Section 3

Infrastructure Strategy

2015-2045

1. New Plymouth District Council's Integrated Planning Framework

The Council has developed an integrated planning framework that guides all of the planning that is undertaken on behalf of the community.

The framework is articulated in the following diagram.

The framework is led by the Shaping our Future Together Vision for the district:

Manaaki - tāngata - whenua - Ngāmotu

Together we support, nurture and respect our people, our environment, our district

The vision is supported by three key outcomes:

- Our Community: An inclusive and connected community.
- Our Environment: A clean, green, liveable environment.
- Our Economy: A strong and resilient economy.

The vision will be supported by strategies, policies and plans that will articulate the implementation framework in which the Council will work.

At its base, a series of plans will be used to operationalise the vision in the day to day management of the district.

The work on the Shaping our Future Together 'Blueprint' is progressing. The Blueprint will be a key strategic planning tool to prioritise how the Council will develop the district's social, economic and environmental futures to achieve the vision.

Initial briefings have been undertaken with key external stakeholders and key community leaders and the following eight high level directions have been identified for the future:

1. Enhance the natural environment with biodiversity links and clean waterways.
2. Strengthen and connect local communities.
3. Enable engaged and resilient citizens.
4. Direct a cohesive growth strategy that strengthens the city and townships.

5. Strengthen and manage rural economy, industry, the port and the airport.

6. Grow and diversify new economies that attract and retain entrepreneurs, talented workers and visitors.

7. Champion a thriving central city for all.

8. Become a world-class destination.

There are a number of key issues in the Infrastructure Strategy (IS) that are being directed by the Blueprint. In particular these relate to planning and prioritising infrastructure into areas of growth for the district and facilitating a second vehicle crossing over the Waiwhakaiho River. Supporting and strengthening the New Plymouth Airport is another important consideration.

2. Introduction

Infrastructure assets refer to existing or proposed capital assets that the Council builds, operates and maintains on behalf of the community. Infrastructure assets are a vital part of society as they provide clean drinking water, wastewater reticulation and treatment, they limit damage and loss due to flooding, they enable people and goods to move around safely and efficiently, and they provide recreation and open spaces that enable an active lifestyle. Infrastructure assets also prevent or mitigate adverse effects on the environment and allow economic growth, which leads to a prosperous community. The challenge is always to put the right asset, in the right place, at the right time, at the right cost.

Assets covered in this strategy relate to the provision of water, wastewater, stormwater, flood protection, roading and community facilities – which include parks, libraries, pools and event facilities – that provide for other recreation and leisure opportunities.

2.1 Why is an Infrastructure Strategy important?

The Local Government Act 2002 as amended in 2014 contains a new section, 101B, that requires the Council to adopt a 30-year IS, as part of the Long-Term Plan (LTP). The IS identifies significant infrastructure issues for the Council and the key decisions that will be required, the timing of those decisions, the principal options, approximate costs, and the implications of those options.

The IS forms a long-term view of infrastructure issues and attempts to plan for and therefore alleviate unexpected expenditure.

The IS must form a view of what level of service the community will want and is willing to pay for, where assets are located, and identify demand for new services. The Council must also attempt to identify what services the community may no longer desire or is simply unwilling to pay for in the future.

2.2 Scope of the Infrastructure Strategy

The IS is required to have a 30-year view of significant infrastructure issues and is produced alongside the LTP and asset/activity management plans (AMPs). The intention is not to produce a summary of those documents nor delve into the detail of what is already covered in the AMPs. The IS is purposefully a high-level document that gives a snapshot of the future and avoids the detail of today.

2.3 Infrastructure Strategy objectives

The main objective of the IS is to set out long-term (30-year) infrastructure requirements of the district. Its purpose is to ensure there are no surprises in the future with regard to infrastructure asset planning, capital investment and/or delivery. The IS is not a 30-year budget of Council activities and only identifies substantial infrastructure projects over the next 30 years.

To achieve its objective, the IS must identify and forecast infrastructure issues, the likely timing of such issues, recommend options and the preferred solution, highlight significant capital and operational expenditure, and draw attention to any demand or levels of service opportunities or challenges.

3. About New Plymouth District

New Plymouth District is the tenth-largest district in New Zealand with an area of 2,324km^2.

New Plymouth City is the largest centre in the district with satellite settlements that include Bell Block, Inglewood, Oakura, Okato and Waitara. New Plymouth City is a service centre for the region's economy that is dominated by dairy farming, oil, natural gas and petrochemical exploration. It is also the region's financial centre and the home of the only deep-water port on the west coast of New Zealand, Port Taranaki. New Plymouth Airport is 11km north of the city centre and an important regional airport in New Zealand.

3.1 Significant Natural Areas

Mount Taranaki is a dormant yet active volcano and research from Massey University indicates that significant seismic activity is likely again in the next 50 years. Most of the district is at some risk of a lahar, which is not necessarily always triggered by a volcanic event. A volcanic event presents one of the most significant risks to infrastructure and the service it provides to the community. The district is also at risk from flooding and high winds, particularly from tornadoes and cyclones with the last significant one being Cyclone Bola in 1988 – one of the costliest cyclones to ever hit New Zealand. Coastal erosion is also a significant natural hazard. While the Council has significant investment in existing protection works, consideration of the potential impacts of future sea level rise on coastal erosion rates will require strategic consideration of alternatives including a planned and coordinated retreat strategy. Being situated on a coast with exposure to the north and west makes storm surge and tsunamis a risk, particularly to above-ground assets close to the coast. Studies have been conducted showing the district is not at significant risk of liquefaction.

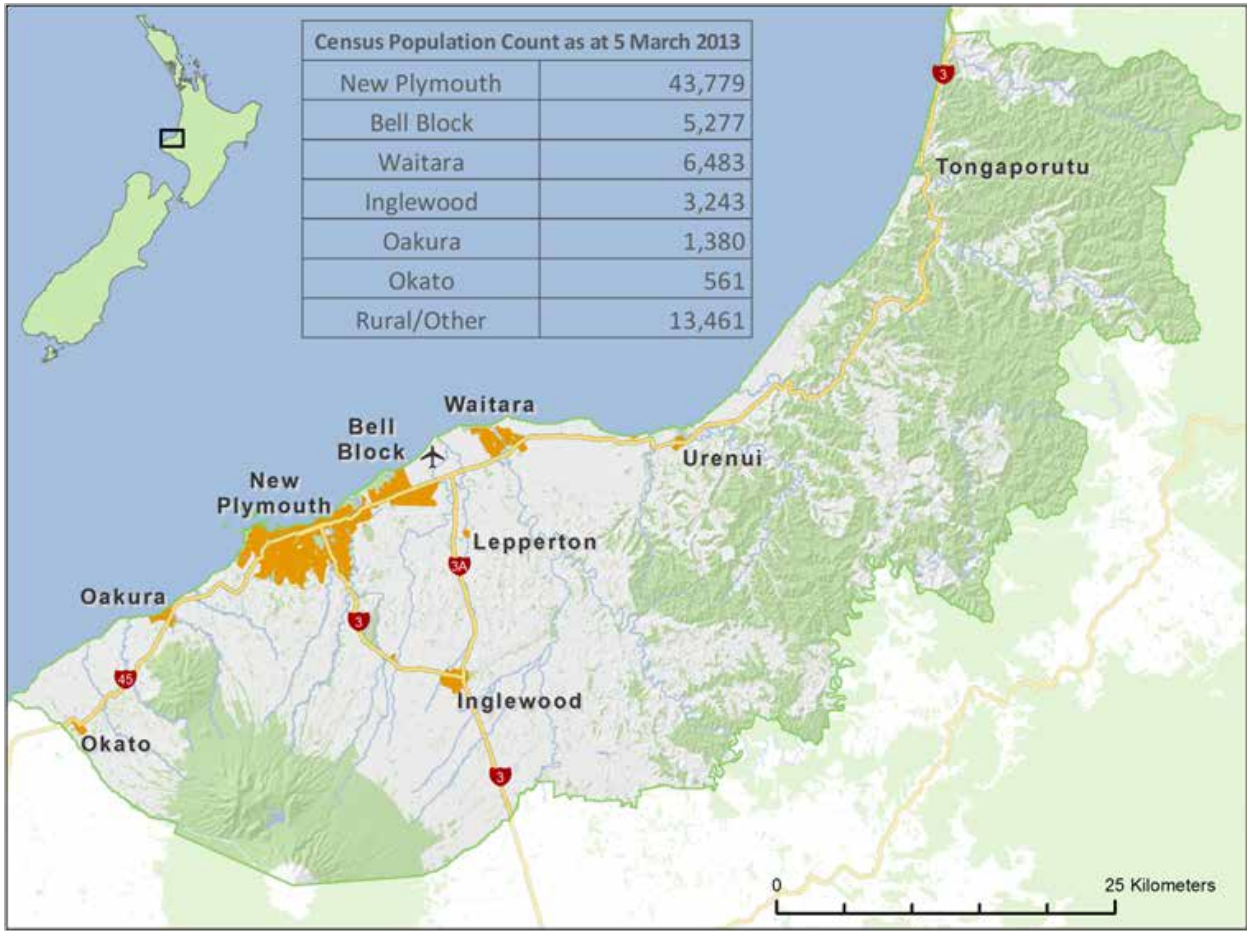


Figure 1: New Plymouth District overview

4. Forecasting assumptions

The IS is based on some major assumptions: population, the age profile of residents, the projected number of new dwellings and the inflation forecast for local government related to capital and operational expenditure. All of these assumptions are covered below.

4.1 Population

With a population of 74,184 in 2013 the district has approximately two-thirds of the Taranaki region's population, which is less than two per cent of New Zealand's total population. The total population growth for the 2013 census was 7.7 per cent higher than in 2006. Previous assumptions were for a static or declining population so the change to population growth has required a significant shift in thinking and focus of attention on long-term planning.

Projections are for the district to grow following Statistics New Zealand "high" projection through to 2021 and "medium-high" until 2045. If the forecast is accurate, the district will have grown by 19 per cent from 74,184 in 2013 (estimated to be 75,100 in 2015) to more than 88,000 in 2045.

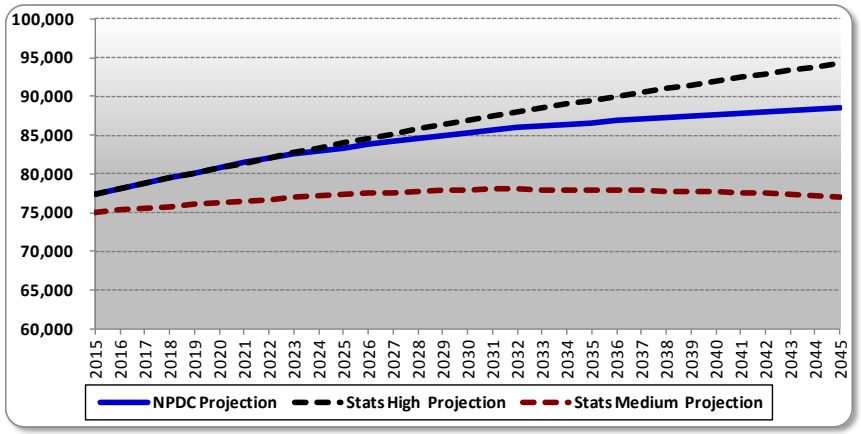


Figure 2: Population projection

4.2 Age profile

Along with the growth in population, the forecast is for a greater percentage to be in the 65 and over age group. Figure 3 shows the 65 and over age group growing from 18 per cent (14,300) of the total population in 2015 to 29 per cent (25,600) in 2045. Also shown is the forecast decline in the percentage of the less than 15 years age group, which goes from 20 per cent (15,400) in 2015 to 17 per cent (15,200) in 2045.

