but the risk was understated. If the potential scale and terrible impact of the odours had been fully understood, this may have led to a greater sense of urgency.

While the risk of odours from the TFs was recognised in January 2022, it wasn't identified as significant enough to press for a fast resolution to the insurance questions. This is more understandable given this was new territory but there was no sense of urgency.

Too much confidence in odour mitigation measures

There was consistent mention made of adding polyaluminium chloride to the wastewater stream to facilitate the removal of solids from the waste stream, and the addition of hydrogen peroxide to the wastewater to help meet the oxygen demand exerted by the treatment processes. While these measures would help with the treatment process, they were not going to replace 60% of the biological oxygen demand (BOD) treatment capacity.

The solution that was going to address the odour issues through the winter was the temporary activated sludge plant. While the aerators for this piece of plant were installed and turned on in April, the lift pumps for the temporary return activated sludge system (a critical component) were not turned on until late July 2022. The stench was gone by mid-September.

Supply chain issues underestimated

Three Waters staff had a plan to repair the plant and hoped that those repairs could be achieved before April 2022. Logistical challenges saw this take until late July 2022.

Global supply chains and shipments started slowing in 2021 because of the COVID-19 pandemic, and got worse in 2022 as a result of the Russian invasion of Ukraine.

The potential for supply chain delays was foreseen in the risk register but the impact was underestimated. The risk management measure was to work closely with procurement staff and shipping agents. To be fair this was new territory for everyone - no-one could reasonably foresee a Ukraine War and the flow on effects.

Staff were emphatic that they did everything they could to expedite delivery of equipment - but this was within a conventional procurement and supply arrangement. Perhaps an ability to go straight to a preferred supplier, and a willingness to spend significantly more money earlier, to achieve priority status with freight services, might have made a difference. There was no sense of desperation.

The result

The potential scale and impact of the odours was understated, too much confidence was placed in the odour mitigation measures, and supply chain issues were

underestimated. We saw no evidence that reporting of major risks was being escalated within the organisation. The result was that the Elected Members and community were not aware that pond failure and odour production were significant risks. Nor was it made clear just how bad those odours could be.

If these issues had been recognised as serious risks, then the community could have been warned. Partner agencies could have been prepared, monitoring plans could have been put in place, and preliminary advice and support plans developed.

Even now the plant is far from being in robust condition. In a presentation on 30 May 2023 councillors were advised that staff have installed *a temporary 5-year solution … a highly lean temporary system, with no redundancy, operating at its operational limit … the lack of redundancy in the temporary systems means any failure in the plant, will affect the performance of the ponds.*

The communities of the eastern suburbs must not be put through this again.

4.2.4 Governance reporting

For the first months the reports were retrospective – only reporting on what had happened. Given the lead time for getting reports written, reviewed and agendas published, the information could be a month out of date.

Councillors were not getting the information they wanted and were feeling frustrated. They wanted to know what was happening in the community and what was planned. The level of questioning increased and sometimes *staff left the meeting with more questions not answered than answered.* The reporting to community boards was no better.

In late April the EMs addressed this themselves by requiring fortnightly updates on what was happening and what was being planned. The updates covered technical issues and community issues. A report was also presented each fortnight, that acted as a formal record of the information included in the presentation from two weeks earlier.

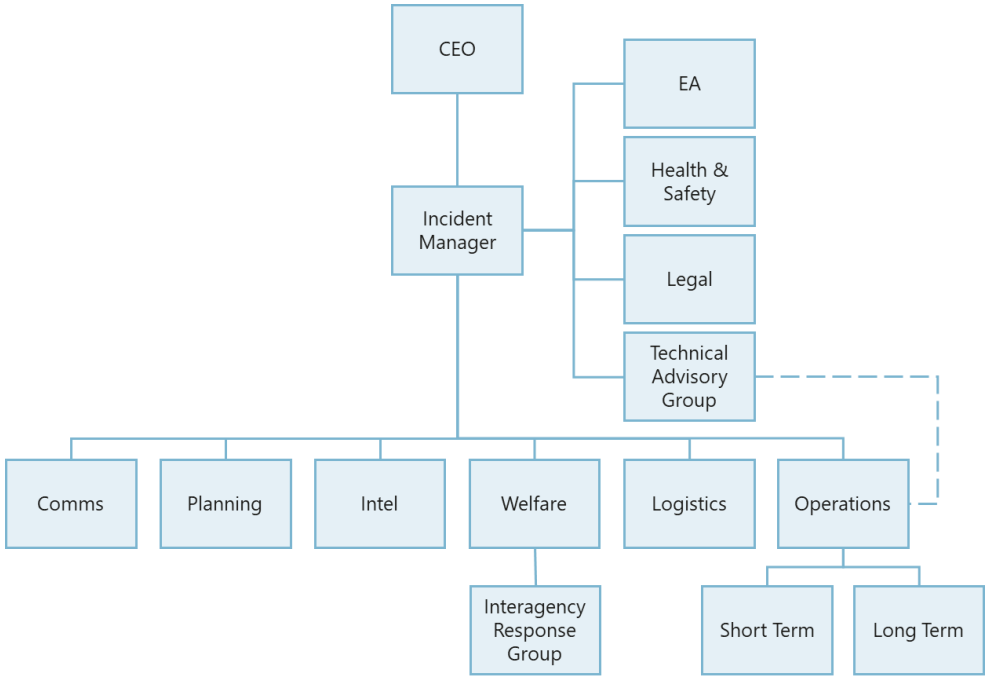
While this frequency of reporting placed considerable pressure on very busy staff, it was justified.

