

CHALLENGES AND OPPORTUNITIES RELATING TO INTEGRATING STORMWATER OPERATIONS FOR THE AUCKLAND REGION

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ABSTRACT

The Auckland Council is responsible for operating and maintaining the largest public stormwater system in New Zealand, with a total asset value of \$2.5 billion, which consists of 8,300 km of streams and open channels, 6,500 km of piped network, 87,200 manholes, 2,500 ground soak holes, 170 treatment devices, 370 dry and wet ponds, 30 wetlands, and thousands of private on-site stormwater management devices, which are not owned by the Council, but form an integral part of the entire stormwater system for the region. Proper operation and maintenance of these systems is critically important for minimising flooding risk and preventing environmental deterioration.

The merging of all local authorities creates a unique opportunity to integrate its stormwater operations for the Auckland region. However, we also face unprecedented challenges in doing so. This paper outlines the major challenges facing us in the integration process. These challenges are due to regional variation and unbalanced development in the following areas:

- Environmental sustainability
- Building one team
- Separating stormwater from a Three Waters model
- Developing region wide Incident Response Plan
- Reporting on Requests for Service
- Aligning delivery models
- Aligning stormwater operational contracts
- Defining ownership and maintenance responsibilities between the stormwater unit and other key stakeholders
- Defining public and private stormwater assets
- Building a knowledge base of stormwater assets
- Design standards for public stormwater infrastructure
- Responding to non stormwater related issues
- Stormwater bylaw and enforcement
- Managing public expectations on stormwater services and agreed levels of service
- Aligning safety strategies
- Providing financial and business support

The paper also summarises the initiatives and approaches, which have been taken or will be taken to overcome the above challenges in integrating stormwater operations for the region. The Key performance Indicator (KPI) results in relation to customer services over the past four months indicate that these initiatives and approaches are successful as the new Auckland Council Stormwater Unit maintains its business as usual. The challenges for stormwater operations are now to improve on this delivery after the initial transition period.

Please note that this paper presents the views, opinions and experiences of the authors. It does not necessarily reflect the views of Auckland Council.

KEYWORDS

Stormwater Operations, challenge, integration, consolidation, safety, best practice

1. INTRODUCTION

The stormwater operations group of Auckland Council is responsible for operating and maintaining the largest public stormwater system in New Zealand. This system accounts for more than one-third of New Zealand's public stormwater infrastructure with a total current asset value of \$2.5 billion (Total optimised replacement value being \$4 billion). The system serves 460,000 properties with 1.4 million people. It consists of:

- 8,300km of streams and open channels
- 6,500km of piped network
- 87,200 manholes
- 2,500 ground soak holes
- 170 treatment devices
- 370 dry and wet ponds
- 30 wetlands

Note that there are about 90,000 catchpits in the region, which play an important role for collecting surface runoff and sediment control, particularly from road runoff. However, most of them are within road reserves or public car parks and while these are currently maintained by Auckland Transport (AT), a Council Controlled Organization (CCO), responsibility for these will progressively transfer to the Auckland Council Stormwater Unit from July 2012.

Auckland Council's public stormwater system comprises nearly all types of stormwater assets installed in New Zealand, including:

- Pipes and manholes
- Lined and unlined channels
- Stormwater ponds (wet ponds for quality improvement and attenuation)
- Constructed wetlands
- Detention tanks and ponds (dry ponds)
- Rain gardens
- Swales
- Tree pits
- Floating islands
- Sand filters
- Coarse pollutant separators
- Catchpit filters
- Flood gates
- Ground soakage pits and tunnels
- Stormwater treatment plants to provide non portable water supply
- Pump stations
- Inlets and outlets

There are 8,300 km of streams and open channels and thousands of private on-site stormwater management devices in the Auckland region. Most watercourses and on-site stormwater management devices, are not owned by the Council, but form an integral part of the region's entire stormwater system. Proper operation and maintenance of these systems is critically important for minimising flooding risk and preventing environmental deterioration (Tian *et al*, 2003, 2005).

Stormwater operations has also inherited some non-stormwater related functions to manage in some areas where there were peculiarities in the maintenance contracts or service delivery while we resolve hand over to appropriate Auckland Council departments and CCOs. These included but

are not limited to managing a septic tank cleaning contract, managing wastewater pumping stations, and water treatment plants for Auckland Council Parks.

