



NAPIER
CITY COUNCIL
Te Kaunihera o Ahuriri

Napier Civic Building
231 Hastings Street
t +64 6 835 7579
e info@napier.govt.nz
www.napier.govt.nz

EXTRAORDINARY MEETING OF COUNCIL

Open Attachments Under Separate Cover

Meeting Date: Tuesday 4 June 2019

Time: 9.00am

Venue: Large Exhibition Hall
Napier Conference Centre
Napier War Memorial Centre
Marine Parade
Napier

TABLE OF CONTENTS

Item 1	Amendments to funding policies and fees and charges	
Attachment E	Fees and Charges for 19/20.....	2
Item 2	Submissions on the Annual Plan 2019/20 Consultation Document	
Attachment A	Consultation Report.....	59
Attachment B	Individual Submissions - residents of Whakarire Ave.....	101
Attachment C	Individual Submissions - Guardians of the Aquifer	112
Attachment D	Individual Submissions - Annual Plan	248

Animal Control

All fees and charges are inclusive of GST (except as noted *)

Dog Registration	2019/20 Fee
<i>Selected owner discount applies to owners who undertake Council training on dog owners' obligations (one year dog ownership as qualifying period)</i>	
<i>For dogs registered for the first time after the commencement of the registration year a charge of one twelfth of the annual unlicensed owner fee per month, or part-month of the remaining year, is payable, provided the dog is no older than three months at time of first registration. Dogs older than three months at the time of first registration will be charged from the date that the dog attained the age of three months.</i>	
<i>The minimal charge for licenced dog ownership for seniors (65+) addresses the very low rate of issues from this sector.</i>	
<i>Charges for Dog Registration and Control are approved pursuant to Section 37 of the Dog Control Act 1996 and the Napier City Animal Control Bylaw.</i>	
Registration Fees	
Full fee (paid by 1 August)	\$110.00
Full Fee after 1 August and Dangerous Dogs	\$165.00
Selected owner discounted fee (paid by 1 August)	\$74.00
Selected owner discounted fee (paid after 1 Aug)	\$110.00
Selected owner application fee	\$25.00
Licensed owner	\$0.00
Working Dog	\$48.00
Working Dog (Public Good) e.g. Guide Dog	No charge
Dangerous Dogs	\$165.00
Impounding Charges	
First impounding registered dog	\$85.00
Second impounding registered dog	\$100.00
Third and subsequent impounding registered dog	\$150.00
Unregistered dog impounding	\$175.00
Recovery of Costs	
Call out rate to open Shelter outside of hours	\$175.00
Animal Control Officer Hourly rate (including enforcement activity)	\$100.00
Daily care of dog	\$10.00
Permit Fee (3 or more dogs or breeding kennels) Annual Fee	\$50.00
Sale of Dog (including microchip implantation)	\$280.00
Replacement Registration Tag	\$5.00
Dog Owner Licence Application Fee	\$50.00
Dog Owner Licence Application Fee (Age 65+)	\$5.00
Surrender of Dog to Animal Control with community services card	\$10.00
Surrender of Dog to Animal Control	\$50.00
Stock Control	
<i>The cost of retrieving stock will be charged in actual costs in accordance with the hourly rates in this schedule</i>	
Stock Impounding Charges	\$40/night
Microchipping of dog and registration on National Dog Database*	\$30.00
Microchipping of dog and registration on National Dog Database with community services card	\$5.00

Bay Skate

All fees and charges are inclusive of GST (except as noted *)

Bay Skate	2019/20 Fee
Admission	
Bay Skate members and affiliated club members	\$4.00
Non-members	\$6.00
Senior Citizens / Community Services Card holders	\$5.00
Child (3 or under)	No Charge
Spectators	No Charge
Membership	
Bay Skate annual membership	\$40.00
Equipment Hire	
Scooter	\$10.00
Inline Skates	\$10.00
Skateboard	\$10.00
Roller skates	\$10.00
Aggressive skate	\$10.00
Beach path hire	\$10.00 per hour
Protective equipment	Free with equipment hire
Helmet	Free with equipment hire
Venue Hire	
Rink Only	
Rink only - Affiliated Club (per hour)	\$30.00
Events (Grandstand and Rink Use)	
Community Group (per hour)	\$50.00
Corporate (per hour)	\$200.00

Building

All fees and charges are inclusive of GST (except as noted *)

Building Consents	2019/20 Fee
Building Fees	
<i>All building consent, building consent amendment, code compliance certificate, certificate of acceptance and certificate for public use fees are charged on an actual and reasonable cost recovery basis as per the below fees and charges. Fees are payable prior to the grant/issue of the applicable consent/certificate.</i>	
<i>Certificates of acceptance pursuant to section 96(1)(a) of the Building Act 2004 are subject to any fees, charges or levies that would have been payable had a consent been applied for before the work was carried out plus the current actual and reasonable costs associated with the application as per the below fees and charges.</i>	
Project Information Memorandum (stand-alone only)	\$250.00
Compliance Schedule	\$300.00
Building Administration Fees	
Online Lodgement Fee	\$144.00
Building Accreditation Fee	\$20.00
Building Warrant of Fitness Fee	
Administration and Audit Fee	\$150.00
Hourly Rates	
Building Consents Officer	\$165.00
Building Administrator	\$80.00
Inspection Fee	
Inspection Fee	\$165.00
Liquor Licence Fee	
Certificate of Compliance Fee	\$100.00
Fees Payable for Specific Works (Set by Legislation)	
Building Research Levy per \$1,000 value above \$20,000*	\$1.00
Building Levy per \$1,000 value \$20,444 and above	\$2.01
Roadway Fees in Association with Building Consents	
Application Processing Fee	\$25.00
Inspection for Road Damage	\$64.00
Inspection for Vehicle Crossing	\$145.00
Sundry Inspections	
Per Hour (minimum fee one hour)	\$165.00
Building Statistics	
Full Report	\$25.00
Single Report	\$15.00
Additional Sections	\$6.00
Miscellaneous Charges	
Property File Fee	
Property File Management Fee (charged per consent)	\$75.00
Certificate of Title	\$25.00

Cemeteries

All fees and charges are inclusive of GST (except as noted *)

Cemeteries	2019/20 Fee
Interments - Burials	
Adults	\$575.00
Child (Over 29 days and under 14 years)	\$270.00
Stillborn child (within Neo-Natal area and up to 28 days after birth)	No Charge
Stillborn child (not within Neo-Natal area and up to 28 days after birth)	\$95.00
Disinterments and Reburials	
Same Plot	\$2,560.00
Different Plot	\$2,560.00
Extra Depth	
Extra Depth (to allow for three burials)	\$90.00
Burial of Deceased Formerly Resident Outside City Boundary	
Burial of Deceased Formerly Resident Outside City Boundary	\$635.00
Sale of Burial Plots	
<i>Includes Perpetual Maintenance</i>	
Children under 14 years area (Western Hills and Park Island)	\$920.00
Wharerangi	\$2,250.00
Western Hills	\$2,250.00
Eskdale	\$2,250.00
Sale of Ash Plots	
<i>Includes Perpetual Maintenance</i>	
Wharerangi Inground Plaque	\$410.00
Wharerangi Middle Ridge Ash Beam	\$410.00
Western Hills Rose Garden Beds 1-14	\$300.00
Western Hills Rose Garden Beds 15 and onwards	\$410.00
Western Hills Upright Ash Internment Area	\$580.00
Interment - Ashes - Includes Registration	
Interment of Ashes	\$130.00
Scattering of Ashes	\$130.00
Disinterment of Ashes	
Disinterment of Ashes	\$95.00
Registration of Memorial only	
Registration of Memorial only	\$95.00
Book of Remembrance	
Record of name in book of remembrance	\$43.00
Monument Permit	
Permit to erect a monument	\$43.00
Change of Plot Ownership	
Transfer or relinquishment of ash or burial plot	\$43.00
Additional Fee	

In exceptional circumstances arrangements can be made for a burial outside normal working hours. Normal hours are 8.00am to 4.00pm Monday to Friday and 8.00am to 12noon Saturday. For Saturday after 12noon, Sunday and Public Holidays additional charges will apply based on an actual quoted basis. Requests for quotations must be made at least 24 hours in advance during normal working hours.

Cost Per After Hours Call (for Saturday, Sunday and Public Holidays between 10am and 5pm)	\$67.00
Out-of-hours additional fee - Minimum charge	\$770.00
Sale of Niches	
Wharerangi	\$172.00
Eskdale	\$85.00
Services Fee	
Dressing of grave and use of equipment	\$87.00

Chapman Pavilion

All fees and charges are inclusive of GST (except as noted *)

Chapman Pavilion	2019/20 Fee
<i>Times of Hire: Morning is 8.00am to 1.00pm, Afternoon is 1.00pm to 6.00pm, Evening is 6.00pm to 11.00pm and Full Day is 8.00am to 11.00pm. Weekdays are Monday to Thursday, Weekends are Friday to Sunday.</i>	
<i>Performance Bond: Payment of a performance bond is required to confirm a booking. This bond will be refunded after the hire date, less any unpaid hire fees and additional costs incurred by Napier City Council as a result of actions or negligence of the hirer. The performance bond will be refunded if the booking is cancelled at least 30 days before the first hire date.</i>	
<i>Public Holidays: Additional costs incurred by Napier City Council for bookings on public holidays will be on-charged to the hirer.</i>	
Chapman Pavilion Pettigrew Lounge (Corporate Lounge 1)	
Performance Bond *	\$400.00
Weekday Morning or Afternoon	\$125.00
Weekday Evening	\$165.00
Weekday Full day	\$335.00
Weekends Morning or Afternoon	\$165.00
Weekends Evening	\$335.00
Weekends Full day	\$570.00
Chapman Pavilion Corporate Lounge 2	
Performance Bond *	\$400.00
Weekday Morning or Afternoon	\$110.00
Weekday Evening	\$145.00
Weekday Full Day	\$300.00
Weekends Morning or Afternoon	\$145.00
Weekends Evening	\$300.00
Weekends Full Day	\$520.00
Chapman Pavilion Both Lounges	
Performance Bond *	\$600.00
Weekday Morning or Afternoon	\$215.00
Weekday Evening	\$270.00
Weekday Full Day	\$540.00
Weekends Morning or Afternoon	\$270.00
Weekends Evening	\$590.00
Weekends Full Day	\$965.00
Napier City Council Wardens	
Senior Floor Attendant (per hour)	\$60.00

Corporate Services

All fees and charges are inclusive of GST (except as noted *)

Administrative, Property & Sundry	2019/20 Fee
Standing Order	
SANZ Sections 15.9, 15.12 & 15.14 (per page)	N/A
Spare copies of open agendas and relevant documents (per A4 page), minutes	No Charge
Local Government Official Information & Meetings Act (Sec 13)	
<i>First hour - no charge. Subsequent time charged per half hour</i>	
<i>Staff Time Fees per hour</i>	
<i>Other Costs: Charged at an amount which covers the actual costs involved</i>	
Requests for readily accessible information (per hour)	\$76.00
Photocopying per page (per A4 sized page after the first 20 pages)	\$0.20
Valuation & Rating Information	
<i>Rating Information Database - property valuation and rating information supplied in hard copy</i>	
Charge per page (under 5 pages free)	\$0.20
Postponed Rates	
<i>In addition to the annual fee, Council charge interest on the accumulating balance of rates postponed for approvals after 1st July 2009, and any other costs or one-off fees incurred in relation to registration of the postponement.</i>	
Postponements approved prior to 1st July 2009 - Annual Fee	\$70.00
Postponements approved after 1st July 2009 - Annual Fee	\$40.00
Lease	
Preparation Fee	\$750.00
Licence to Occupy	
Preparation Fee (Standard)	\$185.00
Preparation Fee (Complex) (eg. where more than one class of land or set of regulations is involved)	\$250.00
Lessors Consent	
Grant of Lessor's Consent Fee	\$70.00
Poster Bond	
Charge to be at discretion of the Director of Corporate Services.	Charge to be at discretion of the Director of Corporate Services.

Environmental Solutions

All fees and charges are inclusive of GST (except as noted *)

Trade Waste Charges	2019/20 Fee
Laboratory charges - Trade & Industrial sites - Type 1	\$186.80
Laboratory charges - Trade & Industrial sites - Type 2	\$124.40
Laboratory charges - Trade & Industrial sites - Type 3	\$23.20
Laboratory charges - Trade & Industrial sites - Type 4	\$155.60
Hourly charge - Environmental Compliance Officer	\$132.00
Labour charges (per hour)	
Manager Environmental Solutions	\$160.00
Environmental Lead	\$150.00
Environmental Management Officer	\$132.00
Environmental Compliance Officer	\$132.00
Environmental Officer	\$132.00
Environmental Intern	\$120.00
Waste Minimisation & Recycling	
Waste Minimisation Lead	\$150.00
Waste Minimisation Officer	\$132.00
Pollution response	
Laboratory charges	Lab costs (no margin)
<i>Hourly rates (as above)</i>	
Types of Trade Waste sites	
<i>Type 1 Trade & Industrial Premises: Tanneries</i>	
<i>Type 2 Trade & Industrial Premises: All industrial and trade premises not utilising metals in their processing that are not tanneries</i>	
<i>Type 3 Trade & Industrial Premises: Industries using metals in their processes that are not tanneries</i>	
<i>Type 3 Trade & Industrial Premises: New trade waste connections, initial sampling</i>	

Faraday Centre

All fees and charges are inclusive of GST (except as noted *)

Admission	2019/20 Fee
Adults	\$9.00
Children (under 15 years)	\$4.00

Graeme Lowe Stand Lounges

All fees and charges are inclusive of GST (except as noted *)

Graeme Lowe Stand Lounges	2019/20 Fee
<i>Times of Hire: Morning is 8.00am to 1.00pm, Afternoon is 1.00pm to 6.00pm, Evening is 6.00pm to 11.00pm and Full Day is 8.00am to 11.00pm. Weekdays are Monday to Thursday, Weekends are Friday to Sunday.</i>	
<i>Performance Bond: Payment of a performance bond is required to confirm a booking. This bond will be refunded after the hire date, less any unpaid hire fees and additional costs incurred by Napier City Council as a result of actions or negligence of the hirer. The performance bond will be refunded if the booking is cancelled at least 30 days before the first hire date.</i>	
<i>Event Day: A day on which an entry charge event is held on the Mclean Park field of play.</i>	
<i>Public Holidays: Additional costs incurred by Napier City Council for bookings on public holidays will be on-charged to the hirer.</i>	
Graeme Lowe Stand Lounge 1	
Performance Bond *	\$400.00
Weekday Morning or Afternoon	\$290.00
Weekday Evening	\$355.00
Weekday Full day	\$850.00
Weekends Morning or Afternoon	\$360.00
Weekends Evening	\$435.00
Weekends Full day	\$1,070.00
Event Day	\$1,070.00
Graeme Lowe Stand Lounge 2	
Performance Bond *	\$400.00
Weekday Morning or Afternoon	\$315.00
Weekday Evening	\$405.00
Weekday Full day	\$950.00
Weekends Morning or Afternoon	\$400.00
Weekends Evening	\$475.00
Weekends Full day	\$1,200.00
Additional Facilities	
Graeme Lowe Stand Kitchen	
Performance Bond *	\$200.00
Morning or Afternoon	\$85.00
Evening	\$170.00
Full Day	\$280.00
Event Day	\$280.00
Napier City Council Wardens	
Senior Floor Attendant (per hour)	\$60.00

Green Meadows East Community Hall

All fees and charges are inclusive of GST (except as noted *)

Main Hall & Kitchen	2019/20 Fee
Group 1 - Profit-Making Organisations and Family Gatherings	
Hourly charge	\$41.00
Morning or Afternoon	\$110.00
Evening	\$168.00
Whole Day	\$245.00
Group 2 - Community, Hobby & Sports Groups	
Hourly charge	\$28.00
Morning or Afternoon	\$82.00
Evening	\$122.00
Whole Day	\$163.00
Meeting Room	
Group 1 - Profit-Making Organisations and Family Gatherings	
Hourly charge	\$18.00
Morning or Afternoon	\$50.00
Evening	\$73.00
Whole Day	\$102.00
Group 2 - Community, Hobby & Sports Groups	
Hourly charge	\$15.00
Morning or Afternoon	\$40.00
Evening	\$54.00
Whole Day	\$71.00

Inner Harbour

All fees and charges are inclusive of GST (except as noted *)

Permanent Berthage	2019/20 Fee
Iron Pot	
<i>A minimum length charge applies to these berths as follows: Jull Wharf (10 metres), Nelson Quay Berths 24-37 (7 metres), Nelson Quay Berths 11-23 (9 metres).</i>	
Commercial (per metre per annum)	\$382.00
Recreational (per metre per annum)	\$334.00
Meeanee Quay Piers 1 & 2	
<i>A minimum length charge applies to these berths as follows: Meeanee Quay Pier 1 (9 metres), Meeanee Quay Pier 2 Berths 62-72 (12 metres), Meeanee Quay Pier 2 Berths 73-80 (10 metres), Meeanee Quay Pier 2 Berths 81-85 (9 metres).</i>	
Commercial (per metre per annum)	\$382.00
Recreational (per metre per annum)	\$334.00
Meeanee Quay Piers 1 & 2 Living on Board Charge	
Living on Board Charge (per week)	\$18.00
West Quay	
Commercial (per metre per annum)	\$372.00
Recreational (per metre per annum)	\$321.00
West Quay Extension (per metre per annum)	\$393.00
Temporary Berthage & Other Charges	
Visiting Vessels	
Commercial (per day)	\$95.00
Recreational (per day)	\$25.00
Rebates & Penalties	
Rebate for Payment of Annual Fees within Specified Time	
Commercial (per metre)	\$22.00
Recreational (per metre)	\$19.00
Penalty for Occupying Discharge Berth Outside Normal Discharge Time	
Per day or part thereof	\$575.00
Penalty for Non-Payment of Annual Fees by Due Date	10%
Nelson Quay Boat Ramp	
Annual Fee	
Hawke's Bay Sports Fishing Club Members	\$110.00
Public who are not members of the Hawke's Bay Sports Fishing Club	\$150.00
Casual Users Fee	
<i>Casual entry fee is \$10.00 per entry. This assumes that parking is not always available within the wharf car park and that a further entry may be required to retrieve the boat. This makes a cost of \$20 per boat launch which is as per the Council approved Fees and Charges Schedule.</i>	
Casual Fee per boat launch	\$20.00

Kennedy Park

All fees and charges are inclusive of GST (except as noted *)

Accommodation	2019/20 Fee
<i>Peak rates apply in high season, Public Holidays, and other times of high demand. Minimum rates and minimum stays may also apply at these times.</i>	
<i>Group (minimum 20 people) discount prices are available upon application, excluding high season.</i>	
<i>Child 1-14 years. Infants under one year free.</i>	
Park Motels (Rack Rate)	
Standard Rate single/double	\$125.00 - \$342.00
Extra Adult	\$25.00 - \$28.00
Extra Child	\$21.00 - \$22.00
Holiday Units (Rack Rate)	
Standard Rate single/double	\$118.00 - \$298.00
Extra Adult	\$25.00 - \$28.00
Extra Child	\$21.00 - \$22.00
En-Suite Units (Rack Rate)	
Standard Rate single/double	\$105.00 - \$245.00
Extra Adult	\$25.00 - \$28.00
Extra Child	\$21.00 - \$22.00
Cabins (Rack Rate) (Guests use communal bathroom facilities)	
Standard Rate single/double	\$69.00 - \$170.00
Extra Adult	\$25.00 - \$28.00
Extra Child	\$21.00 - \$22.00
Powered Sites / Non Powered Sites (Rack Rate)	
Standard Rate single/double	\$49.00 - \$98.00
Extra Adult	\$25.00 - \$28.00
Extra Child	\$21.00 - \$25.00
Hireage Charges	
Hireage	
Portacot (per day)	\$6.00
High Chair (per day)	\$6.00
Portable Barbeque (per two hours)	\$27.00
Power Adaptor (per day)	\$6.00
Chiller Key (per day)	\$1.50
Pedal Car (per hour)	\$10.00
PS2 (per day)	N/A
Karaoke (per day)	N/A
DVD Player (per day)	\$11.00
DVD Movie (per day)	\$4.00
Bicycle	Price on Application
Conference Venue/Facility Hire	
Conference Venue/Facility Hire	Price on Application

Library Services

All fees and charges are inclusive of GST (except as noted *)

Library Services Charges	2019/20 Fee
Rentals	
Book Rental	No Charge
Children's Compact Disc	No Charge
Book Rental - Best Seller Collection	\$6.00
Magazine Rental - Best Seller Collection	\$3.00
Compact Disc Rental - per item 14 days	\$2.00
DVD Rental - new title, per item 7 days	\$4.00
DVD Rental - older item, including Children's, 7 days	\$2.00
DVD Rental - series, 14 days	\$6.00
Extended Loan Charges	
All materials except BestSeller books, BestSeller magazines, and console games - per item per day	\$0.50
BestSeller Collection - Books and magazines. Per item per day	\$1.50
Maximum charge per item	\$11.00
Interloan Charges	
Handling Fee	\$6.50
Interloans from libraries that charge an additional fee (handling fee will be additionally charged)	\$21.00
Rush Fee (additional to above charges)	\$22.50
City Loan	
Handling Fee	\$6.50
Visitors from Outside the Hawkes Bay Region	
Borrowing Fee	\$5.00
Membership Cards	
Replacement of Membership Cards	\$5.00
Research Services	
Per hour with first 15 minutes free	\$50.00
Borrow a Librarian Per 30 min session	Upto \$20
Photocopying	
Per A4 sheet (Black & White 1 x side only)	\$0.20
Per A3 sheet (Black & White 1 x side only)	\$0.50
Per A4 sheet (Colour 1 x side only)	\$0.80
Per A3 sheet (Colour 1 x side only)	\$2.00
Fax and Scanning Charges	
National - up to five pages	\$3.50
Subsequent pages - per page	\$0.20
International - per page	\$3.50
Internet/Email Charges	
Per hour	\$4.00
Per 30 minutes	\$2.00
Printout Charges	
Microfilm reader printer (per A4 sheet)	\$0.50

A4 black & white printouts (per side)	\$0.20
A3 Colour Printouts (per side)	\$2.00
A4 Colour Printouts (per side)	\$0.80
Charges Related to Damaged or Lost Items	
<i>Books with a high replacement value are priced at the discretion of library management</i>	
Item Charges	
Items are charged at individual purchase price as per catalogue record. If a purchase price is not recorded, a standard replacement cost is charged as per the following average item price table	
Individual Purchase Price	
Books	
All Books	up to \$50.00
Compact Disc	
Purchase price of item as per catalogue record, if not available a standard replacement cost will be charged at	\$30.00
DVD	
Per Disk	\$30.00
Magazines	
<i>Minimum Charge</i>	
Childrens Puzzles	
Children's Puzzles	\$30.00

Licence Fees Environmental Health

All fees and charges are inclusive of GST (except as noted *)

Licence Fees	2019/20 Fee
Food Premises / Food Control Plans Fees under the Food Act 2014	
New Template Food Control Plan Registration	\$230.00
Renewal of Template Food Control Plan Registration	\$100.00
Amendment of Food Control Plan Registration (per hour)	\$180.00
New National Programme Registration	\$230.00
Renewal of National Programme Registration	\$100.00
Amendment of National Programme Registration (per hour)	\$180.00
Verification of Food Control Plan based on template or MPI	\$450.00
Postponement of Verification of Food Control Plan	\$70.00
Verification follow up (per hour)	\$155.00
Compliance and Monitoring	\$155.00
Hairdressers	
Hairdressers	\$185.00
Skin Piercing Premises	
Skin Piercing Premises	\$185.00
Offensive Trades	
Tanneries	\$330.00
Refuse Collection	\$180.00
All Other Trades	\$235.00
Funeral Directors	
Funeral Directors	\$235.00
Camping Grounds	
Camping Grounds	\$330.00
Hawkers	
Hawkers	\$100.00
Mobile Shop	
Mobile Shop	\$180.00
Noise Control	
Stereo Seizure	\$250.00
Amusement Devices	
<i>Fees are set by the Amusement Device Regulations 1978</i>	
One device, first 7 days (or part thereof)	\$11.50
Each additional device, first 7 days (or part thereof)	\$2.30
Each device each further 7 days (or part thereof)	\$1.20
Miscellaneous Charges	
Miscellaneous Permits	\$100.00
Advice over and above 1hr - per hour	\$155.00
Hourly Rates	
Environmental Health Officer	\$155.00

Licence Fees	2019/20 Fee
Compliance Officer	\$155.00
Liquor Licence Inspector	\$155.00
Regulatory Administrator	\$80.00
Street Tables and Chairs	
Street Tables and Chairs	\$250.00
Inner City Temporary Commercial Promotion Activity	
Licence to Occupy	\$50.00
Litter Control	
Infringement fee (maximum)	\$400.00
Liquor Licence Application Fees	
<i>Fees set by regulation under Sale and Supply of Alcohol Act 2012</i>	
Application Fees	
Very low risk application	\$368.00
Low risk application	\$609.50
Medium risk application	\$816.50
High risk application	\$1,023.50
Very high risk application	\$1,207.50
Annual Fees	
Very low risk premises	\$161.00
Low risk premises	\$391.00
Medium risk premises	\$632.50
High risk premises	\$1,035.00
Very high risk premises	\$1,437.50
Special Licence Applications	
1 to 2 small size events	\$63.25
3 to 12 small, 1 to 3 medium size events	\$207.00
All other special licenses / large events	\$575.00
Other Applications	
Managers Certificate Applications	\$316.25
Temporary Authority	\$296.70
Temporary Licence	\$296.70
Appeal to ARLA	\$517.50
Permanent Club Charter annual fee	\$632.50
Extract of Register	\$57.50

Memorial Hall Complex Clive Square

All fees and charges are inclusive of GST (except as noted *)

Main Hall & Lounge	2019/20 Fee
Closed	
Closed for Redevelopment	

Museum Theatre Gallery (MTG)

All fees and charges are inclusive of GST (except as noted *)

Museum, Theatre, Gallery	2019/20 Fee
Admission	
General Admission	No Charge
Guided Tours (per person)	\$12.00
Theatre	
Film Admission	
Adults	\$17.00
Student (15 years plus with Student ID)	\$14.50
Senior Citizens (65 +) and Community Services Card holders, and Friends of the Museum	\$12.50
Children (under 15 years)	\$11.00
One Off Film Screens	
Film Festivals	Price on Application
Venue Rental	
<i>All catering, staffing, audio-visual equipment or services are additional charges - price on application.</i>	
<i>Terms and Conditions apply and are available on application.</i>	
<i>Cancellations made less than 7 days in advance of event may incur an additional fee.</i>	
<i>A minimum charge of 3 hours applies to hourly venue rentals.</i>	
Venue Hire Deposits	
Venue Hire - Corporate and Profit Making Organisations	\$300.00
Venue Hire - Community and Non Profit Making Organisations	\$150.00
Theatre Group 1 - Corporate and Profit Making Organisations	
Cleaning fee (one off charge)	\$100.00
Daytime (8.30am to 12.30pm or 12.30pm to 5.30pm)	\$485.00
Daytime full day rate	\$800.00
Evening - 5.30pm	\$670.00
Setup / Pack Out / Rehearsal per hour (including staff costs)	\$95.00
Theatre Group 2 - Community & Non Profit Making Organisations	
Cleaning fee (one off charge)	\$80.00
Daytime (8.30am to 12.30pm or 12.30pm to 5.30pm)	\$291.00
Evening - 5.30pm	\$400.00
Setup / Pack Out / Rehearsal per hour (including staff costs)	\$80.00
Theatre - Gala Film Screening	
<i>330 tiered seating. Available for fund raising gala screenings.</i>	
<i>Special screening fees for Admissions after 5pm and weekends</i>	
Special Film Screening	Price on Application
Main Foyer	
<i>Subject to availability.</i>	
Standard fee (up to 4 hours, thereafter \$150.00/hour)) - corporate rate	\$600.00
Standard fee (up to 4 hours, thereafter \$90.00/hour)) - community rate	\$360.00
Century Theatre Foyer	

Museum, Theatre, Gallery	2019/20 Fee
<i>Subject to availability.</i>	
Standard fee (up to 4 hours, thereafter \$125.00/hour) - corporate rate	\$500.00
Standard fee (up to 4 hours, thereafter \$75.00/hour) - community rate	\$300.00
Education Suite Group 1 - Corporate & Profit Making Organisations	
<i>35 seating theatre style.</i>	
<i>Subject to availability.</i>	
Evening - 5.30pm	\$300.00
Education Suite Group 2 - Community & Non Profit Making Organisations	
<i>35 seating theatre style.</i>	
<i>Subject to availability.</i>	
Evening - 5.30pm	\$250.00
Equipment Hire	
Pianos	
<i>Community and student rates available on request.</i>	
Concert Piano - (Steinway) Per concert	\$293.00
Piano - (Bechstein) Per concert	\$79.00
Piano - (Bechstein) Per lunchtime concert	\$32.00
Piano Tuning (per tuning)	\$170.00
Education	
Programmes	
Per Student - Primary	\$2.50
Per Student - Secondary	\$4.50
Per Student - Tertiary	\$9.00
Accompanying Adult / Teacher	No Charge
Self Guided - School Groups	No Charge
Special Programmes & Pre-Schools	Price on Application
Archive	
Image Delivery	
Postage	Price on Application
Photography	
Photography per hour (where NO suitable image is available)	\$60.00
Photography - Per scanned image	\$21.50
Photography - Disk	\$5.50
Photography - Reproduction fee per image	\$34.50
Reproduction	
Personal, non commercial & websites	No Charge
Published, commercial interior image	\$34.50
Merchandise, book cover and advertising	\$207.00
Research	
Research - Hourly rate	\$60.00
Photocopying	
Photocopying - Standard (per page)	\$1.20

Museum, Theatre, Gallery	2019/20 Fee
Photocopying - Manuscript (per page)	Price on Application

Napier Aquatic Centre

All fees and charges are inclusive of GST (except as noted *)

Napier Aquatic Centre	2019/20 Fee
Cash Admission	
Adults single admission	\$4.90
Children (5 years and over) single admission	\$3.80
Children (under 5 years, accompanied by adult in water) single admission	No Charge
Senior Citizens (65 +) and Community Services Card holders single admission	\$3.80
General Spectators	\$1.60
Club Member	\$1.60
Waterslide (unlimited rides)	\$4.90
Concession Cards	
Child (10-Swim Cards)	\$34.00
Child (20-Swim Cards)	\$67.00
Child (50-Swim Cards)	\$162.50
Adult (10-Swim Cards)	\$44.00
Adult (20-Swim Cards)	\$87.00
Adult (50-Swim Cards)	\$215.00
Community Card Holder (10-Swim Cards)	\$34.00
Community Card Holder (20-Swim Cards)	\$67.00
Community Card Holder (50-Swim Cards)	\$162.50
Club Member (10-Swim Cards)	\$13.50
Club Member (20-Swim Cards)	\$26.80
Club Member (50-Swim Cards)	\$66.50
Aqua Aerobics (10-Swim Cards)	\$50.00
Aqua Aerobics (20-Swim Cards)	\$100.00
Aqua Aerobics (50-Swim Cards)	\$250.00
Pool Hire Charges	
<i>All pool hire charges on a per-hour basis.</i>	
Schools	
<i>Entry fee is exclusive for hire of the following facilities except for single lane hire.</i>	
Single Lane (plus \$1.00 including GST entry fee per pupil)	\$9.60
Slide Special	\$3.00
Old Pool	\$69.00
Ivan Wilson 25-metre Pool	\$81.00
Old Learners Pool	\$37.60
Regular Club Hires : Per Hour	
<i>Entry fee is exclusive for hire of the following facilities except for single lane hire.</i>	
Single Lane (plus club entry fee per pool user)	\$9.60
Old Pool	\$69.00
Ivan Wilson 25-metre Pool	\$81.00
Casual Hires : Per Hour	

<i>Entry fee is exclusive for hire of the following facilities except for single lane hire.</i>	
Single Lane (plus normal entry fee per pool user)	\$9.60
Old Pool	\$93.00
Ivan Wilson 25-metre Pool	\$105.00
Old Learners Pool	\$49.50
Learn 2 Swim (Includes admission charge)	
<i>Please contact the Swim School Co-ordinator for Learn 2 Swim Charges or visit our website at www.napieraquatic.co.nz</i>	
Aquafitness	
Per Session	\$5.50

Napier Conference Centre

All fees and charges are inclusive of GST (except as noted *)

Venue Rental	2019/20 Fee
<i>Rental covers air-conditioned facility and room set to client's specifications.</i>	
<i>All catering, audio-visual equipment and other equipment or services are additional charges - price on application.</i>	
Terms and Conditions	
<i>Terms and Conditions apply and are available on application.</i>	
Ballroom	
Group 1 - Corporate Organisations	
Morning (8.00am - 12.30pm)	\$605.00
Afternoon (12.30pm - 5.00pm)	\$605.00
Evening (5.00pm - Midnight)	\$825.00
Group 2 - Community Organisations	
Morning (8.00am - 12.30pm)	\$363.00
Afternoon (12.30pm - 5.00pm)	\$363.00
Evening (5.00pm - Midnight)	\$495.00
Group 3 - Weddings	
Afternoon (12.30pm - 5.00pm)	\$308.00
Evening (5.00pm - Midnight)	\$775.50
Small Exhibition Hall	
Group 1 - Corporate Organisations	
Morning (8.00am - 12.30pm)	\$385.00
Afternoon (12.30pm - 5.00pm)	\$385.00
Evening (5.00pm - Midnight)	\$528.00
Group 2 - Community Organisations	
Morning (8.00am - 12.30pm)	\$231.00
Afternoon (12.30pm - 5.00pm)	\$231.00
Evening (5.00pm - Midnight)	\$319.00
Group 3 - Weddings	
Afternoon (12.30pm - 5.00pm)	\$198.00
Evening (5.00pm - Midnight)	\$497.20
Gallery	
Group 1 - Corporate Organisations	
Morning (8.00am - 12.30pm)	\$275.00
Afternoon (12.30pm - 5.00pm)	\$275.00
Evening (5.00pm - Midnight)	\$368.50
Group 2 - Community Organisations	
Morning (8.00am - 12.30pm)	\$165.00
Afternoon (12.30pm - 5.00pm)	\$165.00
Evening (5.00pm - Midnight)	\$220.00
Group 3 - Weddings	
Evening (5.00pm - Midnight)	\$344.30

Venue Rental	2019/20 Fee
Breakout Room One	
Group 1 - Corporate Organisations	
Morning (8.00am - 12.30pm)	\$198.00
Afternoon (12.30pm - 5.00pm)	\$198.00
Evening (5.00pm - Midnight)	\$275.00
Group 2 - Community Organisations	
Morning (8.00am - 12.30pm)	\$121.00
Afternoon (12.30pm - 5.00pm)	\$121.00
Evening (5.00pm - Midnight)	\$165.00
Breakout Room Two	
Group 1 - Corporate Organisations	
Morning (8.00am - 12.30pm)	\$286.00
Afternoon (12.30pm - 5.00pm)	\$286.00
Evening (5.00pm - Midnight)	\$390.50
Group 2 - Community Organisations	
Morning (8.00am - 12.30pm)	\$170.50
Afternoon (12.30pm - 5.00pm)	\$170.50
Evening (5.00pm - Midnight)	\$236.50
Boardroom	
All Users	
Morning (8.00am - 12.30pm)	\$137.50
Afternoon (12.30pm - 5.00pm)	\$137.50
Evening (5.00pm - Midnight)	\$137.50
Large Exhibition Hall	
Group 1 - Corporate Organisations	
Morning (8.00am - 12.30pm)	\$423.50
Afternoon (12.30pm - 5.00pm)	\$423.50
Evening (5.00pm - Midnight)	\$660.00
Group 2 - Community Organisations	
Morning (8.00am - 12.30pm)	\$258.50
Afternoon (12.30pm - 5.00pm)	\$258.50
Evening (5.00pm - Midnight)	\$396.00

Napier i-SITE Visitor Centre

All fees and charges are inclusive of GST (except as noted *)

Napier i-SITE Visitor Centre		2019/20 Fee
Paid Advertising Display (per annum)		
<i>10% Hawke's Bay Operator Discount (Applies to Brochure Display Pocket rate only)</i>		
Product Page Display		\$132.00
1 Pocket Display		\$451.00
Poster (A1) (Includes one pocket)	Rate Available on Request	
Other Advertising Features	Rate Available on Request	
Cruise - Stand & Advertising Options	Rate Available on Request	
i-SITE New Zealand Nationwide Standard Charges		
<i>Standard travel industry commission charges of 10 to 20% on operator on bookings</i>		
<i>Charges for information requested and reservations made outside of Hawke's Bay as required</i>		
Communication and Search Fee - standard		\$16.50
Communication and Search Fee - special event		\$22.00

Napier Municipal Theatre

All fees and charges are inclusive of GST (except as noted *)

Theatre Hire	2019/20 Fee
Professional (per day)	
<i>Terms and conditions apply, available on application.</i>	
<i>Multiday / Commercial fees may be subject to negotiation at the discretion of the manager.</i>	
<i>Includes the use of the stage, auditorium, foyers for entrance, dressing rooms, personnel (House Manager, cashier (maximum of 2 hours), and theatre technician (not exceeding 8 hours)), house sound and lighting as installed at time of hire, cleaning of public foyers, toilets and auditorium.</i>	
<i>Energy charges as per meter reading and additional staffing costs are chargeable on final invoice.</i>	
Professional (per day)	\$2,997.50
Setup/pack-out	\$704.00
Rehearsal	\$1,144.00
Deposit Required	\$1,144.00
Community (per day)	
<i>Terms and conditions apply, available on application.</i>	
<i>Includes the use of the stage, auditorium, foyers for entrance, dressing rooms, personnel (House Manager, cashier (maximum of 2 hours), and theatre technician (not exceeding 8 hours)), house sound and lighting as installed at time of hire, cleaning of public foyers, toilets and auditorium.</i>	
<i>Energy charges as per meter reading and additional staffing costs are chargeable on final invoice.</i>	
Community (per day)	\$1,782.00
Setup/pack-out	\$407.00
Rehearsal	\$704.00
Deposit required	\$704.00
Public Meetings (per day)	
<i>Terms and conditions apply, available on application.</i>	
<i>Includes the use of the fore-stage only, auditorium, Port of Napier foyer for entrance, house sound and lighting as installed at time of hire.</i>	
<i>Energy charges as per meter reading and additional staffing costs are chargeable on final invoice.</i>	
Public Meetings (per day)	\$1,144.00
Setup/pack-out	\$407.00
Deposit required	\$1,144.00
Individual Room Hire (per hour)	
<i>Terms and conditions apply, available on application</i>	
<i>Minimum 3-hour hire of any area applies. In general bookings are accepted/confirmed only within a six-week period prior to the proposed date. All other costs (staffing, equipment, energy, catering and cleaning) are chargeable on final invoice.</i>	
Pan Pac Foyer	
Pan Pac Foyer - Including Port of Napier Foyer	\$143.00
Napier Building Society Mezzanine	
Napier Building Society Mezzanine - only with other areas	\$66.00
Westpac Bank Function Room	
Westpac Bank Function Room	\$66.00
Rotary Room	

Rotary Room	\$44.00
Pianos	
<i>Community and student rates are available on request</i>	
Municipal Theatre Steinway	
Concert Hire (per performance)	\$330.00
Lunchtime concerts in foyer (per performance)	\$93.50
Non-performance hires in foyer (per hour)	\$38.50
Piano Tuning (per tuning)	Price On Application
Municipal Theatre Yamaha Upright or Challen Grand	
Piano hire (per performance)	\$93.50
Piano hire (non-performance)	\$38.50
Piano Tuning (per tuning)	Price On Application
Equipment Hire (per day)	
<i>Other equipment can be sourced as required through local agencies</i>	
Staffing	
<i>The Theatre is staffed by certified and approved Napier City Council personnel. Staff and energy charges are available on request for quotation to hire venue</i>	

National Aquarium of New Zealand

All fees and charges are inclusive of GST (except as noted *)

Admissions	2019/20 Fee
General Admissions	
Adults	\$23.00
Child (from 3 up to 14 years)	\$11.50
Children (under 3 years)	No Charge
Student	\$21.00
Family (2 adults & up to 2 children)	\$62.00
Senior Citizens (65 +) and Community Services Card holders	\$16.50
Extra Child	\$7.00
Close Encounters	
Penguins/Alligators/Piranha (per person) (maximum of 4)	\$130.00
Swim with the Sharks	
Swim includes snorkel, wetsuit and fins	\$120.00
Friends of the Aquarium Membership	
Adult	\$65.00
One Adult/One Child	\$95.00
Family (2 adults and up to 2 children)	\$150.00
Extra Child	\$25.00
School Parties	
Pre-school and Special Schools	\$4.50
Primary	\$4.50
Secondary	\$6.50
Tertiary	\$11.00
Extra Adult	\$11.00
Group Discount (10 or more people)	
Adult	\$21.00
Child (from 3 up to 14 years)	\$10.50
Birthday Parties	
Conditions apply, and are available on request	Price on Application
IHC	
Accompanying Caregivers	No Charge
IHC	\$11.50
Sleep-Overs	
Per Person	\$60.00
Holiday Programme	
Per Person	\$32.00
Technical Staff	
Per Hour	Price On Application
Functions	
Aquarium Exhibition Hall	

<i>(available 7.00am to 9.00am and 5.00pm to 9.00pm, charge per hour)</i>	
<i>Catering, entertainment and other equipment or services are additional charges - prices on application</i>	
Charge Per Hour	\$195.00
Guided tours with function - per head	\$18.00

Par 2 MiniGolf

All fees and charges are inclusive of GST (except as noted *)

Par2 MiniGolf	2019/20 Fee
<i>All green fees are for one 18-hole game per person.</i>	
Green Fees	
Child (2 years and under accompanied by a paying adult)	No Charge
Child (3 to 14 years of age)	\$7.60
Adult	\$10.90
Family (2 Adults and 2 children)	\$29.50
Family (additional child)	\$4.90
Return Game - Adult	\$8.00
Return Game - Child	\$5.10
Return Game - Family	\$21.50
Return Game - Family (additional Child)	\$4.00
Spectators	No Charge
Senior Citizens (65 +) and Community Services Card holders	\$7.90
Groups of 10 or More	
Group Rate - Children: 10 to 29 pax	\$6.20
Group Rate - Secondary (15 years and over): 10 to 29 pax	\$8.10
Group Rate - Adults: 10 to 29 pax	\$9.20
Group Rate - Children: 30+ pax	\$5.50
Group Rate - Secondary (15 years and over): 30+ pax	\$7.50
Group Rate - Adults: 30+ pax	\$8.50
After Hours Group Rates	
<i>Par 2 MiniGolf is available after hours for group bookings - terms and conditions apply and are available on request.</i>	

Parking

All fees and charges are inclusive of GST (except as noted *)

Parking Fees	2019/20 Fee
<i>Time restrictions may apply</i>	
Metered fees (per hour)	\$1.00
Pay and Display (per hour)	\$1.00
Discounted Daily rate at specified car parks	\$5.00
Specific Parking fees	
Dickens Street East car park per hour (max stay 2 hours)	\$2.00
Lee Road car park per hour (max stay 3 hours)	\$0.60
Symons Lane - All on lane parking per hour (max stay 3 hours)	\$0.60
Symons Lane car park per hour (max stay 4 hours)	\$0.60
Leased Parking fees	
Leased carparking (per week)	\$25.00
Dalton Street leased car parking (per week)	\$30.00
Edwardes Street Leased car parking (per week)	\$15.00
Secure Leased Parking	\$35.00
Riddell Street Leased car parking (per week)	\$10.00
Supplementary Services	
Parking Permit (per day)	\$15.00
Meter Shroud (per day)	\$20.00
Parking Signs (per day)	\$20.00
All Bonds (refundable on return for meter shrouds or parking signs) *	\$25.00
Car Pound	
Storage of impounded vehicle first month	\$60.00
Storage of impounded vehicle per week after first month	\$35.00
Infringement Fees	
<i>Any parking offence involving parking on a road in breach of a Local Authority bylaw, in excess of a period fixed by a meter or otherwise, where the excess time is one of the times stated below.</i>	
<i>The Land Transport (Road User) Rule 2004 specifies parking offences that incur a penalty, and the maximum fees councils can charge drivers.</i>	
<i>Parking Infringement Fees are not subject to GST.</i>	
Infringement Fees	
Not more than 30 minutes (less a \$2.00 discount if paid within seven days of issue)	\$12.00
More than 30 minutes, but not more than one hour (less a \$2.00 discount if paid within seven days of issue)	\$15.00
More than one hour but not more than two hours (less a \$2.00 discount if paid within seven days of issue)	\$21.00
More than 2 hours but not more than 4 hours (less a \$3.00 discount if paid within seven days of issue)	\$30.00
More than 4 hours but not more than 6 hours (less a \$3.40 discount if paid within seven days of issue)	\$42.00
More than 6 hours (less a \$5.00 discount if paid within seven days of issue)	\$57.00
Street Occupation	

Licence for occupation at ground level or \$0.05/m	\$55.00
Charge against damage to Council property (whole frontage) per m	\$7.00
Removal or replacement of parking meters and signs each	\$35.00
Removal and reinstatement of roadmarking, per metre.	\$6.00
Vehicle Disposal (admin \$75 + \$57.50 tow + \$28.75 crush)	\$165.00

Parks and Reserves

All fees and charges are inclusive of GST (except as noted *)

Reserves	2019/20 Fee
Occupation and use of any public Park or Reserve by either a commercial operation, circus, Mardi Gras, Gypsy Fair or entertainment group, which intend to charge a public admission or sell products for financial gain	
Rental (per day)	\$410.00
Bond (refundable only if grounds and amenities are left in good order)*	\$590.00
Community Events which are free to the public	
Use of grounds & amenities	No Charge
Bond (refundable only if grounds and amenities are left in good order)*	\$590.00
Perfume Point Reserve (HB Sport Fishing Club)	
Use of sealed public car park for marquee : (per day)	\$255.00
Use of grass reserve for vehicle and boat trailer parking : (per day)	\$485.00

Planning Support Services

All fees and charges are inclusive of GST (except as noted *)

Geographic Information Services (GIS)	2019/20 Fee
Map Requests	
<i>A request that involves less than 15 minutes to produce</i>	
A0 Paper Size	\$50.00
A1 Paper Size	\$30.00
A2 Paper Size	\$15.00
Special Map Request Charges	
<i>Specialised maps are those which require new layers to be added, analysis work and/or specialised printing techniques. In addition to the printing charges outlined above (same as every-day map requests) there is a charge based on actual time taken plus any disbursements.</i>	
Hourly Charge-Out Rate	
GIS Officers	\$105.00
Planning Administration	
Disbursements	
Plan Copying A0 (per sheet)	\$15.00
Plan Copying A1 (per sheet)	\$10.00
Plan Copying A2 (per sheet)	\$5.00
Photocopying A4/A3 Assisted	\$1.00
Digital property file	\$95.00
Property Number Map Book	\$30.00
Certificate of Title	\$25.00
Hourly Rates	
Administration Staff	\$75.00

Policy Planning

All fees and charges are inclusive of GST (except as noted *)

Policy Planning	2019/20 Fee
Policy Charges	
Request to Change District Plan	\$20,000.00
Notice of Requirement (Sec 168)	\$20,000.00
Alteration of Designation (Sec 181) - Non Notified	\$1,500.00
Alteration of Designation (Sec 181) - Notified	\$10,000.00
Removal of Designation (Sec 182)	\$300.00
Officers' Hourly Rates - Planning (per hour)	\$180.00
Officers' Hourly Rates - Administration (per hour)	\$75.00

Public Toilets and Showers

All fees and charges are inclusive of GST (except as noted *)

Marine Parade Toilet (Soundshell)	2019/20 Fee
Toilets	
Adults & Children 5 years and over	\$0.20
Children under 5 years	No Charge
Showers	
Shower charge	\$3.00
Hire of towel (includes soap)	\$2.00
Lockers	
<i>Lockers will be opened after the end of the hire period and will be available for rehire</i>	
Deposit	\$12.00
Charge up to 4 hours	\$1.00
Charge over 4 hours (same day)	\$2.00
A daily charge for each additional day or part thereof will apply after the first day	\$2.00
Bike Store	
Deposit	\$12.00
Charge up to 4 hours	\$1.00
Charge over 4 hours (same day)	\$2.00

Refuse Transfer Station

All fees and charges are inclusive of GST (except as noted *)

Refuse Transfer Station Charges		2019/20 Fee
<i>All vehicles are weighed in and out.</i>		
<i>Fridges, freezers and batteries will only be accepted after the weighbridge due to the need to de-gas and high disposal cost for batteries. The normal waste fee will help towards this.</i>		
<i>Government waste levy and ETS charges are incorporated in per tonne rate</i>		
All Vehicles		
Greenwaste and Untreated Wood (per tonne)		\$115.00
General Refuse (per tonne) (Bulk quantities agreed rate)		\$240.00
Discount for separating Green Waste		\$6.00
Minimum Charges		
General Refuse (applies to loads under 50kg)		\$12.00
Greenwaste and Untreated Wood (applies to loads under 50kg)		\$10.00
General Refuse (applies to loads up to 100kg)		\$24.00
Greenwaste and Untreated Wood (applies to loads up to 100kg)		\$14.00
Polystyrene (per cubic metre)		\$70.00
Charge per rubbish bag (Maximum of 2 bags)		\$6.00
Car tyres each (truck tyres not accepted)		\$8.00
Charge to reissue lost inwards docket		\$10.00
Recycling		
Paper & cardboard, glass and metal separated at the recycling station (NO BATTERIES and FRIDGES/FREEZERS).		No Charge

Rodney Green Centennial Event Centre

All fees and charges are inclusive of GST (except as noted *)

Rodney Green Centennial Event Centre		2019/20 Fee
<i>Times of Hire: Morning is 8.00am to 1.00pm, Afternoon is 1.00pm to 6.00pm, Evening is 6.00pm to 11.00pm and Full Day is 8.00am to midnight (unless specified otherwise).</i>		
<i>Performance Bond: Payment of a performance bond is required to confirm a booking. This bond will be refunded after the hire date, less any unpaid hire fees and additional costs incurred by Napier City Council as a result of actions or negligence of the hirer. The performance bond will be refunded if the booking is cancelled at least 30 days before the first hire date.</i>		
<i>Seasonal Hire: A booking for 20 or more sessions over one year (a session is a morning, afternoon, or evening).</i>		
<i>Public Holidays: Additional costs incurred by Napier City Council for bookings on public holidays will be on-charged to the hirer.</i>		
<i>Discount for Sports Tournaments. Only applies if the tournament's principal venue is the Rodney Green Centennial Event Centre. Discount may be negotiated at the time of booking with the Manager of Sport and Recreation, based on economic benefit the tournament brings to the city.</i>		
Local Sports Bodies - Seasonal Hire		
Performance Bond		\$600.00
Morning or Afternoon		\$105.00
Evening		\$175.00
Full Day		\$290.00
Sports Bodies, Not for Profit, and Local Community Benefit		
Performance Bond		\$600.00
Morning or Afternoon		\$255.00
Evening		\$385.00
Full Day		\$685.00
Commercial		
Performance Bond	By negotiation with Manager of Sport and Recreation	
Morning or Afternoon	By negotiation with Manager of Sport and Recreation	
Evening to Midnight	By negotiation with Manager of Sport and Recreation	
Full Day to Midnight	By negotiation with Manager of Sport and Recreation	
Per hour after midnight	By negotiation with Manager of Sport and Recreation	
Additional Facilities		
Kitchen		
Performance Bond		\$200.00
Morning or Afternoon		\$65.00
Evening		\$80.00
Full Day		\$165.00
Dining Room		
Performance Bond		\$200.00
Morning or Afternoon		\$55.00
Evening		\$65.00
Full Day		\$125.00
Combined Kitchen and Dining Room		
Performance Bond		\$200.00
Morning or Afternoon		\$85.00

Rodney Green Centennial Event Centre	2019/20 Fee
Evening	\$110.00
Full Day	\$215.00
Meeting Room	
Performance Bond	\$200.00
Morning or Afternoon	\$55.00
Evening	\$65.00
Full Day	\$125.00
Changing Rooms	
Male and female per day	\$35.00
Male and female changing room toilets per day (if required in addition to foyer toilets)	\$35.00
BasketBall Hoops	
Price estimates or quotations provided on application	Price on Application
Custodian	
Cleaning and other services during hire period (per hour)	\$45.00
Napier City Council Wardens	
Senior Floor Attendant (per hour)	\$60.00
Floor Protection Cover (Carpet Tiles)	
Price estimates or quotations provided on application	Price on Application

Sewerage

All fees and charges are inclusive of GST (except as noted *)

Sewer Connections	2019/20 Fee
<i>Minimum Charges are per connection and non refundable</i>	
100mm Diameter Connection	
Corridor Access Request and Utility Markouts (Chorus/Unison)-work in road reserve only	\$575.00
100mm diameter connection	\$1,602.00
Plus a charge per metre of - No Road Crossing	\$304.00
Plus a charge per metre of - Road Crossing	\$476.00
Minimum Charge	\$1,602.00
Larger Than 100mm Diameter Connection	
<i>All costs including street restoration to be charged to applicant. Quotations available on request.</i>	
Minimum Charge	\$1,602.00
Disconnection	
Disconnection Fee	\$473.00
Video Inspection	
Video Inspection Charge (per hour) - minimum one hour	\$195.00
Bay View Connections (Stage 1 Village)	
All Connections to Stage 1 - Fixed fee to connect plus actual costs of connection - Quote will be provided if required.	\$15,872.00
Service Marking for Council Water, Stormwater and Sewers	
Provision of as built plans	No Charge
Marking large diameter sewer pumping mains	No Charge
Marking large diameter trunk mains	No Charge
Per Hour - Marking of Stormwater, sewer and water mains	\$105.00
Trade Waste Charges	
City Charge	
Existing Trade Waste Customers - Charge Per m	\$0.78
Industry to be phased into Trade waste charging system - Charge Per m	\$0.78
Awatoto and Pandora Charge	
Awatoto Charge Per m	\$0.27
Pandora Charge Per m	\$0.52
Tanker Discharge	
<i>Per Load at Milliscreen Plant</i>	
<i>Monday to Friday 7.00am to 4.00pm & Saturday 6.30am to 10.00am (Non Statutory Days)</i>	
Tankers (\$ per m	\$10.24
After Hours - A minimum additional charge. (Additional Charges to recover overtime, days in lieu etc may apply)	\$97.00
Additional items	
Connection Application Fee (charge per hour, non refundable)	\$80.00

Soundshell

All fees and charges are inclusive of GST (except as noted *)

Soundshell	2019/20 Fee
Shows	
Use of stage and backstage area for a free community event or for commercial events	No Charge

Sportsgrounds

All fees and charges are inclusive of GST (except as noted *)

Sportsgrounds	2019/20 Fee
<i>Performance Bond: A performance bond is required to confirm a booking for a one-off event or tournament. This bond will be refunded after the hire date, less any unpaid hire fees and additional costs incurred by Napier City Council as a result of actions or negligence of the hirer. The performance bond will be refunded if the booking is cancelled at least 30 days before the hire date.</i>	
<i>Seasonal Hire: A booking for up to 20 competition matches on any one sports ground over one season.</i>	
<i>Season Definition: Winter (April to August inclusive); Summer (October to March inclusive). Out of season games will be charged at the one-off rate.</i>	
<i>Admission Charge: Where the hirer charges an admission fee, the hire fee is as scheduled or 20% of the gate, whichever is greater.</i>	
<i>Cancellation: Cancellation charges will apply when Council has incurred preparatory costs and cancellation is not due to the weather. This includes junior sports.</i>	
<i>Junior (Local Competition): Maximum school year 8.</i>	
<i>Discount for Sports Tournaments: Only applies if the tournament's principal venue is Onekawa Park (Netball), Nelson Park (Cricket) or Park Island. Discount may be negotiated at the time of booking with the Sports Facilities Manager, based on economic benefit the tournament brings to the city.</i>	
<i>One-off Games: Includes, but is not limited to, out-of season, friendly and trial games.</i>	
<i>Practice: One team only and must be booked - more than one team will be treated as a trial or friendly game and will be charged at the one-off game rate.</i>	
<i>Charges for Unbooked Games: A penalty rate of 150% of the one-off game rate will be charged for any game played without an approved booking.</i>	
<i>Public Holidays: Additional costs incurred by Napier City Council for bookings on public holidays will be on-charged to the hirer.</i>	
Sports Tournaments - Open Ground	
Performance Bond	Price on Application
Tournament charge	er charges for the code
Ground remarking	\$82.00
Cleaning changing rooms per visit (Park Island) Weekdays	\$145.00
Cleaning changing rooms per visit (Park Island) Weekends and after hours	\$250.00
Cleaning changing rooms per visit (Park Island) Statutory Holidays	\$715.00
Rubbish bins (additional to standard supply)	\$10.50
Electricity usage	Actual usage
Other services required	Price on application
Non-Sporting Events: Community - Open Ground	
Performance Bond	Price on Application
Event charge - per day, per winter playing field	\$100.00
Cleaning changing rooms per visit (Park Island) Weekdays	\$145.00
Cleaning changing rooms per visit (Park Island) Weekends and After Hours	\$250.00
Cleaning changing rooms per visit (Park Island) Statutory Holidays	\$715.00
Rubbish bins (additional to standard supply)	\$10.50
Electricity usage	Actual usage
Other services required	Price on Application

Sportsgrounds	2019/20 Fee
Events: Commercial and / or Admission - Open Ground	
Performance Bond	Price on Application
Event charge - per day, per winter playing field	\$475.00
Cleaning changing rooms per visit (Park Island) Weekdays	\$145.00
Cleaning changing rooms per visit (Park Island) Weekends and After Hours	\$250.00
Cleaning changing rooms per visit (Park Island) Statutory Holidays	\$715.00
Rubbish bins (additional to standard supply)	\$10.50
Electricity usage	Actual use
Other services required	Price on Application
Rugby	
Rugby: Seasonal Sporting Competition - Open Ground	
Seasonal charge per ground (20 competition matches maximum)	\$985.00
One-off games	\$105.00
7-aside seasonal charge per ground (20 competition matches maximum)	\$490.00
7-aside one-off games	\$26.00
Junior (Local Competition)	No Charge
Booked practice (one team only)	No Charge
Rubbish bins (additional to standard supply)	\$10.50
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required (including remarking of grounds)	Price on Application
Touch Rugby	
Touch Rugby: Seasonal Sporting Competition - Open Ground	
Seasonal charge per ground (20 competition matches maximum)	\$490.00
One-off games	\$26.00
Booked practice (one team only)	No Charge
Rubbish bins (additional to standard supply)	\$10.50
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required (including remarking of grounds)	Price on Application
Football (Soccer)	
Football: Seasonal Sporting Competition - Open Ground	
Seasonal charge per ground (20 competition matches maximum)	\$985.00
One-off games	\$105.00
7-aside seasonal charge per ground (20 competition matches)	\$500.00
7-aside one-off games	\$26.00
Junior (Local Competition)	No Charge
Booked practice (one team only)	No Charge
Rubbish bins (additional to standard supply)	\$10.50
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required (including remarking of grounds)	Price on Application
Rugby League	
Rugby League: Seasonal Sporting Competition - Open Ground	
Seasonal charge per ground (20 competition matches maximum)	\$745.00

Sportsgrounds	2019/20 Fee
One-off games	\$77.00
7-aside or Tag Football seasonal charge per ground (20 competition matches)	\$370.00
7-aside or Tag Football one-off games	\$21.00
Junior (Local Competition)	No Charge
Booked practice (one team only)	No Charge
Rubbish bins (additional to standard supply)	\$10.50
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required (including remarking of grounds)	Price on Application
Hockey	
Hockey: Seasonal Sporting Competition - Open Ground	
Charge per booking	Price on Application
Softball	
Softball: Seasonal Sporting Competition - Open Ground	
Seasonal charge per ground (20 competition matches maximum)	\$560.00
One-off games	\$82.00
Junior (Local Competition)	No Charge
Booked practice (one team only)	No Charge
Rubbish bins (additional to standard supply)	\$10.50
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required (including remarking of grounds)	Price on Application
Cricket: Seasonal Sporting Competition - Open Ground	
<i>Charges include morning and evening preparation only (for example, use of covers during the day is the responsibility of the hirer)</i>	
Grass Wickets (Nelson Park)	
Seasonal charge per wicket (20 club competition matches maximum; one match per day)	\$2,850.00
Club practice (20 weeks; 2 nights per week; 2 wickets)	\$2,850.00
Representative practice (per day; 1 wicket)	\$145.00
One off game (except as specified below)	\$280.00
One off game (twilight; outfield wicket)	\$145.00
One off game (50 over)	\$280.00
One off game (twenty/20)	\$115.00
Two day game (consecutive days; one pitch)	\$385.00
Three day game (consecutive days; one pitch)	\$580.00
Four day game (consecutive days; one pitch)	\$770.00
Five day game (consecutive days; one pitch)	\$960.00
Women's 40 over game	\$265.00
Junior representative (grass at representative practice rate)	\$145.00
Artificial Wickets	
Seasonal charge per wicket (20 club competition matches maximum)	\$1,085.00
One off game	\$56.00
Junior (Local Competition)	No Charge
Additional Charges	
Rubbish bins (additional to standard supply)	\$10.00

Sportsgrounds	2019/20 Fee
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required (including remarking of grounds)	Price on Application
Tennis	
Tennis Charges	
Petane Domain - 3 courts (annual charge)	\$1,570.00
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required	Price on Application
Athletics	
Athletics Charges	
Napier - per season	\$1,710.00
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required	Price on Application
Netball	
Netball Charges	
Onekawa Park - 12 courts (full year charge)	\$5,870.00
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required	Price on Application
McLean Park	
<i>For events with two or more consecutive days of use, the minimum charge shall apply for the first day. Charges for additional days will be negotiated with the hirer.</i>	
<i>20% of gate clause in General Terms applies</i>	
Rugby and Cricket - Charge Ground	
Per day minimum charge (excluding floodlights)	\$2,725.00
Floodlights hire (per hour of use)	\$1,360.00
Other services and facilities required	Price on Application
Other Hirers - Charge Ground	
Performance Bond	Price on Application
Per day minimum charge	\$2,720.00
Floodlights hire (per hour of use)	\$1,360.00
Electricians or Technicians on Standby - per hour	\$87.00
Video screen	\$1,765.00
Scoreboard	No Charge
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services and facilities required	Price on Application
Tremain Field (Park Island)	
<i>20% of gate clause in General Terms applies.</i>	
Rugby Union and Rugby League - Charge Ground	
Seasonal charge per ground (20 matches maximum)	\$1,040.00
One off game charge	\$110.00
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required	Price on Application
Bluewater Stadium (Park Island)	
<i>20% of gate clause in General Terms applies.</i>	

Sportsgrounds	2019/20 Fee
Football - Charge Ground	
Napier City Rovers	As per licence
Other hirers	Price on Application
Preparation outside normal work hours (per hour - labour, plant and materials)	Actual Cost
Other services required	Price on Application

Stormwater

All fees and charges are inclusive of GST (except as noted *)

Stormwater Connections	2019/20 Fee
<i>All minimum charges are per connection</i>	
Steel Kerb Connection 90mm Equivalent	
Steel Connection to Kerb & Channel	\$650.00
Double Connection to Kerb and Channel	\$1,003.00
100mm Connection	
Corridor Access Request and Utility Markouts (Chorus/Unison)-work in road reserve only	\$575.00
100mm Connection to Stormwater Pipe - Minimum Charge due on application	\$764.00
Plus a charge per metre of - No Road Crossing	\$254.00
Plus a charge per metre of - Road Crossing	\$426.00
Larger Than 100mm Connection	
<i>For a diameter larger than 100mm all costs including street restoration to be to applicant. Quotations available on request.</i>	
<i>All minimum payments are non-refundable</i>	
Minimum Charge due on application	\$679.00
Service Marking for Council Water, Stormwater and Sewers	
Provision of as built plans	No Charge
Marking large diameter sewer pumping mains	No Charge
Marking large diameter trunk mains	No Charge
Per Hour - Marking of Stormwater, sewer and water mains	\$105.00
Additional items	
Connection Application Fee (charge per hour, non refundable)	\$80.00

Subdivision and Land Development

All fees and charges are inclusive of GST (except as noted *)

Processing of Resource Consents (Subdivision)	2019/20 Fee
<i>These set fees relate to the minimum charge only. Actual fee payable includes the cost of time taken to process each application, memorandum, consent, notice, certificate or schedule, the cost of disbursements, plus any inspections required.</i>	
Planning - Scheme Plan Approval (0-10 lots)	
Total	\$1,000.00
Planning	
Scheme Plan Approval (11-20 lots)	\$2,100.00
Scheme Plan Approval (greater than 20 lots)	\$2,500.00
Amendments to Flats/Crosslease	\$600.00
Certification Fee (223 & 348)	\$200.00
Certificate of Compliance (224) Regulatory Engineering	
Rights of Way Approval	\$350.00
Document Sealing/Signing Fee	\$120.00
Site Visit Fee	\$150.00
Monitoring Inspection in relation to any consent, designation, or site inspection	\$310.00
Property File Management Fee (charged per consent)	\$75.00
Hourly Rates	
Regulatory Engineering	\$160.00
Team Leader Resource Consents	\$175.00
Resource Consents Planner	\$160.00
Regulatory Administrator	\$80.00
Conveyancing Costs	
<i>The following costs are for attendances by the City Solicitors on behalf of Council for the preparation and arrangement of legal documentation.</i>	
Costs	
Bond (includes Caveat)	\$590.00
Release of Bond (includes Caveat)	\$465.00
Release of Bond and issue of replacement Bond (includes withdrawal of existing Caveat and creation of new Caveat)	\$805.00
Easement (per document)	\$465.00
Covenant (per document)	\$465.00
Certificate under Building Act	\$375.00
Release of Certificate, Caveat	\$255.00
Consent	\$225.00
Release of Consent Notice, Fencing Covenant	\$315.00
Lease Renewal	\$535.00
Freeholding	\$535.00
Engineering Approval (Assets)	
Proposed works in terms of the code of practice	
<i>The charges apply where the proposed works are in terms of D and E of the code.</i>	
<i>Where the proposed works are not in terms of D and E of the code but subject to specific design then the actual cost is charged.</i>	
Minimum charge (for up to 3 lots)	\$190.00
Per lot for each additional over 3	\$29.00
Minimum charge (staff time hourly rate) (where there is insufficient information or amendments are required, additional charges may be made)	\$134.00

Processing of Resource Consents (Subdivision)	2019/20 Fee
Bond for Completion of - As Built - Plans	
<i>Bond for - As Built - plans are required for stand-alone projects (not part of a subdivision) that include infrastructure that is to be taken over by Council.</i>	
Bond calculated at 5% of estimated cost of project with a minimum of \$5,155	\$5,230.00
Construction - Acceptance of Pipe Assets	\$0.00
Wastewater - Sewerage	
<i>Initial inspection, water-tightness test, CCTV inspection and final inspection.</i>	
Minimum charge	\$200.00
Per lot for each additional over 3	\$51.00
Stormwater	
<i>Initial inspection, water-tightness test, CCTV inspection and final inspection.</i>	
Minimum charge	\$200.00
Per lot for each additional over 3	\$51.00
Water Supply	
<i>Initial inspection, pressure test, disinfection, residual check and flushing and final inspection</i>	
Minimum charge	\$381.00
Per lot for each additional over 3	\$63.00
Charging by Metre Length	
<i>Where charging by number of lots is inappropriate the following charges per metre apply</i>	
Sewerage - Minimum charge	\$200.00
Sewerage - Per meter	\$2.45
Stormwater - Minimum charge	\$200.00
Stormwater - Per meter	\$2.45
Water Supply - Minimum charge	\$380.00
Water Supply - Per meter	\$2.45
Roading and Reserves	
Roading - Fixed Charge (initial inspections for construction of new roads)	\$528.00
Roading - plus a Per Lot charge of	\$27.00
Reserves - Minimum Charge (initial inspections for development of new reserves)	\$600.00
Reserves - Additional Inspection Charge	\$115.00
Financial Contributions	
<i>In the District Plan (refer to Rule 65.14) the formula for the increase in Financial Contributions is based on the movement in the Statistics NZ Producers Price Index (PPI) Inputs Table E Index.</i>	
Infill	
Urban (per lot)	\$25,812.00
Urban - Multi-Story (per dwelling unit)	\$20,803.00
Urban - Multi-Story (plus per hectare - Stormwater)	\$60,116.00
Jervois town: Full urban (per lot) non local off site	\$22,744.00
Jervois town: Full urban (plus: per lot) local off site	\$89,438.00
Ahuriri (per lot)	\$25,811.00
Ahuriri - Multi-Story (per dwelling unit)	\$20,802.00
Ahuriri - Multi-Story (plus per hectare - Stormwater)	\$60,117.00
Greenfields	
King St / Guppy Rd (per dwelling unit)	\$21,690.00
King St / Guppy Rd (plus per hectare - Stormwater)	\$201,362.00
King St / Guppy Rd (plus per metre Guppy Road frontage - if applicable)	\$752.00
King St / Guppy Rd (less: per metre Guppy Road frontage roading structure plan credit - where applicable)	\$502.00

Processing of Resource Consents (Subdivision)	2019/20 Fee
Lagoon Farm (per lot)	\$23,251.00
Mission Heights (per lot)	\$22,519.00
Park Island (per lot)	\$23,488.00
Te Awa (per lot)	\$21,533.00
Te Awa (plus: per hectare) local off site	\$515,027.00
Te Awa (plus: per meter of road frontage - where applicable)	\$3,342.00
Rural	
Poraiti (per lot)	\$17,563.00
Lifestyle Character (per lot)	\$19,044.00
Lifestyle Character: Plus for lots not connected to a stormwater system discharging above the flood detention dam in Kent Terrace	\$2,646.00
All other rural areas including subdistrict rural (per lot)	\$15,757.00
Jervois town (per lot) non local off site	\$18,400.00
Jervois town (plus: per lot - road) Applies to the area west of Jervois Road, North of Meeanee Road and South of Burness Road	\$7,727.00
Jervois town (plus: per lot - stormwater) Applies to those properties that drain to the Upper Purimu Drain	\$9,017.00
Jervois town (plus: per lot - stormwater) Applies to those properties that drain to the Jervois Drain	\$114,567.00
Capital Contributions	
Bay View Water Supply (per domestic connection)	\$2,905.00
Bay View Water Supply (Commercial)	
The Greater of:	
(1) 15mm connection, or	\$2,905.00
(2) the sum of:	
(2a) Non residential based:	
(i) Offices and Shops	
- Gross Floor area (\$ per m	\$11.60
- plus Pervious Land area (\$ per m	\$4.40
(ii) Warehouses	
- Gross Floor area (\$ per m	\$5.80
- plus Pervious Land area (\$ per m	\$4.40
(iii) Unsealed yards (\$ per m	\$4.40
(2b) Residential based	
(i) Residential Care, Travellers Accommodation and Retirement Complexes	
- Population per Head	\$436.00
- plus Pervious Land area (\$ per m	\$4.40
(ii) Day Care Centres and Educational Facilities	
- Population per Head	\$219.00
- plus Pervious Land area (\$ per m	\$4.40
Bay View Wastewater (Commercial)	
The Greater of:	
(1) Bay View wastewater connection charge, or	See sewer connection charges
(2) the sum of:	
(2a) Non residential based:	
(i) Offices and Shops	
- Gross Floor area (\$ per m	\$8.10
(ii) Warehouses	
- Gross Floor area (\$ per m	\$4.00

Processing of Resource Consents (Subdivision)	2019/20 Fee
(2b) Residential based	
(i) Residential Care, Travellers Accommodation and Retirement Complexes	
- Population per Head	\$304.00
(ii) Day Care Centres and Educational Facilities	
- Population per Head	\$152.00
Development Contributions	
<i>This schedule of charges for Development Contributions is charged under Council's Development and Financial Contributions Policy. It is indexed on 1st July based on the movement in the Statistics NZ Producers Price Index (PPI) Inputs Table E Index.</i>	
Transportation	
Roads and Transportation	\$12,901.00
Water Supply Contribution (Non-Residential Based)	
Offices and Shops	\$0.00
- Gross floor area (\$ per m	\$7.70
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Medical Clinics/Hospitals	\$0.00
- Gross floor area (\$ per m	\$9.70
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Warehouses / Factories / Network Utility Operations	\$0.00
- Gross floor area (\$ per m	\$3.90
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Unsealed Yards	\$0.00
- Pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Churches	\$0.00
- Per Church	\$3,873.00
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Wastewater Contribution (Non-Residential Based)	
Offices and Shops	\$0.00
- Gross floor area (\$ per m	\$5.40
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Medical Clinics/Hospitals	\$0.00
- Gross floor area (\$ per m	\$6.70
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Warehouses / Factories / Network Utility Operations	\$0.00
- Gross floor area (\$ per m	\$2.70
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Churches	\$0.00
- per Church	\$2,701.00
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Stormwater Contribution (Non-Residential Based)	
Offices and Shops - Land area (\$ per m	\$5.30
Medical Clinics/Hospitals - Land area (\$ per m	\$5.30

Processing of Resource Consents (Subdivision)	2019/20 Fee
Warehouses / Factories / Network Utility Operations - Land area (\$ per m	\$5.30
Unsealed Yards - Land area (\$ per m	\$1.30
Churches - Land area (\$ per m	\$5.30
Water Supply Contribution (Residential Based)	
Residential Care Facilities	\$0.00
- Population (\$ per head)	\$291.00
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Travellers Accommodation	\$0.00
- Population (\$ per head)	\$291.00
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Day Care Centres	\$0.00
- Population (\$ per head)	\$146.00
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Educational Facilities	\$0.00
- Population (\$ per head)	\$146.00
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Retirement Complexes	\$0.00
- Population (\$ per head)	\$289.00
- Plus pervious land area (\$ per m	\$2.90
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Wastewater Contribution (Residential Based)	
Residential Care Facilities	\$0.00
- Population (\$ per head)	\$202.00
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Travellers Accommodation	\$0.00
- Population (\$ per head)	\$202.00
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Day Care Centres	\$0.00
- Population (\$ per head)	\$101.00
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Educational Facilities	\$0.00
- Population (\$ per head)	\$101.00
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Retirement Complexes	\$0.00
- Population (\$ per head)	\$202.00
- or equivalent wastewater connection, whichever is greater	See Equivalent Connections
Stormwater Contribution (Residential Based)	
Residential Care Facilities - Land area (\$ per m	\$5.30
Travellers Accommodation - Land area (\$ per m	\$5.30
Day Care Centres - Land area (\$ per m	\$5.30
Educational Facilities - Land area (\$ per m	\$5.30
Retirement Complexes - Land area (\$ per m	\$5.30
Equivalent Connections	

Processing of Resource Consents (Subdivision)	2019/20 Fee
15mm Diameter - Water Connection	\$1,936.00
15mm Diameter - Wastewater Connection	\$1,352.00
20mm Diameter - Water Connection	\$3,447.00
20mm Diameter - Wastewater Connection	\$2,414.00
25mm Diameter - Water Connection	\$5,384.00
25mm Diameter - Wastewater Connection	\$3,770.00
32mm Diameter - Water Connection	\$8,820.00
32mm Diameter - Wastewater Connection	\$6,177.00
40mm Diameter - Water Connection	\$13,769.00
40mm Diameter - Wastewater Connection	\$9,639.00
50mm Diameter - Water Connection	\$21,514.00
50mm Diameter - Wastewater Connection	\$15,060.00
80mm Diameter - Water Connection	\$55,069.00
80mm Diameter - Wastewater Connection	\$38,549.00
100mm Diameter - Water Connection	\$86,050.00
100mm Diameter - Wastewater Connection	\$60,236.00

Taradale Community Rooms

All fees and charges are inclusive of GST (except as noted *)

Meeting Room	2019/20 Fee
Group 1 - Profit-Making Organisations and Family Gatherings	
Hourly charge	\$24.50
Morning or Afternoon	\$67.50
Evening	\$100.00
Whole Day	\$140.00
Group 2 - Community, Hobby & Sports Groups	
Hourly charge	\$20.00
Morning or Afternoon	\$55.00
Evening	\$75.00
Whole Day	\$100.00

Town Planning Resource Consents

All fees and charges are inclusive of GST (except as noted *)

Development Charges	2019/20 Fee
Development Charges (Section 36 Resource Management Act)	
Non Notified Resource Consent	\$900.00
Non Notified Resource Consent (multi-unit)	\$1,000.00
Notified Resource Consent	\$10,000.00
Limited Notification Resource Consent	\$8,000.00
Variation of Conditions - Non Notified	\$600.00
Variation of Conditions - Notified	\$3,625.00
Boundary Activity	\$300.00
<i>Temporary/Marginal Activity</i>	
Pre-Application Advice (over and above 1 hour)	Hourly rate
Resource Consent Monitoring	\$150.00
Set Fees	
<i>These set fees relate to the minimum charge only. Actual fee payable includes the cost of time taken to process each application, memorandum, consent, notice, certificate or schedule, the costs of disbursements, plus any inspections required.</i>	
Certificate of Compliance (Sec 139)	\$600.00
Existing Use Certificate	\$600.00
Extension of Resource Consent Expiry Fee (Sec 125)	\$600.00
Outline Plan Lodgement (Sec 176A)	\$900.00
Review of Decisions (Sec 357)	\$1,750.00
Overseas Investment Certificate	\$600.00
Resource Management Certificate for Sale and Supply of Alcohol 2012	\$100.00
Property File Management Fee (charged per consent)	\$75.00
Moveable Signs Within CBD	
CBD Sandwich Boards Signage Fee	\$150.00
Hourly Rates	
Regulatory Engineering	\$160.00
Team Leader Resource Consents	\$175.00
Resource Consents Planner	\$160.00
Regulatory Administrator	\$80.00
Land Information Memorandum	
LIM	
Residential and Rural	\$300.00
Commercial and Industrial	\$450.00

Transportation

All fees and charges are inclusive of GST (except as noted *)

Roading	2019/20 Fee
Street Banners	
Erect and take down (one fee includes both)	\$141.64
Corridor Management	
Corridor Access Requests	\$335.63
Traffic Management Plans	\$225.20
Additional Inspections (per additional inspection)	\$105.98
Service Marking for Council Water, Stormwater and Sewers	
Provision of as built plans	No Charge
Marking large diameter sewer pumping mains	No Charge
Marking large diameter trunk mains	No Charge
Per Hour - Marking of Stormwater, sewer and water mains (applies to service authorities that charge for their services to be marked)	\$102.92

ANNUAL PLAN 2019/20 CONSULTATION SUMMARY

INTRODUCTION

The purpose of the Annual Plan 2019/20 consultation process was to seek feedback from the community on the changes proposed to Year Two of the Long Term Plan 2018-28. The community were asked to advise their preferred option on two matters as follows:

- Kerbside Recycling payment method
 - Part-pay now (proposed)
 - Pay full cost from now
- Regional Disaster Relief Trust
 - Set up the Trust (proposed)
 - Do not set up the Trust
 - Neither option

In addition, three other matters were presented for the community to indicate whether they agreed with the proposed changes, they were:

- Water Supply – bringing forward planned projects and implementing new projects to help address dirty water issues and optimise the water supply network.
- Whakarire Revetment – introduction of a targeted rate (3% of the project cost) for affected residents in Whakarire Avenue.
- Provincial Growth Fund – support for the applications to the government for funding.

CONSULTATION APPROACH

A consultation document was prepared ([Appendix 1](#)) outlining the proposed changes and the financial impacts of these changes for both the 2019/20 financial year and the flow on effects into 2020/21. Changes to the capital programme were also outlined and supporting documentation was listed.

Community Feedback Meetings were conducted instead of the formal Hearings process in an effort to encourage a dialogue as opposed to formal presentations to Council and to encourage a broader spectrum of participation.

Access to the consultation information and the feedback form was primarily online, with hard copies provided at the Community Feedback Meetings and available at Customer Services. Assistance and access to the online material was provided at the Libraries, Customer Services and at the Community Feedback Meetings.

There was opportunity on the feedback form and at the meetings for people to provide feedback on any other matters they wished to raise with Council.

CONSULTATION PROCESS

Consultation was open for four weeks from 8 April 2019 to 13 May 2019.

A range of engagement and promotional tools were created to support the consultation.

Engagement

Three Community Feedback Meetings were held as follows:

- Monday 15 April 2019, 6pm at the Napier War Memorial Centre
- Wednesday 17 April 2019, 11am at Greenmeadows East Community Hall
- Thursday 2 May, 6pm at Living Waters Church Hall, Tamatea

A New Zealand Sign Language Communicator was provided at each meeting.

Two informational videos were created to explain the situation with Water Supply and the changes to Kerbside Recycling. These videos were included in the presentation at the Community Feedback Meetings, placed online and promoted through social media.

Targeted consultation was undertaken with the affected residents in Whakarire Avenue with regards to the proposed targeted rate.

Promotion

The Annual Plan 2020/21 consultation was promoted widely using the following tools:

- Advertising – radio, digital, newspaper and billboards
- Direct distribution – email signature, rates insert
- Social media

A brochure was also delivered to all Napier households, outlining the key proposed changes.

See [Appendix 2](#) for samples of promotional material.

RESPONSE

Overall, 218 submissions were received, 14 of which were made on behalf of an organisation or group. Four groups made a funding request. Seven submissions were received on the hardcopy form.

Funding Requests:

All groups will present to Council at the Funding Request section of the Deliberations Meeting on 4 June 2019.

Group	Nature of Request	Amount
Jervoishtown Residents	To install CCTV in several streets in Jervoishtown in response to illegal dumping of rubbish	Not specified
Sport Hawke's Bay	Not specified	Not specified
Biodiversity Hawke's Bay Foundation	Annual contribution to Endowment Fund and operational costs	Not specified
Hawke's Bay Knowledge Bank	To contribute to ongoing operational costs	Not specified

Methodology

The submission numbers are similar to the last Annual Plan Consultation process despite the online focus. Attendance at the Community Feedback Meetings was on par with the Community Chat meetings held during the last Long Term Plan Consultation.

Four submitters commented they would like the Hearings process to be available in the Annual Plan process.

Community Feedback Meetings

At each meeting an information presentation was facilitated by Councillor Annette Brosnan. Following this, a panel of key staff with subject expertise on the changes provided information and then the session was open for questions and feedback from the community. The meetings all closed with an invitation to give formal feedback at the i-pad station set up or to complete the feedback form online at home.

A total of 77 members of the community participated in the meetings.

Meeting Snapshots:

Monday 15 April 2019, 6pm at the Napier War Memorial Centre		
Public – 23	Councillors – 9	Staff - 14
Topics discussed: <ul style="list-style-type: none"> Water Supply / Quality <ul style="list-style-type: none"> Status and liability of the contract for Taradale Reservoir project Concerns about water quality in Ahuriri Estuary, suggestion that more funding be available for improvements to water quality Affordability <ul style="list-style-type: none"> Concern about number of high cost projects and increasing debt, particularly with a new Council coming in this year. HB Disaster Relief Fund <ul style="list-style-type: none"> Questioned the need to set this up Comment about HB Regional Council increasing rates when they took over Civil Defence, questioned whether NCC rates correspondingly went down Other <ul style="list-style-type: none"> Loss of all day parking in Munro Street (The Pit) – advised we are looking at other all day parking options Was the replacement outfall pipe at the Bio Filter Tricking Plant factored into the budget? Yes 		
Wednesday 17 April 2019, 11am at Greenmeadows East Community Hall		
Public – 23	Councillors – 9	Staff - 17
Topics discussed: <ul style="list-style-type: none"> Kerbside Recycling / Waste <ul style="list-style-type: none"> Concern about the size of bin (80 litre) being a 'waste encourager'. People that create lots of waste should pay for its disposal. Could we incentivise people to generate less waste through discounts especially for seniors. Unfair that the cost will be borne by those who generate the least waste and who can least afford to pay. We should encourage communities to come up with ways to deal with recycling Reward businesses and individuals to change habits and reduce waste Staff advised that discounts for those that generate low amounts of waste could be looked at Discussion about the tendering process and costings for the new recycling service Water Chlorination <ul style="list-style-type: none"> Comment that the timeline for setting up the dechlorinated water stations was long and couldn't we use the Hastings design so the process could have been sped up? Advised that the first station would be installed by the end of June with a second coming on line after that Several comments regarding water discolouration – staff advised people to try flushing by turning on outside tap until the colour clears and if no change to call and report it as it helps Council identify issues with the network and resolve the issue for the resident Rates Affordability 		

<ul style="list-style-type: none"> <ul style="list-style-type: none"> ○ Increasing rates and insurance costs is placing pressure on people on fixed incomes, pensions don't increase by 6.4% annually • Prioritisation <ul style="list-style-type: none"> ○ The delivery of basic services should be prioritised over 'nice to have' services ○ Need to differentiate between desirables and essentials – i.e. Aquarium and Pools are desirables while sewage, clean water and recycling are essentials that should be prioritised. ○ Concern about the location and expansion of the Aquarium with regards to its proximity to the Hikurangi Subduction Zone. Discussion about most of Napier's level land being in the same situation. Comment that the money could be better spent on affordable housing provision. • Other <ul style="list-style-type: none"> ○ Is the cost of the new Library and the Council Offices in the Long Term Plan - Yes 		
Thursday 2 May, 6pm at Living Waters Church Hall, Tamatea		
Public – 32 Members of the Deaf community in attendance	Councillors – 7	Staff – 13
<p>The focus of this meeting was primarily about Water Supply with the following aspects discussed:</p> <ul style="list-style-type: none"> • Chlorination <ul style="list-style-type: none"> ○ Other options to make the water safe <ul style="list-style-type: none"> ▪ Netherlands model ▪ Ozone Treatment ▪ UV Treatment ○ Levels of Chlorine seem high – smell / taste • Filtering systems <ul style="list-style-type: none"> ○ Two residents presented their used filters ○ Concern about the extra cost of installing systems and replacing filters • Network <ul style="list-style-type: none"> ○ Functionality of Taradale Reservoir – gave update ○ Discussion about the Aquifers ○ Do we have enough water infrastructure to accommodate growth – Yes • Dechlorinated Water Stations <ul style="list-style-type: none"> ○ Concern about the increased traffic in the areas where they will be located – that was part of the location selection consideration ○ Question about where this water comes from – advised it comes from the network (i.e. is chlorinated) but is then dechlorinated at the station • Drinking Water Standards <ul style="list-style-type: none"> ○ Question as to why we had raised the standards – these standards are not set by Councils but by the Government • Other Water matters <ul style="list-style-type: none"> ○ Concern about the water the Cruise Ships and bottling companies take ○ Spending on water infrastructure should be prioritised over tourist activities ○ Suggestion that further discussion about water with the wider community could be made • Other comments <ul style="list-style-type: none"> ○ The increase in recycling costs is a disincentive and people might stop recycling ○ Question about the \$900,000 being spent in 20/21 on the pools, is that at Onekawa, seems no point in spending anything there – these are initial project costs for the new development not at Onekawa ○ Update on plans for the Council Offices – investigation into all of the options underway 		

See [Appendix 3](#) for a record of feedback provided at the Community Feedback Meetings.