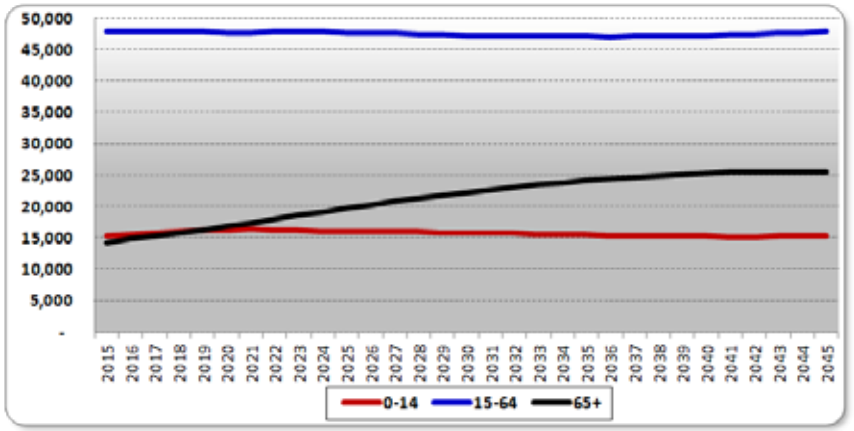


Figure 3: Age distribution

It is important to recognise that there are a significant number of Māori under the age of 15 in the district. This is significant because even though there will be an ageing demographic in the district as a whole, there will still be a large number of young people that will require and desire different facilities at potentially different locations.

4.3 New dwellings

The number of new dwellings and their location is important when considering the infrastructure needs of a growing district. Using the assumption of 350 new dwellings per year, the populated dwellings in the district is expected to grow by 10,500 over the life of this strategy. Figure 4 shows the number of dwellings increasing over the next 30 years and the household density, or number of people living in each dwelling, decreasing from around 2.6 to 2.2 over the same period.

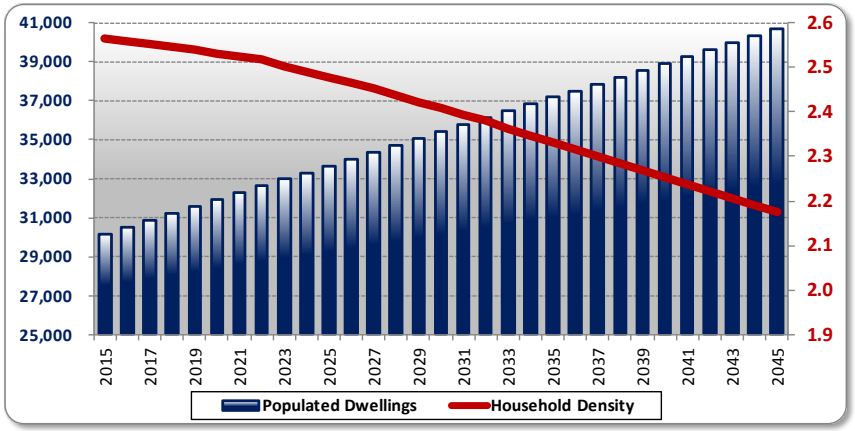


Figure 4: Populated dwellings and household density

The reduction in the household density combined with an overall ageing population could trigger a change in the size of houses and the lot sizes that are desired. This could lead to more land being available for intensification when land reviews are conducted.

4.4 Inflation

The Council uses the Local Government Cost Index (LGCI) forecast produced by BERL to help determine inflation projections. Unlike the CPI, used for household/consumer inflation forecasts, the LGCI is specific to local government in areas such as staff costs, interest paid on debt, transport, the three waters, community (pools, parks and reserves) and other costs not captured elsewhere. From 1999 to 2010 the LGCI rose 43.9 per cent compared to the CPI increase of 30.6 per cent.

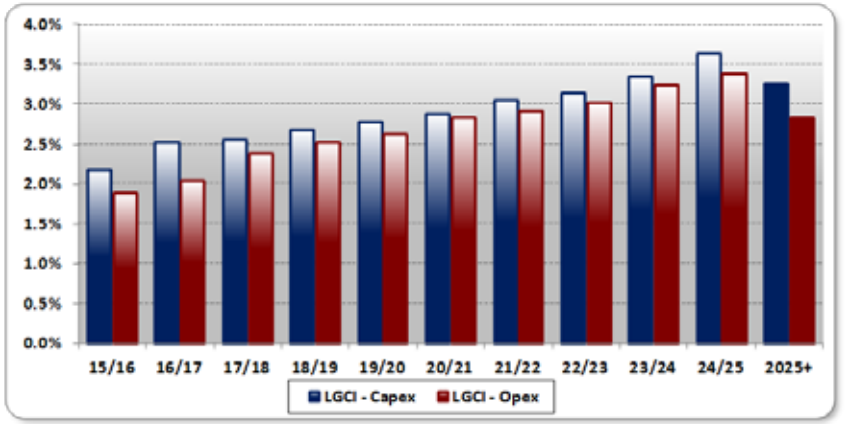


Figure 5: Local Governemnt Cost Index (LGCI) forecast

4.5 Assumptions confidence

To measure the uncertainty and impact of the previous assumptions, the Council uses the Significant Forecasting Assumptions LTP 2015-2025.

The level of uncertainty for all assumptions in this strategy is considered medium, but the impact low because there are not any year one impacts. For demographic assumptions the impact is considered to be low because census data and new projections every three years gives the Council an opportunity to alter forecasts accordingly. The impact for asset lifecycle assumptions is also considered low because a thorough review of unit costs occurs at the end of each year between certified valuations to ensure the assumptions are still relevant. If significant variance(s) to adopted assumptions are found during this review, the Council undertakes to re-certify the valuation of the affected assets. A report is written and submitted to Audit NZ as part of the annual reporting process.

5. Managing infrastructure assets

The Council is required to identify how infrastructure assets will be managed on behalf of the community. Managing assets requires strategies for the renewal of existing assets, setting and meeting levels of service, meeting demand, improving public health and environmental outcomes, and providing for the resiliency of assets – both physically and financially. These topics are touched on below.

5.1 Renewals

Over the life of this strategy the Council will need to renew approximately $660m worth of fixed assets. Renewals are funded via renewal reserves and have no direct impact on rates. The amount set aside annually to the renewal reserve is, however, funded from rates. Renewals are rationalised to ensure that each asset is still required to meet the current level of service it is intended to deliver. The Council uses the latest condition data available to ensure that assets are not renewed on the sole basis of reaching or passing their theoretical expected life.

The Council currently uses a renewal forecasting model that relies on age and condition data to plan the long-range renewal requirements. This ensures the proper funding (funded depreciation) is in place before assets need renewing. The Council has recently implemented a new asset management system (AMS) that includes a strategic asset management component, which will enable further enhancement and refinement of renewal requirements during the LTP planning process.

An asset, or a component of such, should be renewed only if it meets one of the following criteria:

- The asset is failing to deliver the current level of service.
- The annual maintenance cost exceeds the annualised rate of consumption (annual depreciation).
- Continuing to operate the asset in its current condition is deemed to carry too high a risk.

5.2 Levels of service

There are two significant increased levels of service (LOS) changes proposed in this strategy, which are the TSB Stadium and the Todd Energy Aquatic Centre. More information can be found under Section 7 Recreation and Open Space. There are no other major LOS changes planned; however, there are currently and will continue to be minor increases and decreases in LOS changes over the life of this strategy. This is likely to be due to financial constraints the community demands and changing community expectations. Decreasing the current LOS would most likely be a result of the community's desire for lower rates increases. The Council of the day will determine what the LOS is, based on community feedback. The introduction of a new LOS or increase in LOS would likely be as a result of new technology, central government legislation or a new community or sporting activity. All planned LOS can be found in Section 4: Council Services.

5.3 Demand

The Council has been and is forecast to keep experiencing an increase in demand for services, mostly due to growth. More information can be found in Section 6 Growth.

5.4 Public health

The Council provides infrastructure assets that maintain or improve public health and well-being. The New Plymouth water treatment plant upgrade in 2008 was partly to meet demand, but also to provide cleaner water. The Council currently maintains public health by meeting all New Zealand Drinking Water Standards, which involves testing both the source and treated water for compliance. There is also a backflow prevention programme in place that involves ensuring that if a customer's connection has the possibility of contaminating the reticulated water network, a backflow preventer is installed.

The Council will continue to ensure infrastructure helps meet the needs of a healthy district by ensuring compliance with new legislation and changes to industry standards as they arise. Residents and visitors alike can expect clean water, efficient treatment and disposal of waste, a safe and connected road network, fit for purpose walkways and paths, and enough open space to encourage and enable active communities.

5.5 Environment

There is a need to consider the impact on the environment when developing and managing infrastructure, e.g. the promotion of sustainable transport alternatives is important. It is expected that environmental outcomes will become increasingly stringent, especially when renewing consents for activities such as water extraction and releasing treated waste back into the environment (either by land or sea). The cost of supplying services may increase due to higher compliance monitoring and/or additional or reconfigured assets.

5.6 Disposal of assets

No significant issues have been identified in regard to the disposal of infrastructure assets. There is a biannual report completed that determines if land parcels are surplus and sold if they are. There is also a process to ensure any assets no longer required to meet a LOS are identified and disposed with good examples being sports parks, motor camps and recently a stopped road in Ōākura.

Not all assets at the end of their life are sold or physically removed. Current practice for wastewater reticulation is to "reline" the old pipe with a new PVC pipe, which is more cost-effective than removing the old pipe and installing a new one. Water and Stormwater pipes are often left in the ground when removed from service. This has had the additional benefit of providing a good corridor for fibre optic cabling and the government's ultra-fast broadband (UFB) rollout.

5.7 Resilience

One of the Council's strategic outcomes is to have a resilient community and for this to happen, infrastructure assets need to be able to withstand events or be put back into service as soon as practicable after an event. The spectrum ranges from a water main break to a natural disaster on a very large scale. In a large-scale event, the Council has a list of significant infrastructure assets, particularly for reticulation systems and the road network, that have a criticality rating to help determine the most important services to get working first. Each Council business area also has incident response and business continuity plans to enable a planned, coordinated and strategic response when required.

5.8 Financial provision for risk and resilience

Financial resiliency and protection from risk comes via insurance, and the Council's Financial Strategy and Treasury Management Policy. While the chances of a natural disaster of the same magnitude as Christchurch is very unlikely, the Council has prudent measures in place to ensure services are restored as soon as practicable after an event.

Insurance

The Council carries material damage insurance for above-ground assets, and the Council participates in the Local Authority Protection Programme Disaster Fund (LAPP) for below-ground assets. The Council has $404m of material damage and $557m of LAPP insurance to cover the fixed asset base of $1.6b, with any shortfall covered as below. With a replacement value of $570m, the Council has deemed the cost of insuring roading assets as too expensive so those assets are not insured.

Central Government Assistance

In the case of a natural disaster or other significant event causing damage to infrastructure, central government will contribute up to 60 per cent towards the replacement of affected assets or the FAR rate for roading assets.

Renewal Reserve

The renewal reserve is a cash reserve that is funded via rates for the renewal of assets, which is the funded depreciation component of operational expenditure. The reserve can be used to help recover from damage to infrastructure assets. The reserve as of 2014/15 was $26m.

Financial Strategy

Through the Financial Strategy the Council has the ability to borrow based on the amount of revenue received via rates. The strategy is to allow borrowing where the interest expense to rates income is 12.5 per cent or less. At the end of the 10-year LTP forecast, this strategy would give the Council approximately $65m of spare borrowing capacity.

Treasury Management Policy

The Council limits its financial borrowing and related costs via its Treasury Management Policy and this allows capacity for borrowing to meet funding requirements to recover from significant events over and above that of the Financial Strategy.