4.2.5 Key Finding: The response/recovery structure was inadequate.

While the initial fire response was managed by a small Incident Management Team (IMT), a Program Management Steering Committee (PMSC) was set up in mid-December 2021 to manage the response/recovery work. This was the most significant mistake made.

What we heard was that the Council is a large, hierarchical organisation with different arms of the organisation primarily focussing on their own activities. Establishing a PMSC gave the impression that this was a business-as-usual project.

The structure that should have been used for the IMT is shown in below and is based on the standard Coordinated Incident Management System (CIMS) model.



This structure offers significant benefits:

Priority	It would have conveyed to the organisation the scale and urgency of the work and made it clear that supporting the response was a priority. Regular attendance by the CE would have reinforced this message.
Resourcing	It would have ensured that resourcing challenges were quickly brought to the top table and facilitated discussions about other work that could be deferred.
Council expectations	Responding with a structure that has leads entitled Planning, Logistics, Intelligence, etc sends a message that this is not BAU, and cultural norms don't necessarily apply.

Roles and responsibilities	• One of the key roles of the Intelligence Team would have been to keep a register of complaints/notifications from every source and feed this through to the IMT. Staff would have had earlier warning of developing problems, there would have been less of a sense of optimism and a greater sense of urgency earlier on. • The addition of a Technical Advisory Group to the structure would have addressed the shortage of engineering/infrastructure expertise within the organisation, especially above fourth tier. It would have ensured that the IMT heard first-hand from a group of selected experts that could provide advice on operational and odour issues. This would have helped to address the poor assessment of risk and the initial sense of over optimism. • The standard CIMS structure would have given the Communications Team a seat at the top table straight away and given them a stronger voice in terms of pushing back on the overoptimistic messaging going out. • The addition of an Interagency Response Group would have sent a message that the Council was the lead agency and responsible for coordinating the efforts of all other agencies involved.
Risk management	• The structure of the risk register would have aligned with the structure of the IMT. There would be more likelihood that supply chain issues, pond failure and the risk of stench would have been recognised as serious risks. • The presence of a logistics team would have increased the chances of supply chain issues being identified as risk earlier. Better information combined with a greater sense of urgency would have increased the likelihood of the team being prepared to go straight to a preferred supplier and to spend more money to achieve priority status with freight services.

There were suggestions from some in the community that a state of emergency should have been declared and assistance requested from central government. A state of emergency is a legal declaration under the Civil Defence and Emergency Management Act, that provides local government with additional powers to deal with events that have proved beyond the capacity of the emergency services. This was not the case here – the emergency services were not overwhelmed. The response was always within the capacity of the Council to manage.

4.3 Contributing Factors

4.3.1 An organisation already under pressure

The organisation was coming to grips with a new third tier structure at the same time they were trying to respond/recover from the CWTP fire. The letters advising of the new third tier structure went out on the day of the fire.

The water treatment and wastewater treatment plants serving Banks Peninsula came off contract at the start of 2022 and were being brought back in house. While extra staff were being brought on board, the timing was unfortunate.

We were informed that annual staff turnover doubled from just over 10% in 2020 to over 20% in both 2021 and 2022.

The Council's average vacancy levels reached 9% in those two years. To fill some of the vacancies, Council had to recruit staff with less experience and then support them to grow into the roles. The vacancy numbers are likely to understate the overall loss of skill and experience.

The controls imposed during the COVID-19 pandemic meant there were restrictions on public gatherings, 50% of the organisation was working from home and isolation requirements for sick staff and close contacts exacerbated the staff shortages.

Global supply chains and shipments started slowing in 2021, because of the COVID-19 pandemic and got worse in 2022 as a result of the Russian invasion of Ukraine. It was not a good time to be trying to source large, bulky equipment.

The public debate over the size and cost of the Te Kaha multi-use arena and the decision not to adopt the Government's new density rules consumed considerable Council resources from August 2021 through to September 2022.

This was a very difficult time for an organisation to be agile and responsive to its community. The only thing that could have been done differently would have been to free up resources by specifically identifying work that could be stopped or deferred.

4.3.2 Lack of a relationships with partner agencies

We interviewed representatives from Environment Canterbury (ECAN), Community & Public Health / Te Mana Ora (CPH), the Ministry of Education (MoE), and the Early Learning Services (ELS). It seemed that the Council didn't have working relationships established with these agencies before the event and it was too late to be building relationships during the response.

After the initial fire response, fortnightly meetings were initiated with ECAN in early February , but there was little interaction with CPH until complaints started building up in March 2022. At that point there was a lack of clarity about who was the lead

agency. Neither ECAN nor CPH considered they were responsible for the type of monitoring and analysis required to answer the health questions that were starting to emerge. CPH had no funding to carry out this work and was reluctant to comment on health impacts until they had better information. Eventually, in late April the Council took the lead role.