Digital / Social Media

The digital advertising was seen around 250,000 times by Napier residents. Slightly more females than males clicked on the adverts. Twice as many in the 65 years plus clicked on the adverts than any other age group.

There were seven posts made on Facebook, with 4 being boosted. In total, the reach was 83,794 people.

Whakarire Avenue Targeted Consultation

Letters were sent to the 14 affected residential properties providing information and an invitation to attend a meeting with staff to discuss the proposed targeted rate as part of the Annual Plan 2019/20 consultation.

Members of 12 of the 14 households attended the meeting on 11 April. The following matters were discussed:

- Cost of the project
- How the rate would be applied
- The revetment project
- Stormwater discharge
- Reserve landscaping
- Security due to greater access to the Reserve
- Submission opportunities – Annual Plan 2019/20 and the Revenue and Financing Policy Consultation

A follow-up letter was provided to all 14 residential properties summarising the meeting discussion and actions, and reiterating how to make a submission to Council on the targeted rate.

Four submissions were received identifying as Whakarire residents. A further four residents submitted to the Revenue and Financing Policy consultation.

APPENDICES

APPENDIX 1: ANNUAL PLAN 2019/20 CONSULTATION DOCUMENT



NAPIER
CITY COUNCIL
Te Kaunihera o Ahuriri



A VIBRANT AND SUSTAINABLE CITY FOR ALL

TOITŪ TE WHENUA O AHURIRI, TOITŪ TE TANGATA

**A PROSPEROUS AHURIRI,
A PROSPEROUS PEOPLE**



CHANGES TO 2019/20

We are proposing some changes to what was planned for 2019/20 when we did the Long Term Plan 2018-28 last year.

There has been much talk in the community about fixing our water issues. We have \$31.9 million to spend on water over the next 10 years, but we want to bring some of those projects forward and we want to deliver some new projects (\$7.8 million), all of which will help address water clarity (dirty water) issues and optimise the supply network.

A major project now being progressed following community consultation is the Waste Minimisation and Management Plan (WMMP) for Napier and Hastings. This plan includes our recycling service. Recently, China decided to stop taking recycling from New Zealand. Malaysia is now saying no to our non-recyclable plastics. This has an impact on what we do with our waste and we can expect further changes as the industry continues to change. The cost of the recycling service is going up too. We

want your feedback about how these extra costs could be covered.

It is a constant balancing act to get things right. We want to tackle the big issues like water and waste, deliver our other community activities, and invest in opportunities that maintain Napier as a vibrant, sustainable city while keeping it affordable. All of the changes mean that our projected increase for all ratepayer types of 5.1% has increased by 1.3%. For example, for the average household this will mean an overall increase of \$2.62 per week.

We also have to keep an eye on other challenges which will impact on our planning in the coming years, such as climate change.

I encourage you to come along to the community feedback meetings, and to go online and tell us what you think of our plans.

Bill Dalton
Mayor of Napier

HOW TO HAVE YOUR SAY:

Read this document, then go to www.sayitnapier.nz and fill in the online form. There, you will also find links to additional information about the changes to the Long Term Plan (LTP) for this coming year (2019/20).

You can provide feedback on other matters on the online form as well.

The matters that have options for you to provide feedback on are under these symbols.

**SAY IT
NAPIER!**

**WE WANT
YOUR
FEEDBACK**

COMMUNITY FEEDBACK MEETINGS:

This year we are taking a different approach and are holding community feedback meetings rather than the more formal hearing process. Come and share your thoughts about the changes to the 2019/20 year. Councillors and staff will be available to answer any questions you have about the changes, and to listen to your feedback.

Monday 15 April
6:00pm to 7:00pm
Napier War Memorial Centre

Wednesday 17 April
11:00am to 12 noon
Greenmeadows East Community Hall
Tait Drive, Greenmeadows

Thursday 2 May
6:00pm to 7:00pm
Living Waters Church Hall
Durham Ave, Tamatea





HAWKE'S BAY DISASTER RELIEF TRUST

The Civil Defence activity for Hawke's Bay is delivered by the Hawke's Bay Civil Defence Emergency Management (CDEM) Group through a shared service arrangement.

The approved CDEM Group Plan seeks to establish a Hawke's Bay Disaster Relief Trust for collecting and distributing donations made by the public and organisations in a civil defence emergency in Hawke's Bay. Establishing the Trust will allow us to build up a fund as a charity before a disaster occurs. This will mean we will

be ready to distribute donated funds much faster to those most in need should a disaster occur.

The donated funds held in the Trust will not be Council funds, nor are they funds that would otherwise be coming to the Council (e.g. from central government).

As the Trustees will need to be appointed by the Hawke's Bay Councils, it is necessary to establish a Council Controlled Organisation under the Local Government Act to form and administer the Trust.

Costs to set up this Trust will be managed through existing budgets.

Proposed option - Set up the Trust

Other option - Do not set up the Trust



WASTE MANAGEMENT

Last year, our community told us what our joint Waste Management and Minimisation Plan (WMMP) for 2018-24 should include. This plan guides how the Napier and Hastings Councils manage waste, with a focus on reducing the waste that goes to the Omarunui landfill to extend its life. It also helps us make decisions about the region's waste and recycling collections.

The international market for recycling has changed rapidly over the last few months with China and now Malaysia not taking plastics from New Zealand. There is no longer a market for plastics grade 3-7, so we are not able to collect them through our recycling service. Kerbside collectors are also indicating a preference for automated collection (i.e. wheelie bins) due to efficiency gains and health and safety concerns.

Our community values the recycling services we provide and over the last year we have been working hard to keep up the current service given the many changes happening in the market.

Part of this has included cushioning the increasing costs to the current service before we make the changes signalled in the WMMP. The current service now costs \$72 per year per household rates, but the extra cost has been absorbed by Council, keeping the charge to household rates at \$19 per year. The current contract is based on an old service model and is no longer viable and cannot continue as it is, given the new recycling market conditions. The current arrangement is due to finish shortly.

Around December, we aim to introduce the changes to our kerbside recycling service in line with the WMMP and will soon be tendering for the new contract. We know that the cost of the changes has significantly increased since last year when we asked for feedback on the options. We will not know the exact costs or detail of the service until the tender process is finished. However, we anticipate that all possible collection options may cost between \$56 and \$76 extra per year per household rates, that's up to an extra \$1.46 per week.

The fast moving recycling market is going to influence the kerbside recycling service from this point on. When we tender for this service, rather than asking for a specific service, we will be asking providers to propose the way they would operate the service so that we can achieve the following:

- reduce waste
- meet health and safety requirements
- provide suitable containers to residents
- maintain continuity of service
- achieve the WMMP objectives and outcomes as much as possible.

We can continue to absorb the increase for the next three years by using some funding we have in reserves (our savings account). This part-pay option will mean we will deplete our reserves by \$1.3 million over the three-year period. Or, the full costs of the current and new service can be charged to rates and we keep the \$1.3 million in the savings account.

Our community supports introducing wheelie bins for rubbish collection which will be introduced in 2020/21. We may now need to provide bigger wheelie bins than the 80 litre bins we had originally planned in the WMMP because of the changes to the plastics market limiting us to recycling 1 and 2 grade plastics only. We anticipate, at least initially, we will have more waste as the 3-7 grade plastics will be disposed of as rubbish. The extra cost of using a wheelie bin is estimated to be between \$17 and \$50 (per year per household rates).

KERBSIDE RECYCLING OPTIONS

Proposed option - Part-pay now

Instead of paying the full increase straight away, we can use some of our reserves to absorb the increase for the next three years. This means in 2019/20 it will cost an extra \$39 per household per year instead of an extra \$76 per household per year. This option depletes our reserves (savings account) by \$700,000 in the 2019/20 year. Part paying results in a 6.4% increase to total rates for all Council services (\$2.62 per week per household rates) in 2019/20.

Go to www.sayitnapier.nz to see how this option affects your rates.

Other option - Pay full cost from now

This option would add an extra \$76 per year per household. This option does not use any reserves funding. This option exceeds the rates increase maximum we set last year (5% plus LGCI*), taking our proposed overall rates increase for all Council services to 8% (\$3.37 per week per household rates).

Go to www.sayitnapier.nz to see how this option affects your rates.

*LGCI is Local Government Construction Index, a commonly used inflationary tool for Local Authorities





WATER SUPPLY

Water supply used to be about providing as much water as possible, as quickly as possible. Water supply in 2019 is about providing safe water in the right quantities to the right places at the right time.

Following the Havelock North Drinking Water Inquiry we have made, and will continue to make, changes to improve our drinking water network. These changes have resulted in some issues with the clarity of the water, largely due to inconsistent water flow and pipe maintenance. We have heard our community express their concern about this. As a result, we are going to do some of the planned work on our water infrastructure and maintenance earlier and add some new projects – this will help address these dirty water issues and optimise our water network. Ultimately, we will be creating two separate water supply zones rather than the one network that we have now, which will give us greater operational control of the network.

THE WORK INCLUDES

New Projects:

- Start the installation of an extension pumping main from Church Road to a new Napier Hill reservoir (location to be confirmed) to improve water flow. The total cost of the project is \$3 million, these costs occur from 2020/21
- Add a new main water line from Awatoto bores to the new Napier

Hill reservoir at a total cost of \$3.5 million, with \$500,000 occurring in 2019/20

- Add more network access points, which will help with pipe cleaning.

Projects being done earlier:

- Add new bores to the Awatoto bore field
- Start the project to install a new reservoir on Napier Hill to replace the Enfield Rd reservoir (location to be confirmed). The total cost of this new reservoir is \$10.2 million, \$5 million has been brought forward to 2019/20 to purchase a site
- Create a new bore field in Taradale South and a dedicated main to the Taradale reservoir to provide consistent water flow
- Increase monitoring to identify high leakage areas in the network so we can prioritise maintenance and renewals of our pipework
- Improve reservoir inlets and outlets to a number of reservoirs.

We had planned to start an upgrade of the Thompson Road Reservoir this year. However, this work can be completed in two years' time to enable the other projects with higher priority to be completed.

There is a cost to starting the work earlier and adding new projects. These costs will start to occur in the 2020/21 year and will add about 0.7% to rates (or \$15 per year per average household rates).

We are also in the process of installing two De-chlorinated Water Stations.

WHAKARIRE REVTMENT

A revetment is a rock structure on the shoreline that prevents erosion from king tides and storm events. We have resource consent for a revetment that will protect the land on Whakarire Avenue. There is no immediate threat to private property, however public access has already suffered erosion from the sea. The situation is only going to get worse. The revetment will allow reinstatement of the public access and provide protection to the private properties immediately adjacent to the sea.

We have assessed that there is some benefit for the private properties affected and so we propose that they contribute to the cost of the work through a targeted rate (3% of the total cost of the work). Previously, the entire cost was to be funded by all ratepayers. We are currently seeking feedback from these private property residents.

Introducing a targeted rate for the private property residents requires a change to the Revenue and Financing Policy which we are also asking for feedback on. You can read more about the changes to this policy on www.sayitnapier.nz

PROVINCIAL GROWTH FUND

We have made several applications for funding from the Government's Provincial Growth Fund. This Fund supports projects that encourage people in the regions to reach their full potential by helping build a regional economy that is sustainable, inclusive and productive. The applications we have made are for projects that cannot be achieved through Council funding alone. We expect to know the outcome of our applications in the next few months. The applications are for the following projects:

- Activate Maraenui
- Inner Harbour Developments
- Premier Regional Park
- Westshore

We received funding to develop the full business case for the National Aquarium of New Zealand expansion project earlier this year. This business case is now being developed. A further application will be made for project funding should the business case support the project progressing.





WHAT ELSE HAS CHANGED?

The capital works programme outlined in the Long Term Plan 2018-28 (LTP) includes a substantial investment in a variety of projects. For the Annual Plan 2019/20, there have been several changes where projects have been re-phased - either moved to later years, or brought forward. There have also been new requirements that have been identified since the LTP and some projects which are no longer required. Details of any changes over \$500,000 are outlined in the table below.

CHANGES TO THE CAPITAL WORKS PROGRAMME

Table one: Variation between LTP year 2 and Annual Plan 2019/20

Activity names as used in the LTP	Annual Plan 2019/20 (\$000)	Long Term Plan 2019/20 (\$000)	Change between LTP Year 2 and Annual Plan 2019/20 (\$000)
Community and Visitor Experiences	35,998	46,478	-10,481
Property Assets	2,835	9,489	-6,654
Transportation	10,062	11,234	-1,172
Stormwater	2,693	3,365	-672
Wastewater	3,646	3,317	329
Water Supply	10,937	4,769	6,167
City Strategy	2,298	2,325	-27
Support Units	2,008	2,049	-41
Other Infrastructure	2,368	2,443	-75
Total (\$000)	72,843	85,470	-12,627

Table two: Changes over \$500,000 to a project between LTP year 2 and Annual Plan 2019/20

Activity Group	Details of changes over \$500,000 to 2019/20
Community and Visitor Experiences	<ul style="list-style-type: none"> Napier War Memorial (new project) \$1.5 million from loans now included in the Annual Plan. Kennedy Park – Main ablution block (extended scope) \$1 million from loans has been added to the Annual Plan in addition to funding already allocated. Napier Aquatic Centre expansion - \$900,000 brought forward from 2020/21. National Aquarium of NZ Expansion – Funding of \$11 million has been moved to 2020/21 as the business case must be completed first. Par 2 Minigolf – Course upgrade. \$511,000 has been deferred to 2020/21 so more planning can be undertaken in 2019/20. Marine Parade Historic Skating Rink - \$818,000 deferred to 2021/22.
Property Assets	<ul style="list-style-type: none"> Inner Harbour (as outlined in the Ahuriri Master Plan) / Iron Pot Public Access, \$2.76 million moved to 2020/21. Inner Harbour masterplan is being developed which needs to be done first. Design costs have remained in 2019/20. The rest of the allocation is for construction and has been moved to 2020/21.
Transportation	<ul style="list-style-type: none"> Severn Street Roundabout Upgrade - \$750,000 is now included from financial contributions-NZTA subsidy. This project has been brought forward so that any new developments around Prebensen Drive can be safely catered for. CBD Developments – The Marine Parade Piazza (\$1 million) and Tennyson Street Pedestrian Improvements (\$600,000) have been deferred until design work can be undertaken in 2020/21.
Stormwater	<ul style="list-style-type: none"> CBD stormwater upgrade - \$900,000 has been deferred to 2020/21 and 2021/22 as more investigation is required in 2019/20. Ahuriri Estuary outfalls - \$200,000 for investigation and design work has been brought forward as improving water quality in the Estuary is a key priority.*
Water Supply	<ul style="list-style-type: none"> Awatoto Trunk Main Extension - a new project of \$500,000, funded from the Financial Contributions Reserve. Replacement of Enfield Rd Reservoir - \$5 million has been brought forward to 2019/20. New Taradale Bore Field. \$1 million brought forward from 2021/22. Thompson Rd Reservoir - \$800,000 has been deferred to 2022/23 as this project is not considered critical to service delivery.

Note: for any loans taken out in 2019/20, the interest of loan impacts on the 2020/21 financial year.

*included in table due to high public interest.





SO WHAT HAS HAPPENED TO THE NUMBERS?

2019/20 impact

In the Long Term Plan 2018-28, we approved a cap for rates increases to 5% plus LGCI (Local Government Construction Index). The proposed rates increase is 6.4% for 2019/20 - this falls within the cap, if the part-pay option for kerbside recycling costs is adopted.

Looking ahead to 2020/21

Due to the changes in 2019/20 for water supply projects, implementing the WMMP kerbside recycling and rubbish collection changes, and new capital work, including the War Memorial and Kennedy Park ablution block, there is an additional impact on rates for 2020/21. We have identified a possible 2 - 3.5% increase on what was allowed for in the LTP budget for 2020/21. The impacts per year are as follows:

Cost of servicing additional loans

New War Memorial spending proposal	0.20%
Kennedy Park Ablution block	0.13%
Changes to Water projects	0.70%

WMMP Impacts

Impact if kerbside recycling increase phased in	0.50% (with further impact in 2021/22)
Rubbish collection service changes	1% to 2% (\$17 - \$50 extra)

The impact that these 2019/20 changes have on rates for 2020/21 will be considered in the development of the 2020/21 budget.

Examples of Proposed Rates for 2019/20

Examples of the impact of rating proposals for 2019/20 are shown in the following table:

	Land Value	Rates 2018/19	Rates 2019/20	Annual Change \$	Weekly Change \$	Change %
City Residential						
Average	214,000	2,102	2,238	136	2.61	6.4%
Median	200,000	2,031	2,162	131	2.51	6.4%
Quartile 1	160,000	1,833	1,950	117	2.24	6.4%
Quartile 3	250,000	2,281	2,430	148	2.85	6.5%
Commercial / Industrial						
Average	490,000	7,617	8,115	498	9.58	6.5%
CBD Average	291,000	6,172	6,551	378	7.28	6.1%
Industrial Average	563,000	8,573	9,139	566	10.89	6.6%
Miscellaneous Properties						
Average	400,000	3,025	3,220	194	3.74	6.4%
Rural						
Average	460,000	1,910	2,046	137	2.63	7.2%
Bay View						
Average - No Sewerage Rate	248,000	1,589	1,710	121	2.33	7.6%
Average - With Sewerage Rate	248,000	1,953	2,078	125	2.40	6.4%

Note that Council's total rates revenue for 2019/20 will increase by 6.7%, which is an average increase of 6.4% for existing properties, after an allowance of 0.3% is made for new properties added since last year.





WANT TO KNOW MORE?

The following documents provide further details about the proposed changes to the Long Term Plan for this coming year (2019/20) can be found at www.sayitnapier.nz

Changes to our Capital Plan

Frequently Asked Questions –
Water Supply

Frequently Asked Questions –
Waste Management

Long Term Plan Projects update

- De-chlorinated Water Stations
- Napier Aquatic Centre Development
- Ahuriri Master Plan – The first 12 projects
- National Aquarium of New Zealand Expansion Project
- Leasehold Land

What you get for your rates dollar

Revenue and Financing Policy
Consultation

Rates Remissions Policy Consultation



YOUR SUBMISSION ON NAPIER'S ANNUAL PLAN 2019/2020

**SAY IT
NAPIER!**

TO MAKE A SUBMISSION:

Post completed form for free to: FreePost Authority
Number 1772273, Annual Plan 2019/20 Submissions,
Napier City Council, Private Bag 6010, Napier 4142

Or complete the form online www.sayitnapier.nz

You can use extra paper if you need or attach a document. Your submission and name will be published, but your contact details will be kept private.

Need help to fill the form in online? Assistance available at Napier and Taradale Libraries at 10-11am Tuesday's and Wednesday's until 8 May 2019.

**MAKE
IT
COUNT**

Fill in your details
and do it on time.

**Submissions close
12 noon, 13 May 2019**

YOUR DETAILS:

Full name:	
Daytime phone no. (or mobile no.):	
Email:	
Address:	
Postal address (if different from above):	
If you are providing feedback on behalf of a group or organisation, please give us their name:	

YOUR FEEDBACK:

Waste management - Tick which option you prefer

Part-pay now (proposed)	<input type="radio"/>	
Pay full cost from now	<input type="radio"/>	
Do you have any comment to make about the future of Kerbside Recycling?		
Other comment:		



YOUR FEEDBACK:

Regional Disaster Relief Trust - Tick which option you prefer

Set up the Trust (proposed)	<input type="radio"/>	Comment:
Do not set up the Trust	<input type="radio"/>	
Neither option	<input type="radio"/>	

Water Supply - What do you think of the changes for the plan 2019/20?

 Agree	<input type="radio"/>	Comment:
 Neutral	<input type="radio"/>	
 Disagree	<input type="radio"/>	

Whakarire Revetment - What do you think of the way this work will be funded?

 Agree	<input type="radio"/>	Comment:
 Neutral	<input type="radio"/>	
 Disagree	<input type="radio"/>	

Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this Fund?

 Agree	<input type="radio"/>	Comment:
 Neutral	<input type="radio"/>	
 Disagree	<input type="radio"/>	

Any other feedback:

Council will be meeting on 29 May 2019 from 9am at Large Exhibition Hall at Napier War Memorial Centre to consider community feedback and to make it's decisions. You are welcome to attend.

APPENDIX 2: PROMOTIONAL MATERIAL



The banner features a photograph of a woman in a floral shirt and sunglasses placing a plastic bottle into a recycling bin. The bin is green and has 'St. George's, Henderson' and 'icar beget' written on it. A yellow speech bubble with the text 'SAY IT NAPIER!' is overlaid on the photo. The right side of the banner is a solid yellow background with the following text:

WHAT'S CHANGED FOR NAPIER?

Water, Waste and more.

Have your say on our
Annual Plan 2019/20
at www.sayitnapier.nz

The Napier City Council logo is in the bottom right corner, featuring a stylized green tree and the text 'NAPIER CITY COUNCIL' and 'Te Kaitiaki o Napier'.



The banner features a photograph of a woman in a floral shirt and sunglasses placing a plastic bottle into a recycling bin. The bin is green and has 'St. George's, Henderson' and 'icar beget' written on it. A yellow speech bubble with the text 'SAY IT NAPIER!' is overlaid on the photo. The right side of the banner is a solid yellow background with the following text:

WHAT'S CHANGED FOR NAPIER?

Click here
to have your say on our
Annual Plan 2019/20

The Napier City Council logo is in the bottom right corner, featuring a stylized green tree and the text 'NAPIER CITY COUNCIL' and 'Te Kaitiaki o Napier'.



**WHAT'S CHANGED
FOR NAPIER?**

Have your say on our
Annual Plan 2019/20
at www.sayitnapier.nz

**NAPIER
CITY COUNCIL**
Te Kaitiaki o Aotearoa

**SAY IT
NAPIER!**

WHAT'S CHANGED?

Our proposed Annual Plan 2019/20 includes some important changes to what was planned for Napier in the coming year. See over the page for a snapshot of them.



NAPIER
CITY COUNCIL
Te Kaunihera o Ahuriri

CHANGES TO RECYCLING

Following consultation last year, the Waste Minimisation and Management Plan was put in place. The focus ahead is on our recycling service as China and Malaysia no longer take plastics from New Zealand. This has an impact on what we do with our waste and the costs of our recycling service. We would like your feedback about how we cover these extra costs.

FIXING OUR WATER ISSUES

We have \$31.9 million to spend on water over the next 10 years, but we want to bring some of these projects forward and deliver some new projects. All of which will help to improve our water clarity and supply.

WANT TO KNOW MORE?

Water and waste are important topics to us all, but there's more to update you on in the full Annual Plan 2019/20 Consultation Document. Find more information and have your say at www.sayitnapier.nz before **Monday 13 May** at 12 noon.

JOIN US AT OUR COMMUNITY MEETINGS:

Monday 15 April, 6:00pm to 7:00pm
Napier War Memorial Centre

Wednesday 17 April, 11:00am to 12 noon
Greenmeadows East Community Hall
Tait Drive, Greenmeadows

Thursday 2 May, 6:00pm to 7:00pm
Living Waters Church Hall
Durham Ave, Tamatea



**WE WANT
YOUR
FEEDBACK**

ASK US TO HELP WITH YOUR ONLINE SUBMISSION

Annual Plan 2019/20



NAPIER
CITY COUNCIL
Te Kaunihara o Ahuriri



**WHAT'S
CHANGED
FOR NAPIER?**

Click here
to have your say on our
Annual Plan 2019/20

**SAY IT
NAPIER!**



NAPIER
CITY COUNCIL
Te Kaitiaki o Aotearoa



CHANGES TO 2019/20

We are proposing some changes to what was planned for 2019/20 when we did the Long Term Plan 2018-28 last year.

There has been much talk in the community about fixing our water issues. We have \$31.9 million to spend on water over the next 10 years, but we want to bring some of those projects forward and we want to deliver some new projects (\$7.8 million), all of which will help address water clarity (dirty water) issues and optimise the supply network.

A major project now being progressed following community consultation is the Waste Minimisation and Management Plan (WMMP) for Napier and Hastings. This plan includes our recycling service. Recently, China decided to stop taking recycling from New Zealand. Malaysia is now saying no to our non-recyclable plastics. This has an impact on what we do with our waste and we can expect further changes as the industry continues to change. The cost of the recycling service is going up too. We want your feedback about how these extra costs could be covered.

I encourage you to go online by noon Monday 13 May 2019 and tell us what you think.

Bill Dalton
Mayor of Napier



**SAY IT
NAPIER!**

**WE WANT
YOUR
FEEDBACK**

HAWKE'S BAY DISASTER RELIEF TRUST

The Civil Defence activity for Hawke's Bay is delivered by the Hawke's Bay Civil Defence Emergency Management (CDEM) Group.

The approved CDEM Group Plan seeks to establish a Hawke's Bay Disaster Relief Trust for collecting and distributing donations made by the public and organisations in a civil defence emergency in Hawke's Bay.

The donated funds held in the Trust will not be Council funds, nor are they funds that would otherwise be coming to the Council (e.g. from central government).

Costs to set up this Trust will be managed through existing budgets.

There are two options we'd like your feedback on - whether to set up the Trust or to not set one up.



**SAY IT
NAPIER!**

**WE WANT
YOUR
FEEDBACK**

WASTE MANAGEMENT

Our community values the recycling services we provide and over the last year we have been working hard to keep up the current service given the many changes happening in the market. Part of this has included absorbing the increasing costs to the current service before we make the changes signalled in the Waste Management and Minimisation Plan (WMMP).

Around December, we aim to introduce changes to our kerbside recycling service in line with the WMMP and will soon be tendering for the new contract. We know that the cost of the changes has significantly increased since last year when we asked for feedback on the options. We will not know the exact costs or detail of the service until the tender process is finished. However, we do anticipate that all possible collection options may cost you between \$56 and \$76 extra per year per household. That's up to an extra \$1.46 per week.

There are two options of how we can pay for our recycling service in the future - 'Part pay now' where you pay part of the increase now with Council paying the rest, which will mean using up cash reserves or 'Pay full cost from now'. Use the Rates Guide online to see how each option will affect your rates and then please tell us which one you prefer.



WATER SUPPLY

We've made changes to our water network so that we can supply safe water in the right quantities to the right places at the right time.

These changes have resulted in some issues with the clarity of the water, largely due to inconsistent water flow and pipe maintenance. We have heard our community express their concern about this. As a result, we are going to do some of the planned work on our water infrastructure and maintenance earlier and add some new projects - this will help address these dirty water issues and optimise our water network.

Go to www.sayitnapier.nz to find out about new projects to improve our water supply and projects we are getting underway earlier than planned.

There is a cost to starting the work earlier and adding new projects. These costs will start to occur in the 2020/21 year and will add about 0.7% to rates (or \$15 per year per average household rates).

We are also in the process of installing two De-chlorinated Water Stations.



PROVINCIAL GROWTH FUND

We have made several applications for funding from the Government's Provincial Growth Fund. This Fund supports projects that encourage people in the regions to reach their full potential by helping build a regional economy that is sustainable, inclusive and productive.

The applications we have made are for projects that cannot be achieved through Council funding alone.

We will update our community on the outcome of our applications and provide further information at that time.

We received funding to develop the full business case for the National Aquarium of New Zealand expansion project earlier this year. This business case is now being developed. A further application will be made for project funding should the business case support the project progressing.



HOW TO HAVE YOUR SAY

Visit www.sayitnapier.nz to read the full Annual Plan Consultation Document 2019/20 and then complete the online feedback form.

We are also holding community meetings, which are an informal way for you to get more information and provide feedback.

We have held a series of meetings with the last one being on

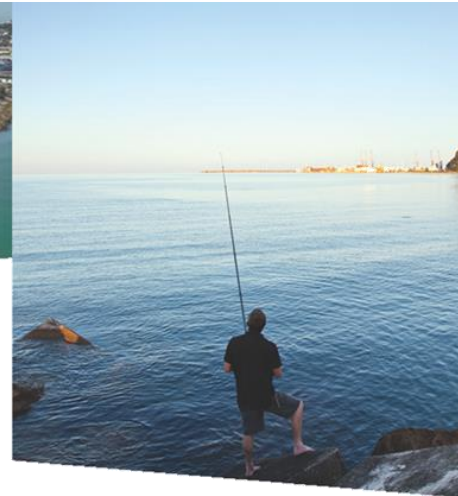
Thursday 2 May
6:00pm to 7:00pm
Living Waters Church Hall
Durham Ave, Tamatea

Please join us if you can.

WANT TO KNOW MORE?

Today we've presented you with an overview of what's in the Annual Plan 2019/20 consultation.

To see the full document, supporting financial information, project updates and Frequently Asked Questions, visit www.sayitnapier.nz and provide your feedback before **Monday 13 May at 12 noon**.



WHAKARIRE REVETMENT

A revetment is a rock structure on the shoreline that prevents erosion from king tides and storm events. We have resource consent for a revetment that will protect the land on Whakarire Avenue. There is no immediate threat to private property, however public access has already suffered erosion from the sea. The situation is only going to get worse. The revetment will allow reinstatement of the public access and provide protection to the private properties immediately adjacent to the sea.

We are looking at introducing a targeted rate for these residents as there is some benefit for the private properties affected. This requires a change to the Revenue and Financing Policy, which we are also asking for feedback on. You can read more about the changes to this policy at www.sayitnapier.nz

WHAT'S CHANGED?

ANNUAL PLAN
2019/2020 CONSULTATION
MAHERE Ā-TAU
2019/2020 UIUINGA

APPENDIX 3: COMMUNITY FEEDBACK MEETINGS SUMMARIES

ANNUAL PLAN 2019 - COMMUNITY FEEDBACK SESSION 1

Napier War Memorial Centre

15 April 2019

Meeting Summary

Summary

Attendance: 22 members of the public, 14 staff and 9 councillors in attendance.

The meeting started with introductions and housekeeping by Acting Mayor, Faye White. She invited Kaumatua – Piri Prentice to open with a karakia. Councillor Annette Brosnan made a PowerPoint presentation outlining the key changes to the Annual Plan 2019/20, mainly relating to water supply projects, waste management, disaster relief trust, changes to capital works programme and the impact of these change on rates. This was followed by a brief presentation by a panel of subject matter experts, namely:

- Catherine Bayly – Manager, Asset Strategy
- Jon Kingsford – Director, Infrastructure Services
- Caroline Thomson – Chief Financial Officer
- Cameron Burton – Manager, Environmental Solutions
- Santha Agas – Team Leader, 3 Waters

The presentation was followed by questions and comments from the members of the public.

Key Matters raised by community:

- **Water Supply**
- **Fiscal Responsibility**
- **Capital budget allocations**

Comments / Questions in detail

- Monitoring and checking of aquifers that feed our water supply
- Status of the second Taradale reservoir (behind Church Road) which had some issues.
Question about any ratepayer liability due to any ongoing litigation.
- Replacement of outfall pipe at BTS plant being factored in to cost and changes
- Improvements that can be expected in the Ahuriri estuary in the next year
- Amount allocated to estuary work compared to mini golf upgrade. Scope to redirect funds to increase allocation for estuary.
- Fiscal responsibility of elected members – a number of high cost projects – aquatic centre, civic building, library have been cleared. Concern about increased debt, especially since there will be a new council in six months.

- Appropriateness of Napier City Council setting up the Disaster Relief Trust, when HBRC rates increased recently when they took over the Civil Defence function.
- Loss of parking space with people no longer able to use the yard on Munro St and Council's plans for more all day parking options.

Meeting closed by Kaumatua, with an opportunity for people to have one on one conversations with staff and councillors present.

No submissions were made at the i-pad station.

ANNUAL PLAN 2019 - COMMUNITY FEEDBACK SESSION 2

Greenmeadows East Community Hall

17 April 2019

Meeting Summary

Summary

Attendance: 23 members of the public, 17 staff and 9 councillors in attendance.

The meeting started with introductions and housekeeping from Acting Mayor, Faye White. She invited Strategic Maori Advisor – Charles Ropitini to open the meeting with a karakia. Councillor Annette Brosnan made a PowerPoint presentation outlining the key changes to the Annual Plan 2019/20, mainly relating to water supply projects, waste management, disaster relief trust, changes to capital works programme and the impact of the changes on rates. Councillor Brosnan invited people to make a submission either at the i-pad station this afternoon or in their own time at home. This was followed by a brief presentation by a panel of subject matter experts:

- Catherine Bayly – Manager, Asset Strategy
- Jon Kingsford – Director, Infrastructure Services
- Caroline Thomson – Chief Financial Officer
- Cameron Burton – Manager, Environmental Solutions
- Santha Agas – Team Leader, 3 Waters

The presentation was followed by questions and comments from the members of the public.

Key Matters raised by community:

- **Recycling and Waste**
- **Chlorination**
- **Rates affordability (fixed incomes)**

Comments / Questions in detail

- Timeline for setting up de-chlorinated water stations and why the design from Hastings can't be used to speed up the process
- Prioritising the delivery of basic services – like unchlorinated water and recycling services, before spending money on 'nice to have' services.
- Rates affordability – increasing regional rates, insurance costs etc. leading to increased pressure on people on fixed incomes. Pension of retired people doesn't increase by 6.4% annually.
- Need to differentiate between desirables and essentials - Aquatic Centre and Aquariums are desirables while sewage, clean water, recycling are essentials that should be prioritised.

- Recycling at kerbside is consumption driven. Plan to provide 80 Litre bins is unnecessary and encourages waste, and shouldn't be done. People who create large amounts of waste should pay to dispose it.
- Basis on which costing has been done and how the 1.4% figure was arrived at. Details requested about tendering process.
- Provision of costs of the new library as well as Council offices in the Long Term Plan.
- Incentivising or giving some kind of credit to property owners/seniors who generate less waste. Recycling seen as a consumption tax. Unfair that the burden of this cost is borne by those who don't create much waste and can't afford to pay.
- Working with communities to solve the problem in innovative ways – eg. Working with pensioners to move recycling to a common point and provide some kind of vouchers/credit to them instead of doing a blanket 6.4% increase.
- Continued water discoloration after 3 garden hoses were left on for 2 hours, stains from discoloured water in the bath as well.
- Rewarding individuals and businesses to change habits and reduce waste.
- Aquarium expansion being considered despite of being in the Hikurangi Subduction Zone. Potential for funding to be re-directed to affordable housing discussed.
- Chlorine dosing and monitoring of chlorine levels in water as it has been excessive at times with repugnant yellow water.

Meeting closed by Charles Ropitini, with an opportunity for people to have one on one conversations with staff and councillors present.

No submissions were made at the i-pad station.

ANNUAL PLAN 2019 - COMMUNITY FEEDBACK SESSION 3

Living Waters Church

2 May 2019

Meeting Summary

Summary

Attendance: 32 members of the public, 13 staff and 7 councillors in attendance.

The meeting was opened with a karakia by Jenny Major, a member of the community in attendance. This was followed by introductions and housekeeping from Acting Mayor, Faye White. Councillor Annette Brosnan made a PowerPoint presentation outlining the key changes to the Annual Plan 2019/20, mainly relating to water supply projects, waste management, disaster relief trust, changes to capital works programme and the impact of these changes on rates. Councillor Brosnan invited people to make a submission either at the i-pad station this afternoon or in their own time at home. This was followed by a brief presentation by two of the panel members of subject matter experts:

- Catherine Bayly – Manager, Asset Strategy
- Cameron Burton – Manager, Environmental Solutions

Other subject matter experts on the panel to answer questions/respond to comments were:

- Jon Kingsford – Director, Infrastructure Services
- Adele Henderson – Director, Corporate Services
- Santha Agas – Team Leader, 3 Waters

The presentation was followed by questions and comments from the members of the public.

Key Matters raised by community:

- **Chlorination**
- **Water quality and network**

Comments / Questions in detail

- Clarification about Netherlands model.
- Consideration given to alternative methods to chlorination instead of following suit after Hastings started chlorination. Eg. Ozone Treatment.
- Water consumption of cruise ships that visit Napier as well as bottling companies.
- Reasons for the change in threshold of contamination from 5 bugs/million to 1 bug/million
- Origin of E Coli that was found and the location of the positive E Coli tests.
- Functionality of Taradale Reservoir.
- Filtrations systems becoming a need, especially for those allergic/intolerant to Chlorine. High associated costs due to frequent filter changes due to quality of water supply.

- Likelihood of Napier City Council reimbursing filter costs to people.
- Chlorine dosing and monitoring of chlorine levels which seems to be excessive due to the strong smell.
- Steps that can be taken by the community to protect their health while Napier City Council is trying to sort out the water network.
- Clarification about projects to increase access points in the parts of the network that cater to Tamatea so that maintenance work can be carried out effectively and regularly.
- Clarification about the \$900,000 allocated to Aquatic centre to confirm if the allocation is towards the existing facility or the new one being planned.
- Suggestion about UV filters being used as a feasible alternative to chlorine in USA.
- Increase in recycling costs can be a disincentive for people who may stop recycling.
- Opportunity to take the conversation about water outside this forum to the wider community.
- Expected uptake of dechlorinated water stations, and its impact on traffic in the area.
- Clarification about where the dechlorinated water stations get their supply from, if the whole network is chlorinated.
- Deterioration in water quality since Chorus started working in the area.
- Information sought about the structure of the aquifers – if there are multiple levels, and if the bores are at different levels because of where the water lies.
- Question about the current number of bores being sufficient for a growing population.
- Prioritising expenses to spend more on the water network and pipes, rather than tourist activities.
- Clarification about plans for the empty Council buildings, which have been the heart of Napier in the past.

Meeting closed by Jenny Major, with an opportunity for people to have one on one conversations with staff and councillors present.

No submissions were made at the i-pad station.

Feedback from Whakarire Ave residents

Submitter: Dennis and Pip Glenn

Consultation method: Revenue and Financing Policy consultation

Submission

Napier City Council Private bag 6010 Napier 4142 ANNUAL PLAN 2019/20
SUBMISSIONS WHAKARIRE REVETMENT

1. Dennis and Pip Glenn and the DG and PJ Glenn Family Trust (the Glenn's), owners of 15 Whakarire Ave. We are in receipt of your letter 3 April 2019 containing proposals for the Whakarire Revetment and the targeted rate. We are also in receipt of your letter of 17 April 2019 which varied the proposal in relation to stormwater.

2. A resource consent was granted for the Whakarire Revetment following the removal of the Glenn's', and a number of other Whakarire Avenue residents, objection. The removal of that objection was based on a dialogue with Napier City Council (NCC). That involved assurances made by NCC to the Glenn's that they would be regularly and actively consulted regarding the further steps and stages in the Whakarire Revetment. They were told that existing vegetation would be retained where possible. At no stage did NCC indicate to them that residents would be asked to fund the Revetment. At no stage did NCC indicate to them that stormwater discharge from the properties would be either redirected from the reserve to the roadside kerb or would be directed to a swale and large culvert directly in front of their property.

3. NCC's letters of 3 and 17 April 2019 set out the proposal for the Revetment and the targeted rates. The Glenn's were not consulted regarding the conditions that NCC now seeks to impose as part of the Revetment. Further NCC is seeking to impose considerable burdens/impacts that were not mentioned in the consultation leading up to the resource consent. These include:

(1) The requirement of residents to partially fund the Revetment through targeted rating; and

(2) The requirement to redirect stormwater discharge from the reserve to the roadside kerb or alternatively to a swale and large culvert directly in front of their property; and

(3) The requirement to remove vegetation.

4. It follows that the Glenn's are opposed to the Revetment and to the targeted rating because NCC is imposing conditions which it had not disclosed in the process leading up to the resource consent. Further Council has breached its obligation to consult with the Whakarire Avenue residents.

5. In addition to issues regarding consultation and misrepresentation the Glenn's oppose the revetment for the further reasons set out below:

(1) They do not believe the Revetment will be of benefit to their property. In fact it is now clear that it will adversely impact their property;

(2) They do not accept that there is an issue with public access. The area is well used by a public, school and other groups;

(3) They have concerns regarding the protection of properties when plants and barriers are removed, and work is being done in the Revetment. Council have provided no assurance that proper measures will be in place to protect the properties during the construction phase.

(4) They do not understand why the NCC are pushing for the Revetment? Why would NCC want to spend this sort of money when there is limited support from the affected residents? Who is driving the Revetment and why?

Yours sincerely Dennis and Pip Glenn 15 Whakarire Ave Westshore Napier

Submitter: Davidson Family Trust, Barry and Janet Davidson

Consultation method: Revenue and Financing Policy consultation

Submission

The Davidson Family Trust objects to the existing Whakarire Revetment Plan because of the following points; (1) It attempts to duplicate already existing safe road and dual pathways to the land point. (2) It fails to fully protect properties from sea level rising. (3) It places an undetermined cost on Whakarire Avenue residents for questionable value to them. (4) It does not address landscaping issues including prevention of proximity and public access to owners properties ie;fencing along their boundaries or a guarantee of planting as a fencing alternative. (5) It increases security risk on the affected dwellings with indecisive regard for safety, screening and shelter.

Submitter: Alan and Karen Willis

Consultation method: Annual Plan submission

Submission

We disagree with the funding in relation to the residents having to pay as its for the benefit of all of Napier Our submission are:

- 1) We would like to be consulted on the layout of the future carpark and position of the walkway
- 2)That on completion of the project that the carpark can be tarsealed and have the lights in the carpark
- 3)That the contractors lay down area doesnt block access to ourhouse
- 4) Can we make a one payment for the residents revetment costs instead of a term payment on our rates

Submitter: Dorothy Townshend

Consultation method: Revenue and Financing Policy consultation and separate letter from lawyer

Submission

Changes to a targeted rate and associated plans to reserve land between revetment and private property are strongly opposed for reasons detailed in letter sent to Wayne Jack by counsel today.

Martin J E Williams

Barrister

13 May 2019

Mr Wayne Jack
Chief Executive Officer
Napier City Council
Private Bag 6010
NAPIER

By email: waynej@napier.govt.nz

WHAKARIRE REVETMENT – TARGETED RATE AND RESERVE PROPOSAL-2019/20 ANNUAL PLAN

I act for Mrs Dorothy Townshend, owner and occupier of the property at 11 Whakarire Avenue, Westshore.

I have met with my client on her property and reviewed various correspondence and other documentation regarding this matter, including as contained within and attached to a letter to my client dated 3 April 2019.

My client strongly opposes the proposed 3% targeted rate for the revetment, and the City Council's proposed plans for land inside the revetment as outlined in the information received on 3 April 2019, for the following reasons:

- (a) My client was one of 47 submitters to the City Council's resource consent application for the revetment wall, all but 3 of which opposed the application. My client was in turn one of four submitters that maintained their objection following a redesign of that seawall/revetment, with one specific concern being to retain her existing plantings. I am instructed that overt pressure was placed on my client and other submitters to withdraw their objections. That aside, as the Hawke's Bay Regional Council staff report prepared regarding the application (dated 27 October 2016) records, the City Council offered an opportunity for further discussion on planting and landscape options of the reserve area at a later date, and advised that an additional process would follow to determine the landscaping and planting of that area after completion of the revetment structure.
- (b) In reliance on the Council's assurances as to this further process, Mrs Townshend advised the Regional Council that she did not wish to be heard on her submission, and took no further action regarding it, including rights of appeal to the Environment Court. There is of course no going back, and it now appears she has relied on the City Council's assurances in this regard to her significant detriment.
- (c) Instead of the process recorded in the Regional Council officers' staff report, my client received the letter of 3 April 2019 and was presented with what amounts to a "fait accompli" proposal for the reserve area (alongside the targeted rate) whereby all

Shakespeare Chambers

Level 1, 21 Browning Street

PO Box 754, Napier 4140

Phone: 06 835 0665 Fax: 06 835 6269

Quay Chambers

Level 7, 2 Commerce Street

PO Box 106 215, Auckland City 1143

Phone: 09 377 5070 Fax: 09 377 5071

Mobile: 027 449 0676 Email: martin@shakespearechambers.co.nz

personal effects and plantings need to be removed before the site is cleared, and all stormwater currently discharged onto the reserve redirected either on to her property or to a 'kerb outlet on the roadside'.

- (d) The scale of the plan included with that correspondence is inadequate and gives no detail of the proposed landscaping, again in conflict with the assurances my client received during the hearing process for the revetment application. Without any survey to my client's knowledge, the plan in question appears to locate the landward reserve boundary at the foot of my client's back steps. My client takes this to mean that the Council intends to clear the site right up that backdoor step, such that she has no rear yard whatsoever, and that all of the extensive plantings established on the property over a 30 year period must be removed.
- (e) I understand my client has met with you personally on site to discuss her concerns. Her impression gained is that the Council would give no quarter, with a suggestion instead made that she place some sort of grass gate or fence at the top of her bottom step.
- (f) My client is in her late 80s. Her husband passed away many years ago. They built their house in 1987 on the understanding that it was in compliance with all planning requirements. This would have included the rear or coastal yard then in force under the District Scheme. If the reserve boundary terminates at her bottom step as the Council's latest plan appears to indicate, that simply cannot be the case. My client and her late husband would instead have acted, again irreversibly, to their significant detriment in constructing their home on the false assumption it was lawfully established relative to the reserve boundary.
- (g) In my opinion, the Council must assume some legal liability for this situation and is undeniably legally responsible to ensure that works requiring consent are undertaken and completed in accordance with the District Plan and Building Act requirements. Either the Council is wrong now about the reserve boundary, or it should not have sat back in the 1980s and let this situation unfold.
- (h) In these circumstances, it is in my view unconscionable, inequitable, unfair and unreasonable for the Council to now proceed in such a high-handed manner. That is, without the further consultation or opportunity for her to comment on the proposed works in the reserve area relied on by her in withdrawing her objection to the revetment application, to instead present such an overbearing proposal extending right up to her backdoor step, the privilege for which she must pay by way of a targeted rate beyond the burden imposed on other rate payers.
- (i) It should also be noted in this context that at no stage before my client withdrew her objection to the revetment application, was it disclosed to her that the residents of Whakarire Avenue faced the prospect of a targeted rate for its construction. The Council agenda papers on this topic (16 October 2018) acknowledge this, and the "implicit assumption at the time that the costs would be absorbed by all the city's residents". By contrast, my client now faces the prospect of an additional \$300 per annum on her rates bill, for the rest of her life. (Open Minutes, Council meeting 11 December 2018).
- (j) Compounding her concerns, my client has received a quote for \$30,000 to redirect her stormwater to the Council stormwater drain. My client was advised at the April meeting to 'discuss' the Council's current proposals that the Council would not insist on my client

incurring that cost, but nothing has been received in writing to that effect. She has overall been given the clear impression including through you that the Council is firm in its resolve, and would not even entertain some form of lease or licence arrangement enabling my client to occupy a reasonable portion of her rear yard area, possession of which has been enjoyed (without objection by the Council) for over 30 years.

- (k) My client is also concerned at the potential for physical damage to her home as the proposed works progress, and understandably as to the significant invasion of privacy from the proposed cycleway along the reserve area, again extending right up to her back door step.

My client seeks to be heard, as a matter of basic natural justice, regarding the concerns outlined in this letter in the context of the Annual Plan 2019/2020 consultation regarding the amendment to the Council's Revenue and Financing policy through which the proposed targeted rate would be set.

Beyond that, my client requests an opportunity for an independently facilitated or mediated discussion with the Council whereby her concerns and (as likely appropriate, those of the other residents of Whakarire Avenue) could potentially be resolved in a practical and straight forward way.

I am instructed that in the event the Council is not willing to accommodate this request, my client reserves her right to take this matter up with the Ombudsman's Office, through the media, and/or the Courts. Surely, that should not be necessary.

For the avoidance of doubt, this letter is sent to the City Council in lieu of feedback otherwise able to be submitted to the City Council through the www.sayitnapier.nz website link.

Yours faithfully



Martin Williams

090519 ncc

Submitter: Raewyn and Max Goodall

Consultation method: Revenue and Financing Policy consultation

Submission

We would like to put on record our opinion on the impending construction of a revetment wall in front of our property and subsequent concrete pathway which could lead to extra amenities being added. Having purchased the section from NCC, we have been a resident at 19 Whakarire Avenue for nearly 29 years. After many discussions and meetings about what may and eventually "has not happened" regarding a wall, there is now a push for this wall to happen. There has been no regular consultation and it now appears to have changed again without consultation. Our neighbours at #17 end up with a big culvert in front of their property which we think will affect our property as well. Forward more to recent times – after the rocks were added to the groyne – the erosion has in fact reversed. We presently have lots happening in the small pool. There are groups of children who come and learn to kayak when the tide is in. There are always people fishing off the rocks. There are families who come down with children to swim in the pool as it's not too deep. And there are a lot of children who come down to search amongst the rocks for crabs etc. There are plenty of people who manage to get access. Creating a concrete path would entice a security problem for us. We have already been burgled with the access coming from the beach side of our property. The increased volume of users would add to our vulnerability. We are also against paying anything towards this revetment as it is firstly to protect NCC property and we don't wish to set a new funding precedence for the area. Our suggestion is ... why not just add to or adjust the existing groyne and put in a piled wooden path. It works very well with the Ahuriri lagoon and near the airport. It would still allow the activities to happen and it would also suit the coastal surrounds – NOT some concrete walkway. This, in turn, would allow us to keep maintaining the council-owned land in front of our property as we have done for nearly 29 years ... other residents a lot longer. Regards Raewyn and Max Goodall

Submitter: John Sutherland

Consultation method: Annual Plan submission

Submission

I prefer capital value \$184.88 I would like to have some input to path and not one metre from my front door and tar seal car park.



7 May 2019

Napier City Council
Private bag 6010
Napier 4142

**ANNUAL PLAN 2019/20 SUBMISSIONS
WHAKARIRE REVETMENT**

1. We act for Simon and Hettie Tremain and the Simon and Hettie Tremain Family Trust (the Tremains), owners of 17 Whakarire Ave. We are in receipt of your letter 3 April 2019 containing proposals for the Whakarire Revetment and the targeted rate. We are also in receipt of your letter of 17 April 2019 which varied the proposal in relation to stormwater.
2. A resource consent was granted for the Whakarire Revetment following the removal of the Tremains', and a number of other Whakarire Avenue residents, objection. The removal of that objection was based on a dialogue with Napier City Council (NCC). That involved assurances made by NCC to the Tremains that they would be regularly and actively consulted regarding the further steps and stages in the Whakarire Revetment. They were told that existing vegetation would be retained where possible. At no stage did NCC indicate to them that residents would be asked to fund the Revetment. At no stage did NCC indicate to them that stormwater discharge from the properties would be either redirected from the reserve to the roadside kerb or would be directed to a swale and large culvert directly in front of their property.
3. NCC's letters of 3 and 17 April 2019 set out the proposal for the Revetment and the targeted rates. The Tremains were not consulted regarding the conditions that NCC now seeks to impose as part of the Revetment. Further NCC is seeking to impose considerable burdens/impacts that were not mentioned in the consultation leading up to the resource consent. These include:
 - (1) The requirement of residents to partially fund the Revetment through targeted rating; and
 - (2) The requirement to redirect stormwater discharge from the reserve to the roadside kerb or alternatively to a swale and large culvert directly in front of their property; and
 - (3) The requirement to completely remove vegetation.
4. It follows that the Tremains are opposed to the Revetment and to the targeted rating because NCC is imposing conditions which it had not disclosed in the process leading up to the resource consent. Further Council has breached its obligation to consult with the Whakarire Avenue residents.



Level 15, Tower Centre, 45 Queen Street | PO Box 835, Auckland 1140, New Zealand | DX CP20526, Upper Shortland Street
T: +64 9 307 2003 | F: +64 9 309 7558 | E: mcelroys@mcelroys.co.nz | mcelroys.co.nz

McELROYS

5. The stormwater proposal is of particular concern. At the time they agreed to the resource consent there was no suggestion by NCC that stormwater would be impacted. Attached marked A is the plan that the Tremains were given by NCC prior to the resource consent. This does not show any redirection of stormwater. Attached marked B is the plan for the stormwater disposal as part of the revetment. This shows that stormwater will be directed to a swale directly in front of and abutting the front of their property from where it will be discharged to sea through a large culvert. This is completely different to what they understood at the time of the resource consent. This was presented to them without any consultation. They are concerned about the proposal for a swale operating as a stormwater catchment as it directly impacts on their property. First it creates the risk of flooding to their property. It is well recognised that culverts can become blocked in storm/flood events. That is almost certain to impact on their property. Second it will involve considerable earthworks which may impact their land. Thirdly it has an aesthetic impact in that they will be looking directly at an industrial stormwater disposal.
6. In addition to issues regarding consultation and misrepresentation the Tremains oppose the revetment for the further reasons set out below:
- (1) They do not believe the Revetment will be of benefit to their property. In fact it is now clear that it will adversely impact their property;
 - (2) They do not accept that there is an issue with public access. The area is well used by a public, school and other groups;
 - (3) They have concerns regarding the protection of properties when plants and barriers are removed, and work is being done in the Revetment. Council have provided no assurance that proper measures will be in place to protect the properties during the construction phase.
 - (4) They do not understand why the NCC are pushing for the Revetment? Why would NCC want to spend this sort of money when there is limited support from the affected residents? Who is driving the Revetment and why?

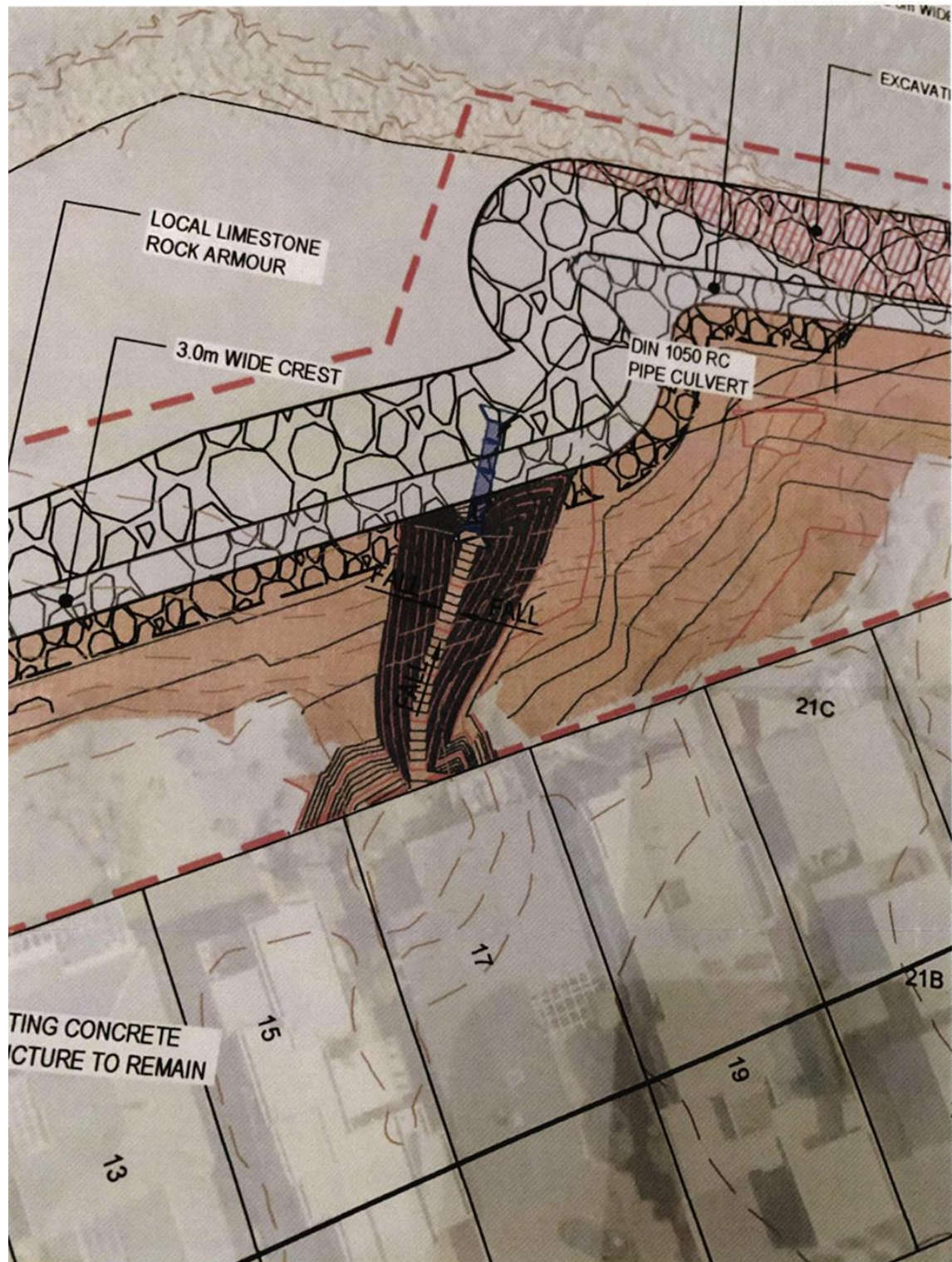
Yours sincerely
McELROYS



Peter Hunt
PARTNER
peter.hunt@mcelroys.co.nz

26322_121.docx/4





NCC Information on Napier's Chlorination Review – March 2019

Why did NCC decide to Chlorinate?

Napier's water source is of a very high quality and prior to the Havelock North incident, this water was provided through our network without any treatment. This is unusual for a larger supply (Internationally) and there were unrealised risks to this approach. The Havelock North incident provided a clear example of the vulnerabilities in our local water supplies and the consequences of not managing these risks adequately.

In Mid to late 2017 we experienced a number of E.coli transgressions in our network. Several samples indicated low levels of e-coli present in the distribution network (pipes and reservoirs) and Emergency chlorination was installed to address these. We also had elevated coliform counts that are an indication of potential contamination. These levels were well above detection.

The Havelock North Stage 2 Inquiry Report and recommendation letters published on 20 December 2017 by Director-General of Health and on 2 February 2018 by Kevin Snee, Hawke's Bay DHB Chief Executive Officer, all advised to implement appropriate and effective treatment. Our Drinking Water Assessor and the DHB strongly supported the continuation of Chlorination of our distribution network.

Central Government is reviewing the regulations relating to Drinking Water. All indicators are that multi-barrier treatment processes and residual disinfection will be a mandatory requirement within the reticulation network.

The use of chlorine as both an effective treatment barrier and to provide residual disinfection is best practice worldwide and is cost effective.

One of Council's Operational Risks relates to water supply contamination and is as follows:
"Contamination of Water Supply resulting in death and/or widespread illness" caused by "Source contamination, reservoir contamination, backflow from community" Leading to "Boil Water Alert, Illness, Third Party statutory maintenance, Parliamentary Enquiry".

Without mitigation measures, this is an extreme risk. Given that our neighbours have experienced this recently, we do not need to debate that this is an extreme risk. One of the ways that we are mitigating this risk is to provide disinfection. The risk of contamination is then reassessed in our Water Safety Plan (signed off by the HBDHB's Drinking Water Assessor).

Figure 1: Contamination Risks in WSP with Chlorine Dosing as Mitigation Measure

Event Reference	Event	Cause	Existing Preventive Measures	Monitoring - What to check (and signs that action is needed)	Risk Assessment based on existing measures			Proposed Corrective Action(s)	Residual Risk Assessment		
					Likelihood	Consequence	Residual Risk		Likelihood	Consequence	Residual Risk
NT02.3	Microbiological (including protozoa) contamination	Inadequate controls on maintenance and construction work.	Written procedures have been prepared for disinfection and testing on pipe installations or repairs. Work is undertaken by NZQA water reticulation trained and experienced staff. Ongoing staff training in place (action no 19 of the IP). Chlorination in place, FAC target above 0.20 ppm in reticulation. Annual pigging programme in place, 2018 pigging complete. Ongoing Flushing Programme of problematic cul-de-sacs in place.	Complaints from consumers about taste or odour. E. coli identified in reticulation system. Reticulation FAC (ppm) levels.	Rare	Moderate	Medium	Develop a SOP / Manual to cover preventative measures during water maintenance procedures on water assets, which might compromise water quality. (Action no. 52 of the IP)	Rare	Minor	Low
NT02.4	Chemical or microbiological (including protozoa) contamination	Backflow from consumer connections	Premises on industrial zoned land are required to have a RPZ or testable double check valve based on hazard. BFPs installed on SPFs. Land-use or building use change initiates backflow assessment. Check valve manifolds being progressively installed at residential premises. Backflow devices are tested annually by Council. Chlorination in place, FAC target above 0.20 ppm in reticulation. Annual testing of backflow preventers are ongoing activity (action no. 26 of the IP). Records kept in Accella.	Contaminants identified in the reticulation system. Taste or odour complaints from consumers. FAC (ppm) levels.	Rare	Major	Medium	Audit of all medium to high risk premises, with appropriate follow up actions. Use of trade waste database to identify medium/high risk premises.	Rare	Major	Medium

Proof that Chlorine Is Effective

For those working in the Water industry it is a given the Chlorine is a cost effective way to disinfect a water supply. Chlorine is used worldwide to treat public water supplies and there are many articles and reports that support this.

Here is a summary of some information from various health organisations around Chlorine:

WHO state the following around Guideline Values for chlorine "In humans and animals exposed to chlorine in drinking-water, specific adverse treatment-related effects have not been observed."
https://www.who.int/water_sanitation_health/water-quality/guidelines/chemicals/chlorine.pdf?ua=1

From the Ministry of Health:

"6.4 Disinfection

*As mentioned in Section 3, the third principle of water treatment is **inactivation**. This is where disinfectants like chlorine or ultraviolet light are used to inactivate pathogens.*

6.4.1 Chlorine

The most common chemical used for disinfection is chlorine. Chlorine is preferred over other disinfectants because of its cost, availability and effectiveness.

One of the advantages of chlorine is that it remains active in the water for some time after it has been dosed into the water. This gives some protection against recontamination that may occur in the distribution network from events such as backflow or pipe breakage. For a secure bore that is free of risk from micro-organisms, water can often be provided in an untreated form direct to consumers. However it is still a good idea to add chlorine as protection against contamination in the network."

Here are some other links that talk about effectiveness of chlorine and some other information should anyone wish to explore this further:

<https://www.health.govt.nz/publication/guidelines-drinking-water-quality-management-new-zealand>
<http://www.drinkingwater.esr.cri.nz/general/nzprocesses.asp>

From the Ministry for the Environment:

<http://www.mfe.govt.nz/publications/fresh-water/introduction-drinking-water-contaminant-treatment-and-management/5-water>

"5.2.4 Disinfection

There are three methods of disinfecting presently in use in community water supplies in New Zealand.

Chlorination: Chlorination is the most widely used disinfecting method world-wide. It inactivates bacteria, viruses and the protozoan, Giardia. It will not, however, inactivate Cryptosporidium rapidly enough for use in water treatment.

An important advantage that chlorine has over the other two main disinfectants used in New Zealand is that it remains present long enough in the water to provide a disinfectant residual after treatment. This is important for the maintenance of a safe water supply. In the event of low levels of contamination entering the distribution zone, the chlorine provides a degree of protection against microbiological contaminants.

The efficacy of chlorine as a disinfectant is determined by the pH; higher acidity (that is, lower pH) enhances disinfection. As well as being a good disinfectant, chlorine is a moderately strong oxidising chemical and is therefore also used for oxidising contaminants²⁰ during treatment (see section 5.2.2)."

Christchurch are removing Chlorine, why can't we?

Media reports indicate that the contamination issues faced by Christchurch were with their bores, not in their network. Our contamination issues occurred in our network and reservoirs and we have addressed this as well as making our bores safe. Christchurch will need to manage how they maintain safety of their network and they will be working with their Drinking Water Assessor (DWA) to address this through their Water Safety Plans, just as we have with our Drinking Water Assessor. Our DWA is supportive of the decision to chlorinate Napier's water.

We have recently been approached by our Drinking Water Assessor to provide our WSP to the Ministry of Health to consider our approach in relation to Christchurch. Currently Napier City Council looks to have a compliant water supply for the 2018-19 year. It remains to be seen whether Christchurch will achieve the same.

What other options are there?

There are three main options that we could look at:

1. Remove chlorine and accept the risk
2. Continue to manage risk with chlorination
3. Change our network to remove chlorine and minimize risks (Netherlands model)

Option 1. Remove Chlorine and Accept the Risk

Both Central Government and Napier City Council are not willing to risk lives by removing chlorine from the water. Chlorine is the most cost effective, efficient way to minimise contamination risks in our network.

One of Council's most extreme risks is the potential loss of life due to a water contamination event. Removing Chlorine from our network would leave council exposed to an 'extreme' risk and would be a failure of our duty of care to the community.

As mentioned earlier, we have been informed that requirements for a disinfectant residual is likely to become mandatory if safety cannot be demonstrated. The DWA has indicated that he would be unlikely to approve a WSP without chlorination with the network as it currently is. Operating without an approved WSP could result in penalties. We would not be meeting legislative requirements.

Option 2. Continue to manage risk with Chlorination

This is the most cost effective, efficient way to minimize contamination risks in the network. There will always be a risk of contamination, however, this is greatly reduced with Chlorine.

Option 3. Change our network to remove Chlorine and minimise risks (Netherlands Model)

In the Netherlands and 50% of Germany, chlorine has been removed from public water supplies. We met with a water engineer from the Netherlands in late 2018 to better understand their approach.

Key points to note from the Netherlands are as follows:

- The Netherlands have had 3 major outbreaks in their water supply since 1962. Chlorine was removed from their water supply in the 2000s.
- Netherlands have a high population Density.
- It took over ten years to change from chlorination to chlorine free.

- System works by treating the water source so that it is as free of sediments, chemicals and microbes as possible.
- Their systems have been planned to meet high velocities, i.e. the right diameter for the amount of customers connected at that time, not oversized to enable future development.
- A pressurised system is maintained with defined pressure zones and self-cleaning velocities are maintained to limit the potential for growth of microbes.
- Network leakage is around 3%, compared with our 22% (which is equivalent to the UK and low compared with the rest of Europe).
- When transgressions are noted pressure zones are closed out, boil water notices are issued and pipes are disinfected.
- All houses are metered and have backflow preventers.
- Cost of provision is significantly higher (we are \$0.60/m³ compared with up to 3.10/m³ and this is at standard operation, post the network change). Household costs could increase from \$240/year to over \$1,200 per year, excluding rates increases for network changes.

A high level comparison of the two approaches to water supplies is attached at the end of this memo.

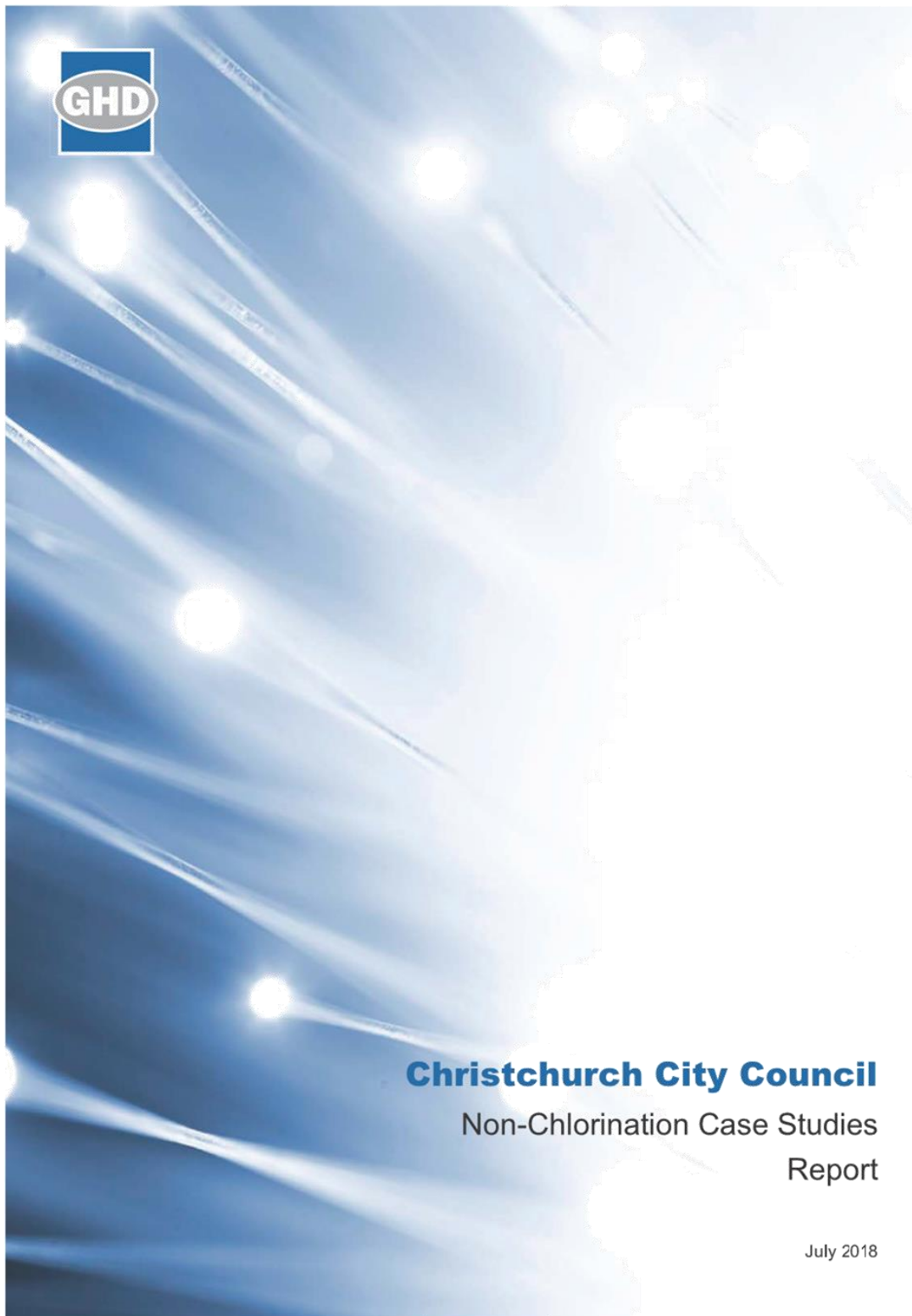
To safely remove chlorine from our network and follow the Netherlands model, a very rough order estimate of the work that we would need to complete is as follows. Significant design studies would need to be done to decide if we would reduce pipe sizes, install booster pumps and change from a gravity system to a fully monitored system with many pressure zones and potentially change source treatment.

Action	Rough Estimate	Timescale
Business Case and Modelling	\$1.5m	1-2 years
Meter All Connections, add backflow preventers	\$10m	5-7 years
Develop Pressure Zones and DMAs including network monitoring, upgraded scada and management systems	\$10-15m	10 years plus
Renew poor condition mains, jointed pipe and resize mains to achieve high velocities (rough estimate \$55% of network)	\$75m	10 years plus
Remove dead ends and address cul-de-sacs	\$3m	
Change maintenance and operations practices	\$1m	10 years
Review water treatment and potentially improve processes to remove sediment and minerals etc	\$5m	3-5 years
Increased installation costs due to more stringent practices	Unknown	
Network pumpstations	\$8m	10 years
Total	Approximately \$110m 11m/year over LTP 22% rates increase/year?	

MANAGER ASSET STRATEGY

Comparison between Netherlands Water Supply and Napier Water Supply

Characteristics	Netherlands	Napier
Population Density	High	Medium
Time taken to remove Chlorine and Change Network	More than 10 years	
Cost per m3 (KL)	NZD \$1.70-3.10 /m ³ 400 m ³ /household/year = \$1,240 (Melbourne Study – mid 1990s Netherlands was 5 x cost of Melbourne water supply, which would be significantly more than ours also)	NZD \$0.6/m ³ \$240 per household per year. Average annual usage = 10m ³ for 57,660 people or 25,000 households (2.3 people per household) 400 m ³ /household/year = \$0.6 m ³ 173m ³ /person/year 465 l/person/day
Willingness to Pay	High	Low
Unaccounted for Water	6%	22% estimated
Leakage	3% leakage, 3% flushing	22% estimated, (similar to the UK)
Connections	All connections have backflow preventer (and meters).	Industrial/commercial users have backflow preventers Residential properties connect directly to the network (no meters, no valves except Bayview)
E.coli transgressions	Monitor for E. coli, total coliforms and Aeromonas. Will use emergency chlorination and issue boil water notices.	Monitor E. coli (compliance requirement) and total coliforms (not a compliance requirement).
Network monitoring	Extensive, know when leaks occur and have great network control.	Limited. Putting in District monitoring but do not have DMAs and no inline monitoring for FAC yet, although planned.
Average Pipe Age	Generally 30-40 years average	Around 40 years average
Pressure	Stable pressure kept in mains, booster pumpstations at strategic locations to keep pressures stable. Variable pumps, pressure dampening devices and automated distribution control to prevent large variations in flow. Clear pressure zones. Pressurised system to prevent ingress of water.	Pressures variable and generally higher than the Netherlands.
Velocities	Keep high velocities in network for self-cleaning and to limit	Variable depending upon demand. Not designed for achieving high velocities.
Metering	Household metering, extensive metering of network and automation	No metering at house apart from Bayview and commercial properties, 3 bulk flow meters.
Firefighting	Seemed an issue, 7 l/s?	Designed for firefighting requirements. 25 l/s
Pipe Diameters	End of street 100mm and scales down in diameter along a street. Typical diameter 40 mm.	50 mm – 100km 100mm – 140km 150mm – 140km 200 mm – 40 km
Planned Maintenance	Mostly Planned	Planned programmes in place
Unplanned Maintenance	Low	Reactive to call outs by the public
Maintenance Practices	Worksites kept very clean e.g. dewater trenches and have pipes wrapped.	Less expensive but safe techniques used. Pipes disinfected prior to connection.



WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

Table of contents

1.	Introduction	3
1.1	Scope of work	3
1.2	Purpose of this report	3
1.3	Scope and limitations	3
2.	Christchurch Water Supply System and the DWSNZ	4
2.1	Current DWSNZ requirements as they apply to Christchurch	5
2.2	Possible direction of water quality requirements in the future	5
3.	European water supplies that do not disinfect with Chlorine	6
3.1	Dutch water supply practices	6
4.	Differences between European and Christchurch systems	8
4.1	Distribution Network Comparisons with the Netherlands	8
5.	Christchurch's Potential for Secure Sources	12
6.	Management of Key Risk Areas within the Network	14
7.	Conclusions	16

Table index

Table 1	Dutch water consumption	8
Table 2	Water supply pipe material	9

Figure index

Figure 1	Christchurch water supply pressure zones and pump stations	4
Figure 2	Comparison of water supply pipe material	9
Figure 3	Infrastructure Leakage Index for the Netherlands	10

Appendices

- Appendix A – Drinking water treatment and distribution without chlorination (Royal HaskoningDHV, July 2018)
- Appendix B - The Dutch secret: How to provide safe drinking water without chlorine in the Netherlands (2009)
- Appendix C - How do you like your tap water? Safe drinking water may not need to contain a residual disinfectant (2016)
- Appendix D – WaterNZ brochure
- Appendix E – Assessing biological stability of drinking water without disinfectant residuals in a full scale water supply system (2010)
- Appendix F – Biological instability in a chlorinated drinking water distribution network (2014)
- Appendix G – Safe distribution without a disinfectant residual (2012)

1. Introduction

1.1 Scope of work

The scope of work is to provide Christchurch City Council with a study of western European medium sized cities that do not normally operate their water supply systems with a residual disinfectant. The focus is on cities that rely on ground water sources and non-chlorinated distribution systems. Information is provided on the typical source conditions and source water quality parameters and comment is made on any source water treatment prior to distribution.

Information is given as to the success of these systems including statistics on contamination incidents for non-chlorinated and chlorinated distribution systems in 1st world countries. It details the methods used by the western Europeans to control real and potential contamination risks and provide commentary on their water quality standards. Brief details on the critical control points in their systems/networks are provided.

The scope of this study does not include recommendations on improvements to the Christchurch water supply system and facilities.

1.2 Purpose of this report

The purpose of this document is to report to Christchurch City Council, alternative ways used elsewhere around the world, to supply drinking water to a city (or part of a city) without the use of residual chlorine within the network.

1.3 Scope and limitations

This report has been prepared by GHD for Christchurch City Council and may only be used and relied on by Christchurch City Council for the purpose agreed between GHD and the Christchurch City Council as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Christchurch City Council arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

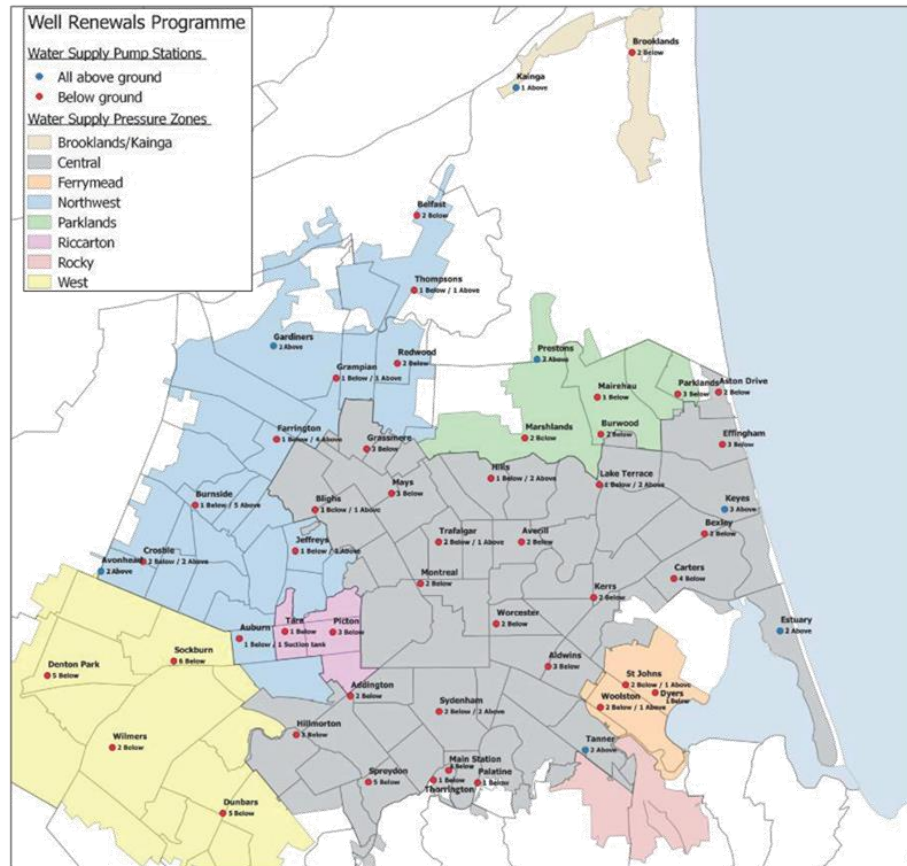
GHD has prepared this report on the basis of information provided by others who provided information to GHD, which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The conditions that apply for the reviewed case studies do not necessarily apply to Christchurch.

2. Christchurch Water Supply System and the DWSNZ

Christchurch City's water supply consists of a distribution network of 1,750 km of mains and 1,500 km of sub-mains into which ground water from bores is pumped. This occurs at over 55 sites around the city. Reservoirs are limited to mainly in the hill areas. The following figure shows the locations of above ground and below ground pump stations around the city.

Figure 1 Christchurch water supply pressure zones and pump stations



2.1 Current DWSNZ requirements as they apply to Christchurch

Under the current Drinking-water Standards for New Zealand 2005 (Revised 2008) (DWSNZ) Christchurch bore water has historically been considered secure, provided that it can be demonstrated that the water is from a confined aquifer and:

- It is not directly affected by surface or climatic influences, as demonstrated by aquifer residence time of at least one year, constant composition, or a verified model
- the bore head is sealed at the surface to prevent the ingress of surface water and contaminants, and the casing does not allow ingress of shallow groundwater
- *E.coli* is not detected

Once classified as secure, ongoing *E.coli* monitoring, and reassessment of well security and residence time is required every five years to maintain this status. Monitoring is also required in the drinking water distribution network at sampling frequencies based on the population. If classified as secure, treatment is not required.

Since the Canterbury earthquakes, Christchurch's water supply has had a provisionally secure status, and has not required treatment. Following the release of the Stage 1 Havelock North Drinking Water Inquiry in May 2017 and Stage 2 in December 2017, investigations of the below ground well heads identified potential sources of contamination, and repairs are required to ensure the security of the wellhead. These repairs are ongoing and the city's secure bore status has been revoked. Temporary chlorination of the water supply has therefore commenced.

2.2 Possible direction of water quality requirements in the future

Stage 2 of the Havelock North Drinking Water Inquiry recommends the abolishment of the secure bore status and a resulting requirement for universal treatment, including the inclusion of residual disinfection within the network to minimise the risk of post treatment contamination. Any exemption would likely require onerous proof of security. The Government has yet to decide which recommendations to implement, and although the inquiry indicated that these issues are urgent it appears that any significant changes are potentially several years away.

3. European water supplies that do not disinfect with Chlorine

Royal HaskoningDHV were engaged by GHD to assist in understanding the water supply practices undertaken in western European countries where supplying drinking water without a residual chlorination is not uncommon. Royal HaskoningDHV have concentrated on Dutch water supply systems where they are the leading consultant providing advice to the Dutch water industry. They have also provided some limited information on disinfection practices in other western European countries, which appear to have a similar response to residual disinfection.

Royal HaskoningDHV has produced a report entitled "Drinking Water Treatment and Distribution without Chlorination" that can be seen in Appendix A. This section and the following one summarises the key finding from that report and will provide a comparison with the water supply system in Christchurch. Additionally, Royal HaskoningDHV have provided a number of engineering/scientific papers/articles that are included in subsequent appendices.

3.1 Dutch water supply practices

There are eleven Dutch water supply companies providing water to communities across the Netherlands with a total population of approximately 17 million. In the early 1980's Dr Rook of the Rotterdam Water Company discovered the linkage between chlorine dosing in the presence of organics and the formation of potentially harmful disinfection by-products (DBPs), notably trihalomethanes (THMs). The wider water industry responded with research and then implementation of regulations to maintain DBP levels to below 'acceptable' health limits in drinking water, as defined in their local drinking water quality legislation and guidelines.

However, the discovery of DBPs and public opinion changed the Dutch water industry's general philosophy on the addition of chlorine to drinking water. Since that time, water companies have been changing their systems to remove residual chlorination. Currently 85 % of all Dutch water supplies do not use residual chlorination within their pipe networks, except in the case of a short-term emergency contamination event. In Switzerland that figure is 70% and in Germany it is 50%.

The Dutch philosophy is that contamination of water has to be prevented in any of these three stages (source, treatment, distribution) and that chemical treatment should be kept to a minimum. Therefore Dutch water companies are careful to select the best water source (i.e. those that need the least amount of treatment) and use groundwater as a preference above other sources. In fact, a number of surface water sources have an initial step of injection of the surface water into the ground, with the later recovery of the water when it has (preferably) been underground for two months. Over 55% of all drinking water is sourced from groundwater (groundwater and dune water) in the Netherlands.

The Dutch water companies prefer groundwater due to its residence time, lower pathogen risk, and its constant quality and temperature, which reduce the likelihood of formation of biofilms within the network, which are risk factors for the provision of unchlorinated drinking water. For groundwater with more than 1 months' (preferably two) residence time underground, Dutch companies generally apply an aeration and filtration process step prior to distribution into the network. The aeration process is used to reduce assimilable organic carbon (AOC) levels to

produce biologically stable water, low AOC levels significantly reduces the amount of nutrients and regrowth¹ of microorganisms in drinking water distribution systems.

For higher risk ground water sources, the Dutch water companies heavily treat their water with a more conventional treatment regimes, including a final disinfection step which could include either UV, Ozone, chlorine dioxide, and chlorine (but not at levels to provide a residual effect). They also strongly control the contact of air with water during the aeration water treatment step, due to the absence of a disinfection process for groundwater. Any air that comes into contact with the raw water is first passed through a HEPA (H13 or H14) filter.

The approach described above, is also in combination with a high quality distribution system. Once the water is treated it is stored and then passed into the network with strong control on constant delivery pressure to reduce the likelihood of pressure transients, which in turn, could cause contaminants to be sucked into the network through leaking pipes/valves or as backflow/syphonage.

Another operational practice used to decrease recontamination risk is the network design, which has been altered in recent years to improve water turnover and opportunity to develop adequate scouring velocities. Ring mains in cul-de-sacs are avoided and all pipe sizes are carefully calculated to ensure that mains are not oversized and therefore there is adequate opportunity for scouring velocities to occur.

Finally, repair and shut down procedures are rigorously controlled. Typically, Dutch water companies have very few un-notified shutdowns. This, coupled with very detailed hygienic repair techniques and low average age of the pipe network (35 to 39 years), means that the rate of pipe bursts is probably one of the lowest in the world.

All the above measures allow the Netherlands to achieve a rate of outbreaks of waterborne disease some 4 to 5 times² lower than in the UK and the USA where residual disinfection is mandatory.

Public opinion in the Netherlands with regards to residual disinfection in drinking water, supports higher water pricing and hence investment to implement the above approach (Section 4.1.6).

¹ M.W.Lechchevallier, N.J.Welch and D.B.Smith, Full-scale studies of factors related to Coliform regrowth in drinking water, *Applied and Environmental Microbiology*, July 1996

² K. D. Beer et al., *Morb. Mortal. Wkly. Rep.* 64, 842 (2015). B. Guzman-Herrador et al., *Eurosurveillance* 20, 21160 (2015)

4. Differences between European and Christchurch systems

In the following sections, comparisons are made between Christchurch's water supply system and that of the Netherlands and other European systems.

4.1 Distribution Network Comparisons with the Netherlands

4.1.1 Water consumption

Christchurch extracts around 50 million m³ of water per year. The Netherlands with a total population of 17 million produces 1,124 million m³ of water for drinking, of which 675 million m³ is from ground water (including river related ground water) sources³. Their water use per person is very low at approximately 120 l/p/day as shown in Table 1. By comparison, the median average daily residential water use across participant networks in NZ was 260 l/p/d and in particular, Christchurch had a residential consumption of 201 l/p/d⁴.