It is also important to note that across the Auckland region we have:

- A mixture of urban and rural areas;
- Varied geology and soil conditions, from volcanic to highly erodible silts;
- Socio-economic diversity giving rise to different service level expectations;
- Extensive coastline covering both the east and west coasts of New Zealand;
- Some of the highest population growth areas in New Zealand; and
- Both localised and widespread rain events.

The merging of one Regional, four City, and three District Councils on the 1st November 2010 created a unique opportunity to integrate stormwater operations for the entire Auckland region. However, we also face a number of significant challenges in doing so, many of which had to be embarked on well before the 1st November. Some of these include but are not limited to the following:

- Environmental sustainability regarding legacy Council's vision and strategic platforms.
- Building one team by promoting a common culture and vision within a group which is spread over seven locations as well as integrating new staff and filling knowledge gaps left by staff no longer with Auckland Council.
- Separating stormwater management from water and wastewater, including duplication of asset management databases, splitting maintenance contracts, duplication of call centre processes, re-scripting call centre processes, and separating incident response plans.
- Development of a region wide Incident Response Plan to ensure a coordinated response to major events and define responsibilities between the Stormwater Unit, Civil Defence, CCO's and contractors.
- Reporting on Requests for Service by developing a common process and classification across the region to ensure all requests are responded to in a timely manner and levels of service are maintained.
- Aligning delivery models including levels of service, during the procurement process, taking into account the strategic direction of Auckland Council, Infrastructure and Environmental Services and the Stormwater Unit.
- Aligning stormwater operational contracts and procurement strategy by rationalising the number of contracts, defining contract boundaries, differences between rural and urban areas, timeframes, as well as alignment with other service providers such as Auckland Transport (AT) or Watercare.
- Ownership and maintenance responsibility between the Stormwater Unit and other key stakeholders, such as AT and Watercare.
- Defining public and private stormwater assets by aligning the different approaches taken by legacy Councils.
- Building a knowledge base of stormwater assets and establishing a regional registers of critical assets including operation and maintenance manuals.
- Design standards for public stormwater infrastructure by taking an active lead in influencing standards to ensure assets are easily maintained and cost effective.
- Responding to non stormwater related issues.
- Stormwater bylaw and enforcement by taking a key role in the preparation of new bylaws to protect public stormwater assets, maintenance of private stormwater systems, and protection of watercourses.
- Managing public expectations on stormwater services and agreed levels of service.

- Aligning health and safety and environmental strategies.
- Providing financial and business support using a decentralised structure.

A clear understanding of these challenges is the first step in integrating stormwater operations for the region. Some of these have already been addressed or are in the process of being addressed. This paper analyses these challenges in detail. It also summarises the initiatives and approaches which are being or will be taken to overcome the above challenges.

2. MAJOR CHALLENGES AND APPROACHES TO OVERCOME THEM

2.1. ENVIRONMENTAL SUSTAINABILITY

There have been varying levels of sustainability approaches in the legacy Councils. Some legacy councils had greater focus on in particular stream maintenance, inlet and outlet maintenance, while others had less. Some legacy councils had a higher consideration to "soft" solutions, e.g. planting as part of the overall solution, using sustainable products like living walls, whilst others used hard engineered solutions. Looking into the future, stormwater operations will have to align with Auckland Council's long term vision and its commitment to sustainability. This key driver will have to be included in all facets of work including sustainability awareness by stormwater operations staff and that consideration of sustainable solutions are clearly built into maintenance contracts. Delivery of these sustainable solutions need to be balanced with the actual cost to the ratepayer.

2.2. BUILDING ONE TEAM

The Auckland Council Stormwater Unit has been based on functional groups with a three area service delivery model as follows:

- North – This includes what used to be Rodney District Council and North Shore City Council.
- Central/ West – This includes what used to be Auckland City Council and Waitakere City Council.
- South – This includes what used to be Manukau City Council, Franklin District Council, and Papakura District Council.

As some of the previous organisations had formed CCOs for the management of water, wastewater and stormwater, being Metrowater and Manukau Water, in addition to stormwater staff from the legacy Councils, stormwater staff from these organisations joined the stormwater unit.