6. Growth

New Plymouth District is experiencing growth that is forecast to continue over the life of this strategy. There is a need to direct growth so that it strengthens the city and the smaller settlements and has efficient infrastructure investments.

The Blueprint is currently testing the district's residential and industrial/employment land supply assumptions. Initial work has found that with the predicted levels of growth anticipated, further land is required in the long-term. The currently zoned residential and future urban development (FUD) capacity is not sufficient for the 30-year demand forecast in New Plymouth, so there is a need to plan for one or more identified growth areas.

It is imperative to assess future growth areas against the efficiency of infrastructure requirements. This is appropriately reflected in the order/ranking of growth areas and associated infrastructure needs. Based on the high-level assumptions used in the Blueprint, there are a number of key infrastructure issues to be considered for the future planning for growth in the district.

In relation to residential growth, New Plymouth is by far the fastest growing area, followed by Bell Block, Waitara, Inglewood and Oakura. Residential growth areas for New Plymouth are currently being identified and tested along with the preferred implementation sequence. Growth will be prioritised in areas that will increase the sense of community, do less environmental harm, improve community health, support the central city and have manageable infrastructure investment. New infrastructure needs (including open space) should be provided for in priority growth areas first.

Alongside land supply for residential development, it is important that there is land available for industry growth as this supports the economy and community. The Blueprint has signalled that 141ha of additional employment land is potentially needed to meet demand over the life of this strategy. Further consideration of the location of these areas will be confirmed through the Blueprint process.

6.1 Growth issues

An important issue for growth in the district is the infrastructure investment needed and the additional operating costs associated with new assets. Even when the Council does not directly lead infrastructure development in growth areas, there are additional operational costs associated with the vesting of assets required to service growth.

In any one year, vested assets are not significant in relation to the asset base, but over the next 30 years vested assets are forecast to have a combined non-land value of $45m requiring an additional $125,000 per year in associated operational costs related to operations, maintenance and depreciation.

Water demand management is an important consideration when planning growth (refer to section 7). Irrespective of water demand management techniques, there is a need to plan increased capacity in the network to service growth and maintain the levels of services expected by the community. Significant water resources are required to service growth as follows:

Location	Estimated timing	Estimated cost
Henwood Road	2020	$1.7m
Smart Road	2025	$2.0m
Mountain Road	2018	$2.0m

In addition, some growth areas may require a wastewater pump station costing an average of $500,000 each, and catchment management plans each costing $100,000. There will also be new roads and reticulation assets, which will be vested to the Council. However, significant network infrastructure investment is not anticipated beyond those assessed in the discussion below.

Two priority residential growth areas will require infrastructure investment by the Council to meet development needs. In these areas most reticulated water, wastewater and

stormwater that are necessary will be vested to the Council as development occurs. The issues raised are those in addition to any vested assets the Council will receive.

Bell Block (Area Q) residential growth area

Area Q (Wills Road to Airport Drive) is in the process of being rezoned to residential with a yield of more than 1,000 sections. It is proposed that the majority of infrastructure will be provided by developers. The Council has invested in completing preliminary design requirements of water and wastewater. There is an opportunity for Council investment in Area Q wastewater infrastructure to alleviate the requirement to duplicate the Mangati trunk sewer through partial diversion of the Inglewood sewer through Area Q. The proposed water main along Airport Drive to the New Plymouth Airport will also assist with water augmentation of Area Q. The majority of roading infrastructure will be led and provided by developers. The Council will also provide for some minor roading measures and the planning and construction of the future Airport Drive realignment. Neighbourhood parks, to provide for the open space needs of the community, are proposed to be funded by financial contributions with the costs of acquiring and developing parks within Area Q approximately $2.5m. The specifics are discussed as follows:

Infrastructure type	Project	Estimated cost	Estimated timing	Comment
Water	Water trunk main to New Plymouth Airport along Airport Drive	$1.05m	2015/16	Required for airport fire fighting capacity, but will augment Area Q water when development connects through to Airport Drive.
Wastewater	Provision for partial diversion of Inglewood sewerage flows through Area Q (alternative to Mangati sewer duplication)	$2m	2015/16	Area Q sewer trunk main and pump station to be provided by developers. Alternative to Mangati trunk main duplication partial diversion of Inglewood sewer through Area Q providing cost savings in excess of $2m to the Council by delaying need for Mangati duplication until approximately 2050.
Roading	Roading work for Area Q	$830k	2015-2019	Parklands Avenue Waitaha Stream underpass, and upgrade of Mangati Road intersection with Parklands Avenue.
	Long-term Area Q roading	$3.45m	2027-2035	
Open Space	Purchase and development (excluding Coastal Walkway) of open space	$2.5m	2015/16 onwards	Costs to be recovered through financial contributions.

Smart Road (Area K and Area L) residential growth area

Smart Road (K) is identified for development in the medium term with more than 11,500 sections. Smart Road (L) is for the longer term with a potential yield of more than 2,440 sections. This growth area has a number of infrastructure issues that need to be planned and provided for as follows.

Infrastructure type	Project	Estimated cost	Estimated timing	Comment
Water	Pipe bridge across the Waiwhakaiho River, new reservoir and reticulation	$6m	2025	Land has been secured for a new reservoir and easements for reticulation. No development in Areas K and L can occur until reticulation in place for fire fighting capability.
Wastewater	Glen Avon pump station upgrade	$6m	2026	Pump station required for development to occur.
Stormwater	Catchment management planning	$100k	2026	The western side of Smart Road will flow into the Waiwhakaiho River. The eastern area will require investigation to potential effects of stormwater and potential mitigation.
Roading	Second vehicle bridge crossing over the Waiwhakaiho River	$16m		A second bridge will be required before the area is developed, otherwise the levels of service along Smart Rd and Northgate will decrease rapidly because of the additional traffic generated. Refer to **Road and Movement**, which discusses resilience issues
Open Space	Purchase and development of open space	$650k	2026 onwards	Acquisition and development of parks, including pathways to facilitate the mountain to sea linkage along the Waiwhakaiho River.

It is essential that the Council plans and provides for the infrastructure requirements of residential and industrial growth.

7. Infrastructure by activity

This section highlights significant infrastructure issues facing the Council not specifically related to growth by the following asset classes: roads and footpaths, water, wastewater, stormwater, flood protection, solid waste, and recreation and open space. All asset values are from the last certified valuation in 2013, which was conducted by Council staff and registered valuers. The assumptions used are then peer reviewed and compared with industry benchmarks to ensure appropriateness, and audited for reasonableness by Audit New Zealand.

All expenditure in section 7 is not adjusted for inflation unless specifically mentioned. Operational costs (OPEX) are shown in the expenditure tables along with capital expenditure (CAPEX), which is made up of renewals, service level improvement and growth. The first 10 years of the forecast are based on the LTP 2015-2025. From years 11 to 30 the totals shown are estimates based on five-year averages. Inflated forecasts can be found in the Expenditure Forecasts section. All condition scores indicated are based on National Asset Management Support Group (NAMS) guidelines.

Community expectations

The diagram in Section 1 highlights the importance the Council places on engaging with the community. It is through this dialogue the Council, led by the Mayor, learns what is important to the community and what the community expects. The Council then sets the Community Outcomes and levels of service for each activity, which this strategy and the AMPs aim to deliver upon.

Community expectations by activity can be summarised as below.

Roading	A safe, reliable roading network with minimal interruptions and adequate parking with an appropriate quality is provided at an affordable cost that minimises harm to the environment.
Water	A continuous, adequate and reliable water service with minimal interruptions that is safe, clear and tastes good at an affordable price that minimises harm to the environment and maintains public health.
Wastewater	A continuous, adequate and reliable wastewater service with minimal interruptions at an affordable price that minimises harm to the environment and maintains public health.
Stormwater and Flood Protection	An adequate service that safeguards life, property and public health that is able to cope with extreme rainfall events at an affordable price that minimises harm to the environment.
Solid Waste	An adequate, regular refuse collection with well maintained facilities in appropriate locations at an affordable cost that minimises harm to the environment and maintains public health.
Recreation and Open Space	Safe, secure, convenient parks facilities, sportsgrounds, and playgrounds that have adequate, clean toilets along with a quality zoo (with well cared for animals) that minimises harm to the environment, maintains the natural ecosystem and maintains public health outcomes.

Asset criticality

Infrastructure assets covered in this strategy are classified by their importance in the supply system or network; this is known as asset criticality. Asset criticality is the relative risk of a high economic, environmental, social and/or cultural cost arising from failure of that asset. Asset criticality prioritises which assets to monitor and maintain and are the first step in designing an effective maintenance and renewal programme. Roading asset criticality is loosely based on the One Network Road Classification from NZTA, though an official criticality has not been determined. A criticality model was developed in 2011 for water, wastewater and stormwater mains with the other asset types not having a criticality model developed yet. More information on criticality can be found in the respective AMPs.

Lifecycle assumptions

The timing of renewals is largely determined by expected life assumptions, which are covered in the Statement of Accounting Policies (Section 5 Financial Information and Statements) and also in the respective asset management plans. Expected life and replacement cost assumptions are set during the certified valuation process and give a good basis for future planning.

It is assumed that the technology will remain unchanged. However, there will be technological advancements, but the net effect is assumed to be consistent with today in terms of annualised lifecycle costs.

All renewal expenditure in this strategy is based on the following significant assumptions:

- Each asset will expire when its expected life is met.
- All assets currently in place, and not already excluded from renewal by way of Council resolution, will be renewed at the end of their life.
- All capital necessary for renewals will be fully funded when required, no matter the financial mechanism implemented throughout the life of this strategy to fund renewals.

Operational Expenditure Assumptions

A growing asset base increases operational expenditure related to operations/maintenance, depreciation and cost of capital (loan interest and principal). The following assumptions are used to calculate the additional OPEX requirements.

Activity	Operations and maintenance	Expected life (for depreciation)	Cost of capital
Road and movement network	10%	50 years	10%
Water	5%	80 years	10%
Wastewater	5%	80 years	10%
Stormwater	1%	100 years	10%
Flood Protection	1%	100 years	10%
Solid Waste	1%	100 years	10%
Recreation and Open Space	5%	100 years	10%

7.1 Road and movement network

The fixed asset gross replacement value for roads is $571m, which makes up approximately 35 per cent of the Council's fixed asset base. Over the life of this strategy roading assets worth approximately $286m ($489m inflated) will need to be renewed. The asset base is in good condition and on average has 57 per cent of its original life remaining. The map on the next page shows the extent of the road network in the district.