Table 1 Dutch water consumption

Liter / person, per day	1995	2004	2007	2010	2013	2016
Bath	9.0	2.8	2.5	2.8	1.8	1.9
Shower	38.3	43.7	49.8	48.6	51.4	49.2
Washbasin	4.2	5.1	5.3	5.0	5.2	5.2
Toilet flush	42.0	35.8	37.1	33.7	33.8	34.6
Washing, by hand	2.1	1.5	1.7	1.1	1.4	1.3
Washing, by machine	25.5	18.0	15.5	14.3	14.3	14.1
Washing up, by hand	4.9	3.9	3.8	3.1	3.6	3.5
Washing up, by machine	0.9	3.0	3.0	3.0	2.0	2.5
Food preparation	2.0	1.8	1.7	1.4	1.0	1.2
Drinking coffee/tea/water	1.5	1.6	1.8	1.8	1.0	1.3
Other	6.7	6.4	5.3	5.3	3.4	4.5
Total	137.1	123.8	127.5	120.1	118.9	119.2

4.1.2 Pipe Material Comparisons

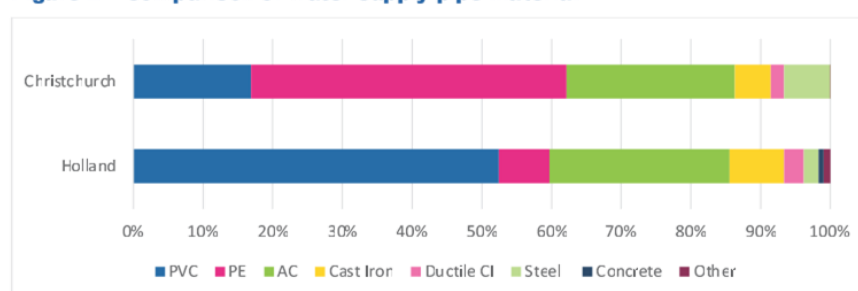
The Dutch have upgraded more than half their network to flexible PVC and PE pipe since the 1970's. The following table shows a breakdown of pipe material by distance and proportion for both Holland and Christchurch. Christchurch by comparison has a slightly greater percentage of the network made of resilient materials such as PVC and PE. This is presented visually in Figure 2.

³ Dutch Drinking Water Statistics 2017, Vewin Association of Dutch Water Companies

⁴ National Performance Review 2016-2017 (Water NZ, 2018)

Table 2 Water supply pipe material

Pipe Material	Holland, km	Holland, %	Christchurch, km	Christchurch, %
PVC	62,445	52%	574	17%
PE	8,691	7%	1,539	45%
AC	30,812	26%	820	24%
Cast Iron	9,294	8%	176	5%
Ductile CI	3,330	3%	64	2%
Steel	2,561	2%	226	7%
Concrete	871	1%	0	0%
Other	1,142	1%	0.1	0%
Total	119,146	100%	3,399	100%

Figure 2 Comparison of water supply pipe material

4.1.3 Pipe Age

The average age of water supply pipe in Christchurch is 33 years. For sub-mains, the average pipe age is slightly older at 37 years. In comparison, the average pipe age in the Netherlands is 35 to 39 years.⁵

4.1.4 Leakage

Leakage in the Netherlands is very low at around 5.5%⁶. This figure includes all non-revenue water such as water used to extinguish fires, water lost through leaks and pipe work flushing. The estimated actual leakage is only 3.0 to 3.5 %.

By comparison, the estimated percentage of real water lost from the Christchurch network in 2016/17 was 11.7%⁷. This equates to 144 litres per connection per day⁸. Council has a target level of service of 15.4%.

Leakage rates conveyed as a percentage are a poor performance indicator for comparing real losses, as a decrease in consumption can increase the leakage percentage with no change in actual leakage. Instead, the Infrastructure Leakage Index (ILI) is increasingly being used to

⁵ Dutch Drinking Water Statistics 2017, Vewin Association of Dutch Water Companies

⁶ Dutch Drinking Water Statistics 2017, Vewin Association of Dutch Water Companies

⁷ Long Term Plan 2018-2028 Service Plan for Water Supply, March 2018, Christchurch City Council

⁸ National Performance Review 2016/17 Volume 2, Water NZ

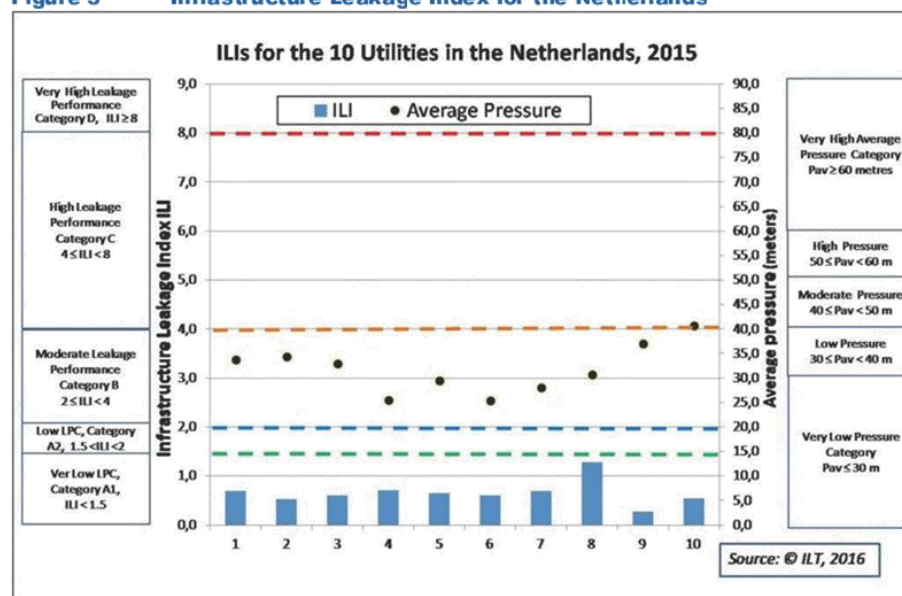
compare leakage. This is a ratio of the current annual real losses (CARL) over the unavoidable annual real losses (UARL). The average system pressure is also reported together with the ILI as this strongly influences the system's losses.

The ILI reported⁹ for Christchurch for 2016/17 is 2.14, with an average pressure of 55 m. This puts Christchurch in the "moderate" leakage performance category.

The Dutch do not yet report ILI values. The Leakssuite.com website collates global information on ILIs and using publicly available information on the Dutch water supply system, presents ILI information for the different utilities in the Netherlands for 2015¹⁰. Their average ILI is 0.6. This means that they are achieving lower real losses than calculated using the standard calculation for unavoidable real losses. Any value less than 1.5 is considered to be in the "very low leakage" performance category.

For comparison, the pressures reported in the Dutch systems are considered "low" and "very low", ranging between 25 m and 40 m. These are shown in Figure 2 for the different water utilities in the Netherlands.

Figure 3 Infrastructure Leakage Index for the Netherlands¹¹



⁹ National Performance Review 2016/17 Volume 2, Water NZ

¹⁰ <http://www.leakssuite.com/netherlands-ilis/> accessed June 2018

¹¹ <http://www.leakssuite.com/netherlands-ilis/> accessed June 2018

4.1.5 Contamination

In 2015, as an average for all Dutch water supply companies, only 0.02% of the measured samples exceeded the standards for *E. coli*, Enterococci or Legionella¹². This is comparable to chlorinated networks from the UK, France, and other European countries, and according to Smeets & Medema (2009), indicates that the absence of chlorination does not lead directly to higher numbers of indicator bacteria¹³, in the Dutch application example.

In Christchurch, in a 12 month period in 2015/2016, 14 out of 5,487 water samples tested positive for *E. coli*. This is 0.25%. Analysis of transgression data since July 2012 shows that of the 87 *E. coli* transgressions, 31 occurred within the distribution network, 54 were at reservoirs and two were at the well source.

4.1.6 Cost

In the Netherlands, the cost of drinking water varies by drinking water supply company. In 2018 this ranges from €1.03 to €1.86 per m³ (\$1.70 - \$3.10 NZD) with the average cost for the treatment and supply of drinking water of €1.5 per m³ (\$2.50 NZD). This is compared to non-residential charges in New Zealand ranging between \$0.44/m³ and \$2.57/m³¹⁴. There is no volumetric charge for residential customers in Christchurch, but it can be expected that the likely cost for water in Christchurch would be closer to the lower end of the NZ range of prices.

¹² Smeets P, Medema G, The Dutch secret: how to provide safe drinking water without chlorine in the Netherlands (2009)

¹³ Smeets P, Medema G, The Dutch secret: how to provide safe drinking water without chlorine in the Netherlands (2009)

¹⁴ National Performance Review 2016/17 Volume 2, Water NZ

5. Christchurch's Potential for Secure Sources

The Royal HaskoningDHV report (Appendix A) noted that for Dutch non-chlorinated supplies, the raw water source from groundwater required a minimum age of at least 30 days, with the well construction to ensure that there is no risk of short-circuiting from the surface to the point of extraction. Furthermore, abstraction from a semi confined or confined aquifer is preferred, noting that the well construction should not result in mixing of water from different aquifer units (i.e. the annulus space should not enable vertical movement of water between water bearing units).

The DWSNZ requirements for secure groundwater are summarised in Section 2. The drinking water standards and accompanying drilling standards (NZS 4411) include a requirement for the young fraction of water to be less than 0.005% and the annular spacing to be sealed to prevent contamination of the raw water from surface contaminants.

Beca (2018)¹⁵ undertook an inspection of the CCC potable supply wellheads, and evaluated the construction against Criterion 2 of DWSNZ. Based on that inspection, Beca (2018) recommended a programme for headwork upgrades based on two scenarios to meet the existing DWSNZ or to meet likely DWSNZ amendments. The recommended upgrades included the following:

- Raising below ground wellheads to above ground
- Installing an annual grout seal around the well casing in the at least the upper five meters

The Christchurch coastal confined aquifer system has been characterised in numerous technical publications (Environment Canterbury technical reports U97/28/01; White, 2007¹⁶; White *et al.*, 2007; Brown and Weeber, 1992; Brown, 2001). Notably, groundwater recharge comes from two sources:

- River recharge (from the Waimakariri River bed seepage)
- Land surface recharge (rainfall, irrigation, stock water races)

It is accepted that recharge of the coastal confined aquifer system occurs to the west of the city, where surface confining sediments are absent and infiltration through the soils, the bed of the Waimakariri River, or beyond, results in groundwater moving eastwards (both horizontally and vertically) into the confined aquifer system.

The Riccarton Gravel aquifer is the upper-most gravel aquifer unit, which underlies the fine sediments of the postglacial marine Christchurch Formation (ECan Report U97/28/1¹⁷). This aquifer unit is considered to be the most susceptible to contamination from land use practices given its proximity to the land surface. The Riccarton Gravel aquifer is present in the stratigraphic sequence across the majority of Christchurch. However, where the Christchurch Formation (surface confining sediments) is missing, it becomes indistinguishable from the overlying postglacial Springston Formation gravels (ECan Report U97/28/1).

¹⁵ Beca, (2018) Below Ground Wellheads Security Improvement Review

¹⁶ White, P. (2007): Geological model of the Christchurch Formation and Springston Formation. GNS client report 2007/87 to Environment Canterbury. Environment Canterbury technical report U07/24.

¹⁷ U97/28/1 (1997): Christchurch-West Melton Groundwater: Hydrogeology, Vol 15/3. Environment Canterbury Technical Report

The deeper aquifer units (i.e. Linwood Gravels, Burwood Gravels, Wainoni Gravels and deeper) are typically artesian, with artesian pressure increasing with increasing depth and towards the coast. The lateral extent of these aquifer units beneath Christchurch becomes less evident the further inland you go (i.e. west of SH1 – Russley Road) (Weeber, 2008;¹⁸ White *et al* 2007¹⁹).

Environment Canterbury undertakes routine state of the environment monitoring and reporting. The 2015 annual report²⁰ for Christchurch notes that of the 28 wells sampled there were no detections of *E. coli* and Nitrate-Nitrogen was recorded below the DWSNZ maximum acceptable value (MAV) of 11.3 mg/L (median of 0.54 mg/L). The long-term trend analysis undertaken by Environment Canterbury for the past 10 years indicate that the groundwater quality is generally very good and the majority of samples meet the DWSNZ, and that overall, there was little change in the quality of groundwater.

The residence time of groundwater within the Christchurch confined aquifer system has been reported by GNS and Environment Canterbury (Stewart *et al.* 2002²¹; Stewart, 2012²²). It was shown that groundwater ages in the shallow aquifer (Riccarton Gravels) increased in age from 1 year in the NW of the city to more than 78 years in the east. Whereas, the deeper aquifers have a chemical fingerprint that are consistent with recharge from the Waimakariri River, with age residence time indicating old water.

Beca (2018) identified a range of potential contaminant sources for the Christchurch supply, in particular to the security of a wellhead and the well itself. Noting these sources and the physical characteristics of the aquifer system, the risk to the raw water source increases with distance inland and with decreasing depth.

The potential for short-circuiting of surface/shallow contamination that is referenced by Royal HaskoningDHV (Appendix A), is addressed in the DWSNZ. If the risks to short-circuiting are addressed to the satisfaction of the DWSNZ, it appears reasonable to assume that the raw water source for the City's potable wells would likely meet the requirements of secure status, where the screened intake is from Aquifer 2 or deeper, and has age residence information that indicates the proportion of young water (i.e. 0.005%) is not less than one year.

¹⁸ Weeber, J. (2008): Christchurch groundwater protection: A hydrogeological basis for zone boundaries, Variation 6 to the Proposed Natural Resources Regional Plan. Environment Canterbury technical report U08/21. ISBN 978-1-86937-802-8.

¹⁹ White, P., Weeber, J., Minni, G., and Covey, S. (2007): Identification of Springston Gravel lobes in the Christchurch Formation. Environment Canterbury Technical Report U07/38.

²⁰ Environment Canterbury (2015): Christchurch Groundwater Quality Monitoring 2015. Report R16/39. Report prepared for Christchurch City Council by Groundwater Science Section. ISBN 978-0947511-60-9. Environment Canterbury

²¹ Stewart, M., Trompetterm V. and van der Raaij, R. (2002): Age and source of Canterbury Plains groundwater. Institute of Geological and Nuclear Sciences (GNS), Report U02/30.

²² Stewart, M. (2012): A 40-year record of carbon-14 and tritium in the Christchurch groundwater system, New Zealand: Dating of young samples with carbon-14. Journal of Hydrology, Vol. 430-431, pp 50-68. Aquifer Dynamics and GNS Science, Lower Hutt.

6. Management of Key Risk Areas within the Network

The following summarises areas that carry higher relative water quality risks and the actions taken overseas to mitigate these factors:

- *Distribution network leaks.*

A leaky network can potentially act as an avenue for contamination to enter the network if negative pressures occur due to very occasional pressure transients, water bursts and similar low pressure events. These risk elements are especially important in higher hill suburbs. To manage this, leakage is reduced as far as practicable and any repairs are carefully scheduled and managed. Reducing the network pressure also reduces the amount of leakage.

- *Large, connected distribution networks.*

To limit the potential to spread contamination throughout the network, a 'closed' network configuration with separate pressure zones and reservoirs feeding these zones is used.

- *Pressure transients*

Pressure transients allow a potential contamination risk through the mechanism of backflow into a network. Monitoring of transients and specific design to limit or remove transients are used to minimise or remove negative pressures and thereby the potential for backflow into the network.

- *Biological regrowth.*

Protection from biological regrowth is provided by ensuring the water is biologically stable. AOC provides a measure of biological stability²³, with a low AOC value indicating biologically stable water. Treatment processes including aeration can be used (if required) to reduce the amount of AOC to ensure regrowth is minimised. Groundwater, particularly that with minimal recent connection with the surface is generally low in AOC.

- *Contamination through airborne sources.*

The Dutch are careful to ensure that treated water is well protected from airborne contamination. Areas of focus includes; bore head vents, network air release valves, and vents at reservoirs.

²³ F.Hammes, C.Berger, O.Koster and T.Egli, Assessing biological stability of drinking water without disinfectant residuals in a full-scale water supply system, Journal of Water Supply: Research and Technology—AQUA | 59.1 | 2010

- *Contamination through water storage infiltration*

To minimise the risk of contamination from infiltration sources the reservoirs are fully protected against infiltration through the reservoir structure, especially for partially in-ground reservoirs and tanks.

- *Contamination during maintenance activities*

To ensure that contamination does not occur as a result of maintenance operations, the hygiene practices, level of supervision, and standards of repairs by maintenance contractors in the Netherlands is advanced and unscheduled repairs are rare.

- *Network residence time*

To maintain turnover of water within the network and minimise dead ends, the Dutch design to strongly limit the residence time of water within the network. Smaller diameter pipes and limited use of small diameter ring mains are used to maintain turnover.

A cursory assessment of the causes of six, serious water supply contamination events worldwide that are cited in a recent Water NZ brochure,²⁴ (including the Havelock North event, refer to Appendix D), indicates that source (e.g. well head) or storage infrastructure contamination appears to be more likely to cause severe disease outbreaks, than distribution network contamination.²⁵

It may therefore be argued that water source and storage security are fundamental to lowering the likelihood of contamination, with distribution network related measures an important secondary consideration. Further study into the prevalence and likelihood of distribution network contamination is required to test this argument.

²⁴ We've got clean water from underground. Why do we need to treat it? – The New Zealand Water and Wastes Association (2018)

²⁵ G.Medema, P.Smeels, M.Blokke, H.vanLieverloo, safe distribution without a disinfectant residual (2012)

7. Conclusions

In the Netherlands, Germany, and Switzerland the operation of demonstratively low (microbiological) risk water supply systems without the use of residual disinfection is reported in the literature. Some recent statistics^{26, 27} suggest that systems that rely solely on residual disinfection have poorer health outcomes than those that have biologically stable source water, rigorous hygiene practices and multiple contamination barriers within the network. The presence of a residual disinfectant does not guarantee lower rates of disease outbreaks^{28, 29}. However, these views should be considered in the context of the approach taken (Section 3) and the customer's willingness to pay (Section 4.1.6).

This review has identified that it is possible to implement a non-chlorinated water supply that is similar to best practice in Western Europe. While Christchurch has a unique hydrogeological setting with relatively low risk source water, higher standards and barriers at the water source and in the distribution network may likely be required to reduce risks further.

²⁶ K. D. Beer et al., *Morb. Mortal. Wkly. Rep.* 64, 842 (2015).

²⁷ B. Guzman-Herrador et al., *Eurosurveillance* 20, 21160 (2015).

²⁸ P. Payment, Poor efficacy of residual chlorine disinfectant in drinking water to inactivate waterborne pathogens in distribution systems. *Can. J. Microbiol.* (1999)

²⁹ F. Rosario-Ortiz et al (2016) How do you like your tap water, *Science Mag* Vol 351, p913

Appendices

Appendix A – Drinking water treatment and distribution without chlorination (Royal HaskoningDHV, July 2018)



REPORT

Drinking water treatment and distribution without chlorination

Client: GHD

Reference: BG1820WATRP180710

Revision: 0.3/Draft

Date: 12-7-2018



Project related

HASKONINGDHV NEDERLAND B.V.

Laan 1914 no.35
3818 EX AMERSFOORT
Netherlands
Water
Trade register number: 56515154
+31 88 348 20 00 **T**
+31 33 463 36 52 **F**
info@rhdhv.com **E**
royalhaskoningdhv.com **W**

Document title: Drinking water treatment and distribution without chlorination

Document short title:

Reference: BG1820WATRP180710

Revision: 0.3/Draft

Date: 12-7-2018

Project name: Christchurch

Project number: BG1820

Author(s): Gerard van Houwelingen

Drafted by: Yvonne Mikkers

Checked by: Gerard van Houwelingen

Date / initials:

Approved by: Michel Riemersma

Date / initials:

Classification

Project related

**Disclaimer**

No part of these specifications/printed matter may be reproduced and/or published by print, photocopy, microfilm or by any other means, without the prior written permission of HaskoningDHV Nederland B.V.; nor may they be used, without such permission, for any purposes other than that for which they were produced. HaskoningDHV Nederland B.V. accepts no responsibility or liability for these specifications/printed matter to any party other than the persons by whom it was commissioned and as concluded under that Appointment. The integrated QHSE management system of HaskoningDHV Nederland B.V. has been certified in accordance with ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007.

12-7-2018

BG1820WATRP180710

i

Project related

**Table of Contents**

1	Introduction	1
1.1	General	1
1.2	This report	1
2	Dutch practice of drinking water production and distribution	2
2.1	General philosophy	2
2.2	Source	2
2.3	Treatment	4
2.4	Distribution	5
2.5	Case studies of situations relevant to Christchurch	5
2.5.1	Amersfoort Berg	6
2.5.2	Dunea	6
2.6	Statistics	6
2.6.1	Water quality	6
2.6.2	Distribution network	7
2.7	International perspective	9
3	Conclusions	11

Appendices

A1	Bibliography
A2	Water quality Amersfoort Berg
A3	Information on Dunea's water production system
A4	Drinking water quality Dunea Scheveningen 2017

Project related



1 Introduction

1.1 General

GHD asked Royal HaskoningDHV for expert support for its study on residual chlorine free operation of the Christchurch water supply network for Christchurch City Council (CCC). Royal HaskoningDHV's focus should be to bring in Dutch and other international experience related to:

- General international experience on residual chlorine free operation;
- Level of incidents / outbreaks with existing networks operating without residual chlorine;
- The way these systems are being controlled;
- Potential risks and critical points.

1.2 This report

This report presents the Royal HaskoningDHV's findings. These were based on

- Royal HaskoningDHV's own experience as the leading engineering consultant for the Dutch drinking water and wastewater sectors;
- text books of Delft University of Technology on sanitary engineering;
- statistical information provided by VEWIN (the Association of Dutch Water Companies);
- results of the Benchmark carried out by ILT (the inspectorate for the environment and transportation);
- articles in journals.

Chapter 2 presents the Dutch practice of drinking water production and distribution, starting with the philosophy and ending with a brief comparison with the UK and the USA.

Conclusions are presented in chapter 3.

Project related



2 Dutch practice of drinking water production and distribution

2.1 General philosophy

In order to produce drinking water, raw water needs to be extracted from a source, dependent on the quality of the source, treatment is applied, after which the water is ready for distribution. Contamination of the water has to be prevented in any of these three stages (source, treatment, distribution). Treatment efforts should be as low as possible. The cleaner the source, the better.

A key event in the development of the philosophy of the Dutch drinking water sector on chlorination was the discovery of harmful chlorination by-products, notably trihalomethanes such as chloroform by J. Rook of the Rotterdam Water Company. This led to the conviction that chlorination should be avoided as much as possible.

2.2 Source

Drinking water production starts with raw water. A clean source means less treatment.

As can be seen in Figure 1, groundwater is the preferred source of drinking water in the Netherlands. Due to its residence time, it is free of pathogens and it has a constant quality and temperature.

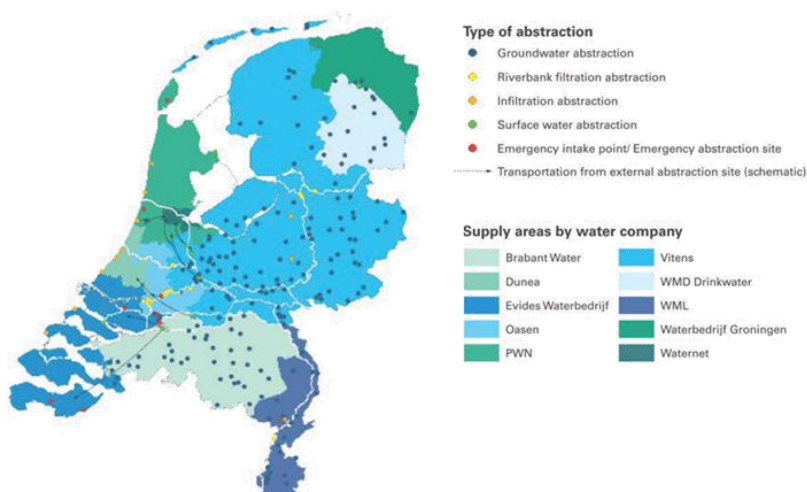


Figure 1: Abstraction sites for the production of drinking water in the Netherlands ((Vewin), 2017)

In cases where the groundwater quantity or quality is insufficient, other sources are needed. When possible, these sources are turned into groundwater by for example infiltration or river bank filtration, before extracting it for treatment. In most of these systems the residence time underground is the main disinfection. One of the key aspects in design and operation of these systems is to ensure a minimum residence time of at least 30 days.

In Table 1 an overview is presented of the amount of water abstracted by the Dutch drinking water companies in 2017 and its various sources.



Project related

Table 1: Water abstraction for Drinking Water per source (in million m³ in 2016) ((Vewin), 2017)

	Total	Ground-water	Riverbank-filtration water	Natural dune water	Surface water
Brabant Water	187	187	-	-	-
Dunea	80	-	-	-	80
Evides Waterbedrijf ¹⁾	207	16	-	-	190
Oasen	44	5	38	-	-
PWN	30	5	-	1	24
Vitens	365	355	10	-	-
Waternet	39	-	-	13	25
Waterbedrijf Groningen	46	39	-	-	7
WMD Drinkwater	35	35	-	-	-
WML	73	50	23	-	-
WRK	155	-	-	-	155
The Netherlands	1,260	692	71	14	482

1) Including Waterwinningsbedrijf Brabantse Biesbosch.

Groundwater which has had sufficient residence time is a bacteriologically safe source for drinking water. The main source of contamination in this phase is the abstraction well. It is very important to prevent short circuiting of rain water run-off which can be contaminated with for example wildlife faeces. This is achieved by either allowing for a large enough unsaturated zone above the extraction point, or by making sure that the impermeable layer above the water bearing zone from which the water is abstracted is restored when the well is constructed (see Figure 2).

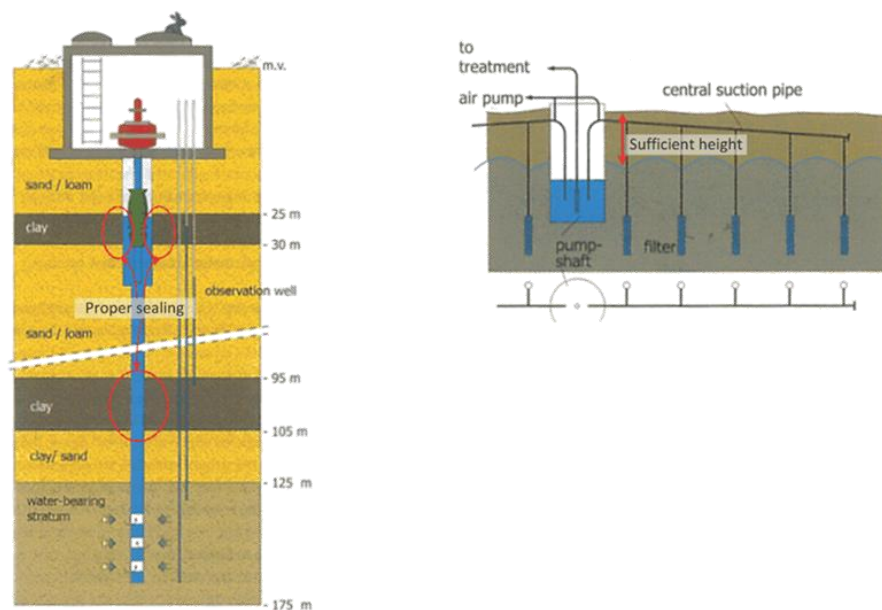


Figure 2: Well configurations with critical points (pictures edited from (Moel, et al., 2007))

Project related



2.3 Treatment

Due to the better quality and stable composition, the treatment of groundwater is much simpler than treatment of surface water.

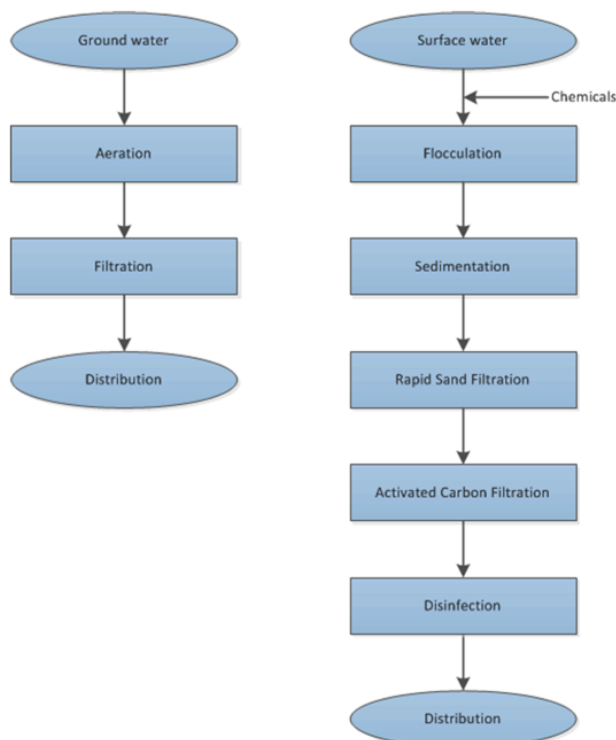


Figure 3: Bloc schemes possible treatment groundwater vs surface water

Each additional treatment step is also a possibility of recontamination. Each additional step is also a possible source of treatment by-products which can potentially be a source of growth in the distribution network (Prevost, et al., 2005).

The most critical steps are those where additional substances are brought into contact with the water. With groundwater treatment, the critical step is aeration. Unwanted gases that may be present in anaerobic groundwater, such as carbon dioxide, methane and hydrogen sulphide are stripped from the water and oxygen enters the water from the air. The available oxygen chemically oxidises iron and manganese after which they can be removed during filtration. The oxygen is also necessary in the biological process to convert ammonium into nitrate.



Project related

The introduced air might contain contaminations in the form of micro-organisms or chemicals. Research performed by order of the Dutch drinking water companies has shown that application of HEPA filters (H13 or H14) will protect the water quality in almost all situations, (Leerdam, 2012).

All installations for dosing of chemicals are constructed in such a way that samples can be taken for analysis at any time.

Another major risk of contamination during treatment is maintenance of the treatment works and the access of people. To reduce these risks, in the Netherlands hygienic zones are introduced around treatment processes. In the latest treatment plants operators do not have access to the water during operation. Access is for maintenance only. In those situations measures are taken to reduce the risk of contamination. After maintenance activities in the main water line, samples are taken to assess the water quality before the process element is taken in operation again.

2.4 Distribution

After treatment, water is stored in reservoirs before distribution. Any contamination from this point onwards won't be removed. Therefore reservoirs are installed above groundwater level. Dutch drinking water has low assimilable organic carbon (AOC). AOC is easily consumed by bacteria and therefore an important factor in maintaining biological stability of drinking water. A high AOC level indicates biological instability. *Aeromonas* is an important indicator organism for the level of biological activity in the distribution network. To maintain biological stability, distribution systems are operated with short residence times to prevent bacteriological activity during distribution. Note that the organisms involved in biological activity are generally non pathogenic.

In order to prevent contamination from external sources, the quality of the distribution system in general is high. The average percentage non-revenue water in the Netherlands in 2015 was 5.4% (Inspectie Leefomgeving & Transport, 2016). Part of this water is used for flushing of the mains and firefighting. It is estimated that the actual leakage is only 3.0 to 3.5%. The distribution system of the Netherlands is fully metered and illegal tapping is nearly absent. All connections are equipped with a backflow prevention system.

The type of backflow prevention is prescribed by European standard EN 1717 "Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow". This standard classifies standard fluids in five categories of risks. Category 1 is water to be used for human consumption coming directly from a potable water distribution system. Category 5 is a fluid presenting a human health hazard due to the presence of microbiological or viral elements. The required minimal level of backflow prevention depends on the category of the fluid.

The up-time of the system is high, which results in a system which is nearly always pressurised. In case of leakage, the water will flow out of the pipe and not into the pipe. In 2015 an average connection was only without adequate water supply for 15 minutes and 34 seconds in the entire year. Of this quarter of an hour, 9 minutes were maintenance related, the rest was caused by disruptions (Inspectie Leefomgeving & Transport, 2016). Although in the Netherlands no chlorine is used for disinfection during treatment, it is used (in the form of hypochlorite) for disinfection of new or repaired pipe sections in the distribution networks, but there is a tendency to avoid using it even there.

2.5 Case studies of situations relevant to Christchurch

The water supply situation in Christchurch has been described to us as: groundwater with a residence time of at least 1 year in a confined aquifer is extracted by a large number of well sites that feed it into a

Project related



common distribution network without treatment other than informal aeration in the tanks the bores pump to and without chlorination.

2.5.1 Amersfoort Berg

Amersfoort Berg (berg means mountain; the height of this mountain is 44 m above sea level) is a production plant of Vitens with a capacity of 6 MLD. It extracts phreatic groundwater from a sandy moraine. The water is treated by aeration only. Royal HaskoningDHV's head office is supplied from this production plant. The clear water quality of Amersfoort Berg is presented in A2.

Relevance: partly very young water can be safely distributed after aeration only, provided that there is no risk of contamination of the wells.

2.5.2 Dunea

Water company Dunea produces on average 220 MLD of drinking water. It extracts water from a river and pre-treats this before infiltrating it into sand dunes. The passage through these sand dunes is the main disinfection process. A residence time of at least 30 days is required to achieve sufficient disinfection.

The most significant risk of disinfection is caused by rainwater infiltrating directly on top of the extraction wells. An unsaturated zone should always remain above the extraction wells to reduce this risk to an acceptable level. Information on Dunea's water production system is presented in A3. The product water quality from its largest plant is shown in A4.

Relevance: the residence time of the groundwater in Christchurch is an order of magnitude higher than what is required to achieve disinfection.

2.6 Statistics

2.6.1 Water quality

Dutch drinking water quality has to comply with the law. Standards are given for both physical-chemical and biological parameters. To monitor the water quality sampling programs are carried out. These programs have to be approved by the ministry of Infrastructure & Environment. The results of the sampling programs are presented to the ministry for comparison.

The monitored parameters are divided into 4 groups in a Benchmark comparison of the drinking water companies that is carried out every three years:

- Health related parameters (acute)
Comprises the bacteriological parameters
Escherichia coli, Enterococci (both must be absent in 100 ml sample) and
Legionella (must be less than 100 in 1 l sample)
- Health related parameters (non-acute)
Chemicals which can have an effect on the human health after prolonged exposure
- Technical parameters
Parameters which are used to optimise the treatment processes
- Consumer related parameter
Parameters which are related to customer experience, such as colour and odour

In Figure 4 an overview is shown of the measured exceedances of the standard in 2015 per water company. The exceedances are presented per category, as described above.



Project related

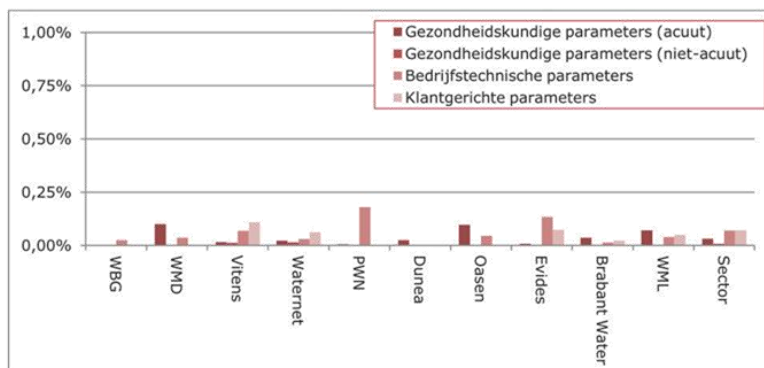


Figure 4: Exceedances of the drinking water standards in 2015 per water company in percentage of total samples (Inspectie Leefomgeving & Transport, 2016)

The average for all companies is 0.05%. Only 0.02% of the measured samples exceeded the standards for E. coli, Enterococci or Legionella.

2.6.2 Distribution network

The Dutch drinking water network is approximately 120 000 km long. Dependent on conditions such as the diameter, the soil condition, length and place within the network, pipes of various materials are used. Table 2 presents an overview of the used materials and the length of the network.

Table 2: Overview of length of distribution network and used materials (Vewin, 2017)

Length and composition of the drinking water supply network, 2016 (kilometres)

Table 1.5

	Total	PVC	Asbestos cement	Cast iron	Polyethylene (PE)	Ductile iron	Steel	Concrete	Other
Brabant Water	18,139	9,967	6,326	1,291	306	69	92	46	42
Dunea	4,834	2,768	653	670	372	232	34	93	10
Evides Waterbedrijf	13,473	7,553	2,991	419	1,306	11	1,008	108	77
Oasen	4,203	2,333	261	111	1,240	67	188	2	2
PWN	9,948	2,477	4,085	610	1,862	499	178	195	41
Vitens	47,303	30,259	9,260	3,735	3,559	105	163	77	145
Watermet	3,130	944	61	718	243	506	114	358	184
Waterbedrijf Groningen	5,085	2,275	1,624	898	125	-	123	21	20
WMD Drinkwater	5,164	3,912	923	-	183	145	1	-	-
WML	8,782	1,931	3,622	525	91	1,750	858	2	2
The Netherlands	120,061	64,420	29,807	8,977	9,288	3,385	2,759	902	524

The drinking water network really started to develop after 1950. Between 1990 and 2010 many new housing developments were built in the Netherlands. The graph in Figure 5 shows the development of the network over the last 60 sixty years in relation to the pipe material used.

Project related

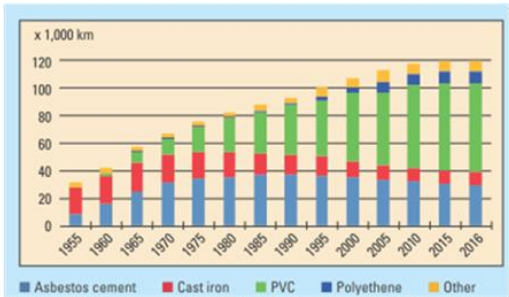
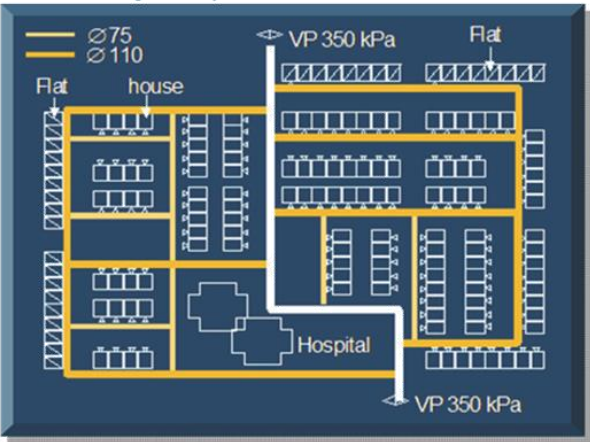


Figure 5: Development of the Dutch drinking water network in relation to the used materials (Vewin, 2017)

There is no minimum separation between water pipes and sewers. In many situations it will be 3-4 m, but it can be far less and always there will be service lines of the water system crossing the sewer main and sewer lines from individual plots crossing the drinking water main.

It is extremely rare to have wells pump into a system directly. Even a system like Amersfoort Berg without treatment (see 2.5.1) pumps into a reservoir from which the water is pumped into the distribution system.

In the first years of this century Kiwa Water Research developed a new design methodology to achieve self-cleaning distribution systems by exceeding a minimum flow velocity in each pipe. This results in applying smaller diameter pipes in the terminal branches of distribution networks and abandoning loops for redundancy there. This reduces the potential for biological activity in the distribution network by increasing velocities and reducing residence times. It also reduces the costs of construction and maintenance significantly.



Project related

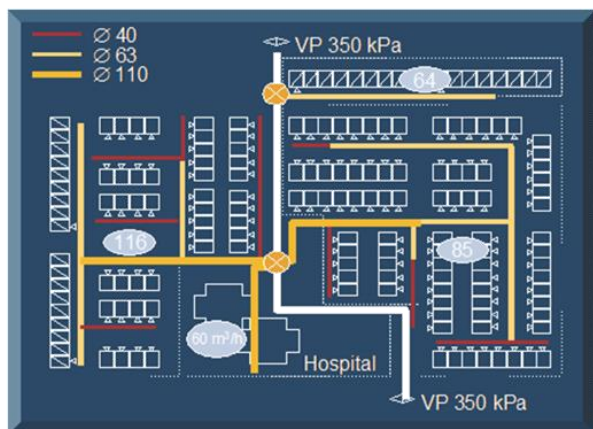


Figure 6 Top; conventional looped network; bottom; self-cleaning branched network (courtesy Kiwa Water Research).

Depending on the water quality that feeds a distribution network, especially on its suspended solids content, there can be large differences in the frequency of flushing that is required from one water system to the other. Suspended solids tend to accumulate in the extremities of conventionally designed distribution systems. Self-cleaning systems reduce the potential for accumulation and thus the frequency of flushing and the water volumes required.

There is a strong focus on the quality of construction activities in the distribution networks. The concept of 'economical level of leakage' has not been applied. Typical leakage control has been to wait until a leak or a drop in pressure is reported. Only recently an interest is developing in technologies for leak detection and localisation by means of detecting deviations from demand and pressure patterns.

2.7 International perspective

According to a comprehensive study published in Science (Rosario-Ortiz, et al., 2016), the average age of the Dutch drinking water distribution network is 15 to 20 years lower than in the United-States and in the UK the age of about 60% of the network is unknown. The level of leakage in the Netherlands is 6%, compared to 16% in the USA and 25% in the UK. Note: the 6% for the Netherlands refers to the total non-revenue water. The actual physical leakage is approximately half of that. See 2.4.

In the meantime, although the use of residual disinfectant is mandatory in UK and the USA, the rate of outbreaks of waterborne diseases in the Netherlands is 4 to 5 times lower than in the UK and the USA (0.59 versus 2.03 and 2.79 per 1000 inhabitants).

Similar to the Netherlands, Switzerland and Germany do not have a requirement for residual disinfection either.

Project related



Table 3 Total volume of drinking water produced per year and estimated percentage without residual disinfection

Country	Drinking water production (10 ⁹ m ³ per year)	Without residual disinfection
Germany	5.1	50% ¹⁾
The Netherlands	1.1	85% ²⁾
Switzerland	0.9	70% ³⁾

¹⁾ (TZW, 2012)²⁾ Evides applies chlorine dioxide at its largest surface water production plants³⁾ 80% of the drinking water in Switzerland is produced from groundwater (EurEau, 2017). Most of that will be distributed without residual disinfection

Project related



3 Conclusions

Experience in the Netherlands has shown that drinking water can be safely distributed without chlorination or other type of chemical disinfection if the following conditions are met:

- Water is produced from groundwater with a minimum age of at least 30 days. The age of groundwater is the time since it infiltrated as rain or surface water. Note that the minimum does not refer to the average of the water, but to the fraction with the shortest residence time.
- Water wells, or other means of extraction are constructed in such manner that there is no risk of short circuiting from the surface to the point of extraction. Preferably, water is extracted from a (semi-)confined aquifer. Particular attention must be paid then to restoring the impervious layer in the drilled hole around the riser.
- Water is protected against contamination during treatment. Potential routes of contamination are:
 - access by personnel,
 - chemicals and materials used in the treatment plant,
 - air used for aeration or ventilation,
 - birds, rodents and so on.
- Water is protected against contamination during transport and distribution. Potential routes of contamination are:
 - intrusion of water through leaks in situations of under-pressure in the pipes or reservoirs relative to the surrounding groundwater,
 - faulty connections or backflow from clients' premises,
 - air used for ventilation in water towers and reservoirs,
 - construction and maintenance activities. Note that chlorine (in the form of hypochlorite) is used for disinfection of new or repaired pipe sections in the distribution networks in the Netherlands.
- Drinking water quality is such that bacterial activity in the distribution network remains at an acceptable level. Note: risk factors are: high temperatures and relatively high levels of nutrients and assimilable organic carbon (AOC). High concentrations of AOC are typical for drinking water produced from groundwater with high concentrations of ammonia and methane.
- There is a system in place to monitor water quality and to check that all conditions above are met.

Project related



A1 Bibliography

- (Vewin), A. o. D. w. c., 2017. *Dutch Drinking Water Statistics 2017*, Werkendam: Damen Drukkers.
- EurEau, 2017. *Europe's water in figures; An overview of the European drinking water and waste water sectors*, Brussels: EurEau.
- Inspectie Leefomgeving & Transport, 2016. *Presentatievergelijking drinkwaterbedrijven 2015 (Benchmark Dutch drinking water companies 2015)*, Den Haag: Ministerie van Infrastructuur en Milieu.
- Leerdam, R. v., 2012. *Risico's van luchtgebruik in de drinkwaterzuivering*, Nieuwegein: KWR.
- Moel, P. d., Verberk, J. & Dijk, J. v., 2007. *Drinking Water - Principles and Practices*. 2nd ed. London: World Scientific Publishing Co. Pte. Ltd..
- Prevost, M., Laurent, P., Servais, P. & Joret, J.-C., 2005. *Biodegradable organic matter in drinking water treatment and distribution*. 1st ed. Denver: American Water Works Association.
- Rosario-Ortiz, F. et al., 2016. How do you like your tap water?. *Science*, 351(6276), pp. 912-914.
- TZW, 2012. Residual Disinfectant Practice. *TZW news*, September, p. 1.
- Vewin, 2017. *Drinking water fact sheet 2017*. s.l.:s.n.



Project related

A2 Water quality Amersfoort Berg



Pb. Amersfoort Berg
Reinwater Uitgaand

Vitens Laboratorium

Sneekterweg 61
8912 AA Leeuwarden
relatiebeheer@vitens.nl

Periode : JAN - MRT 2018

Analysenaam	Eenheid	Gemiddelde	Minimum	Maximum	Aantal	Min.Wet	Max.Wet
Temperatuur in situ	°C	10.1	9.7	10.3	13		25.0
Zuurstof	mg/l	9.3	8.9	9.6	13	2.0	
Troebling	FTE	0.17	0.11	0.33	13		1.0
Zuurgraad (pH)	pH	7.68	7.59	7.76	13	7.00	9.50
Verzadigingsindex (SI) *		-0.39	-0.50	-0.29	13	-0.20	
Totaal Anorganisch Koolstof berekend	mg C/l	20	20	20	1		
Corrosie-index		0.72	0.72	0.72	1		
Theoretisch afzetbaar CalciumCarbonaat 90°	mmol/l	0.11	0.09	0.13	13		
Geleidingsvermogen bij 20 °C (EGV)	mS/m	28.0	26.7	28.8	13		125
Koolstofdioxide	mg/l	3.9	3.3	4.7	13		
Koolstofdioxide agressief	mg/l	2.1	1.4	2.9	13		
Waterstofcarbonaat	mg/l	98	95	100	13	60	
Chloride *	mg/l	28	28	28	1		150
Sulfaat	mg SO ₄ / l	20	20	20	1		150
Natrium (Na), na aanzuren	mg/l	18.4	18.4	18.4	1		150
Kalium (K), na aanzuren	mg/l	1.51	1.51	1.51	1		
Silicaat	mg Si / l	7.09	7.09	7.09	1		
Calcium (Ca), na aanzuren	mg/l	37.1	36.4	38.4	13		
Magnesium (Mg), na aanzuren	mg/l	4.30	3.98	4.92	13		
Totale Hardheid ****	mmol/l	1.11	1.08	1.16	13	1.00	
Totale Hardheid ****	°D	6.2	6.0	6.5	13	5.6	
Ammonium	mg NH ₄ / l	<0.03	<0.03	<0.03	4		0.20
Nitriet	mg NO ₂ / l	<0.01	<0.01	<0.01	4		0.10
Nitraat	mg NO ₃ / l	10.1	10.1	10.1	1		50.0
Fosfaat-ortho	mg PO ₄ / l	0.07	0.07	0.07	1		
IJzer (Fe), na aanzuren	mg/l	<0.01	<0.01	<0.01	4		0.200
Mangaan (Mn), na aanzuren	mg/l	<0.005	<0.005	<0.005	4		0.050
Aluminium (Al), na aanzuren	µg/l	<2	<2	<2	1		30.0
Antimoon (Sb), na aanzuren	µg/l	<1	<1	<1	1		5.0
Arseen (As), na aanzuren	µg/l	0.749	0.749	0.749	1		10.0
Barium (Ba), na aanzuren	µg/l	16.0	16.0	16.0	1		
Boor (B), na aanzuren	µg/l	17.1	17.1	17.1	1		500
Cadmium (Cd), na aanzuren	µg/l	<0.10	<0.10	<0.10	1		5.00
Chroom (Cr), na aanzuren	µg/l	0.908	0.908	0.908	1		50.0
Koper (Cu), na aanzuren	µg/l	<0.5	<0.5	<0.5	1		2000
Kwik (Hg), na aanzuren	µg/l	<0.02	<0.02	<0.02	1		1.00
Lood (Pb), na aanzuren	µg/l	<0.5	<0.5	<0.5	1		10.0
Nikkel (Ni), na aanzuren	µg/l	<1.0	<1.0	<1.0	1		20.0
Seleen (Se), na aanzuren	µg/l	<0.5	<0.5	<0.5	1		10.0
Zink (Zn), na aanzuren	µg/l	<2.0	<2.0	<2.0	1		3000
Cyanide, totaal	µg/l	<2	<2	<2	1		50
Fluoride	mg/l	0.05	0.05	0.05	1		1.0
Kleurintensiteit (455 nm)	mg Pt/Cu/l	<3	<3	<3	1		20
UV-extinctie	1 / m	0.9	0.9	0.9	1		
Totaal Organisch Koolstof (TOC)	mg/l	<0.5	<0.5	<0.5	1		
Koloniegetal 22 °C **	kve/ml	1	<1	3	13		100
Coliformen 37° C ***	kve/100 ml	<1	<1	<1	13		0
Escherichia coli 37 °C ***	kve/100 ml	<1	<1	<1	13		0
Enterococci ***	kve/100ml	<1	<1	<1	1		0
Clostridium perfringens ***	kve/100 ml	<10	<10	<10	4		1000
Aeromonas 30 °C	kve/l	<100	<100	<100	1		100
Legionella	kve/l	<100	<100	<100	1		



Project related

A3 Information on Dunea's water production system

from Dunea's corporate brochure "Dunea: expert in dunes and water"
available at: <https://www.dunea.nl/english>

From river water to drinking water

The original source of our water – a large reservoir of fresh water under the dunes – has been supplemented with river water from the Afgedamde Maas since 1976.

From source to dune

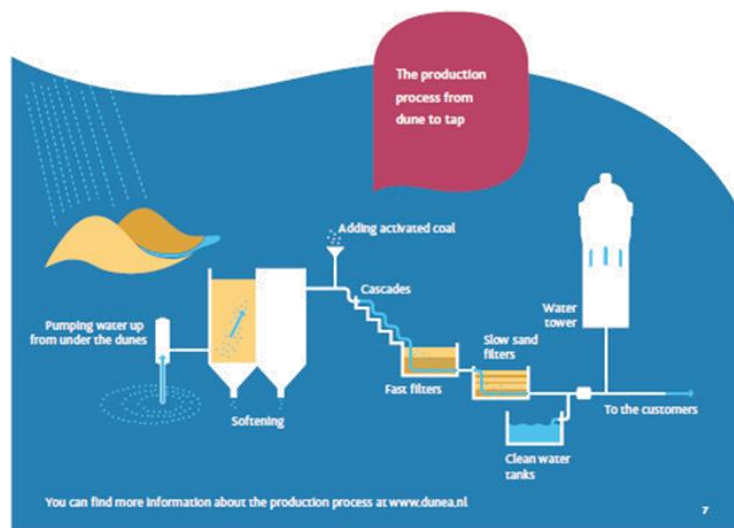
The Afgedamde Maas is a virtually current-free, twelve-kilometre-long, branch and dammed former distributary of the River Maas. In the two months that the water remains here, impurities and silt particles sink to the bottom. This gives the river a significant capacity to purify itself. By also adding iron sulphate (and oxygen) to the water ourselves, the quality of the water has already been considerably improved at source.

Microsieves

During the warmer months, microsieves in Brakel, on the North-Brabant and Gelderland border, extract as much (organic) material from the water as possible. The water then goes to Bergambacht (30 km further on), where it is pre-purified using sand filters. The pre-purified river water is then transported via two pipelines to the area of dunes between Monster and Katwijk where it is pumped into several infiltration basins.

Dunes

The water seeps slowly down from the infiltration basin to the bottom of the dune, where it mixes with sedimentary water. After a minimum of two months, most of the water is pumped up again. As the water sinks slowly to the bottom, its quality is improved and undesirable bacteria and viruses are made harmless in a natural way.





Project related

From dune to tap

The dune water is turned into drinking water at Dunea's production sites in Scheveningen, Katwijk and Monster. Although the water pumped out of the dunes is already bacteriologically reliable, it is not yet ready to use.

Softening

Dune water is quite hard – around 13.4 degrees dH (German unit of hardness). Dunea feeds the water through a softening plant to extract the chalk and reduce the hardness of the water to an average of 8.5 degrees dH.

Softened water has several advantages. The softer the water the less soap and detergents are needed. Softer water also means less lime scale in household appliances. Water softening benefits both public health and the environment because softer water dissolves less lead and copper so less of these substances gets into the drinking water and waste water.

After softening, activated powdered coal is added to the water. This improves the taste and removes the remaining undesirable particles, such as pesticide residue. The coal is filtered out of the water again at a later stage.

Fast and slow sand filters

The water is then pumped via waterfalls (cascades) to the fast sand filters. Oxygen from the air binds itself to iron and manganese particles in the water (oxidisation). These particles and the powdered coal added earlier remain behind in the sand filters.

The final step in the purification process is passing through the slow sand filters. The biological action of the sand filters makes the water totally bacteriologically safe. The dune water is now drinking water. The drinking water is stored in pure water reservoirs so Dunea can deliver pure and safe drinking water 24 hours a day. Water towers ensure that there is constant pressure on the water mains network – even if there is a power cut.



Project related

A4 Drinking water quality Dunea Scheveningen 2017

Gegevens Jaar 2017

Dunea

Locatie:

Scheveningen

Naam:

Rein water

Omschrijving	Eenheid	meetgegevens			norm Drinkwaterbesluit	
		minimum	gemiddelde	maximum	min	max
Aluminium	µg/l	1.8	2.6	3.9		200
Arseen	µg/l	1.4	2.0	2.9		10
Boor	mg/l	0.05	0.05	0.06		0.5
Calcium	mg/l	41	44	55		-
Chloride	mg/l	49	53	57		150 **
Koolstofdioxide	mg/l	0.7	1.2	1.9		-
EGV (elek. geleid. verm. 20°C)	mS/m	49.3	50.5	52.7		<125
Fluoride	mg/l	0.17	0.19	0.22		1.0
Izer	mg/l	<0.01	<0.01	<0.01		0.2
Troebeling	FTU	<0.03	<0.03	0.04		1
Geur (kwalitatief)		afwezig	afwezig	afwezig		****
Waterstofcarbonaat	mg/l	167	178	202	>60	
Kwik	µg/l	<0.02	<0.02	<0.02		1
Totale hardheid	mmol/l	1.33	1.44	1.74	>1.0	
Totale hardheid	°Duits	7.5	8.1	9.7	>5.6	
Kleurgetal	mg/l Pt	4	5	6		20
Magnesium	mg/l	7.4	8.3	9.1		-
Mangaan	mg/l	<0.01	<0.01	<0.01		0.05
Natrium	mg/l	50	59	64		150
Ammonium	mg/l NH4	<0.02	<0.02	<0.02		0.2
Nitriet	mg/l NO2	<0.007	<0.007	<0.007		0.1
Nitraat	mg/l NO3	3.14	4.60	6.65		50
Zuurstof, opgelost	mg/l	9.4	9.6	9.7	>2	
pH berekend	pH	8.29	8.43	8.67	7.0	9.5
Orthofosfaat	mg/l PO4	0.12	0.15	0.20		-
Seleen	µg/l	<0.5	<0.5	<0.5		10
Verzadigingsindex S.I. berekend	pH	0.58	0.67	0.87	> -0.2	
Smaak (kwalitatief)		afwezig	afwezig	afwezig		****
Sulfaat	mg/l	46	51	55		150
Temperatuur	°C	10.6	12.8	15.8		25
Totaal organisch koolstof	mg/l	2.0	2.2	2.5		****
Lood	µg/l	<0.5	<0.5	<0.5		10
Aeromonas	kve/100 ml	0	1	6		1000
Clostridium perfringens	kve/100 ml	0	0	0		0
Coli 37°C	kve/100 ml	0	0	1		0
Enterococci	kve/100 ml	0	0	0		0
Koloniegetal 22 °C *	kve/ml	0	2	8		100 ***
Legionella	kve/l	<8	<8	<8		<100

* Geometrisch jaargemiddelde koloniegetal 22°C = 1.8

Appendix B - The Dutch secret: How to provide safe drinking water without chlorine in the Netherlands (2009)

Drink. Water Eng. Sci., 2, 1 14, 2009
 www.drink-water-eng-sci.net/2/1/2009/
 © Author(s) 2009. This work is distributed under
 the Creative Commons Attribution 3.0 License.

**Drinking Water
Engineering and Science**

The Dutch secret: how to provide safe drinking water without chlorine in the Netherlands

P. W. M. H. Smeets^{1,2}, G. J. Medema¹, and J. C. van Dijk²

¹Kiwa Water Research, Groningenhaven 7, 3433 PE Nieuwegein, The Netherlands

²Technical University Delft, P.O. Box 5048, 2600 GA Delft, The Netherlands

Received: 26 August 2008 – Published in Drink. Water Eng. Sci. Discuss.: 27 October 2008

Revised: 11 March 2009 Accepted: 11 March 2009 Published: 16 March 2009

Abstract. The Netherlands is one of the few countries where chlorine is not used at all, neither for primary disinfection nor to maintain a residual disinfectant in the distribution network. The Dutch approach that allows production and distribution of drinking water without the use of chlorine while not compromising microbial safety at the tap, can be summarized as follows:

1. Use the best source available, in order of preference:
 - microbiologically safe groundwater,
 - surface water with soil passage such as artificial recharge or bank filtration,
 - direct treatment of surface water in a multiple barrier treatment;
2. Use a preferred physical process treatment such as sedimentation, filtration and UV-disinfection. If absolutely necessary, also oxidation by means of ozone or peroxide can be used, but chlorine is avoided;
3. Prevent ingress of contamination during distribution;
4. Prevent microbial growth in the distribution system by production and distribution of biologically stable (biostable) water and the use of biostable materials;
5. Monitor for timely detection of any failure of the system to prevent significant health consequences.

New developments in safe drinking water in the Netherlands include the adaptation of the Dutch drinking water decree, implementation of quantitative microbial risk assessment (QMRA) by water companies and research into source water quality, drinking water treatment efficacy, safe distribution and biostability of drinking water during distribution and *Legionella*. This paper summarizes how the Dutch water companies warrant the safety of the drinking water without chlorine.

1 Introduction

The Netherlands is one of the few countries where chlorine is not used at all, neither for primary disinfection nor to maintain a residual disinfectant in the distribution network. Although it is generally believed that a chemical disinfection increases drinking water safety, the Dutch feel that it provides more problems than benefits. Therefore, the Dutch have

gradually adopted a total system approach that allows production and distribution of drinking water without the use of chlorine while not compromising microbial safety at the tap. The Dutch approach to safe drinking water was described previously by van der Kooij et al. (1995, 1999, 2003a). This approach can be summarized as follows:



Correspondence to: J. C. van Dijk
 (j.c.vandijk@tudelft.nl)

Published by Copernicus Publications on behalf of the Delft University of Technology.

2

P. W. M. H. Smeets et al.: The Dutch secret

1. Use the best source available, in order of preference:
 - microbiologically safe groundwater,
 - surface water with soil passage such as artificial recharge or bank filtration,
 - direct treatment of surface water in a multiple barrier treatment;
2. Use a preferred physical process treatment such as sedimentation, filtration and UV-disinfection. If it cannot be avoided, also oxidation by means of ozone or peroxide can be used but chlorine is not used;
3. Prevent ingress of contamination during distribution;
4. Prevent microbial growth in the distribution system by production and distribution of biologically stable (biostable) water and the use of biostable materials;
5. Monitor for timely detection of any failure of the system to prevent significant health consequences.

New developments in safe drinking water in the Netherlands include the adaptation of the Dutch drinking water decree, implementation of quantitative microbial risk assessment (QMRA) by water companies and research into source water quality, drinking water treatment efficacy, safe distribution, biostability of drinking water during distribution and *Legionella*. This paper summarizes the previous publications by van der Kooij et al. (1995, 1999, 2003a) and provides an update of how the Dutch water companies warrant the safety of the drinking water without chlorine.

2 Legal requirements

Member states of the European Union have to implement the European drinking water directive (European Commission, 1998) in their national drinking water legislation. The Dutch drinking water decree (Staatsblad, 2001) generally applies stricter requirements for drinking water quality. Although the European directive allows exceptions for small supplies (less than 10 m³ water per day or 50 persons), the Dutch regulations do not include this. It was stated that drinking water should fulfill the same requirements regardless of system size. Moreover, the exception would only apply to a low number of systems. Monitoring requirements are related to the size of the system and will be discussed below. Dutch legislation includes no requirements for primary or secondary disinfection. A direct health-based target was included in the revision of the decree in 2001, and microbial requirements now include:

1. A QMRA for sites at risk (surface water) must show that the estimated risk of infection is below 1 infection per 10 000 persons per year for enteric viruses, *Cryptosporidium* and *Giardia* and any other relevant pathogen.

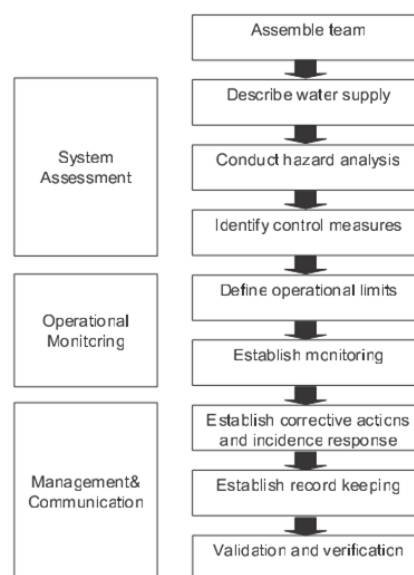


Figure 1. Water Safety Plan framework (WHO 2004).

2. *E. coli* and *enterococci* 0 CFU/100 ml
3. *Aeromonas* <1000 CFU/100 ml (operational parameter)
4. Colony count at 22°C <100 CFU/ml (operational parameter)
5. Coliforms and *Clostridium perfringens* 0 CFU/100 ml (operational parameter)

Implementation of the statutory QMRA has put the focus on microbial drinking water safety again. It has led to the intensified monitoring of full-scale drinking water systems and to research into treatment efficacy and distribution safety. The World Health Organization (WHO) promotes a water safety plan (WSP) as a way to manage the safety of drinking water (WHO, 2004). Many water companies have implemented or are implementing a WSP for their systems. The WSP framework, shown in Fig. 1, provides a systematic approach to safe drinking water. This framework is used here to describe the Dutch approach to safe drinking water on a national level.

P. W. M. H. Smeets et al.: The Dutch secret

3

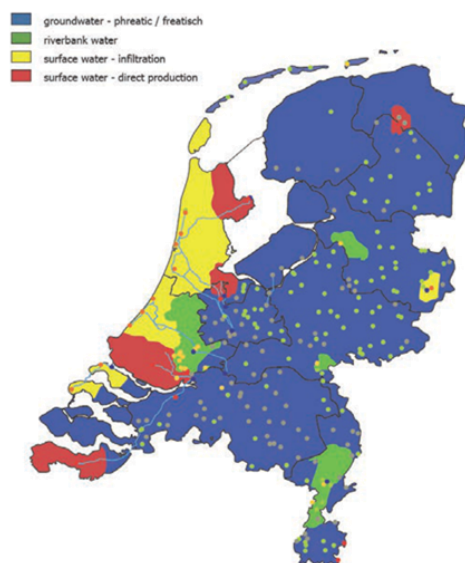


Figure 2. Source water types in the Netherlands.

3 System assessment

3.1 Description of the Dutch water supply

In the Netherlands the highest quality water source is selected for drinking water production. Since the start of drinking water supply in the Netherlands, the preferred source has therefore always been microbiologically safe groundwater (in the Netherlands this source can be found in confined sandy aquifers in most parts of the country, except the western provinces where the groundwater is brackish; see Fig. 2). The water is distributed through a pressurized distribution system that prevents the ingress of water. Furthermore, the groundwater is usually biologically stable and, therefore, chlorination of the water to prevent bacterial growth is not needed. As a result, chlorine has never been used in the northern, eastern and southern parts of the country.

In the western part (city of Amsterdam, The Hague and surrounding urban area) fresh water was originally abstracted from the dunes. After World War II the natural replenishment became insufficient due to increasing urbanization and drinking water use. Now, surface water from the rivers Meuse and Rhine is pretreated, transported to the dunes and infiltrated. The infiltration of pretreated surface water enables more than a 10-fold capacity increase in the same abstraction area compared to natural groundwater. The rivers Rhine and Meuse provide sufficient quantities of water, however they are pol-

luted by untreated and treated wastewater discharges, industrial activities and agricultural land use upstream. Infiltration provides a natural filter for pathogenic parasites, bacteria and viruses, a constant water quality and temperature, and a large storage reservoir to overcome pollution waves in the river. Infiltrated surface water is treated in a multiple barrier system to provide high quality drinking water. To a smaller extent, artificial groundwater along rivers (river bank filtration) is used to provide a soil passage of surface water.

In some locations, including the Rotterdam and Amsterdam areas, direct treatment of surface water was also needed to satisfy the water demand. To improve source water quality, off-stream reservoirs were constructed. On the one hand, this created a storage capacity which allowed the selective intake of water during periods of poor river water quality. On the other hand, the water quality significantly improved during storage due to natural processes. Until 1973 the stored surface water was treated directly by coagulation, sedimentation, filtration and disinfection by chlorine. This water was distributed with a chlorine residual, which sometimes led to customer complaints about taste and odor. When the chemist from the Rotterdam water supply, Joop Rook, discovered that chlorine disinfection was responsible for the production of disinfectant by-products such as trihalomethanes (THM) (Rook, 1976), it led to a revolution in the philosophy regarding drinking water treatment in the Netherlands.

After stormy debates it was decided to abate the use of chlorine whenever possible. Improved pretreatment by soil passage, optimized coagulation-sedimentation and rapid and slow sand filtration, and optimization of the chlorination process initially reduced the use of chlorine. Further improvements included oxidation by ozonation in combination with granular activated carbon filtration (GAC). This replaced chlorination as the main disinfectant where applied and also improved the taste and odor of the water. Still, post-disinfection with chlorine was sometimes applied as a final treatment step to reduce the increased colony counts from the GAC. In some cases this resulted in a low level of disinfectant residual (chlorine or chlorine dioxide) in the distributed water in the first segments of the distribution system that was considered to postpone regrowth. At several locations the surface water treatment was augmented with UV. In 2005 the last chlorine disinfection process was replaced by a new generation UV system that was validated for its microbial inactivation efficacy. This improved taste and odor, reduced DBPs and did not result in regrowth problems. Moreover, UV inactivates a wider spectrum of pathogens than chemical disinfection, and microbial safety is easily warranted by process monitoring and control. Innovative treatment processes also form an important barrier against microorganisms. Membrane filtration such as ultra filtration (UF) and reverse osmosis (RO) can remove all microbes from the water when the integrity of the membrane (and all connections) is guaranteed (Kamp et al., 2000). The most recently applied process of advanced oxidation with H_2O_2 -UV irradiation is effective

Table 1. Typical numbers of pathogens in river water.

	Minimum	Maximum	Reference
Enteric viruses (PFU/l)	0.04	13	Theunissen et al. (1998)
<i>Campylobacter</i> (MPN/l)	10	10 000	Smeets et al. (2008b)
<i>Giardia</i> (cysts/l)	0.1	10	Schets et al. (2008)
<i>Cryptosporidium</i> (oocysts/l)	1.2	128	Medema et al. (2003)

for micro-pollutants as well as for microbes (Kruithof et al., 2007).

The groundwater supplies continued to distribute unchlorinated water. To further improve the water quality of surface water treatment plants (prevention of disinfection by-products and improved taste and odor), the focus of drinking water treatment shifted to producing biostable water. The philosophy was and still is to prevent growth in the distribution network by starvation rather than by the curative approach of (apparently) suppressing regrowth with a disinfectant residual. Thus, there was no more need for a disinfectant residual during distribution to prevent regrowth. The level of post-disinfection at surface water treatment plants was lowered to such an extent that, in 2008, no chlorine is being applied at all, and the few locations where chemical disinfection is applied (chlorine dioxide) no residual disinfectant can be measured in the distributed water.

3.2 Hazard analysis

3.2.1 Hazards

Surface water supplies are facing numerous hazards, both microbial and chemical. The catchments of the rivers Rhine and Meuse are very large and cover several countries and pass through a great number of major cities. Thus, the water is contaminated by all sorts of human, animal and industrial wastes. The water suppliers intensively monitor the river water at several stations and at the intake points for drinking water. Microbial hazards such as pathogenic protozoa (*Cryptosporidium* and *Giardia*), bacteria (*Campylobacter* and *E. coli* O157) and viruses (enteroviruses, *Norovirus*, Rotavirus, Hepatitis A and E viruses and adenovirus) are regularly detected. Table 1 provides an overview of the numbers of pathogens detected in river water in the Netherlands.

Most of these organisms lead to mild symptoms such as gastroenteritis, but some can lead to severe illness or even death (see for details WHO guidelines 3rd edition, WHO 2004). Health consequences can also be more severe for specific groups (children, elderly, pregnant women, immunocompromised persons).

Microorganisms with opportunistic pathogenic properties and the ability to multiply in drinking water networks, such

as *Legionella*, *Aeromonas*, *Pseudomonas* and mycobacteria, can constitute a risk during treatment or distribution. Since an outbreak of legionellosis following a flower show in 2000 (den Boer et al., 1999), the prevention of *Legionella* growth has received much attention (van der Kooij et al., 2005).

Chemical hazards in the source water are not discussed in this paper. However, disinfection by-products (DBP) will be discussed since they can be formed during drinking water production and distribution. The DBPs of concern are trihalomethanes formed during chlorination and bromate formed during ozonation. These compounds can have mutagenetic or carcinogenic effects (Rook, 1976; Orlandini et al., 1997).

Taste, odor, color and turbidity are also considered hazards (Table 4). Although these parameters have no health effect, they need to be acceptable to the consumer. These hazards can be present in the source water but can also be created by treatment or distribution, e.g., temporary chlorination after maintenance leads to customer complaints.

3.2.2 Hazardous events

Hazardous events in source water are spills in the source water leading to peak concentrations of microbial or chemical hazards. Severe rain can lead to "spills" through runoff from agricultural land, combined sewer overflows and failure/bypass of waste-water treatment plants. Drought can also form a hazard since river water is more concentrated and a higher percentage of it consists of wastewater. Since the Meuse and Rhine rivers are continuously polluted with wastewater, the concentrations of pathogens constantly vary. One would only refer to events in case of extreme levels of contamination. A hazard that is related to the groundwater supply is contamination at or close to the well-head. Although this has led to the detection of fecal indicators in the water, an outbreak of disease has not occurred.

Hazardous events during treatment can include equipment failure, operational error or improper protection of the water, e.g., rainwater leakage into the process water. These events have not been systematically analyzed at a national level. However, many potential hazards have been identified in the process of developing water safety plans. Important potential hazards were ventilation openings at different stages of

P. W. M. H. Smeets et al.: The Dutch secret

5

treatment, temporary adaptations to the system for startup or maintenance that were not removed (e.g., connection between raw- and treated water) and unhygienic cleaning practices. However, the major hazard appears to be human error. Therefore, adequate training of personnel is the most important measure for risk reduction during treatment.

All three outbreaks that occurred in the Netherlands since 1945 were caused by cross-connections during distribution: one to a sewer (Gemeentewaterleidingen Amsterdam, 1962), a second to wastewater from a navy vessel through a drinking water supply connection (Huisman and Nobel, 1981), and the third to a household water supply system in 2001 (Raad voor de Transportveiligheid, 2003). Other hazardous events have led to the contamination of drinking water with *E. coli* but did not lead to the outbreak of disease. These events were:

- leakage of a drinking water reservoir (esp. in combination with heavy rainfall);
- mains breaks;
- maintenance and repair;
- pressure loss.

Outbreaks and hazardous events have been analyzed in international studies (Hrudey and Hrudey, 2004; Westrell et al., 2003; Risebro et al., 2007; Nilsson et al., 2007). These have shown that hazards in source water, treatment and distribution can all lead to outbreaks and that outbreaks are often a consequence of simultaneous events in these parts of the drinking water system. The Techneau Hazard Database (Beuken, 2007) provides an overview of hazardous events that were identified by an international research team. It can be used as a checklist for risk assessment and management.

3.3 Identify control measures

3.3.1 Protection of groundwater

Groundwater is the preferred source for the production of drinking water in the Netherlands. Groundwater in the Netherlands is abstracted within restricted areas, where land use is regulated. Land in the immediate neighborhood of the abstraction wells is owned by the water companies. Water from outside the restricted areas will take at least 25–50 years to arrive at the abstraction wells. These large areas (in total some 1500 km², 4.4% of the land area in the Netherlands) allow adequate protection and a very long response time in case of a groundwater contamination. Groundwater protection zones prevent contamination around the drinking water wells. In general a 60-day zone with the highest level of protection prevents fecal contamination. Confined sandy aquifers are covered by impermeable clay layers which protect the groundwater from surface contamination. The 60-day zone allows sufficient time and distance for highly effective filtration and the die-off of microorganisms (Schijven

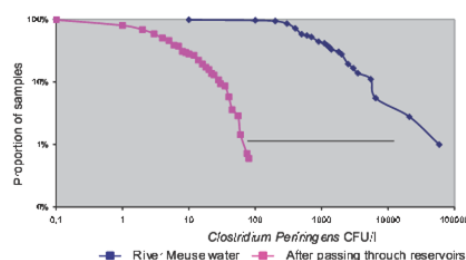


Figure 3. *Clostridium Perfringens* in river water and after raw water storage in open reservoirs for 5 months (van der Veer, 2008).

and Hassanizadeh, 2002; van der Wielen et al., 2008). A few shallow anoxic aquifers require more than 60 days residence time. This high quality water requires no additional disinfection and is only treated for physical parameters such as oxygen, iron, ammonium and manganese by aeration and filtration. Risks of recontamination through poorly constructed wells or insufficient hygiene during construction and maintenance are mitigated by training personnel and by using strict hygienic protocols (Leunk and van Lieverloo, 2007).

3.3.2 Selective intake and storage of surface water

Surface water systems have several built-in control measures. In most cases the intake point can be changed to a different source during contamination events or water shortage. The available storage allows stoppage of the intake for days to months. Storage in reservoirs reduces the microbial hazards due to natural processes like die-off, sedimentation, UV inactivation and predation. Figure 3 shows the reduction of *Clostridium Perfringens* by retention in open reservoirs (van der Veer, 2008). Pretreatment before storage and infiltration in the dunes also reduces microbial and chemical hazards.

3.3.3 Drinking water treatment to control microbial hazards

Since 2001 the microbial safety of drinking water has been regulated in the Netherlands by a health-based target of 10^{-4} risk of infection per person per year. A quantitative microbial risk assessment (QMRA) is required to verify compliance of these targets for surface water treatment plants and other plants at risk. Drinking water treatment needs to be tailored to the hazards in the source water to provide safe water leaving the plant. This requires the assessment of source water quality and treatment efficacy. Instead of using log-credits (as applied in the USEPA LT2ESWTR, 2006), the companies need to verify by monitoring (where possible) that their systems are indeed effective under both nominal and event conditions. By 2008 QMRA's have been performed on the

Table 2. Overview of required log reductions by drinking water treatment to comply to 10^{-4} infection risk level at 4 locations in the Netherlands.

Organism	Location 1	Location 2	Location 3	Location 4
<i>Cryptosporidium</i>	6.4	5.6	5.1	6.5
<i>Giardia</i>	6.7	5.9	5.2	6.9
<i>Campylobacter</i>	8.4	8.5	8.6	6.9
Enteric viruses	4.3	4.3	4.2	5.7

surface water systems in the Netherlands, providing insight into the actual efficacy of full-scale drinking water treatment. Table 2 provides an overview of the log reduction that is required to comply to the health-based target at Dutch surface water treatment plants.

Infiltration in the dunes or other means of soil passage are the major barrier against microbial hazards, since it contributes over 8 logs of pathogen reduction (Schijven, 1998, 2003; Medema and Stuyfzand, 2002). Consecutive barriers like filtration, disinfection and slow sand filtration each provide some additional reduction of pathogens. Direct treatment of surface water relies on a series of barriers, including traditional processes like filtration, disinfection and slow sand filtration (Hijnen et al., 2005; Smeets, 2008a). These have been complemented with new techniques like UV disinfection (Hijnen et al., 2006), advanced oxidation with $UV-H_2O_2$ (Kruithof et al., 2007) and membrane filtration including ultrafiltration (UF) and reverse osmosis (RO) (Kamp et al., 2000).

3.3.4 Preventing contamination during distribution

In the Netherlands the focus is on maintaining a high quality distribution system with sufficient pressure to prevent ingress during normal operation. Additionally, strict hygienic protocols are set for building, maintenance and repair of distribution systems (van Lieverloo et al., 2002). The 100 000 km length of mains (>50 mm) consists of nonplastic polyvinyl chloride (PVC, 40%), asbestos (36%), cast iron (14%), polyethylene (2.5%) and others (7.5%). The leakage rate is low, generally <3%. A study showed that leakage is lower when pipelines are placed in sandy or clay soils, when water pressure is low and the proportion of PVC pipelines is high (VEWIN, 2005; DVGW, 2008). Figure 4 shows the leakage rates in several European countries.

Pressure fluctuations and surges that could result in negative pressure in the distribution network are minimized by variable pumps, pressure dampening devices and automated distribution control to prevent large variations in flow (e.g., when filling reservoirs). Negative pressures (syphonage) and

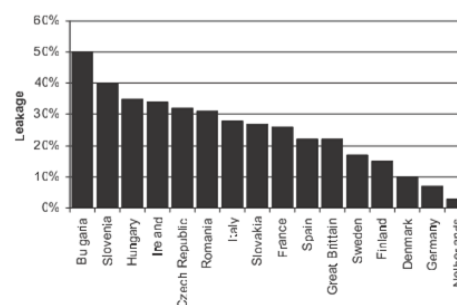


Figure 4. Leakage rates in European countries (VEWIN, 2005; DVGW, 2008).

high pressures in hilly areas are prevented by defining pressure zones with limited pressure ranges.

The prevention of cross-connections and backflow is extremely important. Connections to installations that could present a risk, for example through the connection of pumps or from high levels of pathogens at the location, are only allowed through a backflow prevention valve or a break tank. Examples of this are high-rise buildings with local pressure systems, industry and hospitals.

3.3.5 Preventing microbial growth in the distribution system

Measures to prevent microbial growth in the distribution system were described by van der Kooij (2003b). The following approaches are used to control or limit microbial activity in the distribution system in the absence of a disinfectant residual:

- Production of biologically stable drinking water;
- A distribution system with non-reactive, biologically stable materials;
- An optimized distribution system to prevent stagnation and sediment accumulation.

Aerobic groundwater contains little organic compounds and is generally biostable. Anaerobic groundwater is generally not biostable due to the presence of organic compounds, methane and ammonia. Treatment by aeration and sand filtration is generally sufficient to achieve biostable drinking water with AOC levels below $10 \mu\text{g carbon/l}$. Surface water requires extensive treatment to produce biostable water. Biological treatment processes, such as storage in open reservoirs, soil passage, granular activated carbon filtration and (slow) sand filtration, in combination with physical and chemical treatment processes, such as

P. W. M. H. Smeets et al.: The Dutch secret

7

coagulation-sedimentation and oxidation, form a barrier against biodegradable compounds. When ozonation is applied, AOC is formed from larger organic compounds. Two-stage filtration is then needed to achieve biostable water. AOC is degraded in the first stage and the second stage removes the biomass and fines from the first stage. Biological filtration processes can reduce AOC and BDOC levels by 80%. Chlorine should be avoided in the influent of biological filters. In the Netherlands chlorine is not used in treatment and chlorine dioxide is only applied as a post-disinfection, and therefore does not affect any treatment processes. The contact times for ozonation are such that no residual ozone reaches the consecutive filtration steps. The effect of membrane filtration on biological stability depends on the type of membrane in combination with water characteristics. These relationships are not yet clear.

The biostability of materials is tested with the biofilm formation potential (BFP) test (van der Kooij and Veenendaal, 1993). All materials in the Netherlands have to be tested by Kiwa before they can be used in drinking water. The majority of the distribution system consists of biostable asbestos cement or PVC, which is generally also used when old distribution pipes are replaced (van der Kooij et al., 1999).

Optimized distribution systems are designed so that stagnant zones are prevented and the build-up of sediment is prevented using advanced network modeling (Blokke, 2008). Since distribution systems have a long lifetime, changes to the design can only be implemented slowly. Still, measures in operation can reduce the build-up of sediment by (Vreeburg, 2007):

- Optimizing treatment to minimize particles in drinking water entering the network;
- Applying sufficiently high flow velocities during distribution, resulting in a “self-cleaning network”;
- Regular flushing under specified conditions.

4 Operational monitoring

4.1 Source water monitoring

The Dutch drinking water decree requires monthly monitoring of coliforms and *E. coli* in abstracted groundwater and *E. coli*, enterococci and *Clostridium perfringens* for surface water. River water is monitored on-line and with grab samples at several stations and at intake points for drinking water. The data are made available to water companies via the internet. A range of biomonitors is used at the intake points to detect a broad range of chemical contaminants. Fish, mussels, daphnia and algae all have specific sensitivities to chemical contaminants. When an alarm is generated, the intake of water is stopped. Microbial parameters require more time for analysis, typically over 24 h. Faster methods are being developed, however these are not (yet) sufficiently rapid to

allow for active management of source water intake. Apart from the legally required parameters, monitoring programs to quantify pathogen concentrations in surface water are also regularly performed. The microbial monitoring data is used in a statistical analysis for the QMRA to estimate nominal and peak concentrations. Thus, risks from these hazards can be adequately quantified (Smeets, 2008a).

For groundwater abstractions that may be vulnerable for contamination at the surface or may be under the influence of surface water, the inspectorate guidance document (de Roda Husman and Medema, 2004) suggests event monitoring. The abstracted water should be tested for the presence of *E. coli* and F-specific coliphage in 10-l samples during event conditions, such as heavy rainfall or flooding. The sampling moment should be corrected for the expected residence time for a contamination to reach the well to maximize the probability of detection.

4.2 Process monitoring

All surface water systems are equipped with automated control systems (SCADA). Relevant process parameters such as pH and turbidity are measured on-line and are used for automated control. Important barriers against microbes are strictly monitored. Sufficient UV disinfection is guaranteed by monitoring the flow, UV transmission of the water and UV intensity of the UV lamps. Ozonation is controlled by measuring water flow, flow of and ozone concentration in the ozone dosing gas and the ozone residual in the water. Thus, sufficient Ct is controlled under all conditions. UF and RO are monitored by particle removal and sulfate removal, respectively. In addition regular off-line integrity tests are performed. The intensity of monitoring and control is related to the required efficacy of the process. For example, highly effective barriers that achieve 6-log reduction require on-line monitoring to verify that the process is effective every 10s (Smeets, 2008a). A new development is the design of integrated process control to optimize not only individual processes but also the total combined effect of all treatment processes (van der Helm, 2007).

Microbial monitoring with grab samples is performed at different stages in treatment to verify treatment efficacy (Hijnen et al., 2005). The time required for microbial analysis does not allow for direct control based on these measurements. A statistical analysis of these data provides insight into the efficacy and variability of the treatment processes (Smeets, 2008a). A software tool was developed by the Dutch water companies to automate this analysis for risk assessment (QMRA tool). So far, the QMRA studies showed that treatment processes in practice may be far less effective than would be expected based on experimental tests. Figure 5 shows the results of microbial analysis during treatment at a specific treatment site (Smeets et al., 2008b). Monitoring results were plotted in a complementary cumulative frequency distribution (CCDF), as the proportion of the samples

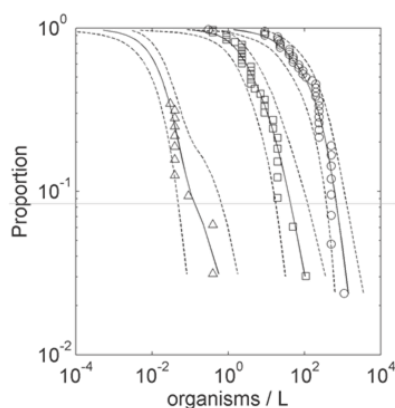


Figure 5. CCDF of monitored *Campylobacter* MPN concentrations (markers) and the medians (lines) and 95% CI (dashed lines) of the confidence interval for raw water (○), filtered water (□) and ozonated water (△) (Smeets et al., 2008b).

that exceeded a concentration. For example, 10% of the raw water samples exceeded a concentration of 900 MPN/l. Although the concentration varies over two log-units at each stage, Fig. 5 clearly shows that the treatment processes reduce the concentrations. The data analysis allows an estimation of the frequency and magnitude of high concentration events by extrapolating the distributions. It also provides an estimate of the distribution of concentrations below the detection limit after ozonation (shown by the part of the ozonation graph without markers).

4.3 Microbial drinking water monitoring

Dutch legislation requires sampling the produced drinking water for *E. coli*, *Clostridium perfringens*, coliforms and colony count on a weekly basis for groundwater, and daily for surface water. In practice, produced drinking water is tested for the absence of *E. coli* in a 100 to 1000 ml sample on a daily basis and some water companies take large volume samples of up to 1000 l on a monthly basis.

4.4 Microbial monitoring in distribution

The statutory monitoring of distribution systems is related to the capacity of the system. Per year 26 samples are required per 2000 m³/day. So, for a system of 10 000 m³/day, 130 samples are required, spread around the distribution network. Samples are taken from reservoirs and taps in homes or public buildings.

5 Management and communication

5.1 Corrective action and incidence response

Corrective action is generally very specific per drinking water system. The water companies have prepared emergency responses by procedures and emergency plans. The implementation of water safety plans is rapidly increasing in the Netherlands. Some general corrective actions are discussed here. Corrective actions for the source water include closing intake at moments of poor raw water quality and, in some cases, discharging the contamination from the intake reservoir back into the river. Process control during treatment and corrective action are related to the types of processes. General hazards such as the loss of power or flooding are covered by emergency power supplies and by partitioning the system in water-tight compartments.

Events in distribution pose the biggest threat to safe drinking water at the tap. In case of contamination, the affected area is contained by selectively closing valves while maintaining pressure in the system. The system is flushed where possible and chlorination can be applied to inactivate pathogens that could remain in the distribution system after flushing. Customers are informed, e.g., by door-to-door boiling notices, the internet and radio. Regional crisis centers are used when the event is of significant size. When water safety is verified by microbial sampling, the boiling notice is lifted (van Lieverloo et al., 2002). To prevent pressure losses, a water supply security plan was developed allowing other systems to partly take over water supply in an affected area.