The stormwater operations team is required to respond locally, hence we have team members located across seven locations in Auckland, being Orewa, North Shore, Waitakere, Three Kings, Manukau, Papakura, and Franklin. Not being in one location makes getting a sense of "team" with staff members more challenging. The operations management team is moving weekly meetings around the offices to ensure that all locations are visited so that the staff are made to feel included and an integral part of the stormwater business.

It is also important to note that while the transition to one organisation happened on the 1st November 2010, this was only the first step of what will be an ongoing transition process. The danger that we face by not maintaining a momentum of change is that we risk people becoming comfortable in what is a state of transition as the permanent situation. This means that people are largely in the locations that they were in previously, more or less doing what they have always done but with a different reporting line.

Equally important is to ensure that the transition is not perceived to be a “take over” by one or more of the legacy Councils, either on a large or small scale, but rather a new organisation with its own culture and values. Managers need to be aware of this and ensure that they are respectful of how people from legacy Councils do things rather than pushing the approaches that they are familiar with. In the operations group we are encouraging all team members to share their approaches, ideas and thoughts with the aim of finding the group agreed overall best approach to implement region wide.

In moving to a more regional mode of operation and making the stormwater operations team more of a “team”, we are exploring options of rotating some staff around offices to get exposure to how things are done in different locations and also get to know the people. This also serves the dual purpose of building regional response capability into the group.

As with any amalgamation or major change process, institutional knowledge is lost when key staff leave. As a whole, the stormwater operations team has been very lucky in retaining critical key staff in most areas but unfortunately we have lost some through the process. Along with managing for this, we also need to be prepared for future potential losses as people decide to take up new opportunities. We need to carefully manage this risk by capturing as much knowledge as possible and building some redundancy into the team, whereby more than one team member is familiar with any part of the region and associated processes.

2.3. SEPARATING STORMWATER FROM A THREE WATERS MODEL

Historically in most of the legacy councils and CCOs, stormwater had been managed in conjunction with water and wastewater, often in a three waters approach. While stormwater transferred to the Auckland Council in the transition, water and wastewater transferred to Watercare. The Auckland Transition Agency (ATA) stormwater working group, and once appointed, the new stormwater unit management team, preparation for transition was significant and included:

- Duplication and separation of Three Water Asset Databases.
- Obtaining copies of all Three Waters files from the legacy Councils to ensure that the stormwater records did not transfer to Watercare without Auckland Council Stormwater Unit being left with copies.
- Separating stormwater from water and wastewater in the operational contracts. This was necessary for Rodney, North Shore, Waitakere, Auckland City and Franklin and in some instances took a whole year of negotiation. In one case it was not successfully completed prior to transition and is requiring ongoing negotiations now by the Stormwater Operations Group.
- Duplication and separation of call centre processes. This was particularly the case for Manukau Water, where the call centre was transferred to Watercare and prior to the 1st November it was necessary to put in place and trial a system for managing stormwater related calls in Manukau.

- Reviewing and revising call centre scripting and testing thereof to ensure that on the 1st November 2010 any stormwater related calls ended up being put through to Stormwater Operations Group or their operations contractors.
- Separating Incident Response Plans.

While many of these challenges have been resolved, there are still many ongoing challenges that still need to be understood and managed.

2.4. DEVELOPING A REGION WIDE INCIDENT RESPONSE PLAN

Before the amalgamation, all legacy Councils had their own Incident Response Plans. However, these plans only covered responses to incidents within a part of the Auckland region and most of the stormwater incident response plans were combined with water and wastewater. When a major incident, e.g. a heavy storm event, impacts Auckland, a coordinated region wide response is required to cope with it. Establishing a region wide incident response was particularly important during the first few months after amalgamation.

A region wide Incident Response Plan was prepared and an exercise was conducted to test the plan prior to the establishment of the new Auckland Council. This plan enables the Council to respond to a region wide incident, particularly a heavy storm, in an efficient and coordinated manner. The focus was to establish a good escalation process, collating all important contact details, and reporting.