This poor coordination between agencies played out while the community was desperate for answers about the health implications of the odours. At least four months were lost when these types of issues could have been sorted and answers for the most likely questions prepared in advance.

From the end of April onwards, CPH did provide valuable support to Council, from both a medical and social impact perspective.

The first contact that MoE and ELS had with the Council (the mayor) was not until mid-May. By then, schools and ELS had already been experiencing problems. Trying to keep the odour out of the classrooms required shutting doors and windows and running air purifiers (if they had them). COVID-19 controls required that windows be kept open for ventilation purposes.

The smell could be so bad that children didn't want to go outside and certainly didn't want to eat their lunch outside. In effect, every day was like a wet day - which placed more pressure on the staff and the children. Younger children would start gagging on the smell.

Once the Council did acknowledge there was a problem and started providing support to schools and ELS, things improved dramatically over the second five months:

- Regular updates started being provided. This was critical because schools and ELS are a trusted source of information to their communities.
- Grants were provided to schools and ELS to assist with the purchase of air purifiers and any other resources that may assist. This was much appreciated.

There has been little contact since the odour issues were resolved.

4.4 Positives

4.4.1 Some things went okay

Communications reference group

A Communications Reference Group (CRG) was established, which could have been a helpful mechanism for engaging with the affected communities. However, the terms of reference for the CRG caused tension. Staff interpreted the role of CRG was to provide input on Council communications, but this was not practical as website

information was being updated daily. Community representatives expected there would be more of an opportunity for an operational discussion – an update on significant issues coming up and a chance to ask questions that the community wanted answers to. Opportunities for genuine engagement were missed.

If the meetings were intended to start rebuilding a relationship between the Council and key opinion leaders within the affected communities, it didn't work. Community representatives felt they were being managed. There was a strong feeling that an independent chair/facilitator would have helped ensure the best outcome for all.

There was positive feedback about Community & Public Health / Te Mana Ora (CPH) attendance at these meetings. There was definite value in CPH being able to understand the issues first-hand and to be able to answer questions.

Compensation

The community support package agreed by the Council was a significant move to assist the affected communities.

Staff were asked to develop a community support package for consideration by Council at the start of May. Considering the work pressures, it was an impressive effort to develop a package including eligibility rules that was confirmed at the Council meeting of 26 May 2022.

However, many in the community felt that it was rushed and not well thought out. The zone boundaries were seen as arbitrary, South New Brighton was excluded and there were not enough Prezzy Cards at the start. These issues were eventually addressed but they detracted from a proposal that had good intentions.

Feedback from the community representatives we met suggested that while the support was accepted, it didn't make up for what they had been through. Most of the community representatives we spoke to would have preferred that the funding allocated to the support package had been spent earlier to speed up repairs and shorten the period they were exposed to the odours.

Four community groups partnered with the Council to manage the process of distributing the cards and they did a good job under stressful conditions.

A common piece of feedback we received here was that the Council lost an opportunity for their own staff to engage with the affected people, hand out the cards, hear their stories, answer their questions, and identify those that could benefit from further support and counselling. It is likely this wasn't considered an option because of the considerable workload this would have imposed on already stretched staff resources.

Iwi/Māori liaison

Early in the process, Council reports were forwarded to Iwi for their information. There was no feedback provided. A resignation of a key staff member and difficulty recruiting a replacement saw this supply of information cease.

There were no briefings or reports presented face-to-face with Iwi on the CWTP fire response. It is likely that Iwi would have a real interest in the effects of the fire and in particular the standard of compliance with the resource consent conditions for the wastewater outfall.

An Ocean Outfall community liaison group had been established but stopped meeting in 2017 due to poor attendance. The liaison group included representatives from Ngāi Tahu and Ngāi Tūāhuriri. This might have been a good time to restart the group.

The Ngā Hau e Whā National Marae is immediately adjacent to the CWTP. There was no direct contact with the marae.

4.4.2 Some things went really well

Technical response

The CWTP is the second largest in the country and has a book value in the order of $700 million (including the ponds). It is the largest single asset the Council owns.

Losing 60% of the biological oxygen demand (BOD) treatment capacity of the plant overnight was a near crippling blow. Council staff made wide ranging enquiries, but this situation was unprecedented.

The consensus from those that understood the challenge, was that the Three Waters team did an amazing job of keeping a badly damaged plant operating, delivering the service to the residents of Christchurch, and achieving a temporary repair by the end of July 2022.

The second five months (May – September 2022)

Once the Council recognised that this was a people issue far more than a technical challenge the performance improved dramatically. There was consistent positive feedback from those we interviewed:

- The contractors responsible for removing the burnt material from the trickling filters (TFs) were recognised for completing this challenging task ahead of schedule.
- Once the Citizens & Community Group (CCG) and, in particular, the Community Partnerships Team got involved at the end of April the relationship with the community started to improve. They did a great job.
- An Interagency Social Response Group was established by the CCG in June 2022 that helped coordinate the provision of support to the affected communities.

This group included representatives from Ministry of Education, MSD, CPH and Pegasus Health.