5.2 Record keeping

The results of (microbial) water quality monitoring are collected by the water companies and laboratories in laboratory information systems (LIMS). The results are reported to the Netherlands Ministry of Housing, Spatial planning and the Environment (VROM) that reports yearly on the Dutch drinking water quality. Incidents are also reported to VROM. Water companies store automated monitoring data which can then be used for analysis, e.g., in QMRA. Most water companies have automated systems to record and store operational information (diaries) and failure reports. Periodically, these reports can be evaluated.

5.3 Verification of safe drinking water at the tap

5.3.1 Verification of microbial safety: health surveillance

Dutch outbreaks were summarized by van Lieverloo et al. (2007): "In the Netherlands, only three outbreaks have been reported for public drinking water systems since the end of World War II. The first of these occurred in 1962, when five cases of typhoid fever were reported in Amsterdam, probably as a result of a contamination of a drinking-water main with sewage (Gemeentewaterleidingen Amsterdam,

P. W. M. H. Smeets et al.: The Dutch secret

9

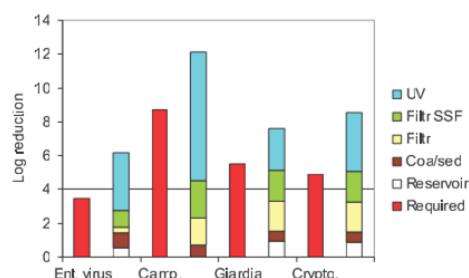


Figure 6. Required and verified log reduction of microbial hazards at a Dutch treatment system according to the legislative QMRA study.

1962). The second reported outbreak occurred in 1981 in Rotterdam, when sewage and wastewater from a foreign navy vessel were pumped into the distribution system via a drinking water supply valve for marine vessels. This event led to 609 reported cases, mainly of gastroenteritis. Pathogens isolated from stool samples included *Giardia* (8%), *Campylobacter* (5%), *Entamoeba histolytica* (2.3%), and *Salmonella* (1.2%) (Huisman and Nobel, 1981). In 2001, an outbreak of waterborne gastroenteritis occurred in the Netherlands as a result of an accidental cross-connection between the drinking water distribution system and a grey water distribution system, intended for flushing toilets, washing cloths and watering gardens in a new residential area (Raad voor de Transportveiligheid, 2003). This last outbreak led to a legal ban on secondary quality water supply systems in housing.

5.3.2 Verification of microbial safety: QMRA of surface water systems

Since 2001 the Dutch water companies have assessed their drinking water systems through QMRA. Figure 6 shows the summarized results of such a QMRA study for one drinking water system. Numbers were taken from a QMRA study of a surface water treatment plant. The risk was assessed for four index pathogens. *Cryptosporidium*, *Giardia* and Enteric viruses are explicitly mentioned in the drinking water decree. *Campylobacter* was not named explicitly, however it is considered a relevant index pathogen to cover risks from bacteria. The QMRA is summarized by pairs of bars in Fig. 6. The first bar shows the required log reduction by drinking water treatment based on the measured concentration of pathogens in source water and the health-based target. The second bar shows how the different treatment barriers contribute to achieving the required log reduction. The graph illustrates how the treatment barriers can have a different significance for the index pathogens. UV disinfection is essential for the

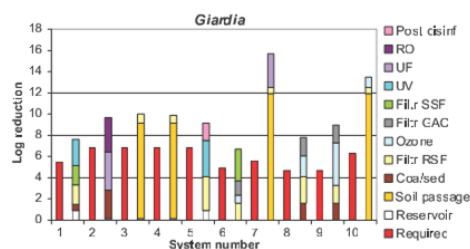


Figure 7. Required and verified log reduction of *Giardia* at 10 Dutch treatment systems according to the legislative QMRA studies.

reduction of *Campylobacter*, while it is not essential, but provides additional safety, against *Cryptosporidium*.

Treatment efficacies in Figs. 6 and 7 were based on microbial monitoring and surrogate monitoring at full-scale for the first treatment step (Hijnen et al., 2005). Pilot-scale experiments and process monitoring supported the estimated efficacy of the final treatment steps. For most systems, compliance with the 10^{-4} per person per year risk of infection could be proven for all index pathogens. In some cases the available information was insufficient to verify this level, and more research was conducted. The quantitative approach did provide several eye-openers for the water companies such as:

- The importance of contamination through “indirect flows” such as leakage near wells of an artificial infiltration site;
- The impact of short incidents on the average yearly risk, such as temporary failure of a dosing system;
- Suboptimal design of a process can have a strong impact on treatment efficacy;
- The importance of strict sampling procedures to prevent contamination of samples or the switching of samples since these errors can have a significant impact on the risk assessment outcome.

Given the outcomes of the QMRA studies, it could be stated that drinking water entering the distribution system is indeed safe and does not contain microbial pathogens at a level that would be of any health concern.

5.3.3 Verification of microbial safety: *E. coli* monitoring of produced drinking water

Van Lieverloo et al. (2007a) found that 0.01 to 0.09% of the yearly samples of finished drinking water from groundwater and surface water systems (over 10 000 samples per year) in the Netherlands in 2001, 2002 and 2003 were positive for *E. coli* or thermotolerant coliforms. A more detailed study

Table 3. Estimated mean infection risks per person per day when exposed to a mean concentration of thermotolerant coliforms of 1 CFU per 100 ml. For enteric viruses in soil or shallow groundwater, three selections of the available ratios were used. Culturable = only ratios of culturable enteric viruses to positive (>0) thermotolerant coliforms (coli44); positive data = ratios of positive enteric viruses (culturable and PCR) vs. coli44; all data=all ratios, including data points with one or both values below the detection limit (coli44 concentrations below detection limit were set to 50% of the detection limit) (van Lieverloo et al., 2007a).

	Assuming P/E ^a ratios from sewage	Assuming P/E ^a ratios from surface water	Assuming P/E ^a ratios from soil and shallow groundwater
<i>Cryptosporidium</i>	5.6×10^{-7}	3.2×10^{-4}	
<i>Giardia</i>	2.2×10^{-7}	2.7×10^{-5}	–
<i>Campylobacter</i>	4.0×10^{-3}	4.8×10^{-2}	–
Enteric viruses			
– culturable	6.3×10^{-7}	2.2×10^{-5}	6.8×10^{-3}
positive data			3.6×10^{-2}
all data			0.24

^a P/E ratio: pathogen to *E. coli* or thermotolerant coliform ratio

– no data on pathogen to *E. coli* or thermotolerant coliform ratio available.

of this data showed that only one surface water treatment system had found *E. coli* in treated water in 0.08% of 5840 samples between 1996 and 2003. For all Dutch surface water treatment plants, only 5 out of 17 277 finished drinking water samples were positive (0.03%).

5.3.4 Verification of microbial safety: *E. coli* monitoring in distribution

Van Lieverloo et al. (2007a) found that 0.1% of the yearly samples of distributed drinking water (over 33 000 samples per year) in the Netherlands in 2001, 2002 and 2003 were positive for *E. coli* or thermotolerant coliforms. They also showed that the statutory monitoring program was not very sensitive for detecting sewage ingress (2007b). The analysis of large volumes of drinking water in the Netherlands (44 samples of max. 2001, total 70621) for the presence of *E. coli* has shown that this indicator of fecal contamination is not present in detectable background concentrations, even when disinfectant residuals are absent (van Lieverloo et al., 2007a; Hamsch et al., 2007).

Van Lieverloo et al. (2006, 2007a) have applied QMRA to estimate the health risks that detections of *E. coli* in distributed water might indicate. They compared three assumptions for the ratio between pathogen and thermotolerant coliform (TTC) concentration related to the type of contamination that occurred. In sewage, the ratio of *Campylobacter*, *Cryptosporidium*, *Giardia* and enteric viruses to TTC was estimated on the order of 10^{-3} , 10^{-6} , 10^{-5} and 10^{-6} , respectively. In surface water this was 10^{-1} , 10^{-4} , 10^{-2} and 10^{-5} , and in soil and groundwater this was 10^{-2} to 1 for viruses.

Table 4. Typical water quality parameters in the Netherlands (de Moel, 2006).

	Unit	Surface water	Groundwater	Drinking water
Temperature	°	0–25	10–12	5–25
pH		6–8	6–8.5	7–8
Turb	NTU	0.1–100	–	<0.1
O ₂	mg/l	5–10	0–7	6–11
Fe ²⁺	mg/l		0–10	<0.1
DOC	mg/l	1–10	0–10	0–6

Table 3 shows the theoretical estimated daily risk of infection resulting from these assumptions. The results suggest that the risk from bacterial pathogens is high when TTC are detected.

5.3.5 Verification of microbial safety: *Legionella* monitoring

Currently, *Legionella* is the most significant known source of infection through drinking water in the Netherlands. For risk sites, such as swimming pools, hospitals, and residences for the elderly, a risk assessment and management plan (similar to Water Safety Plan) has to be drawn up and they are regularly monitored for the presence of *Legionella*. PCR methods, and currently also a new culture method (Veenendaal and van der Kooij, 2007), allow for a distinction between pathogenic *Legionella pneumophila* and non-pathogenic *Legionella* species, which form the majority of *Legionella*

P. W. M. H. Smeets et al.: The Dutch secret

11

found in drinking water installations (Wullings and van der Kooij, 2006). This allows for a *Legionella* risk management approach that is directed at pathogenic types rather than all *Legionella*.

5.3.6 Verification of consumer satisfaction and confidence

Consumer trust in the Netherlands' drinking water was surveyed in 2008 (VEWIN, 2008). Over 95% of the consumers fully trust the drinking water quality and its safety. The esthetic quality of drinking water was compared to that of bottled (mineral or spring) water. Tap water was rated among the best for taste and odor and was therefore preferred by many consumers (Consumentenbond, 1997). The incidental use of chlorine for disinfection after construction, maintenance or repair, however, does lead to an increase in complaints about water quality.

6 Discussion

The Dutch approach of distributing drinking water without a disinfectant residual has been disputed many times. The following arguments in favor of disinfection are discussed here:

- Provides an additional barrier in case treatment is ineffective;
- Provides a barrier in case of ingress in the distribution system;
- Prevents regrowth in the distribution system;
- Prevents outbreaks of disease due to chlorine residual.

6.1 Additional barrier

A disinfectant residual during distribution could mitigate the risks from inadequate drinking water treatment. Long contact times could result in significant CT values and thus in disinfection. Consumers living closer to the production site, however, would receive water that was less safe. Furthermore, the disinfection process is poorly monitored and controlled when it takes place during distribution. Therefore, it makes more sense to properly treat the water at the production site. Comparing *E. coli* monitoring results between countries with and without secondary disinfection does not indicate a significantly lower number of detections when disinfection is applied. Data from the UK indicated 0.02% of the (chlorinated) drinking water samples from the treatment plant were positive for *E. coli*, and in France up to 1% of the samples contained coliforms (no data on thermotolerant coliforms or *E. coli*) (van Lieverloo et al., 2007a). In the Netherlands approximately 0.01 to 0.09% of treated water samples were positive in the absence of disinfectant.

6.2 Barrier in case of ingress

In theory, residual chlorine could mitigate the effect of the ingress of contaminated water in the distribution system. However, it is likely that such water also contains a significant amount of organic compounds that would rapidly consume all residual chlorine. Microorganisms in the contaminated water could be shielded from chlorine by attachment to particulate matter. Moreover, several pathogens can withstand exposure to chlorine (*Cryptosporidium*) and would not be inactivated. *E. coli* would be inactivated before most pathogens, thus a contaminated situation could exist for a prolonged period of time without being detected. Therefore, the additional safety provided is very limited. *E. coli* monitoring data from the distribution network do not show a significantly lower number of detections in chlorinated systems. Data from the UK indicated 0.03 to 0.04% of the (chlorinated) drinking water samples from the distribution network were positive for *E. coli*, and in France 0.4 to 1.0% of the samples contained coliforms (no data on thermotolerant coliforms or *E. coli*) (van Lieverloo et al., 2007a). In the Netherlands 0.1% of the samples from distribution systems without disinfection were positive for *E. coli* or thermotolerant coliforms. This basic comparison indicates that the absence of chlorination does not lead directly to higher numbers of indicator bacteria.

6.3 Prevent regrowth

A comparative study of drinking water distribution in the United Kingdom and the Netherlands showed that a chlorine residual can be effective to control regrowth in the distribution system. However, this does lead to the formation of DBPs and taste and odor complaints. By controlling the biostability of the water, the Dutch approach has shown that regrowth can also be controlled without a disinfectant residual (van der Kooij et al., 2003b).

6.4 Outbreaks despite chlorination

The most direct verification of drinking water quality is by health surveillance. Severe contamination of drinking water can lead to a high number of ill consumers. When the number of ill people is high enough to be picked up by health surveillance, the event is referred to as an outbreak. Risebro et al. (2007) analyzed 61 outbreaks in the European Union to determine their cause. Many outbreaks had several causes, and for 27 outbreaks an event in distribution contributed to the outbreak. Backflow and cross-connections were the most frequent causes. Chlorine residual was not sufficient to prevent the outbreaks for these cases, nor for other significant causes (e.g., repairs, leakage and low pressure). Other causes of outbreaks could be assigned to events in treatment and source water. Also in these cases, disinfection during distribution was an insufficient barrier. In several cases the

www.drink-water-eng-sci.net/2/1/2009/

Drink. Water Eng. Sci., 2, 1–14, 2009

water supplier and inspectorate failed to recognize the need for adequate treatment like filtration (23 cases) or disinfection (12 cases). A water safety plan or QMRA would most likely have identified these needs. Similarly, contamination of source water was not recognized in many cases, leading to insufficient treatment. Most outbreaks occurred in systems that applied a chlorine residual during distribution. The extremely low number of outbreaks in the Netherlands indicates the safety of the Dutch approach.

7 Conclusions

In the Netherlands water is distributed without a disinfectant residual. This was achieved by taking the following approach:

1. Use the best sources available, in order of preference:
 - microbiologically safe groundwater,
 - surface water with soil passage such as artificial recharge or bank filtration,
 - direct treatment of surface water in a multiple barrier treatment;
2. Treat using physical processes such as sedimentation, filtration and UV-disinfection. If it cannot be avoided also oxidation by means of ozone or peroxide can be used, but chlorine is not used;
3. Prevent ingress of contamination during distribution;
4. Prevent microbial growth in the distribution system by production and distribution of biologically stable water and the use of biostable materials;
5. Monitor for timely detection of any failure of the system to prevent significant health consequences.

The success of this approach was achieved by the joint effort of the Dutch water companies to constantly improve the water supply systems. Their joint research program allows efficient research with a close relationship to drinking water practice. In combination with well-trained and qualified staff, the improvements can be rapidly implemented in practice. Also, specific circumstances in the Netherlands, such as population density, geography and economy, were favorable for these developments. As a consequence, outbreaks of disease through drinking water are extremely rare. The results are that over 95% of Dutch consumers drink water from the tap daily and consumer trust and satisfaction are very high. Other countries can adapt the Dutch approach to their own situation. Relatively simple and robust techniques like infiltration can be used in rural areas where land is cheap. New technologies with small footprints such as UF and H₂O₂-UV are more suitable for urban areas where land is scarce.

Drink. Water Eng. Sci., 2, 1–14, 2009

P. W. M. H. Smeets et al.: The Dutch secret

References

- Beuken, R.: Identification and description of hazards for water supply systems, in: A catalogue of today's hazards and possible future hazards, edited by: Beuken, R., Technau, 78 pp., 2008.
- Blokker, E. J. M., Vreeburg, J. H. G., Buchberger, S. G., and van Dijk, J. C.: Importance of demand modelling in network water quality models: a review, *Drink. Water Eng. Sci.*, 1, 27–38, 2008, <http://www.drink-water-eng-sci.net/1/27/2008/>.
- Consumentenbond: Drinkwater getest, 18–19, 1997.
- de Moel, P. J., Verberk, J. Q. J. C., van Dijk, J. C.: *Drinking water – principles and practices*, World Scientific Publishing, Singapore, 416 pp., 2006.
- den Boer, J. W., Yzerman, E., Schellekens, J., Bruin, J. P., van Leeuwen, W., Mooijman, K., Veenendaal, H., Bergmans, A. M. C., van der Zee, A. N., van Ketel, R. J., Tijssen, H., and Conyn-van Spaendonck, M. A. E.: Onderzoek naar de bron van een epidemie van Legionellose na de Westfriese Flora in Bovenkarspel (Research into the Legionellosis outbreak at Bovenkarspel), 83 pp., www.RIVM.nl, 2000.
- de Roda Husman, A. M. and Medema, G.: Inspectierichtlijn, Analyse microbiologische veiligheid drinkwater. VROM-inspectie, 34 pp., www.vrom.nl, 2004.
- DVGW: Verbände präsentieren "Branchenbild 2008", <http://www.dvgw.de>, last access: 9 March 2008.
- European Commission: Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption, European Commission, 1998.
- Gemeentewaterleidingen Amsterdam: Year report 1962 of the City of Amsterdam (in Dutch: Jaarverslag 1962), Gemeentewaterleidingen Amsterdam, Amsterdam, The Netherlands, 1962.
- Hamsch, B., Bockle, K., and van Lieverloo, J. H. M.: Incidence of faecal contaminations in chlorinated and non-chlorinated distribution systems of neighbouring European countries, *J. Water Health*, 5, 119–130, 2007.
- Hijnen, W. A., Beerendonk, E. F., and Medema, G. J.: Inactivation credit of UV radiation for viruses, bacteria and protozoan (oo)cysts in water: a review, *Water Res.*, 40(1), 3–22, 2006.
- Hijnen, W. A. M., Beerendonk, E., and Medema, G. J.: Elimination of microorganisms by drinking water treatment processes, 2nd Ed., Kiwa NV, Nieuwegein, The Netherlands, 101 pp., 2005.
- Hrudey, S. E. and Hrudey, E. J.: *Safe drinking water – Lessons learned from recent outbreaks in affluent nations*, IWA Publishing, London, 514 pp., 2004.
- Huisman, J. and Nobel, P. J.: Some epidemiological data on the effects of the faecal contamination of drinking-water in the Scheepvaartkwartier residential area in Rotterdam in March 1981 (in Dutch: Enkele epidemiologische gegevens over de gevolgen van de faecale drinkwaterverontreiniging in het Scheepvaartkwartier te Rotterdam in maart 1981, *H₂O* 14(26), 642–646, 1981.
- Kamp, P. C., Kruithof, J. C., and Folmer, H. C.: UF/RO treatment plant Heemskerk: from challenge to full scale application, *Desalination*, 131(1–3), 27–35, 2000.
- Kruithof, J. C., Kamp, P. C., and Martijn, B. J.: UV/H₂O₂ treatment: A practical solution for organic contaminant control and primary disinfection, *Ozone-Sci. Eng.*, 29(4), 273–280, 2007.
- Leunk, I. and Lieverloo, J. H. M. v.: *Hygiëne bij winmiddelen: hygiëncode drinkwater*, KIWA Water Research, Nieuwegein, The Netherlands, 32 pp., 2007.

www.drink-water-eng-sci.net/2/1/2009/

P. W. M. H. Smeets et al.: The Dutch secret

13

- Medema, G. J. and Stuyfzand, P.: Removal of micro-organisms upon basin recharge, deep well injection and river bank filtration in the Netherlands, in: Management of Aquifer Recharge for Sustainability Proceedings of the Fourth International Symposium on Artificial Recharge, edited by: Dillon, P. J., Balkema Press, Adelaide, Australia, 125–131, 2002.
- Medema, G. J., Hoogenboezem, W., van der Veer, A. J., Ketelaars, H. A., Hijnen, W. A., and Nobel, P. J.: Quantitative risk assessment of *Cryptosporidium* in surface water treatment. *Water Sci. Technol.*, 47(3), 241–247, 2003.
- Nilsson, P., Roser, D., Thorwaldsdotter, R., Pettersson, S., Davies, C., Signor, R., Bergstedt, O., and Ashbolt, N.: SCADA data and the quantification of hazardous events for QMRA, *J. Water Health*, 5, 99–105, 2007.
- Orlandini, E., Kruitthof, J. C., vanderHoek, J. P., Siebel, M. A., and Schippers, J. C.: Impact of ozonation on disinfection and formation of biodegradable organic matter and bromate, *J. Water Supply Res. T.*, 46(1), 20–30, 1997.
- Raad voor de Transportveiligheid: Contamination of Drinking-water in Leidsche Rijn (in Dutch: Verontreiniging drinkwater Leidsche Rijn), Raad voor de Transportveiligheid, The Hague, The Netherlands, 2003.
- Risebro, H. L., Doria, M. F., Andersson, Y., Medema, G., Osborn, K., Schlosser, O., and Hunter, P. R.: Fault tree analysis of the causes of waterborne outbreaks, *J. Water Health*, 5, 1–18, 2007.
- Rook, J. J.: Haloforms in drinking-water, *J. Am. Water Works Ass.*, 68(3), 168–172, 1976.
- Schets, F. A., van Wijnen, J. H., Schijven, J. F., Schoon, A., and Husman, A.: Monitoring of waterborne pathogens in surface waters in Amsterdam, The Netherlands, and the potential health risk associated with exposure to *Cryptosporidium* and *Giardia* in these waters, *Appl. Environ. Microbiol.*, 74(7), 2069–2078, 2008.
- Schijven, J. F., de Bruin, H. A. M., Hassanizadeh, S. M., and Husman, A. M. D.: Bacteriophages and clostridium spores as indicator organisms for removal of pathogens by passage through saturated dune sand, *Water Res.*, 37(9), 2186–2194, 2003.
- Schijven, J. F. and Hassanizadeh, S. M.: Virus removal by soil passage at field scale and groundwater protection of sandy aquifers, *Water Sci. Technol.*, 46(3), 123–129, 2002.
- Schijven, J. F., Hoogenboezem, W., Nobel, P. J., Medema, G. J., and Stalkebeek, A.: Reduction of FRNA-bacteriophages and faecal indicator bacteria by dune infiltration and estimation of sticking efficiencies, *Water Sci. Technol.*, 38(12), 127–131, 1998.
- Smeets, P. W. M. H.: Stochastic modelling of drinking water treatment in quantitative microbial risk assessment, Delft University of Technology, Delft, The Netherlands, 2008a.
- Smeets, P. W. M. H., Dullenont, Y. J., van Gelder, F. H. A. J. M., van Dijk, J. C., and Medema, G.: Improved methods for modelling drinking water treatment in quantitative microbial risk assessment; a case study of *Campylobacter* reduction by filtration and ozonation, *J. Water Health*, 6(3), 301–314, 2008b.
- Staatsblad: Besluit van 9 januari 2001 tot wijziging van het waterleidingbesluit in verband met de richtlijn betreffende de kwaliteit van voor menselijke consumptie bestemd water (Adaptation of Dutch drinking water legislation), Staatsblad van het Koninkrijk der Nederlanden, I 53, 2001.
- Theunissen, J. J. H., Nobel, P. J., van de Heide, R., de Bruin, H. A. M., van Veenendaal, D., Lodder, W. J., Schijven, J. F., Medema, G. J., and van der Kooij, D.: Enterovirusconcentraties bij innamepunten van oppervlaktewater voor de bereiding van drinkwater (Enterovirus concentrations at collection sites of surface waters for drinking water production) RIVM, Bilthoven, The Netherlands, Report no: 289202013, 18 pp., www.RIVM.nl, 1998.
- USEPA: LT2ESWTR, Long Term Second Enhanced Surface Water Treatment Rule. United States Environmental Protection Agency, Washington D.C., USA, 2006.
- van der Helm, A. W.: Integrated modeling of ozonation for optimization of drinking water treatment, Delft university of Technology, Delft, The Netherlands, 2007.
- van der Kooij, D., Veenendaal, H., and Scheffer, W. J. H.: Biofilm formation and multiplication of *Legionella* in a model warm water system with pipes of copper, stainless steel and cross-linked polyethylene, *Water Res.*, 39(13), 2789–2798, 2005.
- van der Kooij, D., van Lieverloo, J. H. M., Gale, P., and Stanfield, G.: Distributing drinking water with a low or zero disinfectant residual. Operational and biological aspect, UKWIR (Ed.), 2003a.
- van der Kooij, D.: Managing regrowth in drinking water distribution systems, in: Heterotrophic Plate Counts and Drinking-water Safety, edited by: Bartram, J., Cotruvo, J., Exner, M., Fricker, C., and Glasmacher, A., IWA Publishing, London, UK, 199–232, 2003b.
- van der Kooij, D., van Lieverloo, J. H. M., Schellart, J., and Hiemstra, P.: Maintaining quality without a disinfectant residual, *J. Am. Water Works Ass.*, 91(1), 55–64, 1999.
- van der Kooij, D., Hijnen, W. A. M., Drost, Y. C., Willemsen-Zwaagstra, J., Nobel, P. J., and Schellart, J. A.: Multiple barriers against micro-organisms in water treatment and distribution in the Netherlands, *Water Supply*, 13(2), 13–23, 1995.
- van der Kooij, D. and Veenendaal, H.: Assessment of the biofilm formation potential of synthetic materials in contact with drinking water during distribution, Miami, AWWA WQTC, 7–11 November 1993.
- van der Veer, A. J.: Bijdrage aan het inzicht rond de verwijdering van indicatororganismen en pathogenen door het zuiveringsproces (Reduction of indicator organisms by treatment processes), Internal memo., Evides. Rotterdam, The Netherlands, 19 pp., 2008.
- van der Wielen, P., Senden, W., and Medema, G.: Removal of Bacteriophages MS2 and Phi X174 during transport in a sandy anoxic aquifer, *Environ. Sci. Technol.*, 42(12), 4589–4594, 2008.
- van Lieverloo, J. H. M., Mesman, G. A. M., Bakker, G. L., Bagge-laar, P. K., Hamed, A., and Medema, G.: Probability of detecting and quantifying faecal contaminations of drinking water by periodically sampling for *E. coli*: A simulation model study, *Water Res.*, 41(19), 4299–4308, 2007b.
- van Lieverloo, J. H. M., Blokker, E. J. M., and Medema, G.: Quantitative microbial risk assessment of distributed drinking water using faecal indicator incidence and concentrations, *J. Water Health*, 5, 131–149, 2007a.
- van Lieverloo, J. H. M., Medema, G., and van der Kooij, D.: Risk assessment and risk management of faecal contamination in drinking water distributed without a disinfectant residual, *J. Water Supply Res. T.*, 55(1), 25–31, 2006.
- van Lieverloo, J. H. M., Mesman, G. A. M., Nobel, P. J., and Kroes-bergen, J.: Hygiëencode drinkwater: Opslag, transport en dis-

www.drink-water-eng-sci.net/2/1/2009/

Drink. Water Eng. Sci., 2, 1–14, 2009

14

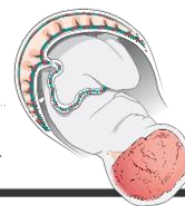
- tributie KIWA Water Research, Nieuwegein, 161 pp., the Netherlands, 2002.
- Veenendaal, H. and van der Kooij, D.: Een specifieke kwade methode voor *Legionella pneumophila*, 36-38, 2007.
- VEWIN: Water Supply Statistics 2004, VEWIN, Association of Dutch Water Companies, Rijswijk, The Netherlands, 2005.
- VEWIN: Groot vertrouwen in Nederlands kraanwater, <http://www.kraanwater.nu>, last access: 22 May 2008.
- Vreeburg, J.: Discolouration in drinking water systems: a particular approach, Delft University of Technology, Delft, The Netherlands, 2007.
- P. W. M. H. Smeets et al.: The Dutch secret
- Westrell, T., Bergstedt, O., Stenstrom, T. A., and Ashbolt, N. J.: A theoretical approach to assess microbial risks due to failures in drinking water systems, *Int J. Environ. Health Res.*, 13(2), 181-197, 2003.
- WHO: Guidelines for Drinking Water Quality, third edition World health organization, Geneva, Switzerland, 2004.
- Wullings, B. A. and van der Kooij, D.: Occurrence and genetic diversity of uncultured *Legionella* spp. in drinking water treated at temperatures below 15 degrees C., *Appl. Environ. Microbiol.*, 72(1), 157-166, 2006.

Appendix C - How do you like your tap water? Safe drinking water may not need to contain a residual disinfectant (2016)

INSIGHTS

Chiral catalysis with
ion pairs *p. 918*

Maternal infection and
brain development *p. 919* ▶



PERSPECTIVES

Getting a drink. Countries around the world differ in their approach to delivering safe drinking water to their citizens. The photo shows a young boy drinking from a waterfront tap in Guam, USA.

WATER INFRASTRUCTURE

How do you like your tap water?

Safe drinking water may not need to contain a residual disinfectant

By **Fernando Rosario-Ortiz**,^{1,2} **Joan Rose**,³
Vanessa Speight,⁴ **Urs von Gunten**,^{2,5}
Jerald Schnoor^{2,6}

The expectation that tap water is safe has been sorely tested by the recent events in Flint, Michigan, where lead contamination has caused a public health emergency (1). Apart from contamination with heavy metals and other harmful substances, a key concern is the control of microbial contamination. To prevent microbial growth and protect con-

sumers from pathogens from other sources, some countries, such as the United States, require the presence of residual disinfectant in drinking water. However, the presence of a disinfectant can lead to the formation of potentially carcinogenic disinfection by-products, issues with corrosion, and complaints based on the fact that people dislike the taste of disinfectants in their water (2). The experience of several European countries shows that such residual disinfectants are not necessary as long as other appropriate safeguards are in place.

From the early 1900s, the control of microbial waterborne pathogens, including *Salmonella typhi* and *Vibrio cholera*, led to a major reduction of waterborne diseases in the industrialized world. Filtration and chlorine disinfection reduced mortality in the United States substantially. But in 1974, chloroform, a probable human carcinogen formed by the reaction of chlorine with naturally occurring organic matter, was discovered in chlorinated drinking water. This discovery led to a debate about microbiological safety versus exposure to harm-

PHOTO: © ANTHONY ASALL/ART IN ALL OF US/COPIES

912 26 FEBRUARY 2016 • VOL 351 ISSUE 6276

sciencemag.org **SCIENCE**

Published by AAAS

Downloaded from on March 7, 2016

ful substances, and the overall effectiveness of disinfectants in the distribution system (3, 4). Furthermore, disinfectants can contribute to the leaching of lead from pipes in older distribution systems (5).

In some European countries (including the Netherlands, Switzerland, Austria, and Germany), drinking water can be delivered to consumers without a residual disinfectant as long as there is adequate source protection, treatment, and maintenance of the distribution system to prevent growth of pathogenic bacteria and additional contamination events (see the figure). If one of these elements is missing or improperly managed, disinfectants are added to the distribution system to maintain a residual and a margin of safety.

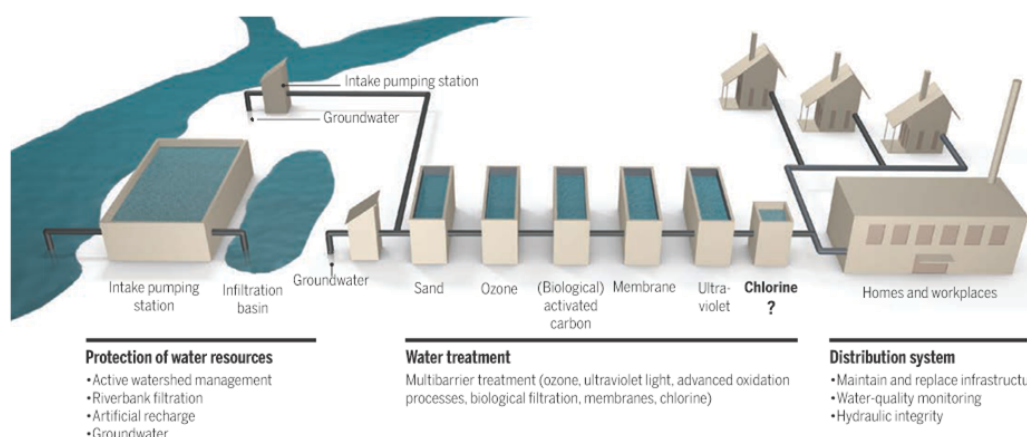
In the United States, unprotected surface waters often serve as source water. Treatment includes coagulation, sedimentation,

The choice between the two approaches is based on balancing the risk of microbial contamination, exposure to disinfection by-products and the taste and odor of chlorine. In western Europe, eliminating the use of disinfectant during distribution certainly limits the formation of disinfection byproducts, but does it result in increased incidence of disease? And in the United States, how effective is maintaining a disinfectant residual in reducing the frequency of disease outbreaks? Also, what level of investment is needed to limit problems associated with old infrastructure, such as in the case of Flint? Estimates have ranged from tens of millions to \$1.5 billion USD for Flint alone, and many other cities have similar infrastructure problems.

There is little direct evidence that disinfectant residuals have prevented drinking water-related disease outbreaks (including aerosol-associated cases of *Legionella*). A

contamination events. In the Netherlands, at least half of the water distribution pipes have been replaced since the 1970s; as a result, pipe networks are, on average, 33 to 37 years old (8). Although there are regional differences, an estimated 22% of the pipes in the United States are more than 50 years old; the average age of pipe at failure is 47 years, and only 43% of pipes are considered to be in good or excellent condition (9). In the United Kingdom, as much as 60% of pipe inventory does not have a record of pipe age, and estimates of average pipe age are on the order of 75 to 80 years overall (10). The use of a disinfectant residual is required in the United Kingdom (11).

Leakage is one measure of vulnerability of the distribution system. It is as low as 6% in the Netherlands, compared to 25% in the United Kingdom and 16% in the United States (8, 12, 13). Generally, United States distribu-



Multibarrier approach to drinking water safety. Filtering through soil and/or sand-gravel aquifers protects source waters from many microbial contaminants. Well-controlled water treatment includes particle removal, disinfection, biological filtration, and removal of natural organic matter. Water can then be distributed to consumers without addition of a disinfectant residual, but with the capacity to do so in the event of leaks or repairs.

filtration, and disinfection with specific contact times. The water is then distributed to the consumer with a residual chemical disinfectant (chlorine, chlorine dioxide, or chloramines) as a last barrier against contamination.

comparison of waterborne disease outbreak data from the Netherlands, United Kingdom, and United States shows that the Netherlands has a very low risk of waterborne disease. For these three countries, the rates of outbreaks per 1000 population in the last few years were 0.59, 2.03, and 2.79, respectively (6, 7). It seems that the presence of a disinfectant in the distribution system does not guarantee lower rates of disease outbreaks. However, small groundwater systems that are not chlorinated and are typically used intermittently have caused the most recent outbreaks in the United States (6).

An additional consideration in the debate about disinfectant residuals is the robustness of the infrastructure against

tion systems have longer retention times, which may promote microbial regrowth and disinfection byproduct formation. Maintenance of adequate pressure can provide a barrier against contaminant intrusion, but excessive water pressure, including transients, can lead to pipe breaks. In fact, drinking water infrastructure in the United States is in serious need of investment, including the replacement of lead-lined pipes or connections that are found in many households.

It should be noted that there are differences in drinking water costs between Europe and the United States. Water prices in some western European countries are on average two to three times higher than in the United States (14). It is clear that pricing

¹Department of Civil, Environmental and Architectural Engineering, University of Colorado, Boulder, CO 80309, USA. ²Eawag, Swiss Federal Institute of Aquatic Science and Technology, Dübendorf 8600, Switzerland. ³Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI 48824, USA. ⁴Department of Civil and Structural Engineering, University of Sheffield, Sheffield S10 2TN, UK. ⁵School of Architecture, Civil and Environmental Engineering (ENAC), Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland. ⁶Department of Civil and Environmental Engineering, University of Iowa, Iowa City, IO 52242, USA. E-mail: jerald-schnoor@uiowa.edu

INSIGHTS | PERSPECTIVES

for potable water also needs to be evaluated to determine how much should be spent to ensure microbiological safety and integrity of the distribution system.

To understand the long-term properties of water distribution systems, comparative data are needed on water quality, disease outbreaks, and distribution system failures from all approaches used to produce potable water. The water microbiome in distribution pipes and the definition of microbiologically safe water should be further investigated. In addition, improved monitoring and emerging sensor technology can provide warnings and alerts, helping to determine when to restore and protect extensive pipe assets. In the case of green water infrastructure, which includes water recycling, rainwater harvesting, and solar water heating, multiple barriers will be necessary to prevent opportunistic pathogens such as *Legionella*, which is higher in buildings with green water designs and longer water residence times (15). But the European evidence to date suggests that safe water can indeed be delivered without a disinfectant residual, as long as there are multiple barriers in operation. ■

REFERENCES AND NOTES

1. M. Harina-Altisha, J. LaChance, R. C. Sadler, A. Champney Schnepf, *Am. J. Public Health* **106**, 283 (2015).
2. E. D. Mackey et al., *Public perception of tap water chlorinous flavor* (Water Research Foundation, Denver, CO, 2005).
3. G. J. Medema, P. W. M. H. Smeets, E. J. M. Blokker, J. H. M. van Leeuwen, in *Microbial Growth in Drinking-Water Supplies: Problems, Causes, Control and Research Needs*, D. van der Kooij, P. van der Wielen, Eds., (IWA Publishing, London, 2014), pp. 95–125.
4. D. L. Sedlak, U. von Gunten, *Science* **331**, 42 (2011).
5. M. Edwards, S. Triantafyllidou, D. Best, *Environ. Sci. Technol.* **43**, 1618 (2009).
6. K. D. Beer et al., *Morb. Mortal. Wkly. Rep.* **64**, 842 (2015).
7. B. Guzman-Herrador et al., *Eurosurveillance* **20**, 21160 (2015).
8. Vewin, Dutch water sector, 2015; www.vewin.nl/english/dutch-water-sector.
9. S. Folkman, *Water main break rates in the USA and Canada: A comprehensive study* (Utah State University, Logan, UT, April 2012); see www.neng.usu.edu/mae/faculty/stevell/UtahStateWaterBreakRatesLR.pdf.
10. UKWIR, National sewer and water mains failure database, Issue 1.2, Project Report 08/RG/05/26, UK Water Industry Research, 2011.
11. DWI, The Water Supply Regulations, Statutory Instrument 2010 No. 991.
12. D. Carrington, "Most water companies not required to cut leaks before 2015 despite drought," *The Guardian*, 7 May 2012; www.theguardian.com/environment/2012/may/07/water-companies-cut-leaks-2015-drought.
13. USEPA, Water audits and water loss control for public water systems, Report 816-F-13-002 (2013).
14. N. Hrovatin, S. J. Bailey, *Utilities Policy* **10**, 13 (2001).
15. W. J. Rhoads, A. Pruden, M. A. Edwards, *Environ. Sci.: Water Research & Technology* **2**, 164 (2016).

ACKNOWLEDGMENTS

J.S. and F.R.-O. are grateful for sabbatical support from Eawag, Swiss Federal Institute of Aquatic Science and Technology, during work on this Perspective (F.R.-O. also received support from ETH Zurich). V.S. received support from EPSRC (EP/I029346/1). We thank J. Hering and R. Valentine for helpful suggestions on the manuscript.

10.1126/science.aaf0953

WATER

Saving freshwater from salts

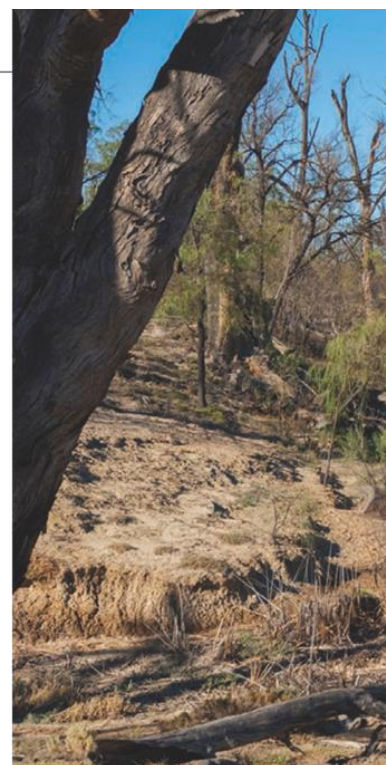
Ion-specific standards are needed to protect biodiversity

By M. Cañedo-Argüelles,^{1,2} C. P. Hawkins,³ B. J. Kefford,⁴ R. B. Schäfer,⁵ B. J. Dyack,⁴ S. Brucet,^{6,7} D. Buchwalter,⁷ J. Dunlop,⁸ O. Frör,⁹ J. Lazorchak,⁹ E. Coring,¹⁰ H. R. Fernandez,¹¹ W. Goodfellow,¹² A. L. González-Achem,¹¹ S. Hatfield-Dodds,¹³ B. K. Karimov,¹⁴ P. Mensah,¹⁵ J. R. Olson,¹⁶ C. Piscart,¹⁷ N. Prat,² S. Ponsá,¹ C.-J. Schulz,¹⁸ A. J. Timpano¹⁹

Many human activities—like agriculture and resource extraction—are increasing the total concentration of dissolved inorganic salts (i.e., salinity) in freshwaters. Increasing salinity can have adverse effects on human health (1); increase the costs of water treatment for human consumption; and damage infrastructure [e.g., amounting to \$700 million per year in the Border Rivers catchment, Australia (2)]. It can also reduce freshwater biodiversity (3); alter ecosystem functions (4); and affect economic well-being by altering ecosystem goods and services (e.g., fisheries collapse). Yet water-quality legislation and regulations that target salinity typically focus on drinking water and irrigation water, which does not automatically protect biodiversity.

For example, specific electrical conductivities (a proxy for salinity) of 2 mS/cm can be acceptable for drinking and irrigation but could extirpate many freshwater insect species (3). We argue that salinity standards for specific ions and ion mixtures, not just for total salinity, should be developed and legally enforced to protect freshwater life and ecosystem services. We identify barriers to setting such standards and recommend management guidelines.

Attempts to regulate salinization on the basis of ecological criteria can be found in the United States and Australia, where total salinity recommendations have been made (5, 6). Even these criteria are insufficient to protect freshwater life, because waters with the same total amount of salts but different ionic composition can have markedly different effects on freshwater fauna (7).



Canada and the United States are the only countries in the world that identify concentrations of a specific ion (chloride) above which freshwater life will be harmed (6, 8). Globally, concentrations of other ions (e.g., Mg^{2+} , HCO_3^-) remain free from regulation in spite of their potential toxicity (9).

The situation will likely worsen in the future, because predicted increase in demand for freshwater will reduce the capacity of surface waters to dilute salts, and increasing resource extraction and other human activities (10) will generate additional saline effluents and runoff. Climate change will likely exacerbate salinization by causing seawater intrusion in coastal freshwaters, increasing evaporation, and reducing precipitation in some regions (11).

SETTING STANDARDS. Scientific understanding of mechanisms by which increasing salinization damages freshwater ecosystems is in its infancy, which makes it challenging to develop and implement standards protective of freshwater life. Technical challenges are exacerbated by the fact that salinization risks perceived by the public and policy-makers may be much lower than those identified by scientists. In addition, although scientific input has been

PHOTO: © KERRY WHITWORTH/ALAMY/STOCK PHOTO

Appendix D – WaterNZ brochure

Many communities learnt this the hard way...

...let's learn from their mistakes.

We've got clean water from underground. Why do we need to treat it?

Location	Population	Year	Contaminant	Sick	Deaths
Walkerton, Canada	5,000	2000	dangerous E.coli	2500	7
Washington County Fair, USA	100,000	1999	E.coli and campylobacter	2500-5000	2
Alamosa, USA	8,900	2008	salmonella	1,300	1
Klarup, Denmark	4,000	1990	campylobacter	2,400	0
Saitama, Japan	15,000	1990	dangerous E.coli	186	2
Havelock North, New Zealand	15,000	2016	campylobacter	5000	3

All these outbreaks have been caused by untreated or inadequately treated groundwater.

water
NEW ZEALAND
The New Zealand Water & Wastewater Association
www.waternz.org.nz

THE QUESTIONING ENGINEER
thequestioningengineer.com

water
NEW ZEALAND
The New Zealand Water & Wastewater Association

Water quality has never been a problem before. Water is just H₂O right?

Not exactly. It can pick up tiny bugs on its way to your house. Let's take a closer look...

There can be millions of microbes in a single drop of clear water...

The ones that can make you sick are called "pathogens"

But not all bugs are pathogens

Pathogens come from what scientists call "faecal contamination"

It's the scientific way of saying "poo got in the water"

So you can get sick if human or animal poo gets into the water?

But the water here is clear, from deep underground!

Just because it's clear doesn't mean it's clean.

Let's look at how pathogens can get in

Even in very deep aquifers, old bores (and cracks from earthquakes) can let surface water into the groundwater

This is one of many possible paths for pathogens to get into drinking water

Or after treatment, birds and vermin can contaminate it.

Even if the reservoir is roofed (or the chamber is sealed) they may not be in perfect condition forever

Even close to your house, dirty water can enter pipes from cross-connections or return-flow from other properties.

Backflow prevention devices stop this happening, but not all properties have them installed.

So the more people and animals in our environment, the more chances of pathogens getting into the water!

That's why we have to start treating water... It's not just pure H₂O after all.

Appendix E – Assessing biological stability of drinking water without disinfectant residuals in a full scale water supply system (2010)

Assessing biological stability of drinking water without disinfectant residuals in a full-scale water supply system

Frederik Hammes, Cordula Berger, Oliver Köster and Thomas Egli

ABSTRACT

Biological stability refers to the inability of drinking water to support microbial growth. This phenomenon was studied in a full-scale drinking water treatment and distribution system of the city of Zürich (Switzerland). The system treats lake water with successive ozonation and biological filtration steps and distributes the water without any disinfectant residuals. Chemical and microbiological parameters, notably dissolved organic carbon (DOC), assimilable organic carbon (AOC), heterotrophic plate counts (HPC) and flow-cytometric total cell concentration (TCC), were measured over an 18-month period. We observed a direct correlation between changes in the TCC, DOC and AOC concentrations during treatment; an increase in cell concentration was always associated with a decrease in organic carbon. This pattern was, however, not discerned with the conventional HPC method. The treated water contained on average a TCC of 8.97×10^4 cells ml⁻¹, a DOC concentration of 0.78 mg l⁻¹ and an AOC concentration of 32 µg l⁻¹, and these parameters hardly changed in the distribution network, suggesting that the treated water had a high level of biological stability. This study highlights the descriptive value of alternative parameters such as flow-cytometric TCC for drinking water analysis, and pinpoints some of the key aspects regarding biological stability in drinking water without disinfectant residuals.

Key words | assimilable organic carbon (AOC), biological stability, drinking water, flow cytometry, total cell concentration (TCC)

Frederik Hammes (corresponding author)
Cordula Berger
Thomas Egli
Swiss Federal Institute of Aquatic Science and
Technology (Eawag),
Überlandstr. 133,
CH-8600, Dübendorf,
Switzerland
Tel.: +41 44 823 5350;
Fax: +41 44 823 5547
E-mail: frederik.hammes@eawag.ch;
www.eawag.ch

Cordula Berger
Oliver Köster
Zürich Water Supply (WVZ),
Hardhof 9, P.O. Box 1179,
CH-8021, Zürich,
Switzerland

Thomas Egli
Institute of Biogeochemistry and Pollutant
Dynamics, ETH Zürich,
CH-8092, Zürich,
Switzerland

INTRODUCTION

Uncontrolled and excessive growth of bacteria in drinking water can lead to a deterioration of the aesthetic water quality, such as the development of undesirable tastes and odours or visual turbidity (van der Kooij 2000; Hammes *et al.* 2008). It can also lead to process malfunctioning: for example, the clogging of point-of-use filters, bio-fouling of distribution pipes and bio-corrosion (Lee *et al.* 1980). In a worst-case scenario, regrowth can allow the proliferation of pathogenic bacteria (Vital *et al.* 2007, 2008), resulting in a hygienic risk to the consumer. One common approach to limit potential regrowth in drinking water is the addition of disinfectants such as chlorine, chlorine dioxide or monochloramine after the treatment train (LeChevallier

1999; van der Kooij 2000). While this has proven effectiveness, it is also known that some bacteria are resistant to chlorine (Barbeau *et al.* 2005), that there is a health risk associated with disinfection by-products, and that a negative consumer perception associated with the chlorinous taste exists (Hamsch 1999; Uhl & Schaule 2004). Some European countries—notably the Netherlands, Germany, Austria and Switzerland—have taken the approach of distributing high quality drinking water without the use of additional residual disinfectants (Hamsch 1999; van der Kooij *et al.* 1999). Drinking water treatment in such countries aims to limit microbial regrowth through limitation of the nutrients essential for growth, which is

doi: 10.2166/aqua.2010.052

usually (but not necessarily) organic carbon (Miettinen *et al.* 1997; van der Kooij 2000). Under these conditions, the need to understand and accurately monitor the general quality and microbial stability of drinking water has a high priority.

The inability of drinking water to support microbial proliferation is expressed as the biological stability (intermittently termed 'microbial stability', 'microbiological stability', 'biostability' or 'regrowth potential') of the water (Rittmann & Snoeyink 1984; Miettinen *et al.* 1997; van der Kooij 2000; Laurent *et al.* 2005). Simply viewed, biological stability is a function of biologically available organic carbon substrate, and 'instability' is measured as an increase of biomass and a concomitant decrease of substrate. However, different interpretations, coupled to preferences for different parameters and methods, are often applied to the concept of biological stability. For example, Rittmann & Snoeyink (1984) defined 'biostability' as the lack of microbial growth specifically in the absence of disinfectant residuals, while Srinivasan & Harrington (2007) modelled biological stability taking into account the presence of disinfectant residuals. Rittmann & Snoeyink (1984) and van der Kooij (2000) regarded both the quality of water, as well as the growth-supporting nature of the materials used for distribution, as important factors when considering biological stability. In this regard, van der Kooij (2000) highlighted assimilable organic carbon (AOC) and biofilm formation rate (BFR) as the key parameters of biological stability. Other groups have disregarded BFR and favoured biodegradable organic carbon (BDOC) as the most important water quality parameter for biological stability (Escobar & Randall 2001; Laurent *et al.* 2005). Moreover, depending on the composition of the water, inorganic nutrients (e.g. phosphate), rather than organic carbon, can also be growth limiting (Kernejš *et al.* 1995; Miettinen *et al.* 1997).

One of the more contentious aspects of biological stability is which microbiological parameter should be used to describe and monitor this phenomenon. The most used parameter is conventional heterotrophic plate counts (HPC) (Hambsch 1999; Carter *et al.* 2000; Müller *et al.* 2003; Srinivasan & Harrington 2007), even though it is well known that the HPC method does not accurately reflect total microbial abundance in drinking water (Yokomaku *et al.* 2000; Hoefel *et al.* 2003; Hammes *et al.* 2008).

Although the concept of biological stability is well known among drinking water microbiologists, little experimental and/or field data exist that underpin the main factors involved, and that adequately demonstrate the presence/absence of biological stability. One reason for this is the complexity of the problem: different countries often have completely different water qualities, different treatment technologies and employ different analytical tools for monitoring (Miettinen *et al.* 1997; van der Kooij 2000; Laurent *et al.* 2005). Another reason is a shortage of methods specifically describing the two main parameters: namely biologically available substrate (organic carbon) and microbial biomass. With regard to the latter, we have previously shown that flow-cytometric total cell concentration (TCC) is an important parameter for drinking water treatment and distribution systems, and that it holds more descriptive value for the treatment process than conventional HPC measurements (Hammes *et al.* 2008; Siebel *et al.* 2008).

Here we present a case study of a full-scale drinking water treatment system that treats surface water through successive ozonation and filtration steps and where the treated water is distributed without the addition of disinfectant residuals. Conventional drinking water parameters (HPC and DOC) were complemented with AOC and flow-cytometric TCC measurements during an 18-month sampling campaign. This study highlights the descriptive and complementary value of these two additional parameters for monitoring the microbial quality of drinking water, and it contributes to a better understanding of the fundamental principles of biological stability of drinking water.

MATERIALS AND METHODS

Preparation of AOC-free glassware

Borosilicate glass sampling bottles (250 ml) with glass caps were used for sampling, while 20 ml borosilicate glass vials were used for the AOC assays. Sterile, carbon-free glassware was prepared by heat-treatment (500°C, 6 h) as described previously (Greenberg *et al.* 1993; Hammes & Egli 2005). Teflon-coated caps for the AOC vials were cleaned of

residual AOC by soaking in warm persulfate (60°C, 1 h) as described previously (Greenberg *et al.* 1993).

Layout of the full-scale drinking water treatment plant and sampling sites

The full-scale plant that was monitored in this study produces roughly 50% of the drinking water for the city of Zürich (Switzerland) by treating surface water (Lake Zürich) through sequential ozonation and filtration steps. The treatment train consists of the following specific steps (Figure 1): (1) pre-ozonation (ozone dose $1.1 \text{ mg l}^{-1} \pm 25\%$, hydraulic contact time 50 min, ozone residual after contact time $c. 0.15 \text{ mg l}^{-1}$); (2) rapid sand filtration (RSF) (double layer filter with 50 cm of pumice stone and 80 cm of quartz sand; filter flow rate $1.4\text{--}4 \text{ m h}^{-1}$); (3) intermediate ozonation (ozone dose 0.5 mg l^{-1} , hydraulic contact time 26 min,

ozone residual after contact time 0.28 mg l^{-1}); (4) granular active carbon (GAC) filtration (double layer filter with 130 cm of GAC (Norit ROW 0.8 supra) and 40 cm of quartz sand, filter flow rate $4.6\text{--}13.2 \text{ m h}^{-1}$); (5) slow sand filtration (SSF) (quartz sand $\sim 65 \text{ cm}$, filter flow rate $0.18\text{--}0.52 \text{ m h}^{-1}$); and (6) reservoir in the plant. Samples (250 ml) were taken roughly every two weeks over an 18-month period. Samples were taken before and after each step and also of the raw water and of the water coming from the reservoir (Reservoir 1) in the plant after treatment. Two points in the distribution network (DN) were sampled. Both points received their water from the same reservoir (Reservoir 2) in the distribution network which is located 2.4 km from the treatment plant (Figure 1). Point DN-1 was located a further 1 km from this reservoir, and point DN-2 was located 6.1 km from the reservoir. Assuming a retention time of one day in the reservoir, the water collected at points DN-1 and DN-2 have hydraulic retention times in the network of 29 h and 43.5 h, respectively. All samples were collected in AOC-free glassware and transported in cold-storage containers to the laboratory, where they were processed within four hours of sampling.

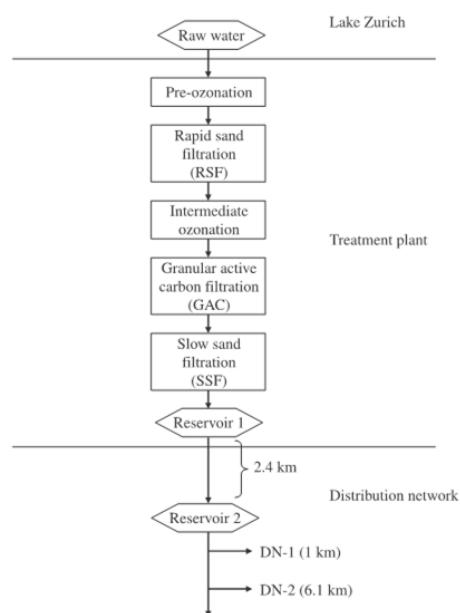


Figure 1 | Schematic presentation of the full-scale drinking water treatment plant (Lengg, Zürich, CH) monitored in this study. Water samples were taken during 18 months before and after every treatment step and, additionally, at two points in the distribution network (DN-1 and DN-2).

Total cell counts with fluorescence staining and flow cytometry (FCM)

Bacterial cells were stained with $10 \mu\text{l ml}^{-1}$ SYBR® Green I (1:100 dilution in dimethylsulfoxide (DMSO); Invitrogen) and incubated in the dark for at least 15 min before measurement. Where necessary, samples were diluted in filtered ($0.22 \mu\text{m}$; Millex®-GP, Millipore) bottled mineral water (Evian, France) just before analysis, so that the concentration measured with the flow cytometer was always less than $2 \times 10^5 \text{ cells ml}^{-1}$. Flow cytometry was performed using a PASIII flow cytometer (Partec, Hamburg, Germany) equipped with a 25 mW solid state laser (488 nm) and volumetric counting hardware. Green fluorescence was collected in the FL1 channel ($520 \pm 20 \text{ nm}$), red fluorescence (also resulting from SYBR® Green I) was collected in the FL3 channel ($> 615 \text{ nm}$) and all data were processed with the Flowmax software (Partec). Electronic gating with the software was used to separate positive signals from noise. All samples were collected as logarithmic (3 decades) signals and were triggered on the green

fluorescence channel (FL1). The standard instrument error on the FCM measurements was experimentally determined to be below 5%.

Conventional water parameters

The heterotrophic plate count (HPC) method was performed according to the Swiss guidelines for drinking water (SLMB 2000). In short: 1 ml of the water sample was transferred to a sterile Petri dish and mixed with about 15 ml plate count agar (PCA, Oxoid). The agar was kept at 46°C before plating. The samples were incubated at 30°C for 3 days. Phytoplankton in the lake water was measured as described in Müller *et al.* (2003). Dissolved organic carbon (DOC) (after 0.45 µm filtration) and particulate organic carbon (POC) (concentrated on a fibreglass filter (Whatman GF/F)) were measured on a Dimatoc 2000 TOC analyser equipped with a Dima 1000 Universal detector. Water temperature was measured on site during sampling.

Assimilable organic carbon (AOC)

AOC was determined with a batch growth assay as described previously (Hammes & Egli 2005; Vital *et al.* 2007). In short: the pasteurised and filtered water samples (15 ml) were inoculated with 10 µl (1×10^4 cells ml⁻¹ initial concentration in the assay) of a bacterial AOC test-inoculum. These suspensions were then incubated at 30°C for three days (until stationary phase was reached) and the resulting growth was measured with flow cytometry (see above). The AOC test-inoculum comprised autochthonous bacteria from the treatment plant that was studied, and was prepared as described previously (Vital *et al.* 2007). The same bacterial community was used for all AOC determinations throughout the present study. As standard quality control prior to use, the performance of this inoculum was compared with bacterial AOC test-inocula used in previous studies in our group (Hammes *et al.* 2006; Vital *et al.* 2007), using different types of natural surface water as media. A difference of less than 10% in the average AOC values was deemed acceptable for use. AOC (µg l⁻¹) is estimated from cell concentrations (cells ml⁻¹) using a theoretical conversion factor (Hammes *et al.* 2006)

(Equation 1). All assays were performed in triplicate. The detection limit of the method was 10 µg l⁻¹ and the average standard deviation was $\pm 10\%$.

$$\text{AOC}(\mu\text{g l}^{-1}) = \frac{\text{net grown cells (cells l}^{-1}\text{)}}{\text{conversion factor (}1 \times 10^7 \text{ cells } \mu\text{g}^{-1}\text{)}} \quad (1)$$

Data presentation and calculations

Given the large set of data collected over an 18-month period, we have opted to present the data as box plots to illustrate the spread of the data, and we have used the geometrical mean values of all data for the calculations.

RESULTS AND DISCUSSION

Water supply without the addition of disinfection residuals

The configuration of the Zürich drinking water treatment plant targets specifically the production of biologically stable, high quality drinking water that can be distributed without the need for additional disinfectants (Figure 1). The raw water (Lake Zürich) has a low organic carbon content (POC = 0.22 (± 0.1) mg l⁻¹; DOC = 1.3 (± 0.1) mg l⁻¹; AOC = 0.023 (± 0.017) mg l⁻¹), which means that relatively low ozone dosages are required during treatment. Two ozonation steps are meant to serve as double disinfective barriers against any malignant microorganisms that may enter the system through the raw water, while also oxidising possible micropollutants in the water (Müller *et al.* 2003; Von Gunten 2003). The ozonation also transforms stable, dissolved natural organic matter (NOM) molecules and organic particles (e.g. phytoplankton) into typical AOC molecules (Von Gunten 2003; Hammes *et al.* 2006, 2007). Three separate biological filtration processes (rapid sand filtration, granular activated carbon filtration and slow sand filtration) are the basis for the removal of organic carbon from the water. We have demonstrated previously that these filters are biologically active with high AOC removal capacity (Hammes *et al.* 2006; Velten *et al.* 2007). As a result, regrowth of microorganisms occurs in the biological filters together with the removal of biologically available

organic carbon. The combination of low organic carbon concentrations and an autochthonous community of natural planktonic bacteria stabilises the treated water, which is then distributed without additional disinfection.

General microbiological quality of the water in the treatment train

Flow-cytometric total cell concentration (TCC) was a sensible and reliable parameter to describe bacterial removal and regrowth during drinking water treatment and in the distribution system during the 18-month sampling campaign

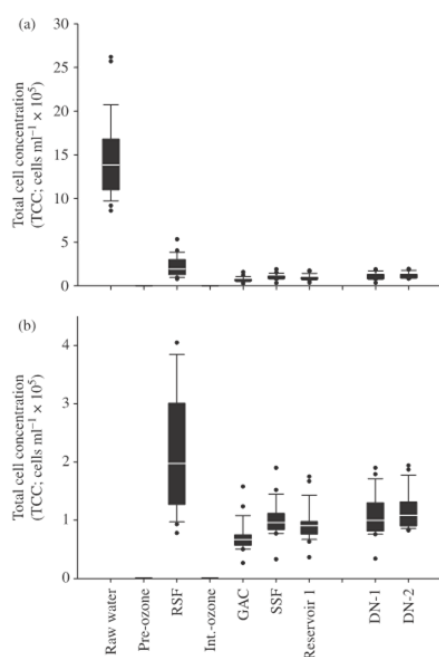


Figure 2 | (a) Changes in the total cell concentration during drinking water treatment over an 18-month period, as measured with flow cytometry; (b) detailed overview of the treatment process (excluding raw water data). RSF = rapid sand filtration; Int-ozone = intermediate ozonation; GAC = granular active carbon filtration; SSF = slow sand filtration; DN = distribution network; BDL = below detection limit (< 1,000 cells ml⁻¹). Black bars represent the 75 percentiles, whisker lines represent the 90 percentiles and black dots represent the outlier values. White bisects are the geometrical mean values for all data points, used for all calculations ($n = 27$).

(Figure 2(a), (b)). The raw water, originating from 30 m depth of lake Zürich, contained 1.38×10^6 cells ml⁻¹ (geometrical mean; $n = 27$), which is typical for natural surface water in the region (Wang *et al.* 2007; Hammes *et al.* 2008). Twice during the treatment, all planktonic bacteria in the water are completely destroyed by ozonation to levels below the flow-cytometric quantification limit (Figures 1 and 2; see also Hammes *et al.* 2008), safeguarding the system against any potential incursion of pathogenic bacteria in the raw water. Subsequently, benign heterotrophic microbial communities regrow in the various biological filters, feeding on the organic carbon originating from the ozonated raw water, and thus filling the niche that was created with the ozonation process. As a result, the treated water (Figure 2, 'reservoir') contained a stable planktonic community of 8.97×10^4 cells ml⁻¹, which is a typical value for public drinking water and bottled water where residual disinfectants are not used (Hammes *et al.* 2008; Berney *et al.* 2008). Notably, fewer cells are produced during biofiltration after each ozonation step (1.98×10^5 cells ml⁻¹ after RSF; 0.7×10^5 cells ml⁻¹ after GAC). This can be attributed to changes in the organic carbon quantity and quality in the influent of each filtration step (discussed below).

HPC is the conventional parameter for characterising microbial numbers in drinking water (Carter *et al.* 2000; Allen *et al.* 2004; Uhl & Schaule 2004), and as such, variations of the HPC method are usually included in guidelines or legislation for drinking water treatment (Hamsch 1999; SLMB 2000; Uhl & Schaule 2004). HPC (30°C; 3 days) values for the Zürich treatment and distribution system were typically low (< 10 cfu ml⁻¹) and meet the local water quality criteria (Figure 3). Note that there was no evident correlation between the TCC and the HPC in the treatment train (Figures 2 and 3(a)), which concurs with numerous previous reports that only a small percentage of planktonic bacteria in drinking water is in fact culturable (Yokomaku *et al.* 2000; Berney *et al.* 2008; Hammes *et al.* 2008). Also, the HPC values did not accurately reflect the main microbiological events (i.e. die-off through ozonation and regrowth during biological filtration) that occurred in the treatment train (Figure 3(b)). As a result, all calculations below were done with the TCC data. It is noted that different HPC methods often give different results, specifically, R2A agar and lower incubation temperatures giving higher HPC values (Leclerc & Moreau

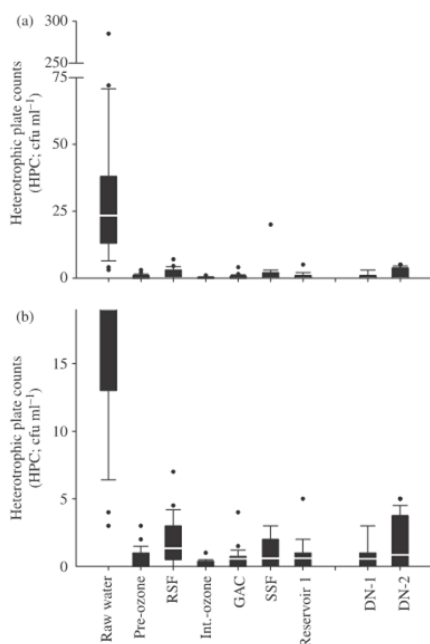


Figure 3 | (a) Changes in the heterotrophic plate counts (HPC) during drinking water treatment over an 18-month period; (b) detailed overview of the treatment process (excluding raw water data). See Figure 2 for key to abbreviations and scale ($n = 27$).

2002; Uhl & Schaule 2004; Berney *et al.* 2008). For example, in a previous study of the same treatment plant, Müller *et al.* (2003) reported significantly higher HPC values with a lower incubation temperature (20°C/3 d) for both the raw water and the effluent of the rapid sand filter, compared with the results from the present study. Whether these differences are due to environmental changes in the raw water, or a result of different HPC methods that were used, is not evident. In the present study we have followed specifically the HPC method as set out in the Swiss guidelines for drinking water analysis (SLMB 2000). However, irrespective of the HPC method applied, the data suggest that rapid FCM analysis of the TCC in the water is more useful than HPC analysis for assessment of the general microbial quality of drinking water during treatment.

Organic carbon parameters

The increase of bacteria (regrowth) during different filtration steps, as measured with the total cell concentration (Figure 2), was equally reflected in simultaneous decreases observed in two main organic carbon parameters (DOC and AOC) (Figures 4 and 5). Changes in the DOC concentration were reflective of the different treatment processes (Figure 4). The raw water had a low DOC concentration (1.3 mg l⁻¹) and ozonation did not alter this concentration. With the applied ozone dosage one would not expect complete mineralisation to carbon dioxide, but merely a conversion of the carbon towards AOC-like molecules such as organic acids and aldehydes (Von Gunten 2003; Hammes *et al.* 2006). Therefore, the DOC concentration before and after ozonation was identical (Figure 4), while the AOC concentration changed significantly during this step (Figure 5). The filtration steps all resulted in the partial removal of DOC. Rapid sand filtration (empty filter bed contact time: 0.92–0.32 h) removed on average 248 µg l⁻¹ (19%), granular activated carbon filtration (empty filter bed contact time: 0.37–0.13 h) removed 102 µg l⁻¹ (10%) and slow sand filtration (empty filter bed contact time: 3.61–1.26 h) removed a further 164 µg l⁻¹ (13%). On average, much more DOC than AOC was removed in the entire treatment (515 µg l⁻¹ DOC vs. 93 µg l⁻¹ AOC). Although this depended on the time of year

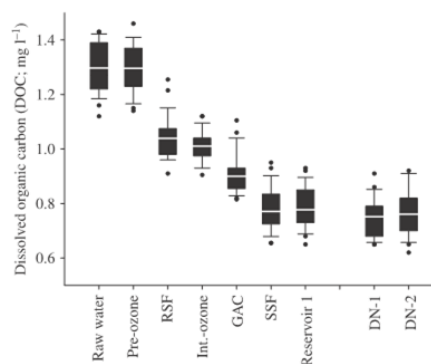


Figure 4 | Box plot of changes in the DOC concentration during drinking water treatment. Data were collected over an 18-month period. See Figure 2 for key to abbreviations and scale ($n = 27$).

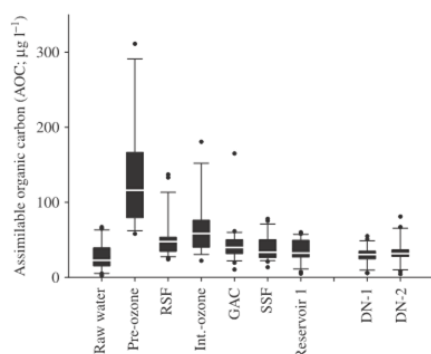


Figure 5 | Box plot of changes in the AOC concentration during drinking water treatment. Data were collected over an 18-month period. See Figure 2 for key to abbreviations and scale ($n = 27$).

and other factors, typically only 18% of the removed DOC was measured as AOC. We have often observed that when planktonic bacteria grow in natural water, nearly all consumed DOC can be measured as AOC, but when the same water is treated with sand or GAC filters, the DOC reduction is significantly higher than the AOC change (unpublished data). One explanation for this phenomenon might be sorption to the particle surfaces and slow turnover of high molecular weight DOC compounds (e.g. polymers) in the sand filters and GAC reactors.

Although less AOC than DOC was removed, the changes in AOC concentrations showed an expected descriptive pattern of the treatment train (Figure 5). The AOC concentration in the raw water was low ($23 \mu\text{g l}^{-1}$), as is expected for a stable natural water system. Pre-ozone resulted in an increase of the AOC concentration (mean = $113 \mu\text{g l}^{-1}$), but the amount of AOC that was formed during ozonation varied seasonally (range: $50\text{--}311 \mu\text{g l}^{-1}$), with typically more AOC formed during colder raw water temperature periods (data not shown). This corroborates a previous observation of higher AOC concentrations after ozonation in winter months (Müller *et al.* 2003). However, it was not evident from the data whether the increased AOC concentrations could be ascribed directly to an influence of temperature, or rather to seasonal changes in the raw water composition (e.g. algal blooms). We have previously shown that ozonation of

filtered ($0.22 \mu\text{m}$) water from lake Zürich forms predominantly organic acids (acetate, oxalate and pyruvate) which are typical AOC molecules (Hammes *et al.* 2006), while the ozonation of phytoplankton in the raw water could have contributed to the AOC formation as well (Müller *et al.* 2003; Hammes *et al.* 2007). However, in the current study, no specific correlation was found between the phytoplankton concentration in the raw water and the concentration of AOC that was formed (data not shown). Rapid sand filtration resulted in the average removal of 59% of the total AOC (down to a mean value of $46 \mu\text{g l}^{-1}$), which underlined the biological nature of this treatment step, as was also demonstrated previously (Müller *et al.* 2003; Hammes *et al.* 2006). Intermediate ozonation resulted in only little additional AOC formation (from $46 \mu\text{g l}^{-1}$ to $58 \mu\text{g l}^{-1}$), probably because the first ozonation step already oxidised most of the easily oxidisable carbon. Subsequently, the granular active carbon filter and the slow sand filter removed a further 31% and 6%, respectively, of the remaining AOC from the water, resulting in a final AOC concentration of $32 \mu\text{g l}^{-1}$. The AOC concentrations reported in the present study are slightly higher than those reported in a previous study of the same treatment plant, but follow the same overall trend (Müller *et al.* 2003). The higher values can be attributed to methodological differences in the measurement of AOC from the two studies.

A correlation between cell growth and carbon removal

It is important to note that in all cases where cell growth was observed (thus a biomass increase), it coincided with a decrease in both AOC and DOC concentrations (thus a substrate decrease) (Figures 2, 4 and 5). In the filtrate of the rapid sand filter, an average cell concentration of $1.98 \times 10^5 \text{ cells ml}^{-1}$ was recorded (Figure 2), which coincided with the removal of $248 \mu\text{g l}^{-1}$ DOC (Figure 4) and $67 \mu\text{g l}^{-1}$ AOC (Figure 5). Based on the DOC values, this constitutes a numerical cell yield of $7.98 \times 10^5 \text{ cells } \mu\text{g-C}^{-1}$ (assuming steady state conditions of the biofilm biomass on the filter media and not considering any potential losses through the filter backwashing process). The yield from the granular activated carbon filter (also backwashed) was lower ($6.57 \times 10^5 \text{ cells } \mu\text{g-C}^{-1}$) and from the slow sand filter it was considerably lower ($1.77 \times 10^5 \text{ cells } \mu\text{g-C}^{-1}$).

The lower yields in the two later reactors can be ascribed to a probable reduction in the quality of the DOC, as easy utilisable AOC molecules would be removed first in the rapid sand filter. This is corroborated by the percentage of AOC that was removed as DOC in the various reactors (RSF = 27%; GAC filter = 18%; SSF = 3%). However, the data used for these calculations are only the bulk measurements before and after each reactor, and do not take into account potential turnover in the reactors, that is, that some cells might also be retained or even grazed by higher organisms in the slow sand filter. This would naturally alter the precise yield values, particularly for the slow sand filter. However, for practical reasons this aspect was not considered in this study.

It is interesting to note that, for the same treatment plant, Müller *et al.* (2003) detected only significant regrowth in the rapid sand filters, and only in the winter periods. These authors furthermore suggested that an AOC concentration of $100 \mu\text{g l}^{-1}$ is required to stimulate significant regrowth (Müller *et al.* 2003). Similarly, Carter *et al.* (2000) did not detect a clear correlation between organic carbon (e.g. AOC) and bacterial concentrations (as HPC) in distributed drinking water. Although this seems contradictory to the present study, it is important to note that the conclusions from both aforementioned studies (Carter *et al.* 2000; Müller *et al.* 2003) were based on HPC values and not on total cell concentrations. The clear correlation between changes in total cell concentrations and AOC and DOC concentrations in the present study is further evidence that the total cell concentration is one of the most accurate microbiological parameters with which changes during drinking water treatment can be described (Hammes *et al.* 2008).

Biological stability of treated water

Total DOC removal during treatment was 40% and resulted in a final concentration of $780 \mu\text{g l}^{-1}$ in the treated water. Throughout the 18 months of this study, hardly any decrease in the DOC concentration of the treated water was observed in the distribution system ($20\text{--}30 \mu\text{g l}^{-1}$; Figure 4), and likewise for the AOC concentrations ($2\text{--}4 \mu\text{g l}^{-1}$; Figure 5). A paired student t-test suggested that these minute decreases were significant at point DN-1 but not at point DN-2 (Table 1). Notably, van der Kooij (2000) proposed an AOC concentration of less than $10 \mu\text{g l}^{-1}$ for biological stability of non-chlorinated water. We have shown previously that the AOC method used in this study typically presented higher values than the method used by van der Kooij (2000) (Hammes & Egli 2005), which may explain the difference between the proposed value ($10 \mu\text{g l}^{-1}$) and the observed value ($32 \mu\text{g l}^{-1}$). The TCC showed a small but significant increase (11–18%) during distribution (Figure 2(b); Table 1). Interestingly, if one applies the yield factors derived from the treatment train data ($2\text{--}8 \times 10^5$ cells $\mu\text{g C}^{-1}$; above), the observed DOC decrease ($20\text{--}30 \mu\text{g l}^{-1}$) accounts for about $0.5\text{--}2 \times 10^4$ cells ml^{-1} , which would be enough to explain the 11–18% TCC increase (Table 1). This suggests that TCC is a parameter that can be used as a sensitive indicator for biological stability and growth in treatment and distribution systems.

Higher water temperatures could have promoted bacterial regrowth during distribution (Kerneis *et al.* 1995; Uhl & Schaule 2004). The temperature in the treatment plant varied only slightly during the sampling period (range: $3.9\text{--}7.1^\circ\text{C}$), but the distribution network was subject to significantly higher temperatures and larger fluctuations in

Table 1 | Geometrical mean values ($n = 27$) for the treated water (reservoir) and distribution network (DN) sampling points during the entire sampling period (18 months). Significant variations between the distribution network values and the treated water are indicated

	Reservoir	DN-1	DN-2
pH	8.04	8.04	8.04
Temperature ($^\circ\text{C}$)	6.15	8.37*	8.80*
DOC (mg l^{-1})	0.78	0.75*	0.76
AOC ($\mu\text{g l}^{-1}$)	32	28*	30
HPC (cfu ml^{-1})	1	1	1
TCC (cells ml^{-1})	8.97×10^4	1.00×10^5	1.09×10^5 *

* $P < 0.05$ (paired student t-test).

temperature (range: 3.6–17.7°C), particularly during the summer periods. However, no correlation was found between increased temperatures and increased cell concentrations (data not shown). There are no existing guidelines for biological stability with respect to TCC. If biological stability of drinking water is interpreted in the strictest sense as the absence of any change in the concentrations of either growth-supporting nutrients or biomass, a certain level of instability was measured (Table 1). However, the minor change in TCC (11–18%), and the fact that the organic carbon concentrations hardly changed during distribution, suggests in our opinion that the distributed water displayed a high level of biological stability.

CONCLUSIONS

- Two alternative methods for the monitoring and characterisation of drinking water have been tested: namely, flow-cytometric total cell concentration (TCC) and assimilable organic carbon (AOC). These two methods have been shown to be useful for describing microbiological changes during treatment in a full-scale water supply system.
- From this study we conclude that the cultivation-independent parameter, TCC, allows a more quantitative description of biological stability than conventional heterotrophic plate counts.
- During the 18-month sampling campaign, the treated drinking water had an average TCC of 8.97×10^4 cells ml⁻¹, DOC of 0.78 mg l⁻¹ and AOC of 32 µg l⁻¹. These parameters changed only minutely during distribution, suggesting that the treated water had a high level of biological stability.
- Monitoring of straightforward parameters for substrate (DOC) decrease and biomass (TCC) increase allows a basic understanding of growth and biological stability in drinking water treatment and distribution systems.

ACKNOWLEDGEMENTS

The authors acknowledge financial assistance from the Zürich Waterworks (WVZ), the Eawag Wave21 project and the 6th EU framework project TECHNEAU (018320).

REFERENCES

- Allen, M. J., Edberg, S. C. & Reasoner, D. J. 2004 Heterotrophic plate count bacteria—what is their significance in drinking water? *Int. J. Food Microbiol.* **92**, 265–274.
- Barbeau, B., Desjardins, R., Mysore, C. & Prévost, M. 2005 Impacts of water quality on chlorine and chlorine dioxide efficacy in natural waters. *Water Res.* **39**, 2024–2033.
- Berney, M., Vital, M., Hülshoff, I., Weilenmann, H.-U., Egli, T. & Hammes, F. 2008 Rapid, cultivation-independent assessment of microbial viability in drinking water. *Water Res.* **42**(14), 4010–4018.
- Carter, J. T., Rice, E. W., Buchberger, S. G. & Lee, Y. 2000 Relationships between levels of heterotrophic bacteria and water quality parameters in a drinking water distribution system. *Water Res.* **34**, 1495–1502.
- Escobar, I. C. & Randall, A. A. 2001 Assimilable organic carbon (AOC) and biodegradable dissolved organic carbon (BDOC): complimentary measurements. *Water Res.* **35**, 4444–4454.
- Greenberg, A. E., Clesceri, L. S. & Eaton, A. D. (Eds) 1995 *Standard Methods For The Examination of Water and Wastewater*, 18th Edition. American Public Health Association, Washington, DC.
- Hamsch, B. 1999 Distributing groundwater without a disinfectant residual. *J. Am. Water Works Assoc.* **91**, 81–85.
- Hammes, F. A. & Egli, T. 2005 New method for assimilable organic carbon determination using flow-cytometric enumeration and a natural microbial consortium as inoculum. *Environ. Sci. Technol.* **39**, 3289–3294.
- Hammes, F., Salhi, E., Köster, O., Kaiser, H. P., Egli, T. & von Gunten, U. 2006 Mechanistic and kinetic evaluation of organic disinfection by-product and assimilable organic carbon (AOC) formation during the ozonation of drinking water. *Water Res.* **40**, 2275–2286.
- Hammes, F. A., Meylan, S., Salhi, E., Köster, O., Egli, T. & von Gunten, U. 2007 Formation of assimilable organic carbon (AOC) and specific natural organic matter (NOM) fractions during ozonation of phytoplankton. *Water Res.* **41**, 1447–1454.
- Hammes, F., Berney, M., Wang, Y., Vital, M., Köster, O. & Egli, T. 2008 Total bacterial cell counts as a descriptive microbiological parameter for drinking water treatment process. *Water Res.* **42**, 269–277.
- Hoefel, D., Grooby, W. L., Monis, P. T., Andrews, S. & Saint, C. P. 2003 Enumeration of water-borne bacteria using viability assays and flow cytometry: a comparison to culture-based techniques. *J. Microbiol. Methods* **55**, 585–597.
- Kerneis, A., Nakache, F., Deguin, A. & Feinberg, M. 1995 The effects of water residence time on the biological quality in a distribution network. *Water Res.* **29**, 1719–1727.
- Laurent, P., Barbeau, B. & Servais, P. 2005 Evaluating the impacts of treatment modifications on regrowth potential in distribution systems: a new screening procedure using water quality modelling. *Urban Water J.* **2**, 81–92.

- LeChevallier, M. W. 1999 The case for maintaining a disinfectant residual. *J. Am. Water Works Assoc.* **91**, 86–94.
- Leclerc, H. & Moreau, M. 2002 Microbiological safety of natural mineral water. *FEMS Microbiol. Rev.* **26**, 207–222.
- Lee, S. H., O'Connor, T. L. & Banerji, S. K. 1980 Biologically mediated corrosion and its effects on water quality in distribution systems. *J. Am. Water Works Assoc.* **72**, 636–645.
- Miettinen, I. T., Vartiainen, T. & Martikainen, P. 1997 Phosphorus and bacterial growth in drinking water. *Appl. Environ. Microbiol.* **63**, 3242–3245.
- Müller, K. C., Forster, R., Gammeter, S. & Hambsch, B. 2005 Influence of ozonated cyanobacteria on bacterial growth in rapid sand filters. *J. Water Supply Res. Technol. AQUA* **52**(5), 333–340.
- Rittmann, B. E. & Snoeyink, V. L. 1984 Achieving biologically stable drinking water. *J. Am. Water Works Assoc.* **76**, 106–114.
- Siebel, E., Wang, Y., Egli, T. & Hammes, F. 2008 Correlations between total cell concentration, total adenosine tri-phosphate concentration and heterotrophic plate counts during microbial monitoring of drinking water. *Drinking Water Eng. Sci.* **1**, 71–86.
- SLMB (Schweizerisches Lebensmittelhandbuch) 2000 EN/ISO 4833: Mikrobiologie von Lebensmitteln und Futtermitteln—Horizontales Verfahren für die Zählung von Mikroorganismen—Koloniezählverfahren bei 30 Grad Celsius.
- Srinivasan, S. & Harrington, G. W. 2007 Biostability analysis of drinking water distribution systems. *Water Res.* **41**, 2127–2138.
- Uhl, W. & Schaule, G. 2004 Establishment of HPC (R2A) for regrowth control in non-chlorinated distribution systems. *Int. J. Food Microbiol.* **92**, 317–325.
- van der Kooij, D. 2000 Biological stability: a multidimensional quality aspect of treated water. *Water Air, Soil Pollut.* **123**, 25–34.
- van der Kooij, D., Van Lieverloo, J. H. M., Schellart, J. A. & Hiemstra, P. 1999 Distributing drinking water without disinfectant: highest achievement or height of folly? *J. Water Supply Res. Technol. AQUA* **48**, 31–37.
- Velten, S., Hammes, F., Boller, M. & Egli, T. 2007 Rapid and direct estimation of active biomass on granular-activated carbon through adenosine tri-phosphate (ATP) determination. *Water Res.* **41**, 1973–1983.
- Vital, M., Fuchslin, H. P., Hammes, F. & Egli, T. 2007 Growth of *Vibrio cholerae* O1 Ogawa Eltor in freshwater. *Microbiology* **153**, 1993–2001.
- Vital, M., Hammes, F. & Egli, T. 2008 *E. coli* O157 can grow in natural freshwater at low carbon concentrations. *Environ. Microbiol.* **10**, 2387–2396.
- Von Gunten, U. 2003 Ozonation of drinking water. Part I. Oxidation kinetics and product formation. *Water Res.* **37**, 1443–1467.
- Wang, Y., Hammes, F., Boon, N. & Egli, T. 2007 Micro-filterable bacteria are omnipresent in natural freshwater. *Environ. Sci. Technol.* **41**, 7080–7086.
- Yokomaku, D., Yamaguchi, N. & Nasu, M. 2000 Improved direct viable count procedure for quantitative estimation of bacterial viability in freshwater environments. *Appl. Environ. Microbiol.* **66**, 5544–5548.

First received 7 June 2009; accepted in revised form 15 October 2009

Appendix F – Biological instability in a chlorinated drinking water distribution network (2014)



Biological Instability in a Chlorinated Drinking Water Distribution Network

Alina Nescerecka^{1,2}, Janis Rubulis¹, Marius Vital², Talis Juhna¹, Frederik Hammes^{2*}

¹ Department of Water Engineering and Technology, Riga Technical University, Riga, Latvia, ² Department of Environmental Microbiology, Eawag, Swiss Federal Institute for Aquatic Science and Technology, Dübendorf, Switzerland

Abstract

The purpose of a drinking water distribution system is to deliver drinking water to the consumer, preferably with the same quality as when it left the treatment plant. In this context, the maintenance of good microbiological quality is often referred to as biological stability, and the addition of sufficient chlorine residuals is regarded as one way to achieve this. The full-scale drinking water distribution system of Riga (Latvia) was investigated with respect to biological stability in chlorinated drinking water. Flow cytometric (FCM) intact cell concentrations, intracellular adenosine tri-phosphate (ATP), heterotrophic plate counts and residual chlorine measurements were performed to evaluate the drinking water quality and stability at 49 sampling points throughout the distribution network. Cell viability methods were compared and the importance of extracellular ATP measurements was examined as well. FCM intact cell concentrations varied from 5×10^3 cells mL⁻¹ to 4.66×10^5 cells mL⁻¹ in the network. While this parameter did not exceed 2.1×10^4 cells mL⁻¹ in the effluent from any water treatment plant, 50% of all the network samples contained more than 1.06×10^5 cells mL⁻¹. This indisputably demonstrates biological instability in this particular drinking water distribution system, which was ascribed to a loss of disinfectant residuals and concomitant bacterial growth. The study highlights the potential of using cultivation-independent methods for the assessment of chlorinated water samples. In addition, it underlines the complexity of full-scale drinking water distribution systems, and the resulting challenges to establish the causes of biological instability.