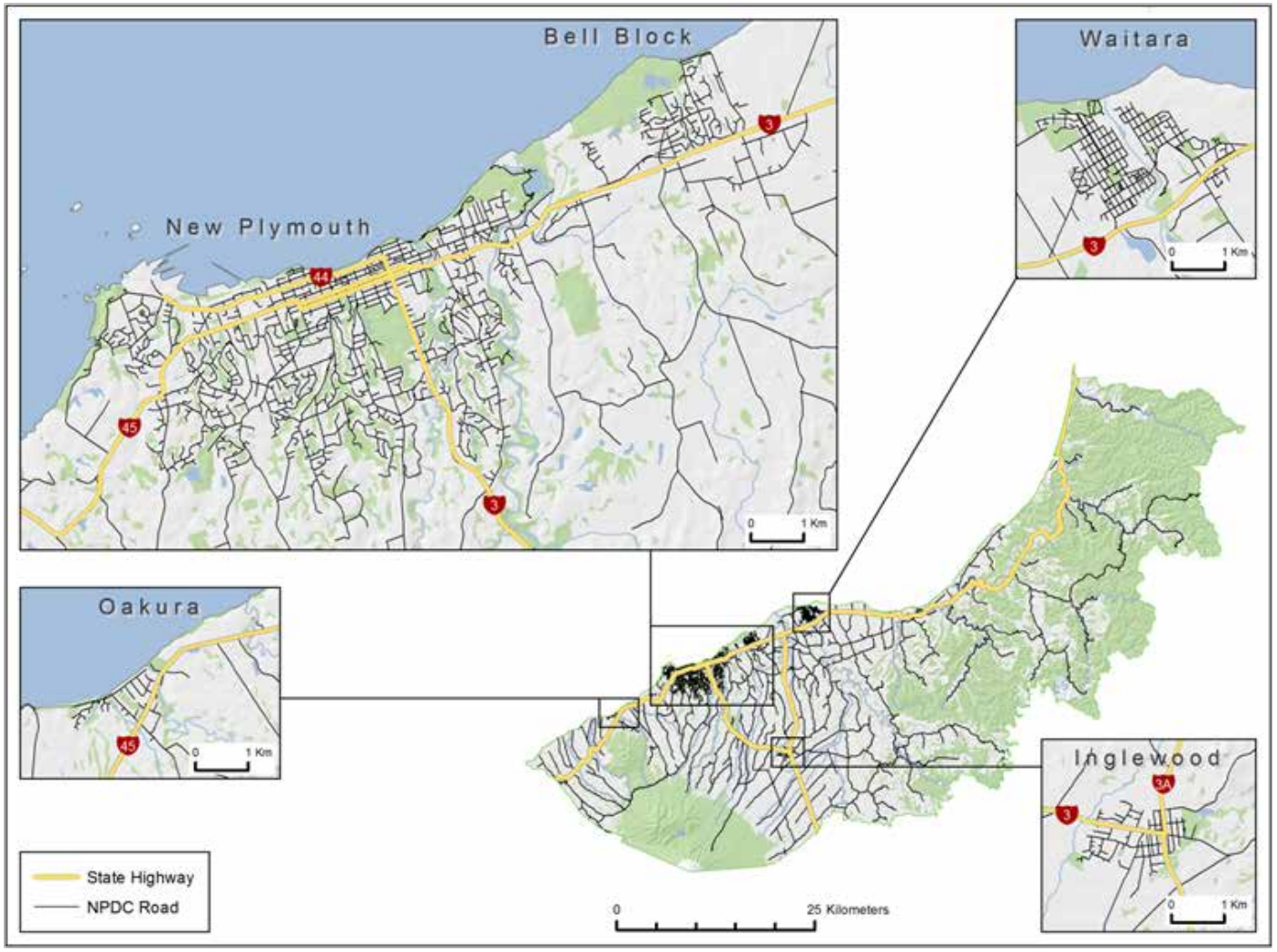


Figure 6: Extent of NPDC road network

Second vehicle bridge crossing over the Waiwhakaiho River

Planning for a second Waiwhakaiho River crossing is critical to facilitate growth in the district (Smart Road – Areas K and L), however there are also other strategic transport reasons for a crossing relating to resiliency. The east to west corridor is limited to a single crossing point on State Highway 3. There is a potential risk that could impact the resilience of the movement network, because if the city crossing is damaged or closed, the city will be cut in half with the only other crossing at Egmont Village.

The Blueprint has signalled the need for a second crossing to be located centrally to improve the arterial network operations and to strengthen the central business district. Current estimates for a new crossing are approximately $16m, including acquiring land and development costs. Scoping and feasibility work will need to commence in the short-term to better understand the implications of a second bridge.

Maintaining levels of service

The operations and renewal of roading assets is the only area covered by this strategy that relies on an external funding agency – the New Zealand Transport Agency (NZTA). The funding assistance rate (FAR) paid by NZTA has not increased with inflation for the past six years and this has had the effect of a gradual lowering of LOS over that time, such as frequency of mowing and pothole repairs. Figure 7 shows that there will be a two per cent funding increase in 2015/16 from 2014/15 levels for operations and renewals, but a drop of nine per cent over the same time period for special projects including the Council's Let's Go programme and minor safety improvements. From 2016/17 onward the funding will be increased in line with inflation for operations and renewals with another two per cent drop in special programmes, with flat funding going forward. This means there will not be as many improvements to the network unless alternative funding is found such as sponsorship or an increase in rates.

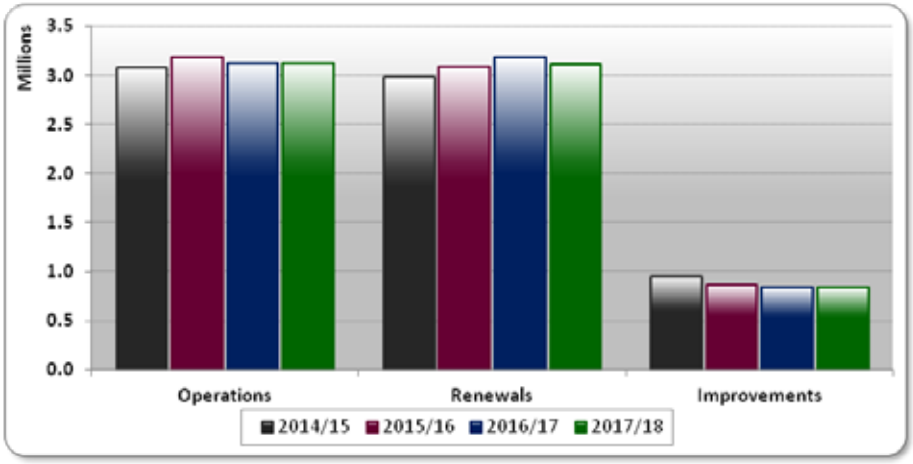


Figure 7: Financial Assistance

The Council will continue looking for cost saving opportunities associated with collaboration and facilitating the one network approach into the future.

Overall, the road and movement network in the district is functioning well. In order to strengthen and connect local communities, small improvements may be required. It is likely that growth and specific activities (e.g. the port) will require network solutions over the next 30 years. Enhancing opportunities for walking and cycling and building on our current solid network will be a key focus.

Rural roads

With increased and changing industrial activities in the rural area, there are potential impacts on the maintenance and upgrading of rural roads. Maintaining the current LOS will require specific road engineering responses (e.g. widening traffic lanes, reducing edge breaks, increasing the frequency of pavement renewals and strengthening and/or widening of bridges), or alternatively a lower LOS will result.

Rainfall intensity

The impacts of increasing rainfall intensity on the road network and the potential impacts on drainage capacity may need to be considered in the 30-year period. Considerations to increasing the capacity of drainage channels and enlarging throughflow are potential mitigation measures. It is not considered likely that road carriageways will need to be moved above potential areas of inundation.

The chart and table below show the expenditure forecast for roads.

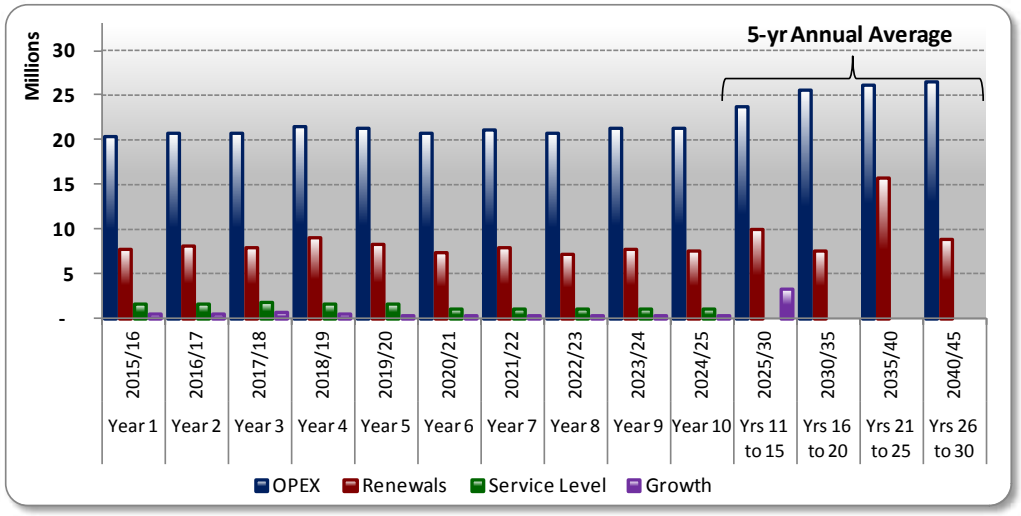


Figure 8: Road expenditure forecast

Significant expenditure highlights

- Opex increases from 2025 are related to additional operational costs associated with a growing asset base – note that depreciation is not necessarily funded, but is included.
- Capex:
  - Second Waiwhakaiho River crossing 2025/26 - $16m.

$m	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Yrs 11-15 2025-30	Yrs 16-20 2030-35	Yrs 21-25 2035-40	Yrs 26-30 2040-45
OPEX	20.38	20.66	20.71	21.45	21.25	20.63	21.08	20.76	21.31	21.29	23.68	25.56	26.03	26.50
Renewals	7.73	8.07	7.92	9.12	8.32	7.30	8.00	7.15	7.66	7.55	10.01	7.61	15.63	8.84
Service level	1.65	1.62	1.73	1.63	1.61	1.10	1.10	1.10	1.10	1.10	0.00	0.00	0.00	0.00
Growth	0.43	0.41	0.61	0.43	0.39	0.39	0.39	0.39	0.39	0.39	3.20	0.00	0.00	0.00

Table 1: Road expenditure forecast

7.2 Water

The Council has four water schemes comprising 793km of reticulated water mains, with approximately 314km needing to be renewed over the life of this strategy. The fixed asset gross replacement value for water assets is $221m or about 14 per cent of the Council's fixed asset base, of which approximately $71m ($120m inflated) of reticulation will need to be renewed over the next 30 years. The asset base is in good to very good condition and on average has 56 per cent of its original life remaining. The map shows the extent of the water network in the district, with those in red indicating what will need to be renewed over the life of this strategy.

Water demand

One of the most significant issues facing the water activity is demand for water. The Council has consent to extract 60ML (mega-litres or one million litres) of water a day for the New Plymouth Treatment Plant, but when demand is highest in summer the available water is just over 40ML/day, with demand being the same over that period. This will be a particular issue with the trend towards longer dry periods. Predicted growth will also increase demand for water.