The Council's response to the heavy storms on 23rd and 29th January 2011, of which the rainfall intensities exceeded rates predicted for 1 in 100 year events during the most intensive part of this storm for the northern area, proved that this plan worked well. Improvements are being implemented based on the lessons learnt from these storm events, including focusing on improvement of communication and clarification of roles and responsibilities between Council's Civil Defence Department and the Stormwater Unit.

We are also building a regional response capability in to the group. To do this we are currently:

- Drawing up agreements with our operation and maintenance contractors to agree to be available to respond to incidents outside of their current contractual areas in the event that one of the other contractors is overloaded due to a localised event hitting very hard in a particular area.
- Having the stormwater operations team leaders working closely together and familiarising themselves with each others areas so that any of them can step into managing the response of another area if necessary.
- Rotating staff around offices to learn how each other are doing things so that if needed, they can be called upon to assist.
- Putting an agreement in place with the stormwater project engineers, to assist the operations group during events if needed.
- Having discussions with AT about establishing a combined regional emergency response agreement and capability. A similar discussion may also be pursued with Watercare in the future.

Improving and refining our incident response capability will be an ongoing focus for the operations group and the regional response capability will be improved as service delivery models, levels of service, operational contracts, etc are aligned regionally.

2.5. Reporting on Requests for Service (RFS)

One of the key drivers through the transition was to ensure that there was no deterioration of levels of service and that all customer requests were responded to. As the stormwater operations group are on the coal face of this, we needed to develop and have in place a process of reporting all of our RFS across the region, categorise them into urgent, health and safety, and non urgent, and report if the response KPIs had been met.

The challenges that were encountered included:

- Call Centre processes differ in the seven areas.
- All of the legacy Councils used different systems of recording an RFS – even the three that use the Hansen asset management system have different versions and completely different job codes and processes.
- The RFS systems are categorised differently.
- What constitutes an RFS in the system differs.
- The response delivery models differ – i.e. contractor versus a stormwater operations group member as some legacy Councils are more heavily outsourced than others.
- Getting the information of the systems is a highly manual task requiring differing levels of effort.
- The response KPIs are different.

The stormwater operations team has collated and prepared a weekly report from 1st November. This report provides, on a regional basis, how many urgent requests were received, whether or not the response KPIs were achieved (with the knowledge that across the region the response times vary), along with the percentage of RFS measures that achieved the response KPI.

Our RFS reporting is evolving as we continually improve and review what we are reporting and how we are reporting information. Along with this, we are trying to standardise processes as much as possible within the constraints of different systems, contractual KPIs, and call centre processes. Ultimately, the long term goal is to standardise and automate reporting which will be made easier with one corporate asset database and customer services module across the whole region.

2.6. ALIGNING DELIVERY MODELS

The seven legacy councils in the Auckland region had developed and implemented varying delivery models. In terms of stormwater, some Councils were heavily insourced while others were largely outsourced with others divesting the management responsibility to CCOs. In most cases, as mentioned previously, stormwater was managed with water and wastewater in a three waters approach, however, this was not the case in all areas. During the transition, the organisational structure for the new Auckland Council Stormwater Unit was largely built based on accommodating the legacy delivery models and taking the current FTEs forward. For stormwater operations this has specifically meant that in some areas we have larger teams for what is covered in other areas by smaller teams with the operations and maintenance contractors doing more of the work.

Response to RFS were dealt with differently, where in some legacy Councils this went directly to the contractors in the first instance and in other areas first to an in-house response team of “field officers”. As a result, the stormwater operations group now has field officers in some teams but not in others.

The extent of stormwater management responsibility varied across the region. For example, in some instances, legacy council’s took responsibility for management of pipe connections to the house from the road boundary where others deemed this private to the public network connection. Similarly, what was managed by the Stormwater departments versus other departments, such as say streams or ponds on Council Parks also varied.

In attempting to align our delivery models regionally, we need to consider that:

- Many of the current delivery models are tied up in contracts and the opportunity to sensibly align these is when we procure new operational contracts. This is complicated as in some instances these are also tied up in contracts of other Auckland Council departments or CCOs.
- The potential staff implications particularly given that the team have just been through a major restructure and there is no willingness to make changes to the structure in the near future.
- The strategic direction that Auckland Council and the Stormwater Unit want to take in terms of “in” versus “outsourced” service delivery.
- Alignment of levels of service.
- Alignment of operations and maintenance contracts.