Citation: Nescerecka A, Rubulis J, Vital M, Juhna T, Hammes F (2014) Biological Instability in a Chlorinated Drinking Water Distribution Network. PLoS ONE 9(5): e96354. doi:10.1371/journal.pone.0096354

Editor: Jose Luis Balcazar, Catalan Institute for Water Research (ICRA), Spain

Received: January 10, 2014; **Accepted:** April 7, 2014; **Published:** May 5, 2014

Copyright: © 2014 Nescerecka et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Funding: The authors acknowledge the financial support of the EU project "TECHNEAU" (Nr. 018320) and the NMS-CH project "BioWater: Assessment of biological stability in drinking water distribution networks with chlorine residuals" (Sciex-N-7 12.265). The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Competing Interests: The authors have declared that no competing interests exist.

* E-mail: frederik.hammes@eawag.ch

Introduction

The goal of public drinking water supply systems is to produce water of acceptable aesthetic and hygienic quality and to maintain that quality throughout distribution until the point of consumption. From a microbiological perspective, the quality of treated water can deteriorate as a result of excessive bacterial growth, which can lead to problems such as a sensory deterioration of water quality (e.g. taste, odor, turbidity, discoloration) as well as pathogen proliferation [1–10]. To avoid this, biological stability during distribution can be achieved by maintaining sufficient residual disinfectants in the water, and/or through nutrient limitations [3,7,11,12]. However, drinking water systems should not be viewed as sterile; complex indigenous bacterial communities have been shown to inhabit both chlorinated and non-chlorinated drinking water distribution systems [5,13–17].

The concept of biological stability and its impact on a system's microbiology has been discussed extensively in the framework of non-chlorinated drinking water distribution systems [3,7,17–20]. However, many treatment plants worldwide employ a final disinfection step to ensure that no viable bacteria enter the distribution system. The latter is often achieved by oxidative disinfection, usually by chlorination [21]. Disinfection has a number of implications for a biological system. During chlorination, one can expect that a considerable fraction of bacteria in the

water are killed or damaged, while some residual chlorine may remain in the water (Figure 1). This could be visible through numerous microbial monitoring methods. For example, the number of cultivable bacteria, measured with heterotrophic plate counts, would reduce dramatically [22,23]. Secondly, bacteria cells are likely to display measurable membrane damage irrespective of their cultivability [24], though the rate and extent of damage may differ between different communities. This would be detectable with several staining techniques coupled with epifluorescence microscopy or flow cytometry (FCM). Also, adenosine tri-phosphate (ATP), often used as a cultivation-independent viability method [19,22,25] will be severely affected. Based on data from Hammes and co-workers [4] one may reasonably expect increased levels of extracellular ATP (so-called free ATP) and decreased concentrations of intracellular ATP (bacterial ATP) following oxidative disinfection. Irrespective of the detection method, the overall consequence of disinfection is a considerable decrease in the viable biomass, potentially opening a niche for microorganisms to occupy downstream of the treatment process. Following initial disinfection, residual chlorine might provoke undesirable changes during drinking water distribution. Disinfectants target not only bacteria, but it also react with natural organic matter, pipe surfaces and particles in the network, thus potentially forming/releasing assimilable organic carbon (AOC) [26–30]. AOC can easily be consumed by bacteria, and is therefore seen as a main contributor

to biological instability. Moreover, chlorine decay within the network negatively affects its ability to inhibit microbial growth at the far ends of the network [12]. If all factors were considered, the presence of nutrients, a reduction in the number of competing bacteria, and the lack of residual disinfectant would potentially lead to biological instability in the distribution network, manifesting in a subsequent bacterial growth (Figure 1). Besides the importance of nutrients, the extent of bacterial growth will be influenced by a number of factors. For example, increased water temperature can accelerate chlorine decay and favor bacteria growth [19,31], while changes in hydraulic conditions can alter nutrient supply for microorganisms in biofilms and/or bacteria detachment from the pipe surfaces [32,33]. Finally, the quality of materials in contact with drinking water, as well as the presence of sediments and loose deposits, can both affect the general microbial quality of the water [6,34,35].

In the present study we examined some of the above-discussed concepts in a full-scale, chlorinated distribution system in the city of Riga (Latvia) with a number of microbiological methods. The purpose was a detailed investigation of the entire city's distribution network, asking the basic question whether evidence of spatial and/or temporal biological instability exists, and if so, to which degree. Additional goals were to evaluate the use of fluorescent staining coupled with FCM, as well as ATP analysis, for the assessment of chlorinated drinking water in a distribution network with disinfectant residuals.

Materials and Methods

Ethics statement

Permission for sampling at all locations in the present study was obtained from the local water utility (Rīgas Ūdens).

Description of study site

Sampling was performed in the full-scale distribution network of Riga (Latvia) with a total length of about 1400 km. The city is supplied with drinking water from six water treatment plants (WTP) produced from both surface and groundwater ($150\,000\text{ m}^3\text{ d}^{-1}$). Only the three major WTP, which are continuously operated, were included in the sampling campaign. Average WTP effluent water quality parameters for each treatment plant are shown in Table 1. The distribution network mainly consists of cast iron (80%) and unlined iron (15%) pipes as old as 50 years.

The diameters of pipes ranged from 100 to 1200 mm. Three reservoirs are operated in the network to compensate for fluctuations in the daily water demand, while four high-pressure zones are maintained in some distal areas of the network. The high-pressure zones were excluded from the present study. A total of 49 sampling sites were selected across the city to cover the network broadly and to include both proximal and distal zones relative to the treatment plants. The sampling sites were selected according to the approximate water retention times obtained from a validated hydraulic model made in EPANET 2.0 [36,37] based on a total length of 538 km (39% of the total length of the network). Apart from the effluents of the three treatment plants, the sampling sites were in all cases fire hydrants in order to attain some degree of reproducibility between sampling and to avoid localized effects (e.g. household growth). The exact locations of sampled fire hydrants can be obtained from the authors after agreement from the local water utility.

Sampling protocol

A specific sampling protocol was designed and followed in order to avoid artifacts due to water stagnation in unused fire hydrants. Each hydrant was pre-flushed at a high velocity (never exceeding 1.6 m s^{-1}) for no more than 60 s, then immediately adjusted to a low velocity of $0.015\text{--}0.25\text{ m s}^{-1}$ and connected to an online system for monitoring pH, temperature, redox potential, electroconductivity and turbidity. The low sampling velocity was specifically used to ensure a minimal possible impact of cell wall erosion and detachment from biofilms on the samples and measurements. Readings of all parameters were taken at 5–10 minute intervals, and water was only sampled for microbiological analysis once all of the parameters stabilized. The impact of this hydrant flushing is demonstrated in an example in Figure 2 and discussed in detail in the results section. Samples were kept in cold storage ($\approx 5^\circ\text{C}$) and analyzed within four hours of sampling.

Chemical analysis

Determination of free chlorine was performed according to standard method EN ISO 7393-1, based on the direct reaction with N,N-diethyl-1,4-phenylenediamine (DPD) and subsequent formation of a red compound at pH 6.2–6.5. Afterwards titration by means of a standard solution of ammonium iron (III) sulfate until disappearance of the red color was performed. Determination of total chlorine was performed according to EN ISO 7393-1,

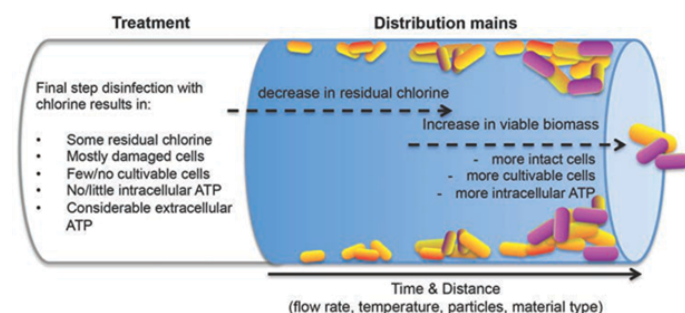


Figure 1. A worst-case-scenario in an unstable, chlorinated distribution network. Prediction of changes in the microbiological state of the water due to the depletion of residual chlorine and the concomitant growth of bacteria, potentially resulting in hygienic and sensory deterioration of the water quality.

doi:10.1371/journal.pone.0096354.g001

Table 1. Average water quality parameters for the final effluents of the the three main treatment plants of Riga (Latvia).

	WTP 1	WTP 2	WTP 3
Source water	surface water	artificially recharged groundwater	groundwater
Final treatment step ^a	Cl ₂ (0.5–3 mg L ⁻¹)	Cl ₂ (ca. 1.5 mg L ⁻¹)	N.A.
Residual chlorine (mg L ⁻¹) ^b	0.44±0.11	0.51±0.01	0.42±0.26
Total organic carbon (TOC) (mg L ⁻¹) ^a	6±1	9±3	3
Assimilable organic carbon (AOC) (µg L ⁻¹) ^a	213±37	209±59	N.A.
Total cell concentration (cells mL ⁻¹) ^b	5.31±0.97×10 ⁵	5.45±0.47×10 ⁵	1.69±0.18×10 ⁵
Intact cell concentration (cells mL ⁻¹) ^b	1.83±1.18×10 ⁴	1.4±0.86×10 ⁴	1.03±0.68×10 ⁴
Total ATP (nM) ^b	0.015±0.005	0.029±0.004	0.011±0.002
Intracellular ATP (nM) ^b	0.007±0.003	0.000±0.004	0.001±0.002
HPC 22°C (CFU mL ⁻¹) ^b	23±24	4±2	4
HPC 36°C (CFU mL ⁻¹) ^b	16±16	4±2	1
Conductivity (µS cm ⁻¹), 25°C ^a	468±101	625±4	272±25
pH ^a	6.63±0.18	7.41±0.04	7.5±0.05

^aData supplied by the water utility or measured in previous sampling campaigns.^bData from present study.

doi:10.1371/journal.pone.0096354.t001

based on the reaction with DPD in the presence of an excess of potassium iodide, and then titration as described above.

Fluorescent staining and flow cytometry (FCM) of water samples

Staining and FCM analysis was done as described previously [4,38]. In short, for a working solution, SYBR® Green I (SG) stock (Invitrogen AG, Basel, Switzerland) was diluted 100x in anhydrous dimethylsulfoxide (DMSO) and propidium iodide (PI; 30 mM) was mixed with the SYBR® Green I working solution to a final PI concentration of 0.6 mM. This working solution was stored at -20°C until use. From every water sample, 1 mL was stained with SGPI at 10 µL mL⁻¹. Before analysis, samples were incubated in the dark for 15 minutes. Prior to FCM analysis, the water samples were diluted with 0.22 µm filtered bottled water (Evian, France) to

10% v/v of the initial concentration. FCM was performed using a Partec CyFlow SL instrument (Partec GmbH, Münster, Germany), equipped with a blue 25 mW solid state laser emitting light at a fixed wavelength of 488 nm. Green fluorescence was collected at 520±10 nm, red fluorescence above 630 nm, and high angle sideward scatter (SSC) at 488 nm. The trigger was set on the green fluorescence channel and data were acquired on two-parameter density plots while no compensation was used for any of the measurements. The CyFlow SL instrument is equipped with volumetric counting hardware and has an experimentally determined quantification limit of 1000 cells mL⁻¹ [4].

Adenosine tri-phosphate (ATP) analysis

Total ATP was determined using the BacTiter-Glo reagent (Promega Corporation, Madison, WI, USA) and a luminometer

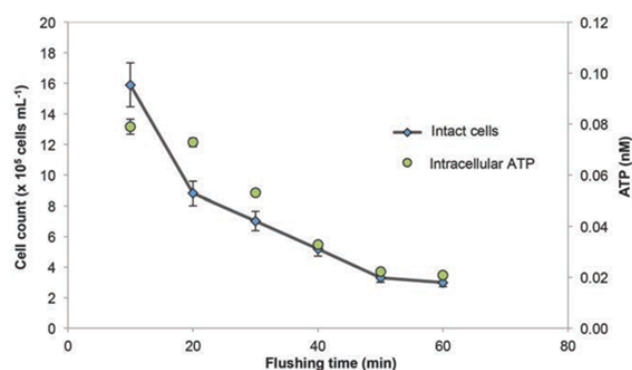


Figure 2. The impact of low velocity flushing on the water quality in a newly-opened fire hydrant. Intracellular adenosine tri-phosphate (ATP) data points were derived from duplicate measurements of extracellular and total ATP concentrations. FCM intact cells (after SYBR Green I and propidium iodide staining) were single measurements, with a relative standard deviation of 9% calculated from all data in the present study. doi:10.1371/journal.pone.0096354.g002

(Glomax, Turner Biosystems, Sunnyvale, CA, USA) as described elsewhere [25]. A water sample (500 μl) and the ATP reagent (50 μl) were warmed to 38°C simultaneously in separate sterile Eppendorf tubes. The sample and the reagent were then combined and then the luminescence was measured after 20 s reaction time at 38°C. The data were collected as relative light units (RLU) and converted to ATP (nM) by means of a calibration curve made with a known ATP standard (Promega). For extracellular ATP analysis, each sample was filtered through a 0.1 μm sterile syringe filter (Millex-GP, Millipore, Billerica, MA, USA), followed by analysis as described above. The intracellular ATP was calculated by subtracting the extracellular ATP from the total ATP for each individual sample. ATP was measured in duplicate for all samples.

Heterotrophic plate counts

To obtain heterotrophic plate counts (HPC), samples were serially diluted in sterile distilled water and then inoculated onto nutrient yeast agar plates using the spread plate technique. All plates were incubated in dark at 22°C or 36°C for 3 and 7 days, respectively. Results were expressed as colony forming units (CFU) per ml of water sample.

Statistical analysis

Statistical data evaluation was performed with the MS Excel Data Analysis tool (Descriptive statistics, Regression). The reproducibility for indirect/calculated data (e.g., intracellular ATP) was calculated by a propagation-of-uncertainty method. FCM data was not always measured in duplicate, due to practical constraints. In these cases, a 9% error (average coefficient of variation (CV) ($n=39$)) was applied for representing FCM data. The residual chlorine concentration distribution box plot was created using on-line calculator on <http://www.physics.csbsju.edu/stats/>.

Results and Discussion

The importance of correct sampling

Sample collection during this study elucidated some of the problems specific for this network and highlighted the broader importance of correct sampling procedures. Fire hydrants were selected as sampling points to enable direct access to the distribution network and avoid potential household effects [39]. We opted for a low velocity water flow in combination with online monitoring to achieve comparable samples. In some cases, the water initially emerging from the fire hydrants were visibly turbid and/or discolored (data not shown). Turbid water is clearly unwanted and serves as a first visual confirmation of some form of system failure. In this regard, a recent study in the Netherlands has established an important link between suspended solids and microbial growth and biological instability [6]. Hence in some instances continuous low velocity flushing of up to 60 minutes was required before stable values for chemical and physical parameters as well as microbiological parameters were obtained (Figure 2; Table S1). The data in Figure 2 demonstrate clearly the need for a carefully planned sampling protocol when assessing full-scale systems. It should be noted that Figure 2 represents an example of some of the worst sampling points in the system. Data from other hydrants often showed less fluctuation during flushing (Figure S1). One potential problem during the sampling procedure is the resuspension of sediments/particles and sloughing of biofilms from the pipes, causing artifacts in the measurements. In this respect, we specifically employed a low velocity (0.015–0.25 m s^{-1}) pre-sampling flushing procedure. The latter differs from extreme

flushing applied for network cleaning, which is operated with high velocities of 1.5–1.8 m s^{-1} [40,41]. According to Antoun and co-workers [40] low-velocity flushing (below 0.3 m s^{-1}) does not cause any scouring actions. However, it should be considered that part of the samples, especially during the first minutes of the flushing, can contain biofilm bacteria detached in a result of pre-flushing [35].

The concept of detecting instability: a single point in the distribution network

In the introduction we proposed the straightforward hypothesis that biological parameters would show an increase between the point of treatment and a point during distribution in case of biological instability (Figure 1). Before the relation between different parameters and the impact on the entire network are discussed in detail below, a single sampling point is compared to its source water as an example to illustrate the concept (Figure 3A). The point was selected on the basis of (1) hydraulic data linking it with a specific WTP, (2) its medial distance from WTP (neither too close and nor too far from the WTP) and, (3) the fact that all microbiological parameters (FCM, ATP and HPC) as well as residual chlorine measurements were performed on this sample. For the purpose of clarity, the data was normalized to the values of the treated water and expressed as the relative change (the raw data and standard deviations for the data in Figure 3A are shown in Figure S2). Evidently the data from Figure 3A supports the basic hypothesis. The microbial parameters such as intact cell concentration, ATP and colony forming units all show a considerable increase in their values. Simultaneously, only 12% (0.06 mg L^{-1}) of the initial residual chlorine concentration (0.5 mg L^{-1}) was left in the water sample. The data suggests that the residual chlorine in the network was not sufficient to inhibit microbial growth, concurring with earlier report from Prévost and colleagues [42] showing increased HPC, total direct and direct viable bacteria counts in a distribution network coinciding with chlorine depletion. Other studies also showed the presence of viable bacteria in water with chlorine concentration lower than 0.1 mg L^{-1} [23] and that residual chlorine levels below 0.07 mg L^{-1} allows bacterial growth [12]. Data of residual chlorine concentrations in the drinking water network is summarized in Figure S3. Evidently a considerable fraction of samples (18%) had residual chlorine concentrations below 0.1 mg L^{-1} .

Staining of bacteria with fluorescent dyes was previously suggested as a way to distinguish between viable and damaged bacteria in real water samples [43,44], and the application of this approach has been successfully demonstrated in laboratory scale chlorination studies [24,45]. One focus point of the present study was to determine whether FCM combined with viability staining can be used for a fast and meaningful assessment of viable bacteria in chlorinated drinking water systems. The same samples from Figure 3A, stained with SYBR Green and propidium iodide (SGPI), are shown as density plots obtained with FCM (Figure 3B). The theory behind the staining method and the interpretation of such data are discussed in detail elsewhere [20,24,38,43,46]. In the treatment plant sample, where the water was recently exposed to chlorine, 98% of all cells were measured as membrane compromised, seen by absence of events inside the gated area of the plot (Figure 3B). In the distribution network (DN) sample, a high concentration of intact cells appeared (Figure 3B). Since these intact cells were clearly not present in the influent, the plausible conclusion is that the bacterial growth occurred during distribution.

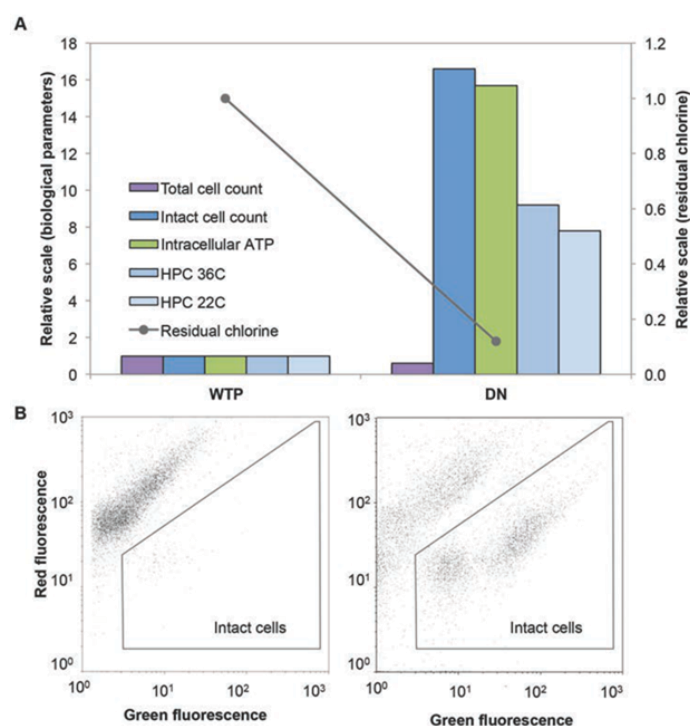


Figure 3. Changes in bacterial parameters between water treatment plant (WTP) and distribution network (DN) sampling points. (A) For comparison, all values at the WTP were set to 1, and values in the DN were expressed relative to their values at the WTP. The original raw data for these samples are shown in Figure S2. Data points are average values for duplicate FCM and ATP measurements and triplicate HPC measurements; (B) Flow cytometric density plots of samples stained with SYBR Green I and propidium iodide, showing the intact cell concentration at the plant and in the specific network point.
doi:10.1371/journal.pone.0096354.g003

Detailed assessment of dynamic changes in a single point

High frequency monitoring of a single sampling point revealed temporal instability in the distribution network. We monitored the effluent of one treatment plant and one point in the network with 1-hour intervals during a day (ca. 21 h). The sampling was arranged in such a way that the network sampling started 15 hours after the treatment plant sampling, which corresponded with the estimated water residence time (WRT) for this location. Figure 4 displays the changes of intracellular ATP and intact cell concentrations in the network and the water treatment plant. Values for both parameters were low in the water samples from the treatment plant ($n = 19$): intracellular ATP varied from 0.0025 nM to 0.0096 nM (mean = 0.0061 ± 0.002 nM) and the intact cell concentration amongst 19 samples varied from 7.5×10^3 to 6.3×10^4 cells mL⁻¹ (mean = $1.6 \times 10^4 \pm 1.2 \times 10^4$ cells mL⁻¹ in average). In turn, the values from the distribution network point ($n = 23$) were significantly higher: intact cell concentrations ranged from 1.37×10^5 to 4.66×10^5 cells mL⁻¹ (mean = $2.5 \times 10^5 \pm 9.9 \times 10^4$ cells mL⁻¹), and the ATP concentrations from 0.021 to 0.063 nM (mean = 0.038 ± 0.012 nM). More-

over, a distinct pattern was apparent in the distribution network data, with values peaking at about 05:00–07:00 and again at 12:00–13:00. During both these events, the intracellular ATP data followed a similar pattern as the intact cell concentration data, with a good overall correlation ($R^2 = 0.81$; $p < 0.005$). Although it is not evident exactly why the bacterial concentrations peaked at these specific time periods, a plausible explanation is a change in the flow velocity due to diurnal changes in water consumption by both industrial and domestic consumers. It was previously shown in laboratory scale experiments that increased flow velocity could lead to increased bacterial detachment from biofilms and a resuspension of loose deposits, thus leading to an increase in suspended cell concentrations [32,33,47]. In addition, it is possible that lower water consumption overnight resulted in considerably reduced flow rates, and consequently a faster decay of chlorine and increased bacterial growth [42,48].

Detailed data sets of diurnal changes in the microbial quality of water mains, such as Figure 4, are particularly scarce in literature. Importantly, this clearly demonstrated temporal instability in the network for which the exact cause remains uncertain. Moreover, it

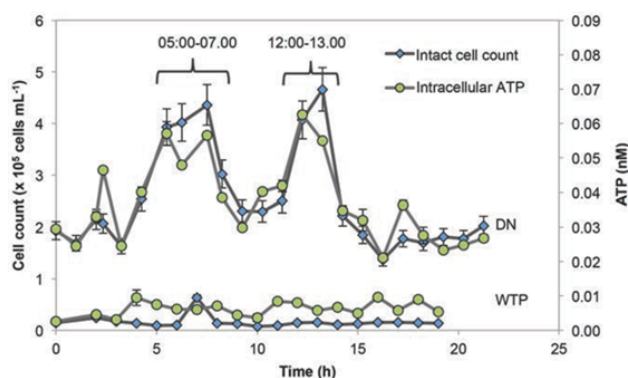


Figure 4. Diurnal changes in bacterial parameters of WTP and DN points. Intensive sampling of one WTP ($n = 19$) and one point in the DN ($n = 23$) during 21 hours reveals steady cell concentrations at the treatment plant but clear variations in the distribution network. Intracellular adenosine tri-phosphate (ATP) data points were derived from duplicate measurements of extracellular and total ATP concentrations. FCM intact cells (after SYBR Green I and propidium iodide staining) were single measurements, with a relative standard deviation of 9% calculated from all data in the present study.
doi:10.1371/journal.pone.0096354.g004

shows that the absolute cell concentrations at any sampling point may be influenced by the time of sampling.

Instability data for the entire network

Full-scale distribution networks are complicated systems, not restricted to a single source or a straight distribution line [17]. The Riga distribution network is supplied with drinking water from several separate treatment plants (Table 1). One plant treats surface water from the Daugava River (WTP 1) and the others supply natural groundwater (WTP 3) and artificially recharged groundwater (WTP 2). Chlorination is applied as the final disinfection step at all plants, resulting in low concentrations of intact cells, intracellular ATP and cultivable bacteria in the effluents (Table 1). A large fraction of the active chlorine is rapidly consumed due to relatively high levels of organic matter. Despite the fact that the purpose of chlorination and residual chlorine is to limit microbial growth during distribution, a considerable increase in the concentration of intact cells was detected throughout the distribution network. Figure 5A shows the range of intact cell concentrations arranged in ascending order. Treated water contained between 1.84×10^3 – 5.63×10^3 total cells mL^{-1} and between 9.7×10^3 – 2.13×10^4 intact cells mL^{-1} (hence 2–5% intact cells) depending on WTP. The data confirms effective final disinfection in all treatment plants. The total cell concentration values of the drinking water samples from the distribution network ($n = 49$) varied from 1.62×10^3 cells mL^{-1} to 1.07×10^6 cells mL^{-1} and the range of the intact cell concentration was from 5.28×10^3 cells mL^{-1} to 4.66×10^5 cells mL^{-1} (3–59% intact cells). Notably, 50% of all samples contained more than 1.06×10^5 intact cells mL^{-1} corresponding to an increase of at least one order of magnitude in those samples compared to effluent water, which clearly shows that bacterial growth in the distribution network was not an isolated occurrence. The observed increase in intact cell concentration is likely related to the presence of assimilable organic carbon (AOC) in the distributed water. While AOC was not measured in the present study, previous data for two of the treatment plants were high (in the range of $200 \mu\text{g L}^{-1}$; Table 1), and nutrient availability in the water is generally regarded as a key

factor that promotes microbial growth [29,49]. It cannot be excluded that some variability in the data resulted from bacteria detached from biofilms or re-suspended from sediments during the fire hydrant sampling procedure. However, the potential adverse impact of this was minimized by the low velocity sampling protocol (see above), while the systematic increase in cell concentrations in the network clearly suggests the occurrence of biological instability rather than sampling artifacts. In contrast to these findings, several studies analyzing drinking water distribution systems without any additional residual disinfectants showed no (or only minute) changes in bacterial parameters during distribution [17,19,20]. These distribution systems rely on nutrient limitation to achieve biological stability, and while intact cell concentrations are often relatively high (ca. 1×10^5 cells mL^{-1}) [17,20], changes during distribution tend to be negligible.

To examine the spatial distribution of the growth/instability in the network, the data was divided into four broad categories based on the extent of growth (Figure 5A). These were visualized on the sampling map (Figure 5B). The sampling points with the lowest intact cell concentration (less than 5×10^3 cells mL^{-1}) are marked with green bullets. Yellow and orange colored bullets indicate higher concentrations, while the points with the highest values (over 2×10^5 cells mL^{-1}) are shown as red bullets. As could be expected, the map shows that the points with the lowest cell concentrations are mostly concentrated in areas close to the water treatment plants. Low intact cell concentrations in those areas could be ascribed to (1) disinfection during treatment and (2) growth inhibition from sufficient residual chlorine. Also the flow rate in the outgoing pipes closest to the treatment plants is high, which likely prevents water stagnation, sedimentation and cell adhesion on the pipe surface, and, consequently, biofilm formation and further bacterial growth. A different situation is observed in the distant areas from the water treatment plants and particularly in the so-called mixing zones, where the water from three different water treatment plants potentially mix. The map displays different color points spread in these zones without any visible order. The prevalence of the samples with higher cell concentrations there compared to the areas close to WTPs also corroborates the

Biological Instability of Chlorinated Drinking Water

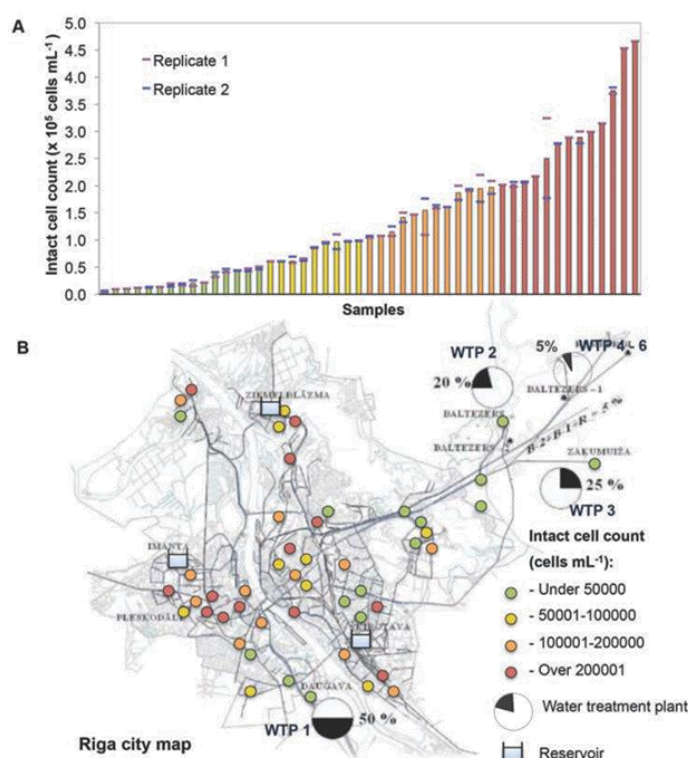


Figure 5. Intact cell concentrations of all samples measured from the distribution network (n=49). (A) Intact cell concentrations arranged in ascending order and categorized into four main classes (colored bars) according to increasing concentrations. Data points are average values of duplicate measurements. Blue and purple stripes above and below data bars show the measured values. (B) Actual distribution of the classes of intact cells (colored circles) throughout the drinking water distribution network. WTP 1, WTP 2, WTP 3 represent location and productivity of the main water treatment plans supplying the city: WTP 1 operates using surface water, WTP 2 – artificially recharged ground water, WTP 3 – natural ground water. WTP 4 – 6 indicates on other three pump stations with less significance for the city water supply.
doi:10.1371/journal.pone.0096354.g005

argument that increasing distance and water residence time could lead to chlorine decay with concomitant oxidation of dissolved organic matter; both these events would favor bacterial growth. Moreover, mixing zones are potential hot-spots for bacterial growth, as one water might well contain the nutrients that are growth limiting in the other.

The uneven spatial distribution of the samples with different intact cell concentrations is noteworthy, highlighted for example by the three points in upper-left corner of the map. Based on the long distance from the WTPs, high intact cell concentrations were expected, but the samples taken from the hydrants located in this small area rather show variability (respectively 1.82×10^4 , 1.87×10^3 , 2.51×10^3 intact cells mL^{-1}). Such different intact cell concentrations could be due to several reasons: the time the samples were taken, which is linked to water consumption and the potential impact of which is shown in Figure 4, the condition of the pipes in this specific area (unknown), the way water flows from the treatment plant, and/or the relative proximity of these sample

points to one of the reservoirs (Figure 5B), etc. Other authors showed a decrease in AOC [13] and ATP [19] in the some distal points of the distribution networks. Decrease of AOC concentration was explained by its consumption by bacteria within the network. These authors argued that an insufficient amount of nutrients led to starvation and a decrease in bacterial parameters at the end of the pipelines. However, it is an unlikely reason in the present study, because this phenomenon seems more occasional than systematic.

The combined data demonstrates clearly biological instability throughout the distribution network. However, despite the relative simplicity of the concept (Figure 1; Figure 3A), a complex interplay of chemical, physical and biological parameters and hydraulic conditions should be taken into account for characterization of each particular case of instability.

Comparison of different microbiological parameters

FCM and ATP data showed clear correlations, but these data did not correlate well with conventional HPC data. A total amount of 49 different samples was measured in duplicate with ATP (total and extracellular) and FCM (total and intact cell concentration) analyses, while 38 of those samples were further analyzed with HPC. The significant linear correlation ($R^2 = 0.77$; $n = 49$) between intracellular ATP and FCM intact cell concentration is shown in Figure 6A. This corroborates previous studies that showed good results comparing total ATP with total cell concentration [19,50] and intracellular ATP with intact cell count as well [20,25]. The strong correlation is encouraging, since FCM and ATP analysis are independent viability parameters – integrity of the cell membrane (FCM) and cellular energy (ATP). A correlation between these parameters during disinfection is not necessarily a given fact. The membrane integrity based PI staining method implies that PI positive cells are damaged and thus considered as inactive, yet extreme examples where living cells became permeable for propidium iodide have been described [46]. In turn, Nocker and co-workers [51] showed that after UV-C exposure cells became inactivated, while their membranes remained essentially intact. Discrepancies between intracellular ATP and intact cell concentration can also result from cell morphology, bacterial species and physiological state, that was discussed in detail previously [25]. The results provided by FCM provide information on single cell level, whereas during ATP analyses the values are evaluated per volume. Hence, intracellular ATP-per-cell was calculated for characterization of biomass activity. In the present study intracellular ATP-per-cell ranges from zero (no cell-bound ATP observed) to $5.92 \times 10^{-10} \text{ nM cell}^{-1}$ ($= 3 \times 10^{-17} \text{ g cell}^{-1}$) with the average value of $1.68 \times 10^{-10} \text{ nM cell}^{-1}$ ($= 8.52 \times 10^{-18} \text{ g cell}^{-1}$) (stdev = $9.58 \times 10^{-11} \text{ nM cell}^{-1}$, $n = 49$). The result is in the same range as ATP-per-cell values obtained from various water sources, which were analyzed with the same methods [20,25]. This suggests that bacterial activity (ATP values) in the intact cells was not affected by any remaining chlorine residuals, and that membrane damage (SGPI values) was in this case reflective of viability in the sample. The good correlation between these two independent parameters is an optimistic prospect for applying these methods for chlorinated water analyses in future studies.

The conventional HPC results were compared with the FCM intact cell concentration values. A weak correlation ($R^2 = 0.18$, $n = 38$) was observed between HPC (at 22°C) and intact cell concentrations (Figure 6B), similar to reports in previous studies [38,50]. It could be explained by the often described phenomenon, that less than 1% of drinking water bacteria are cultivable on conventional agar plates [25,50,52]. In addition, Mezule and co-workers [53] demonstrated evidence of the presence of so called viable-but-not-cultivable (VNBC) bacterial state, in both drinking water and biofilms for the network investigated here, thus indicating further limitations in the HPC method. Since intracellular ATP showed a good correlation with intact cell concentration, but intact cell count correlated weakly with HPC, it was expected that intracellular ATP and HPC would not correlate well (Figure 6C; $R^2 = 0.11$, $n = 38$). Various studies were performed to compare ATP and HPC parameters from water samples, but good correlations were never observed e.g., $R^2 = 0.20$ [19], $R^2 = 0.36$ [22] and $R^2 = 0.31$ [50]. Our results combined with those from previous studies cast further doubts on the value of using the HPC method for general microbiological drinking water quality control. In our opinion, the clear correlation between two methodologically independent viability parameters (intracellular ATP and FCM intact cell counts), and the absence of any correlations with

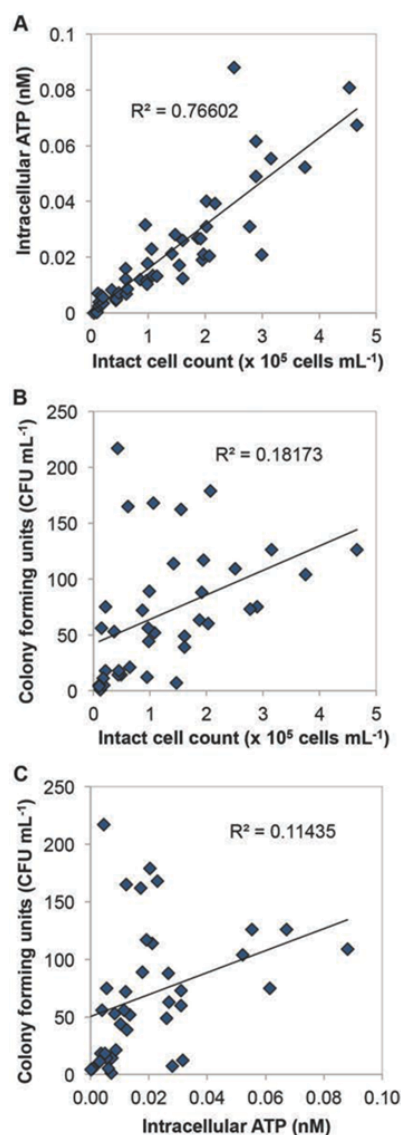


Figure 6. Comparison of the various microbiological parameters. Clear correlations were observed between intact cells and intracellular ATP ($n = 49$) (A), but no obvious correlations between these two parameters and heterotrophic plate counts at 22°C ($n = 38$) (B) (C).
doi:10.1371/journal.pone.0096354.g006

Biological Instability of Chlorinated Drinking Water

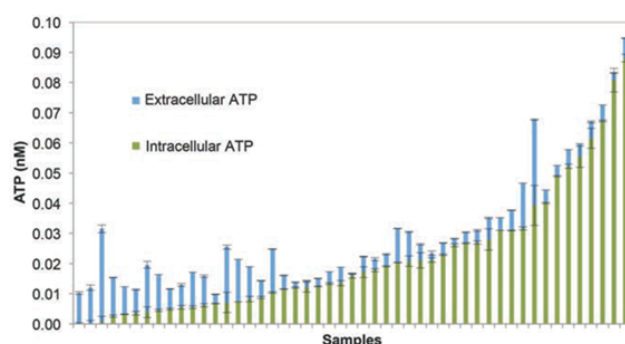


Figure 7. Distribution of intracellular and extracellular ATP in the water samples. In general, higher concentrations and relative percentages of extracellular ATP were measured in samples that exhibited lower intracellular ATP concentrations ($n = 49$). doi:10.1371/journal.pone.0096354.g007

two different HPC methods, renders the former methods more meaningful for assessing and understanding biological instability, particularly in chlorinated environments.

Importance of measuring extracellular ATP

Arguments for and against the concept and importance of measuring extracellular ATP have been made [4,19,20,25,54,55]. To understand this better, we arranged our data according to increasing intracellular ATP concentrations, after which the measured extracellular ATP values were added to each corresponding sample (Figure 7). It is evident that extracellular ATP constitutes a considerable fraction of the total ATP amount in some samples – varying from 3% up to 100% – with an average contribution of 36% ($n = 49$). Moreover, 33% of the samples contain more than 50% of extracellular ATP. This data supports other studies, where analyses showed high extracellular ATP in drinking water samples from the distribution networks [20,25]. Interestingly, the highest extracellular ATP ratio is mostly observed in the samples with relatively low intracellular ATP, in this case samples with close proximity to the treatment plant. In the case of chlorinated water, this could potentially be explained by the oxidative effect of chlorine on bacterial cells. Previous studies have shown extensive damage to bacterial membranes during chlorination [24,45], after which a release of extracellular ATP from the damaged bacteria can occur. This membrane damage was also clearly detected in the present study (e.g., Figure 3B). Although, there is lack of detailed data considering the release of extracellular ATP in water samples affected by chlorination, strong evidence of ATP release during oxidation was presented in previous studies [4,20]. Both these works showed a significant decrease in cell concentrations and intracellular ATP after ozonation, whereas extracellular ATP comprised 83–100% of the total ATP. Moreover, Figure 7 shows that samples with increased intracellular ATP concentrations, which we linked to bacterial growth during distribution, often had considerably less extracellular ATP in relation to total ATP. This could be due to the fact that extracellular ATP can be biodegraded by bacteria or extracellular enzymes in the network [54,56–58]. However, it cannot be excluded that a decrease in extracellular ATP during distribution occurs due to oxidation by residual chlorine present in the network.

Conclusions

- An investigation of a full-scale chlorinated drinking water distribution network with various microbiological methods clearly demonstrated both spatial and temporal biological instability in the network.
- Fluorescent staining with SGPI in combination with ATP measurements provided reliable and descriptive information about bacterial density and viability in chlorinated drinking water samples.
- A good correlation was observed between intracellular ATP and intact cell counts ($R^2 = 0.77$), whereas HPC showed poor correlations with both parameters ($R^2 = 0.18$ with intact cell concentration and $R^2 = 0.11$ with intracellular ATP).
- Extracellular ATP constituted on average 36% of total ATP in the present study, which confirms the necessity of extracellular ATP subtraction from total ATP measurements during chlorinated drinking water analyses.
- Overall the results raise questions with respect to the offset between increased biological safety gained from disinfection opposed to increased risk from instability (uncontrolled bacterial growth). While an improvement of the chlorination procedure could be a solution, the data suggests looking beyond only disinfection for achieving biological stability of drinking water.

Supporting Information

Figure S1 Additional examples of hydrant flushing. Changes in intact cell concentration and intracellular ATP during flushing in 6 newly-opened fire hydrants. Intact cell concentration values are shown as solid lines with blue markers, whereas intracellular ATP results displayed as single green bullets. (TIF)

Figure S2 Actual data for Figure 3A. Changes in various bacterial parameters between one water treatment plant and a randomly selected point in the distribution network (actual values for Figure 3A). (TIF)

Figure S3 Residual chlorine concentration in the distri-

bution network. 50% of residual chlorine concentration in the network was between 0.12 (first quartile) and 0.23 (third quartile) mg mL^{-1} , with a mean value of 0.17 mg mL^{-1} ($n = 27$). The whiskers indicate on minimum and maximum values, whereas bullets show outliers of the population. (TIF)

Table S1 Physical and chemical parameters of water measured on-line during low velocity flushing of newly-opened fire hydrant. Some measurements were omitted during the first 20 minutes of flushing due to the high fluctuation in measuring tools readings. (DOC)

References

- Barttram J, Cotruvo J, Exner M, Fricker C, Glasmacher A (2003) Heterotrophic plate count and drinking-water safety: The significance of HPCs for water quality and human health. World Health Organization, 244 p.
- Boe-Hansen R, Albrechtsen H-J, Arvin E, Jørgensen C (2002) Bulk water phase and biofilm growth in drinking water at low nutrient conditions. *Water Res* 36: 4477–4486. doi:10.1016/S0043-1354(02)00191-4.
- Hammes F, Berger C, Köster O, Egli T (2010) Assessing biological stability of drinking water without disinfectant residuals in a full-scale water supply system. *J Water Supply Res Technol* 59: 31. doi:10.2166/aqua.2010.052.
- Hammes F, Berny M, Wang Y, Vital M, Köster O, et al. (2008) Flow-cytometric total bacterial cell counts as a descriptive microbiological parameter for drinking water treatment processes. *Water Res* 42: 269–277. doi:10.1016/j.watres.2007.07.009.
- Juhna T, Birzniece D, Larsson S, Zulenkovs D, Sharipo A, et al. (2007) Detection of *Escherichia coli* in biofilms from pipe samples and coupons in drinking water distribution networks. *Appl Environ Microbiol* 73: 7456–7464. doi:10.1128/AEM.00845-07.
- Liu G, Lut MC, Verberk JQJC, Van Dijk JC (2013) A comparison of additional treatment processes to limit particle accumulation and microbial growth during drinking water distribution. *Water Res* 47: 2719–2728. doi:10.1016/j.watres.2013.02.035.
- Van der Kooij D (2000) Biological stability: A multidimensional quality aspect of treated water. In: Belkin S, editor. *Environmental Challenges*. Springer Netherlands, pp. 25–34.
- Vital M, Stucki D, Egli T, Hammes F (2010) Evaluating the growth potential of pathogenic bacteria in water. *Appl Environ Microbiol* 76: 6477–6484. doi:10.1128/AEM.00794-10.
- Vital M, Fuchslin HP, Hammes F, Egli T (2007) Growth of *Vibrio cholerae* O1 Ogawa Etor in freshwater. *Microbiology* 153: 1993–2001. doi:10.1099/mic.0.2006/005173-0.
- Vital M, Hammes F, Egli T (2008) *Escherichia coli* O157 can grow in natural freshwater at low carbon concentrations. *Environ Microbiol* 10: 2387–2396. doi:10.1111/j.1462-2920.2008.01664.x.
- LeChevallier MW, Schulz W, Lee RG (1991) Bacterial nutrients in drinking water. *Appl Environ Microbiol* 57: 857–862.
- Niquette P, Servais P, Savoir R (2001) Bacterial dynamics in the drinking water distribution system of Brussels. *Water Res* 35: 675–682.
- Liu W, Wu H, Wang Z, Ong SL, Hu JY, et al. (2002) Investigation of assimilable organic carbon (AOC) and bacterial regrowth in drinking water distribution system. *Water Res* 36: 891–898.
- Eichler S, Christen R, Hölje C, Westphal P, Botel J, et al. (2006) Composition and dynamics of bacterial communities of a drinking water supply system as assessed by RNA- and DNA-based 16S rRNA gene fingerprinting. *Appl Environ Microbiol* 72: 1858–1872. doi:10.1128/AEM.72.3.1858-1872.2006.
- Hong P-Y, Hwang C, Ling F, Andersen GI, LeChevallier MW, et al. (2010) Pyrosequencing analysis of bacterial biofilm communities in water meters of a drinking water distribution system. *Appl Environ Microbiol* 76: 5631–5635. doi:10.1128/AEM.00281-10.
- Pinto AJ, Xi C, Raskin L (2012) Bacterial community structure in the drinking water microbiome is governed by filtration processes. *Environ Sci Technol* 46: 8851–8859. doi:10.1021/es302042t.
- Lautenschlager K, Hwang C, Liu W-T, Boon N, Köster O, et al. (2013) A microbiology-based multi-parametric approach towards assessing biological stability in drinking water distribution networks. *Water Res* 47: 3015–3025. doi:10.1016/j.watres.2013.03.002.
- Rittmann BE, Snoeyink VL (1984) Achieving biologically stable drinking water. *J - Am Water Works Assoc* 76: 106–114.
- Van der Wielen PWJJ, van der Kooij D (2010) Effect of water composition, distance and season on the adenosine triphosphate concentration in unchlorinated drinking water in the Netherlands. *Water Res* 44: 4860–4867. doi:10.1016/j.watres.2010.07.016.
- Vital M, Dignum M, Magic-Knezev A, Ross P, Rietveld L, et al. (2012) Flow cytometry and adenosine tri-phosphate analysis: Alternative possibilities to evaluate major bacteriological changes in drinking water treatment and distribution systems. *Water Res* 46: 4665–4676. doi:10.1016/j.watres.2012.06.010.
- LeChevallier MW, Au K-K (2004) Water treatment and pathogen control: Process efficiency in achieving safe drinking-water. IWA Publishing, 136 p.
- Delahaye E, Wehé B, Levi Y, Leblon G, Montiel A (2003) An ATP-based method for monitoring the microbiological drinking water quality in a distribution network. *Water Res* 37: 3689–3696. doi:10.1016/S0043-1354(03)00288-4.
- Francisque A, Rodríguez MJ, Miranda-Moreno LF, Sadiq R, Proulx F (2009) Modeling of heterotrophic bacteria counts in a water distribution system. *Water Res* 43: 1075–1087. doi:10.1016/j.watres.2008.11.030.
- Ramseier MK, von Gunten U, Freihofer P, Hammes F (2011) Kinetics of membrane damage to high (HNA) and low (LNA) nucleic acid bacterial clusters in drinking water by ozone, chlorine, chlorine dioxide, monochloramine, ferrate(VI), and permanganate. *Water Res* 45: 1490–1500. doi:10.1016/j.watres.2010.11.016.
- Hammes F, Goldschmidt F, Vital M, Wang Y, Egli T (2010) Measurement and interpretation of microbial adenosine tri-phosphate (ATP) in aquatic environments. *Water Res* 44: 3915–3923. doi:10.1016/j.watres.2010.04.015.
- LeChevallier MW, Welch NJ, Smith DB (1996) Full-scale studies of factors related to coliform regrowth in drinking water. *Appl Environ Microbiol* 62: 2201–2211.
- Polanska M, Huysman K, van Keer C (2005) Investigation of assimilable organic carbon (AOC) in flemish drinking water. *Water Res* 39: 2259–2266. doi:10.1016/j.watres.2005.04.015.
- Ramseier MK, Peter A, Traher J, von Gunten U (2011) Formation of assimilable organic carbon during oxidation of natural waters with ozone, chlorine dioxide, chlorine, permanganate, and ferrate. *Water Res* 45: 2002–2010. doi:10.1016/j.watres.2010.12.002.
- Van der Kooij D (1990) Assimilable organic carbon (AOC) in drinking water. In: McFeers GA, editor. *Drinking Water Microbiology*. New York, NY: Springer New York, pp. 57–87.
- Weinrich LA, Jemba PK, Giraldo E, LeChevallier MW (2010) Implications of organic carbon in the deterioration of water quality in reclaimed water distribution systems. *Water Res* 44: 5367–5375. doi:10.1016/j.watres.2010.06.035.
- Jemba P (2010) Guidance document on the microbiological quality and Biostability of reclaimed water following storage and distribution. WaterReuse Research Foundation.
- Lehtola MJ, Laxander M, Miettinen IT, Hirvonen A, Vartiainen T, et al. (2006) The effects of changing water flow velocity on the formation of biofilms and water quality in pilot distribution system consisting of copper or polyethylene pipes. *Water Res* 40: 2151–2160. doi:10.1016/j.watres.2006.04.010.
- Manuel CM, Nunes OC, Melo LF (2007) Dynamics of drinking water biofilm in flow/non-flow conditions. *Water Res* 41: 551–562. doi:10.1016/j.watres.2006.11.007.
- Bucheli-Wütschel M, Kötzsch S, Darr S, Widler R, Egli T (2012) A new method to assess the influence of migration from polymeric materials on the biostability of drinking water. *Water Res* 46: 4246–4260. doi:10.1016/j.watres.2012.05.008.
- Doutereid I, Hushand S, Boxall JB (2014) The bacteriological composition of biomass recovered by flushing an operational drinking water distribution system. *Water Res* 54: 100–114. doi:10.1016/j.watres.2014.01.049.
- Rossman LA (2000) EPANET 2 Users manual. National Risk Management Research Laboratory, U.S. Environmental Protection Agency, Cincinnati, Ohio.
- Rubulis J, Dejus S, Meksa R (2011) Online measurement usage for predicting water age from tracer tests to validate a hydraulic model American Society of Civil Engineers, pp. 1488–1497. doi:10.1061/41203(425)133.
- Berney M, Vital M, Hulshoff I, Weilenmann H-U, Egli T, et al. (2008) Rapid, cultivation-independent assessment of microbial viability in drinking water. *Water Res* 42: 4010–4018. doi:10.1016/j.watres.2008.07.017.
- Lautenschlager K, Boon N, Wang Y, Egli T, Hammes F (2010) Overnight stagnation of drinking water in household taps induces microbial growth and changes in community composition. *Water Res* 44: 4860–4877. doi:10.1016/j.watres.2010.07.032.

Biological Instability of Chlorinated Drinking Water

40. Antoun EN, Dyksen JF, Hiltbrand DJ (1999) Unidirectional flushing: A powerful tool. *J - Am Water Works Assoc* 91: 62-71.
41. Friedman M, Kirmeyer GJ, Antoun E (2002) Developing and implementing a distribution system flushing program. *J - Am Water Works Assoc* 94: 48-56.
42. Prévost M, Rompré A, Coallier J, Servais P, Laurent P, et al. (1998) Suspended bacterial biomass and activity in full-scale drinking water distribution systems: Impact of water treatment. *Water Res* 32: 1393-1406. doi:10.1016/S0043-1354(97)00388-6.
43. Berney M, Hammes F, Bosshard F, Weilenmann H-U, Egli T (2007) Assessment and interpretation of bacterial viability by using the LIVE/DEAD BacLight Kit in combination with flow cytometry. *Appl Environ Microbiol* 73: 3283-3290. doi:10.1128/AEM.02750-06.
44. Grégori G, Citterio S, Ghiani A, Labra M, Sgorbati S, et al. (2001) Resolution of viable and membrane-compromised bacteria in freshwater and marine waters based on analytical flow cytometry and nucleic acid double staining. *Appl Environ Microbiol* 67: 4662-4670. doi:10.1128/AEM.67.10.4662-4670.2001.
45. Lisle JT, Pyle BH, McFeters GA (1999) The use of multiple indices of physiological activity to assess viability in chlorine disinfected *Escherichia coli* O157:H7. *Letts Appl Microbiol* 29: 42-47. doi:10.1046/j.1365-2672.1999.00572.x.
46. Shi L, Günther S, Hübchmann T, Wick LY, Harms H, et al. (2007) Limits of propidium iodide as a cell viability indicator for environmental bacteria. *Cytometry A* 71A: 592-598. doi:10.1002/cyto.a.20402.
47. Tsai Y-P (2005) Impact of flow velocity on the dynamic behaviour of biofilm bacteria. *Biofouling* 21: 267-277. doi:10.1080/08927010500390633.
48. Srinivasan S, Harrington GW, Kagoraki I, Goel R (2008) Factors affecting bulk to total bacteria ratio in drinking water distribution systems. *Water Res* 42: 3393-3404. doi:10.1016/j.watres.2008.04.025.
49. Van der Kooij D (1992) Assimilable organic carbon as an indicator of bacterial regrowth. *J - Am Water Works Assoc* 84: 57-65.
50. Siebel E, Wang Y, Egli T, Hammes F (2008) Correlations between total cell concentration, total adenosine tri-phosphate concentration and heterotrophic plate counts during microbial monitoring of drinking water. *Drink Water Eng Sci Discuss* 1: 71-86. doi:10.5194/dweds-1-71-2008.
51. Nocker A, Sossa KE, Camper AK (2007) Molecular monitoring of disinfection efficacy using propidium monoazide in combination with quantitative PCR. *J Microbiol Methods* 70: 252-260. doi:10.1016/j.mimet.2007.04.014.
52. Van der Kooij D, Vrouwenvelder JS, Veenendaal HR (2003) Elucidation and control of biofilm formation processes in water treatment and distribution using the Unified Biofilm Approach. *Water Sci Technol J Int Assoc Water Pollut Res* 47: 83-90.
53. Mezule L, Larsson S, Juhna T (2013) Application of DVC-FISH method in tracking *Escherichia coli* in drinking water distribution networks. *Drink Water Eng Sci* 6: 25-31. doi:10.5194/dwes-6-25-2013.
54. Gowan DA, Casanueva A (2007) Stability of ATP in Antarctic mineral soils. *Polar Biol* 30: 1599-1603. doi:10.1007/s00300-007-0324-9.
55. Venkateswaran K, Hattori N, La Duc MT, Kern R (2003) ATP as a biomarker of viable microorganisms in clean-room facilities. *J Microbiol Methods* 52: 367-377. doi:10.1016/S0167-7012(02)00192-6.
56. Azam F, Hodson RE (1977) Dissolved ATP in the sea and its utilisation by marine bacteria. *Nature* 267: 696-698. doi:10.1038/267696a0.
57. Mempin R, Tran H, Chen C, Gong H, Ho KK, et al. (2013) Release of extracellular ATP by bacteria during growth. *BMC Microbiol* 13: 301. doi:10.1186/1471-2180-13-301.
58. Riemann B (1979) The occurrence and ecological importance of dissolved ATP in fresh water. *Freshw Biol* 9: 481-490. doi:10.1111/j.1365-2427.1979.tb01532.x.

Appendix G – Safe distribution without a disinfectant residual (2012)

5

Safe distribution without a disinfectant residual

*Gertjan Medema, Patrick Smeets, Mirjam Blokker
and Hein van Lieverloo*

5.1 INTRODUCTION

5.1.1 Safe distribution of water: to disinfect or not to disinfect?

Drinking water is transported from the treatment works to the consumers' tap in a distribution network of pipes and reservoirs. In situations with high raw water quality and/or extensive multiple barrier treatment to produce high quality drinking water, this water should maintain its' high quality during transport.

Microorganisms and microorganism associated processes in the network can affect water quality:

© 2012 Copyright holder. Book title, Edited by Editor(s) name(s). ISBN: X XXXXX XXX X.
Published by IWA Publishing, London, UK.

2

Microbial growth in drinking-water supplies

- Ingress of pathogenic microbes due to loss of physical and hydraulical integrity of the network and the presence of a nearby contamination source (such as sewer lines);
- Growth of microorganisms in the distribution network, some of which may be opportunistic pathogens, such as *Legionella pneumophila*, non-tuberculous mycobacteria, *Pseudomonas aeruginosa*, *Acanthamoeba*, *Naegleria fowleri* and others.

These issues not only affect water quality but may also pose a health risk to the consumer. In addition, growth of non-pathogenic microorganisms can lead to (see chapter 1):

- non-compliance with water quality standards for total coliforms, heterotrophic plate counts;
- esthetical issues such as presence of invertebrates and taste and odour problems;
- corrosion of pipe materials.

In affluent nations, there are two principal approaches to control the microbial water quality in the distribution network. The first approach is to maintain a disinfectant residual in the water during distribution to provide a barrier against ingress of microbial contaminants and limit microbial growth. The second approach is to control the risk of ingress through strict maintenance of the physical and hydraulic integrity of the network and to control the growth of microbes by distributing biologically stable water and using materials that do not leach nutrients. In the latter approach, drinking water is distributed without the presence of a disinfectant residual. This approach is found in some European countries, the former in most of the other affluent nations.

The different approaches have been the subject of debate that amalgamated in the late nineties (Trussel, 1999, van der Kooij et al 1999a, 1999b, Haas, 1999, LeChevallier, 1999). In these debates, arguments pro and con distribution with a disinfectant residual are highlighted. The most important arguments for the use of a disinfectant residual are:

- The presence of a residual disinfectant reduces the risk of microbial contaminants that may enter the distribution network. With the increasing complexity of the distribution network, the costs of the network and the open nature and aging of the infrastructure a residual disinfectant is necessary to inactivate microbial pathogens that may enter the network through cross-connections, mains breaks, repairs and leaks. Also for smaller systems with limited resources, a disinfectant residual is a relatively simple and cheap solution to improve the microbial safety.
- The presence of a residual disinfectant controls the growth of microorganisms in the network. It limits non-compliance with microbial water quality standards such as total coliforms and heterotrophic plate

Safe distribution without disinfectant residual

3

counts. It is also argued that limiting the amount of nutrients in the water and materials is difficult and would require substantial investments in additional treatment (LeChevallier, 1999) and focus on carbon-sources alone may not be enough (Haas, 1999). Also, most networks now in use have been installed in the past decades with the materials of that time and a control strategy should also consider this situation.

- The presence of a residual disinfectant may serve as sentinel for a breach of integrity of the system. When a distribution network is monitored with a consistent sampling strategy (or even on-line sensors) a reduced disinfectant residual concentration may signal that a contamination event has occurred.

The most important arguments against the use of a disinfectant residual are:

- Disinfectants react with organic and inorganic compounds in the water and this creates disinfection by-products (DBP) in small quantities. DBP formation depends on many factors, but DBP such as trihalomethanes (THM) are found in the vast majority of cases of chlorination. More than 600 DBP have been identified (Richardson et al., 2008). Several (groups of) by-products have been associated with illnesses in humans. Some of the DBP (bromate, NDMA, benzaldehyde) show carcinogenic activity in long-term animal studies and several others are classified as possible carcinogens. A large body of epidemiological literature is accumulated over the years and meta-analyses have been conducted to assess the health risk of DBP. Lifetime exposure to chlorinated drinking water is associated with bladder cancer with a risk level of approximately 1 in 1000 (Hrudey & Charrois, 2012). For colon and rectal cancer and also for reproductive health outcomes results are less univocal. A recent review (Nieuwenhuijsen, 2009) indicated that there appears to be some evidence for an association between exposure to DBPs, specifically THMs, and congenital health, particularly in relation to the health effects little for gestational age/intrauterine growth retardation and, to a lesser extent, pre-term delivery, but evidence for relationships with other outcomes such as low birth weight, stillbirth, congenital anomalies and semen quality is inconclusive and inconsistent.
- The reaction of disinfectants with organic compounds in the water may also yield compounds, such as halogenated phenols and anisoles that give rise to taste and odour complaints by consumers. Taste and odour complaints are the most frequent cause of consumer complaints and consumers have a negative opinion about chlorinous taste and odour, both in terms of aesthetics and safety (Crozes *et al.*, 2007).
- The sensitivity of pathogens to the disinfectants used in the network differs. The disinfectants used are effective against bacterial pathogens, less so against viruses and even less so against parasitic protozoa (Payment, 1999,

4

Microbial growth in drinking-water supplies

EPA, 2012). Chlorine and chloramine are not effective against *Cryptosporidium*. (LeChevallier & Au, 2004).

- The use of a disinfectant residual may mask the failure of the integrity of the system and ingress of microbial contamination (Craun & Calderon, 2001). Water quality testing for coliforms or *E. coli* that are very sensitive to chlorine may indicate that the water is not contaminated, while infectious pathogens that are more resistant may be present in the water. This is of particular importance in samples taken after repairs and maintenance.
- Disinfectant residuals are not very effective against microbes in biofilms on pipe walls or sediment. The disinfectants react with the biofilm matrix but do not reach the microbes (LeChevallier *et al.*, 1988). Also microbes in biofilm particles that slough off the wall and enter the bulk water again are more difficult to reach and inactivate (Behnke *et al.*, 2011).
- Disinfection is targeting the symptoms rather than the cause of the microbiological issues in the network. The cause of ingress is insufficient hydraulic and structural integrity and hygiene. The cause of biofilm formation is the quality of the treated water and the materials used in the network. Targeting the cause is more effective and is also not sensitive to failures in the disinfection.
- In many settings, disinfectant residuals are not maintained throughout the entire network. That means that only a part of the network and consumers is protected by the presence of a residual and part is not (Payment, 1999, Gauthier *et al.*, 2001). In such settings, disinfectant residuals may even enhance regrowth as they react with the organic compounds in the water and produce compounds that are more readily biodegradable (Skadsen, 1993; Zang and DiGiano, 2002).
- The use of toxic chemicals such as chlorine and chlorine dioxide requires production and may require transportation of these chemicals with a risk of accidents and spills.

Looking at the pros and cons there is no simple answer to the question whether a disinfectant residual in the distribution network is necessary/beneficial for health and a wholesome drinking water quality. The answer certainly depends on the context, such as the quality of the water entering the network, hydraulic and structural integrity of the network and the ability to apply proper hygiene. In the context of drinking water supply in the Netherlands, the answer is no. The next paragraphs describe the history and rationale of this answer and the consequences for safeguarding drinking water safety, with the emphasis on protection of the distribution network against ingress of faecal contamination. Protection against regrowth is discussed in other chapters in this book.

5.1.2 The road to distribution without disinfectant residual in the Netherlands

In the 1970's, chlorination was applied in the Netherlands, particularly in surface water treatment. After the discovery of DBP of chlorination in the water of Rotterdam Water Works (Rook, 1974, Bellar *et al.*, 1974), a significant effort started to reduce the use of chlorine in water treatment. The reduction of chlorine use or replacement of chlorine was promoted: "the amount of chlorine to be added should, however, not be more than is absolutely necessary" (Kiwa, 1978), but not without recognizing the significance of disinfection for public health "until...techniques have been found to be at least equivalent to chlorination, chlorine must from a public health viewpoint continue to be used as a disinfectant for potable water". In the late seventies, the amount of chlorine used in water treatment in the Netherlands was reduced significantly by limiting break-point chlorination and transport chlorination at low temperatures and using lower doses in summer (Kruithof, 1986^{a,b}). Also, post-treatment disinfection was re-examined and was shown to be an important contributor to the presence of THMs in the network. Given the suggested relation between by-products of chlorination and several types of cancer and the observed mutagenicity (as seen with the Ames-test) of the water, it was recommended to reduce post-chlorination as much as possible. This meant in several water supplies that the residual was present only in the first part of the distribution network. The residual disappeared due to reaction of the disinfectant with reducing compounds in the water, biofilm, sediment and piping materials and no residual was present in the largest and more distant part of the network.

As an example, Amsterdam Water Supply started a full scale experiment in 1983 to reduce the chlorine dose stepwise and monitor what happened to the water quality in the distribution network (Schellart, 1986). It turned out that when the chlorine was reduced to zero, the mutagenicity (Ames-test) of the water disappeared, total trihalomethanes were reduced from 12-22 µg/l to below the detection limit, no coliforms or enterococci were detected in the network (before and after stopping the chlorine dosing), the heterotrophic plate counts remained as low as they were (2-5/ml) and the assimilable organic carbon (AOC) content of the finished water was reduced with 40% (Schellart, 1986). So the chlorine dosing was stopped permanently (it was kept standby for emergency disinfection). Similar developments were seen at the other surface water utilities that used a chlorine residual. And even though the concentrations of chlorination by-products were below the 10⁻⁶ lifetime cancer risk level, the utilities abandoned the use of post-chlorination (van Genderen, 1998).

In the 1990's, disinfection of surface water with chlorine was replaced in the Netherlands by ozone or membrane filtration as primary barrier to pathogens, except for two water treatment plants. By 2006, these two chlorine-based disinfection plants changed to UV for primary disinfection, so chlorine is not used in water distribution *and* water treatment in the Netherlands any longer. Important arguments for abandoning chlorine also from water treatment were: prevent DBP formation, improve taste and odour and hence consumer satisfaction, and apply sufficient disinfection, particularly of *Cryptosporidium*.

Today, there are two surface water utilities that use low doses of chlorine dioxide as post disinfection; not to create a residual in the network but to inactivate heterotrophic bacteria that may grow in activated carbon or sand filters in periods when the water temperature is high. In several other surface water, bank filtration and groundwater systems, UV is used for this purpose.

The Netherlands is not unique in the distribution of water without a disinfectant residual. Denmark and areas in other Nordic countries, areas of Germany (Hamsch, 1998), Luxembourg and Switzerland (Klein & Foster, 1998) distribute water without chlorination. These countries, and the EU, have no legal requirement for maintaining a disinfectant residual. Standards occur for microbial water quality and the owner of the network is obliged to ensure that the water meets these standards (with or without disinfectant residual).

5.1.3 Microbial safety in water legislation in the Netherlands

Water legislation in the Netherlands has adopted Quantitative Microbial Risk Assessment as the central approach to demonstrate the microbial safety of (surface) water supply systems (Anon, 2001, 2011). Water utilities have to monitor the presence of reference pathogens (*Campylobacter*, *Cryptosporidium*, *Giardia*, culturable Enteroviruses) in the source water and demonstrate the adequacy of the treatment processes to remove these pathogens to produce drinking water that has a quality that corresponds with a probability of infection of less than 1 in 10,000 persons per year. Although not identified specifically in the legislation, maintaining this high quality through the distribution network implies the same safety level applies to the water delivered to the consumer.

5.2 Good engineering practice

Good practices in construction, operation and maintenance of distribution networks is of paramount importance in protecting the water quality, both with and without a disinfectant residual in the network. When the network is in good condition and actively managed, this creates the proper conditions to consider distributing water without disinfectant residual.

The basic elements are:

Safe distribution without disinfectant residual

7

- Physical integrity. The physical integrity prevents ingress in places or times where the hydraulic pressure is low or absent. Physical integrity is particularly important in places such as reservoirs that are not pressurized. The Netherlands has a very low leakage rate, generally <3% (Beuken *et al.*, 2006). Compared to leakage rates in other European countries this is very low (Figure 5.1) and a comparative study identified several factors that contribute to this (UKWIR, 2006). The pressure in the network can be relatively low due to the flat terrain and high buildings are equipped with their own pump. The majority of the network is relatively young and produced of PVC with relatively few joints and connections. Like many affluent nations, the Netherlands is facing ageing networks and need to actively assess and manage network condition and integrity to prevent leakage and ingress.

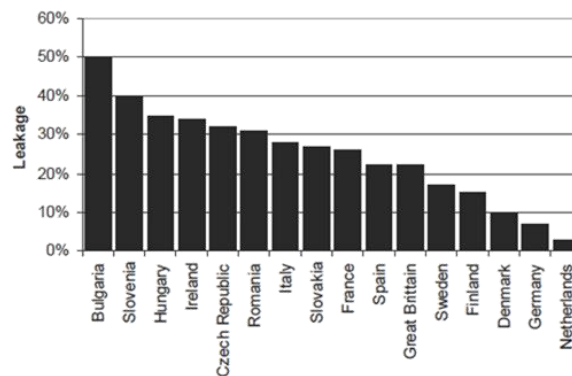


Figure 5.1. Leakage rates in European countries (VEWIN, 2009; DVGW, 2008).

- Hydraulic integrity. Continuous maintenance of sufficiently high pressure in the network to prevent contaminants entering the network is required. Pressure fluctuations and surges are minimized by variable pumps, pressure dampening devices, valve closure procedures, automated distribution control to prevent large flow fluctuations and pressure zoning in (the few) hilly areas (Smeets *et al.*, 2009).

8

Microbial growth in drinking-water supplies

- Protection against backflow. Use of break tanks before larger user-installations (industries, hospitals) and the use of backflow preventers in the water meters of house connections, where >96% of the connections are metered.
- Strict hygiene during construction and maintenance. A national hygiene code was developed by the water utilities (Nobel, 2001, van Lieverloo *et al.*, 2002). Since then, this has become part of the quality assurance systems of the water utilities. It has recently been updated (Meerkerk & Kroesbergen, 2010) and has become an integral part of the Dutch drinking water legislation. The code lays down the principles of good hygiene during construction and maintenance and describes control measures for safe storage of materials, inspections, cleaning and disinfection of materials and pipes after construction or repair, personal hygiene and use of appliances such as fire hydrants. Also training, supervision and water quality monitoring to verify the efficacy of the hygiene code is described.
- Approval system for materials and valves and hydrants. Certification of materials and appendages that are to be used in distribution networks has been developed since the start of Kiwa in 1948. All materials have to be approved according to the national acceptance scheme.

5.3 Evidence of safe distribution without disinfectant residual

Noblesse oblige; with the absence of a disinfectant residual the water utilities have one barrier less in the distribution system and are obliged to ensure that the other barriers are in place and effective. Recognizing the difference in approach to safe distribution in the Netherlands and the United Kingdom, a collaborative research project was conducted around 2000 to evaluate the knowledge on distribution of drinking water with or without a disinfectant residual (van der Kooij *et al.*, 2002). Both countries show a high compliance with microbial water quality standards and recognize that good engineering practice is the principal factor in protecting the distribution system against ingress. A chlorine residual appears to be a cheap way to reduce regrowth, but increases DBPs and taste and odour complaints. The UK-NL study indicated that a chlorine residual may offer at least some protection against faecal contamination of the network.

In the past decade, concerns were raised in North America and Europe over distribution system contaminations as a result of cross connections, pressure transients and maintenance works and the association with illness (Payment *et al.*, 1991, 1997, Craun & Calderon, 2001, Karim *et al.*, 2003, Hunter *et al.*, 2005, Nygard *et al.*, 2007, Besner *et al.*, 2011, LeChevallier *et al.*, 2011). In the joint research program of the water utilities in the Netherlands (BTO), research

projects focused on the evaluation of the evidence that distribution without disinfectant residual offers sufficient protection against ingress of pathogens. The next paragraphs present the evidence coming from surveillance of waterborne outbreaks of disease, contamination events registered by the water utilities, water quality monitoring and operational monitoring.

5.3.1 Evidence from waterborne outbreaks

In affluent nations, outbreaks of waterborne illness are our main source of information about the burden of disease via community water supply, even though they are difficult to detect (Hunter *et al.*, 2001). The difficulty to detect waterborne outbreaks means that the information we collect from outbreaks is an underestimation of the actual number of waterborne disease outbreaks (Ford, 1999). Moreover, sporadic cases are thought to represent a larger proportion of waterborne disease than cases related to outbreaks (Nichols, 2003) but go largely unnoticed. Such sporadic cases may be particularly the result of local contamination events in the distribution network. So, our picture is incomplete, but what is evident from outbreaks in public supplies is that harmful pathogens may spread to a large body of consumers resulting in substantial economic and health-related costs. This is illustrated by the April 1993 *Cryptosporidium* outbreak in Milwaukee (Mackenzie *et al.*, 1994), where around 403,000 people suffered illness, 4,400 people were hospitalised and around 100 people died. Even though these figures have been disputed by others (Hunter and Syed, 2001), it is clear from this and many other outbreaks that the health and economic consequences can be large.

Outbreaks do not only show that the impact can be substantial, but also inform the water and health community about the events, faults and circumstances, alone or in combination, that may lead to an outbreak. The next paragraph is a brief literature review about outbreaks that were caused by an event in the distribution network, to indicate the relative significance of the network and the causes of contamination events that have been implicated in outbreaks.

Hunter (1997) reported that 15 of the 57 outbreaks in public water supplies in the UK between 1911 and 1995 were associated with contamination within the distribution network. In the Nordic countries, 18-20% of the outbreaks through drinking-water between 1975 and 1991 were associated with cross connections, both in community and private supplies (Stenström *et al.*, 1994). In the European project MICRORISK, outbreaks through public water supplies in Europe between 1990-2004 were reviewed and subjected to a fault tree analysis (Risebro *et al.*, 2007). 86 outbreaks were reported, with a total of 72,546 cases,

of which 341 were hospitalised and 1 died. In 33% of these outbreaks, contamination during distribution was the dominant cause of the outbreak. The fault tree analysis showed that distribution system events were usually solitary events, i.e. without a related event in source or treatment. Events that have contributed to outbreaks through contamination of distribution networks were:

- cross connections/backflow
- construction or repair
- damaged/old mains
- low pressure
- cleaning of mains
- reservoir contamination

In the USA, 671 outbreaks reported in community water supplies from 1971 to 2002 were associated to distribution system deficiencies (Craun *et al.*, 2006). Data on incidents collected by the USEPA suggest that this is an underestimation of the actual number of identified outbreaks by a factor of 3 – 4 (Reynolds *et al.*, 2008). Figure 5.2 illustrates the type of deficiencies that were identified as cause of the contamination.

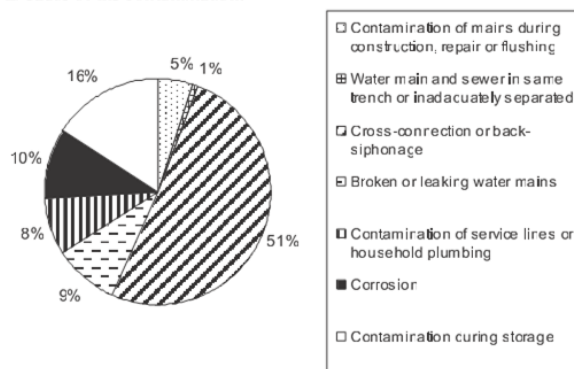


Figure 5.2. Distribution deficiencies associated with waterborne outbreaks in the United States, 1971–2000 ($n = 120$). (From Calderon, 2004; Reynolds *et al.*, 2008)

The proportion of outbreaks associated with treatment deficiencies has declined over the years, and the deficiencies in the distribution network seem to be a proportionally increasing cause of waterborne outbreaks. From 1991–2000, 25% of the outbreaks were related to a contamination in the distribution system or in household plumbing. In the period 1920–1990, this was 11–18% (Craun & Calderon, 2001). This increase of distribution deficiencies may be associated

Safe distribution without disinfectant residual

11

with aging distribution networks. Why didn't the presence of a chlorine residual prevent these outbreaks? This is largely unknown. What is suggested (Craun *et al.*, 2006) is that many pathogens associated to these outbreaks are not likely to be killed by the low level of disinfectant residual in the network. Another trend in the US that was associated with distribution-associated outbreaks was that they affect more people than other deficiencies.

From the review of outbreaks through community drinking water supplies (Hrudey & Hrudey, 2004) it is clear that in many distribution-related outbreaks, lack of or non-compliance to adequate hygiene procedures to maintain the integrity of the network or to ensure safety during and after breaks and repairs have led to gross contamination of mains water which resulted in people falling ill and even to fatalities, such as in the Cabool and Gideon outbreaks in Missouri, USA. Hrudey & Hrudey (2004) state: "many of the most troubling cases have revealed no effort whatsoever at assuring distribution system integrity". In other cases, outbreaks resulted from cross-connections or open connections with contamination sources.

In the Netherlands, three outbreaks of waterborne diseases have been reported since 1945. All these three outbreaks connected to contamination of drinking water in the distribution network. Six cases of typhoid in Amsterdam occurred in 1962, possibly due to sewage contamination of the drinking water network. In 1981, 609 cases of enteric disease of multiple aetiology were reported because of waste water inflow from a marine vessel by a cross connection with the drinking water network in Rotterdam (Huisman and Nobel, 1981). At that time, water was still distributed with a (low) disinfectant residual. In 2001 an outbreak of gastroenteritis, with approx. 500 people experiencing symptoms, occurred due to a cross-connection in a dual reticulation system between a "household water" (partially treated river water) pipe and the drinking water network (both without residual disinfectant) (Fernandes *et al.*, 2007; Van Lieverloo *et al.*, 2007^b). Because of this outbreak, the use of dual reticulation systems was largely banned in the Netherlands.

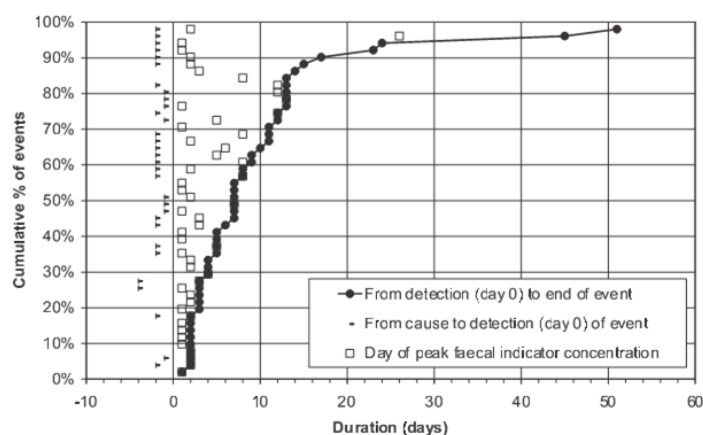
Comparing the documented outbreaks in the Netherlands and the United States indicates that the number of outbreaks and disease cases in The Netherlands is low: in the period 1971-2002 there were 671 community water supply outbreaks in the US (roughly 22 outbreaks per year or 0.08 outbreaks per million consumers per year), compared to 2 (1 every 15 years or 0.004 outbreaks per million people per year) in The Netherlands. In Europe 86 outbreaks were recorded (roughly 6 per year or 0.01 outbreaks per million consumers per year) from 1990-2004. Though many differences in water supply and surveillance system make a direct comparison difficult, the outbreak

statistics certainly do not suggest that distribution of drinking water without a disinfectant residual increases the risk of a waterborne outbreak.

5.3.2 Evidence from contamination events

Outbreaks are the tip of the iceberg of contamination events (Craun *et al.*, 2006) that may lead to illness among exposed consumers. Operational data from water utilities may provide a more extensive picture of contamination events that occur in the distribution network. The absence of a registered outbreak of disease cases in these contamination events does not mean that no disease cases occurred. Health surveillance is not very sensitive in picking up waterborne outbreaks of intestinal illness.

Westrell *et al.* (2004) used operator logs of the Gothenburg water utility to estimate the frequency and magnitude of contamination events in the distribution network. Failures in the distribution system were derived from the incidence reports between 1980 and 2000 and personnel interviews. In a few events, cross-connections with pressurised sewage pipes were detected as the cause of the contamination, but for contamination events in the periphery of the distribution system or in reservoirs, no information of the contamination source was recorded. The events in the periphery and reservoirs were caused by leakage through cracks in concrete reservoir walls or through damage during maintenance of the network.



Safe distribution without disinfectant residual

13

Figure 5.3. Duration of 50 faecal contamination events reported in the Netherlands from 1994 through 2003. The start was defined as the first day that faecal indicator bacteria were detected (from detection to end) or the day the suspected cause of the event occurred (from cause to detection). The end of the event was the second day when no indicator bacteria were detected anymore in 100 ml samples. From Van Lieverloo *et al.*, 2007b.

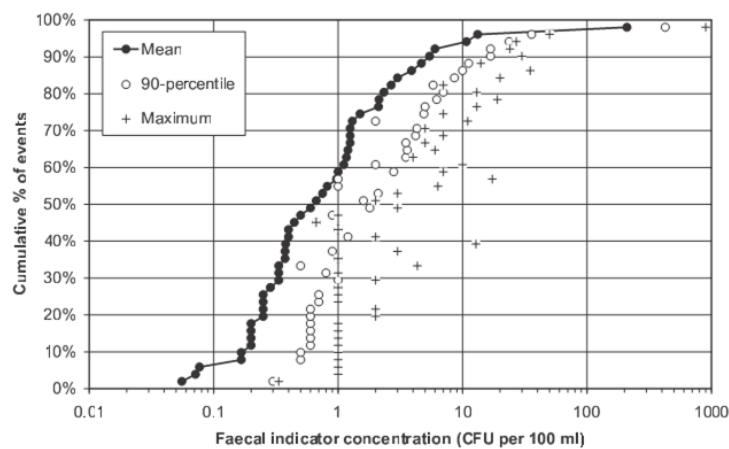


Figure 5.4. *E. coli* concentrations per 100 ml in water samples during 50 faecal contamination events. From Van Lieverloo *et al.*, 2007b.

In the Netherlands, a large study was conducted to collect information about contamination events in distribution networks. Water utilities, representing the water supply to 11 million consumers, collated the information on events from the period 1994-2003 (Van Lieverloo *et al.*, 2006, 2007^b). Events were defined as repeated detection of faecal indicators. Fifty events were recorded, or (roughly) 0.4 events per million people per year, hundredfold higher than the recorded outbreaks. One event was the recorded outbreak in 2001, in the other events no increased illness incidence was noted. The estimated affected

population varied between 5 and 50,000 persons, with 9 events affecting over 1,000 consumers and a total affected population of 185,000 persons. The utilities emphasized that not all events were retrievable from the records, so this overview was an underestimation of the actual number of events. Data were compiled from the events on the duration (median 8 days, 95% 30d, Figure 5.3) and the level of contamination, described by the concentration of *E. coli*/thermotolerant coliforms detected (Figure 5.4).

The event data also provided information about the cause of the event, the suspected source of contamination and type of system failure that was involved, how the event was detected and what type of remedial actions were taken to restore safe water distribution. Table 5.1 provides a summary of the data.

Table 5.1. Characteristics of 50 faecal contamination events recorded from 1994-2003.

Phase of water supply system that was cause of the event							
Distribution	Unknown	Source	Treatment	Before distribution			
37	10	1	1	1			
Site of water supply system that was cause of the event							
Main	Unknown	Reservoir	Well	Treatment			
34	13	2	1	0			
Cause, type of failure							
Unknown	Replacing mains/hydrant	Repair mains	Damaged main	Leak in reservoir	Cross-connection	Flushing	Swabbing
19	18	8	1	1	1	1	1
Suspected source of contamination							
Soil	Unknown	Sewage	Surface water	Roof material			
26	19	3	2	0			
Detection of faecal contamination event by							
1 st sample	2 nd sample	3 rd sample	4 th sample	Complaints			
25	7	1	1	3			
Site of detection							
Treatment plant	Distribution reservoir	Periodical tap water sample	After operations				
2	12	7	29				
Remedial measures taken							
Flushing mains	Isolation of	Unknown	Boiling advisory	Dosage of			

Safe distribution without disinfectant residual

15

	mains section			disinfectant
48	29	16	7	2

Only 3 of 50 events were reported to have occurred in wells or (groundwater) treatment plants, whereas 37 events occurred in distribution systems (Table 1). Over half of the reported events concerned contaminations that were detected after operations in mains (18 replacements, 8 repairs, 2 cleaning operations). In these cases, supply was commenced immediately after the operations, but not before the mains were flushed and in some cases disinfected. Standard procedure for operations is isolation of the distribution mains that were opened, until microbial safety has been verified by water quality testing. Most of the unknown causes were not well recorded as information was limited to sampling dates and concentrations of thermotolerant coliforms in laboratory databases. It is likely that the causes of these events in most cases also were also a result of mains operations. Isolation and flushing were the primary responses to prevent further spread of the contaminants and to remove the contaminants from the network. Evaluating the remedial actions of the utilities from a health perspective, more attention to issuing boiling water advisories (now issued in only 7 out of 50 events) and the use of remedial, targeted disinfection of the contaminated mains (used in only 2 out of 50 events) is advised.

What do these events mean for the consumer? The average annual probability of a consumer in the Netherlands to reside in an event-affected area is 1.7×10^{-3} . But what is the health risk of these events? Van Lieverloo *et al* (2007^b) used the event data (frequency, affected population, duration, *E. coli* concentration) in a Quantitative Microbial Risk Assessment (QMRA) to estimate the health risk associated with such events. This required a set of assumptions since the collected information did not disclose all the elements. One major assumption was the source of the contamination. To estimate the health risk, the information collected on duration and thermotolerant coliform concentrations had to be transformed into the exposure of consumers to faecal pathogens. To achieve such a transformation, pathogen-to-thermotolerant coliform ratios were derived from data on pathogen concentration (culturable thermotolerant *Campylobacter*, *Cryptosporidium* oocysts, *Giardia* cysts, culturable enteroviruses) and thermotolerant coliform concentration in sewage (Medema *et al.*, 2001; Höller, 1988). The calculated total risk of infection was dominated by the risk of *Campylobacter* because the *Campylobacter*-to-thermotolerant coliform ratios were the highest of the investigated faecal pathogens. Assuming surface water as contamination source yielded a 95-percentile risk of infection per event of 0.16; when sewage was assumed as source the 95-percentile risk of infection was 0.013; 12-fold lower, because the data showed that in sewage the average

Campylobacter-to-thermotolerant coliform ratio was 12-fold lower than in the surface water. In any case, the best estimate of the risk of infection during events, even if low numbers of faecal indicator bacteria are detected, appears to be substantial. This is in line with recorded waterborne outbreaks where low numbers of *E. coli* were detected in the water (Hrudey & Hrudey, 2004; Fernandes *et al.*, 2006). Improvement of our ability to assess the health risk of such events can be achieved by collecting more data on the contamination level of the soil surrounding the water mains. The soil was identified as the main source of contamination in the events in the Netherlands and is the least well characterized in terms of microbial contamination (Van Lieverloo *et al.*, 2007^b).