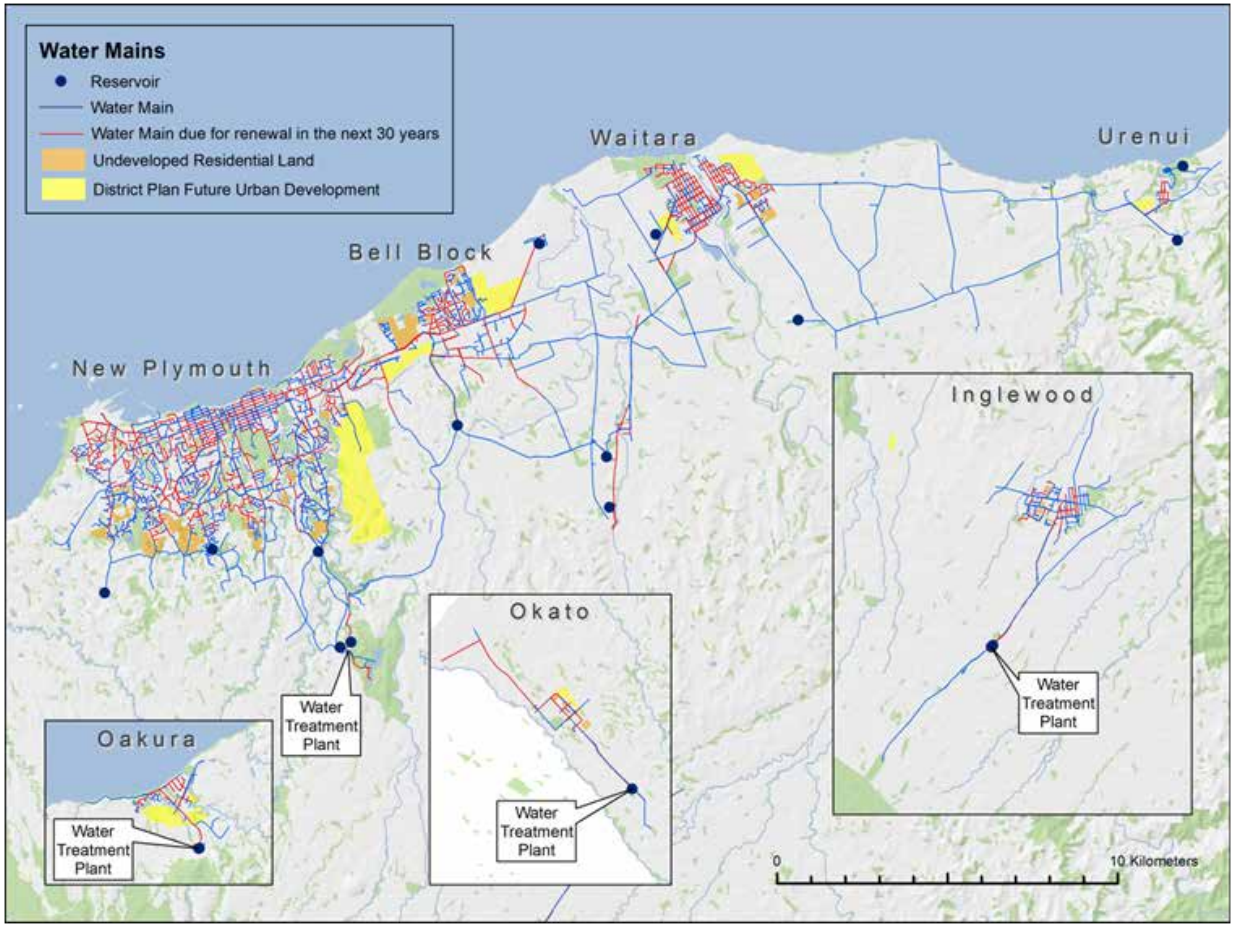


Figure 9: Extent of NPDC water network

To adequately provide water to the district over the 30-year period, a more thorough approach to demand management will be required. There are three main options to address the additional demand:

- Implement more demand management that provides end-users with the right incentives to use water infrastructure and services efficiently.
- Find additional water sources.
- Lower the level of service for water supply by reducing water pressure at end source, and implementing more frequent water restrictions.

Implementing more water demand techniques, e.g. installing water meters, will reduce demand for water, allowing for more efficient and sustainable use of the resource. In combination with education programmes, water meters for each residence and business in the district would have an estimated capital cost of approximately $11m with additional operational costs of $10.4m. Finding and securing more water is not preferred as it eases the short-term demand, but does not address the issue of long-term availability and sustainability of the water resource. There will also be network costs associated with providing more water, leading to capital expenditure implications. Reducing the LOS is not desired as it would equate to more water restrictions and potential dissatisfaction from the community. A reduced level of service could also affect essential services by reducing fire fighting capabilities.

Trunk mains

The following feeders are needed to meet current levels of service, allow for growth and provide resiliency to the network:

Location	Estimated timing	Estimated cost	Requirements
Central Feeder	2027	$6.6m	Duplication of trunk main from WTP reservoir #1 to Hydro Road.
Wester Feeder	2027	$2.8m	Duplication of trunk main from WTP reservoir #2 to Veale Road.
Barrett Road	2026	$1m	Extend trunk main from Karamea Street to Poplar Grove.

Ageing network

The water network in Waitara is ageing and requires continuous monitoring and inspection to ensure there are no disturbances to the service provided. As with all renewals, replacement is done based on the condition of the actual assets in the ground but it is expected that most of the town's water supply will need to be renewed in 2025-2030, assuming the condition remains within an acceptable range.

New Plymouth Water Treatment Plant

The New Plymouth Water Treatment Plant (NPWTP) will need to find a new source of water by 2040 to meet additional demand at a cost of $0.6m to $1m per ML per year, with no more than 5ML needed until the end of the strategy. Also, in 2018 the outlet capacity from the plant will need to be increased as currently the plant can produce 70ML/day, but the outlet is restricted to 54ML/day. This is expected to cost $0.5m. There is also a restriction on the number one reservoir inlet that will cost $0.5m; if not done, it will restrict the Council's overall ability to supply water at current service levels. However, the success of demand management (water meters) could push back the timing of such infrastructure upgrades to outside the life of this strategy.

New Plymouth Airport

The New Plymouth Airport is a key strategic asset that supports the economic development of the region. To support the existing resilience of the airport and future growth potential, there is a need for an enlarged water main as the growth of the airport has eclipsed the present supply, which has the potential to limit the expansion of the airport as it will not be able to sufficiently provide for fire fighting capacity and meet aviation standards and codes. The cost of the project is $1.05m and is a priority project to be started in 2015.

The chart and table below show the expenditure forecast for Water.

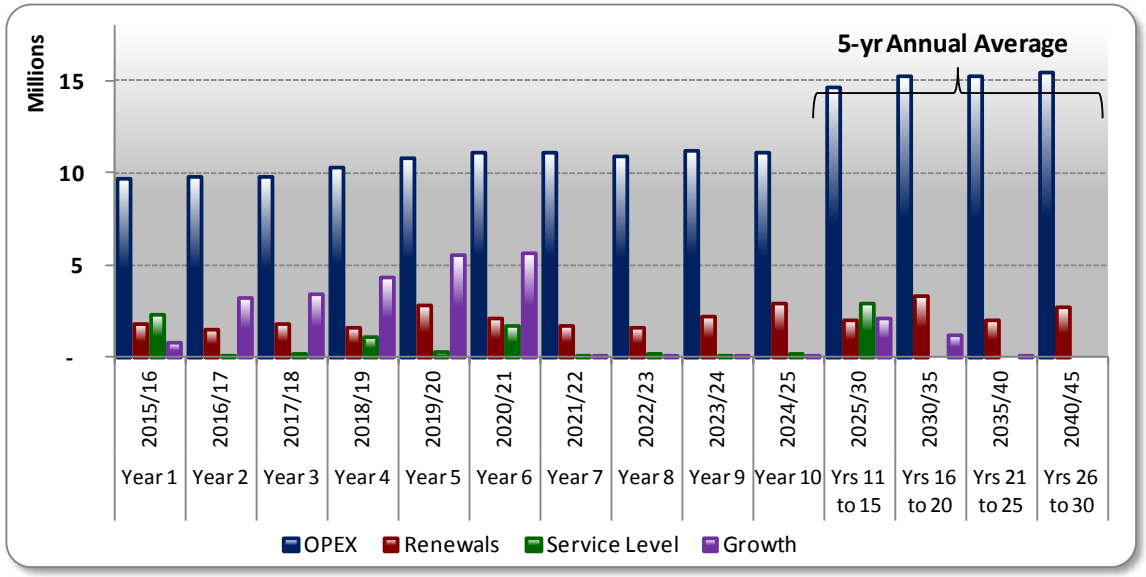


Figure 10: Water expenditure forecast

Significant expenditure highlights

- Opex increases from 2025 are related to additional operational costs associated with a growing asset base – note that depreciation is not necessarily funded, but is included.
- Capex
  - Capital cost of installing meters 2025-2027 - $11m.
  - Smart Road reservoir and mains 2025/26 - $6m.
  - Barrett Road trunk main 2026/27 - $1m.
  - Central Feeder 2027/28 $6.6m.
  - Western Feeder 2027/28 - $1m.

$m	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Yrs 11-15 2025-30	Yrs 16-20 2030-35	Yrs 21-25 2035-40	Yrs 26-30 2040-45
OPEX	9.64	9.74	9.81	10.28	10.77	11.09	11.06	10.94	11.24	11.11	14.64	15.21	15.28	15.40
Renewals	1.81	1.47	1.74	1.56	2.80	2.11	1.65	1.57	2.16	2.87	2.04	3.27	1.98	2.75
Service level	2.29	0.09	0.17	1.04	0.26	1.65	0.09	0.19	0.09	0.16	2.86	0.00	0.00	0.00
Growth	0.75	3.25	3.38	4.30	5.56	5.64	0.00	0.00	0.00	0.03	2.08	1.20	0.10	0.00

Table 2: Water expenditure forecast

7.3 Wastewater

The Council has one central wastewater treatment plant serving New Plymouth and the four main satellite towns. Reticulation comprises of 455km of wastewater mains with approximately 97km needing to be renewed over the life of this strategy. The fixed asset gross replacement value for wastewater assets is $331m or about 20 per cent of the Council's fixed asset base, of which approximately $106m ($181m inflated) of reticulation will need to be renewed over the next 30 years. The asset base is in good to very good condition and on average has 56 per cent of its original life remaining. The map below shows the extent of the wastewater network in the district, with those in red indicating they will need to be renewed over the life of this strategy.

Ageing network

Inflow and Infiltration (I&I) is a significant issue related to ageing infrastructure. As the reticulation system ages it allows more water/ stormwater to enter the network and therefore requiring treatment. Pipes are currently being renewed through the renewal programme, however the cost of trying to fix all pipes susceptible to I&I would be significant. CCTV inspection of pipes is required to identify the need for replacement, and the cost of inspecting the entire network is estimated to be considerable. Taking this into account, it is most appropriate to manage the ageing network through the renewals programme.

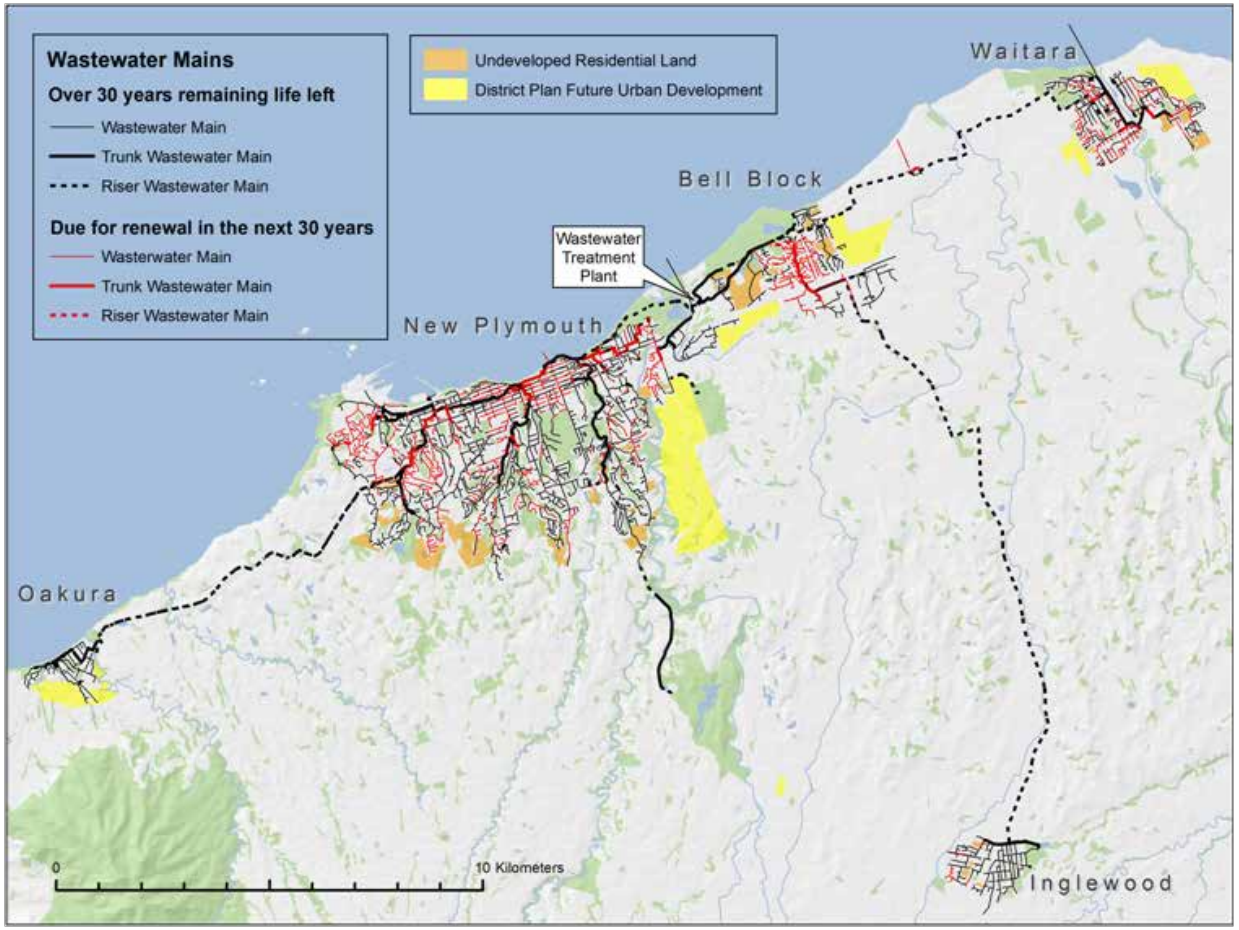


Figure 11: Extent of NPDC wastewater network

Capacity of the New Plymouth Wastewater Treatment Plant

The New Plymouth Wastewater Treatment Plant (NPWWTP) will also require some significant spend required over the life of this strategy. The hydraulic capacity of the inlet works will need to be increased around 2030 at a cost of $8m. Increasing the capacity of the plant itself in 2040 will also be required at a cost of $25m.