- Once it was recognised that air quality monitoring was required, the staff responsible did a good job of getting the right equipment and establishing a monitoring and reporting regime.
- Once the paint discolouration was acknowledged as an issue the staff response was outstanding. Mention was made several times of their willingness to come out to site and meet with concerned residents. These face-to-face meetings were very much appreciated. This was considered to be a good example of how to lead with a social response.
- The graphics produced by the Communications Team that showed how the CWTP operated and that provided updates on pond health received many favourable comments.

5 Conclusions

For the first six months after the fire, there was not enough consideration given to the risks of odours and how these might affect the neighbouring communities. Months were lost because the Council systems let them down:

1. The approach to risk assessment and risk management was too optimistic. The potential scale and impact of the odours was understated and too much confidence was placed in the odour mitigation measures. It was not made clear just how bad those odours could be.

   Elected members and the community were not aware that pond failure and odour production were significant risks until it was obvious. Even now, the plant is far from being in robust condition.

2. Complaints about odour never stopped from the day of the fire and started ramping up markedly in March 2022. However, there was no coordinated monitoring and reporting on incoming complaints. A valuable source of intelligence was left untapped, and the chance of an early warning was lost.

If these failings had been addressed, then the Council could have been warned earlier and responded faster. Partner agencies could have been prepared, monitoring plans could have been put in place, and preliminary advice and support plans developed.

The decision to manage the response using a Program Management Steering Committee was the most significant mistake made. A full-scale Incident Management Team (IMT) should have been established very early on in the process. The structure for the IMT should have been based on the standard Coordinated Incident Management System (CIMS) model, with fine tuning to meet the specific circumstances.

This structure would have conveyed to the organisation the scale and urgency of the work and made it clear that supporting the response was a priority. Regular attendance by the CE would have reinforced this message.

Even before the fire, the relationship between the communities of the eastern suburbs and the Council was strained. These communities don't have the same depth of advocacy resources as others in Christchurch. This meant it took a long time for the Council to hear the message and understand just how badly these communities were suffering. The relationship needs to be rebuilt.

These two key issues are addressed by recommendations. Other issues also adversely affected the speed and standard of the response, and they are addressed through suggestions for improvement.

6 Recommendations & Suggestions for Improvement

6.1 Recommendations

If the relationship between the communities of the eastern suburbs and the Council had been in a better state, it might not have taken so long for the Council understand how badly these communities were suffering. The relationship needs to be rebuilt.

Recommendation 1

That the Council:

1. **Prioritises** strengthening and sustaining effective and respectful relationships with the affected communities, so as to regain their trust and confidence. This should include:

    a) An agreed relationship management strategy
    b) Appropriate mechanisms for monitoring the health of the relationship
    c) Effective and appropriate channels for communication and engagement
    d) Clear accountability for the Chief Executive to ensure this is implemented within the Council organisation

An Incident Management Team (IMT) should have been established to manage the response and recovery. A structure based on the CIMs model would have conveyed to the organisation the scale and urgency of the work and made it clear that this is not business as usual, cultural norms don't apply, and supporting the response is a priority.

The structure of the risk register would have aligned with the structure of the IMT. There would have been more likelihood that supply chain issues, pond failure and the risk of stench would have been recognised as serious risks.

One of the key roles of the Intelligence Team (within the IMT structure) would have been to keep a register of complaints/notifications from every source and feed this through to the IMT. Staff would have had earlier warning of developing problems.

Recommendation 2

That the Council:

1) **Endorses** the use of an Incident Management Team (based on the CIMS model) as the standard response structure for significant/large scale events, recognising that fine tuning to the structure may be required in some circumstances,

2) **Requires** the Chief Executive to develop a process for determining when the IMT will be deployed, including:

   a) Assessment criteria,
   b) Delegations, and
   c) The mechanisms for ensuring Elected Members have timely visibility of the decision, and

3) **Requires** the Chief Executive to ensure the IMT model includes sufficient oversight such that Elected Members can be assured that:

   a) Resources and processes are sufficiently expedited,
   b) Community voice is being sought and considered in decision making, and
   c) Risks and issues are being escalated appropriately.

6.2 Suggestions for improvement

The suggestions for improvement have been sorted into categories that align with the key recommendations (Relationship with the Affected Communities and Readiness & Response) and then General Improvements.

Relationship with the affected communities

1. Council should ensure that the affected communities in the Eastern Suburbs receive regular progress reports on the project to replace the capacity lost through the fire damage to the trickling filters and updates on how the temporary repairs to the plant are performing. The design of the new plant should recognise the critical importance of odour control and resilience.
2. Council should ensure that the affected communities in the Eastern Suburbs receive regular progress reports on the project to relocate the Organics Processing Plant, which they see as closely related to the CWTP.
3. As part of the 2024 LTP process, Council should consider specifically engaging with the communities in the Eastern Suburbs to understand why they feel they are overlooked and develop plans to address this. This report includes suggestions about how to engage, but it would be worthwhile to work with the community representatives from the 2022 Community Reference Group to seek guidance on how best to go about this.
4. The Council should seek advice from Community & Public Health on how best to develop and fund counselling services for those still suffering from the stress induced by the stench caused by the CWTP fire. The community representatives from the 2022 Community Reference Group may be able to help with ways of identifying people in need of this service.