Does the occurrence, frequency, magnitude and health risk of contamination events in the network imply that a disinfectant residual is necessary? Simulation studies indicate that chlorine (but not chloramine) disinfection is an effective barrier against ingress of microbial contaminants (Propato & Uber, 2004; Teunis *et al.*, 2010). Nevertheless, many outbreaks are reported via chlorinated systems and the epidemiological studies indicate that contamination events in chlorinated systems are associated with disease in the consumers (Payment *et al.*, 1991, 1997, Hunter *et al.*, 2005, Nygard *et al.*, 2007). In the UK, the Drinking Water Inspectorate recorded between 14 and 47 microbiological contamination events per year in the period 1990-2005 (Gray, 2008). They see an increasing number of events in the network of both microbiological contamination and discolouration and associate this with the increasing remedial activities of the ageing networks. These findings illustrate that a disinfectant residual in the network is certainly not an absolute protection. This was also concluded by Van der Kooij *et al.* (2002). Structural and hydraulic integrity and strict hygiene are preventative measures, while a disinfectant residual is a curative measure for failures. In the absence of a disinfectant residual, the water utility relies more heavily on the preventative measures, but also has a more sensitive monitoring system to detect faecal contamination. Several enteric pathogens, particularly viruses and protozoa are (much) more resistant to chlorine and related disinfectants than indicator bacteria such as *E. coli*. This means that infectious pathogens may still be present in contaminated water, where the indicator bacteria for faecal contamination have been inactivated. Several outbreaks of viral and protozoal illness have been reported from water in which no *E. coli* was detected (Craun and Calderon 2001; Anderson and Bohan 2001). Hence, the low frequency of events in the Netherlands, coupled with a rapid response to identify and repair these breaches, the limited protective value of a disinfectant residual are considered adequate protection of the safety of the consumer. In the context of the rapid response, improvements in consumer protection by proactive issuing of boil water advisories and in certain

Safe distribution without disinfectant residual

17

cases the use of targeted disinfection of the network to inactivate the contaminants is warranted.

5.3.3 Evidence from water quality monitoring

The statutory monitoring of faecal indicators by water utilities can also provide information about contamination events that occur in the distribution network. Bartram *et al.*, 2002 accumulated the results of statutory drinking water monitoring for faecal indicator bacteria in Europe. On average, 1-2% (range 0-12%) of the drinking water samples show the presence of thermotolerant coliforms. This included countries in the (far) Eastern WHO Europe region and countries with a high proportion of small rural water supply systems. Studies from European countries with more centralized water supply systems indicate that only around 0.05-0.3% of the samples show the presence of *E. coli* (van der Kooij *et al.* 2002; Mendez *et al.* 2004; van Lieverloo *et al.* 2006, 2007^b; Hambsch *et al.* 2007). In the Netherlands, the statutory monitoring for coliforms and *E. coli* is used by the water utilities in the water quality index of their benchmark. The statutory monitoring shows drinking water has a very high compliance with the drinking water standards. On average there was 1 instance of incidental non-compliance with standards in 2008 for every 333 million m³ supplied in the sector (VEWIN, 2009^b). This is a clear indication that water without a disinfectant residual can be delivered to the consumer without contamination by cross connections or ingress. To study this in more detail, coliform and thermotolerant coliform monitoring data from 1996-1998 were collected from 8 Dutch water utilities. Table 5.2 shows the pooled data.

Table 5.2. Percentage of samples containing coliform and thermotolerant coliform: first samples and repeat samples taken the next day at the same or a nearby sampling site.

Location	n	Coliform positive	Repeated coliform positive	Thermotolerant coliform positive	Repeated thermotolerant coliform positive
Water leaving works	26656	0.70%	0.086%	0.10%	0.004%
Water in reservoirs	6682	2.02%	0.614%	0.31%	0.030%
Water in premises	54741	0.96%	0.037%	0.31%	0.0037%
Total	88079	0.96%	0.095%	0.24%	0.0057%

Both coliforms and thermotolerant coliforms were detected more often in premises and reservoirs than in water leaving the works, which was an indication that ingress of faecal contamination may occur at low levels during

distribution. Repeated detection of (thermotolerant) coliforms was most frequently observed in the reservoirs. Given the residence time of water (and contaminants) in reservoirs, this is not surprising.

To try to understand what this low frequency and level of potential faecal contamination means in terms of safety, the sampling program was assumed to be representative of the occurrence of faecal contamination in the network. The thermotolerant coliform drinking water data were transformed to pathogen data, assuming sewage was the source of contamination and using concurrent data of pathogens and thermotolerant coliforms in sewage. The resulting pathogen data were used to calculate the probability of infection with enteric pathogens (van Lieverloo et al., 2003). The overall probability of infection (given the assumptions) was in the order of 10^{-6} per person per year, well below the 10^{-4} threshold. Incidents of repeated *E. coli* positive samples give a high probability of infection (see previous paragraph), but are very rarely seen. Given the transient nature of contamination events and the water flow in the network, current practice of repeated sampling the following day at or around the same premises as the first positive sample was taken may not be very able to detect all incidents.

In a subsequent European study, 3 years of statutory monitoring data from the Netherlands, were compared to the data from France and Germany (Table 5.3, Hamsch et al., 2007). Overall, the percentage of samples containing *E. coli* was higher in France than in Germany or the Netherlands. The French data contained a high percentage of small rural water supplies, while the German and Dutch data represented larger systems. The larger German statutory data set of all systems does include small systems and yields higher percentages of *E. coli* positive samples (up to 0.23%). Also, the data from France indicated that no further deterioration of the water quality takes place in the network, while the German and Dutch data do show a higher percentage of positive samples in the distribution network compared to the water leaving the works. Comparing the data from the Netherlands from this period (2001-2003) to the previous suggests that the water quality in the network has improved (Table 5.3 vs Table 5.2).

Table 5.3. Incidence of *E. coli* in tap water. From Hamsch et al., 2007

	Germany	France	Netherlands
Represented # of consumers (million)	5.8	27.5	12.1
Water volume (million m ³)	400 (est)	2680	820
Water supply zones	13	1960	125
# of samples	42000	94000	149000
Chlorine residual	No	Yes	No

Safe distribution without disinfectant residual

19

Leaving works with <i>E. coli</i>	0.005%	0.3%	0.04%
Distribution system with <i>E. coli</i>	0.1%	0.3%	0.09%

Although a direct comparison is hampered by the nature of the supply systems, the findings suggest that a high level of safety can be reached in the absence of a disinfectant residual. The data also indicate that water quality might be affected during distribution; compare the percentages of *E. coli* positive samples in water leaving the works and in the network in the data from Germany and the Netherlands. In the same study, much larger volumes of distributed water (10-200 L) than the normal 100 ml were sampled and analysed to increase the sensitivity of detection. A total of 356 samples were collected in the United Kingdom, Germany and the Netherlands. None of these large volume samples showed the presence of *E. coli*. The study suggested that contaminations occur infrequently and during a short period.

But what is the level of protection that may be assigned to the statutory microbiological water quality monitoring? Not all water is tested all the time; the common approach is to take grab samples from predefined premises throughout the distribution network with a certain spatial and temporal distribution. The sample volume may vary, but the most commonly volume tested for *E. coli* is 100 mL. Contamination events due to cross connections or ingress through leakage or orifices may occur throughout the system. Given the nature of the statutory monitoring, it will not be possible to detect all events that occur throughout the network and time. No information was available on the sensitivity of the statutory monitoring. We evaluated the sensitivity of a statutory monitoring system to detect an event of ingress of raw sewage into the distribution network in a simulation study (van Lieverloo *et al.*, 2007⁹). The distribution network of a medium-sized city (72,000 inhabitants; 20,300 connections) was used. The network was fed with groundwater and did not contain a disinfectant residual. Contamination events were simulated, in which raw sewage entered the network with a rate of 1 l/h for a period of 16 hours. The *E. coli* concentration in raw sewage (1×10^8 cfu/l¹) was the average of a sewage monitoring survey. Twelve different points of entry were simulated: at the treatment works, in a large transport main, in a reservoir and in nine (both central and peripheral) premises throughout the network.

A hydraulic model of the network, that was calibrated against flow and pressure measurements, was used to simulate the transport of *E. coli* in the network. Immediate and complete mixing of the *E. coli* from sewage into the mains and also in the reservoirs was assumed. *E. coli* was considered to behave as a conservative contaminant, be transported by convection and no inactivation or settling occurred. The hourly *E. coli* concentration at each sampling site was

calculated for a period of 1,200 hours following the contamination event and the detection probability of the statutory monitoring program was determined. The statutory monitoring program was the actual program that the water utility used in this city. The monitoring program was designed in accordance with the EU Drinking Water Directive, but was more extensive than the minimum requirements of the Directive. It contained 47 sampling sites: one at the treatment works, two in reservoirs and 44 in premises throughout the network. The annual number of samples taken from the premises is four per site (176 in total, minimum requirement of Directive for this network: 39 check and 15 audit samples). The results of the simulations showed that the probability of detecting each of the nine contamination events throughout the network was on average 5.6% and varied from 0 - 13%. That means that on average 95% of such contamination events remain undetected by the statutory monitoring, even in the more expanded mode that was used here. This is in line with the reports of outbreaks of disease or contamination events that are reported by customer complaints rather than by water quality monitoring (Hrudey & Hrudey, 2004, Fernandes *et al.*, 2007). The low sensitivity is primarily determined by the transient nature of the contamination event and the infrequent water quality monitoring (over space and time). This appears to reflect the actual situation of contamination events (Van Lieverloo *et al.*, 2007^b, Besner *et al.*, 2011, LeChevallier *et al.*, 2011).

Several options to improve the detection probability were investigated (Blokker *et al.*, 2009). Increasing the sample volume did not increase the detection probability. Increasing the sampling frequency at the sampling sites did increase the detection probability, a 3 fold increase yielded an increase of the detection probability to 10.9% and at weekly sampling (which is 13 times more frequent than the current program) the average detection probability of all events was 31%, although the standard deviation was high. Selection of sampling sites based on the residence time of the water in the system or using the gate-keeper approach did not substantially improve the detection probability. We also investigated the (hypothetical) scenario of installing on-line *E. coli* sensors for continuous monitoring throughout the distribution network. Sensor locations were optimized with a genetic algorithm (Weickgenannt *et al.*, 2010). With 5 sensors, 60% of all events was detected and with 25 sensors this increased to approx. 80% (Figure 5.6).

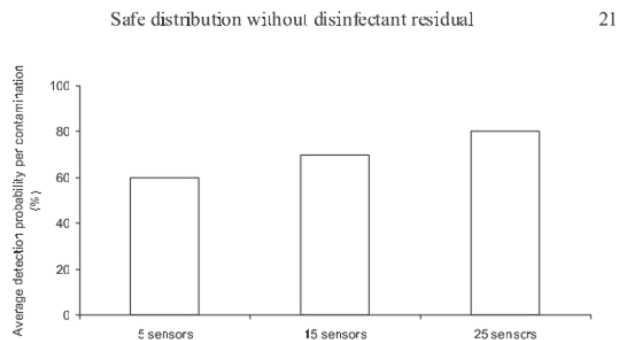


Figure 5.6. Probability of detection of a contamination of the distribution network with different (hypothetical) sensitive *E. coli* sensors.

6.3.4 Evidence from operational monitoring

The combination of physical and hydraulic integrity of the distribution network provides a double barrier against contamination of drinking water during distribution. For intrusion of contaminants to occur, both the physical and the hydraulic integrity of the network need to be lost at the same time and place, and contaminants should be present in the vicinity of the network. Loss of pressure is a breach in the protection that could result in backflow from cross-connections or intrusion of contaminants through leaks and orifices (LeChevallier *et al.*, 2003, 2011, Besner *et al.*, 2010). Causes of sustained pressure loss are mains breaks, repairs and power loss. Also short (seconds to minutes), transient events of low or negative pressures have been implicated as the cause of contamination of distributed drinking water. Such events can be caused by pump shutdowns but also by transmission main closures, use of hydrants, main repairs and pump power failures (Funk *et al.*, 1992, Besner, 2010b). The contaminants may enter the distribution network through (small) leaks in pipes, leaking couplings, cross-connections, joints or seals and submerged air valves. The health risk of contamination by low pressure events was suggested in two epidemiological studies in Europe. In England, a strong association between low water pressure, as noticed by the consumer, and self-reported diarrhea was found (Hunter *et al.*, 2005). The study was not designed to test this association (it was a case control study of sporadic cryptosporidiosis), but the authors hypothesized that 15% of intestinal illness in the community may be associated with low pressure events. In Norway, Nygard *et al.* (2007) studied 88 low pressure events in 7 distribution networks. The events were

caused by main breaks and planned and unplanned repairs. Consumers in affected areas had a 1.6-2.0 times increased risk of intestinal illness. The authors hypothesized that if 20% of the consumers are exposed to a low pressure event every year, this would mean that these events caused 33,000 cases of intestinal illness annually in the Norwegian population of 4.5 million; if low pressure events are more frequent the number of cases will be higher. Flushing of the pipelines and use of chlorination after a repair episode yielded a reduction of the risk of illness. Guidelines in Norway recommend chlorination of distribution networks after maintenance, loss of water pressure or both and prior to repressurizing, to protect against contamination. However, these recommendations are specified to certain predefined risk incidents, where a contamination might have occurred and are often not followed. Only one of the seven participating water utilities chlorinated routinely in all episodes of work on the distribution network.

No outbreaks have been directly associated with short pressure transients. A number of outbreaks have been associated with low pressure events, leading to backsiphonage or ingress through cross connections, including the 2001 outbreak in the Netherlands (Craun & Calderon, 2001, Fernandes *et al.*, 2007).

In the Netherlands, unplanned interruptions of supply are recorded, especially since the introduction of this parameter in the benchmark of the water utilities, to determine the level of service to the consumer. Not only the downtime but also the characteristics and causes of the unplanned supply interruptions are recorded and pooled by all water utilities. The primary objective of these records is to estimate the life expectancy of distribution network segments, as an aid to proactive evidence-based asset management (Vloerbergh *et al.*, 2008). At the same time, they also provide information about the frequency of events that may be associated with ingress, such as low or no pressure. The interruptions are expressed as minutes of interrupted or inadequate supply. In 2009, consumers suffered an unplanned interruption of water supply of, on average, 7.5 min (range of average time between utilities was 2-13 min). This was an increase of 32% compared to 2006, probably due, at least in part, to improved registration.

OFWAT (2008) has collected data on leakage and supply interruptions from 2006-2007 from different countries. The data are not complete and not always directly comparable, but do reflect the good structural and hydraulic integrity of the distribution network in the Netherlands (Table 5.4).

Safe distribution without disinfectant residual

23

Table 5.4. Operational data on distribution networks (based on OFWAT, 2008).

	Main bursts per 1000 km	Leakage m ³ /km/d	Unplanned interruptions per 1000 properties	Properties at risk of low pressure
England/Wales	187	10.1	23	0.02%
Scotland	166	21.3	34	0.31%
Canada	66	11.9	21	No data
Australia	No data	4.4	50	No data
Portugal	67	7.0	0.4 (>12 hr)	No data
USA	629 [*]	No data	3	No data
Netherlands	70 ^{***}	1.6	***	No data

^{*}LeChevallier *et al.*, 2011 indicate an industry average of 23-27 breaks per 100 miles, or approx. 150 per 1000 km; ^{**}All failures, not only main bursts; ^{***}Unplanned interruptions in the Netherlands are, on average, 7.5 min per property per year

Researchers in Canada have monitored pressure in a distribution system of 1,600 km serving 380,000 consumers with an average water demand of 210,000 m³/d (Besner *et al.*, 2010). Pressure dropped to below 172 kPa at the treatment plant nine times in a period of 17 months and this resulted in four measured and five suspected negative pressure events throughout the distribution network. Another 4 negative pressure events were associated with the closure of a transmission main and 10 negative pressure events were recorded at only a single location. These lasted for minutes to hours and were associated with maintenance work in the same area of the network. The authors also confirmed the presence of faecal contamination in soil and water from pipe trenches, although both frequency and level of contamination was lower than previously reported in the USA (Karim *et al.*, 2003).

Continuous pressure monitoring data from calibrated pressure monitors are limited in The Netherlands. In a dedicated study, the pressure was monitored for 50 days continuously at three locations along a limited part of a distribution network (boulevard of Zandvoort; Blokker *et al.*, 2010). During these 50 days, the nominal pressure was 200 – 350 kPa and at 2 moments a pressure transient occurred in the network where the pressure dropped below 1 bar for several minutes. No negative

24

Microbial growth in drinking-water supplies

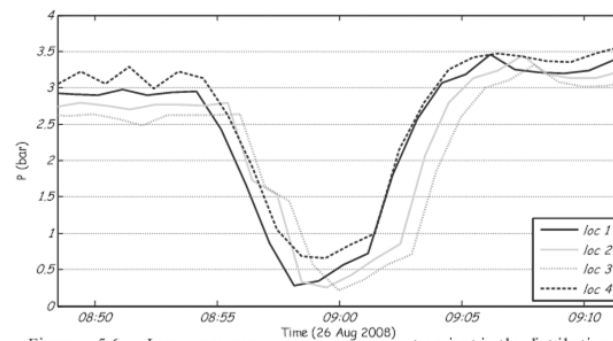


Figure 5.6. Low pressure transient in the distribution network of Zandvoort.

pressures were observed; the minimum pressure was 0.2 bar. The movement of the low pressure transient through the network is shown in figure 5.6. The duration of the low pressure event was short (Figure 5.7). The cause of the low pressure transients was not identified. This shows that pressure transients do occur in the network in the Netherlands. Because of the predominantly flat terrain, the network is probably less prone to negative pressures, but the evidence-base is limited.

Safe distribution without disinfectant residual

25

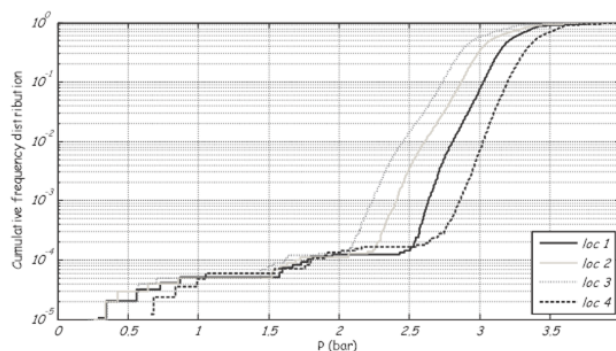


Figure 5.7. Frequency distribution of water pressure (x , in Bar) of the 50 day monitoring at three locations in the Zandvoort distribution network. A frequency of 10^{-3} in 50 day monitoring corresponds to 1.2 hours, 10-4 to 7.2 min.

6.4 Synopsis

The collected data in the Netherlands indicate that distribution networks with a high level of structural and hydraulic integrity and hygiene and without a disinfectant residual:

- have a low frequency of outbreaks;
- have a low frequency of contamination events;
- have a low frequency of detection of faecal indicator bacteria (while this system is more sensitive in non-disinfected waters);
- experience low but no negative pressure transients (based on limited data);
- have low leakage rates;
- have low rates/times of unplanned interruptions.

This demonstrates the advantages of the focus on structural and hydraulic integrity and hygiene.

Is this sufficient proof of safety? The best available evidence is collected, representing the best state of the art, and the evidence clearly points to a high level of safety. Under these conditions disinfectant residuals, with DBP formation and taste and odour problems, are not needed to enhance the safety of

the water network. It is clear that in drinking water distribution networks, unsafety is more easily demonstrated than safety. The network is complex, open and underground and with our best efforts we currently monitor water quality, condition and integrity in a fraction of the network, both in space and in time. Are there ways to improve the assessment of the safety? New technologies and concepts emerge in the area of smart networks that may substantially improve our ability to assess the safety of the network.

5.5 Outlook

5.5.1 Improved microbiological monitoring

The statutory monitoring of *E. coli* aims to verify the effectiveness of the measures to prevent contamination of the distribution network. Water utilities and health authorities use the level of compliance with the statutory monitoring of *E. coli* as an indication of the level of protection of the distribution network.

The level of protection that may be assigned to the statutory monitoring depends on the ability of the statutory monitoring to detect a faecal contamination event. Given the transient nature of contamination events and the results of our studies that showed a low recovery efficiency of the current grab sampling approach (see 5.3.3), we designed a continuous monitoring study to optimize the detection probability of events. Sampling sites were selected and tested for adequate placement with the genetic algorithm. The study uses continuous membrane filtration samplers that are installed on the tap and sample water 24 hours per day at a low flow to filter 10 – 100 l water. This study is currently in progress.

Rethinking of the sampling strategy upon detecting *E. coli* in the network, using the knowledge of the water (and contaminant) transport in the network between the first positive sample and the next samples, is also recommended.

5.5.2 Improved monitoring by combining sentinel sensors with rapid microbiological assays

The ability to monitor continuously for faecal contamination at dedicated sites in the network would mean a large improvement in the ability to demonstrate drinking water safety and due diligence. There are currently developments in monitoring stations for *E. coli* (Zibuschka *et al.*, 2010, Brown *et al.*, 2010, van de Vossenberg *et al.*, 2010) that indicate that this next generation of monitoring is becoming achievable, although true online monitoring of *E. coli* on many sites in the network is still “a bridge too far”. In the meantime, water utilities are

exploring the application of non-microbiological sensor systems (turbidity, refractive light index and others) that are able to monitor online and are cheap and robust enough to install throughout the network (Storey *et al.*, 2011, de Graaf *et al.*, 2012). This is driven initially from the perspective of water security, but the developments are equally useful for water safety. The combination of sentinel sensors for detection of anomalies in the network and rapid, on site confirmation of a faecal contamination, is achievable given the current status of technology. Similarly, there are recent developments in the area of sensor placement strategies based on (improved) network modelling. This approach should also be applied to optimize the current (grab) sampling programs.

5.5.2 Improved use of operational monitoring

The application of operational monitoring to aid the assessment of safety has been explored. Improved national registration of distribution system deficiencies (Vloerbergh *et al.*, 2008) provides opportunities to upgrade the safety assessment even further. The first step is to extract information from this register (which is currently focused on the condition of network elements) that is indicative of contamination events.

In parallel, Geographical Information Systems are employed to evaluate the risk of main breaks for the surrounding area. This technology can also be used to identify spots in the network that are vulnerable to contamination, because of the presence of contamination sources, soil types, groundwater levels and pipe characteristics and condition etc.

5.5.4 Epidemiology to assess safety

Several epidemiological studies have been conducted in chlorinated systems in Canada (Payment *et al.*, 1991, 1997) Australia (Hellard *et al.*, 2001) and the USA (Colford *et al.*, 2005) to determine the health burden associated with drinking water. The Canadian studies found a significant contribution of drinking water to intestinal illness in the population, and a link with events in the distribution network was suggested. No epidemiological study has been conducted in non-chlorinated systems to determine if there is a measurable contribution of drinking water to the intestinal illness in the community. Given the high background prevalence of intestinal illness, such a study requires a large population. An epidemiological study focused on the health effects of repairs and maintenance in the distribution network, in analogy with the Norwegian study, (Nygard *et al.*, 2007), is more appropriate.

5.5.5 QMRA to improve science-based management

The Netherlands has incorporated QMRA in the drinking water legislation. Currently, QMRA is used to determine the safety of the surface water treatment systems. QMRA models have also been developed for intrusion of pathogens in the distribution network (McInnis, 2004, van Lieverloo *et al.*, 2007^b, Teunis *et al.*, 2010, LeChevallier *et al.*, 2011, Besner *et al.*, 2011). These QMRA models do suggest that contamination events do amount to a high probability of infection in the affected consumers. This, in combination with the detection probability of contamination events of the current statutory monitoring programs for *E.coli*, is a strong incentive for QMRA-based safety management of the distribution network. The current state of knowledge implies that such a QMRA requires several assumptions. Key factors are the pathways of entry and the occurrence of pathogens in the material that enters the network via these pathways. The evidence from the Norwegian (Nygard *et al.*, 2007) and the Canadian study (Besner *et al.*, 2010) indicate that repair and maintenance work render the network vulnerable to ingress and may be associated with illness. Collection of information about the occurrence of pathogens in the trenches during repair and maintenance of the network, the amount of material and pathogens that can enter the network and the efficacy of the remedial actions (flushing, chlorination) in the Dutch setting is therefore recommended to evaluate the level of protection that is offered by current network operation practices.

Acknowledgement

This chapter has been prepared as part of the Joint Research Programme (BTO) of the water supply companies in the Netherlands and contains research conducted within the European FP6 project Microrisk.

References

- Andersson, Y., Bohan, P. (2001). Disease surveillance and waterborne outbreaks, in: L. Fewtrell & J. Barttram (eds). *Water Quality: Guidelines, Standards and Health*. London, UK: IWA Publishing, pp 115-133.
- Anonymous (2001). Waterleidingbesluit. Staatsblad van het Koninkrijk der Nederlanden 2001, nr. 31.
- Anonymous (2011). Drinkwaterbesluit. Staatsblad van het Koninkrijk der Nederlanden 2011, nr. 293.
- Bartram, J., Thyssen, N., Gowers, A. (2002). Water and health in Europe. WHO Regional publications, European Series No. 93, Copenhagen, Denmark.

- Behnke, S. Parker, A.E., Woodall, D., Camper, A.K. (2011). Comparing the chlorine disinfection of detached biofilm clusters with those of sessile biofilms and planktonic cells in single- and dual-species cultures. *Applied and Environmental Microbiology*, 77(20):7176-7184.
- Bellar, T.A., Lichtenberg, J.J., Kroner, R.C. (1974). The occurrence of organohalides in chlorinated drinking water. *Journal of the American Water Works Association*, 66:703.
- Besner, M.C., Ebacher, G., Jung, B.S., Karney, B., Lavoie, J., Payment, P., Prévost, M. (2010). Negative pressures in full-scale distribution system: field investigation, modelling, estimation of intrusion volumes and risk for public health. *Drinking Water Engineering and Science*, 3:101-106.
- Besner, M.C., Prévost, M., Regli, S. (2011). Assessing the public health risk of microbial intrusion events in distribution systems: conceptual model, available data and challenges. *Water Research*, 45:961-979.
- Beuken, R., Lavooij, K., Bosch, A., Schaap, P. (2006). Low leakage in the Netherlands confirmed. Water Distribution System Analysis conference, Cincinnati, USA.
- Blokker, E.J.M., Vogelaar, A., Medema, G.J. (2009). Optimalisatie meetprogramma *Escherichia coli* in distributienet. Report BTO 2009.008, KWR, Nieuwegein, Netherlands (in Dutch).
- Blokker, E. J. M., Vreeburg, J. H. G., Beverloo, H., Klein Arfman, M. en van Dijk, J. C. (2010). "A bottom-up approach of stochastic demand allocation in water quality modelling." *Drink. Water Eng. Sci.*, 3(1), 43-51.
- Brown, R. S., Marcotte, E.J.P., Dunkinson, C.E., Aston, W.P., Gallant, P.J., Wilton, D. (2010). An automated detection technology for on-site *E. coli* and coliform bacteria monitoring. Proceedings of the Water Environment Federation, WEFTEC 2010: pp. 7433-7442.
- Calderon, R.L. (2004). Measuring benefits of drinking water technology: ten years of drinking water epidemiology. NEWWA Water Quality Symposium, Baxborough, USA.
- Colford, J.M., Wade, T.J., Sandhu, S.K., Wright, C.C., Lee, S., Shaw, S., Fox, K., Burns, S., Benker, A., Brookhart, M.A., van der Laan, M., Levy, D.A. (2005). A randomized, controlled trial of in-home drinking water intervention to reduce gastrointestinal illness. *American Journal of Epidemiology*, 161(5):472-482.
- Craun, G.F. (1986). *Waterborne diseases in the United States*. CRC Press Inc. Boca Raton, Florida, USA.
- Craun, G.F., Calderon, R.L. (2001). Waterborne disease outbreaks caused by distribution system deficiencies. *Journal of the American Water Works Association*, 93, 9, 64-75.
- Craun, M.F., Craun, G.F., Calderon, R.L., Beach M.J. (2006). Waterborne outbreaks reported in the United States. *Journal of Water and Health*, 4 Suppl 2, 19-30.
- Crozes, G. et al., (2007). Public perception of tap water chlorinous flavor. Water Research Foundation, Denver, USA.
- de Graaf, B.R., Williamson, F., Koerkamp, M.K., Verhoef, J.W., Wuestman, R., Bajema, B., Trietsch, E., van Delft, W. (2012). Implementation of an innovative sensor technology for effective online water quality monitoring in the distribution network. Proc. Singapore International Water week 2012, Singapore.

- DVGW (2008). Branchenbild der deutschen Wasserwirtschaft. DVGW, Bonn, Germany.
- EPA (2012). The effectiveness of disinfectant residuals in the distribution system. Total Coliform Rule issue paper. http://www.epa.gov/safewater/disinfection/tcr/regulation_revisions.html (accessed November 27, 2012).
- Fernandes, T.M., C. Schout, A.M. De Roda Husman, A. Eilander, H. Vennema & Y.T. van Duynhoven, (2007). Gastroenteritis associated with accidental contamination of drinking water with partially treated water. *Epidemiology and Infection*. 135, 5, 818-826.
- Ford, T.E., (1995). Microbiological safety of drinking water: United States and global perspectives. *Environmental Health Perspectives*, 107 Suppl 1, 191-206.
- Gauthier, V., Besner, M.-C., Trepanier, M., Millette, R., Prevost, M. (2001). Tracking the source for microbial contamination in distribution systems using an integrated approach. In: Proc. of the AWWA WQTC Conference, American Water Works Association, Denver, USA.
- Gray, J. (2008). Water contamination events in UK drinking-water supply systems. *Journal of Water and Health*, 6(suppl. 1):21-26.
- Haas, C.N. (1999). Benefits of using a disinfectant residual. *Journal of the American Water Works Association*, 91(1):65-69.
- Hamsch, B. (1998). Change from chlorine residual distribution to no chlorine residual distribution in groundwater systems. *Proc. Symposium Protecting water quality in the distribution system: what is the role of disinfection residuals*. AWWA/IWA, April 26-28 1998, Philadelphia, USA.
- Hamsch, B., Bockle, K.K., van Lieverloo, J.H.M.L. (2007). Incidence of faecal contaminations in chlorinated and non-chlorinated distribution systems of neighbouring European countries. *Journal of Water and Health*, 5 (Suppl 1):119-130.
- Hellard, M.E., Sinclair, M.I., Forbes, A.B., Fairley, C.K. (2001). A randomized, blinded, controlled trial investigating the gastrointestinal health effects of drinking water quality. *Environmental Health Perspectives*, 109(8):773-778.
- Höller, C. (1988). Quantitative und qualitative Untersuchungen an *Campylobacter* in der Kanalisation einer Grossstadt. *Zentralblatt für Bakteriologie, Mikrobiologie und Hygiene B* 185:307-325.
- Hrudey, S.E., Hrudey, E.J., (2004). *Safe drinking water; lessons from recent outbreaks in affluent nations*. IWA Publishing, London.
- Hrudey, S.E., Charrois, J.W.A. (2012). *Disinfection by-products and human health*. IWA Publishing, London, UK.
- Huisman, J., Nobel, P.J. (1981). Some epidemiological data on the effects of the faecal contamination of drinking-water in the Scheepvaartkwartier residential area in Rotterdam in March 1981 [Enkele epidemiologische gegevens over de gevolgen van de faecale verontreiniging in het Scheepvaartkwartier te Rotterdam in maart 1981]. *H₂O*. 14, 26, 642-646. (in Dutch).
- Hunter, P.R. (1997). *Water-borne disease: epidemiology and ecology*. John Wiley & Sons, Chichester, UK.
- Hunter, P.R., Syed, Q., Naumova, E.N. (2001). Possible undetected outbreaks of cryptosporidiosis in areas of the North West of England supplied by an unfiltered surface water source. *Communicable Disease and Public Health*, 4(2):136-138.

- Hunter, P.R., Syed, Q. (2001). Community surveys of self-reported diarrhoea can dramatically overestimate the size of outbreaks of waterborne cryptosporidiosis. *Water Science and Technology* 43:27-30.
- Hunter, P.R., Chalmers, R.M., Hughes, S., Syed Q. (2005). Self-reported diarrhea in a control group: strong association with reporting of low-pressure events in tap water. *Clinical Infectious Diseases*, 40(4):32-34.
- Karim, M.R., Abbaszadegan, M., LeChevalier, M. (2003) Potential for pathogen intrusion during pressure transients. *Journal of the American Water Works Association*, 95(5):134-146.
- Kiwa (1978). Problematiek haloformen. Eindrapport van de ad hoc werkgroep Problematiek van de Haloformen. Kiwa mededeling nr. 57, Rijswijk, The Netherlands. (in Dutch)
- Klein H.P., Forster, R. (1998). Network operation without safety chlorination in Zurich. *Proc. Symposium Protecting water quality in the distribution system: what is the role of disinfection residuals*. AWWA/IWA, April 26-28 1998, Philadelphia, USA.
- Kruijthof, J.C. (1986^a). Side effects of chlorination. Kiwa report 74. Nieuwegein, The Netherlands.
- Kruijthof, J.C. (1986^b). Chlorination by-products: production and control. AWWA/Kiwa report, Nieuwegein, The Netherlands.
- LeChevallier MW (1999). The case for maintaining a disinfectant residual. *Journal of the American Water Works Association*, 91(1):86-94.
- LeChevallier, M.W., Au, K.K. (2004). Water treatment and pathogen control. World Health Organization, Geneva, Switzerland.
- LeChevallier, M.W., Cawthon, C.D., Lee, R.G. (1988). Inactivation of biofilm bacteria. *Applied and Environmental Microbiology*. 54(10):2492-2499.
- LeChevallier, M.W., Gullick, R.W., Karim, M.R., Friedman, M., Funk, J.E. (2003). The potential for health risks from intrusion of contaminants into the distribution system from pressure transients. *Journal of Water and Health*, 1(1):3-14.
- LeChevallier, M.W., Xu, M., Yang, J., Tuenis, P., Fleming, K.K. (2011). Managing distribution system low transient pressures for water quality. Water Research Foundation report, Denver, USA.
- MacKenzie, W.R., N.J. Hoxie, M.E. Proctor, M.S. Gradus, K.A. Blair, D.E. Peterson, J.J. Kazmierczak, D.G. Addiss, K.R. Fox, J.B. Rose & J.P. Davis. (1994). A massive outbreak in Milwaukee of cryptosporidium infection transmitted through the public water supply. *New England Journal of Medicine*, 331, 3, 161-167.
- McInnis, (2004). A relative-risk framework for evaluating transient pathogen intrusion in distribution systems. *Urban Water Journal*, 1(2):113-127.
- Medema, G.J., Ketelaars, H.A.M., Hoogenboezem, W. (2001). *Cryptosporidium* and *Giardia* in sewage, livestock manure and surface water. RIWA report 2000.035, RIWA, Amsterdam, the Netherlands.
- Meerkerk, M.A., Kroesbergen, J. et al. (2010). Hygiëencode drinkwater; opslag, transport en distributie. BTO report 2001.175 second edition, KWR, The Netherlands. (in Dutch).
- Mendez, J., Audicana, A., Cancer, M. et al. (2004). Assessment of drinking-water quality using indicator bacteria and bacteriophages. *Journal of Water and Health*, 2(3):201-214.

- Nichols, G. (2003). Using existing surveillance-based data. In: Hunter, P.R., Waite, M., Ronchi, E. *Drinking Water and Infectious Disease: Establishing the Links*. IWA Publishing, London, UK.
- Nieuwenhuisen, M.J., Grellier, J., Smith, R., Iszatt, N., Bennett, J., Best, N., Toledano, M. (2009). The epidemiology and possible mechanisms of disinfection by-products in drinking water. *Philosophical transactions of the Royal Society A: mathematical, physical and engineering sciences*, 367(1904):4043-4076.
- Nobel, P.J. (2001). Bewaking van de microbiologische kwaliteit van het drinkwater in het distributienet na aanleg en ingrepen. BTO report 2001.113, Kiwa, The Netherlands. (in Dutch).
- Nygard, K., Wahl, E., Krogh, T., Tveit, O.A., Bohleng, E., Tverdal, A., Aavitsland, P. (2007). Breaks and maintenance work in the water distribution systems and gastrointestinal illness: a cohort study. *International Journal of Epidemiology*, 36(4):873-880.
- OFWAT (2008). International comparison of water and sewerage service report. OFWAT, UK.
- Payment, P. (1999). Poor efficacy of residual chlorine disinfectant in drinking water to inactivate waterborne pathogens in distribution systems. *Canadian Journal of Microbiology*, 45(8):709-715.
- Payment, P., Richardson, L., Siemiatycki, J., Dewar, R., Edwards, M., Franco, E. (1991). A randomized trial to evaluate the risk of gastrointestinal disease due to consumption of drinking water meeting current microbiological standards. *American Journal of Public Health*, 81(6):703-708.
- Payment, P., Siemiatycki, J., Richardson, L., Renaud, G., Franco, E., Prevost, M. (1997). A prospective epidemiological study of gastrointestinal health effects due to the consumption of drinking water. *International Journal of Environmental Health Research*, 7(1):5-31.
- Propato, M., Uber, J.G. (2004). Vulnerability of water distribution systems to pathogen intrusion: how effective is a disinfectant residual? *Environmental Science and Technology*, 38:3713-3722.
- Reynolds, K.A., Mena, K.D., Gerba, C.P. (2008). Risk of waterborne illness via drinking water in the United States. *Reviews in Environmental Contaminant Toxicology*. 192:117-158.
- Richardson, S.D., Plewa, M.J., Wagner, E.D., Schoeny, R., Demarini, D.M. (2007). Occurrence, genotoxicity, and carcinogenicity of regulated and emerging disinfection by-products in drinking water: a review and roadmap for research. *Mutation Research*, 636(1-3):178-242.
- Risebro, H.L., Doria, M.F., Andersson, Y., Medema, G., Osborn, K., Schlosser, O., P.R. Hunter, P.R. (2007). Fault tree analysis of the causes of waterborne outbreaks. *Journal of Water and Health*, 5:1-18.
- Rook, J.J. (1974). Formation of haloforms during chlorination of natural waters: Water Treatment and Examination, 23:234-243.
- Schellart, J. (1986). Disinfection and bacterial regrowth: some experiences of the Amsterdam water works before and after stopping the safety chlorination. *Water Supply* 4:217-225.
- Skadsen J. (1993). Nitrification in a distribution system. *Journal of the American Water Works Association*, 85(7):95-103.

- Smeets, P.W.M.H., Medema, G.J., van Dijk, J.C. (2005). The Dutch secret: how to provide safe drinking water without chlorine in the Netherlands. *Drinking Water Engineering and Science*, 2:1-14.
- Stenström, T.A., Boisen, F., Georgson, F., Lahti, K., Lund, V., Andersson, Y., Ormerod, K. (1994). Waterborne infection in Nordic countries (Vattenburen infektioner i Norden). TemaNord 1994: 585 Nordiska Ministerrådet, (in Swedish).
- Storey, M., van der Gaag, B., Burns, B.P. (2011). Advances in on-line drinking water quality monitoring and early warning systems. *Water Research*, 45(2):741-747.
- Teunis, P.F.M., Xu, M., Fleming, K.K., Yang, J., Moe, C.L., LeChevallier, M.W. (2010). Enteric virus infection risk from intrusion of sewage into a drinking water distribution network. *Environmental Science and Technology*, 44:8561-8566.
- Trussel, R.R. (1999). An overview of disinfectant residuals in drinking water distribution systems. *Journal Water Supply Research and Technology - Aqua* 48(1):2-10.
- UKWIR, 2006. Comparison of Leakage Levels and Leakage Practice in the UK and the Netherlands. Report 06/WM/08/34, UKWIR, United Kingdom.
- Van Genderen, J. (1998). Nevenproducten van chemische desinfectie in drinkwater: een toxicologische beoordeling op basis van literatuur- en praktijkgegevens. Kiwa report 96.220, Nieuwegein, The Netherlands. (in Dutch).
- Van de Vossenberg, J., Medema, G.J. (2010). Rapid optical detection of *Escherichia coli* in drinking water. BTO report 2010.006, KWR, Nieuwegein, The Netherlands.
- Van der Kooij, D., van Lieverloo, J.H.M.L., Schellart, J.A., Hiemstra, P. (1999a). Distribution of drinking water without disinfectant: highest achievement or height of folly? *Journal Water Supply Research and Technology - Aqua* 48(1):31-37.
- Van der Kooij, D., Lieverloo, J.H.M.L., Schellart, J.A., Hiemstra, P. (1999b). Maintaining quality without a disinfectant residual. *Journal of the American Water Works Association* 91(1):55-64.
- Van der Kooij, D., van Lieverloo, J.H.M.L., Gale, P., Stanfield, G. (2002). Distributing drinking water with a low or zero disinfectant residual. Operational and biological aspects. Kiwa report 127, Nieuwegein, The Netherlands.
- Van Lieverloo, J.H.M. et al. (2002). Hygiëncode drinkwater, opslag, transport en distributie. BTO report 2001.175, Kiwa, Nieuwegein, The Netherlands. (in Dutch).
- Van Lieverloo, J.H.M., Esveld-Amanatidou, A., Hijnen, W.A.M., Groenou, J.Th. (2003). Microbiologische verontreiniging van drinkwater tijdens opslag, transport en distributie. Evaluatie en beheersing van risico's van eventuele afwijkingen en verontreinigingen. BTO report 2002.130, Kiwa Water Research, Nieuwegein, The Netherlands. (in Dutch).
- Van Lieverloo, J.H.M., Medema, G., van der Kooij, D. (2006). Risk assessment and risk management of faecal contamination in drinking water distributed without a disinfectant residual. *Journal of Water Supply Research and Technology-Aqua* 55:25-31.
- Van Lieverloo, J.H.M., Mesman, G.A.M., Bakker, G.L., Blokker, E.J.M., Baggelaar, P.K., Hamed, A., Medema, G.J. (2007). Probability of detecting and quantifying faecal contaminations of drinking water by periodically sampling for *E. coli*: A simulation model study. *Water Research* 41:4299-4308.

- Van Lieverloo, J.H.M., E.J.M. Blokker & G. Medema. (2007). Quantitative microbial risk assessment of distributed drinking water using faecal indicator incidence and concentrations. *Journal of Water and Health*, 5 Suppl 1, S131-S149.
- VEWIN (2009^a). Dutch drinking water statistics 2008. VEWIN, Rijswijk, The Netherlands.
- VEWIN (2009^b). Reflections on performance. VEWIN, Rijswijk, The Netherlands.
- Vloerbergh, I.N. (2008). USTORE: toelichting op en afspraak over uniforme storingsregistratie. BTO report 2008.057, KWR, Nieuwegein, The Netherlands. (in Dutch).
- Weickgenannt, M., Kapelan, Z., Blokker, M., Savic, D.A. (2010). Risk-based sensor placement for contaminant detection in water distribution systems. *Journal of Water Resources Planning and Management*, 136:629-636.
- Westrell, T., Bergstedt, O., Stenström, T.A. and Ashbolt, N.J. (2003). A theoretical approach to assess microbial risks due to failures in drinking-water systems. *International Journal of Environmental Health Research* 13:181-197.
- Zang, W., DiGianno, F.A. (2002). Comparison of bacterial regrowth in distribution systems using free chlorine and chloramine: a statistical study of causative factors. *Water Research*, 36:1469-1482.
- Zibuschka, F., Lendenfeld, T., Lindner, G. (2010) Near real time monitoring von E. coli in wasser. *Österreichische Wasser- und Abfallwirtschaft*, 62, (11-12):215-219.

GHD

Level 3

138 Victoria Street

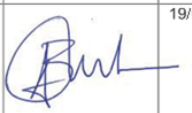
T: 64 3 378 0900 F: E: chcmail@ghd.com

© GHD 2018

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

<https://projects.ghd.com/oc/NewZealand/nonchlorinationcases/Delivery/Documents/5138045-RPT-Non-Chlorination Case Studies Rev2.docx>

Document Status

Revision	Authors	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Draft	Peter Free Stephen Douglass Andre Bresler Helen Barclay	Dr Melissa Steele		Andre Bresler		6/6/2018
Rev 1	Peter Free Stephen Douglass Andre Bresler Helen Barclay			Andre Bresler		7/6/2018
Rev 2	Peter Free Stephen Douglass Andre Bresler Helen Barclay			Andre Bresler		19/07/2018

www.ghd.com



Submission to NAPIER CITY COUNCIL
 From Pauline Doyle on behalf of GUARDIANS OF THE AQUIFER
 19 Selwyn Road, Hospital Hill Napier 4110
 [06-2110380]
 Date Monday 13th May 2019

Re: Annual Review of Long Term Plan 2019/2020

We urge the council to carry out an independent investigation of the Christchurch model for supplying healthy, safe drinking water.

The **attached** NCC Chlorination Review purports to be an objective assessment of Napier's ability to follow the Christchurch example and apply the Dutch model. It is not. It has merely revised last year's response to the 38 submissions in favour of chlorine-free water:

"The capital cost to develop a water distribution network that is suitable to remove chlorine as a treatment methodology is likely to be in the billion dollar range and would take decades to implement."

The billion dollar estimate has been revised down to roughly \$110 million with a potential rates increase of 22% in the March 2019 report. This is scare-mongering: the review overly exaggerates the contamination risks within Napier's distribution network and makes unsubstantiated claims regarding the effectiveness of chlorine. **[#1 Supporting Documents]**

NCC would benefit from an objective, independent review of the GHD Report to Christchurch City Council on Non-Chlorinated Case Studies dated July 2018 **attached**.

In 2018 Christchurch City Council appointed GHD to collaborate with Royal HaskoningDHB in the Netherlands for expert support for its study on the feasibility of residual chlorine-free operation of the Christchurch water supply network.

Page 15 of the GHD report deals with Management of Key Risk Areas within the Network and states that while risk management in the distribution network is important *"serious water supply contamination events worldwide (including the Havelock North event, refer to Appendix D), indicates that source (e.g. well head) or storage infrastructure contamination appears to be more likely to cause severe disease outbreaks, than distribution network contamination."*

However the permanent chlorination of Napier's water supply is based on the premise that, while our source water is pristine, we need a "chlorine residual" in the network because the risk of contamination in the distribution network is "major". This appears to be an over-reaction to the Havelock North outbreak in 2016 and based on limited understanding of the cause of contamination of the two HDC bores in Brookvale Road. **[#2 Supporting Documents]**

Christchurch City Council is following the Dutch model where chlorine is not used, not even as a "residual disinfectant" in the pipe network. In 1975 the discovery of toxic by-products from chlorinating water led the Dutch government to revolutionize their approach. Their prime concern was the **health risks** associated with chlorinated water supplies. **[#3 Supporting Documents]**

Christchurch has budgeted approximately \$35million for their upgrade to enable supply of chlorine-free water. They expect that 98% of their network will be chlorine-free by the end of June 2019. In contrast Napier has budgeted \$20million – and what do we get for our money - a chlorinated water supply. Christchurch has 146 wells while Napier has 7 operational wells. We need an investigation of the Christchurch/Dutch model, carried out by independent experts with an open mind.

Napier's bores have been thoroughly serviced and their "secure bore" status has been reinstated, making Napier's bores compliant for E.coli and Protozoa risk at the bore head. Council staff confirm that UV treatment is not required, which means we don't need expensive treatment plants and **millions of dollars could be saved** if Napier City follows Christchurch and goes chlorine-free. **[#4 Supporting Documents]**

Why did Napier get chlorinated? There was **no proof of any contamination**: in May 2017 the current council started chlorinating Napier's water following the Havelock North gastro outbreak, even though council staff have since admitted that the two overly sensitive E.coli test results which triggered chlorination in Napier were "**on the edge of detection**". Email responses from council staff indicate to us that in the last five years tests for E.coli have demonstrated no need for permanent chlorination of Napier's municipal supplies, but this is contradicted by claims made in the NCC Engineers Report, March 2019. **[#5 Supporting Documents]**

Since May 2017 "**Chlorine residual**" disinfection has been promoted by NCC but it does not guarantee protection against all waterborne diseases – it does not kill protozoa such as **Cryptosporidium**. Under Napier City Council's current policy of trying to maintain a permanent "chlorine residual" in the network E.coli would be de-activated before most pathogens, which means that cryptosporidium would go undetected. This is what happened in a city of 700,000 people in Northern Ireland in 2015 where chlorine disinfection led to a false sense of security.

Why is NCC continuing to rely on chlorine treatment when council engineers admit that it provides no protection against Protozoa such as Cryptosporidium? **[Attached NCC Engineers Report and #6 Supporting Documents]**

Chlorination is mandatory in the UK, including Northern Ireland. But in 2015 chlorine failed to keep people safe from a serious outbreak of Cryptosporidium in a city in Northern Ireland. The crisis was managed by maintaining a BOIL WATER regime for five months while the source of contamination was identified and the problem solved. The incidence of waterborne diseases in the UK is five times higher than in the Netherlands where chlorine is not used, not even as a "residual disinfectant" in the pipe network. Their health authorities have rigorous monitoring for early warning signs of illness in the community. In 2016 it took six days for our DHB to notify HDC that there was a health crisis in the Havelock North community.

Water engineers are aware that consumers are not getting consistent protection even against E.coli contamination because the chlorine taken up by organic matter in the early part of the network can mean there is no remaining "residual" protection against E.coli for consumers further along the network.

The Dutch decided to stop using chlorine because of the harmful effects on human health.

Chlorinated water : used for human consumption may contain mutagens and carcinogens generated during the disinfection process with chlorine

Reproductive Issues and Pregnancy Anomalies

Harmful Impacts to Respiratory System and Skin

Colorectal and Bladder Cancer: **An association between water chlorination and the development of colorectal carcinoma is well established**

Weakening of the Immune System. Chlorine destroys most of the pathogenic bacteria, but also the beneficial gut bacteria, like acidophilus, a probiotic which helps building and maintaining friendly bacteria in your colon (70-80% of your immune cells operate from your digestive tract). **[#3 Supporting Documents]**

Napier can and should return to the chlorine-free water supply we enjoyed prior to the 2016 Havelock North gastro outbreak.

The 2016 outbreak in Havelock North was NOT caused by any failure in the distribution network. A chlorine residual in the pipe network would not have prevented 5,000 people from being poisoned in Havelock North.

CONCLUSION

Christchurch is following the Dutch system and will seek exemption if central government decides to make permanent chlorination mandatory throughout New Zealand. All of Napier's productive bores have "interim" secure bore certification from the Hawke's Bay DHB's Drinking Water Assessors. NCC could also seek exemption from mandatory chlorination - we draw from secure confined aquifers and our bores are well-constructed.

We urge the council to seek expert support to investigate the feasibility of following the Christchurch example.

Pauline Doyle, Spokesperson, GUARDIANS OF THE AQUIFER, 13 May 2019

Guardians of the Aquifer submission to NCC 13 May 2019
SUPPORTING DOCUMENTS

#1 NCC Chlorination Review - Report to councillors March 2019

The report begins with this claim:

Proof that Chlorine Is Effective

Removing Chlorine from our network would leave council exposed to an 'extreme' risk and would be a failure of our duty of care to the community. For those working in the Water industry it is a given the Chlorine is a cost effective way to disinfect a water supply. Chlorine is used worldwide to treat public water supplies and there are many articles and reports that support this.

From the Ministry of Health:

For a secure bore that is free of risk from micro-organisms, water can often be provided in an untreated form direct to consumers. However it is still a good idea to add chlorine as protection against contamination in the network."

From the Ministry for the Environment:

Chlorination is the most widely used disinfecting method world-wide. It inactivates bacteria, viruses and the protozoan, Giardia. It will not, however, inactivate Cryptosporidium rapidly enough for use in water treatment."

WHO state the following around Guideline Values for chlorine

https://www.who.int/water_sanitation_health/water-quality/guidelines/chemicals/chlorine.pdf?ua=1 "In humans and animals exposed to chlorine in drinking-water, specific adverse treatment-related effects have not been observed."

Originally published in Guidelines for drinking-water quality, 2nd ed, Vol.2. Health criteria and other supporting information. World Health Organization, Geneva, 1996.

However it should be noted that the WHO guidelines date back to 1996 and appear to be well out of date.
[see #3 Supporting Documents list of recent scientific research]

The report from the Havelock North Water Inquiry also relied on the WHO guidelines.

"The Inquiry discussed treatment and chlorination at length and the Inquiry has concluded that ...there is no compelling or credible evidence that chlorination poses any risk to consumers." (Paragraph 146 of the Part 2 report)

In fact there is ample scientific evidence that chlorinated water is proving to be harmful to human health [see #3 Supporting Documents].

It is interesting to note that the Ministry for the Environment states that chlorination will not inactivate **Cryptosporidium** but the Ministry of Health says it is "still a good idea to add chlorine".

The NCC Chlorination Review **incorrectly** states:

Key points to note from the Netherlands are as follows:

□ The Netherlands have had 3 major outbreaks in their water supply since 1962. Chlorine was removed from their water supply in the 2000s.

In fact the Dutch have never used chlorine to treat municipal water sourced from **groundwater** – not even as a "residual disinfectant". And the 3 outbreaks experienced in the Netherlands were all caused by cross-connections during distribution and apparently due to human error:

HDC Report to Christchurch City Council– Non-chlorination Case Studies, July 2018
Appendix B 3.2.2 Hazardous events

The major hazard appears to be human error. Therefore, adequate training of personnel is the most important measure for risk reduction during treatment. All three outbreaks that occurred in the Netherlands since 1962 were caused by cross-connections during distribution:

- one to a sewer [1962]
- a second to wastewater from a navy vessel through a drinking water supply connection [1981] *[Could a similar event occur during Napier's cruise ship season?]*
- and the third to a household water supply system in 2001.

#2

Don't compare Havelock North & Napier water supplies

https://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=12216846

Yet again Napier has been mistakenly lumped in with Havelock North [Hawke's Bay Today 16/3/19]. It is a misrepresentation of the facts to say that "contaminants could enter Napier bores during major weather events" as happened with the Brookvale bores in 2016. Napier has an entirely different water supply. The bore heads on Havelock North's two municipal wells were below ground-level, non-artesian, not in a confined aquifer and highly vulnerable to surface contamination due to sub-standard bore head construction. In contrast, Napier's bores have well-constructed bore heads, strong artesian pressure and are in the secure confined part of the aquifer.

However, without understanding this vital difference the DHB removed the "secure bore" status for Napier's water supply in 2017 following the recommendations of the Havelock North Water Contamination Inquiry that all municipal supplies "should be treated immediately". Napier's bores have been thoroughly serviced and their "secure bore" status has been reinstated, making Napier's bores compliant for Protozoa risk at the bore head. This means that expensive UV treatment plants are not required.

The problem is local councils in Hawke's Bay have been doggedly following the advice of Water NZ who have promoted permanent chlorination nationwide since the 2016 gastro outbreak.

By way of contrast, Christchurch City Council is following the Dutch model for providing safe drinking water without using chlorine, not even as a "residual disinfectant" in the pipe network. In 1975 the discovery of toxic by-products from chlorinating water led the Dutch government to revolutionize their approach.

Helen Beaumont, Water Supply Improvement Manager for CCC, says Christchurch is in the process of securing all their 146 council bores and as each one is secured chlorine has been removed. By the end of June 98 percent of Christchurch should be chlorine-free. The entire project will cost Christchurch approximately \$35million. [hbtoday 16/3/19]

Contrast that with NCC's water projects which are projected to cost \$20 million yet we will still have to drink chlorinated water.

https://www.nzherald.co.nz/hawkes-bay-today/news/article.cfm?c_id=1503462&objectid=12202937

What's stopping Napier from following Christchurch?

In 2017 Napier City Council decided to permanently chlorinate the town supply, even though council staff have since admitted that the two overly sensitive E.coli test results which triggered chlorination were "on the edge of detection" – no proof of any contamination. The whole argument for chlorination hinges on the belief that Havelock North was just a "routine" water supply.

But history shows that Havelock North was never a "routine" water supply. Twenty years ago 80 people got sick from campylobacter contamination of their town supply.

The 1998 enquiry determined that contaminated surface water leaked in to the equipment chamber above the well heads (which were two-and-half metres below ground-level) and poured down into the well heads through loose seals on the manifold, mixing with the clean source water from the aquifer every time the pumps came on. Between 1998 and 2016 Hastings District Council was constantly told by Drinking Water Assessors to raise the well heads above ground-level to prevent another outbreak. They failed to do so and Havelock North's bore heads remained below ground-level and therefore highly vulnerable to surface contamination, especially in a major weather event with power outages.

In August 2016 HBRC carried out E.coli tests on all the private bores in the vicinity of the two suspect council bores in Brookvale Road. No E.coli was detected in the private bores and no-one got sick drinking from the private bores in August 2016. Only the two bores managed by Hastings District Council were contaminated. Well-drillers carried out two extensive investigations of the Brookvale bores for the Regional Council but for some reason the Inquiry Panel declined to call HBRC's expert witness on this and the media never got to hear the full story.

The 2016 Inquiry Panel subsequently decided that the contamination was *probably* not caused by a combination of events similar to the 1998 contamination. Instead they decided the fault *probably* lay with an “insecure” water source. The belief that the aquifer was somehow “insecure” has subsequently been popularized and the whole of Hastings and Napier was lumped in with Havelock North.

The real reason for the contamination of Havelock North’s bores in 1998 and 2016 got buried. Instead we are told that chlorine treatment will keep us “safe”. Four people died and another four suffered the crippling neurological Guillain-Barre syndrome as a result of the 2016 outbreak. Approximately 5,500 were poisoned from drinking the heavily contaminated water for three weeks and many are still suffering on-going health problems today.

A disturbing element in this sorry saga is that claims for ACC support have been declined because it was “not an accident”. ACC will only approve claims if someone succeeds in proving negligence in a private case pursued through the civil courts. That's expecting far too much from the survivors of the Havelock North gastro crisis.

Only the two council bores in Havelock North were contaminated in August 2016 - no-one got sick drinking from the private bores in Havelock North, or from the community bore in Whakatu, or from the municipal bores in Hastings and Napier.

Pauline Doyle and Ken Keys, Spokespersons, GUARDIANS OF THE AQUIFER.

#3 HEALTH RISKS

The GHD report to Christchurch City Council notes in Appendix B, 2009 :

When the chemist from the Rotterdam water supply, Joop Rook, discovered that chlorine disinfection was responsible for the production of disinfectant by-products [DBP] such as **trihalomethanes** (THM) (Rook, 1976), it led to a revolution in the philosophy regarding drinking water treatment in the Netherlands.

Page 3 of Appendix G, 2012 notes:

The most important arguments against the use of a disinfectant residual are that disinfectants react with organic and inorganic compounds found in the water and this creates disinfection by-products [DBP]. DBP such as **trihalomethanes** [THM] are found in the vast majority of cases of chlorination. Several groups of by-products have been associated with illnesses in humans. [READ p. 3 of Appendix G for the full list of illnesses]

Note that Napier's Water Safety Plan states at p.31:

Starting November 2018 chlorination by-products monitoring programme is scheduled to start.

Twice a year 2 random samples will be taken from reticulation (from reservoir and reticulation each) and tested against bromate, chlorate, TOC, halogenated acetic acids by GCMS and halogenated volatile disinfection by-products by GCMS.

Weakening of the Immune System:

Chlorine destroys most of the pathogenic bacteria, but also the beneficial gut bacteria, like *acidophilus*, a probiotic which helps building and maintaining friendly bacteria in your colon (70-80% of your immune cells operate from your digestive tract).

The Negative Health Effects of Chlorine. J. G. Hattersley, *Journal of Orthomolecular Medicine* (2000); 15(2), pp. 89-95.

Immunotoxicological Profile of Chloroform in Female B6C3F1 Mice When Administered in Drinking Water. W. Auttachoat et al., *Drug and Chemical Toxicology* (2009); 32(1), pp.77-87.

Chlorinated water: carcinogenic and mutagenetic

Mutagenicity and genotoxicity of water treated for human consumption induced by chlorination by-products. <https://www.ncbi.nlm.nih.gov/pubmed/23397647>

Water used for human consumption may contain mutagens and carcinogens generated during the disinfection process with chlorine. In the study described in this article, the mutagenicity and genotoxicity of water samples taken from the San Cristobal treatment plant in Medellin, Colombia, were evaluated. Short-term mutagenic and genotoxic assays using the Ames test and comet assay, respectively, were employed to examine the genotoxic activity of the extracts of these water samples. Two samples were taken before and after the chlorination process. The treated water samples without chlorination did not show mutagenic effects using the Ames test, while the chlorinated samples produced mutagenic activity in both strains. A dose-response relationship for the comet assay was obtained only in the chlorinated samples. MX (3-chloro-4-[dichloromethyl]-5-hydroxy-2[5H]-furanone), E-MX ([E]-2-chloro-3-[dichloromethyl]-4-oxobutenoic acid), and some trihalomethanes were detected at low concentrations. These concentrations were enough, however, to cause detectable mutagenic and genotoxic activity in the extracts of chlorinated water samples.

Toxicological aspects of trihalomethanes: a systematic review. [Feb 2019]

<https://www.ncbi.nlm.nih.gov/pubmed/30607849>

Chlorine is considered the most used chemical agent for water disinfection worldwide. However, water chlorination can lead to by-product generation which can be toxic to humans. The present study aimed to perform a systematic review on the toxicity of trihalomethanes (THMs) through bioindicators of cytotoxicity, genotoxicity, and mutagenicity. The results showed that studies on the effects of THMs on DNA are a current research concern for evaluating the toxicity of the pure compounds and real samples involving several types including water for recreational use, reused water, and drinking water. THMs deleterious effects have been assessed using several biosystems, where the Ames test along with experimental animal models were the most cited. A wide range of THM concentrations have been tested. Nevertheless, DNA damage was demonstrated, highlighting the potential human health risk. Among the studied THMs, chloroform presented a different action mechanism when compared with brominated THMs, with the former being cytotoxic while brominated THMs (bromodichloromethane, bromoform, and dibromochloromethane) were cytotoxic,

genotoxic, and mutagenic. The described evidence in this research highlights the relevance of this topic as a human health issue. Nevertheless, research aimed to represent THMs current exposure conditions in a more accurate way would be needed to understand the real impact on human health.

Colorectal and Bladder Cancer:

World Journal of Gastrointestinal Oncology, 15 April 2016

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4824718/>

An association between water chlorination and the development of colorectal carcinoma is well established.

Carcinomas of the large intestines are remarkably common across the globe with around 1.4 million new cases diagnosed in 2012[1]. The risk of developing colorectal cancer increases with age and is higher in men than in women[2].

Chlorine is commonly used as a chemical disinfectant in water supplies, in the prevention of algal, bacterial and general slime growths in treatment plants and pipe works, in the control of tastes and odours, and in the removal of iron, manganese and colouring additives[92].

Trihalomethanes are derivatives of the outcome of the reaction between chlorine/chloride, with contaminants in water supplies, such as organic compounds, bromide and iron.

The associated health threats including colorectal cancers are dependent on the frequency of exposure to and the levels of trihalomethanes in the used water for drinking. Cancers arising from long exposure to chlorinated water are not exceptional.

Case-control Study of Bladder Cancer and Chlorination By-Products in Treated Water (Ontario, Canada). W.D. King et al., *Cancer Causes Control* (1996); 7(6), pp. 596-604

Chlorine is by far the most commonly used chemical for the disinfection of water supplies in North America. However, chlorine reacts with organic material in the raw water producing a number of halogenated hydrocarbon by-products. This population-based case-control study in Ontario, Canada examined the relationship between bladder cancer and exposure to chlorination by-products in public water supplies. Residence and water source histories and data from municipal water supplies were used to estimate individual exposure according to water source, chlorination status, and by-product levels (represented by trihalomethane [THM] concentration). Exposures were estimated for the 40-year period prior to the interview, using 696 cases diagnosed with bladder cancer between 1 September 1992 and 1 May 1994 and 1,545 controls with at least 30 years of exposure information. Odds ratios (OR) adjusted for potential confounders were used to estimate relative risk. Those exposed to chlorinated surface water for 35 or more years had an increased risk of bladder cancer compared with those exposed for less than 10 years (OR = 1.41, 95 percent confidence interval [CI] = 1.10-1.81). Those exposed to an estimated THM level \geq 50 micrograms/liter for 35 or more years had 1.63 times the risk of those exposed for less than 10 years (CI = 1.08-2.46). These results indicate that the risk of bladder cancer increases with both duration and concentration of exposure to chlorination by-products, with population attributable risks of about 14 to 16 percent. Chlorination by-products represent a potentially important risk factor for bladder cancer.

Colorectal Cancers and Chlorinated Water. A.M. El Tawil. *World Journal of Gastrointestinal Oncology* (2016); 8(4), pp. 402-409.

Colorectal carcinomas are the third most common tumour in both sexes across the globe. The hazard to develop tumours in different specific sites including colon and rectum in association with the long-term exposure to water disinfectants in drinking water is well established. The risk to develop tumours in the large intestines is dependent on the concentrations and frequency of exposure to the trihalomethanes in the used water for drinking. The risk to develop malignant tumours due to water pollution is higher amongst user of swimming pools and is also dependent on the frequency of showering. Colorectal carcinomas arising from long exposure to trihalomethanes in drinking water are characterised an aggressive courses of development and are rarely diagnosed in early stages.

Reproductive Issues and Pregnancy Anomalies:

Exposure to Trihalomethanes and Adverse Reproductive Outcomes. M.D. Gallagher et al. *Epidemiology* (1998); 9, pp.464-489.

Drinking Water Contaminants and Adverse Pregnancy Outcomes. F. Bove et al., *Environmental Health Perspectives* (2002); 110(1), pp. 61-74.
Effect of Trihalomethane Exposure on Fetal Development. J. Wright et al., *Occupational and Environmental Medicine* (2003); 60(3), pp. 173-180.
Review Chlorination Disinfection By-products in Drinking Water and Congenital Anomalies: Review and Meta-analyses. M.J. Nieuwenhuijsen et al., *Environmental Health Perspectives* (2009); 117(10), pp. 1486-1493.

Harmful Impacts to Respiratory System and Skin:

Household activities such as bathing and showering are important routes for human exposure to volatilised THMs (Chloroform for instance).
Ingestion, Inhalation, and Dermal Exposures to Chloroform and Trichloroethene from Tap Water. C.P. Weisel et al., *Environmental Health Perspectives* (1996); 104(1), pp. 48-51.
Effect of Water Temperature on Dermal Exposure to Chloroform. S.M. Gordon et al., *Environmental Health Perspectives* (1996); 106, pp.337-345.
Exposure Estimates to Disinfection By-Products of Chlorinated Drinking Water. C.P. Weisel et al., *Environmental Health Perspectives* (1999); 107(2), pp. 103-110.
Household Exposures to Drinking Water Disinfection By-Products: Whole Blood Trihalomethanes Levels. L.C. Backer et al., *Journal of Exposure Analysis and Environmental Epidemiology*. (2000); 10(4), pp. 321-326.
Assessing Exposure to Disinfection By-Products in Women of Reproductive Age Living in Corpus Christi, Texas, and Cobb County, Georgia: Descriptive Results and Methods. M. Lynberg et al., *Environmental Health Perspectives* (2001); 109(6), pp.597-604.
Influence of Tap Water Quality and Household Water Use Activities on Indoor Air and Internal Dose Levels of Trihalomethanes. J.R. Nuckols et al., *Environmental Health Perspectives* (2005); 113(7), pp.863-870.

Individual exposure to trihalomethanes (THMs) in tap water can occur through ingestion, inhalation, or dermal exposure. Studies indicate that activities associated with inhaled or dermal exposure routes result in a greater increase in blood THM concentration than does ingestion. We measured blood and exhaled air concentrations of THM as biomarkers of exposure to participants conducting 14 common household water use activities, including ingestion of hot and cold tap water beverages, showering, clothes washing, hand washing, bathing, dish washing, and indirect shower exposure. We conducted our study at a single residence in each of two water utility service areas, one with relatively high and the other low total THM in the residence tap water. To maintain a consistent exposure environment for seven participants, we controlled water use activities, exposure time, air exchange, water flow and temperature, and nonstudy THM sources to the indoor air. We collected reference samples for water supply and air (pre-water use activity), as well as tap water and ambient air samples. We collected blood samples before and after each activity and exhaled breath samples at baseline and post-activity. All hot water use activities yielded a 2-fold increase in blood or breath THM concentrations for at least one individual. The greatest observed increase in blood and exhaled breath THM concentration in any participant was due to showering (direct and indirect), bathing, and hand dishwashing. Average increase in blood THM concentration ranged from 57 to 358 pg/mL due to these activities. More research is needed to determine whether acute and frequent exposures to THM at these concentrations have public health implications. Further research is also needed in designing epidemiologic studies that minimize data collection burden yet maximize accuracy in classification of dermal and inhalation THM exposure during hot water use activities.

Human Respiratory Uptake of Chloroform and Haloketones During Showering. X. Xu et al., *Journal Exposure Analysis and Environmental Epidemiology* (2005); 15(1), pp.6-16.

Inhalation is an important exposure route for volatile water contaminants, including disinfection by-products (DBPs). The inhalation exposure from a typical 10-15 min shower contributes significantly to the total dose for chloroform in chlorinated drinking water.

#4 EMAIL from JON KINGSFORD

From: Jon Kingsford <jon.kingsford@napier.govt.nz>

Sent: Friday, 12 October 2018 2:54 PM

To: p.doyle@hotmail.com

Subject: RE: DWA certification of council bores

Council's 3 Waters Team have undertaken a significant programme of work associated with the city's bores in order to obtain secure bore status.

This has involved a number of initiatives, including where possible lifting the bore head structure above ground to eliminate inundation and backflow contamination related risks. For some of Council's bores this has not been possible, so the work to try and regain secure bore status is somewhat different.

Some bores were constructed in close proximity to wastewater facilities, which is not deemed appropriate from a risk perspective, and these bores have been retired and will in time be decommissioned in an appropriate manner.

Of Napier's 10 bores, 5 have obtained interim bore security status. The interim status applies for a period of 12 months, during which the Drinking Water Assessor closely inspects water quality monitoring. If satisfied the Drinking Water Assessor may remove the interim status to reinstate full secure bore status.

All indications from the Havelock North Drinking

Interim bore security status means that our bores are compliant for Protozoa risk at the bore head, and that UV treatment of raw water is not required to reduce water quality risk and meet the New Zealand Drinking Water Standards.

Council is continuing the programme of work to understand and address remaining risks around bores and network based risk, and is focusing on Source Protection Zones (SPZs) and developing a better understanding of Catchment risk through Catchment Sanitary Inspections.

The biggest risk of water contamination resides in the reticulation network and therefore maintaining a disinfection residual is paramount to continuing to provide potable water.

Prior to the commencement of Chlorination, Napier's water supply had experienced 10 ecoli transgression events over the past decade. Since chlorination has commenced no ecoli has been detected in reticulated water supply.

Regards **Jon Kingsford**

#5 EMAIL from NCC

From: Cheree Ball <cheree.ball@napier.govt.nz>

Date: 15 June 2018 at 9:29:47 AM NZST

To: Councillor Larry Dallimore <larry.dallimore@napier.govt.nz>

Subject: 18086 - Official Information Request - Larry Dallimore (on behalf) - Water Supply Issues -

RESPONSE

1. Further to your request for information dated 17 May 2018 regarding water supply issues, I am now able to provide you with Napier City Council's response.
2. You requested:
 - a) GNS tested Hastings council's bores and found indications that surface water may have entered their bores [so-called "young water"]. Has GNS tested municipal bores in Napier? If so, what were the results?
 - b) In the council's E Coli testing regime over the last 5 years, how many returned a "false positive"?
 - c) In the last 5 years, how many times has NCC chlorinated the water?
 - d) Where?
 - e) When?
 - f) What was the possible cause of the contamination?
 - g) What level of chlorination was used on each occasion?
 - h) What was the level of E Coli reading which triggered each alert?
 - i) When did NCC move to the more sensitive E Coli testing regime?
 - j) When was the decision made to move from "incident chlorination" to permanent chlorination?
 - k) Did NCC have independent advice demonstrating the need to do this?
 - l) What was that advice and who were the consultants who gave that advice?
3. Response:
 - a) Yes, GNS has tested municipal bores in Napier. A number of bores have a young water component that is two years old. Water age varies with season. All wells have less than 0.005% of water under one

year old which is the requirement of drinking water standards. Two wells (T5 and T6) have minimum residence times of two years. Three wells (T1, T2 and T4) have variable groundwater ages, but minimum ages are higher than two years.

b) Whenever Napier City Council received a positive E. coli result, it was not questioned whether it is a false positive result or not, but considered as a representative result and appropriate actions were taken. Labs undertaking E. coli testing were / are IANZ certified for E. coli testing.

c) Continuous reticulation-wide chlorination commenced on 24/25 May 2017 (following the Park Island transgression), with the exception of the Otatara/Puketapu area, which was then chlorinated as well following the Otatara reservoir transgression at the end November 2017. Prior to that, reservoirs where E. coli was detected have usually been isolated, super-chlorinated, discharged, filled with fresh water and retested before returning to service. There have been four such chlorination events in the last five years.

d) These chlorination events occurred at Halliwell Reservoir (March 2017), Enfield Reservoir (February 2017), Kaimata Reservoir (January and February 2015).

e) Refer to d) above.

f) Council have not established the source of contamination on any of the E. coli instances, that would be supported with strong evidence, especially as the E. coli results were on the edge of detection (eg. 1 cfu/100ml). Possible causes could be through air flow entering the reservoir (pollen, air born dust, etc). Air vents have been upgraded following the incidents and Kaimata reservoir has been decommissioned.

g) Apart from reservoir super-chlorination response actions following transgressions, the water in the Napier reticulation has never been chlorinated at a rate greater than 0.75 ppm FAC. Please note that the super-chlorinated water from the reservoirs was discharged and did not enter the reticulation at any time.

h) 1 cfu/100ml - in consultation with the Drinking Water Assessor.

i) In around March 2017 Council moved to the more sensitive E. coli testing regime which refers to the amount of testing – as MPN and presence/absence are both sensitive (the same) tests.

j) The decision was taken at the Council meeting held on 20 December 2017 to maintain incident chlorination of the Napier water supply in line with the urgent and early recommendations from the Havelock North Inquiry Stage 2 report. The 20 December 2017 paper noted needs to be read/quoted in its entirety to adequately understand the way forward. The word incident chlorination was used as the current chlorination infrastructure is of an incident standard, i.e. designed for the purpose of a short term incident. It is not desirable to use for the long term. The draft Long Term Plan (LTP) contains provision for \$1.7m in 18/19 and 19/20 to construct two permanent water treatment plants to replace the 10 incident standard chlorinators. Council are continuing to use the incident standard chlorination facilities until permanent facilities are constructed.

The paper also notes that accelerating the capital works will be considered as part of the LTP process, which included the consolidation of treatment (chlorination) from 10 incident to two permanent treatment plants. The new water treatment plants were specifically highlighted in yellow, drawing attention to the fact that they were being brought forward to replace the current incident standard infrastructure. The paper also noted that Napier City Council will not recognise secure bore status as a barrier to pathogens. Without a such barrier chlorination is necessary.

The option of doing nothing and return to a non-chlorinated supply after June 2018 was presented in the Paper and identified as high risk as it was unlikely to be approved by the drinking water assessor and was counter to the findings of the Havelock North Inquiry.

The agenda and minutes from the Council meeting held on 20 December 2017 are available on our website: <http://napier.infocouncil.biz/>

Please select 2017 and click View to locate this meeting, as shown below.

k) This course of action was discussed with the Drinking Water Assessor and Chief Medical Officer (HB), and based on Early and Urgent Recommendations of the Havelock North Inquiry together with letters from the Director General of Health and Chief Executive of HBDHB.

l) Refer to k) above.

#6 See attachment NCC CHLORINATION REVIEW

Presented to councillors in March 2019 the report states:

Chlorination is the most widely used disinfecting method world-wide. It inactivates bacteria, viruses and the protozoan, Giardia. It **will not, however, inactivate Cryptosporidium rapidly enough for use in water treatment**

WATER SAFETY PLAN 2019

Page 6 of the WATER SAFETY PLAN reports that as at 3 December 2018 Napier's seven production bores have interim bore water secure status. In an email dated 12th October 2018 [#4 Supporting Document] Jon Kingsford stated:

"Interim bore security status means that our bores are compliant for Protozoa risk at the bore head, and that UV treatment of raw water is not required to reduce water quality risk and meet the New Zealand Drinking Water Standards."

This statement appears to be contradicted on p.6 of the WSP:

NCC long-term plans are to achieve protozoal compliance at each bore utilising UV treatment as NCC does not intend to rely on bore security status going forward. With current configuration, it is difficult to install UV treatment. However NCC's Long Term Plan, that has been approved in July 2018, includes commissioning two bore fields with treatment plants at each one (most likely UV treatment) and permanent chlorination before June 2023. In December 2018 Council indicated this project might be brought forward.

If NCC were to investigate the Christchurch model the council could save millions of dollars on unnecessary UV treatment plants.

Page 20 notes that

NCC intends to develop, register and go for secure bore status also at A2 bore

Page 29 notes that

Proposed works	Person responsible	Expected cost	Intended completion date
Complete all works needed to commission A2 bore and gain interim bore security status, providing DWA with evidence on Bore Security Criterion 1 and 2	3WL	150,000	December 2019

In an email dated 2nd April 2019 Jon Kingsford advised that:

A2 is not operational - it was developed as a test bore and nothing more than a capped and cased well. In this regard it has never had secure bore status. Also, it is not yet part of Council's resource consent to extract water. Council are drilling a new bore for operational purposes close to this test bore. Council are applying for a variation to the existing consent to use this bore. The new bore will be developed to meet current drinking water standards and security status can then be achieved.

In a subsequent email dated 7 May 2019 Jon Kingsford advised that :

The cost of the contract to develop A2 was approximately \$147,000.

The contract documents identify that the bore was to be developed to a standard capable of performing as a production bore should Council wish to connect it to the public network. At the time the bore was developed the necessary complementary projects to connect this bore to the public network were not identified and consequently not funded. Therefore at that time it was never intended to be anything other than a test bore. As a test bore it has fulfilled its purpose in proving the ability to extract sufficient quantities of water from this part of the aquifer without adversely affecting the aquifer. The original bore will continue to be used as a monitoring bore for operational purposes.

This project was tendered in April 2015 and awarded in May 2015.

It appears that ratepayers are going to have to pay a total of \$300,000 for a new water take in Awatoto which should have cost half that price if there had been appropriate planning.

Sick of CHLORINATED water?

Petition for Chlorine-free Water

1. **Chlorine undermines the immune system.** It depletes the good bugs in the human gut which are vital for a healthy intestine. Since Napier City Council added chlorine many people have experienced stomach problems and skin conditions they've never had before. Chlorine is known to be carcinogenic - **this is why the Dutch stopped using chlorine**. Just one example: the link between water chlorination and colorectal cancer is well established: www.ncbi.nlm.nih.gov/pmc/articles/PMC4824718/

2. **Chlorination is mandatory in the UK, including Northern Ireland.** But in 2015 chlorine failed to keep people safe from a serious outbreak of **Cryptosporidium** in a city in Northern Ireland. The crisis was managed by maintaining a BOIL WATER regime for five months while the source of contamination was identified and the problem solved. The incidence of waterborne diseases in the UK is five times higher than in **the Netherlands where chlorine is not used, not even as a "residual disinfectant"** in the pipe network. Other Western European countries have followed the Dutch method and instead of using chlorine they rely on proactive management and a programme of regular maintenance/replacement of infrastructure.

3. A false sense of security: "**Chlorine residual**" disinfection is being promoted by our council but it does not guarantee protection against all waterborne diseases – it does not kill protozoa such as **Cryptosporidium**. Under Napier City Council's current policy of trying to maintain a permanent "chlorine residual" in the network E.coli would be de-activated before most pathogens, which means that cryptosporidium would go undetected. **This is what happened in a city of 750,000 people in Northern Ireland in 2015.**

4. Another problem: The chlorine taken up by organic matter in the early part of the network can mean there is no remaining "residual" protection against E.coli for consumers further along the network. In December 2016 the **Havelock North Water Inquiry** ordered urgent re-commissioning of Brookvale Bore 3 using Log 5 chlorination [the highest level permitted for drinking water under NZDWS] in the mistaken belief that it would help provide protection all the way to the end of the pipe. The panel failed to understand that "**chlorine residual**" is just a theory and in practice it can lead to a **false sense of security**.

5. **Why did Napier get chlorinated?** There was **no proof of any contamination**: in May 2017 the current council started chlorinating Napier's water following the Havelock North gastro outbreak, even though council staff have since admitted that the two overly sensitive E.coli test results which triggered chlorination in Napier were "**on the edge of detection**". Written responses from council staff indicate to us that in the last five years tests for E.coli have demonstrated no need for permanent chlorination of Napier's municipal supplies.

6. **Good News:** Napier's bores have been thoroughly serviced and their "secure bore" status has been reinstated, making Napier's bores compliant for E.coli and Protozoa risk at the bore head. Council staff confirm that UV treatment is not required, which means we don't need expensive treatment plants and **millions of dollars could be saved** if Napier City follows Christchurch and goes chlorine-free. Napier's bore heads are well-constructed and are above ground-level. In contrast Havelock North's two bore heads were below ground-level, non-artesian, and vulnerable to surface contamination from campylobacter [sheep dung from the 1600 sheep grazing in a nearby paddock in August 2016] due to sub-standard bore head construction.

7. There is currently **no law** requiring permanent chlorination – merely the December 2017 recommendation from the Ministry of Health based on the misguided belief that Havelock North was a "routine New Zealand water supply". It was not. The recent position paper of LGNZ says the government should "avoid prescribing inputs such as chlorination" (13/11/2018). The Local Govt Minister says there are other options – Christchurch City Council is exploring another option - the chlorine-free option and has investigated the Dutch model.

8. The latest news is that 8 of Christchurch's 9 water supply zones should be chlorine-free by May and the council expect that 98% of Christchurch will be chlorine-free by end of June 2019. **Christchurch is following the Dutch system** and will seek exemption if central government decides to make permanent chlorination mandatory throughout New Zealand. Canterbury Medical Officer of Health Alistair Humphrey fully supports the council. Napier's current policy is being driven by CEO Wayne Jack and Mayor Bill Dalton. A new council could change that policy and follow Christchurch City Council. Hastings could do the same.

9. We need councillors prepared to stand up for the community's right to an **exemption from permanent chlorination** if a new law is introduced. Like Christchurch we draw from secure confined aquifers and our bores are well-constructed. But we need to vote for councillors who are committed to returning to 100% pure artesian water with no chlorine added.

Pauline Doyle & Ken Keys, Spokespersons, Guardians of the Aquifer

May 2019

Sign the Petition for chlorine free water :

email p.doyle@hotmail.com

Can you help? Donations welcome - \$10 or \$20?

Guardians of the Aquifer: T.S.B account no: 15-3979-0031086-00

Napier City Council Annual Plan 2019/2020 - Your Feedback

#1

Page 1

Q1 Your details:

Full name **michelle jefferis**

Address

Email

Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed),**
Comment::
make small changes
slowly

Q5 Do you have any comment to make about the future of Kerbside Recycling?
it needs to be simple.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Neutral

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Disagree**

1 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#2

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Graham Beaumont**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Comment::**
 Why not the status quo?

Q5 Do you have any comment to make about the future of Kerbside Recycling?
 It should be done only if it is economically viable, otherwise just put everything in the landfill

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
Comment::
 Leave it as it is

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

3 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#3

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Nicola O'Keeffe**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed),**
 Comment::
 A bit rich that the contractor is taking less of our recycling but we are being charged more. Perhaps its time to put a tender out and look at other contractors?

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Neutral,
 Comment::
 I would like to see no chlorine in our water supply in Napier.
 A chlorine free station is no use to me as I cant shower in it!