The increased capacity/demand on the plant will also lead to the requirement for the sludge handling facility to be upgraded in 2040 at a cost of $20m. The alternative option to an upgrade would be to dispose of the sludge to land, which has potential environmental consequences.

Expanding reticulated network

The focus for expanding the reticulated network will be to service new growth areas in the District. Unless monitoring identifies environmental quality issues related to the current approach to wastewater, this strategy does not directly identify the need for further reticulation.

The chart and table below show the expenditure forecast for wastewate

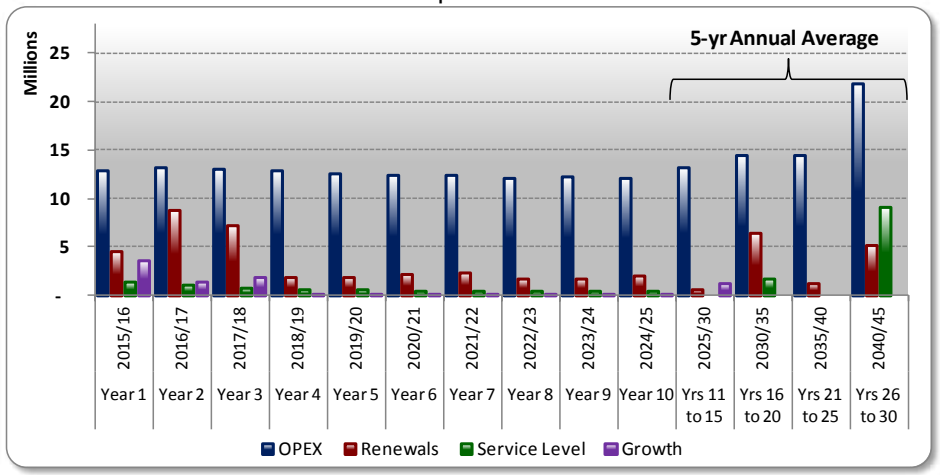


Figure 12: Wastewater expenditure forecast

Significant expenditure highlights

- Opex increases from 2025 are related to additional operational costs associated with a growing asset base – note that depreciation is not necessarily funded, but is included.
- Capex:
  - Glen Avon Pump Station 2025/26 - $6m.
  - NPWWTP Capacity 2031/31 - $8m.
  - NPWWTP Capacity 2040/41 - $45m.

$m	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Yrs 11-15 2025-30	Yrs 16-20 2030-35	Yrs 21-25 2035-40	Yrs 26-30 2040-45
OPEX	12.93	13.12	12.97	12.79	12.53	12.40	12.41	12.10	12.27	12.12	13.12	14.46	14.50	21.86
Renewals	4.53	8.77	7.13	1.88	1.87	2.16	2.23	1.64	1.72	2.06	0.63	6.33	1.22	5.20
Service level	1.43	1.08	0.67	0.53	0.55	0.45	0.45	0.44	0.44	0.44	-	1.60	-	9.00
Growth	3.59	1.29	1.76	0.01	0.01	0.03	0.03	0.01	0.01	0.01	1.20	-	-	-

Table 3: Wastewater expenditure forecast

7.4 Stormwater

The Council has 308km of reticulated stormwater mains with approximately 34km needing to be renewed over the life of this strategy. The fixed asset gross replacement value for stormwater assets is $148m or about nine per cent of the Council's fixed asset base, of which approximately $11m ($19m inflated) of reticulation will need to be renewed over the next 30 years. The asset base is in very good condition and on average has 68 per cent of its original life remaining. The map below shows the extent of the stormwater network in the district, with those in red indicating they will need to be renewed over the life of this strategy.

Catchment Management Planning

Managing stormwater and urban tributaries through a catchment management approach is particularly an issue where there is urban intensification. Renewal of assets should be appropriately focused into areas where capacity issues are likely due to increases in intensification of existing built-up areas. Securing secondary flow paths to manage stormwater when there are peak flows is critical.

The district has high-intensity rainfall events that fall in catchments that drain quickly to the sea. Often the effects of stormwater management are short-term and result from a particular event. However, with a greater frequency of high-intensity rainfall events likely, there is a need to manage community expectations regarding stormwater as, in many cases, overflow is inevitable.

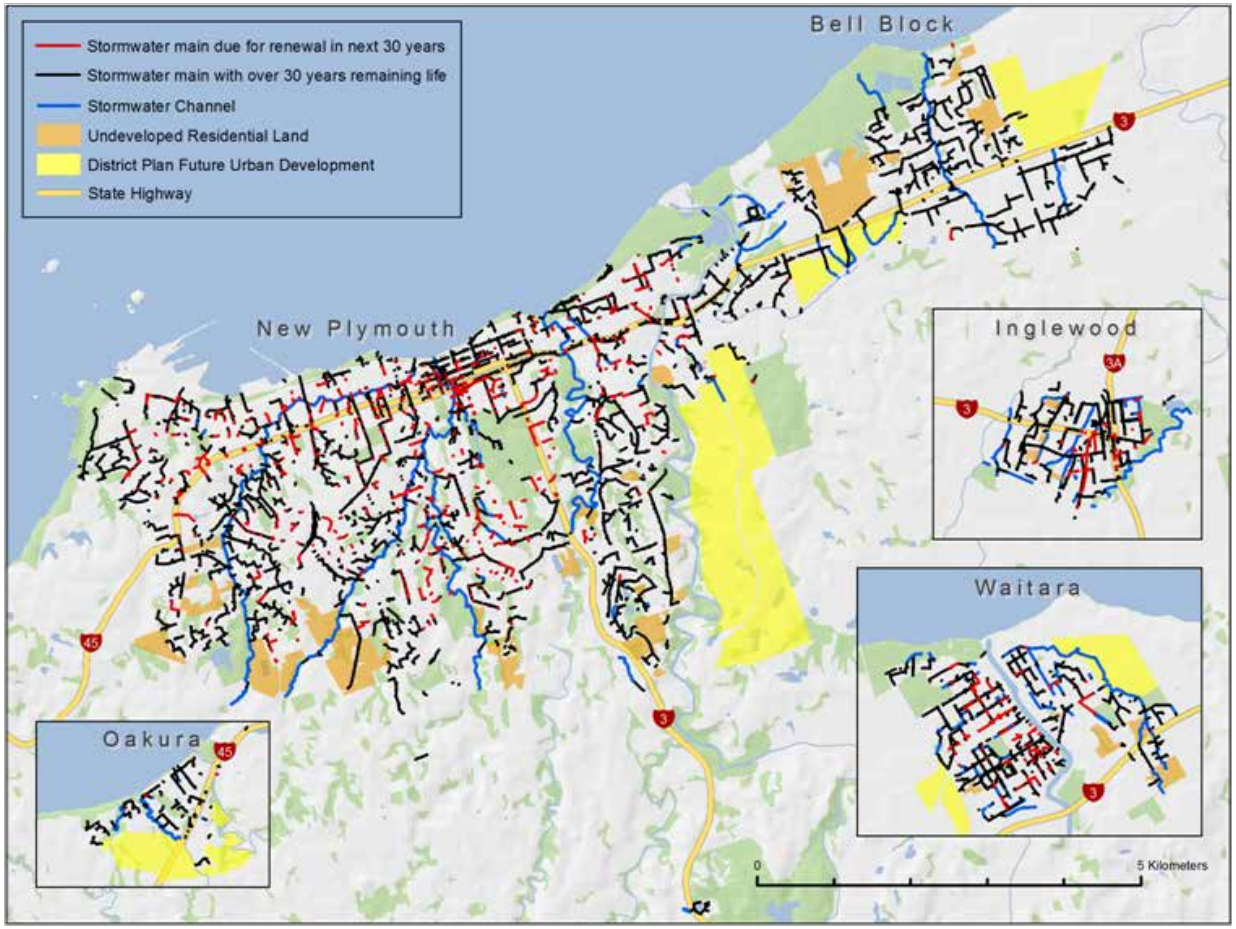


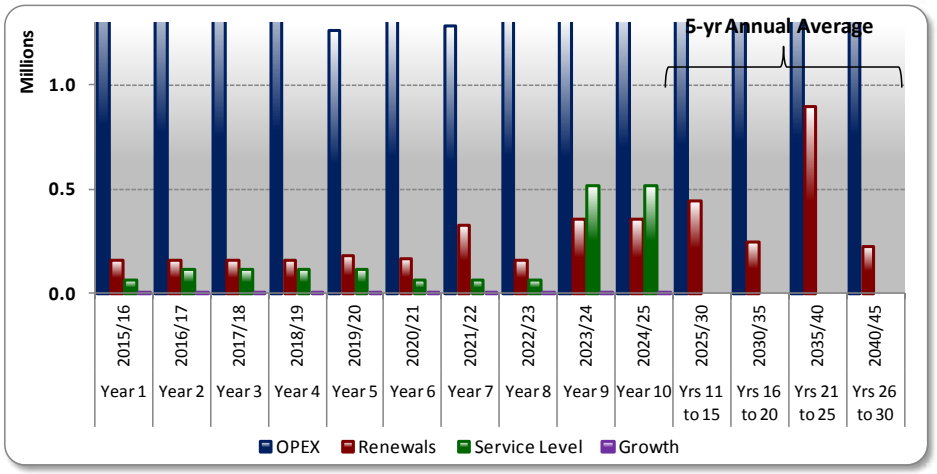
Figure 13: Extent of NPDC stormwater network

Catchment management planning is also required in particular growth areas or existing developed areas that are under pressure from increasing development. The timing of these works is likely in the 30-year period to cater for growth and more intensive land uses.

In order to provide better environmental outcomes, further consideration is required for when and where to provide fish passes as required by the Taranaki Regional Council. The Council will also need to consider stormwater quality, sediment control, ensuring gross pollutants do not enter the stormwater system, and manage the associated costs.

The chart and table below show the expenditure forecast for stormwater.

Figure 14: Stormwater expenditure forecast



Significant expenditure highlights

- Opex increases from 2025 are related to additional operational costs associated with a growing asset base – note that depreciation is not necessarily funded, but is included.
- Capex:
  - Seaview Road upgrade 2022-2025 - $1.3m.