5. Council should ensure that copies of this report available is made readily available to the communities in the Eastern Suburbs, including in public libraries, community facilities and so on.
6. Council should consider establishing a CWTP liaison group. Ensure there is good representation from immediate neighbours (including the marae).

Readiness and response

7. Council should identify suitable candidates that can operate as the IMT work stream leads and ensures that suitable CIMs training is provided, documented, and reported to Council.
8. Council should develop a Communications & Engagement Strategy for such large-scale events that:
    - Recognises the importance of early face-to-face communication with affected communities. These are valuable opportunities to have conversations, answer questions, build trust and gain an understanding of the pressures people are facing.
    - Makes more use of Community Boards and local staff to engage with affected communities.
    - Makes more use of drop-in centres located within the affected communities, where residents can talk to subject matter experts about what is happening and get answers. These one-to one discussions also help to identify those that need extra support.
    - Makes more use of schools and early learning services to convey information – they are seen as trusted advisers.
    - Makes provision for the appointment of Navigators to assist and support those worst affected.
9. Council should work with key agencies such as MoE, CPH, Police, MSD, Oranga Tamariki and ECAN to establish a small Metropolitan Leaders Group where the leaders of each organisation meet at least four times per year to discuss key issues affecting Christchurch.

General Improvements

10. As part of the 2024 LTP process, Council should consider allocating a corporate budget to the Communications Team. This will ensure their voice is heard, that communications are accurate, and the reputation of the organisation is better protected.
11. Council should make more use of an independent Chair/Facilitator when establishing working groups/liaison groups that include community

representatives. The Council always needs to be aware of the perceived power imbalance in these situations.

12. The Chief Executive should be requested to implement a culture change programme that leads to greater transparency in the assessment and reporting of risks within the organisation.
13. Council should engage with Iwi and the Ngā Hau e Whā National Marae to gain a better understanding of how they would expect to be involved in the case of a similar event.
14. As part of the professional development of third and fourth tier managers Council should introduce training workshops designed to help staff manage the dual expectations of minimising liability and helping their community in times of crisis. Involvement by the CE and GMs is essential to help reinforce this message.
15. Council should consider reestablishing the Ocean Outfall Community Liaison Group (that includes iwi).

6.3 Process from here

Once the Council has considered this report and decided which recommendations and suggestions it wishes to implement, staff should be asked to present a proposed program of work. It is expected that all work should be underway within eighteen months.

Regular progress reports should be provided to EMs so that they can be assured that changes are being made.

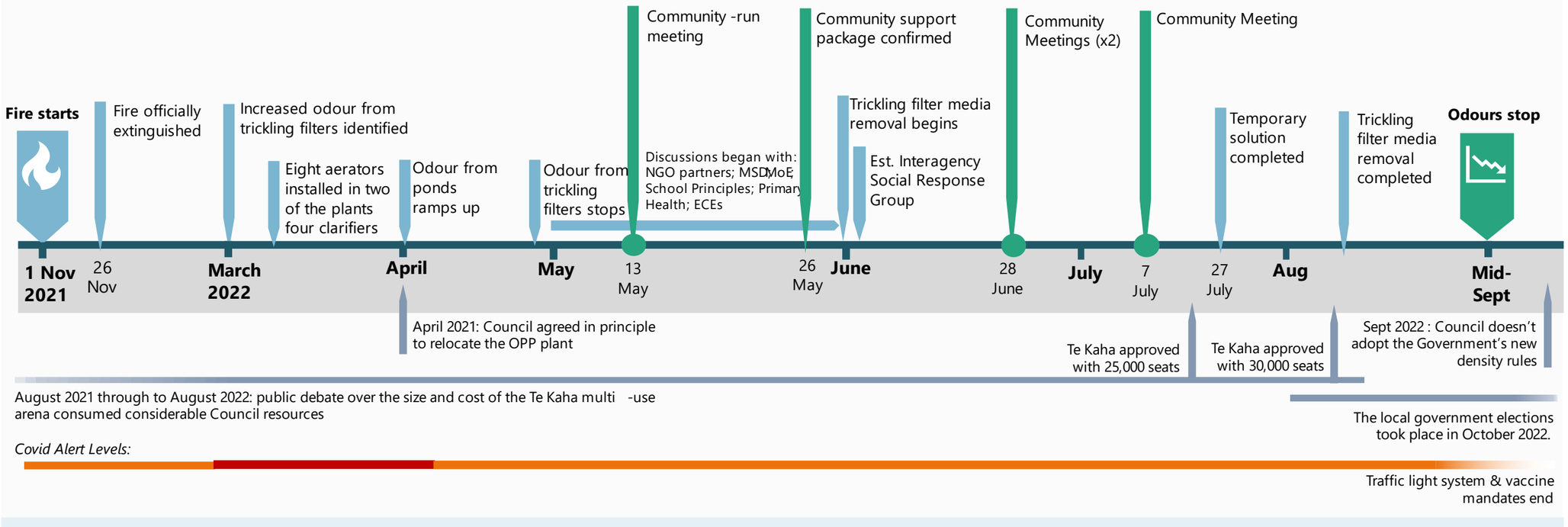
Some pieces of work are short-term, and it will be relatively straight forward to assess if the work has been successfully completed. Other work will take some time to have an effect and other measuring techniques will need to be considered, however regular reporting to the affected communities about progress with implementation of the recommendations will assist in rebuilding trust and repairing the relationships. This must remain a focus for the Council.