5 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#4

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Brad Jones**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now,**
 Comment::
 Don't delay paying , there will be other issues needing money in years to come

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Wheelie bins is the way to go - look at what New Plymouth has done we are way behind

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**
 Comment::
 Another clunky organisation for no reason

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Neutral

7 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

I also wouldn't have an issue if council funded 100% of it

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#5

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Pete Wright**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed),**
 Comment:
 Can the recycling company back up its claims in price increase with figures and not just say China wont take the plastic anymore, do other companies tender for this job each year

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Would it make it cheaper doing it once month and getting people to sperate paper, card board and coloured glass. The Collection company Leaving it on the curb side if it isn't presented properly. This reducing sort time and labour costs, it would then require half the trucks, half the staff and should make a significant savings on collection fees charged to the council

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

I have spent a lot of money putting a high quality entire house water filter on my house after spending a lot of money on drinking water since Napier started chlorinating the water, my children stopped drinking water, they where hard work to get them to shower because the chlorine was causing skin issues. My aging hot water tanks are now at risk from leakage from the chlorine that has gone through the system, If you spend money on the water will the chlorine be removed. There has been no reduction in my rates yet I have spent a lot of money myself already increasing the water quality in my house because of a directive from the council to put chlorine in the water after a few small water readings went stray.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#6

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Paula Yeates**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I have lived in Napier for 44 years. In all that time to the best of my knowledge no-one has caught campylobacter from the water supply. There has never been a "boil water" statement issued. There used to be a small amount of discolouration from the taps when the council cleaned the pipes but this was fixed immediately by running the taps for a few minutes. I have had ongoing skin issues since the water was chlorinated and now have to buy expensive body wash and moisturiser - I hate to think what it's doing to my internal organs if my skin is falling off. I would like the council to do a Napier wide referendum to see how many people actually want chlorination and how many would like you to stop it right now. You seem to think putting in a couple of chlorine free water stations is enough - well it isn't. I DO NOT WANT CHLORINE IN THE WATER FULL STOP.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#7

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Alan Fleming**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Comment::**
 Very happy with the system as it is. I use a bag when needed but also hire a general rubbish bin which is emptied weekly.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Bins not crates

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
Comment::
 Stop using Chlorine in our water. Apart from all the dirty water problems, it is not helping the ozone layer. The Refrigeration and Airconditioning industries went to great pains to stop the use of fluocarbons. Surely the council can do their bit also. Please read the Montreal Protocol about the

13 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

use of Chlorine. Please give us fresh water back!! It would be a lot cheaper The Montreal Protocol on Substances That Deplete the Ozone Layer EmailThis Premium lets you save unlimited bookmarks, PDF, DOCX files, PPTs and images. It also gives you a PDF copy of every page that you save. Upgrade to Premium → picture The Montreal Protocol, finalized in 1987, is a global agreement to protect the stratospheric ozone layer by phasing out the production and consumption of ozone-depleting substances (ODS). The stratospheric ozone layer filters out harmful ultraviolet radiation, which is associated with an increased prevalence of skin cancer and cataracts, reduced agricultural productivity, and disruption of marine ecosystems. The United States ratified the Montreal Protocol in 1988 and has joined four subsequent amendments. The United States has been a leader within the Protocol throughout its existence, and has taken strong domestic action to phase out the production and consumption of ODS such as chlorofluorocarbons (CFCs) and halons. The Montreal Protocol has proven to be innovative and successful, and is the first treaty to achieve universal ratification by all countries in the world. Leveraging worldwide participation, the Montreal Protocol has sent clear signals to the global market and placed the ozone layer, which was in peril, on a path to repair. Full implementation of the Montreal Protocol is expected to result in avoidance of more than 280 million cases of skin cancer, approximately 1.6 million skin cancer deaths, and more than 45 million cases of cataracts in the United States alone by the end of the century, with even greater benefits worldwide. The Montreal Protocol's Scientific Assessment Panel estimates that with implementation of the Montreal Protocol we can expect near complete recovery of the ozone layer by the middle of the 21st century. Further information on the science of the Stratospheric Ozone Layer can be found on the NASA and NOAA websites, and information on the U.S. domestic implementation of the Montreal Protocol can be found on the EPA website. The full text of the Protocol, information on its institutions and past actions, and related publications are available through the UNEP Ozone Secretariat. On October 15, 2016, Parties to the Montreal Protocol adopted the Kigali amendment to phase down production and consumption of hydrofluorocarbons (HFCs) worldwide. HFCs are widely used alternatives to ozone depleting substances such as hydrochlorofluorocarbons (HCFCs) and chlorofluorocarbons (CFCs), already controlled under the Protocol. This amendment creates market certainty and opens international markets to new technology that is better for the environment, without compromising performance. It calls on all countries to gradually phase down their production and consumption of HFCs in the coming decades using the flexible, innovative,

Napier City Council Annual Plan 2019/2020 - Your Feedback

and effective approaches the Montreal Protocol has used for three decades. Global stakeholders endorsed adoption of the Kigali amendment, including most of the major U.S. companies working in related sectors. NASA Ozone Website NOAA Ozone Website EPA Ozone Website Source: <https://www.state.gov/e/oes/eqt/chemicalpollution/83007.htm> Upgrade to Premium Plan ✓ Save unlimited bookmarks. ✓ Save PDFs, DOCX files, images and Excel sheets as email attachments. ✓ Get priority support and access to latest features. Upgrade To Premium EmailThis Send web pages & articles to your email inbox. If you have any suggestions, bug reports or comments, please let me know at bharani@hq.emailthis.me. You can also Tweet to us at @EmailThis_

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#8

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Dr Rose Stiles**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed),**
 Comment:
 Unfortunately along with the other cost increase needs envisaged for updating and maintaining Napier City's infrastructure at this time and so many households on limited incomes it is unlikely most will be able to pay the full amount despite the subsequent subsidy requirement via the Council.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Yes. This is important to lessen the amount of rubbish going to land fills. It is also important for residents to be issued with appropriate containment bins as at present rubbish gets blown out of the variety of containers put out by residents themselves at kerbs and is left in situ despite contractors being required to pick up any such items.
 Think the best option is indeed the lidded wheelie bin (perhaps yellow to differentiate from the current green and red lidded bins used by many residents for other rubbish) proposed by Council. However, two bins are needed for the safety of recycling contractors one being a wheelie for all recyclable materials such as paper, cardboard, metal and a separate smaller bin for glass items. These two recycling bins could be collected on alternate weeks as is arranged by other Councils.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),

Comment::

A good idea of possible future benefit.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Agree with all the proposed infrastructure work proposed but with the proviso that all water supplied by the Napier City Council should follow the best practise method of being chlorinated for the health of its citizens. Think definitely the Council should not be involved in supplying and maintaining any unchlorinated water supplies at all as could leave itself open to accusations of negligence and large cost damages should any citizen become ill, and there is always that likelihood or such untreated water even being blamed when possibly not the cause of an illness at all. It is not an option any Council should consider even when lobbied for vigorously by a sector of citizens. A Council makes best policy decisions on sound research and advice for all citizens regardless of individual preferences and this is always the best cost effective option for any community. There are many options available for individual citizens to improve the taste of chlorinated water if they find it necessary.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Comment::

Agree this work should be mostly funded by those residents living in the area as unfortunately choosing to live close to NZ coasts has always been a known risk even if effects are only becoming more noticeable now. It is an individual's responsibility to assess where they will live and in doing so accept the risks - and any higher resulting insurance costs. Perhaps a bit of a firm stand in this matter but household rates would become an enormous burden if any Council shouldered such responsibility and costs. Paying for the maintenance of roads at risk of erosion is already a rising cost for Councils.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

1. Re former Napier Library and Council buildings:

Think the Napier City Council should plan to strengthen the former library building, if not the former Council building as well, and move these important entities back into the midst of the community where there is already good parking for citizens to access these facilities and their knowledgeable staff.

In most cities these twin facilities are seen as the 'key' community assets and placed city centre. Napier's were placed perfectly within the CBD and easily accessible for all citizens with both internal and surrounding space with nearby parking for easy access by those disabled and close to bus stops. If the cost of strengthening/upgrading both or even one of the present buildings for Council staff and the library to move back proves prohibitive would support their demolition and the erection of a new building in their place in the same location.

The central location of these two community facilities for their future use, as in past years, is much more important than any gains from selling or leasing the sites for commercial use.

2. Re new sub-division developments:

These are moving ahead at a great pace in Napier and providing many new and warmer houses for citizens in contrast to the now inappropriate old wooden villas.

However, residents who move into these new areas (e.g. Te Awa estates) are isolated completely from community amenities unless they get in a car and drive, an option proving less and less acceptable nowadays to citizens and Councils alike.

An option could be that if a subdivision is proposed in any area where it takes a person more than 15 minutes to walk to a facility such as a Dairy/bakery/cafe that any subdivision must put aside one or two sections (800 - 1,000 sqm) for a future small community shopping facility in their development plan. And any future bus stops could automatically be placed outside this important public amenity. These amenities and others like space for a future kindergarten or medical centre are being included in the plans of subdivisions in other areas of New Zealand.

3. Public transport:

A similar lack of alternative transport to driving a car into town is apparent to those residents of these new suburbs and again this needs to be assessed by Council and a public transport plan put in place when new subdivisions being initially assessed by Council.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#9

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Tammie Crompton**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Agree**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Neutral,**
 Comment::
 Residents should have to pay more of a % of the bill.

19 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#10

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Giles
Address	Pogson
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer. Part-pay now (proposed)

Q5 Do you have any comment to make about the future of Kerbside Recycling? Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer. Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20? Neutral

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Neutral,
 Comment::
 It does feel appropriate that the properties most affected should contribute but hard to gauge whether 3% is a fair figure when it is not clear how this is reached.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#11

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Andrew**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now,**
 Comment::
 Pay full cost get it over with and spend that extra money saved in the 3 waters as that's going to blow up in our faces soon enough

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed),**
 Comment::
 Trust be good but needs to not be a drain on council resources and funds Should fund itself

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Agree**

23 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Disagree
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Agree
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#12

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Robyn Cook**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed),**
 Comment:
 Costs are going up all the time. Unfortunately income is not keeping up with that. So therefore rates increases need to kept to abare minimum

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Needs to be more efficient. Currently the collectors although mostly do a good job are guilty of allowing some recycling to litter the street and make no attempt to retrieve it. Therefore I believe the bin system would be more effective in keeping the streets cleaner. Sorting could be done at the end allowing the correct products to be recycled. Our plastic problem is a huge one and pressure must be put on industries to find a better packaging solution. Imports also need to be addressed re packaging

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?	Agree, Comment:: This has been a disaster. Needs fixing now. Take the money from the unnecessary prebesen drive pool debacle and Aquarium and upgrade the infrastructure before it becomes more of a complete shambles.
Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#13

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Peter Dunkerley**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

HB Knowledge Bank

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Respondent skipped this question**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Respondent skipped this question**

27 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

We wish to apply for further funding for the Knowledge Bank to continue the grant made last year.

We now have a three year funding path from the Hastings District Council and it would be helpful if that could be achieved with the Napier City Council.

We have achieved many milestones this year because of this assistance.

We would like to present a full report.

Q11 If you have more to say or additional information
please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#14

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Debbie Chalmers**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Recycling should be weekly

There should be penalty for selling non recyclable plastics

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,
 Comment::
 Should also incentivise rain water collection for garden use

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,

Comment::

Should be combination targeted rate and general rate

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#15

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Genevieve Bennett**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Biodiversity Hawke's Bay

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Respondent skipped this question**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

31 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

BiodiversityHB submission to NCC Annual Plan April2019.docx(62.1KB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#16

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Michele Grigg
Address	
Email	

Q2 Please provide a postal address if different from above
 Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.
 Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Make it easy for people.
 We definitely need a kerbside collection.
 Fortnightly would be fine.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
 Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?
 Disagree,
 Comment:
 Residents could pay more than 3% given the long term benefit to those properties and increased value as a result.

33 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#17

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Michael Barry Adams
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above	Respondent skipped this question
---	---

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.	Respondent skipped this question
--	---

Page 2

Q4 Waste Management - Tick which option you prefer.	Pay full cost from now, Comment:: You need to detail where the recycling actually goes now and what makes it less expensive than handling rubbish. Otherwise people will just put it in their rubbish. Why recycle if it is costing more! Government should put a surcharge on all plastics imported and distribute the money to those disposing of the recycling without putting it in landfill.
--	--

Q5 Do you have any comment to make about the future of Kerbside Recycling?	Respondent skipped this question
---	---

Q6 Regional Disaster Relief Trust - Tick which option you prefer.	Set up the Trust (proposed), Comment:: Everybody should contribute annually from rates.
--	--

35 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?	Agree, Comment:: Are we ever likely to see chlorine free water to the house again?
Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Agree
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#18

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **antony carstens**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed)

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree,
 Comment::
 the costs should be funded from ALL ratepayers as we all use the foreshore, or have the option to use it

37 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#19

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Robert Haas
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),
 Comment:
 In the interest of fixed-income households.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Just a quick follow-up to what was said at today's community meeting at the Greenmeadows East Community Hall. Firstly, I may note, that it appears that no member of the public spoke up in the meeting to say that an everyone pays a fixed amount for rubbish collection would be the preferred choice. Instead it was voiced that people with less rubbish should be rewarded, aka incentivise people to reduce waste.

I think there is good research to support the point. Here is an article with supporting research: "Pay As You Throw, or unit-based pricing, is the single most effective way to educate and motivate residents to reduce, reuse, recycle and compost." Find the full article here: <https://ilsr.org/metering-residential-garbage-can-pave-the-way-to-zero-waste/>

Furthermore, I mentioned that there surely would be councils around the world who have successful schemes going. Here are a few short links that could be a start:

Wales seems to be doing well: "Wales currently has the highest recycling rate of all the devolved nations, recycling 54% of municipal waste in 2013/14, thanks to an ambitious long-term waste strategy. Find the full article here: <https://www.letsrecycle.com/councils/government-policy/>"

Some research from Spain: "Findings indicate that UP [unit pricing] schemes can provide a more balanced payment system for local residents, and help reducing free-rider behaviours associated with illegal and improper disposal practices." Find the research here: <https://www.sciencedirect.com/science/article/pii/S0921800918303264>

And in another part of the UK they found that swapping to a 3 compartment bin was well received and made a big difference: "This has resulted in a 30% increase in recycling in those rounds who have Wheelie Boxes and a 90% satisfaction rate from 1160 residents surveyed." Find the article here: <http://www.brysonrecycling.org/recycling/case-studies/recycling-cs2>

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Fixing our water is a high priority need

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#20

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Penelope Margaret Graham
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

Like many superannuants I am concerned at the proposed increase in rates this year (6.4%).

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I attended the consultation meeting at Greenmeadows Community Hall on April 17 and was pleased to hear the discussion and clarification re both Recycling and Refuge collections.

I do not believe it is necessary to collect recycling weekly.

Keeping that collection fortnightly as we are used to must reduce the overall cost.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Do not set up the Trust

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

This issue must be fully addressed.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

I am very disappointed to see that the Acting Mayor used her casting vote to sway the decision to proceed with the Prebensen Drive Swimming Complex. Like the War Memorial Hall issue the people have once again not been listened to. The decision on the Pool development should not have been made prior to the forthcoming election.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#21

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Pieter Franklin**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed)

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Clean not chlorinated water should be a priority for Napier residents urgently not on the ten year plan. If the well heads are all sealed and safe why chlorinate? The Napier water kills Plants, Fish, Birds and has caused problems with water cylinders and will probably contribute to peoples health as well. I do not believe a new swimming pool should go ahead until the water is sorted. Just think of the costs to maintain and treat the rotten water you expect residents to swim in. Extremely disappointed with the councilors who voted for this to go ahead. Has the roof on the reservoir at Taradale been fixed and is it in use yet if not why not.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,

Comment::

Good luck with this plan. This problem will probably worsen with Port extensions and rising sea levels. The only place I have seen beating the erosion is Gisborne Port with sheathed piling.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree,

Comment::

With most communities in NZ being concerned about rising sea levels do you think it is wise to be spending the huge amount of money on the Aquarium as surely it must be of risk to storms and sea levels. Nothing has been said about this matter and I doubt you have a dispensation for this danger. I am also concerned about our Anderson Park maintainance as now you have to rely on volunteers to trim edges and weed gardens and pick up rubbish. There has been a definite stop on maintainance since the playground was finished. EG. Dead trees in crab apple garden killed by canker which will probably spread if left. An increase in weed, rubbish and rats in the waterway. It is a rare sight to see the paths being swept as well as the Dog rangers presence. everyday there are people walking dogs off leads in on lead areas as well as on the Sports fields at Park Island. If this was enforced it would stop this happening and contribute to the general funds. As a retired widower I am very concerned about the increase of everything, food rates, insurance, Heating etc. and I think we should be careful of the huge amount of debt you are inflicting on Napier citizens. PS Could you get someone to answer the questions on your website. Communication with the present council is very poor. Regards Pieter Franklin

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#22

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Margaret Jaffe**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Neither option**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Neutral**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Respondent skipped this question**

46 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#23

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name Kelly
 Address Lash
 Email
 Daytime phone number (or mobile number)

~~Respondent skipped this question~~

Q2 Please provide a postal address if different from above

~~Respondent skipped this question~~

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Comment::

I already pay for my rubbish to be collected

Page 2

Q4 Waste Management - Tick which option you prefer.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Why not try what palmerston north has been doing for years. Wheelie bins for specific items

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

This needs to fixed ASAP no more chlorine you can not drink the water. Hair and skin feels dry and horrible all the time. We need to be like Christchurch and chlorine free.

48 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#24

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Antony Steiner
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Part-pay now (proposed)

Page 2

Q4 Waste Management - Tick which option you prefer.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Large wheelie bins will only encourage sending recyclable materials to landfill.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.	Set up the Trust (proposed)
---	-----------------------------

Q7 Water Supply - What do you think of the changes for the plan 2019/20?	Agree
--	-------

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Respondent skipped this question
---	----------------------------------

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Agree**

Q10 Do you have any other feedback?

Invest more in disabled access across Napier.

Update the Botanical Gardens, including more labelling of trees and plants and information boards.

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#25

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Alicia Marie Burgess
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.**Q5** Do you have any comment to make about the future of Kerbside Recycling?

Yes all plastics need to be taken and recycled

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 I do not want chlorinated water!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

52 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#26

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Shaun Smith-Holley**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 Stop chlorination! It is unnecessary and you're removing people's rights to choose whether they want it or not

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#27

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Diana Jane Turner
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment:
 The total cost of waste management should be covered in the main budget for the use of rates received not as an add-on.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

We have to consider recycling before anything else but it works more efficiently if all recyclable material is collected in one (not putting the responsibility of separation to the general public who are not always knowledgeable) then sorting and separating at a depot. If something like this was set up it would definitely employ more people as well.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Christchurch has a population 6 times larger than Napier. It has 14 times more bores. If it can have un-chlorinated water at less than twice the cost anticipated by Napier's upgrade then we need to be talking to them and getting advice. Aim at providing UN-chlorinated water to all households once again and make chlorinated stations available to those who prefer it. I don't understand this DE-chlorinated proposal - taking the chlorine out of water once it has already done it's damage? It should be chlorine free by the time it hits households anyway.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

fairytale.jpg (45.2KB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#28

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Mary Gregory
Address	Respondent skipped this question
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Comment::
 Don't agree with either of the above. Pay enough rates already.

Page 2

Q4 Waste Management - Tick which option you prefer.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Yes, pay enough rates without paying for proposed bins. Plus, how are the elderly or informed able to get these bins to and from the kerbside when living on steep back sections etc...

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Comment::
 I do not know enough about this to vote

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 Spend our money to have clean water, without chlorine

58 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Comment::

More heading info on this please, what is it?

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree,

Comment::

Water needs to be addressed before any more beautification of our city...if that is what you mean

Q10 Do you have any other feedback?

Yes..... please put more explanation of the questions being asked

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#29

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Barbara Chalk**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question
 Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Respondent skipped this question

Q4 Waste Management - Tick which option you prefer.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 I do not want chlorine in my water. It is not healthy. I have not drunk chlorinated water for years and have had to pay to have clean filtered water in my home for me and my animals to drink. I want to know why we cannot go the way of Christchurch who are forward thinking and I certainly do not want a rates increase to pay for something I do not want.

60 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#30

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Reo Munro
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

No

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

Why can't we have an open forum where we as rate payers are able to listen and hear others views and contribute with our own thoughts and views. You are asking me to tick tick 2 alternatives which I do not agree with and yet at the end of the day I am paying out of my pocket without having any say. I am opposed to the two options

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Yes already you are deciding what could be taken and what can't. How about telling the businesses to stop receiving their goods in plastic and to stop parcelling them in plastic and stop enforcing them onto the consumer.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Comment::

Needs regulation, and Volunteers to set up a Regulated body, and an ongoing Health and Safety Body

62 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Clean our rivers and waterways, and stop selling our water to overseas markets.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Why not if it from Govt why not make use of it to our advantage, after all it is going from our taxes

Q10 Do you have any other feedback?

Please stop and listen to your Community. This is a beautiful part of our country Hear what the people are saying and get on side with them We waste so much money when things go wrong. Why wait for disasters before action is taken

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#31

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Hellene Overend**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment:
 We want chlorine free water. Sort a bulk purchase for ratepayers and allow to pay off like insulation.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Neutral**

64 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#32

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Helen Fouhy**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I would prefer a wheelie bin

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 I would like to see management of chlorine free water

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Neutral**

66 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Neutral**

Q10 Do you have any other feedback?

I am really unhappy about proposed rates increase

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#33

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Virginia MacEwan**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 Please provide chlorine free water to households

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#34

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Barbara Sumner**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Yes, implement a full on awareness program to stop waste before it starts. Most of our plastic waste comes from supermarkets. Make them accountable. Ending plastic bags is great, but not nearly enough. Charge supermarkets a levy for every product on shelves that has plastic. They would very quickly go back to their suppliers to find alternative solutions. Resolutions for garbage and waste removal has been outsourced to the end user (the council) by manufacturers for too long. Find the point of weakness in the chain. Making supermarkets pay a levy seems to be that weakness.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

70 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

No Chlorine!!! No Chlorine!!!! Either change the network to remove chlorine and minimise risks as they do in the Netherlands. Or just remove it and live with the risk. But also working with polluters who compromise our water systems. And create a policy that values water as our most precious resource. STOP giving away our water to bottlers and cruise ships.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Plant trees - but not just natives - plant fruit trees everywhere you can

Q10 Do you have any other feedback?

Yes, on a recent trip to Canada, I noticed that with new roading projects they had small gardens as part of the developments (integrating divided cycle ways) and those gardens were available for local sponsorship. Households agree to take on their verge or garden and manage it.

In multiple suburbs I noticed community food plots everywhere. Small pieces of ground turned into food. Such an easy way to gain community involvement in a more beautiful and engaged small city.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#35

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Elizabeth Anne Thomas**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment:
 Not happy with either. We already recycle with our own containers

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 We need to get rid of the chlorine out of our water supply. Bottom line. I would like to know about the "non compliant reservoir in Taradale please

72 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Disagree
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Respondent skipped this question
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#36

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Rachel Dahl**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
 Comment:
 Change our network to remove chlorine and minimise risks (Netherlands model)

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

74 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Respondent skipped this question**

Q10 Do you have any other feedback?

RE: Napier Botanical Gardens

I implore you to please re-open the gate at the junction of Spencer Road, Lawrence Road and Main Street.

So many residents here on Lawrence Road want this re-opening as well as the many, many walkers that frequent this area.

Lock it at night, for security, if required.

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#37

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **RACHEAL WOOD**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

It is absolutely terrible that all we can recycle plastic wise is numbers 1 & 2. I know its not your fault but it is ridiculous when pretty much the only plastic that is 1 or 2 are milk bottles everything else is normally a 5 .

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Neither option**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 I DO NOT WANT CHLORINE!!!! MY HAIR IS TURNING GREEN, MY SKIN IS DRY AND MY STOMACH IS ALWAYS CHURNING.

76 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#38

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Gavin Cooper
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Disagree,

Comment::

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

I support a comprehensive upgrade to our water supply network to remove chlorine and minimise risks (Netherlands model)

Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

78 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#39

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Michel de Vos**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.**Part-pay now (proposed),**

Comment::

This should be a fixed increase for the service provided not a percentage increase to the rates, i.e. why should higher ratable properties have a higher increase for the same additional service?. Rates are already high and any increase in cost should be absorbed by NCC fulls top, not only deferred.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Do not set up the Trust

Comment::

I don't believe that NCC or any other council should be responsible for the establishment of a trust, this should be managed at Central Government level. I say this because in the case of a major event such as a Hikurangi subduction EQ and resulting EQ the council will be ineffective and likely not functioning in any capacity due to infrastructure damage and lack of personnel to distribute funds from the trust, i.e. the very people who will be charged with distributing funds will be the ones who need it.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

I have no comments, I note some of the community angst but we have no problem with the water supply at our property, nor have an issue with chlorination, which in my experience is the norm.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

Agree it should be a targeted rate, although 3% is low. For this there must be a significant increase in amenity for all rate payers

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#40

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name KANE RAISEY
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::

Its difficult to communicate with the NCC on this issue without seeming bitter but heres my feedback. I truly feel NCC are poisoning us. I truly feel NCC really don't give a hoot about the people who you are supposed to serve. I truly feel that NCC are either taking bribes or involved in something corrupt here. My opinion of NCC has plummeted and will never be restored as long as Napier has chlorinated water. My opinion of any NCC councillor who supports chlorinated water is they are corrupt and don't care about Napier's collective health. This questioning set up is clearly crooked as you don't really give in your choices a clear path for people to disagree with chlorinated water. Ive read it twice and its confusing. Why cant you just say yes/No for chlorinated water? Well I know the answer is that 100% of people other than you lot will say no thanks to chlorinated water. You don't want to see that so you basically weasel the process. Basically the NCC has lost the trust of most of the Napier population over this issue. There are very angry people in Napier. Every time my eyes burn in the shower I think of NCC. Every time I have to make alternative plans to drink water other than from tap I think of NCC. Every time I taste chlorine in a glass of water anywhere I think of NCC. Every time I water my plants I think of NCC. Every time I fill my dogs bowl with water I think of NCC. Every time I purchase water I think of NCC. Heres what I think. That NCC are corrupt and basically a bunch of crooks. My feelings toward NCC are very negative and will stay that way. Please sort this out. NO CHLORINE!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#41

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Gavin Cooper
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

My concern is with chlorination. My narrow concern is the taste, from high quality fresh aquifer water we get to drink chlorine tasting water. I understand the use of chlorination to manage the contamination risk and that it is cost effective. Is it possible to invest and to plan in the long term for a chlorine free water supply? Use chlorine in the short term, make changes to the network as outlined gradually, but with a view to eventually having a chlorine free water supply. It seems to be such a very poor aspiration to settle for a chlorine contaminated water supply, when our source of water is of such high quality. It is worth challenging the assumption that rate payers do not want to fund the additional costs associated with a chlorine free water supply.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#42

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Andrea Hannah**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
 Comment:
 I have enjoyed our un-chlorinated water supply in the past and would like to see option 3: Change our network to remove chlorine and minimise risks (Netherlands model) put into place.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

86 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#43

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Geoff Hulbert**
 Address
 Email
 Daytime phone number (or mobile number)

~~Respondent skipped this question~~

Q2 Please provide a postal address if different from above

~~Respondent skipped this question~~

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Pay full cost from now

Q4 Waste Management - Tick which option you prefer.

~~Respondent skipped this question~~

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed) Agree

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

88 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#44

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **IAN WILLIAM MCQUILLAN**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

PO Box 4072 Marewa, Napier

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 As argued by Pauline Doyle we should be aiming for chlorine free water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

90 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#45

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Malcolm Reeves**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

I don't know why this flicks directly onto waste management and does not give me the opportunity to make a comment on the matter I am interested in. However while on waste management I trust you will not require use of those stupid PLASTIC rubbish bins. When one needs to walk one of these a few hundred metres over rough ground and moderately steep slopes they are EXTREMELY difficult and inconvenient. I cannot imagine how I will get them into my car to take to the gate to leave them for collection. The standard plastic bin that we currently use is great, convenient,

doesn't require pickup when empty, the advantages are great compared to the inconvenient heavy PLASTIC bins that some would have us use. And when I last looked the PLASTIC bins did not fall free from the sky - some one has to pay and presumably it will be the poor ratepayer yet again. Plastic bins might be convenient for some but far from all. Quite the contrary.

92 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q5 Do you have any comment to make about the future of Kerbside Recycling?

If it isn't broken don't fix it. It is working well for us right now.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Do not set up the Trust

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::

Go for it. The city needs a safe secure supply. Chlorination is the way to ensure this. I note that we are told the upgrade will add about 0.7% to rates. Fine except I presume that this will NOT be levied on those ratepayers who have their own water supply. How will this be either not charged or rebated. presumably it will show on our rates demand as non-payable or not levied. I look forward to your response/reply.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Comment::

What is this?

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Comment::

Go for it. So far Jones appears to be buying votes in marginal seats. We should threaten to make Napier marginal and then we might get some funding too.

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#46

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Neil Eagles**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

A little confused as to green recycling. At present we pay for weekly removal. What is future proposal?

Recent combined info for you & HDC left us up in air.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed),**
 Comment:
 Funds for relief are important as well as a combined strategy for all HB

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Agree,
 Comment:
 Enfield road needs replacing with an earthquake safe larger reservoir.

94 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Agree
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Respondent skipped this question
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#47

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Neil Eagles**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

Recycling most important. What is happening with green waste. Earlier survey with Hastings DC did not come to any announced resolution. Is this plan still going ahead and what is result?

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Must be expanded by local initiatives. How can we recycle more as a City.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),

Comment::

We may need this as we are in an accident prone area. Not sure how it will be done and where funds will come from.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Replacement of Enfield supply vital as a new safer option required for future. Clean water a must. Expanded facilities to cater for Mission development and waste water removal vital. The planning for a storm water receiving area before stormwater hits the Ahuriri Estuary essential. For the long term good of the Estuary planning must be expedited and funding provided to put plans in place from 2021 onwards. We have had a century of dumping waste into this area and this must stop asap. Global warming and sea level rise must be factored in. City cannot afford to procrastinate more than a couple of years and get it right by enlightened planning.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

An asset for the City

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Milk the fund while it is still there. HB must have its share.

Q10 Do you have any other feedback?

Cleaning up storm water and ensuring there is adequate reticulation to cope with an expanding city system. New suburban developments will place pressure on existing systems. Ecoli events are totally unacceptable.

Planning for sea level rise is a must. Future generations will either praise or condemn existing councillors in this aspect. Lets hope it is praise.

Development of a wetland south of the estuary will polish water run off and ensure a cleaner environment.

Would also be a great tourist attraction.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#48

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Denis Monti**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

We all know that recycling is a myth. Such a very small amount actually gets recycled. All that recycling of plastic does is delay the inevitable; the plastic is recycled into other goods, but the second time around, it can't be recycled so it eventually ends up in land fill anyway. Someone has to take the hard decision and stand up to the corporates who are forcing all this plastic packaging upon us. Stop it at the source, rather than applying a band aid at the end.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I am a pensioner and my wife and I have extremely low recycle product. We use reusable shopping bags, buy very little quantities of processed foods, and generally try to reuse material that would otherwise be recycled. Furthermore we do not drink alcohol, nor fizzy drinks. I suspect many other pensioners do the same.

Conversely neighbours with families have heaps of unnecessary recycling. Just wander down the street on recycle day and compare my bin with the majority of others with all their beer bottle and plastic drink bottles. The net result is that we pensioners, through standard rates, heavily subsidise these careless and wasteful families.

There is an unfairness here, especially as we pensioners find it hard to make ends meet. If you find it necessary to increase the recycle process, that's fine, but a discount for pensioners who have very little recycle would be appreciated.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.**Set up the Trust (proposed),**

Comment::

We were living in Christchurch at the time of the quakes. My parents lived at Haumoana at the time of the Napier quake. So, we need no convincing that this is a good idea.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?**Disagree,**

Comment::

Just get rid of the chlorine and stop making excuses as to why you can't.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?**Agree****Q9** Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?**Neutral****Q10** Do you have any other feedback?

No. Thank you for taking the time to "listen".

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#49

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **David Emery**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Agree**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Neutral**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Agree**

100 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#50

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Jacqui Robinson**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q4 Waste Management - Tick which option you prefer.

Comment::

Surely the answer to the recycling fiasco is to make the shops etc take care of the plastics that nobody wants, and educate all of us about not purchasing the product in the plastic 3 - 7 that cannot be recycled, we can all do our bit, why do bananas for instant need a plastic bag when you never eat the skin. We have become to selfish and do not think about others or the future. Business's need to take more responsibility about there waste & recycling, the easiest thing do to is paper and cardboard collections, or fines to shops & business's that refuse to participate, you as the elected representatives have to be more proactive and encourage greater take up of this recycling, it has to start somewhere, ordinary working people, retired people, young people cannot afford to keep paying out, our incomes are not keeping up with your spending!!!! Please bear in mind that most of us understand the need to be careful with what we buy & how we dispose of our waste & recycling, but we must also be given the tools to carry this out, ie better policies around waste management, we have for far too long been allowed just to dump it when we like with no regard to the future. We have to as a community take responsibility in part for the recycling but also everybody else has to do their part, given the right tools to allow this. I look forward to very little if any increase in our rates this year

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#51

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Brian Eales**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Neither option**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Neutral,
 Comment:
 Get the chlorine out of the supply line the use of chlorine indicates poor infrastructural management over previous successive years

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Agree**

104 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Go for it but lest not use the funds for grand designs and broken promises mitigation

Q10 Do you have any other feedback?

Marine Parade

The increased tourist numbers (including the cruise boats) take water for their needs please ensure that they pay additional costs as per rate payers.

The use of Marine Parade by Trucking companies "'Toamoana / Sanford' being the most obvious in carting to the port, (which has already been provided with a pvte benefit in the use of traffic signals on a public carriage way) form 6.30am until late regardless of the high visitor numbers or the back to back traffic flow is beyond a joke. The use of part time wardens to check the vehicle, flow the use of cones to block parking access and have it reserved for tour buses, is great for tourists but what does it do for rate payers? very little.

I have yet to see any public announcement of what or where these additional funds are being used fro the rate payer good.(not even being used to upgrade the mini golf)

The roundabouts installed by council as a truck mitigating influencer(ie discourage) are ignored by these drivers and companies and at best a laugh. The roundabouts are driven over by the trucks with trailer units their speed is above the forty courtesy and it is to hell with ever one else we bring in the money attitude.

I travel Marine Parade every day at 7am and again later afternoon . I observe the number of heavy truck trailer units delivering to the port is increasing in frequency and in both directions. There is an alternative route for heavy trucks to take delivery containers / logs to the port or fertilizer from the port.The council promoted this 'route' ... but it is like all else until the council are annoyed / or the CEO is held to account for enforcement nothing will change

Get the trucks off the Parade

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#52

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name
 Address

Jed Graham

Q2 Please provide a postal address if different from
 above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or
 organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now,

Comment::

This is a painful wakeup call for all New Zealanders,
 ultimately it's our waste (or recycling) so we should be
 paying to deal with it. This is the cost of living in a disposable
 society.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Changes need to be made and local and national government around policy and law to ensure all packaging coming into NZ or made in
 NZ can be effectively recycled within NZ once it's been used and disposed of by the end user.

I think it's brilliant that China and Malaysia have said no to taking other countries rubbish because it forces us to be accountable for our
 waste rather than just palming it off out of sight and out of mind.

Q6 Regional Disaster Relief Trust - Tick which option
 you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for
 the plan 2019/20?

Agree

106 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Agree
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Agree
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#53

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Kerry Tattersall**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now,**
 Comment:
 Happy to pay the full cost so long as the reserves the council propose to use for part-pay are utilised on other initiatives for the betterment of Napier

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Agree**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Neutral**

108 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#54

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Gary Curtis
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above	Respondent skipped this question
---	----------------------------------

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.	Respondent skipped this question
--	----------------------------------

Page 2

Q4 Waste Management - Tick which option you prefer.	Part-pay now (proposed)
--	-------------------------

Q5 Do you have any comment to make about the future of Kerbside Recycling?	Respondent skipped this question
---	----------------------------------

Q6 Regional Disaster Relief Trust - Tick which option you prefer.	Set up the Trust (proposed)
--	-----------------------------

Q7 Water Supply - What do you think of the changes for the plan 2019/20?	Neutral
---	---------

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Agree
--	-------

110 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Anything to help keep rate increases down especially for those on fixed incomes -pensioners, sickness benefits etc.

Q10 Do you have any other feedback?

Councillors and Council staff need to realize they cannot continue to simply increase rates to fund non essential projects (e.g. New pool project) which is a 'nice to have' but not essential as the Onekawa pools are perfectly good for a number of years to come.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#55

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Pamela Harrison
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above	Respondent skipped this question
---	---

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.	Respondent skipped this question
--	---

Page 2

Q4 Waste Management - Tick which option you prefer.	Part-pay now (proposed)
--	--------------------------------

Q5 Do you have any comment to make about the future of Kerbside Recycling?	Respondent skipped this question
---	---

Q6 Regional Disaster Relief Trust - Tick which option you prefer.	Neither option
--	-----------------------

Q7 Water Supply - What do you think of the changes for the plan 2019/20?	Agree
---	--------------

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
--	----------------

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
--	----------------

112 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#56

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:Full name **David Fellowes**

Address

Email

Daytime phone number (or mobile number)

Respondent skipped this question**Q2** Please provide a postal address if different from above**Respondent skipped this question****Q3** If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Pay full cost from now,

Comment::

Q4 Waste Management - Tick which option you prefer.

There are more pressing demands on the cash reserves (water quality).

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Every material that can be practically recycled should be. Landfill of material where technology exists to reuse should be absolutely minimal & only where economic reality prohibits it.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.**Set up the Trust (proposed)**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Inadequate to the scale of the problem. Ive seen no evidence of serious root cause analysis of the problem- namely ensuring that the underlying issues are understood. How did it get to be so bad? Chronic longterm underfunding? Mismanagement? Without understanding how we got here it worries me that the right solutions will not be designed- much less executed with accuracy & urgency. Council's track record is not good in this regard. Provision of clean safe drinking water is a pretty basic requirement from local & national governments. We should be able expect this & that you are still talking in woolly terms and with a 3yr horizon is not good enough. I hope that progress to timelines will be made publicly available and that genuine accountability will be achieved. The current situation is a serious embarrassment to the current council & councillors. We are a first world country that shouldnt have to run taps for 15 mins to get clear water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

Dependant on the details & costs, the general principle should be user (or those getting the major benefit-eg immediate local residents) pays.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Yes, the more the merrier- I'm sure there is a rigorous approval process that applies centrally so lets put our best foot forward to get some extra funding.

Q10 Do you have any other feedback?

Good that you have arranged the consultation process & shared some of the proposal details- thanks

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#57

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Penny Huthnance
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 I think we should follow in Christchurch's footsteps and follow the Netherlands model. Get rid of the chlorine please. It is poisonous to our bodies.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

116 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#58

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Simone Dunkerley**
 Address
 Email
 Daytime phone number (or mobile number)

Respondent skipped this question**Q2** Please provide a postal address if different from above**Respondent skipped this question****Q3** If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.**Pay full cost from now,**

Comment::

Honestly, waste management is pretty important to me. Although it would be nice to know how much the rates will go up. If the council uses their cash reserves to fund the plan, than that doesn't leave a whole lot for an 'emergencies'.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Unfortunately, no. But only because I haven't researched it.

I trust council members have researched successful kerbside recycling strategies (especially from other countries).

Q6 Regional Disaster Relief Trust - Tick which option you prefer.**Set up the Trust (proposed)****Q7** Water Supply - What do you think of the changes for the plan 2019/20?**Agree**

118 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#59

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Richard Matthews**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q4 Waste Management - Tick which option you prefer.**Part-pay now (proposed),**

Comment::

I wish to propose a fund be established to explore ways of utilising waste that is productive rather than just buried. What I am suggesting is that Napier City start by establishing a fund by gifting an annual amount of \$8,500. All other Local Bodies should be invited to contribute to the fund an amount that is simply the \$8,500 adjusted by the ratio of the population base. The population of NZ will raise a little over \$1million by my calculations. The fund could be managed by a small committee of Mayors who would allocate all of it each year (so there were no ongoing admin costs). The fund would be awarded to one (or more) recipients who offer significant proposals for the utilisation of waste. For example I am excited by the idea that used plastic could be melted into fence posts, building panels, insulation etc. An entrepreneur would find \$1m useful in setting up a plant, investing time and energy into thinking about innovative solutions etc. The investment per Local Body would be trivial, the cudros for Napier in leading the way would be significant and the commitment would ultimately provide dividends to the Ratepayer and Environment.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.**Set up the Trust (proposed)****Q7** Water Supply - What do you think of the changes for the plan 2019/20?**Agree****Q8** Whakarire Revetment - What do you think of the way this work will be funded?**Agree****Q9** Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?**Agree****Q10** Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#60

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name

Pene Johnstone

Address

Email

Daytime phone number (or mobile number)

Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.**Pay full cost from now,**

Comment::

Wheely bin fortnightly for recycling please Wheely bin fortnightly for green waste please Rubbish bag for other waste weekly

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Wheely bin fortnightly please

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Please work towards giving us chlorine free water in the future.

122 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Agree
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Agree
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#61

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Kate Penny**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Agree**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Agree**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Agree**

124 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#62

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **jonathan pickup**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

with the change in recycling, there is an increase in the volume of rubbish. We should stop the shops and supermarkets from supplying products that use plastics that can't be recycled.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

you are not going far enough. we need to implement a greywater and stormwater storage strategy. Every year we have to have restrictions on watering gardens, because we use potable water for that. Why don't we have district plan rules that get users to store stormwater and use greywater for garden watering, toilet water etc. we have water supply companies exporting our nice water while we have restrictions on watering our gardens.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

why are you only carrying this out for Whakarire? westshore used to be such a nice beach, now it is a disaster. You should by planning something to bring back the old westshore.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

we need to look more to the future of napier. there are areas that should be higher density, we need variation in the housing stock (ie. tiny houses), we need more solar panels, water storage, sustainable communities, etc.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#63

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Sheryl Brown**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Take an in depth look at any options for recycling waste, ie roading material from waste products.
 As an alternative for timber decks, products are being developed, we need to think smarter.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed),**
 Comment::
 This will in the event of a major disaster be needed urgently, there will be many who will need immediate help.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?
Agree

128 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Agree**

Q10 Do you have any other feedback?

My husband and I were part of the recovery team with HiPhiPhi Thailand after the 2004 Boxing Day tsunami.

My husband worked with the ground recovery team, I was operations manager of the dive recovery team as the village had been washed into the bay with 80% of the islands buildings gone.

The loss of life by the government was estimated at 600 odd people, the local count was 3000 on Phi Phi Island.

We arrived there to work 5 weeks after the tsunami, and worked for 7 months on the island and also help set up emergency boxes at high points on the island which contained rescue equipment and emergency medical supplies, this model set up by a volunteer paramedic, could be helpful in Napier at points on the hills, especially with the medics who live up here who would be first responders.

We still have a full inventory list of what went into these boxes if anyone is interested, and first hand knowledge of what is required immediately after a disaster of these proportions, to help survivors, and rescue procedure that needs to be organised.

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#64

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Niels Nikolaison
Address	
Email	

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed),**
 Comment::
 Why are we being charged more every time Council management has not found a solution. Why is it more expensive than waste?

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Neither option,**
 Comment::
 Council should not be dealing with donations.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Work within your budget. All private enterprises have to. Why can't Council. How come we now have poisoned water (chlorination)? The aquifer NCC take water from is 60 - 90m below ground and has a positive head, therefore very hard to contaminate. It is totally different to Havelock North. Cost to poison residents is ridiculous, especially when it is not required. Now we have to pay extra to UN-CHLORINATE the water - what a mess????

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Rates go up more than CPI every year.

There has to be a break=point where we cannot survive on a restricted income.

Why are staff not sticking to budget.

Rates should only increase by CPI each year.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#65

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Ann-louise Webster**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

Everything is going up except for income. Although we can afford to pay the full cost, there are possibly many that for them this is another cost which they cannot afford.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

New changes may make it just "too hard" for many and it will just be easier to throw everything in the rubbish. While it might be nice for the collectors to have everything in wheelibins, where are people meant to keep them? It will be a pain to have one for recycling, one for rubbish and then we already have the one that we pay privately for.

Also I am concerned that at the moment when recycling is collected there are 3 people - a driver, a person in the back and a person who picks up the containers and throws them to the person in the back for emptying. If the new system is going to be with wheelibins, then only a driver need be required as the trucks very often are automated so the driver doesn't even leave the cab.

That would mean 2 people out of work per current truck.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),

Comment::

As this is of no extra cost and coming from existing budgets, then there doesn't seem any negative reason for setting it up.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

While it is good that improvements are going to be made, I think that more money could be put into this project and it should be the number ONE priority. It is essential that we have clean water in plentiful supply. It is a necessity. It is a NEED not a want. We NEED to have decent water. We want lots of things but they should take a back seat to needs.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

I think it important that the Napier City Council and it's Councillors remember what they are there for. They should be providing basic necessities and concentrating on things like water and transport infrastructure.

If there is surplus money THEN look at spending money on a wish list eg a new swimming facility.

I cannot believe that the council pushed ahead with the Prebensen Drive pool facility knowing full well how much opposition within the community that there was.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#66

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Bill Inglis**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Neither option**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Neutral**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Neutral**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Agree**

134 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Yes, where do we see your plans for a new library?

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#67

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Steven Dew
Address	
Email	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

Why not address the recycling problem in the Bay by not having the plastic products in the supermarket in the first place it is hard to go any where in HB or NZ for that matter and not seen some sort of plastic waste on the ground. Recycling day is a absolute eye sore the trash blows all down the street broken glass is over our awesome bike /walk ways then the off shore wind carries all the plastics to the ocean. In my opinion the issue can only be fix by not having the problem products in the first place. I have tried to do the right thing and refill my containers at a shop only to pay 3 x the price of the same product in the supermarkets throw away container i feel that the consumer is been taken advantage of if they make the choice to reuse. The earth should be the first priority not profit. We all know now that the recycling thing has always been another money making adventure surly the carbon foot print must be massive driving around collecting this trash then shipping it to the other side of the world for them in some cases to burn or bury. So i feel the only proper way to address the issue is to stop stocking the problem products.

136 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q5 Do you have any comment to make about the future of Kerbside Recycling?	Respondent skipped this question
Q6 Regional Disaster Relief Trust - Tick which option you prefer.	Set up the Trust (proposed)
Q7 Water Supply - What do you think of the changes for the plan 2019/20?	Agree, Comment: Safe drinking water is a vital part of life it is a need not a want
Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#68

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Michael Heather
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),
 Comment:
 Rising costs of waste management should have been budgeted for the future, in original plan.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

If there is to be an increase in costs to waste management of recycling this should be offset by fortnightly kerbside rubbish collections.
 If we are to recycle successfully surely overall rubbish will decrease.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment:
 The infrastructure of our water supply has needed overhauling for years.

138 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

The only way to go if ratepayers are not to be constantly asked to carry the costs. where does the Regional council stand on this point.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Comment::

If the money is available at no cost it is worth pursuing.

Q10 Do you have any other feedback?

Our community has a large number of pensioners who live on a Fixed income closely aligned to yearly inflation rates. They have no recourse to loans or increasing their incomes yet this council continues to raise rates at more than 3 times the rate of inflation and then ask for more. Pensioners cannot afford it, interest rates are low at under 4% per annum before tax so even if one did try to live on meager savings "RATE INCREASES ABOVE 6% ARE NOT CALLED FOR"

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#69

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Lisa Robson
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment:
 Neither already have our own bins.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

As long as people have their own bins rather than plastic bags ??

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 How come it costs so much for 10 wells when Christchurch has three times the amount and less than double the amount of millions?

140 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Disagree
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Disagree
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#70

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Nikki Lawson**
 Address
 Email
 Daytime phone number (or mobile number)

Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Part-pay now (proposed)

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Disagree,
 Comment::

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

I think that the council should be aiming to return to chlorine free water - Christchurch can do it so why can't we! I understand that there needs to be a level of investment to upgrade the system (that has been neglected by previous councils) but we should be looking for long term and not just looking for the easy option here.

142 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#71

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **John Conneely**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

4110

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 Please restore the water supply to how it used to be - unadulterated water coming directly from the aquifer and out of my tap.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

144 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#72

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Rhonda Cherie Simpson**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Agree**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

Is 3% a fair and reasonable amount for the private property holders? How will this revetment affect the value of these properties? If the land value is to increase, and their rates accordingly - should the 3% be higher in light of their long term financial benefit?

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#73

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Jamie Twigg**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Agree**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Agree**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Neutral**

148 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#74

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Ruth Smithies**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Care of Creation, Catholic parish of Napier

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

Waste management is an essential service provided by councils. The cost should be kept low - if there is not enough money in the NCC kitty it should do away with fancy projects such as a super swimming pool, which are not core business of councils.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Council should help set up a plastics recycling/reuse business of all plastics locally.

Residents should be encouraged to minimise their waste and providing large bins, rather than smaller ones, does not do that.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

150 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Water quality and supply is core business for councils. Do bring forward your plans to improve what exists.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Your consultation with the public should be broader than you selecting a few issues on which you would want to have rate payers views.

There may well be other issues of concern - cost of land for housing, more social housing are an example.

It is more democratic to have an annual open hearings.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#75

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Karyn Mills**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment:
 Please base off the neatherlands model. No one wants chlorine in their water. Please remove and minimise risks

Q8 Whakarire Revetment - What do you think of the way this work will be funded?
Neutral

152 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Neutral**

Q10 Do you have any other feedback?

My biggest issue is recycling... we need to take responsibility for our waste. Christchurch has incredible recycling kerbside. But also as a resident I want to know that my waste isn't just being dumped. What is happening to all the plastic??
And chlorine in the water. I'm sick of it. Everytime I run my young children a bath it reeks. Please remove. I would pay for any other option to have it removed

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#76

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Lewis Kenah**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling?
It is good that we are moving to using bins. I agree that the larger bins may now be necessary.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I agree that we need to increase the water supply to meet the growing demand but I disagree that we should have our water chlorinated. We should be following the Christchurch and Netherlands examples which would cost less and would not have our water chlorinated. This is a huge one for us. Napier water used to rated some of the best in the world and now we have chlorine in it. The quality at times is disgusting and we can't see that adding chlorine has improved it at all. Don't spoil our wonderful aqua water by adding chlorine to it.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

We agree with most of the plan but we must stress our concern at the councils plans for our water treatment. We are strongly opposed to having chlorine added to our water and firmly believe that it is not necessary to do so. We want the council to review their direction in this regard and follow Christchurch and the Netherlands lead.

We will be looking closely at the up coming councilor elections with a view to voting for those councilors that are opposed to the councils plan to chlorinate Napiers water supply.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#77

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Paul Walwyn**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
 Comment:
 The number 1 issue for me is - No more chlorine in our water

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

156 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#78

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Chris Elliott**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

nil

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

nil

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question****Q5** Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question****Q6** Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

First off, I'd like you to note that I'm officially in Hastings, but this doesn't preclude me moving to Napier - I've lived there before - so I feel I can legitimately contribute to this discussion. That, and the fact that Napier Council decisions about water quality could easily influence decision-making in Hastings Council, which I'm more directly concerned in. Essentially, I believe Napier Council should follow Christchurch and make the whole water supply system chlorine free. The evidence is there from research done in Holland, which has now gone to a completely chlorine free water supply system, that chlorinated water contributes to the development of colorectal cancers. A chlorine free water supply system is also apparently cheaper than other systems. Looked at in its simplest terms, chlorine basically kills any living organism - and we are living organism; although we have relatively large bodies, chlorine consumption HAS to have a damaging effect on our system, particularly if we are ingesting it with our water on a daily basis. When the possibility exists that the whole water delivery system can safely deliver pure water to every home, it seems not just questionable, or even highly unethical, but bordering on criminal irresponsibility to not implement a chlorine-free water delivery system as expediently as possible, starting immediately. You may think this is strong language, but put yourself in the position of someone who has just been diagnosed with colorectal cancer. You may even know someone in this dreadful position; a friend, a colleague, or a spouse, or even a child of yours. And now feel what it might feel like, to know that you could've done something to prevent it, or that you can now do something to help eradicate this dreadful condition from the community by creating the a chlorine free water delivery system, backed by the support of the community, the policies of other countries, AND the scientific evidence. What's to talk about? It's a no-brainer.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q11 If you have more to say or additional information
please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#79

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Kerry Megan Mackenzie**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

We should be aiming to have chlorine free water. We used to have great water until the council freaked out and over-reacted. Please, please, please work toward protecting our human, animal, and plant health by stopping the chlorination of our water. Other cities are doing it - why isn't this a top priority for Napier? It also concerns me that we have water restrictions for so long each summer - when I don't think that the Council has been transparent about how much of our water is being used/supplied to the cruise ships that come into the port each year.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#80

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Julia Linda Murphy
Address	
Email	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed)

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

163 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#81

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Rebecca Greaney**

Address

Email

Daytime phone number (or mobile number) **Respondent skipped this question**

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.**Pay full cost from now,**

Comment::

Only if the full cost is what is currently written ie \$1.46 per week. And only if its the supplied wheelie bin options that were previously talked about.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

We need to go to a wheelie bin per household for rubbish and one for recycling.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.**Neither option,**

Comment::

Need more information - how funds will be distributed in a disaster and to whom etc.

165 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Fix the water so the moaners of Napier will be quiet. I am sick of hearing about the water online and the amount of bullying that has gone on towards the council for it. I don't have a problem with my water - never smell chlorine or even taste it for that matter in my household water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,

Comment::

Depends on how much it costs and how much each property has to pay.... are they allowed to pay it off over years like with the sustainable home loans etc. It could be a lot of money for the property owners to come up with all at once etc.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#82

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Louise Booth**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Disagree**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Respondent skipped this question**

167 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#83

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Jenni foster**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Neither option**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 Chlorine free water is our right. Please no more poison in our supply

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Neutral**

169 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#84

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	teresa allen
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Comment::

Q4 Waste Management - Tick which option you prefer.

No
 comment

Q5 Do you have any comment to make about the future of Kerbside Recycling?

No comment

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Comment::

No
 comment

171 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Whatever changes need to be made or bores that need to be added doesn't address my concerns about chlorine in the water. I have suffered from skin irritations ever since chlorine was added and want you to follow the ch'ch model they followed from the Netherlands. I want chlorine removed from the water and under no circumstances agree with anything you propose because for me CHLORINE is the main issue

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Comment::

No
comment

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Comment::

No
comment

Q10 Do you have any other feedback?

I am not happy with this council and would welcome a completely new membership.

At no point was there consultation about adding chlorine to the water but there was a big fuss about the Port and the council did want they wanted anyway! despite my submission and many others in opposition to the decision made.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#85

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	maureen powell
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above	Respondent skipped this question
--	----------------------------------

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.	
	Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.	Respondent skipped this question
---	----------------------------------

Q5 Do you have any comment to make about the future of Kerbside Recycling?	Respondent skipped this question
--	----------------------------------

Q6 Regional Disaster Relief Trust - Tick which option you prefer.	Disagree, Comment::
---	------------------------

Q7 Water Supply - What do you think of the changes for the plan 2019/20?	Napier has good clean artesian water available from safe bores, therefore, I strongly disagree with the Council's plan to chlorinate our drinking water.. Our rates are better spent on maintaining these safe bores and attending to water reticulation in a timely manner.
--	--

173 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Agree**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Agree**

Q10 Do you have any other feedback?

Please stop spending large amounts of our rates on 'showcase' type projects....First and foremost, we need to have our water , drainage and sewage being handled in an environmentally manner.

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#86

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name Rachel Mackay
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above
 as above

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer. Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling? Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer. Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
 Disagree,
 Comment:
 I do not want chlorine added to Napier water please. I do not believe it is necessary and think it is an over reaction to the water problem that occurred in Havelock North. We have carried the water we use each week from Hastings chlorine free fountain since chlorine was added to our Napier water. This is not convenient but indicates how strongly I feel about not having to consume chlorine!

175 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#87

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **S Matheson**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above
 Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.
 Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.
 Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?
 Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.
 Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 I want chlorine-free water and see no good reason that this cannot be provided to all Napier rate payers, not just those that can afford to install full house de-chlorination systems. Our water source is pristine and the council ought to be able to provide and maintain the infrastructure to distribute it to residents without adding chlorine.

177 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#88

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name Cheryl Newman
 Address
 Email

~~Respondent skipped this question~~

Q2 Please provide a postal address if different from above

~~Respondent skipped this question~~

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.**Part-pay now (proposed),**

Comment::

I only agree to any extra payment if there is guarantee that the waste is being properly processed and removed (current system sees me clearing up the street after the guys have been through the area) and that there isn't a u-turn on what will be recycled due to international limitations - as has happened in Hastings

Q5 Do you have any comment to make about the future of Kerbside Recycling?

As above. I want guarantee on what is going to be recycled, or not

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

179 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Is there a clear goal to consider removal of chlorine from the water systems? If not, then I think the water supply fixes should be done in a way that works towards chlorine free water in Napier.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

If they live by the coast they should be aware of risks and potential cost to them in choosing to do so. Shouldn't be a full rate payer cost.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Please make sure any plans are equitable

Q10 Do you have any other feedback?

I feel that as a rate payer we're starting to feel the effects of a long term focus on business and tourism in Napier. If being money to the region by these methods was so successful then surely we wouldn't be having to make piecemeal additions to our rates to cover basic facility and infrastructure matters

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#89

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Brendan Nikolaison
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now,
 Comment::
 Bins for recycling, rubbish and green waste (half size) should be already collected by now. We need to look after our environment

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Set up the Trust (proposed)

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 No chlination of our water is needed. Christchurch doesn't and here aquifers are similar to ours

181 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#90

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name terrance isted
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

183 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#91

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Paul Walsh-Roberts**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

PO Box 4333, marewa, Napier 4143

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

-

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now****Q5** Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question****Q6** Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

Some effort should be made by council to progressively upgrade to 20mm (or at least bigger than current) mains supplies to houses. Part benefit of this would be to compensate for household pressure lost due installation of filter systems to clean water that has been contaminated by council adding chemicals. We would even be willing to contribute towards (or if necessary pay) for our home property to be upgraded to 20mm piping, and surely many home owners would. In addition, we would like to express our VERY strong insistence that fluoridation (of any kind whatsoever) should never be introduced into the Napier water supply.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#92

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Skye Isaac**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 We want the pure unchlorinated water we have had.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

187 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#93

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Peter Philip Brown**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Napier sources its water from the pure Heretaunga Aquifer via bore heads which are the secure part of the aquifer and which have "secure bore" status meaning they are compliant for protozoa risk. There therefore no need for Napier's water supply to be treated with chlorine or by any other method except regular bore head maintenance. Christchurch has undertaken a programme of removing chlorine from its water where it can after well-heads have been upgraded. Napier's bore heads are well constructed and have been well-maintained and are already compliant for protozoa risk. The unnecessary chlorination spoiling our water taste and in my case causing itchy skin problems should be stopped ASAP.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#94

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Russell Pattison**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

P O Box 16024, HBMC, Napier

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Comment:**
 To remain as is. If recycling is an option this should be arranged privately and remain outside council.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

This should be by contract between the resident and private contractors.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

191 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Remove chlorine from the city's water supply and install UV filters if necessary. This option should be even more economical once the water supply is direct feed from the reservoirs as only each reservoir would need UV filters in lieu of each well head or pump station. When it was suggested during the 'Amalgamation Debate' that Napier's infrastructure needed replacement the Chief Executive stated there would be no need for any renewal. Ratepayers need a further explanation why we need water infrastructure renewal when the Council's 2016 Annual Report stated the water reticulation would not need any replacement. This was backed up by the Waugh Report paid for and received by Council on behalf of the ratepayers.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Council has an obligation to obtained this type of funding on behalf of the ratepayers.

Q10 Do you have any other feedback?

Why are the ratepayers being subjected to further rate increases above the countries average when the Mayor and Chief Executive stated in the 2014 Annual Report "We are in a very strong financial position" and also said "Due to the tight economy, rates will be set in regard to community affordability". Was this just lip service to appease any perceived protest. Are the Councillor's, elected to represent the ratepayers, not aware the ratepayers as part of the 'aging population' are finding it harder to find the extra rates that now far exceed the 2.4% annual increase in income.

When will the Mayor and C E advise the ratepayers that a further (approx.) \$135M shortfall will exist when the costing's of new Aquatic Centre, Aquarium extension and other projects are included in the amended Long Term Plan. What has happened to the reserve funds the Council held on behalf of the ratepayers at the time of the Amalgamation Debate. Reported to be \$106M. where has this reserve gone to.

Why do we need a new pool in Tamatea Drive when there is a 25m pool planned for Pandora and a 50m public pool complex planned for the Spriggs Park foreshore.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#95

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Hannah George
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now,

Comment::

Bins please. Easier to be safer to utilise and saving us all from using all those heavy plastic bags we would otherwise be using.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Needs to be integrated (ie we don't have to sort it). Provide bins. Detailed information about what can and cannot be recycled. Stickers left on bins and/or no collection for repeat offenders.

Additionally, reducing plastic shouldn't just be up to the consumer. Target businesses (including supermarkets) to reduce the plastic/waste involved in their products. Have Napier become a world leader in this!

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

193 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

No chlorine in water please! Let's follow the Dutch model. Reduce water consumption by charging for water. Not a popular option, but necessary. There is currently no incentive to conserve water here, it's ridiculous. Most other places charge. Charges for residential, commercial, agricultural, the lot.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,

Comment::

Needs more funding to come from those residents. We shouldn't be made to pay for their short sightedness.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

When's the library coming back!?
Incentives for organic agriculture.
Better driver/ road safety needed.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#96

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name	Kelly Brown
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Guardians of the aquifer

Page 2

Q4 Waste Management - Tick which option you prefer. Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling? Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Chlorinated water is not an option I am prepared to pay for. I want to change our network to remove chlorine and minimise risks (Netherland model). Chlorine is ruining my clothes, my skin (not to mention my poor kids) - it tastes disgusting, and unless the council is prepared to pay \$1000 to every Napier ratepayer to install a filter system, then our hard-earned money should go towards providing safe drinkable water that is free of chlorine.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#97

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Esperanza Alvarez**
 Address
 Email
 Daytime phone number (or mobile number)

Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now, Comment::
 Do not use any reserves
 funding.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

no comments

Q6 Regional Disaster Relief Trust - Tick which option you prefer.**Set up the Trust (proposed)**

197 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

It is not clear that the Havelock North crisis didn't happen because of the physical configuration of the specific bores. The contaminants from the surface entering through the bores might be an inconvenient truth. The solution was proposed years ago by transforming and securing the bores. Apparently wasn't the option. More economical and politically correct for sure. You are not listening to people who have been talking about the bores. I agree with the changes of the bores and make them safe, avoiding the contaminated water from the surface to be sucked by the water station. You have to fix that. Water from the aquifer is a luxury, it is not surface water (rivers, lakes). The management team and politicians are NOT engineers, scientist, and qualified workers on this area. Chlorine with the subsequent formation of Disinfection By-Products is not the solution, it might be one of the worst solution.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

It is part of Napier

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

As long as the Council writes a clear document telling the details of the deals and operations.

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#98

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Michael McKubre
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Pay full cost from now

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Do not set up the Trust

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Agree,
 Comment::

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Priority must be removing chlorine which is both toxic and destructive. A well managed water supply from the Hawkes Bay aquifer should have no need for this chemical addition [I am a PhD Chemist and Geophysicist].

199 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#99

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Deneice Marilyn Marshall**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question Respondent**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Napier doesn't need chlorination - if the infrastructure of the pipes was maintained, then our beautiful, clean water coming out of the bores wouldn't get contaminated by the past their use by date lead and asbestos pipes. It is not just our drinking water that is at fault - I need to be able to shower in clean, uncontaminated chlorine-free water. I am highly allergic to the chlorine and my skin has been badly affected and I have to use creams twice every day to stop me getting oozing, bleeding sores over all my body, particularly my arms and legs. My doctor has confirmed it is caused by the chlorine in the water. Napier used to have the most beautiful tasting, clean, clear water in New Zealand - please bring back our clean water. I don't see why my rates should have to be spent on paying for chlorine I don't want. Failing that, perhaps the council could install water filters for the whole house for those who don't want chlorinated water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#100

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **JiL Sargent**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 NO CHLORINE Our water source is known to be pure. If Christchurch can do it we can do it. Chlorine is another poison our bodies and our eco-system does not need or want.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

203 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#101

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Bethne Gardner**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

205 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

NCC have made an error in chlorinating the water supply. Residents were not getting sick from ingesting water from Napier bores. Chlorination does not protect our health. It is in fact harmful. Water pipes used to be cleaned by pigging. Now they are not and the water is cloudy due to chlorine upsetting the biofilm. I cannot wash my hair under the shower. I get my water from a bore at Mangateretere and heat it before pouring it on my hair cupful by cupful. My scalp becomes reddened and inflamed. I do not want to think about what is happening to my gut. Please listen to the residents of Napier who feel bulldozed by this Council over water chlorination. Save money and our health by removing Chlorine and following the Dutch regime of water care. Reinstate our water supply to prior the chlorination decision which was brought about by fear only. The deaths in havelock Nth were due to 1 unsecure bore head. This city's residents should not be involved with resulting fear based decisions as a result of that tragic outcome.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#102

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Olivia Strawbridge
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now,

Comment::

If it's included in the rates I pay these as an AP every month so either would be fine.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I really think we need a solution for recycling soft plastics.

--

What if the council set up a plastic recycling/processing centre in a ship container somewhere in Napier (there are lots of containers in Ahuriri). People could take their plastic there and process it so it spits out 3d printing filament, flakes, or whatever the market is buying. The people could then either take their byproduct home to use in their 3d printing machines, or have the option to sell it to the council/recycling centre at a trade rate. The council/recycling processing centre can then sell the product at market cost and make a profit to keep the system working.

--

Check out <https://preciousplastic.com/en/machines.html> - a resource for making plastic processing machines. There's also a picture of a plastic recycling workspace here: <https://preciousplastic.com/en/workspaces.html>

--

I'd be keen to get involved and I'm sure many more would too.

207 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),

Comment::

Sounds like a good idea.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Please remove chlorine from the Napier Water Supply!! I've never had perioral dermatitis before and I now have it all over my face. It started when the Chlorine was added. Why can't we use the Dutch system that Christchurch is using?

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

No chlorine in the water and a place to process plastic are the things that I think Napier can be leaders in - why not lead the way for other regions?

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#103

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	clinton llewellyn
Address	
Email	Respondent skipped this question
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Part-pay now (proposed)

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Set up the Trust (proposed)

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neutral

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,
 Comment:
 Any wall should be paid for with funds raised from a targeted rate levied against property owners in the immediate vicinity who will benefit from it.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

209 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Agree**

Q10 Do you have any other feedback?

I propose that Napier City Council adopt a policy to achieve a 5% reduction in operational costs by the 2020/21 financial year (i.e reduce wages bill, improve efficiencies) and limit future rate rises to no more than 2% above the official inflation rate from the 2020/21 financial year. This is needed to reduce the growing burden placed on ratepayers and offset the continual rate increases, which are becoming unaffordable for many. My own rates will have increased by more than 25% between 2015-20, or 5% per year on average, far outstripping inflation. Council needs to tighten it's belt.

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#104

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Derrick Mills
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 Napier's water has been reliable for years (I have lived in Tamatea for over 40 years) and not until the Havelock North Incident did we have any issues with our water supply. It seems a knee jerk reaction caused some closer examination of our supply and the conclusion was that chlorine would rid us of any problems. Wrong. Water is being drawn from local aquifers that are perfectly good - just like we always had.

211 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#105

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Carl Norris-Newth
Address	
Email	

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::
 NCC should be supporting real recycling not just lip service. Waste Management and skip bin providers do not recycle anything and are a disgrace to the community. Real local recycling companies do exist in the bay and have got no funding such as CJ's Junk Removal Service & Tiger Tyres both are innovative and actually recycle in real terms.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Waste Management do not recycle its a joke. Encourage and fund business which actually will recycle rather than dumping more at Oamarui.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Agree**

213 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Agree**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,
Comment::
Real innovative business should be funded so our children have a future.

Q10 Do you have any other feedback?

Transfer stations are a complete failure. They create a race to the bottom system.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#106

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Collin D Blackman**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Box 12104 Ahuriri 4144

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option,

Comment::

We do not need yet another set of shiny bottoms to pontificate on the poor information and alarmist information that have all emanated from non scientific emotive rantings. There has to be a better way and better choices than this selection of 3, with no criteria of value.

215 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Dumping a neuro-toxin in the clean aquifer water fixes nothing, but does waste more of our rates. Christchurch and other countries can supply water without the mindless addition of chlorine products (dribbling it into the supply does not have the same effect as using a holding tank for a set period) therefore it is a practice that makes little sense. Do it the easier way and save us money long term - follow Christchurch's lead.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#107

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Neil Bishop**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I wish to object to the proposal for the Water Supply in the 2019/20 plan. In simple terms I would like to have my water as it was up until a year ago. IE. Uncolorinated. This must be able to be achieved by bring the rectulation Network back to the standard it was some years ago

217 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#108

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Jess richards**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 We want chlorine free water in Napier. The chlorine affects people's health and is unnecessary and ineffective for stopping illness from dirty water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Neutral**

219 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#109

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **James Powrie**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Chlorination of Napier water is a massive, primitive and unnecessary backward step. It is addressing an incredibly low risk of waterborne illness which is preventable through proper systems design, maintenance and monitoring. And it brings with it the certain impacts of chlorination, which include; damage to skin and intestinal flora, (and therefore gut health), damage to immunity and the production of neurotransmitters (which is seated in the gut, and yes these are the drivers of mental health); the production of a range of disinfection byproducts (DBPs) as a unavoidable result of chlorine reacting with organic and inorganic material in water, or networks (no our councils don't mention these), many of which are toxic and some of which are carcinogenic. Chlorination is prescribed for largely illegitimate reasons, relative to the certain health risks it entails, i.e: to increase comfort and protection of officials; to comply with broad brush and often nonsensical regulatory tools, (specified by health officials who do not understand water supply methodology), and; to sell chlorine, chlorination equipment and monitoring services. Chlorination would be fraudulent if applied in Napier's case. In any case, chlorination is ineffective in regard to many pathogens and especially without regard to correct systems design - allowing for guaranteed correct contact times. It is a tool which is relevant in some instances, not in this one. Our Napier aquifer water is pristine, and investment should be toward network development, systems maintenance, and monitoring, and not unnecessary, toxic and hazardous chemistry.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#110

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Jeanette Eleanor White.**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::

I totally disagree with the chlorine being added to our Water Supply...I think it's a mark of mismanagement on the part of Napier City Council...It's a disgrace that after 61 years of paying rates I have to buy Water to drink because of the lack of upkeep on our Water Management infrastructure ...especially when Certain councillors keep trying to spend ridiculous amounts on personnel projects, which will benefit mainly the more affluent suburbs, instead of spending it on necessary infrastructure upkeep to give ALL suburbs, what is urgently needed...

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#111

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Gordon Hills**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

225 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Why can't the Council do what Christchurch CC is doing and upgrade the water supply network so that there is no need for chlorination. The chlorine in the water has caused some (if not all) of the dirty water according to your own staff. It has also caused hundreds of water cylinder failures. This is on top of the horrible smell and taste of drinking water. Apparently your water engineer(s) have said chlorine will always be in Napier water. I suggest they pay a visit to Christchurch's engineers to find out the way you CAN have a non chlorinated water supply.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#112

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Tracy Collins
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Part-pay now (proposed)

Page 2

Q4 Waste Management - Tick which option you prefer.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Recycling should be collected regardless of what container it is in. Bag, bin, whatever. Collection of recycling is a Council responsibility.

The links provided with the plan documentation and the NCC website state clearly that recycling in bags will be collected. This is not the case at present.

The Council MUST provide bins for each household to put their recycling in. This is because of the costs incurred by ratepayers when contractors destroy bins during their rounds. Broken bins are often seen lying about on pavements or roads where they have been thrown, shards of plastic everywhere. This is dangerous to pedestrians and could incur substantial costs to motorists.

Kerbside recycling contractors must be responsible for their mess. They leave plastic on the berm, in the gutter which others have to pick up. This will not do.

Kerbside recycling is essential for those unable to pack their recycling into a car to take to a transfer station or other bin service. Should kerbside recycling stop, the poor, elderly and disabled will be seriously disadvantaged. It will be the 'Inorganic Rubbish Collection' debacle all over again with people hoarding rubbish because they cannot get rid of it.

227 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),

Comment::

I would like to see what the definition of 'most in need is' and see some examples of how this trust would work.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

I agree with most of the proposal but I do not agree with the continued use of bore water. We should be aiming to reduce the amount of bore water we use and have a mixture of bore and rain water instead.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

I agree that NCC should apply to this fund but I disagree about the use of it for Tourism. The fund should be tapped for projects that improve the quality of life of those living here. Getting the rail to Gisborne carrying passengers, monitoring of air quality for example.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

You probably mean feedback on your Annual Plan, but the question is not clear. Here is some general feedback.

The stratification of this City into rich and poor is really digging in.

More has to be done for the elderly, disabled, working poor and poor.

There needs to be less money spent on Tourism and beautification and more on infrastructure, roading, public transport and public safety.

Services for the poor need to extend beyond WINZ and the CAB. The Community House needs branches throughout the City, not just in town. We need more hostel-type accommodation for the single poor and housing for families (working and non-working) that is realistically affordable. Feeding the hungry has to be more than just foodbanks.

There is a genuine need for better services for mental health and addiction services in the community as well as policing. Bring back community police stations!

NCC needs to lean on Central Government to improve these services. Private providers contracted by central government are not bridging the gaps. A good example of this is getting counselling in Napier now the EIT service has gone. People in mental distress should not be waiting weeks or longer to see someone.

Substance abuse is a major issue and it is largely uncontrolled. Any belief that this is 'a Maraenui problem' or 'a Marewa problem' need to be put to bed. P and synthetics are in every suburb. Trying to get family members to any kind of service is like pulling teeth. NCC must bring pressure to bear on Central Government to end this suffering. The sellers of this stuff must be imprisoned, the addicts treated.

One other thing: Please bring back inorganic rubbish collections. Not everyone can get to the transfer station to go shopping for free second or third hand goods.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#113

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	James Solomon
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above	Respondent skipped this question
--	----------------------------------

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.	Respondent skipped this question
---	----------------------------------

Q5 Do you have any comment to make about the future of Kerbside Recycling?	Respondent skipped this question
--	----------------------------------

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?	Disagree, Comment:: No chlorine or Flouride in the Public drinking water.Stop allowing it to be stolen.
--	---

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Respondent skipped this question
---	----------------------------------

230 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#114

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Yvonne Cotter**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I want all plastics to be recycled, or at least plastics be kept separate from general rubbish

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 I do not want our water to be chlorinated. Please follow the Christchurch plan

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

232 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#115

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Daniel Bloomer**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

We should have kerbside recycling and collection should be the same day as waste collection. Waste collection volume should be smaller than recycling

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I want the Christchurch solution. The Napier water supply should be and can be secure without chlorination. It is wrong to continually link to the Havelock North example which is not analogous. The aquifer is secure, Wells should be secure and so should the rest of the supply network. Invest in that, not chlorination

234 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral, Comment:: Why not?
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#116

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Dirk Haselhoff**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

22 Lighthouse Rd, Napier

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Chlorine is a third world solution and is not a suitable solution for Napier. Due to the biofilm, organics, and inorganics, chlorine consumption is excessive. Application rates of 0.75mg/l results in councils stated 0.20 ppm FAC is stated. However, we are only measuring 0.01 ppm or less. This isn't protecting our network or the people that consume the water from an infection that may enter the network. In the case, as occurred in Havelock North chlorination would

236 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

not have made any difference to the number of people that were infected as all chlorine will have been consumed by organics and dissolved matter that accompanied the infections. Although *Campylobacter* was the dominant infection there were also a significant number of people infected with protozoa and residual chlorine in the reticulation system or even in the pre-treatment stage will not disinfect our water against the protozoa. If infection occurs in the network, then chlorine will not be effective as typical ingress of infection usually comes with other high demand on the chlorine. As disinfection with chlorine is a third order reaction it is highly unlikely that the contamination will be disinfected. Note: The last five major outbreaks in the USA that resulted in high levels of infection were all chlorinated. It's clear that by the council's own admission that we have biofilm in the network (resulting in black water). If chlorine is effective, then we shouldn't have biofilm in our network. As biofilm is clearly present in our chlorinated network, how can the council guarantee that a pathogenic biofilm will not cause a problem in the future? Many pathogens are showing increased resistance to disinfectants (chlorine) as is also the case for antibiotics. Our council should be looking at solutions that will not become ineffective in the future. The Dutch model has clear benefits (five times lower infection rates than comparable countries using chlorine). Even if our network isn't as good as the Dutch, we can address shortfalls by good monitoring and clever modern engineering without ineffective chlorination. Napier council hasn't addressed chlorination disinfection by-products (over 600 DPB's and rising). The chlorine solution is a third world solution. Is our council prepared to reduce Napier to Third World status already? Europe has recognized that Chlorine is a significant problem and many countries have recognized the severe limitations of chlorine and its negative impact on human health and on our environment. We need a council that is forward thinking and one that isn't guided by corporate interests along with all their lies. Chlorine is a carcinogen and affects human health in many other ways as is clearly demonstrated by all the complaints from our residents and doctors who must deal with these issues. We are faced with increasing levels of endocrine disrupters and chlorine only increases the toxicity of these chemicals. Napier had very minor *E-coli* transgressions and no other indication that our water supply has had an issue. We are now burdened with a clearly ineffective chlorination solution. There are far better more effective solutions that will make our council the heroes and not the villains. Note: Protozoa are now the cause of > 95% of infection from potable water supplies in first world countries and the chlorination system proposed for Napier will not have any effect on these pathogens. We are being subjected to all the negative impacts of chlorine to

237 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

treat only < 5% of the problem. This makes no sense. Although protozoa may not be a risk in our source water it is still a major source of infection in the case of backflow or as a result of a pressure loss in our 20% water loss leaky network. To discount protozoa entering our network is irresponsible and puts our community at significant risk. Money is being wasted on dirty ineffective chlorination and these funds will be far better spent on a recognized far better solution and that is the Dutch solution. Christchurch CC has recognized that chlorination is a very poor solution and is not fit for our future. Note: Germany has banned the use of chlorination of all their public swimming pools (over 780) due to the toxic impact on human health. I would hope that our new pool isn't resorting to chlorination.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#117

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:Full name **bhavna nagar**

Address

Email

Daytime phone number (or mobile number)

Respondent skipped this question**Q2** Please provide a postal address if different from above**Respondent** skipped this question**Q3** If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Part-pay now (proposed)**Q4** Waste Management - Tick which option you prefer.**Respondent** skipped this question**Q5** Do you have any comment to make about the future of Kerbside Recycling?**Do not set up the Trust****Q6** Regional Disaster Relief Trust - Tick which option you prefer.**Disagree,**
Comment::**Q7** Water Supply - What do you think of the changes for the plan 2019/20?

Would prefer to have chlorine-free drinking water directly from my tap at home. It has been a considerable long time since the last chlorine-free tap was closed in Napier, meaning that we had to collect water from Hastings. This long period is not acceptable..

239 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Agree
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#118

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Alan and Karen Willis
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above	Respondent skipped this question
---	----------------------------------

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.	Respondent skipped this question
--	----------------------------------

Page 2

Q4 Waste Management - Tick which option you prefer.	Respondent skipped this question
--	----------------------------------

Q5 Do you have any comment to make about the future of Kerbside Recycling?	Respondent skipped this question
---	----------------------------------

Q6 Regional Disaster Relief Trust - Tick which option you prefer.	Respondent skipped this question
--	----------------------------------

Q7 Water Supply - What do you think of the changes for the plan 2019/20?	
---	--

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree,

Comment::

We disagree with the funding in relation to the residents having to pay as its for the benefit of all of Napier Our submission are 1) We would like to be consulted on the layout of the future carpark and position of the walkway 2) That on completion of the project that the carpark can be tarsealed and have the lights in the carpark 3) That the contractors lay down area doesnt block access to our house 4) Can we make a one payment for the residents revetment costs instead of a term payment on our rates

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#119

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Kenneth Thorn**
Address
Email

Q2 Please provide a postal address if different from above

8 Rutland Place Taradale

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I strongly disagree with contaminating our water supply with chlorine due to an incident in another community in which their contamination was due to their poor maintenance of their supply. Surely that event placed emphasis on the overseeing of services and maintenance. To pass the buck by adding chemicals to counter one problem but create many additional ones is not good enough. The fact that the water supply has remained potable without additives for the last 100 years indicates that additives are not required.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#120

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Margaret June Clark
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

n/a

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

I do not have enough rubbish to warrant a bin. I put out a small bag of rubbish about once in four weeks. I will also have a problem with finding a safe place to put a bin on my small section.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Appreciate this service.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Do not set up the Trust

245 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Would like to see Napier City revert to it's clean un-chlorinated water supply. The chlorine is affecting my well-being. And I have had to eliminate some plants from my garden as they don't do so well either. As for collecting fresh water from outlets in the city, that is a problem as I have arthritis and carrying heavy containers of fresh water is too difficult. So please reconsider and bring back our fresh water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#121

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	raymond wm. jas. metcalfe
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),
 Comment::
 not able to give constructive criticism.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

for household's sake -this must continue. not every citizen has access to appropriate transport to the tip be it by car/truck etc. local authorities NZ wide must press for biodegradeable packaging wherever possible.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),
 Comment::
 seperate investment fund [into NZ GOVT Stock]

Q7 Water Supply - What do you think of the changes for the plan 2019/20?**Neutral**

247 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Agree, Comment:: get in before it disappears!
Q10 Do you have any other feedback?	
not yet.	
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#122

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Joshua palmer**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed)

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I delivery my recyclables to to transfer station

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),

Comment::

As long as the council put in legislation that it can never be touched by future councils as a fund to pay for all the mistakes (as they are piling up)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Pretty much your water supply schemes are ridiculous.

249 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree,

Comment::

User pays. Get those who can afford to live out there to pay for it. Even a user pays scheme. Why should this cost be pushed onto people who never have and never will use this. Rates are getting to high as it is.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree

Q10 Do you have any other feedback?

I have lived in my house coming up 5 years now. Single, middle class, lucky to get a payrise a year but definitely get charged more by this council. I live in onekawa. No new development around my place. Oh you do rip up perfectly good foot paths and replace them. Great use of my money. Oh and build a new pool that noone wants. You guys dont listen to any body. Bunch of baby boomers stuck in your ways, looking after all your mates in local business. The intern reading this probably works harder than you. Stop pretending to listen and actually fucking do something. This town is turning to rubbish. Born and breed here left for 9 years came back and i regret it everyday. Cant wait to leave again. Sort your stuff out.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#123

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Kelly Nissen**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 Napier does not need chlorinated water. If Christchurch can be chlorine free after all they have been through, why are we still dealing with terrible water? This is appalling. What Christchurch is doing is working. Follow their lead!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

251 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#124

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Sybil Roberts
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

253 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

The ONLY water I require and deserve as a hard working citizen is CHLORINE FREE. We used to have wonderful water here with competent knowledgeable NCC staff to oversee its delivery and maintenance. The water at times runs brown which is absolutely disgraceful. Why should I have to purchase a filter to combat this dirty water. NCC and your CEO need to reprioritise our rates money into infrastructure such as upgrading our aging waterpipes NOT adding glamour items such as the pool complex we DON'T want in Tamatea Drive. You councillors and CEO need to LISTEN to us and put community FIRST. As a massage therapist and retired pharmacist I have seen an increase in skin complaints from my clients, which have manifested only since chlorine was added to the water supply. I have lived with unchlorinated water all my 60 plus years until you put it in my water last year. I NEVER had an E coli or campylobacter infection. I am confident that if you employ intelligent knowledgeable men and women to look after the NCC water department or reemploy previous staff from this department and have a new CEO who has community NOT ego as his/her mantra then we will get back to a city that I am proud to call home,.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#125

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **K Kalmar**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

255 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I want my old, pure, non-chlorinated water back. Is chlorination of Napier water supply a knee-jerk reaction to Havelock North E-Coli outbreak? What has that got to do with Napier water supply? I will tell you what - NOTHING, absolutely nothing. We have some of the best drinking water in the world, that's why water bottling plants are popping up like mushrooms after rain here in Hawke's Bay. If our water is good enough to be exported to China, then it means it's GOOD. And no, China doesn't want our CHLORINATED water, but the pure unadulterated water straight from the aquifer. So why is it not good enough for Napier City Council? What are you afraid of? Do you know that chlorine is toxic, irritant (badly affecting my eyes) and also a cancerogenic substance? It's used to kill bugs in the water right? It's also killing us humans, but slowly, so it's not that obvious!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#126

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Nichola Nicholson
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now,
 Comment::
 Happy to absorb costs if a good service is provided.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree

257 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#127

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Donna McColl**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

259 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I wish to have Chlorine free water in my home and town supply. Chlorine drunk into the body causes many effects, most importantly killing off good gut bacteria which is responsible for a healthy digestive tract and a healthy body overall! It has been reported to increase incident of cancer risk for those that drink it. It breaks down into harmful chemicals in the body. Up until now, Napier has had an amazing water supply, I have grown up here all my life and enjoyed our water. When the water was Chlorinated I personally began to get pressure in my head, feeling of nausea, really feeling off. I will not in anyway consume it now, and hate that I have to shower in it!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#128

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Katja Morrison**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

100% pure NZ is a Farce. You should recycle all plastic. Look into other countries for ideas like Germany. We have to invest into a better recycling systems and improve the current bad situation otherwise our beaches, sea and rivers will be polluted too. I expected a bit more input from the Green Government. Introduce refund systems for cans and bottles. It works and gives jobs. Ban all that extreme packaging. Let those companies suffer for polluting the planet

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

261 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::

No chlorine in our water. China gets our pure water and we have to drink poison. What a joke! Replace all the old pipes, refurbish the water system and bring Napier back to pure beautiful water. Our water was good before you have overreacted. Now we have to either drink poison, invest into a filter, pay for cartridges and pay more rates. A lot of people cannot afford all that. I haven't had a good tea anymore since you introduced chlorine - and I have two filters! Not good. I would say this is THIRD WORLD

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#129

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Robin Marriage**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 Napier has no need to chlorinate it's water if it looks after it's bores.I hate the smell of chlorine and the affect it has on my skin.We should be following Christchurch s plan and save money

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

263 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#130

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Fran Cole
Address	
Email	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 Napier residents deserve and need fresh clean drinking water. We are ideally placed to deliver this to all residents from our pure and secure aquifer. Work is certainly needed on the infrastructure but this should be part of a well managed and on-going maintenance plan

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

265 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#131

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **David Hall**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 We need to treat our water as Christchurch is doing now.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

267 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#132

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Douglas Evans**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Suggest the Council provides different bins to every household for each of the items to be recycled ie paper, green glass, clear glass, tins etc

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

269 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I have been forced to buy bottled water from the Supermarket for our Household because no one can drink the treated water through the tap. This is a double edged sword as it is not only costly and labour intensive as the ladies can't carry the bottles from the S/Mkt as they have physical issues (hips requiring replacement). There is also the resulting increase in more plastic (bottles) to be recycled adding to the plastic mountain.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#133

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Phillipa Page**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

271 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Chlorinating pristine water is a bandaid on the broader issue of infrastructure upgrade and maintenance. Chlorine does not exclude all water-borne risks, it is affecting gut health and skin health and has the potential to produce carcinogenic compounds when in contact with organic matter (such as biofilms). Alternative filtration and disinfection methods are possible. These can give better levels of security from contamination and less side effects. Investment in chlorine-free public taps is wasteful in an area with access to such clean water that does not need chlorinating. However having public taps for re-filling drink bottles will assist with the reduction of waste.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#134

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Bernadette Patterson**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I would like to see Napier water chlorine-free, as I find it undrinkable. For the first time ever, I am buying bottled water, while also being conscious of the fact that this is more unnecessary plastic to dispose of. From the information that I have read, we should be able to be chlorine-free just like Christchurch. Then I can be proud of our water again and not feel embarrassed when my overseas visitors comment on the taste of the water !

273 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#135

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Patrick Tuffin
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 Please give us un chlorinated water

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

275 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#136

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Keri Schwed**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 I would like to have chlorine free water as it should be a fundamental right to have clean water with no chemicals. The role of Councils/Govts is to work FOR the people NOT poison the people. We should not have to spend alot of money undoing what is done to us not to mention the harm it causes.

277 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#137

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Gretta Carney**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Hapī Ora Ltd

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

It is imperative that you initiate municipal composting services that will take products that can divert plastics from landfill. Commercial composting services around the country are beginning to refuse these projects and it is essential that councils step in to compost them in an appropriate manner in the interests of reducing non-compostable waste.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Compostable collection please! It is unrealistic to expect households to compost themselves and compostables are a significant proportion of landfill waste.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

279 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Our business was negatively affected when chlorine was added to the water. We work with fermented, sprouted and cultured foods. Chlorine kills the beneficial biology in these processes, causing the foods to go off rather than ferment, sprout or culture. For a health and safety reasons we were required to install a water filter as soon as the water began to be chlorinated. Where we had proudly listed "Napier Municipal Artisan Water" as an ingredient on our food labels we removed all reference to our water supply on our labels. As health food practitioners working with the public we have spoken with many people who have reported health impacts from drinking the chlorinated water, namely compromised thyroid function, disordered digestion and weight gain.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#138

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **John Schwed**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 I do not agree with chlorine or fluoride or any poisons in my water supply.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

281 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#139

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Hayden Burgess**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 We want chlorine free water in Napier. It is a lazy option to chlorinate the water rather than put measures in place to make sure the water is clean. Chlorine is poisonous to drink, bad for your skin, and should not be in our water. Napier is better than this, it is another example of council mismanagement.