$m	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Yrs 11-15 2025-30	Yrs 16-20 2030-35	Yrs 21-25 2035-40	Yrs 26-30 2040-45
OPEX	1.64	1.56	1.52	1.59	1.26	1.33	1.28	1.35	1.33	1.43	1.45	1.48	1.52	1.55
Renewals	0.16	0.16	0.16	0.16	0.18	0.17	0.33	0.16	0.35	0.36	0.45	0.25	0.90	0.22
Service level	0.06	0.11	0.11	0.11	0.11	0.06	0.06	0.06	0.52	0.52	0.00	0.00	0.00	0.00
Growth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 4: Stormwater expenditure forecast

7.5 Flood Protection

The Council has three diversion tunnels, three dams and one weir that are used to protect New Plymouth from flood events. The fixed asset gross replacement value for flood protection assets is $18m or about one per cent of the Council's fixed asset base, of which $254,000 ($371,000 inflated) worth of assets will need to be renewed over the next 30 years. The asset base is in very good condition and on average has 77 per cent of its original life remaining. The map below shows the location of flood protection assets in the district.

There is likely to be a trend towards more frequent and higher-intensity rainfall events. It is anticipated that the effects of this trend will not be significant over the life of this strategy. The potential impacts, if it does in fact eventuate, need to be considered and monitored to determine the impact, if any, on flood protection in New Plymouth City.

Catchment management plans will become increasingly important as more land gets developed and if rainfall events increase in frequency and intensity. The timing will be determined by future need and is likely to cost $100,000 for each plan. The data is not as accurate as required so the first step is to address this within the scope of day to day operations.

Figure 15: Location of NPDC flood protection assets

The chart and table below show the expenditure forecast for flood protection.

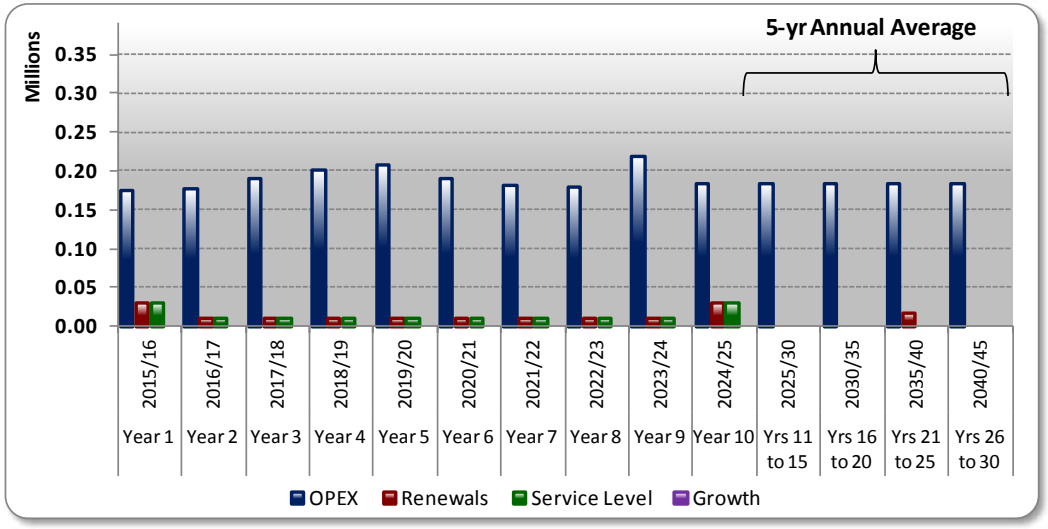


Figure 16: Flood protection expenditure forecast

Significant expenditure highlights

There is no additional significant expenditure over the life of this strategy.

$m	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Yrs 11-15 2025-30	Yrs 16-20 2030-35	Yrs 21-25 2035-40	Yrs 26-30 2040-45
OPEX	0.17	0.18	0.19	0.20	0.21	0.19	0.18	0.18	0.22	0.18	0.18	0.18	0.18	0.18
Renewals	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.00	0.00	0.02	0.00
Service level	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.00	0.00	0.00	0.00
Growth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 5: Flood protection expenditure forecast

7.6 Solid Waste

The Council has one regional landfill and five transfer stations with a new resource recovery facility due to open in October 2015. In addition to the open facilities there are eight closed landfills the Council is still responsible for, of which two can be used in an emergency. The fixed asset gross replacement value for solid waste assets is $6m or less than one per cent of the Council's fixed asset base, of which approximately $3.5m ($5m inflated) will need to be renewed over the next 30 years. The asset base is in good condition and on average has 55 per cent of its original life remaining. The map below shows the location of solid waste sites in the district.

The Colson Road Landfill is expected to reach capacity in 2019 and an alternative is required for the disposal of solid waste. Planning has already started for a regional landfill that it expected to provide for the district's solid waste needs until approximately 2040. Waste minimisation techniques including recycling (existing) and organic disposal alongside education initiatives will assist with extending the life of the landfill. It is possible that planning for an additional landfill or for further capacity for a landfill will fall within the last years of this strategy.

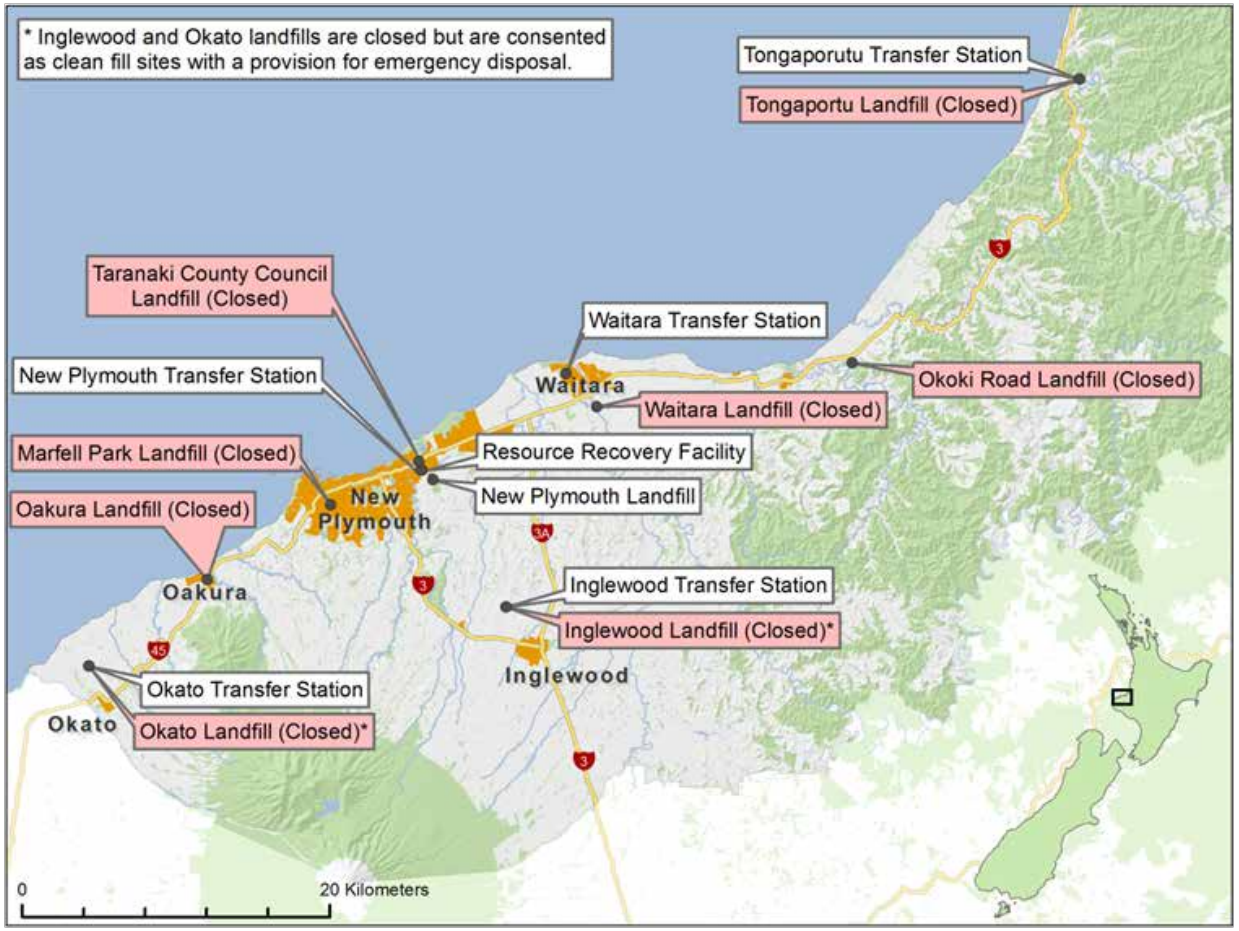


Figure 17: Location of NPDC solid waste sites

The chart and table below show the expenditure forecast for solid waste.

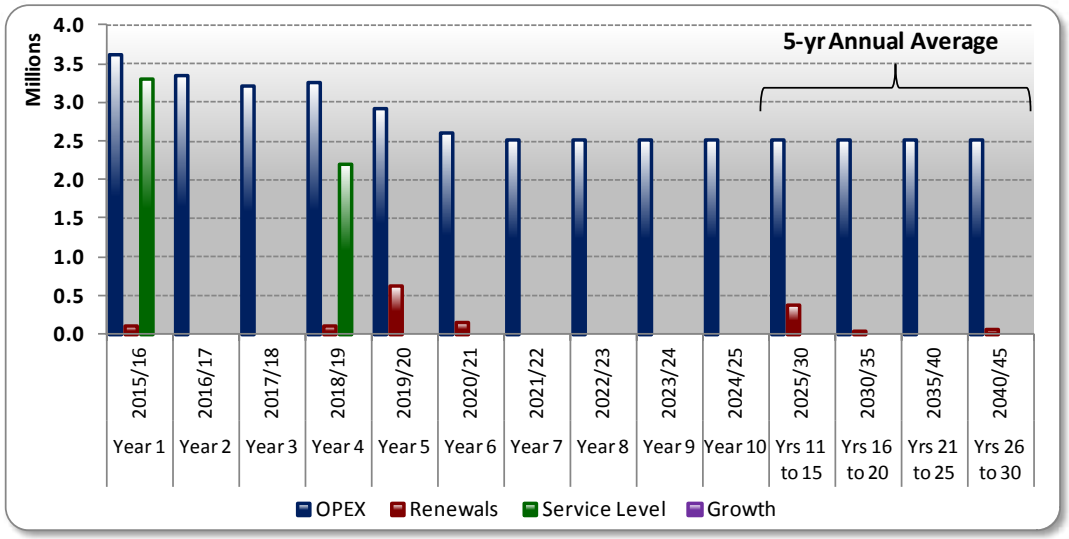


Figure 18: Solid waste expenditure forecast

Significant expenditure highlights

- Capex:
  - New resource recovery facility 2015-2018 - $3.9m.
  - Collection changes (by resolution) 2015/16 - $1.6m.

$m	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Yrs 11-15 2025-30	Yrs 16-20 2030-35	Yrs 21-25 2035-40	Yrs 26-30 2040-45
OPEX	3.60	3.34	3.22	3.25	2.91	2.60	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Renewals	0.10	0.00	0.00	0.10	0.61	0.14	0.00	0.00	0.00	0.00	0.37	0.04	0.00	0.06
Service level	3.30	0.00	0.00	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 6: Solid waste expenditure forecast

7.7 Recreation and Open Space

Recreation and open spaces contribute positively to social, physical and mental well-being. They also have positive benefits for the local economy and help preserve and enhance the natural environment. The Draft Open Space, Sport and Recreation Strategy is currently out for consultation. The strategy is a long-term planning document that will help the Council plan, develop and manage Council-owned recreation and open spaces within the district, in a way that meets the current and future needs of the community. The Blueprint has considered the directions in this strategy and tested these against other infrastructure issues.