A follow up review to assess progress in responding to these findings in 12 to 18 months could be considered.

7 Appendices

7.1 Appendix 1: High-Level timeline

High-Level timeline of events:



7.2 Appendix 2: Council's Detailed timeline of events

1 Nov 2021

Emergency Services respond to a fire at the Wastewater Treatment Plant in Bromley. Both of the trickling roof filters collapse

The damage can't be assessed properly until the fire is completely out

2 Nov 2021

The Council install polymer dosing to increase removal of solids from the wastewater

4 Nov 2021

The Council installs a sprinkler system to get rid of hot spots and help reduce the smell

The Council also begins working on an adaptive management plan to figure out the best possible outcome for the discharge of wastewater from the plant

26 Nov 2021

The fire is officially completely extinguished by the fire service

The Council identifies the need to remove the two trickling filters. Both filters store 13,000 cubic metres of material

The Council starts using misters

6 Dec 2021

The Council completes a successful trial to remove a section of the fire-damaged media from the plant This means that the Council can begin assessing the stability of the structures

17 Dec 2021

Council staff plan to convert two of the plant's four clarifier tanks (or secondary contact) into aeration tanks

Installing four aerators in each of the two tanks will help decrease the bad smells and improve the quality of the wastewater being discharged

The Council anticipates that it will be years before the trickling filters can be replaced or rebuilt

14 Feb 2022

Aeration components begin to arrive and we're able to implement our interim plan to minimise odours from the fire-damaged plant

16 Mar 2022

Eight aerators are installed in two of the plant's four clarifiers

Soon afterward, increased odours from the trickling filters are detected after wet weather. It's determined that the acute stench is caused by the material inside the trickling filters rotting and drying out

6 Apr 2022

The aerators installed in March are turned on

12 April 2022

The Council decides to fast-track the appointment of a contractor to remove the burnt filter material from the Bromley Wastewater Treatment Plant

28 April 2022

Council request a community support plan

3 May 2022

Independent testing to better understand the odours from around the fire-damaged Christchurch Wastewater Treatment Plant detects small amounts of hydrogen sulphide and methyl mercaptan.

May 2022

Filter media removal work

1 May 2022

Community Team asked to develop community support package

2–6 May 2022

Community NGO partners identified and agree to partner with Council

13 May 2022

Community-run meeting

May 2022

Discussions with MSD initiated

19 May 2022

Meeting with Ministry of Education

- **26 May 2022** — Council confirms community support package for 3,380 of the most-affected residents
- **27 May 2022** — Meeting with school principals
- **30 May 2022** — Support package distribution starts
- **May 2022** — Discussions with Primary Health initiated
- **31 May 2022** — Meeting ECEs
- **7&8 June 2022** — Evening sessions for residents
- **June 2022** — Interagency Response Group regularly meets to develop plan
- **June 2022** — Discussions with CDHB re funding options initiated
- **3 June 2022** — Southern Demolition and Salvage Limited conduct a test run, removing and transporting the burnt trickling filter material on Friday 3 and Saturday 4 June
- **6 June 2022** — Work to remove the trickling filter begins
- **26 May 2022** — Council confirms community support package for 3,380 of the most-affected residents

- **28 June 2022** — Community meetings x 2
- **7 July 2022** — Community meeting
- **13 July 2022** — Webinar
- **27 July 2022** — Interim solution completed at the plant
- **29 July 2022** — Paper to Council for decision regarding extending the zone
- **July 2022** — Drop-in session
- **Aug 2022** — Filter media removal expected to be completed
- **3 Aug 2022** — Council considers additional funding, for targeted support
- **Aug 2022** — Household letterbox drop
- **Aug 2022** — Health information webinar
- **Mid Sept 2022** — Odours expected to be significantly reduced

7.3 Appendix 3: The people we met with

Name	Role/Representing
Adam Twose	Council Staff (current or former)
Adrian Seagar	Council Staff (current or former)
Andrew Turner	Former Deputy Mayor
[redacted]	Community Representatives
Annette McGowan	Community Representatives
[redacted]	Council Staff (current or former)
[redacted]	Kids First Kindergartens
Celeste Donovan	Elected Members (current or former)
[redacted]	Ngai Tahu
Cheryl Brunton	Community & Public Health
[redacted]	Ministry of Education
Dawn Baxendale	Chief Executive
[redacted]	Council Staff (current or former)
Don Gould	Community Representatives
Elizabeth Neazor	Council Staff (current or former)
Gary Watson	Council Staff (current or former)
Gijs Hovens	Council Staff (current or former)
[redacted]	Community Representatives
Jackie Simons	Elected Members (current or former)
[redacted]	Community Representatives
Johannes Welsch	Environment Canterbury
Katy McRae	Council Staff (current or former)
Kelly Barber	Elected Members (current or former)
Kelly Gibson	Community Representatives
[redacted]	Ngā Hau e Whā National Marae
[redacted]	Environment Canterbury
Kurt Scoringe	Council Staff (current or former)
Lianne Dalziel	Former Mayor
Louisa Taylor	Community Representatives
Lucy De-Ath	Community & Public Health
[redacted]	Kids First Kindergartens
[redacted]	Community Representatives
[redacted]	Environment Canterbury
Mary Richardson	Council Staff (current or former)