The stormwater operations group are working to streamline and standardise delivery models as much as possible within the constraints and considerations listed above, recognising that moving to a region wide approach is an ongoing transition process.

2.7. DEFINING OPERATION AND MAINTENANCE RESPONSIBILITIES

Several key stakeholders are involved in the creation, operation and maintenance of the region’s stormwater systems, including:

- AT
- Watercare
- Auckland Council Parks
- Auckland Council Regulatory and Building Control

AT holds the responsibility for about 90,000 catchpits within public road reserves and car parks. These catchpits are the “starting” points of the stormwater reticulation network. Whether these catchpits are in good working conditions directly affects the performance of the stormwater network. Past experience indicates that, of all urgent stormwater related service requests received by the legacy councils, about 60% of them are catchpit related. AT also owns culverts underneath public roads and many stormwater management devices within road reserves. An agreement that has recently been signed off between the Chief Executives of Auckland Council and AT will see the operation and maintenance of

these catchpits, along with road flooding response transferred to the Auckland Council Stormwater Unit.

The transition in the transfer of this responsibility will in itself bring some significant challenges to the stormwater operations group and require us to work very closely with AT and other council units.

There are currently about 250 km of combined sewers, which are owned and maintained by Watercare. The operation and maintenance of these combined sewers not only affects the performance of Auckland's wastewater system, but also the stormwater system in particular impact in the publically vested streams in Auckland's isthmus.

Auckland Council Parks are responsible for many natural watercourses running through council reserves. There are also public pipes, lined channels, stormwater ponds, and wetlands within reserves. In addition to this, the stormwater operations group currently manages and operates a number of wastewater pumping stations and water treatment plants for Auckland Council Parks.

Auckland Council Regulatory and Building Control do not directly affect the operation and maintenance of the stormwater network, however, all proposed stormwater systems from new developments are assessed and approved by these departments. The stormwater operations group will have difficulties if the constructed stormwater systems are difficult to operate and maintain. Considering the maintenance and operational risks associated with vested assets to council, the stormwater operations group are involved in providing technical advise in terms of operations and maintenance of critical assets including ponds, treatment devices, large pipes, and build over proposals.

With all of these departments and stakeholders, the boundaries of who is responsible or where it is managed by one entity versus another can vary depending on the policies adopted by the legacy Councils. While working with these key stakeholders to form a regional approach, we also have to recognise local differences and the implications on both the short or long term operations, as much will also be tied up in current operational contacts either within stormwater or with other stakeholders. The performance of the stormwater system depends on us collaborating and working closely with these key stakeholders.

To improve cooperation among these key stakeholders, the following actions have been or are being taken:

1. Preparation and adoption of service level agreements, between the Stormwater Unit and other key stakeholders (i.e. AT, Watercare, and Auckland Council Parks). The development of these is at different stages with some being signed off and others being in initial draft form. As part of these service level agreements, regular meetings with these stakeholders are being held as part of managing the relationships.
2. Establishment of working groups between the stormwater operations group and operational groups of our key stakeholders to:
 - 2.1. Understand, develop and agree detailed responsibilities at the operational level

- 2.2. Monitor and compare performance as well as identifying issues and proposing improvements
3. Education of call centre staff (simplified outcomes from, two above, are being sent to local call centres and seminars are being organised to educate the staff of the responsibility boundaries). Not only should the operational staff from the Stormwater Unit and other key stakeholders know their responsibilities, but also the call centre staff. One common problem can easily be encountered where a call centre sends the RFS to the wrong team (low efficiency, cost more and low customer satisfaction).

Given the interdependencies of the Stormwater Unit with the various stakeholders, the success of not only the stormwater operations group, but the Stormwater Unit will depend on collaborating and working towards a common goal with these other groups.