There are opportunities for a strategic rationale process to be undertaken for open space, recreation and community facilities across the district to respond to demand, changing needs or oversupply. In addition to this the Council needs to build on current approaches that leverage off external organisations by enabling, partnering and supporting them to be coordinated and strategic in order to extend the Council's ability to deliver, or influence, better community/environmental outcomes with the same resources.

TSB Stadium

As part of the Council's commitment to proving facilities for a healthy community, it has been proposed that a new multi-sport development of the TSB Stadium/Pukekura Raceway is required to meet current or forecast demand on the stadium. Basketball, netball and volleyball are sports that have increasing demand and require more indoor space than is available. Demand for other indoor community sports such as futsal, one of the world's fastest-growing indoor sports, is also anticipated. The current "non-event" to "event" ratio for the stadium is 36:64, which is unusually high for a facility of this type. Industry guidelines indicate a ratio of 50:50 is desirable. The location of this site in relation to existing infrastructure, the ability for future expansion and "hubbing" is desirable.

The project has been signalled as appropriate for after 2026. The TSB Stadium redevelopment was included in the LTP 2012-2022 and scheduled to start in 2016/17; however, this has not been proposed in the LTP 2015-2025. The project has a capital cost of $27.1m and additional operational costs of $2m in the first year. An alternative 10-15 year option of renewing the Waiwhakaiho Netball Courts and the current TSB Stadium along with improving parking at the netball courts has a cost of $5.2m. The implication for the proposed option is there will be an increase in rates, but the community would have a facility that meets the demand of an active community. The implication of the second option is the community would have unmet demand for an indoor stadium but some improvement to the usability at the TSB Stadium and Waiwhakaiho Netball Courts. Traffic and parking congestion would largely remain at Waiwhakaiho.

Todd Energy Aquatic Centre

Associated with an active ageing community is a significant increase in demand for indoor pool space, specifically lap lanes. The proposal is to redevelop the Todd Energy Aquatic Centre to create more indoor pool space at an estimated cost of $15.5m. The project has been signalled as appropriate for after 2026. The implications are mainly related to increases in operational costs with loan funding required. The operational costs are likely to be offset to some degree with an expected increase in revenue. The implications of not redeveloping the aquatic centre are that demand would not be met with the current facilities, which could have a negative effect on community well-being.

Coastal Walkway to Waitara

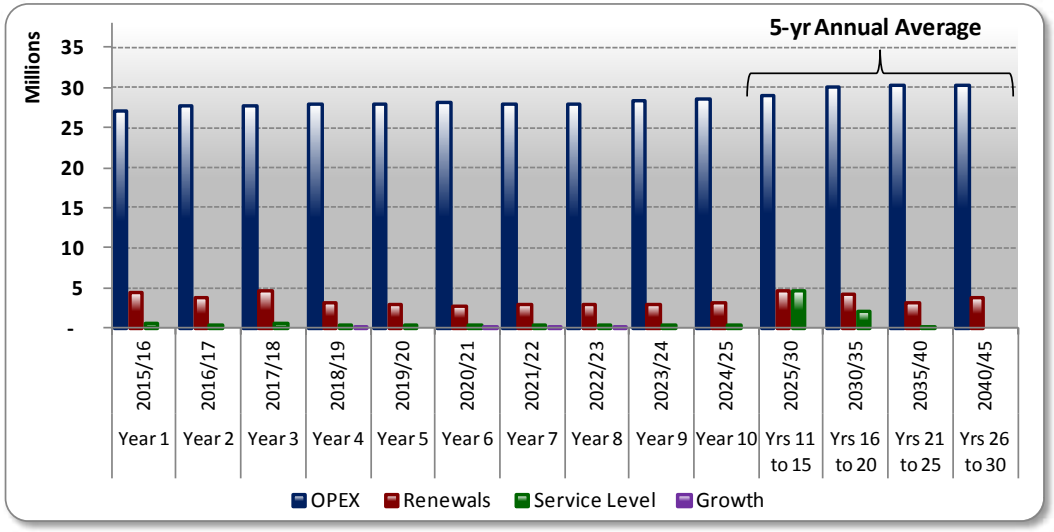
The Council is planning for the extension of the Coastal Walkway from its current terminus at Tiromoana Crescent to Waitara. The extension is dependent on land acquisition through the future residential growth area between Wills Road and Airport Drive, known as Area Q. Land acquisition is predicted to take a number of years depending on the timing of subdivision and it is therefore appropriate that the timing of the Coastal Walkway extension to Waitara is beyond 2026. The total cost of developing this extension is $4.4m. The extension will be of benefit to residents of Waitara by providing an off-road commuting route to Bell Block and New Plymouth, and to the wider community through extended recreation opportunities.

Coastal Erosion

Coastal erosion is a significant issue given that the Taranaki coast is a coastline formed by erosion processes (which are still ongoing) and New Plymouth is a coastal city. It is recognised that a lot of infrastructure is along the coastline such as water and wastewater reticulation, roads, open space and the Coastal Walkway. In addition to Council assets, there are also assets of importance to the district such as rail, state highways and the central business district itself, and the nationally important gas line along the North Taranaki coastline. Most settlements along the coast including, but not limited to, Bell Block, Waitara, Oakura, Urenui and Onaero are also at risk of coastal erosion. All assets within the coastal hazard zone identified within the District Plan have the potential to be affected in the next 100 years, particularly should forecast increases in sea level rise eventuate.

The Council needs to ensure that the existing policy of protecting only significant public assets, not considering the protection of private assets, is well communicated and is reflected in policy documents. In regard to the Council's coastal parks and reserves, the Council does have a Coastal Erosion Strategy. There will, however, be a continuation of the operational and renewal expenditure to maintain the foreshore protection assets already present.

The chart and table below show the expenditure forecast for recreation and open space.



Significant expenditure highlights

- Opex increases from 2025 are related to additional operational costs associated with a growing asset base – note that depreciation is not necessarily funded, but is included.
- Capex:
  - TSB Stadium Redevelopment 2025-2030 - $27.1m.
  - Walkway Extension to Waitara 2025-2032 - $4.4m.
  - Todd Energy Aquatic Centre 2030-2035 - $15.5m.

Figure 19: Recreation and open space expenditure forecast

$m	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Yrs 11-15 2025-30	Yrs 16-20 2030-35	Yrs 21-25 2035-40	Yrs 26-30 2040-45
OPEX	27.10	27.62	27.81	27.99	27.97	28.10	27.96	27.87	28.32	28.51	28.98	30.00	30.22	30.22
Renewals	4.46	3.70	4.65	3.23	3.00	2.62	2.96	2.85	2.91	3.12	4.68	4.12	3.09	3.75
Service level	0.58	0.41	0.53	0.31	0.31	0.31	0.31	0.31	0.31	0.31	4.70	2.08	0.03	0.00
Growth	0.00	0.00	0.00	0.05	0.00	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00

Table 7: Recreation and open space expenditure forecast

8. Historical expenditure and forecasts

8.1 Historical expenditure

The chart below shows the capital expenditure trend for the recent past. The Council's aim for the LTP 2012-2022 was to ensure what was planned could be completed to minimise carry-forwards (capital expenditure planned but not used). It can be seen that in 2012/13 the amount planned versus spent was closer than the recent past. The large spike in 2013/14 from the original budget to the revised budget was largely because the Waitara to New Plymouth wastewater pipeline was moved forward and not completed, causing the variance to actual spend. This project has since been completed.

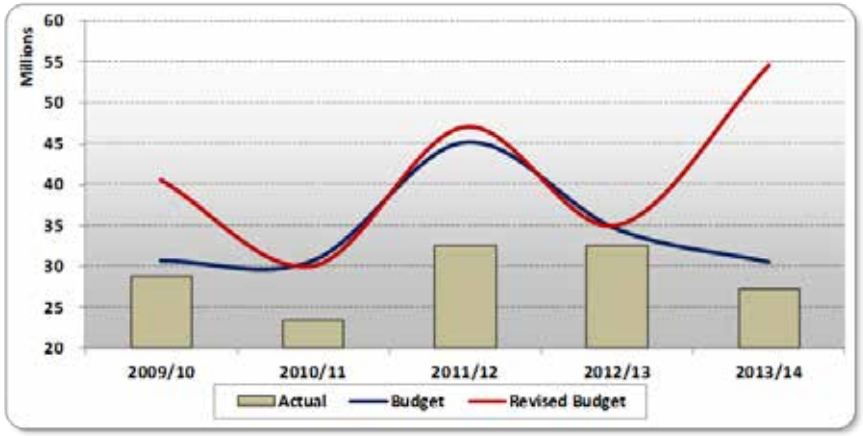


Figure 20: Historical capital expenditure

Significant expenditure highlights

There are additions to the asset base that drive operational expenditure up as highlighted in section 7; however, inflationary impacts are significant from 2025-2045. To highlight the impact of inflation, $1 in 2015 will be equivalent to $2.27 in 2045 for opex and $2.52 for capex.

8.2 Inflated summary

The chart below collates the expenditure from section 7 of this strategy. The Council is required to show expenditure that reflects a current inflation adjusted expenditure forecast. It should be noted that inflation rates change over time. Below is the inflation adjusted expenditure forecast summary (note that the figures presented in section 7 are not inflated).

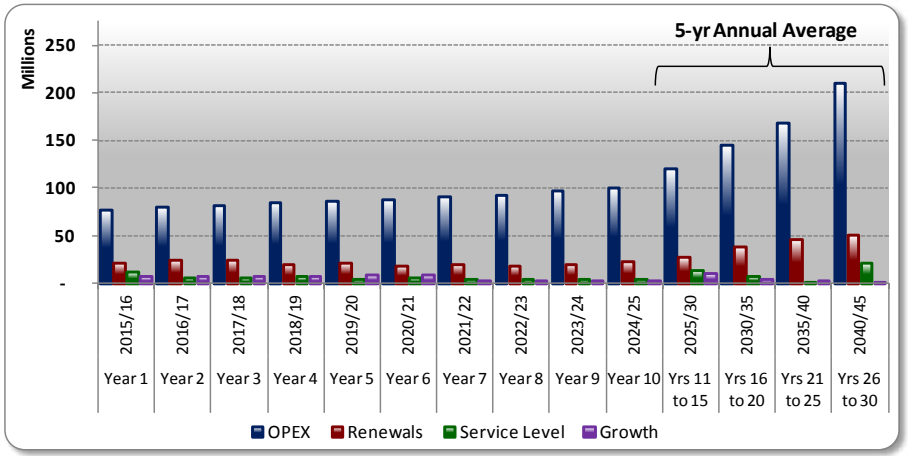


Figure 21: Inflated expenditure forecast

$m	Year 1 2015/16	Year 2 2016/17	Year 3 2017/18	Year 4 2018/19	Year 5 2019/20	Year 6 2020/21	Year 7 2021/22	Year 8 2022/23	Year 9 2023/24	Year 10 2024/25	Yrs 11-15 2025-30	Yrs 16-20 2030-35	Yrs 21-25 2035-40	Yrs 26-30 2040-45
OPEX	76.86	79.25	81.15	84.51	86.33	88.02	90.75	92.39	97.24	100.27	119.59	144.88	167.72	209.60
Renewals	20.71	24.70	24.68	19.17	20.47	18.36	19.47	18.02	20.16	22.38	27.51	38.80	45.84	51.02
Service level	11.12	4.99	4.98	7.95	4.73	5.73	3.98	4.17	4.13	4.34	12.80	7.77	1.69	21.60
Growth	6.52	6.82	7.82	6.91	8.39	8.73	2.17	2.16	2.15	2.20	10.88	3.57	1.85	1.64

Table 8: Inflated expenditure forecast