Michael Croucher	Council Staff (current or former)
Nigel Grant	Council Staff (current or former)
[redacted]	Ngā Hau e Whā National Marae
Paul Durie	Community Representatives
Paul McMahon	Elected Members (current or former)
[redacted]	Community Representatives
[redacted]	Ngā Hau e Whā National Marae
Sam MacDonald	Elected Members (current or former)
[redacted]	Community Representatives
Sarah McKay	Community Representative
Sean Rainey	Council Staff (current or former)
[redacted]	Kids First Kindergartens
Simon Makker	Council Staff (current or former)
Stephen McPaike	Community Representative
[redacted]	Community Representative
Tim Drennan	Council Staff (current or former)
Vickie and Andy Walker	Community Representative
Yani Johanson	Elected Members (current or former)

7.4 Appendix 4: List of documents provided by CCC

Outlined below are all the documents that provided by CCC.

Communication Strategies:

- Bromley Wastewater infographic – "Oxidation ponds health tracker" (August 2022)
- Bromley Wastewater infographic – "Oxidation ponds health tracker" (July 2022)
- Bromley Wastewater infographic – "Oxidation ponds health tracker" (November 2022)
- Bromley Wastewater infographic – "Oxidation ponds health tracker" (September 2022)
- CCC Bromley Community Support Fund A5 booklet – "Wastewater Treatment Plant Fire Support Package" (May 2022)
- CCC Communications plan – "Wastewater Treatment Plant Fire - Removal and disposal of material, Hurunui & Waimakariri districts" (31 May 2022)
- CCC Communications plan – "Wastewater Treatment Plant fire mid-term recovery plan" (Updated May 2022)
- CCC Draft Communications plan – "Paint Discolouration" (October 2022)
- CCC flyer – "Christchurch Wastewater Treatment Plant: Fire update" (November 2021)
- CCC flyer – "Important health information" (August 2022)
- CCC flyer – "Update on the Christchurch Wastewater Treatment Plant" (May 2022)
- CCC flyer – "Wastewater treatment plant fire update" (January 2022)
- CCC House discolouration poster A3 – "Do the walls of your home look like this?" (October 2022)
- CCC newspaper ad – "Update on the Christchurch Wastewater Treatment Plant" (May 2022)
- CCC Notice – "SWN Wastewater Treatment Plant – trickling filter material removal"
- CCC Wastewater fire update mailout – "Wastewater Treatment Plant recovery update" (August 2022)

Council Briefings:

- CCC council briefing – "Bromley Odour Update" (February 2023)
- CCC council briefing – "Bromley Odour Update" (n.d.)
- CCC council briefing – "Community Support: Response to Waste Treatment Odour" (May 2022)
- CCC council briefing – "Community wellbeing response to WWT fire" (July 2022)
- CCC council briefing – "CWTP Process Options Assessment" (August 2022)
- CCC Wastewater Treatment Plant – Community Wellbeing Response (July 2022)

ELT & Council Memos:

- CCC memo – "Bromley update - organics processing plant and wastewater treatment plant" (28 April 2022)
- CCC memo – "Christchurch wastewater treatment plant - effluent discharge quality" (23 May 2022)
- CCC memo – "Christchurch Wastewater Treatment Plant – flooding event" (15 July 2022)
- CCC memo – "Christchurch Wastewater Treatment Plant - recovery of oxidation ponds" (11 July 2022)
- CCC memo – "Christchurch Wastewater Treatment Plant Fire - Location of odour complaints" (1 March 2022)
- CCC memo – "Odour Analysis from Christchurch Wastewater Treatment Plant" (2 May 2022)
- CCC memo – "Recovery plan for interim operation of the wastewater treatment plant" (16 December 2021)
- CCC memo – "Recovery progress at the Christchurch Wastewater Treatment Plant" (8 April 2022)
- CCC memo – "Support package for Bromley residents to be considered at Finance and Performance Committee" (20 May 2022)
- CCC memo – "Update on the Christchurch Wastewater Treatment Plant" (28 March 2022)
- CCC memo – "Wastewater Treatment Plant – Update" (23 November 2021)
- CCC memo – "Wastewater Treatment Plant blog updates - 3 June 2022" (3 June 2022)
- CCC memo – "Wastewater treatment plant update" (3 March 2023)
- CCC memo – "Wet weather overflow consent (CRC182203): Non-compliance challenges" (3 February 2022)

ELT Minutes & Briefings:

- CCC Briefing to the Chief Executive – "Wastewater plant - interim operations following the fire" (11 November 2021)
- CCC Executive Leadership Team – "5. Christchurch Wastewater Treatment Plant Process Options Assessment: Progress Report" (27 July 2022)
- CCC Executive Leadership Team – "6. Response to Wastewater Treatment Plant fire" (10 August 2022)
- CCC Executive Leadership Team – "8. Christchurch Wastewater Treatment Plant Process Options Assessment: Permanent Recovery Recommendation"
- CCC Executive Leadership Team – "8. CWTP Procurement Options" (6 April 2022)
- CCC Executive Leadership Team – "8. WWTP Update" (29 June 2022)
- CCC Executive Leadership Team open minutes (10 August 2022)
- CCC Executive Leadership Team open minutes (26 October 2022)
- CCC Executive Leadership Team open minutes (27 July 2022)
- CCC Executive Leadership Team open minutes (29 June 2022)
- CCC Executive Leadership Team open minutes (6 April 2022)

- CCC Executive Leadership Team open minutes (6 July 2022)
- CCC memo – "Contractor Health, Safety and Wellbeing Events – CWTP" (14 July 2022)
- CCC memo – "Wastewater treatment plant fire - operational response" (4 November 2021)

Other Documentation:

- "2022 Wastewater treatment plant fire recovery – Council communications outputs" (n.d.)
- "Sewer Crisis: Community data on health effects of CCC owned facilities" (June 2023)
- "Three Waters Org Chart" (16 March 2023)
- CCC – "Christchurch City Council Delegations Register: Legal Services" (17 March 2023)
- CCC – "Christchurch Wastewater Treatment Plant: Community Board Briefing" (15 August 2022)
- CCC – "Update on Christchurch Wastewater Treatment Plant's Trickling Filter Short Term Solution" (30 May 2023)
- CCC Programme Management Steering Committee – "Christchurch Wastewater Treatment Plant Recovery and Rebuild Programme: Programme Management Plan" (n.d.)
- Engeo Limited – "Bromley Black Staining and Mould Investigation" (28 July 2022)
- Jacobs – "Air Quality Monitoring: CWTP and Surrounding Suburbs, Winter 2022 Odour Event, SiFT-MS Sampling Programme" (28 February 2023)
- Resilient Organisations – "CCC Bromley Response: Reflections and Options for Consideration" (24 August 2022)
- Spreadsheet - Hybris Wastewater Treatment Plant Complaints (n.d.)

7.5 Appendix 5: Reports of Odour Nov 21 – March 23

Month	ECAN Smelt-It App	Genesys Interactions	Hybris Complaints	Total
Nov-21	846			**846**
Dec-21	259			**259**
Jan-22	102			**102**
Feb-22	102			**102**
Mar-22	427			**427**
Apr-22	1643		76	**1719**
May-22	5613	118	285	**6016**
Jun-22	1565	549	78	**2192**
Jul-22		115	0	**115**
Aug-22		367	13	**380**
Sep-22		120	12	**132**
Oct-22		5	0	**5**
Nov-22		6	1	**7**
Dec-22		0		**0**
Jan-23		1		**1**
Feb-23		0		**0**
Mar-23		2		**2**
Total	**10557**	**1283**	**465**	**12305**

Notes;

a. Council initially had access to the Smelt-It App raw data up until 14 June 2022 when access was stopped over concerns regarding data security. Complaints were still coming in after 14 June, but the data cannot be accessed.

b. An examination of the Smelt-It App record shows a fair percentage of the early complaints related to odours from the OPP, or used burnt plastic and smoky/woody/resinous as descriptors. By late November sewer odour and faecal/sickening were the most common descriptors of the smell.

c. The Smelt-It App asks users to rate the smell on a 0 – 6 scale. The top end of the scale looks like this:

   3. I can't use my outside areas - if I keep the windows closed its OK inside.
   4. I can smell the odour inside my house.
   5. I can't use my house for certain activities because of the smell.
   6. I don't want to be at home because of the odour.

   The average rating of complaints logged was 4.5, which is very bad.

7.6 Appendix 6: Restrictions

This report is issued pursuant to the terms and conditions set out in our contract dated 21 February 2023.

3.1.1 Purpose of the report

This report has been prepared solely for the purposes stated in this report and should not be relied upon for any other purpose. We accept no liability to any party should it be used for any purpose other than that for which it was prepared.

3.1.2 Disclaimer

The statements and opinions expressed in this report have been made in good faith, and on the basis that all information relied upon is true and accurate in all material respects, and not misleading by reason of omission or otherwise.

The statements and opinions expressed in this report are based on information available as at the date of the report.

We have not independently verified the accuracy of information provided to us, and have not conducted any form of audit in respect of the organisation for which work is completed. We express no opinion on the reliability, accuracy, or completeness of the information provided to us and upon which we have relied.

Any investment or other decisions taken in response to this report are the responsibility of the client, and not Tregaskis Brown Ltd or its employees. Therefore, any liability of Tregaskis Brown Ltd and our representatives is limited to not exceed the fees paid to us under the terms and conditions set out in our contract.

3.1.3 Future Amendments

We reserve the right, but will be under no obligation, to review or amend our Report, if any additional information, which was in existence on the date of this report, was not brought to our attention, or subsequently comes to light.