2.8. STORMWATER OPERATION AND MAINTENANCE CONTRACTS

There are currently 11 major stormwater operation and maintenance contracts in the Auckland region with five main contractors. In most instances, we share the same contractors and same terms and conditions with Watercare as many of these contracts were previously single contracts that have been subsequently split to separate stormwater from water and wastewater. Across the regional, these contracts differ in many ways, including:

- Contract “philosophy” (A single comprehensive contract versus split contracts for one legacy area. A partnership type contract versus conventional contract).
- Levels of service and KPIs.
- Terms and conditions (mainly NZS 3910 with varying amendments).
- Expiry dates and possible extensions. Contract termination or first right of renewal generally varies from between 2011 and 2014 although, due largely to ATA efforts, most being 2012.
- Provisional sums for reactive renewals and minor capital works.
- Contract management (managed by Council officers or through a third party, normally a consulting firm).
- Day work rates.
- Incentive and “punishment” clauses.

Moving forward it will be necessary to rationalise the number of contracts and we are currently developing procurement options to move forward. Some of the issues that we need to consider in doing so are as follows:

- **How many contracts we go for.** In considering this we need to weigh up our internal structure; political wards and areas; AT and Watercare contract boundaries; economics of the scale we are proposing; regional response capability; opportunity for benchmarking and competition; and maintaining competitiveness and capability in the contracting market.
- **The contract form.** Considerations include staying with what we all know best and is trailed and proven i.e. NZS3910 based, or going for NCE, alliancing or partnering; ensuring we do not impose too much change on the industry; the philosophy and culture we want to instil and foster; and whether we look at an outcome based or prescriptive model.

- **Whether we split the operational contracts by function or area.** What peculiarities are there regionally and whether a similar approach can be adopted for the whole region including urban and rural areas.
- **The term of the contract.** In selecting this we need to ensure it gives the contractors sufficient time get return on their investment while recognising that we are still in a transition phase and therefore need to allow for flexibility for further refinements to our operations and structure.
- **Incentives** – do we offer incentives or punish poor performance.
- **Asset Management and Request for Service systems.** We are still working without a direction on what systems are being implemented regionally by the new Council. As such we need to build flexibility into our future contracts to allow for the contractors to firstly work with different legacy systems and secondly transition to what will become a permanent system for Auckland Council.
- **Alignment of Levels of Service.** Currently we have different Levels of Service across the region. These are inherited from the legacy Councils and bought into as part of the political LTCCP/LTP process. We are hoping that we will have the opportunity to align these as much as possible, but the Local Boards will also be given the opportunity to alter these. This means we will need to build the flexibility to accommodate regionally different Levels of Service into our contracts.
- **Procurement timeframe.** We need to consider whether we go out to the market for the whole region at the same time or if we or if we stage procurement. Furthermore, we need to consider when AT and Watercare procure their contracts so not to flood the market.
- **Alignment with AT or Watercare.** With taking on the responsibility for catchpits from AT there will need to be some alignment in the procurement to allow this to take place. With Watercare we need to be aware that we are potentially competing for the same contractor's skills at the same time.

We are hoping that we will be in a position to consult with our key suppliers on the draft procurement strategy in the next few months.

2.9. DEFINING PUBLIC AND PRIVATE STORMWATER ASSETS

It is currently difficult to operate and maintain the region's stormwater infrastructure in a consistent manner, because the ownership and maintenance responsibility (public versus private) for some stormwater assets vary amongst the legacy Councils.

The overarching principles for defining the nature of a stormwater asset (public or private) are similar over the Auckland region. Generally speaking, a stormwater asset which receives stormwater runoff from more than one freehold lot is deemed to be public unless there is a special agreement between council and the developer. However, different approaches have been taken by previous legacy councils towards the nature of privately installed stormwater pipes or kerb outlets within road reserves or other public places.

1. Kerb outlets

Due to lack of public stormwater networks, thousand of private properties discharge their roof runoff to the roads through kerb outlets. Most of these kerb outlets were initially installed by the developers as part of their approved private stormwater systems.

Some legacy councils considered that such a discharge system should be considered private stormwater assets and the respective private property owners should be responsible for their ongoing maintenance. When the kerb outlets were blocked, broken or damaged, the legacy councils required the private property owners to repair them.

Whereas other legacy councils considered that the private owners are only responsible for the stormwater pipes within their property boundaries. The Council should be responsible for the ongoing maintenance and replacement of the stormwater pipes and the kerb outlets within the public road reserve as they are out of these property owners' control.

2. Private stormwater pipes within public places

Similar to the kerb outlets, the legacy councils had different approaches towards the nature of privately installed stormwater pipes between a private property and a public stormwater pipe.

Some legacy Councils considered that the entire stormwater pipe connecting a private house and a public stormwater pipe is private even when the public stormwater pipe is within a public road reserve or other public place. However, other legacy councils considered that any stormwater asset within a public road reserve or other public places should be maintained by council. For new developments, those councils required private pipes within public places to be designed according to the standards for public stormwater assets, as these councils would have been responsible for their future operation and maintenance.

There are situations within some legacy councils where pipes were classed as private even when they crossed the neighbour's boundary, while in other councils they were considered public as soon as the pipe crossed the property owner's boundary line.

In each legacy council area, the previous practice towards the ongoing maintenance of kerb outlets and privately installed stormwater pipes within public places continues, as the customers and maintenance contractors from each legacy council have become accustomed to the previous approaches.

However, the current practice will be changed, in due course, as the council should have a consistent approach towards the same problem. It will be considered when the new operation and maintenance contracts are prepared. Several factors will be considered when reviewing this issue, including:

- Legality
- Comparison of required resources.
- Risk to footpath users

- Cost between these two approaches - council maintains and replaces all privately installed stormwater assets within public places or enforces the private property owners to maintain and replace them.

2.10. BUILDING A KNOWLEDGE BASE OF STORMWATER ASSETS

Due to a variety of reasons, our knowledge about council stormwater assets varied from area to area. This is reflected in the following areas.

1. Completeness of asset inventory
2. "Storage" of asset inventory (hard copy, soft copy, and GIS)
3. Accuracy of asset information
4. Asset database (Hansen, Asset Management Information System)

Our approaches towards improving our stormwater asset knowledge include:

- a) Short term - transfer information from hard copy to GIS, such as flood gates in the North, and the continued capturing of as-built information from assets which have been identified by operation contractors.
- b) Long term – Council needs to decide on the selection of a unified asset database across asset owners such as Parks or Stormwater, or individual databases for each asset owner depending on the requirements of information to be recorded and a format for reporting. Only when this is decided and a commitment is made by council, the detailed work of collating the data and transferring the information from the legacy council's database can be planned and implemented. We realise that this is a very complex exercise and that the timeframe is unknown as there will be substantial amount of testing required to ensure that the data migration into one database across the region has an acceptable level of accuracy.

2.11. DESIGN STANDARDS FOR PUBLIC STORMWATER INFRASTRUCTURE

The design standards for public stormwater infrastructure, either created by developers or council, are critically important as these standards decide what kind of public stormwater assets we provide for the public. Traditionally, the seven legacy councils each had their own infrastructure design standards, which differed from each other in several respects. A number of region-wide stormwater infrastructure design standards are complete with the remainder expected within the next few months.

Development of these standards requires input from the whole of Stormwater Unit with the Stormwater operations group setting operation and maintenance requirements and influencing access point requirements, minimum pipe sizes and grades for minimising blockages, ease of cleaning, pipe materials, acceptable fittings and other technical details.

2.12. RESPONDING TO NON STORMWATER RELATED ISSUES

Unlike water supply and wastewater systems, a stormwater system consists of two parts:

1. Man-made physical stormwater assets (such as pipes, manholes, channels, inlets and outlets); and

2. Natural watercourses and overland flow paths on private land.

The natural watercourses and overland flow paths are not necessarily owned by Council. However, they form an integrated part of the region's entire stormwater system. Past experience from legacy councils indicates that many reported problems are linked to these more natural stormwater assets, including stream bank erosion, build up of debris, overgrown weeds and fallen trees in streams,

The legacy councils took different approaches to these problems. Some councils were less involved in managing private watercourses, while others were more involved. This is not an issue of judging which approach is correct. What we are trying to achieve is being as consistent as we can across the region. To achieve this, we will:

1. Develop a region wide interim guideline so that all stormwater operational officers' deal with the non stormwater asset related issues under the same guideline.
2. Organise regular workshops among the stormwater operations group to share experiences and lessons learnt.

2.13. STORMWATER BYLAW ENFORCEMENT

There is a need to prepare and adopt a new stormwater bylaw so we can implement a consistent approach to the management of issues that are not covered in the Local Government Act or other such legal documents.

The preparation and adoption process, will be managed by Council's Bylaw team within the Planning Division. However, the stormwater operations group, in their role as a key stakeholder, will play an integral part in the preparation of the new Bylaw. This will focus particularly in the areas of protection of public stormwater assets, long term maintenance of private stormwater systems and the protection of watercourses.

2.14. MANAGING PUBLIC EXPECTATIONS ON STORMWATER SERVICES AND AGREED LEVELS OF SERVICE

There are differing public expectations regarding the provision of stormwater services and the agreed levels of customer services which vary from area to area. This can be due to a number of reasons, some of which include the following:

- Socio-economic factors
- Public awareness and understanding of response systems relating to stormwater management
- Long term traditional approaches towards stormwater management taken by the legacy councils
- Issues with current format of stormwater charges that directly relate to specific area funding

The approach that stormwater operations will seek to implement is:

1. Ensure that we initially continue the current level of services for each area.
2. Review the agreed level of service through the LTP and AMP processes.

3. Accommodate Local Board variances as contract renewals occur and build ability modify levels of service into the contracts (Local Boards have the ability to vary levels of services in their areas)

2.15.ALIGNING SAFETY STRATEGIES

Auckland Council's safety requirements associated with operational works, were generally covered in the legacy Council maintenance contracts and the safety issues are discussed in all contracts meetings as a regular agenda item. These continue to be in place.

The approaches taken to safety strategies by the legacy councils varied. In particular, in relation to issues such as fencing watercourses and ponds or dealing with surcharging manholes. The challenge is to adopt a regional strategy and approach, noting that this will have political interest and potentially significant budget implications.

The short term plan is to collate asset information from all legacy councils that are classed as critical assets or having safety implications, such as surcharging manholes, ponds or open watercourses. A formally adopted long-term strategy and funding plan is required.

2.16.PROVIDING FINANCIAL AND BUSINESS SUPPORT

One of the areas that was significantly impacted through the transition process was in the area of business support, where the support to professional staff ratio was greatly reduced. A business support structure for the Stormwater Unit was set out by the ATA where each area – North, Central/West, and South were supported by one Business Support Administrator who would assist with the day to day administration tasks required by the Stormwater Unit and a Contract Administrator who manages all Stormwater Unit contracts. No dedicated support is provided for each functional area nor does the structure allow for management PA support. Other support activities, such as communications, are managed centrally.

The structure results in a high degree of reliability on very few staff with little backup for high work demands or absences. Furthermore, the business support structure does not support the functional split that has been adopted for the stormwater unit or the goal of regional alignment. It has been challenging for stormwater operations to ensure continuity over all areas under this structure. A high level of ongoing interaction across the region between stormwater operations and business support staff is required to implement process alignment opportunities during the transitional phase as well as to recognise and implement ongoing improvements. Where necessary we have utilised temporary staff to provide administrative support in the short term pending a review of our long term administration requirements as part of our structure.

The collation of legacy council expenditure, deferrals and future budget planning into a single financial system has caused difficulties across the whole of Auckland Council. During the data migration process budgets were incorrectly allocated as well as some purchase orders not moved across to the new system. Five months after transition we are still not able to access reliable financial information or reports. We are working though these issues to the best of our ability and with our knowledge of current contracts given the absence of this information.

3. CONCLUSIONS

1. The merging of all local authorities in the Auckland region creates an opportunity to integrate stormwater operations. However, we also face many challenges in doing so. Clear understanding of these challenges is the first step to successful integration of this vital function for Auckland.
2. Maintaining business as usual over the transition period is the greatest challenge for the new stormwater operations group as these benchmarks were set by the legacy councils. Auckland ratepayers will judge our success not just on legacy council service levels but our commitment to deliver higher standards of service at lower cost.
3. Some actions, such as the preparation of a regional Incident Response Plan and a region wide project to mitigate risk to the public from popping manhole lids, have been taken to overcome some of the challenges and risk.
4. Some challenges cannot be overcome in the short term. However, strategies and approaches have been developed to overcome these challenges which are the current key focus for the stormwater operations group.

4. REFERENCES

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