283 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#140

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Jenny Horne**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

285 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

NCC is asking ratepayers to fork out an increase of 6.4% which includes water projects estimated to cost us \$20 million. After spending our \$20 million the proposed outcome leaves Napier residents and visitors still drinking, cooking and bathing in chlorinated water – so why would we do it? In stark contrast Christchurch is spending \$35million upgrading their water supply and 98% of their network will be chlorine-free by the end of June 2019. Due to all our operational wells being thoroughly serviced and certified by the DHB, and since our wells draw pure artesian water from the secure, confining layers of the Heretaunga aquifer while being naturally filtered over many decades, we do not require expensive treatment plants. We want chlorine-free water in Napier - same as they are doing in Christchurch.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#141

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **E G Jones**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment:
 We should adopt a policy of keeping our water safe that is not based on chlorine as first option. As I understand it, Napier began chlorinating on the flimsiest of evidence of need.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

287 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#142

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Allison Armstrong**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

My leukaemic husband suffers diarrhoea after drinking chlorinated water; my discerning cat will not drink Napier's water and neither will I. I hugely object to both the expense and plastic pollution incurred when forced to buy chlorine free water. It is less attractive to our tourist industry, most of whom are after the pure NZ experience.

289 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#143

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Simon Wagner
Address	
Email	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

291 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#144

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name john
 Address paxie
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

12/37 Wellesley Place Napier South 4110

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

This is my own opinion

Page 2

Q4 Waste Management - Tick which option you prefer.**Part-pay now (proposed),**

Comment::

Certain members of our community can do with the
 help....They are older and perhaps cannot still work to
 provide for the little comforts in life that are so necessary

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Yes I think that it is essential to keep up the process of keeping precious resources via the recycling process
 It would be really nice if the facilities to do this are modern and well designed so that the members of housing communities want to use
 them and are encouraged to do so

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),

Comment::

If a disaster happens we will need all the help and support we can muster as a region because the resources of other regions have already been stretched (almost to the limit) It will help to streamline the aid to where it is most needed at any given time

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::

Unfortunately I am not aware of the proposed changes, I would like to say take this issue is probably of the most importance as without good water we are knackered. Could you please make me aware of these changes

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Comment::

So to say that I am also unaware what the Whakarire Revetment is...could you please inform me of the details

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Napier is desperate for intervention into its horrendous drug problem. Generally people being people, they will try to short cut their way to happiness any way they can. The trouble with some of these drugs is that the more desperate ones turn to what they think is the quickest solution or route to happiness The funding needs to be drawn down to help alleviate what is virtually mass suicide on our doorsteps. I have no idea of how this problem could be tackled. That would be where the funding could be focused.

Q10 Do you have any other feedback?

Just to say thank you..... for putting a roof over my head for which I am grateful every day. your team is much appreciate by me and people like me

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#145

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Geoff Donkin**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?
 Should be done as best as can be achieved to a reasonable cost.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 I want chlorine free water supply. If other cities such as Christchurch can do it, Napier should also be able to do it.

295 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

The local residents should make a contribution

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral,

Comment::

It depends on what projects the Napier CC has in mind and whether the ratepayers would be expected to make a contribution as well.

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#146

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Napier City Council
Address	n/a
Email	adeleh@napier.govt.nz
Daytime phone number (or mobile number)	0273955221

Q2 Please provide a postal address if different from above

n/a

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Napier City Council

Page 2

Q4 Waste Management - Tick which option you prefer. Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling? Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer. Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20? Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

297 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Recommend changing the rates funding 2019/20 Stormwater, Wastewater, and Water Projects to loans with an offset within other Council projects. There will be a net impact on rates. This better reflects the intergenerational requirements of these assets being created.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#147

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Peter Philip Brown
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed)

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 Water for Napier is drawn from a secure aquifer. There is no need to continue with chlorination or to consider any other form of purification.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree

299 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#148

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Amanda jackson**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

Kia ora I am objecting whole-heartedly to the unreasonable and unscientific decision to continue to chlorinate our water. It has been a decision operated on by stealth and now, again without scientific backing, has become the norm when we don't need it, would be risk free without it providing the bore heads are maintained properly, and are risking other health problems, quite apart from the smell and taste and damage to tanks, that chlorine has injected into our daily lives. Stop panicking, act rationally with the best science that we have at our disposal, and give us back our beautiful unpolluted artesian water like Christchurch is doing. If they can do it, and our aquifer scores better than their's, so can we. We don't need a rates rise to fund an unnecessary system. We can do what Christchurch is doing. Science says so. regards
 Amanda jackson

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

301 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Kia ora I object whole-heartedly to, and vehemently disagree with the unreasonable and unscientific decision to continue to chlorinate our water. It has been a decision operated on by stealth and now, again without scientific backing, has become the norm when we don't need it, would be risk free without it providing the bore heads are maintained properly, and are risking other health problems, quite apart from the smell and taste and damage to tanks, that chlorine has injected into our daily lives. Stop panicking, act rationally with the best science that we have at our disposal, and give us back our beautiful unpolluted artesian water like Christchurch is doing. If they can do it, and our aquifer scores better than their's, so can we. We don't need a rates rise to fund an unnecessary system. We can do what Christchurch is doing. Science says so. regards Amanda jackson

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#149

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **K Kalmar**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

303 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I want my old, pure, non-chlorinated water back. Is chlorination of Napier water supply a knee-jerk reaction to Havelock North E-Coli outbreak? What has that got to do with Napier water supply? I will tell you what : NOTHING, absolutely nothing. We have some of the best drinking water in the world, that's why water bottling plants are popping up like mushrooms after rain here in Hawke's Bay. If our water is good enough to be exported to China, than it means it's GOOD. And no, China doesn't want our CHLORINATED water, but the pure unadulterated water straight from the aquifer. So why is it not good enough for Napier City Council? What are you afraid of? Do you know that chlorine is toxic, irritant (badly affecting my eyes and skin) and also a cancer-causing substance? It's used to kill bugs in the water, right? It's also killing us humans, but slowly so it's not that obvious!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#150

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Brian Carwell-Cooke**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Ensure bins provided are practical, not too cumbersome to manage

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?
Agree

305 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#151

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	angela crabtree
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Respondent skipped this question

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Disagree,
 Comment::
 Do not believe our water needs to have chlorine in it permanently. Clean water would be a good start, in Tamatea not a week goes by without dirty water coming out of the taps. I have to take my white loads to my mums in taradale so I can be sure of it coming out clean! This has been happening for over a year, it is time this is sorted!

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

307 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#152

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Lauretta
Address	Thomas
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

1/382 Gloucester Street, Taradale

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now,**
 Comment::
 Reduce amount of bags to one per household

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Where are our new recycling bins??
 Make recycling weekly as annoying storing everything for two weeks.
 Gets tempting to chuck in a rubbish bag at times.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

309 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

We want Chlorine free water, Having grown up in Napier and now in my forties. We have never had to do this before and we grew up fine! Can't stand the smell of it and it's damaging pipes and hot water cylinders all over the bay. Having done a flood restoration course as part of my job We see the hot water cylinder floods and also a lot of pipes have failed. So what is it doing to us?? It's linked to cancer and we bath in it and drink it! We pay rates to get water so god damn do your regular checks make more bores and do your job instead of being lazy and pouring in Chlorine. We need more jobs in the bay. A lot of people including myself have had to pay and purchase a filter and some now filtering from there water mains into house. Expensive with ongoing costs and yet you wanna charge more rates. Duh we aint dumb!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree,

Comment::

Doesn't concern every tax payer! Donation box at the site and people closely affected could fundraise. Maybe a local gala

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree,

Comment::

Aquarium charges enough to support itself. Keep our rates down and stop the increase every year!

Q10 Do you have any other feedback?

Intersection on Meeanee and guppy needs a look into for cars turning into guppy as cant see clearly oncoming traffic. Expressway is a disaster its become a race track with cars screaming along and pulling in front of you it should have had a double lane bridge and been longer with two lanes.

Stop putting mob members into state housing.

Something need do be done as too many tucks on our roads.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#153

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Jenny Peters
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),
 Comment:
 Please be clear about how you plan to do this and charge us for it.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Kerbside should have everything that doesn't need to go to land fill. I mean all the electronics, home appliances, furniture etc can be recycled and the NCC COULD coordinate this and advertise dates for twice a year or have a kerbside sale.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

311 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I don't have a problem with chlorinating the potable water but at least you could publish the results of all regular culture and chemical samples as often as there are done. Because NCC has identified contaminating Pandora pond regularly these could be posted on site as Rotorua lakes do. At least visitors would know if it's safe or desirable to swim.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Comment::

What is this?

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Deal with some of the deferred maintenance it's disgraceful that NCC discharge sewage into pPandora pond and thence to city beaches.

Q10 Do you have any other feedback?

All Council meetings should be open to the public and accurate minutes circulated on website including details of which councillor spoke to what motion or discussion THEN the public would know which incumbent represented their views. When councillors solicit my vote and refuse to say where they stood on a possibly contentious situation because the discussion was "excluded from the public" ratepayers know the council has a problem and determinations may not represent the most public interest.... and I won't vote for that person.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#154

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name Susan Dianne Scott
 Address
 Email
 Daytime phone number (or mobile number)

Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed)

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Our Water must be chlorine-free. Chlorine is toxic smells is unnecessary, is a proven carcinogenic agent scientifically at an international level. It is suggested that the government advisory committee consists of people with vested interest in chlorine, and the advisor on chlorine is not an expert in the field.

313 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#155

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Kate Graham**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Neither option**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,
 Comment::
 I would love to see rate payers investment in our waters infrastructure brought forward - rather than spending lots of money on new community facilities, pools etc can our infrastructure issues particularly drinking water and storwater be prioritised and the funding brought forwsrd now.

315 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral,

Comment::

Could an option for funding for overbridge across the expressway at the Prebensen Drive roundabout please be suggested as part of the walking / cycleway network please be suggested. This intersection is imposible to cross on bikes especially with kids. We would cycle with our kids to park island and the new pools if there was a safe crossing available.

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#156

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Marie ROBINSON-LEDWITH**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

317 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Need to ensure water is safe to drink this beens to be free on choline too as too many people are having affects from it. Shut down the water bottling plants as if we can't get clean drinking water here as a resident why would we let them export our clean water. It is mad that China have high cleance levels on their water imported so they must be bottling safe unchlorinated water so why aren't we able to get it?

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#157

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **John Wuts**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

Much more pressure should be put on manufacturers to minimise the creation of useless packaging, i.e. packaging of cucumbers in plastic, the use of non-biodegradable stickers on fruit, etc.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option,

Comment::

What costings have been provided to set up this trust?

319 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

It should be possible to supply the Napier citizens with pure unadulterated water. If the network is not up to providing that, it should be made a priority to bring it up to standard, it is the least Napier citizens can expect from their Council.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

why should it all go to Northland? I am sure there are plenty of opportunities for the use of this fund in Hawke's Bay also!

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#158

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Aniwa Morunga**
 Address
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed)

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I do not want Chemical put in our water. I do t want my children to ingest, bath in it and think that chlorinated water is normal. It's possible to have i chlorinated water, the council is just being lazy. Fix our system and make our water, water!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

321 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#159

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name Irene McKinnon
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above
 Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.
 Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.
 Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?
 Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.
 Respondent skipped this question

323 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

In my family we have a history of skin conditions, in particular, eczema. My son is 24 and had this condition all his life. The only relief was for him to soak in a bath of CLEAN WATER. every night. Chlorine is the worst thing out for eczema. All his life he has not been able to get a good nights sleep because of the constant itchiness of his skin and often waking in the morning to blood stained sheets and bedding. Coping with this condition was bad enough but now that the water is chlorinated it is ten times worse. We have had to go to the expense of adding a water filter. But that only filters the water, we still don't have the nice clean water we once had. I have now come across people of all ages who have now developed eczema since the chlorine has been added. In addition to this I have a husband who is susceptible to bladder cancer and after drinking the chlorinated water had a huge scare. While you may think you are saving the public from health issues in general you are, in fact, creating more. Please be a progressive council and be proactive in bringing back clean water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#160

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Rebecca Field**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

P O Box 7 Bay View Napier

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Come up with a design to have a 3 or 4 section bin so that we have to wash and separate our own recycling prior to pick up, would be quicker for the guys on the truck and cleaner.

Glass
fibre - this could be split to paper and cardboard
cans

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

325 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Chlorination of Napier water is a backward step and a large investment massive. You are attempting to address a low risk of waterborne illness which is preventable through proper systems design, maintenance and monitoring. Chlorination, is damaging to our skin (not to mention our animals (fish)) and intestinal flora, (and therefore gut health), damage to immunity and the production of neurotransmitters (which is seated in the gut, and yes these are the drivers of mental health); the production of a range of disinfection byproducts (DBPs) as a unavoidable result of chlorine reacting with organic and inorganic material in water, or networks many of which are toxic and some of which are carcinogenic. Do you as councilors really understand the health risks, or is it a matter that you have someone advising who is in the business of selling chlorination equipment and monitoring services? If Christchurch are able to go Chlorine free why can't Napier? I would rather see our money spent on investment of our aquifers, systems maintenance and monitoring than Chlorination.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#161

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name	Leanne Kenah
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

327 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I want a Chlorine free water supply. Napier always had the best water supply in NZ and we used to brag about it - no Chlorine and no Fluoride in our water. Now we have dirty water at times and Chlorine in it. This is unacceptable and we should be looking to the Christchurch and Netherlands system that they are implementing and not spending some \$30m only to Chlorinate the water. NO CHLORINE IN OUR WATER. Fix the issues if they are there but do not put Chlorine in our water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#162

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Rosella Hill**
 Address
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment::
 Stop chlorination, if Christchurch can do it, why can't we. My skin has suffered, also my clothes and washing machine. Can't water plants. Don't own my own place, so putting in a water filter not an option. Can't afford to buy water or go somewhere to fill up.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

329 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#163

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Anne Pond**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

It is my desperate wish that we return to unchlorinated water. To enjoy a bath every once in a while would be an absolute luxury. Yes have had a filter installed in my shower. A cup of tea/drink of water now only enjoyed with bought water. Of great concern are my three grand daughters living in Tamatea - yes a water filter used but the absorption of chlorine through showering, the steam, and when filter used for any length of time in a household of five - for their current and future health and wellbeing both mentally and physically. What was once an appreciated aspect of returning from travelling in third world countries is now no longer. What was once a source of quality hydration is now no longer. What was once used to grow ones own fruit and vegetables is now no longer - there is a noticeable difference. Water is rated second to air for our survival. NZ's cancer rates are already high - do we wish these to become higher? Are we - the residents - 'just the ratepayers' whose health and wellbeing pales to significance in the quest for bigger and better everything else?

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#164

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Jack Kopu**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

If we just use glass an replace plastic all togeather that would be much better for the environment and the people of Napier

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Do not set up the Trust**

333 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Napier city council i want chlorine-free water, and the rest of napier would want that aswell I have lived in napier all my life an our water was good always drinking it my whole family loved it but now that use have added chlorine we have had to go to the local supermarket to buy water which has hit us hard financially an then theres the amount of plastic waste we have to deal with. We do not need chlorine treatment or expensive U.V. treatment plants napier city council could save ratepayers millions of dollars if they follow what Christchurch is doing. If Christchurch can go chlorine-free so can we - our aquifer is better than theirs. Come on napier deserves chlorine free water

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#165

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Jack Kopu**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Respondent skipped this question**

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Respondent skipped this question**

335 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

The new swimming pool that's going to replace the old one needs to have diving boards similar to the original dive boards that onekawa pools had an needs to be indoors to so that it can be utilized everyday as the only place to do bombs in Napier is at the wharf which is heavily congested with boats, fishing vessels an most of the time is not safe to swim in so we really need this use would save a lot of people from getting sick from swimming in polluted waters of our inner harbor.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#166

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name Sue Stone
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer. Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling? Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer. Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Disagree,**
 Comment::
 Would like the whole of Napier to be supplied Chlorine free water

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

337 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#167

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Cecilie Palmer
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Chlorine is damaging my health - I have to buy bottled water as I cannot ingest mains supply without getting stomach pains. But I have to shower and wash my hands in what is supplied and it drying my skin and causing cracks and bleeding. I left the district for a three day holiday and in just that short time my skin improved to almost normal. My elderly friend (82) ran out of bottled water and ingested mains supply and became quite ill. Once she was able to purchase more bottled water, her health improved and returned to normal. STOP CHLORINATION. Those of us on superannuation find our budgets impacted by having to buy bottled water - it is not right or just. There are other ways to keep our water safe - which before you overloaded it with chlorine, was one of the purest in the country.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#168

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name sue myles
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

121 Milton Rd, Bluff Hill, Napier

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

R. Smithies, M & J Mills, D Brooker, R Severinsen

Page 2

Q4 Waste Management - Tick which option you prefer.**Part-pay now (proposed),**

Comment::

The prime focus of the joint council consultation process was to reduce waste to landfill, however attending the Submission Meeting it was clear that there was a predetermined outcome - ie the future use of the prescribed large wheelie bins (2 sizes) at increased cost to the ratepayer. The only way to reduce waste is to provide smaller waste containers to force people to learn about reducing waste.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

as above.

Recycling is even more important now that we will have to recycle our own plastics (most of the grades). This needs to be a joint Government/Local Government effort. It may even be a business opportunity for local recycling to be developed - maybe a Provincial Growth Fund Project that would benefit the environment.

341 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option,

Comment::

It was understood that the HB Regional Council took over the Civil Defence (centralised) and that correspondingly Regional Rates increased. There did not appear to be any reduction in NCC rates as a consequence. Any Emergency Trust should be set up regionally surely?? Not the responsibility of NCC

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

It is pleasing that the NCC appears to be addressing an issue of failing infrastructure regarding the transportation of our water to residents. The resolution has been slow and communication poor. The addition of chlorine to the water is hopefully a short term measure but information seems to be "veiled" on planning for this to be temporary. In the "Say it Napier" meeting comparisons were made with Christchurch's underground supply but were quickly dismissed. More information needs to be supplied to rate payers please as to why we are not able to follow Christchurch's move to eliminate chlorine eventually.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree,

Comment::

Is the Aquarium a priority ? Social Housing is a priority The need for swimming facilities is a priority.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

The "Consultation Process" as in "Say it Napier" was poorly advertised, as in it was late and brief. Could "email" spread the advertising to rate payers earlier and more cost effectively? It almost appeared that NCC did not want a great turnout for the purposes of consultation. The meeting was "scripted" to the "Whats Changed" Document and missing other important issues. Does this meet the legal description of "consultation"? The Community needs to be consulted to meet its legal responsibilities and its financial accountabilities but also to meet issues of "for the greater social good" eg the name change of the Napier War Memorial Conference Centre and the issue of Easter trading and affected groups being consulted.

"Social Housing": there is now widespread awareness of there being some 880 people including in that number 440 children currently requiring housing. This is exacerbated by imported seasonal workers requiring accommodation as well. Increased house prices have pushed up rents, making them unaffordable for those on lower or fluctuating incomes. The issue is one of affordability and fit for purpose. Hawkes Bay statistics indicate there is a higher than average number of 65yrs + and also increasing numbers of solo parents so their needs are possibly for smaller housing units. There is a need for upgrading and extending existing housing stock and a need to work collectively with NGO's on the ground and Central Government.

Swimming Pool: It was disappointing that the NCC was equally divided on this hugely expensive project. User groups were left feeling frustrated that they were not consulted. The access to the proposed site is dangerous and away from a large group of users ie schools and community who walk to the current Onekawa facility. Please consider deferring this decision for the new NCC to deal with.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#169

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Mary Rose Quirk**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 I would like to see the chlorine removed from our water!!! I am having to buy water, on a pension, and believe that now is the time to end the chlorination. Please!!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

344 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#170

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Violet Elvena Mattson**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I used to brag that the fresh water supply in Napier was the best in NZ now due to chlorination I have to apologise for the taste of the tap water. Now like many others I have had to buy a filtration jug and continuous filters to be able to drink and cook with it because of the awful taste of cleaning fluid. No one I have spoken to is happy with this decision .

Regards E. Mattson

346 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#171

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Allan Stoney**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

A proper treatment plant with settlement ponds , which was proposed 40 yrs ago Better improved stormwater system that also goes to treatment ponds rather than out to sea with minium screening.. Smoke inspect all systems to find the leaks emanating from and into the pond ..should not be happening.. council needed better regulations when new developments want to build so close to water front areas

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Recycling of plastics is a waste of time
remedy the suppliers

if its unable to be recycled DONT manufacture it NO exceptions..

Develop a huge recycle re use center at the transfer station where all wood metal products ,everything is sifted threw sorted and up cycled

NO black rubbish bags or bin liners compostable waste sorted produced into soil ,fertilisers etc.

Use the unemployed to sort it out

Probation people

New job seekers etc

Q6 Regional Disaster Relief Trust - Tick which option you prefer.**Neither option****Q7** Water Supply - What do you think of the changes for the plan 2019/20?**Disagree,**

Comment::

NO CHLORINE NEEDED fix up like CHCH have done and proposed Fix up the new tanks at taradale that werent made properly and leaking stop wasting rate payers money regulate properly the first time stop sacking people who have old knowledge of the systems talk to those who installed it all in the first place. Tap into the chlorine free reservoirs that are already being used by china Compensate rate payers for the filter systems they have already installed so they can drink clean chlorine free water

Q8 Whakarire Revetment - What do you think of the way this work will be funded?**Neutral****Q9** Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?**Agree****Q10** Do you have any other feedback?**Respondent skipped this question****Q11** If you have more to say or additional information please upload your file here.**Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#172

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Nancy Rosemarie Halford**
 Address
 Email
 Daytime phone number (or mobile number)

Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Respondent skipped this question

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Neither option

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Disagree,

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment:
 I strongly object to the current plan to chlorinate our water long term. I believe that a safe water supply can be provided (if there was a will to do so). The Council over reaction to the Hastings water problems, and unwillingness to listen to the rate payers is a disgrace!

350 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#173

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **James Miller Neil**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment:
 We do not want chlorinated water. We would like the pure artesian water we've had in the past. Just like our water that is being exported. Thank you.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

352 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#174

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Noel Mann**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer.
 Comment:
 Should be done directly by Council rather than by contractors.

Q5 Do you have any comment to make about the future of Kerbside Recycling?
 Serious dialog is needed by all affected parties on the whole question of recycling in NZ

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment:
 We need chlorine free water. We have had it before and if past councils have not put sufficient resource into maintaining water supply security that has to change.

354 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#175

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Dianne Dingle
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),
 Comment:
 Would prefer to stay as we are.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Only that it will cost much more.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 Please get rid of the chlorine in our water and get back to our pure water.

356 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#176

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **maria crewther**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Part-pay now (proposed)**

Q5 Do you have any comment to make about the future of Kerbside Recycling?
 why is that increasing when actually you will have less recycling to pick up due to only certain plastics being put out.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Neither option,**
 Comment::
 sorry dont no enough about this.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Neutral

Q8 Whakarire Revetment - What do you think of the way this work will be funded?
Neutral

358 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Neutral**

Q10 Do you have any other feedback?

I was only giving feedback on recycling so didnt research any of other questions.

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#177

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Claire Alexander**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

360 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Please stop chlorination of our water. The council forced us to close the Artisian water on our property on Guppy road. Then chlorinated the town supply. We used to have beautiful drinking water. Please bring our chlorine free supply. When reports are made of burst pipes action then immediately not 2 days later. Especially underground leaks that are not seen by the eye. Stop allowing companies to make money from our bore water. Whatever it takes in terms of your project do what will give us back our clean safe drinking water

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#178

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Lewis David Willoughby**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

362 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I believe that the response to an "undisclosed test result" by the council is completely over the top. I am very angry that the Council and Senior Staff will not disclose these test results. It seems that as the ability to detect even smaller concentrations of any organism increases, that level becomes the new "safe level". This smacks of the "we know better than you" attitude. Keep them in the dark and tell them nothing! Well the people are not stupid, in this day and age they are able to do their own research. We understand that our water, and the source of our water is FUNDAMENTALLY different to that of Havelock North. The situation in Havelock North has the Council and staff running scared. We used to be so proud of our water in Napier and in reality nothing has changed in my opinion. The use of chlorine is completely unnecessary

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#179

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **marilyn corbishley**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),
 Comment::
 need big receptable for rubbish,paper
 etc

Q5 Do you have any comment to make about the future of Kerbside Recycling?

not really, quite happy, except for windy days, when everyones rubbish flys down the cul-de-sac.
 If council provide good receptables, would make life easier for the collectors. They do a dam good job most of the times.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),
 Comment::
 none

364 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

Just get the damed chlorine out of the water. Sick of having an itchy skin, and hair.. the smell of chlorine, in the bathroom, toilet and kitchen. MY LIPS AND ROOF OF MY MOUTH ARE ALWAYS DRY AND CRACKED. Never had to buy so much lip balm in all my years of living in Taradale. You flush the toilet and it smells like a bottle of bleach is in it. So many other people having the same symptoms.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,

Comment::

none

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral,

Comment::

none

Q10 Do you have any other feedback?

not a present.

maybe get some of the teenagers in taradale off the streets.

I dont know what the answer is, but it is frightning when they hang around.

Instead of the 2 vapa shops in main area, put them away from central shopping area.

Lots more things, but they just arn't coming thru at present.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#180

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Dermot Horne
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

366 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I want this council to provide us with Chlorine-free water. I don't believe that this present situation has been honestly presented to the community. It concerns me that an agenda is being driven without clear consultation with either our elected councilors or us ratepayers. Having spent \$1000 on a filter system with an on going yearly cost of \$200 I am concerned for those that are unable to afford such cost. We have an aquifer of pure clean water, we need a system that can get it up to our homes without additives. I believe Christchurch is working through this process and I think we should follow. But more importantly I do not trust our present council set up, there is something wrong when our elected councilors are not free to openly discuss in public matters which are important to our community.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#181

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Henri-Alexandre Lapicoré**
 Address
 Email
 Daytime phone number (or mobile number)

~~Respondent skipped this question~~

Q2 Please provide a postal address if different from above

~~Respondent skipped this question~~

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

~~Part-pay now (proposed)~~

Q4 Waste Management - Tick which option you prefer.

~~Respondent skipped this question~~

Q5 Do you have any comment to make about the future of Kerbside Recycling?

~~Set up the Trust (proposed)~~

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

~~Disagree,~~

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::
 We had one of the best water in New Zealand and I would like the council, with our support, to invest in a solution chlorine free. A lot of habitants and me included are suffering skin problems, immune system problems and digestive problems. Let's put the money and the effort to get the best drinking water in New Zealand. And even advertise it after if that can help...

368 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Neutral
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#182

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Namico Leslie**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Pay full cost from now**

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Lets star following the world's leading countries in waste management and try to make the environment better while also creating opportunities for the city and its citizens.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Set up the Trust (proposed)**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Neutral

Q8 Whakarire Revetment - What do you think of the way this work will be funded?
Agree

370 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#183

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Kevin Hall**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment::
 Remove the chlorine from my water supply, I am happy with the risk.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

372 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#184

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Dylan Mallinder-Capamagian**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

374 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I want to see Napier return to chlorine free water. I moved to Napier because the town i was living in has chlorine in the water and it badly impacted my health. I have a chronic illness and do my best to keep my body free of toxic chemicals in an effort to heal myself and keep myself well. Being exposed to chemicals should be a choice especially when it is to be ingested... research suggests this is not ideal for a healthy person let alone someone with a medical condition who needs to be cautious of what they put into their bodies. If people want to drink chlorinated water then they can buy it or choose to chlorinate at their taps. Seeking fresh water is very expensive and very sad considering the water we buy is from our beautiful town! If our fresh water is being bottled and sold it is definitely good enough to go through our taps!

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#185

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Heather
Address	Armstrong
Email	

Q2 Please provide a postal address if different from above Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer. Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I want to see a move away from collecting rubbish in plastic!

I also want to explore options for recycling locally, and recycling everything possible. I am extremely disappointed that recycling now no longer includes flexible plastics and has narrowed rather than expanded. I realise this is due to overseas plants limiting what they take - I wish we could develop our own recycling plants instead of giving up and putting it in landfill.

Q6 Regional Disaster Relief Trust - Tick which option you prefer. Respondent skipped this question

376 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I want chlorine-free water. It is an necessary expense when we draw artesian water from the Heretaunga aquifer, and an unnecessary chemical to be adding to our bodies. It tastes terrible and pets dislike drinking it, which is an indication that its not a healthy addition. Upgrade and maintain the water supply as Christchurch are already doing, and stay away from the expense of treatments plants that add in a chemical I do not see as necessary or healthy.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#186

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Judy Mills**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

I think giving people bigger bins for waste (not green waste)-which they will HAVE- to use- will not encourage waste reduction.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option,

Comment::

Not enough information has been given.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Respondent skipped this question

378 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Respondent skipped this question**

Q10 Do you have any other feedback?

1. The need for co-operation with Central govt to provide more social housing.
2. The proposed swimming complex seems too costly and not situated for easy access by large sections of the population.
3. I am opposed to further extension of the Aquarium. Entry fees are too high as it is. Figures for visitor numbers should be made available.
4. What is the Council planning to do about building -or re-building - a Library? We need a dedicated building and the MTG needs their space too.
5. The Women's Rest in Memorial Square needs to be restored for use. It is a public memorial built with community funds to honour citizens. At the moment it is an insult to them.

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#187

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Alan White**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q4 Waste Management - Tick which option you prefer.**Pay full cost from now,**

Comment::

For meaningful consultation your 12 page "Say it Napier- Whats changed" just does not "cut the mustard. You list 5 things you are going to ask providers to propose to achieve the listed outcomes. Does the Council have NO expertise to determine such a basic element of waste management and Local Authority operations ? Are Council Officers so far removed from the waste management industry that they have to ask the industry what is best for Napier and what it should cost?? If so, how can these same Officers make sensible decisions on what emanates from the tendering process? Did that expertise all go in the recent restructuring?? The first achievement listed on page 5 is to minimise waste and then as a solution the leaflet suggests subsidizing the service and providing BIGGER bins. Is the level of expertise in the Council itself so thin that they don't comprehend that if you give someone a BIGGER BIN they are not going to reduce waste? In fact , in all likelihood they will fill that big bin with all forms of general waste incurring further cost to the ratepayer. Nowhere is mentioned the very real potential of the Government's waste levy tax being increased. Also nowhere is there any comment on rewarding those residents who already minimise waste and careful buying plastic free goods and already don't utilise the current or future service fully. If your objective is the minimise waste you should fully charge costs to those using the service and reward responsible ratepayers and single resident users who are hardly using the services. The leaflet states that monies for the subsidy would " come from reserves" . This is a term heard to often - what is the slush fund that Council Officers can so easily access to be so generous? Council "reserves" should be spent on major long term investment in basic infrastructure only (sewage, lighting, water, roads and pathways) - the type of projects citizens often request but are rebuffed with vague costings of horrendous proportions to close the discussion down.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Covered above.

Citizen responsibility should be emphasised in promoting recycling .

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option,

Comment::

Why was this the first item in the leaflet at page 3 but the third in this feedback?? Pretty basic isn't it?? The principal sound good BUT A Council Controlled Organisation set up under the LGA would not hold my confidence to work for a common good for citizens. A lack of explanation as to where the donor funds might come from also is provided. The set up costs are able to come from existing budget but the cost of this and what would not be funded is not explained. I don't feel there is enough information shared to have an opinion.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

I still feel Napier is being short changed in this matter. Just like with the pool debate scary figures are being thrown into the discussion information to ensure a discussion on water quality and getting rid of chlorine is not advanced and the chlorine option discussion is closed down. I support the proposed advancement of the water supply projects but despair at the lack of aspiration in the Council's vision for its citizens with our water services. Again, like the waste management and the swimming pool contract decision one wonders if the Council does indeed have the right levels of expertise in house to advise Council. So much seems determined by Consultants. Again like the pool debate, Council staff seem quick to focus on the "why not" rather than "lets do look at it". Why have we have intentional breakages and illegal connections? Also why is Council not dealing to the offenders with illegal connections and intentional breakages? Why are they not looking at longer term improvement/ replacement of the whole system over a medium term (10 year) period? A majority of Council has been quite happy to approve the new swimming pool , the cost of which will balloon out as past recent Council's over the last few years have done but quick to strike out non chlorinated water. The continuing non operation of the "new" Taradale reservoir" is also not mentioned in the leaflet , yet presumably is part of the financials for water services.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

But don't approve any more at risk areas for development. Will Parklands, Te Awa and the Prebensen pool all be subject to similar bail outs in the not too distant future?

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral,

Comment::

I searched the Council website for the 4 projects listed and got no direct links to the projects. I searched the website for Provincial Growth Fund with similar results. I therefore have no context to make a rationale comment. Again I make the comment, that meaningful consultation requires good contextual information that is neutral and not PR concocted by the media team - external or internal. A precis of each of the projects listed may have assisted me.

Q10 Do you have any other feedback?

The Council should reinstate the opportunity for public hearings of submissions in future consultation rounds.

The Council's overall approach to engagement with its citizens needs to change drastically.

More information should be shared with the residents and more LISTENING by Council Officers and the CEO before recommendations/decisions are made to Council. There was a perception of arrogance and dismissal displayed by both the Mayor and the CEO during the pool process and meetings. That does not inspire a willingness to participate in citizen engagement processes. The Council website, I feel is a dog. The search function seems word sensitive but not necessarily helpful when attempting to access reports titles.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#188

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Alan McWilliam
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above	Respondent skipped this question
--	----------------------------------

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.	Respondent skipped this question
---	----------------------------------

Page 2

Q4 Waste Management - Tick which option you prefer.	Respondent skipped this question
---	----------------------------------

Q5 Do you have any comment to make about the future of Kerbside Recycling?	Respondent skipped this question
--	----------------------------------

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 It is totally unacceptable that you chlorinate the water to protect your backsides. You should be ensuring that your water source is maintained to the highest standard. We don't live in Napier but we do live nearby and have much to do with Napier. The councillors are elected and paid to know that the Council staff do a top job and do not cut corners.

384 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#189

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Jeanette Elgie**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

To make sure rates are not just put up, and then Council decides to change the way they do things.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

It is a necessity if we are to keep landfills down to a minimum. It helps all residents to assist in this.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Do not set up the Trust

Comment::

Another Trust with Committees and others. Rate payers do not need this. It will just add to the continual increase of rates, which the Napier Council do consistently each year. Wages and Incomes are NOT rising at the same way as the rates.

386 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Good water quality is paramount for all residents. We definitely need unchlorinated water stations, as the council has gone back on its original word of only chlorinating the water supply for three months. If the council can fix our poor water supply so we can return to our previous great tasting and good water, then spend the money earlier rather than later.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

This is protection for the buildings already there, however Council should ensure that areas that are prone to this type of situation are not allowed to be built on.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral,

Comment::

I dont believe in making an Aquarium costing that amount of money, when our water is more important. It is just a councils monument. Another swimming pool could again be a failure, unaffordable/unassessable to many households. We have already had the failed Art Deco Buses, the failed MTG which the ratepayers will never stop paying for (In the storage fees of our treasures off site). Ratepayers do not need any more white elephants.

Q10 Do you have any other feedback?

Councillors need to understand that many of the people in the Napier Council area are not rich, and do not have an income that increases every year. I believe that currently councillors see many of these issues as ones which they themselves can easily pay in extra rates, where the majority of people find the extra rate increases a real struggle to pay.

Perhaps Councillors should ask themselves; Do the Ratepayers need it or Do the Councillors just want it.
Perhaps then the Councillors would really be working for the people in their areas.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#190

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Christine McIntosh
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

388 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

The knee-jerk reaction to chlorinate Napier's beautiful water supply has been an unmitigated disaster, both in management and public relations. The general public no longer believe that the Council is acting in the best interests of its citizens, but simply opting for the easiest option. Ever since chlorine was introduced to our water supply we have become like a third world country, gathering at wells wherever we can find them to access clean and pure water. I have lost count of the number of times our water has run brown or when silt has fouled the water. I have been collecting water from Hastings for over a year. Before that, I was getting it from the taps which were supplied at the makeshift Napier venues. As a result of lugging the heavy water bottles from tap to car to home, I suffered a torn rotator cuff injury which has to an extent disabled my left arm even after physiotherapy treatment. I am left handed, so this has an impact on my quality of life. The chlorinated water has also dried my skin, and caused skin irritations. It has stripped out my hair colour almost as soon as I apply it and my hair is like straw. These may be considered cosmetic problems only, but before chlorination, I did not experience any of them, so I become an example of how chlorination of the water supply has adversely affected the citizenry. I would like our Council to do the job for which we elected them and make balanced and intelligent decisions with regard to this problem. Christchurch has been able to provide pure water for its populace, so Napier can do likewise. The easy option is not always the best choice.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#191

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **RACHEAL wood**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

390 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

OUR WATER DOES NOT NEED TO BE CHLORINATED!!!!!! SINCE MOVING TO NAPIER 6 MONTHS AGO FROM BEING ON BORE WATER OUT THE BACK OF HASTINGS,MY OVERALL WELLBEING HAS DECLINED. I AM ACTUALLY ALLERGIC TO CHLORINE SO I AM CONSTANTLY ITCHY AND DRY SKIN AND BECAUSE MY HAIR HAS BLEACH IN IT, IT IS TURNING GREEN!!!! DISGUSTING AM I AM PAYING RATES FOR THIS????????????????

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#192

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Anna White**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

Don't think we should be paying, anymore for this service, our rates seem to be getting very expensive and the general incomes of families aren't going up with inflation.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Due to the amount of recycling that can't be done now. So most of it is going to go to landfill, another big problem. So I think trying to save the planet by recycling is a thing of the past. I'm not happy about paying for kerbside recycling as there is so much that cant be recycled now.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

392 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Bring back the old Napier water, there was nothing wrong with it. More problems have been created since introducing the chlorine to our water, I think we have third world water now. Not good having brown water and we drink this?????

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#193

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Craig Morley**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

N/A

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

N/A

Page 2

Q4 Waste Management - Tick which option you prefer.**Part-pay now (proposed),**

Comment::

While actual costs are unknown (and may blow-out), the
 Council needs to limit excessive costs to the public by
 providing some form of subsidy (even if from reserves)

Q5 Do you have any comment to make about the future of Kerbside Recycling?

One "one solution fits all" option will not work. It will penalize low users. There are many low (recycling) waste producers that would prefer an opt out option and to manage their own recycling at less regular intervals.

I live on the Hill. There is no room on my narrow street for multiple large recycling bins. Nor do I have easily accessible storage for these on my property. And I have steps that these would need to be carted up/down.

There should be options for private (council recognized) organizations to collect Kerbside Recycling.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Do not set up the Trust

Comment::

Civil defense and disaster relief is not a local body function. It has to be handled at Central Govt. level. Even so, NCC passed this responsibility to HBRC who could (supposedly) handle this function. Now NCC want to "double dip" on the act again. No to another trust that you should not be involved in.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

Option 3. Discontinue drinking water disinfection and manage the risk. This is what was done prior to the Havelock North outbreak. The evidence is there - decades worth. There has been no mass illness from Napier's water supply prior to disinfection. When the DWS lowered the E.coli detection thresholds and there were very low levels of E.coli detected, disinfection was applied IF AND WHEN required. This is effective management of the water. Even with chlorine disinfection, our drinking water is still not safe and clean. In many overseas countries, residual chlorination is not effective and there have been many mass illness outbreaks due to Chlorine resistant bacteria and predominantly protozoa contamination - giardia and cryptosporidium. Those countries have removed Chlorine disinfection and now the lowest rates of water illness in the world. NCC has not effectively communicated this risk to the public. Home filters may even be increasing the risk of local pathogens in residents water. The best management practice for safe, clean drinking water is to ensure that is doesn't get contaminated in the first place. The source is pure, so the issues with our pipe network needs proper engineering and controls. This starts with correct choices and investment in infrastructure. Chlorination is not effective, not safe and will continue to provide substandard dirty water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree,

Comment::

No. Invest in core business infrastructure first.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Listen to the community properly.

Q11 If you have more to say or additional information
please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#194

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Sue Macdonald**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q4 Waste Management - Tick which option you prefer.

Comment::

I do not support either of the two "options" that are given to pay for recycling. This is part of rubbish collection that is a core service the ratepayers pay for in their rates. You cannot treat ratepayers to be a cash cow for these core services. Many of your ratepayers are low income or fixed income and they do not have the power to try and absorb these extra costs for what are basic core services. Extra costs should be paid for monies collected already by council through rates instead of being used for "nice to have projects" eg the Aquarium. Whether plastic is recycled, or put in general rubbish to end up in the landfill, ratepayers pay. The council are looking to change our general rubbish collection also, we can only imagine what sort of increase in rates that will take, all on top of average rate increases of 6% every year for the life of the 10 year plan. It was suggested at one of the community meetings I attended that the part pay option would be subsidised by council. Do you forget that this money is not "your" money but belongs to the ratepayers. I fully support recycling as one means to dispose of plastics and of course it costs, but to dump increased costs on ratepayers through increased rates is unfair. Many citizens enjoy these services for "free"

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::

Water supply is again a core service that councils provide. I am one of many people who are disappointed that you are only looking at chlorination as an answer. For many years we were assured that our infrastructure was very good in Napier. This has proved not to be the case. To fix this issue you are projecting costs of \$3 million dollars per year for the next 10 years. Is that all? Compared with other projects this is a pittance. Good water supply is again a core service and as such should be a priority from the money the council collects. For citizens like me (a ratepayer for over 45 years, de-chlorination stations are not the answer. Yes I can make my way to these stations but unless I only fill 1 litre bottles I cannot carry containers to my car. What are the more elderly citizens to do?

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?	Neutral
Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?	Agree
Q10 Do you have any other feedback?	Respondent skipped this question
Q11 If you have more to say or additional information please upload your file here.	Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#195

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Abi Featherstone
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

I don't agree with bigger bins. We are working on waste reduction. Right? If your rubbish can't fit in your bin hopefully that's a wake up call. And it does not inspire finding alternatives to all the waste we are needlessly producing. Or to sum up Because we can no longer send our low quality plastics to pollute an other part of the world we are going to make larger plastic rubbish bins to hid our waste from our sight at our homes.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

It is probably best kept how it is. Mixed bins are not a good option

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

400 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

The water filling stations are great for traveling visitors. They will hopefully discourage bottled water. But all the water should be de chlorinated

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral,

Comment::

I might not understand this correctly But if you are potentially going to be expanding the Aquarium, I hope the current inhabitants get a better deal. It's like a Victorian show and tell with those tiny glass boxes

Q10 Do you have any other feedback?

Business should be charged separately for rubbish pick up in town.

There is so much mixed waste, so much glass and food scraps going to land fill. The gulls rip it out and spread it over the road. And it becomes another job, it's put into yet another plastic rubbish bag.

And you can hear the clinking of bottles in the bags as they get thrown into the trucks

A lot of cafes and shops are so small with little to no space out back, maybe a shared recycling and composting per block could be effective

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#196

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Angela Gay Denby**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name. **Respondent skipped this question**

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
Disagree,
 Comment:
 No chlorine. Too many issues: taste, pipe interference e.g. biofilm scoured and into tap water, gut/skin conditions. If Christchurch can get rid of it so can we.

Q8 Whakarire Revetment - What do you think of the way this work will be funded? **Respondent skipped this question**

402 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#197

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name Karen Lisa Prebensen
 Address
 Email
 Daytime phone number (or mobile number)

Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Respondent skipped this question

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Disagree,

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::

I do not think Napier's water supply should be chlorinated.
 You cannot compare it to Havelock North. Chlorine is a hormone disrupter and can cause a variety of health issues.
 I have 2 children approaching their teens and I do not want them having to consume chlorinated water and contenting with the issues that arises from this as well. A better plan would be to follow the Christchurch model with NO chlorine in the water. Thanks

404 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#198

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name Valerie Stace-Chadwick
 Address
 Email
 Daytime phone number (or mobile number)

Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Respondent skipped this question

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Disagree,

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Comment::

Our water supply is different from the Hastings/Havelock North. We were not and are not tainted in the same way. There is NO need for the addition of Chlorine. Indeed I wonder what health implications there may be if using this water for consumption (drinking). Please revert to the way things were done in the past instead of the expense involved now and proposed for the future.

406 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#199

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Shelley Marie Kean
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now,
 Comment::
 I dont mind paying for a competant service.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I would prefer to have Kerbside recycling. I believe if ratepayers were provided with approved appropriate containers the uptake

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

408 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#200

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name	James Lee
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above**Q3** If you are providing feedback on behalf of a group or organisation, please give us their name.

Awatoto Development Ltd

Page 2

Q4 Waste Management - Tick which option you prefer. Respondent skipped this question**Q5** Do you have any comment to make about the future of Kerbside Recycling? Respondent skipped this question**Q6** Regional Disaster Relief Trust - Tick which option you prefer. Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Water supply should include extension to the Awatoto Industrial zone on the corner of Awatoto Road and Waitangi Road to service subdivision and industrial development. This land is currently zoned but there is no town water supply. Industrial development is having to rely on ground water supply and Regional Council water take consents. This is not satisfactory for Napier's only greenfields industrial development land and is inhibiting industrial growth and new jobs to the city. I wish to be heard at the community feedback hearing.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#201

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	John Artless
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),
 Comment::
 Recycle wheelie bins please!

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Easy solution, one recycle bin for all recycling is preferable

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

I hate chlorine in the water. It tastes appalling and is bad for my skin We have some of the best water in the world (there is a reason why overseas companies bottle our water and send it overseas - for free!!)Export quality water, why aren't we allowed to drink it as nature intended? Drives me crazy. Please don't chlorinate water

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Neutral

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#202

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name jan vaessen
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above
 Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.
 Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.
 Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?
 Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.
 Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

We, Jan and Mariet Vaessen, are very worried about the fact that NCC plans to continue chlorinating our drink water supply. It is bizar that locals have to drink "dirty" chlorinated water from their taps while several companies around Hawkes Bay making sound businesses from pumping up clear safe drinking water from our aquifers and sell it in and outside New Zealand in plastic bottles. How does that make sense? We are aware that the water issues are complex, but we also feel if these issues were given high priority a better solution would be found as been done in several other situations, Christchurch one of them. Live in Hawkes Bay is not all about the economy. Our environment , sustainability of resources and wellbeing of its people, including providing safe and healthy drinking water and proper housing for everyone who lives here, should be of utmost priority. As a ratepayer we expect NCC to share these concerns and do anything to safeguard us from losing sight what is most important. Thank you for inviting us to comment on your plans. Kind regards, Jan and Mariet Vaessen

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

More should be done to improve our housing crises and drinking water issues. Make them the highest priority because it will impact on the well being of all citizens in Napier, rich, poor, young and old!

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#203

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Svetozar Majstorovic
Address	
Email	
Daytime phone number (or mobile number)	

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,
 Comment:
 Napier deserves to have chlorine free water. NCC is responsible to the ratepayers and should provide untreated water.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

416 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#204

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name
 Address

John Sutherling

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,
 Comment:
 I prefer capital value \$184.88 I would like to have some input to path and not one metre from my front door and tar seal car park.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

418 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#205

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name
 Address
 Email

Adrienne Wakeling

Q2 Please provide a postal address if different from
 above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or
 organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future
 of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option
 you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for
 the plan 2019/20?

Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way
 this work will be funded?

Neutral,

Comment::

As per funding options, I have preference for the Capital
 Value rate for my property \$139.33

Q9 Provincial Growth Fund Projects - Do you have any
 thoughts on us making applications to this fund?

Respondent skipped this question

420 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#206

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name

James McPetrie

Address

Email

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.**Part-pay now (proposed),**

Comment::

We need to keep it simple and cheap

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Wheelie bins are difficult to handle in hills, particularly by elderly pensioners

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Do not set up the Trust

Comment::

Is this a charge to the rate payer, if so, do not set up trust.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

Keep the water chlorinated.

422 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,

Comment::

No mention of overall cost of project or of cost to ratepayer

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

We should seek to gain as much as we can from this ill conceived turd

Q10 Do you have any other feedback?

Why do rates always have to increase? Pensioners only receive a 2.4% increase each year. Can a case be made for special pensioner rates?

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#207

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name

Rosemary Anne Russell

Address

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Part-pay now (proposed),

Comment::

This year I have obtained 2 small crates for recycling plastics and papers, as asked to do by NCC. Now er're told that may change to wheelie bins that costs of recycling will go up and fewer types of plastic accepted. I shall be left with very little recycling to put out every two weeks in a wheelie bin?

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

424 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Neutral**

Q10 Do you have any other feedback?

Like many of the new residents in St Luke's village, I do not have access or capability for online information? Additional written information would be helpful for those in the situation, If I had that I would have been able to give feedback to the questions on this page.

Q11 If you have more to say or additional information please upload your file here. **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

#208

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Margaret and Robin Gwynn**
 Address
 Email

~~Respondent skipped this question~~

Q2 Please provide a postal address if different from above

~~Respondent skipped this question~~

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

Increasing the size of bins as proposed would lead to more waste not to minimization as is needed.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

What steps is NCC taking to pressurise large distributors of plastic like supermarkets

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Neither option,

Comment::

More exploration of possibilities is needed on a regional basis.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

We have been waiting for 3 years for a proper consultation on Chlorination

426 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,

Comment::

Surely the private properties get much more than 3% of the benefit?

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#209

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name **Fran Lowe**
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Napier Pilot City Trust

Page 2

Q4 Waste Management - Tick which option you prefer. **Respondent skipped this question**

Q5 Do you have any comment to make about the future of Kerbside Recycling? **Respondent skipped this question**

Q6 Regional Disaster Relief Trust - Tick which option you prefer. **Respondent skipped this question**

Q7 Water Supply - What do you think of the changes for the plan 2019/20? **Respondent skipped this question**

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree,

Comment::

The Napier Pilot City Trust have some questions for you: Should ratepayers pay for 97% or any of this? We are aware that Haumoana seafront residents did not fare so well. What sort of precedent does this set and what other property owners will be putting up their hands for help when they should be thinking of relocating? How long must we pay to help these houses persist in an unsuitable location? The walkway is of little consequence - there is a road to walk on Surely we should be thinking instead of the people who do not have a home at all - who do not feature in your plan. Your Maraenui Development needs to be prioritised over the homes of the relatively well-heeled, please refer to our response to your Provincial Growth Fund Projects.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Disagree,

Comment::

The Napier Pilot City Trust understands that the needs of business, tourism, leisure activities are important, however it is our view that the Napier City Council Annual Plan as presented lacks balance and fails to address the high levels of deprivation that currently exist in Napier. We also strongly feel that the current Council has failed to consult and engage effectively with the Napier Community and is in contravention of its Significance and Engagement Policy. Flashy brochures and website are distractions and the divisions on the Council send a very clear message that an urgent stock take and genuine community engagement is essential. Community engagement is important to enable the community to participate and have confidence in the decision making process and to help council understand varied points of view to make better decisions and deliver better services for Napier, reflecting the aspirations of mana whenua, residents, ratepayers, community groups and businesses. Rationale p4 Maraenui and Napier South urgently need support and the promised Maraenui Development is clearly low priority as after investigation it appears to be dependent on funding from the Provincial Growth Fund. (This was discovered with difficulty and it appears there is nothing on your web site regarding the Provincial Growth Fund applications. Fortunately we obtained a copy of the Annual Plan submission brochure and found a reference there). We are disappointed that this revitalisation project is not mentioned anywhere in the goals of the NCC, is relegated to a one-line mention in a brochure and is to be funded not via rates but via uncertain regional funding, which is for economic development, not urban renewal. Whether this project attracts funding or not, it is a point of shame that the NCC still fails to acknowledge the need to provide for ALL of

429 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Napier's citizens by including this development in the annual plan. This is best expressed as follows: "One woman, who had lived in the area (Maraenui) most of her life, said she'd seen many plans put forward in the past, but none had been supported by any commitment, in terms such as the council's budgeting for a community centre as part of the staged development." Hawkes Bay Today Sep 2018 A vibrant city that is safe and healthy and that supports community well-being is the stated aim of your plan's Community and Visitor Experiences and your City Strategy. Our wonderful destination city (territorial authority) with its mild climate has the highest number of people on the housing register in the country (MSD stats, NZ Stats pop ests), and not too surprisingly has the highest number of victimisations (crimes) per capita in the country (police data, NZ Stats pop estimates). Solving those problems seem not to be a high priority to the NCC perhaps because most of the people concerned are Maori. We are interested that the good people of Whakarire Ave are getting an erosion barrier to protect their properties, having chosen to live in an area vulnerable to the sea. There is some irony in prioritising that project to be paid by the tax payer. Maori represent 19% of the working age population. This will be 27% in 2038 based on people who have already been born (MSD statistic). Maori currently make up 42% of the Napier unemployed (MSD statistic), and if nothing is done this means an ever-increasing number of people unemployed and unhoused with little hope for the future but gang life, drug escape, and rotating prison stays. Dare we say it – this will impact on the gentle folk not living in our marginalised areas and will impact on our reputation both nationally and internationally. Napier as a vibrant party town may become much less attractive. Maraenui and environs needs to be a destination not a place to be avoided. Perhaps put some of the wonderful planned public facilities there so people go there and start to understand the kind and generous nature of the residents who are struggling but manage. As part of our very successful Unity Day on April 24th (kindly supported by the Council) we sought feed back from Napier residents on their views of what a kind and fair Napier would look like. A long-term resident powerfully made his view known. Mane, a gang leader made the following comments: . Napier City Councillors need to be EDUCATED regarding The Treaty of Waitangi obligations. . Te Reo & Cultural Training Understanding/Awareness for Councillors. . That Meetings between gang leaders, and leaders of Napier City be scheduled. . That Napier City support more Social Housing Papakainga Initiatives for low-income Maori-Pacific families. . More Health Providers working with gang families. . Work Trust programmes available to the identified vulnerable next-generation of gang youth towards Education, Training, Up-

430 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Skilling, Trade Training, and Community contribution programmes, e.g. Community Max, group employment liaison services to the vulnerable. NPCT support these objectives. We have a number of key statistics that can be found here:
<https://www.dropbox.com/sh/txtn5d1trbbm0ma/AACToXhVZuCb7NsKDstppEa9a?dl=0> We will be reporting on and celebrating progress on these statistics to the Napier populace at our annual Unity Days.

Q10 Do you have any other feedback?

NPCT are pleased to be able to attend your deliberations on these matters.

Q11 If you have more to say or additional information please upload your file here.

Respondent skipped this question

Napier City Council Annual Plan 2019/2020 - Your Feedback

#210

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name Ryan Hambleton
Address
Email
Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above

PO Box 7537, Taradale, Napier

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Sport Hawke's Bay

Page 2

Q4 Waste Management - Tick which option you prefer. Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling? Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer. Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20? Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded? Respondent skipped this question

432 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback?

Sport HB has worked closely with Napier City Council since our establishment in 1989.

Our mission is to create a healthy, vibrant community by supporting more people to be physically active. We acknowledge the ongoing investment which the Council makes in providing facilities for the community to engage in sport and active recreation.

In this regard we particularly note the investment that the Council has recently made in sport and recreation facilities in Napier and its planned investment in the aquatic facility development.

Over the past year, thanks in significant part to support from the Council, we have continued to work closely with communities in Napier.

The Council's support partly funds the salary of one staff member (currently Samantha Ware). Her focus has been on working alongside the Maraenui and Tamatea communities to encourage more people to be active and live a healthier lifestyle.

We appreciate the ongoing support council contributes to Sport Hawke's Bay and look forward to continuing working alongside Council staff to help fostering recreational participation while creating a safe and healthy city that supports community well-being.

Once again, I thank the Council for its investment in infrastructure to support sporting and recreational activities and also its support of the activities of Sport HB. We believe that the partnership between our organisations significantly benefits the Napier community.

We would like to be heard in support of our submission.

Yours sincerely

Mark Aspden, CE

Q11 If you have more to say or additional information please upload your file here.

Sport Hawke's Bay submission_NCC 2019_20.pdf (229.4KB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#211

Collector:
Started:
Last Modified:
Time Spent:
IP Address:

Page 1

Q1 Your details:

Full name	Paul Bailey
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Page 2

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q4 Waste Management - Tick which option you prefer.

Pay full cost from now,

Comment::

I acknowledge that changes to the recycling market means that the management of our recycling has to change in some way. Section 43 of the Waste Minimisation Act (WMA) states that a Waste Management and Minimisation Plan (WMMP) must provide for methods for achieving effective and efficient waste management and minimisation. Whilst the recommendations discuss, and offer different options for waste management it is completely deficient of any discussion around waste minimisation. This ignores the reality that the cheapest way to deal with waste management is to stop waste being produced in the first place (minimisation). No doubt you agree that waste minimisation has many flow on environmental, social, and economic benefits. It is more than just what's going to the landfill. That's why I find the consultation information so underwhelming and unimaginative. To reduce the amount of waste going to landfill we need to get society as a whole to stop producing so much of it. Otherwise we are simply treating the symptom and not finding a cure for the cause. It is true that there has been a lack of initiative shown by central government in the past, which does not help, but I think you will find that the current government has a different view on the matter. Waste minimisation is after all one of the 20 initiatives negotiated by the Green Party with their coalition partners. So unlike say the Capital Gains Tax something is likely to happen in this area. As for the options you have presented I wonder if the solutions offered are as cost effective as getting plastics grade 3-7 out of the waste stream in the first place. I believe there is wide spread acceptance of the ban on single use plastic bags. We now need to consider taking the next steps before defaulting to increasing the cost of waste management. Firstly, just how much plastics grade 3-7 was being recycled and what did it consist of? We need to get an idea of the size of the problem we are trying to solve. If necessary when need to ask are there alternatives which could be introduced? If so how can this be done? Does it require central government intervention or can industry be encouraged to use alternatives? If you cannot answer these questions then it would indicate to me that little work has been done to consider waste minimisation as the first step in waste management. Just keep in mind that it is called the Waste Minimisation Act and that there must be good reason why the word management was not included in its title. In saying this I support paying the full cost now rather than the proposed option.

435 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q5 Do you have any comment to make about the future of Kerbside Recycling?

With respect to your kerbside recycling options your proposal to go with 80ltr wheelie bins is to my mind an acknowledgement that as a community we have yet to get on top of waste minimisation.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

I am pleased to note that you are bringing forward some expenditure to expediate water security.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral,

Comment::

This is an interesting discussion in light of the work that is being undertaken by the Coastal Strategy Group to deal with similar issues which confront all of Hawkes Bay. I have no issue with a public/private split for funding this project however I do think that having this at 3% / 97% should be questioned in light of it setting a precedent for future projects on the Hawke's Bay coast. It is my understanding that the affordability question was high on the minds of councillors when these decision was taken. However the papers presented to the Finance Committee (16 Oct 18) and Council (11 Dec 18) were bereft of any analysis as to what 'affordable' means. So how can we be sure that any private good above the proposed 3% is in fact 'unaffordable' to an owner of a property with substantial capital value? The paper presented to the finance committee stated "Individual properties along Whakarire Avenue identified as being within the current erosion risk zone stand to gain the most from the construction of the revetment. This is both in relation to maintaining their housing and property asset but also significantly increasing the value of their holding." As a ratepayer I have to question why Whakarire Avenue owners are being asked to contribute such a small percentage of the total cost when they can expect not only protection of the capital value of their properties, but also a significant increase in this value. I wonder if it is fair to charge all of the ratepayers of Napier for the financial benefit of the few? I suppose this is more of a philosophical question but as is indicated in the table below, increasing the private good component of the project to 10% amounts to under 1% of the capital value of the property - which brings us back to what exactly do we mean by 'affordable'? How much is it worth to an effected ratepayer to protect the capital value of their property? What, for example, would happen to their insurance premiums if this project were not to proceed? In saying that I'm in favour of introducing a targeted rate. I just don't think the proposed percentages are fair.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

NCC Annual Plan 2019.pdf (122.2KB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#212

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name

Simon and Hettie Tremain

Address

Email

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Respondent skipped this question

Page 2

Q4 Waste Management - Tick which option you prefer.

Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree,

Comment::

See attachment 7 May 2019 Napier City Council Private bag 6010 Napier 4142 ANNUAL PLAN 2019/20 SUBMISSIONS WHAKARIRE REVETMENT 1. We act for Simon and Hettie Tremain and the Simon and Hettie Tremain Family Trust (the Tremains), owners of 17 Whakarire Ave. We are in receipt of your letter 3 April 2019 containing proposals for the

438 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Whakarire Revetment and the targeted rate. We are also in receipt of your letter of 17 April 2019 which varied the proposal in relation to stormwater. 2. A resource consent was granted for the Whakarire Revetment following the removal of the Tremains', and a number of other Whakarire Avenue residents, objection. The removal of that objection was based on a dialogue with Napier City Council (NCC). That involved assurances made by NCC to the Tremains that they would be regularly and actively consulted regarding the further steps and stages in the Whakarire Revetment. They were told that existing veg MSELROYS 5. The stormwater proposal is of particular concern. At the time they agreed to the resource consent there was no suggestion by NCC that stormwater would be impacted. Attached marked A is the plan that the Tremains were given by NCC prior to the resource consent. This does not show any redirection of stormwater. Attached marked B is the plan for the stormwater disposal as part of the revetment. This shows that stormwater will be directed to a swale directly in front of and abutting the front of their property from where it will be discharged to sea through a large culvert. This is completely different to what they understood at the time of the resource consent. This was presented to them without any consultation. They are concerned about the proposal for a swale operating as a stormwater catchment as it directly impacts on their property. First it creates the risk of flooding to their property. It is well recognised that culverts can become blocked in storm/flood events. That is almost certain to impact on their property. Second it will involve considerable earthworks which may impact their land. Thirdly it has an aesthetic impact in that they will be looking directly at an industrial stormwater disposal. 6. In addition to issues regarding consultation and misrepresentation the Tremains oppose the revetment for the further reasons set out below: (1) They do not believe the Revetment will be of benefit to their property. In fact it is now clear that it will adversely impact their property; (2) They do not accept that there is an issue with public access. The area is well used by a public, school and other groups; (3) They have concerns regarding the protection of properties when plants and barriers are removed, and work is being done in the Revetment. Council have provided no assurance that proper measures will be in place to protect the properties during the construction phase. (4) They do not understand why the NCC are pushing for the Revetment? Why would NCC want to spend this sort of money when there is limited support from the affected residents? Who is driving the Revetment and why?

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? Respondent skipped this question

Q10 Do you have any other feedback? Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

2019-05-07 Annual Plan 2019 20 Submission - Whakarire Revetment McElroys.pdf(2.1MB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#213

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Jervoishtown Residents
Address	Jervoishtown

Q2 Please provide a postal address if different from above
 Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Jervoishtown Residents

Page 2

Q4 Waste Management - Tick which option you prefer.
 Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling?
 Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.
 Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?
 Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded?
 Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?
 Respondent skipped this question

441 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Jervoistown Security Submission

This submission is on behalf of the 191 Jervoistown residents that engage with the residents only Facebook page. I am one of two admins on the page and we also have a Council staff member, Natasha Carswell engaging positively with the page on behalf on Council, which is appreciated..

We appreciate the high level of communication and engagement the NCC has had to date with the residents regarding concerns around boy racers, trucks and speeding drivers in our suburb and the traffic calming measures in place.

What we have also noticed is a significant increase in burglaries, back yard lurkers day and night, drone observations of resident properties and the increase in the illegal dumping of rubbish.

As a suburb we would ask if Council could investigate the following and work with residents towards installing permanent camera surveillance at one or all of our entrance points, the tunnel at the end of Burness Road and/or additional lighting.

If Council could look into the following;

- the cost to Council cleaning up the areas along Burness and Tannery Roads, photos attached only of what has been seen in the past two weeks, compared with the value of cameras as a deterrent and/or a means to prosecuting what clearly appear to be repeat offenders.
- The quantities of waste by tonnages illegally dumped regularly in the area.
- The hazardous nature of what is being dumped and risk to residents, children and pets, if any. The area is well utilised by walkers, dog walkers, cyclists and equestrians.
- The data on the number of burglaries in the area as the residents agree, in principle with making a contribution themselves towards additional surveillance or tagging on to any work Council may like to put in place with regards to surveillance to address the illegal dumping.

Thank you for your consideration.

Q11 If you have more to say or additional information please upload your file here.

Jervoistown.pdf (904.4KB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#214

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Barb Abbott
Address	Tu Tangata Maraenui Trust
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Tu Tangata Maraenui Trust

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

We are not happy about the 6.4% rates increase in the proposal. Surely, if \$700,000 from your reserves is available, and in the light of the \$41 million you have set aside for the Prebensen Drive Aquatic Centre, then why can council not find the rest of the funds required rather than increase the rates by 6.4 per cent? In our community, rates increases are passed down to renters or when inflicted on low-income home owners, many of them pensioners living on the superannuation. We do not support this rate increase. With the loss of recycling of many types of items, it seems like we are paying more for a reduced service. Are there opportunities for those who do not want wheelie bins to opt out and thus pay less?

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

443 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed),

Comment::

As this does not require any further funding, we have no difficulty in endorsing this.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Neutral,

Comment::

Some of us have had recurring problems with dirty water (which Council staff have come around and attended to promptly) and none of us like drinking the chlorine. We are inviting you to come over to Maraenui and hold a public meeting just on this subject to listen to and inform the community why you are handling water the way you are. Perhaps have someone come from Christchurch to explain how they can remove chlorine from their water supply. Some of us are currently either buying large bottles of clean water and/or travelling to Hastings to access their chlorine free taps, so the sooner our de chlorinated taps are in place the better.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Disagree,

Comment::

We feel that local residents should be paying more than 3% of the cost of this as it will directly protect their homes.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

We are pleased that the Activate Maraenui plan is part of this application. When will we find out the outcome, and what happens if it is not agreed to?

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q10 Do you have any other feedback?

Tu Tangata Maraenui Charitable Trust submission

TO Tangata Maraenui Charitable Trust is based in Maraenui and has the Vision: To tautoko and advocate for the people of Maraenui; and a Mission: A Maraenui in which everyone feels safe, valued, connected and supported.

We have been in existence since 2013, and in the last year have been involved in:

- Supporting and running two holiday programmes based at the Maraenui Rugby and Sports club;
- Meeting regularly with Jon Kingsford and staff to discuss traffic calming measures in Maraenui;
- Feeding information back to Council staff about lighting in Maraenui
- Natasha Carswell has attended some of our meetings to talk about Activate Maraenui and housing issues;
- Collaborating with retailers in the Shopping Centre (our Deputy Chair is the owner/operator of The Pie Man bakery in the shopping centre)
- Working with the Maraenui Community Policing Team (who send a representative to our monthly meetings);
- Tautoko for Minnie Ratima's submission to Council on the Prebensen Drive Aquatic Centre;
- Working with Housing New Zealand in helping clean up specified areas;
- Developing a Strategic Plan to map a way forward.

Our comment on your Annual Plan

1. The process

Some members of our community are not on line and do not have the means or desire to go to the library to make a submission. Why is there not a Feedback form they can post in?

We would prefer to meet council kanohi-ki-te-kanohi, face to face, but you are not holding hearings. This suggests to us you do not want to hear our voices. What happens to this written submission? Do we get answers to our questions? Will they be recorded in your minutes?

We liked the way things used to be done - that annually, we all had the opportunity to let you know our feedback on various matters council is involved in, not just issues

you have defined. It was more democratic and enabled us to talk to you on a range of matters. The current system puts obstacles in the way of people who want to submit, and we believe in a democracy, councils should be making submitting on important issues as easy and inclusive as possible.

2. The Prebensen Drive Aquatic Centre

We reiterate that your decision to choose this site rather than Onekawa means that many people living in Maraenui will have difficulty in accessing this facility. Not just the distance, but for many in Maraenui, this site is in the heart of Black Power territory while Onekawa Park is neutral. This could be a barrier for our youngsters wanting to ride or bike there; it is not seen as a safe place for them.

We are alarmed at the amount of public money being spent on this project and how it will be paid for in the coming years. Surely the Onekawa Pools could have been upgraded without this kind of expenditure.

With such a slim majority of councillors supporting the Prebensen Drive option, the decision should have been delayed until after the election.

8. Housing.

Many of our residents are homeless and living in motels or overcrowded whanau homes. Please lobby central government to build state houses asap in Maraenui. We also seek assurance from you that your own Council flats will not be sold off as they provide an affordable home to many on fixed incomes.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q11 If you have more to say or additional information please upload your file [here](#).

Tu Tangata.pdf (711.7KB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#215

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Richard Catley
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Part-pay now (proposed)

Page 2

Q4 Waste Management - Tick which option you prefer.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

I believe the NCC should be lobbying the Central Government to sort the problem of plastic packaging at the source. I.e if there is an alternative that is fully recyclable, a ban should be on the use of plastic for that product.

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Set up the Trust (proposed)

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Neutral

447 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund? **Agree**

Q10 Do you have any other feedback?

Further to my personal feedback above, I would also like to submit on behalf of the Pirimai Residents Association our case for expanding the Allen Berry Reserve. PDF attached

Pirimai Residents' Association Submission to Napier City Council
13th May 2019

My name is Richard Catley and I'm making a submission on behalf of the Pirimai Residents' Association.

The Pirimai Residents' Association (PRA) was founded in 2000. We are a group of Pirimai residents who meet monthly to look at issues affecting our suburb.

Firstly I would like to acknowledge the response to my previous submissions to the NCC, and the subsequent letter from Mayor Bill Dalton. It is also pleasing to note the pledge of \$100,000.00 for the enhancement of the Allen Berry Reserve. We appreciate any progress on our Associations goal of growing and enhancing this valuable resource for future generations to enjoy.

To follow on with this, I am now wishing to re-present our submission under the 2019/2020 Annual Plan.

We are respectfully asking for the NCC to purchase the Ministry of Education land formerly occupied by the Pirimai School and adjacent to the Allen Berry Reserve, for the public to use as a park.

We understand the MOE is now looking to dispose of this land. The NCC has the first right of refusal as former owners and we believe the time is right for Council to make this commitment to the people of Napier.

History

Since 2000 Pirimai residents have raised issues of concern to the suburb. We successfully lobbied for the noisy motorway road surface behind our homes to be quietened and members helped plant vegetation on the verges. Members successfully stopped a gambling venue from entering this suburb.

In 2008 Annual Plan hearings, the PRA made our first approach to NCC asking for an extension to the Council reserve on Allen Berry Avenue and for play equipment to be installed. NCC suggested PRA should raise the money and show we were not just asking for a handout but could help ourselves. And so the fundraising began! In 2009 \$31,000 was raised through grants, a raffle, donations, car boot sale and community fun days. Play equipment and a set of swings was installed with a community and church working bee in November 2009. We raised a further \$34,000 and a junior playground erected. This equipment is now owned and maintained by NCC – a great asset for Council and the community.

We've held "meet the candidate meetings" & BBQ's, Fun Days, a playground opening, 1st birthday party and commissioned a mural in the shopping centre.

The NCC have planted trees, put in a seat and a BBQ table around the playground and last year erected a concrete activity wall.

PRA's approach to Council's Annual Plan hearings in 2008 was accompanied by a petition signed by 517 signatures. We further submitted to the 2009 Council Ten Year Plan, submitted to the 2010 Annual Plan with 778 signatures, presented again to the 2011 & 2016 Annual Plans, all with the same request. We met with CE Wayne Jack in 2014 and was told Council was keen to bring

communities like ours together to make plans with the Council for what the community wants for their suburb. He thought Pirimai would be a good area to trial this.

In 2017, we hosted a Ward Meeting in which we presented our proposal with Councillors, the Mayor and Staff in attendance. We have since begun the journey to create a community plan in conjunction with the NCC. One thing is very clear from the residents and key stakeholders in the Pirimai community, is the need to keep the land for an expansion to the Allen Berry Reserve.

The Area

Pirimai South Park is a perfectly positioned existing open space central to the area of Pirimai South.

The area is growing a larger population of young families. It is close to the shops, church and kindergarten, making it a great spot for families to relax and engage in recreational activities. There is a cricket pitch (albeit in a state of disrepair) that is frequently used by children and their families alike.

Napier City Council Annual Plan 2019/2020 - Your Feedback

The park is large enough to host a large range of activities, and it is a familiar sight to see many families, individuals and even sports teams using every part of this area in its current state.

It is close to the many pathways that have recently been created, and now being used by so many. While Anderson Park with all its facilities may appear close on a map, it is a long way for people without cars and requires crossing Kennedy Road.

What do we want and why?

We want to see the Napier City Council take notice of this unique opportunity to take over the ownership of the remaining area currently owned by the Ministry of Education. We believe there is never a better time than now to pursue this. Land will not get cheaper than what it is now. This is the only opportunity we see to obtain this valuable resource. If it were to be developed into housing it will be lost forever, and Pirimai will continue to have one of the lowest areas of open space in comparison to population. We do not accept the drains being counted as open space – we feel this claim is a copout and not acceptable.

The PRA is a well-established community group who speaks for the people of this area. Is Council listening to us? We as ratepayers believe we have a valid request and by achieving this goal of total ownership will secure another asset for the people of Pirimai and Napier.

Assets like this are what makes a community stronger and better place. It builds families and friendships. It builds positive energy and a happier place for all. It builds a healthier population and helps make a city grow into the future.

We want to see our youth busy and engaged in positive social activity, and providing this will help cut-down on anti-social behaviour through a stronger community. Surely this must save money in other areas?

These are all the hallmarks of a safer, prosperous and resilient community. We know these are all factors Napier City Council is committed to build.

Our Vision.

We have a proven track record of being active in the Napier community, to drive our community's wishes into reality.

We can do it all again!

If we secure the whole of the Ministry of Education owned area, we will have a total area of approximately 2.2ha.

Some ideas for the park in the long term are the following:

- Repaired Cricket Pitch to create an oval, combined with areas for community games and fun sports.
- A community garden
- Skate area
- Picnic areas with shade and BBQ's (like on the marine parade)
- BMX Area
- Dog area/Agility
- Fitness Trail Just to name a few!

As the existing playground has proven, build it and the people will come. It is already heavily used.

The idea is to secure the land and then over time add to the attractions through fundraising and community participation.

What Next?

The Pirimai Residents' Association has asked time and time again for Council to take action and purchase this area for a park. After 10 years of lobbying, meetings, fundraising, petitions and submissions, we believe it is now time for Council to put the wishes of the Pirimai community into action, to show you are listening to your citizens.

So our request is for you to add your intention to purchase our park to the Council's current list of exciting community projects and write this into the 2019-2020 Annual Plan.

Own Pirimai South Park and help us to grow a stronger, happier and healthy community. Thank you for considering our request.

Richard Catley

On behalf of the Pirimai Residents' Association Contact: 33 Arthur Hobson Ave, Pirimai Napier. Phone: 021 730 806

Email: richard@atkin.co.nz

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q11 If you have more to say or additional information please upload your file [here](#).

Pirimai Park Submission May 2019.pdf (442.5KB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#216

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name **Bruce Carnegie**
 Address
 Email
 Daytime phone number (or mobile number)

Q2 Please provide a postal address if different from above **Respondent skipped this question**

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Grey Power Napier and Districts

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

Clearly, as stated previously, no rates increase is the best option for our members and most retired people of Napier. It is also apparent there is a crisis with waste in our country. Using reserves to cover part of the cost over the next three years is a short term fix, but as many of our members can attest it does not take long to exhaust savings/reserves. Grey Power Napier and Districts requests that Napier City Council double its efforts to find a low-cost option for kerbside recycling and as an interim measure use reserves to absorb the increased costs.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

See attached

451 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Do not set up the Trust

Comment::

It is of concern that the summary of some initiatives appearing in the insert to the Napier Courier (regarding the plan) gave the impression that the above trust fund would be "collecting and distributing donations made by the public and organisations in a civil defence emergency in Hawke's Bay." [Underline added]; whereas the actual plan clearly states "the Trust will allow us to build up a fund as a charity before a disaster occurs. This will mean we will be ready to distribute donated funds much faster to those most in need should a disaster occur." [Underline added] It then goes on to point out this initiative involves the establishment of yet another Council Controlled Organisation (CCO) under the Local Government Act and would involve all Hawke's Bay councils. This appears to be yet another benefit to the finance industry, who no doubt will look after this fund. Depending on the investments this fund makes, the fund could well suffer a disaster long before Hawke's Bay does. Grey Power Napier and Districts requests that Napier City Council do not set up the Trust.

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Agree,

Comment::

It is gratifying to see the plan addressing water supply issues and bringing forward some projects. We question the need for installing de-chlorinated water stations rather than simply not putting the chlorine in the water in the first place. This would be our preferred option. We fully acknowledge the risk averse nature of local bodies; however the Havelock North situation appears completely different to that Napier one. Grey Power Napier and Districts requests that Napier City Council make all endeavours to provide a chlorine free water supply to all the people of Napier. On the same topic, our members feel ill-informed about why their water is often dirty, and why we are told you cannot remove the chlorination, when Christchurch is planning to do so. We ask that the Council holds public meetings, with speakers from NCC, the HB DHB and experts from Christchurch City Council to better discuss this matter with the public.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Agree,

Comment::

We acknowledge consultation, concerning a targeted rate with affected private property owners in the vicinity of Whakarire Avenue, is currently underway. However as the expected private contribution is only 3% of the total cost of the work, we wonder if the Port of Napier is a significant contributor to the erosion, and if they might be persuaded to contribute to the remedy? Grey Power Napier and Districts agrees in principle with the concept of a targeted rate in unique circumstances.

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Agree,

Comment::

Napier City Council is to be commended for the exploration of options for funding from the Provincial Growth Fund. That said, we note the proposal for expansion of the National Aquarium of New Zealand and wonder if this is the best use of that resource. Given that we are being constantly reminded of tsunami risk here in Napier - is investing significantly more money into an already adequate facility (that would be one of the first casualties of a significant tsunami) a good idea? Would the Provincial Growth Fund resource be better directed to projects inland and a suitable distance from the tsunami risk zone and projected sea level rises?

Q10 Do you have any other feedback?

Napier has a tremendous resource available within the group of retirees and elders in this community. Consultation - genuine consultation - with this group could well solve a number of problems facing Napier and with less cost than proposed in the Plan.

We believe Council should be encouraging and facilitating community input into your Annual Plan, from all and everybody. However, the process this year has been flawed and obstacles put in the way of many of our members who show interest in civic matters and are unable or unlikely to submit because they are not online.

For those without internet access or skills, a booklet with a simple free post-in form available at libraries or council offices and the community meetings would have made submitting easier for all, which we believe is your underlying intent. Such a booklet was shut away in a cupboard in your Customer Centre and only available when requested; it was nowhere to be found at libraries; and the booklet that was available at the community meetings not only had no Free Post form, but did not contain the deadline for submissions.

We wish to also register our concern that no citizen is able to make direct oral presentations regarding this latest Plan, being restricted to online submissions alone. We request that the opportunity for citizens to present their concerns face to face at a hearing be restored in next year's consultation.

Napier City Council Annual Plan 2019/2020 - Your Feedback

Rates rises and "affordability"

Our members have serious concerns about the level of rates increases proposed in the Annual Plan 2019/20, suggested at 6.4% for this year (if the part-payment of the cost of kerbside recycling is adopted) ; and a further increase next year.

We hear from our members that elderly residents of Napier, both renters and home-owners are skimping on food, power and doctors' visits to cover their skyrocketing costs. Home owners living solely on the pension cannot meet the increasing costs of insurance and rates. Rates increases are passed down by landlords to renters. It is worth remembering that 23.4 per cent of all Napier's residents live on a low income (vs 18.7 per cent nationwide). We are not a well off city.

Pensioners whose only income is National Superannuation do not have enough income to live on without rent and rates increases. This is confirmed by the latest Retirement Expenditure Guidelines Report published by Massey University which states, inter alia, "A two-person household living in a provincial area on a no-frills budget is likely to spend around \$14 a week more than NZ Superannuation."

The Plan suggest the average household will have to pay an extra \$2.62 per week. That equates to a bag of rice and two tins of beans which supplies two of the week's meals for some of our couples. \$2.62 a week is a lot of money to someone living on a fixed income.

Grey Power Napier and Districts requests that Napier City Council rates be held at current levels (no rate increase).

Council Housing

With the over-65 population expected to reach 25 per cent of the city's residents in 2030, and with housing being identified as one of the major concerns in your Positive Ageing Strategy, we urge councillors to make retention, refurbishment and expansion of your pensioner portfolio a top priority.

As you are aware, we are experiencing a crisis with affordable rental accommodation in Napier, and this means the increasing number of elders living only on the pension cannot afford steep market rentals.

We have seen in some other cities where their council sold flats to a social housing provider that, while existing tenants were not evicted, they were slowly replaced by younger people thus breaking up the secure environment pensioners previously enjoyed as well as forcing more pensioners into unaffordable market rentals.

Our delegates to the Grey Power Federation conference in May will be moving a remit which mirrors your Council's remit to the Local Government NZ Conference, stating "that the (Grey Power) AGM lobbies the Government to provide financial assistance to local councils for the operation, upgrade and growth of local authority social and pensioner housing portfolios".

Grey Power Napier and Districts urges NCC to retain your pensioner housing and refurbish and build where possible.

The War Memorial Centre

Grey Power Napier and Districts would appreciate it if Council would restore the memorial plaques and eternal flame in a manner better than before the ill-conceived removal of these features occurred to allow development of the conference centre. This memorial could have the wow factor enhancing the Marine Parade environment.

The Proposed \$42 million Prebensen Pool/Aquatic Centre

While we agree with the need for improved aquatic facilities in Napier, we have a number of concerns about this project, which

Napier City Council Annual Plan 2019/2020 - Your Feedback

represents the biggest capital works project ever undertaken by Napier City Council.

Firstly, \$42 million seems an excessive amount to spend on improving our aquatic facilities. Many municipalities have succeeded in doing this much cheaper. With rocketing rates and your council flats requiring capital to improve and expand them, this seems unnecessarily extravagant.

Secondly, the new location appears not to suit the majority of Napier people, whereas the Onekawa complex does. We feel schools who use the current Onekawa facility, of which there are a number, will be significantly disadvantaged.

The 6-6 split on location amongst councillors reflects the unease many feel out in the community about a 42 million dollar new build in an unoccupied part of town.

Grey Power Napier and Districts requests that Napier City Council defer any decision to progress the Prebensen Pool/Aquatic Centre until after the Local Body elections later in this year.

Council's commitment to the reintroduction of the four well-beings to the Local Government Act.

We thoroughly support the submission Council made last year in favour of returning economic, environmental, cultural and social well-beings to the Act, and endorse your comment that this change would provide "a mandate to support our community to address these issues where central government is not able to respond."

Your elderly citizens are important and often vulnerable members of the community; our needs are not always met by central government. We would appreciate you applying this consideration in your deliberations, be it on your Council housing, rates rises and building very costly structures.

Q11 If you have more to say or additional information please upload your file [here](#).

greypower.pdf (1.5MB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#217

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name
 Address

Deborah & Robert Burnside

Q2 Please provide a postal address if different from
 above

Respondent skipped this question

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Clean Earth

Page 2

Q4 Waste Management - Tick which option you prefer.

Comment::

Yes, we would like to speak to our submission. Thank you for the opportunity to submit and for the series of public meetings held over past weeks. We attended one of those meetings and would like Council and Councillors to consider the following when making decisions on curbside collection services; • Napier has many residents on a fixed income unable to afford expansive curbside services - nor significant increases to their annual rates invoice, bearing in mind that the HBRC also seems similarly unable to hold rates increases on or around inflation. While your CFO has said the proposed increase is within acceptable limits by Council's measure... for pensioners a near 7% increase to any fixed cost is not acceptable. Council's role is to offer the minimum service to the maximum number of ratepayers, rather than tailoring services for what is essentially a personal consumption based need. • All recommendations adopted from the public WMMP consultation have been concluded from seriously flawed data, as the model for curbside collections of any plastics is broken. Both Nationally and Internationally. No price option for the status quo was provided as a comparison to the public. The public consultation document read more like an order form and

456 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

people simply ticked the cheapest options. Council appear to have rejected any credible objections from those that understand the industry. An industry that does not provide on any scale an 80L bin as they are not suited for the majority. • We would strongly urge Council drops the wholesale provision of 80L wheeliebins for the following reasons; 80L is not utilised by the industry as standard 80L is less than the current two bag maximum Waste at curbside by volume, but not necessarily by weight is set to increase due to the rejection of plastic wastes numbered 3-7 Waste at curbside may increase due to the instability of the current markets for plastics 1 & 2 (which are still largely exported) Automated side loaders cannot service all areas of Napier Automated side loaders are dangerous The H & S aspects of continued bag collections has been grossly overstated, in our view - as automated systems have their own H & S risks Such a contract, to achieve affordability, may have unintended consequences such as tying ratepayers to a long and expensive contract, reducing competition in the market, or a contract where private waste is mingled with municipal waste and ratepayers unfairly underwriting private dump fees The provision of a bin for general waste has no impact upon recycling bin supply or uptake of recycling There is no data yet available upon the impact of current council changes to curbside recycling services, which will impact upon waste output at curbside It is greenwaste that is problematic in landfill and that needs to be reduced to reduce emissions and thus reduce the requirement for carbon credit purchases by the landfill We have prepared this submission in haste as we are about to attend for the 3rd time the International Waste Expo in Nevada, however would like to speak to our submission and trust councillors will prepare any questions for us rather than simply go through the motions of us repeating what is covered quite loosely here. We would ask that Council and Councillors review our own previous submission to the WMMP and those of our local colleagues in the waste industry. We would respectfully ask, again that Council work with local contractors when seeking to find answers to waste and recycling problems in the Bay, rather than consultants with seemingly no practical industry experience. It is a continual disappointment that Council appear to take their advice from large International waste companies, with a vested interest in curbside contracts. We are disappointed that all Councillors are not fully involved in the WMMP as waste is complex and, when we get it wrong... we end up with the situation that has occurred with recycling. We will not be tendering on any Council curbside contracts. We do not hold now, nor ever have held any Council curbside contracts. In fact almost all Council entities have never contacted Clean Earth in the past 25 years for even a comparative quote on commercial services. This is

457 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

even a comparative quote on commercial services. This is despite Clean Earth being the only private front load supplier in the region. If anyone cared to review our past submissions we have consistently stated that only items that are genuinely able to be recycled in NZ ought to be collected at curbside and Councils nationwide have contributed to the issues we face today as they simply did not care to examine what was happening to waste products after collection. We will not be tendering on any Council curbside contracts. We feel that Council ought to consider undertaking a basic waste service themselves or at least taking only short term options due to the instability in the industry and the very real possibility that central Government may introduce deposit schemes for valued product, such as aluminium that could immediately impact upon any long term curbside. Leaving ratepayers paying for something with poor uptake. Council, in our view needs to position itself to be more swiftly responsive to any changes in the industry and challenge the Govt more firmly when directives are being considered for which there are no facilities for. Council must continue to support ongoing landfill disposal needs, in the absence of any alternatives, and retain its ownership of this vital piece of community infrastructure for the ongoing needs of the community.

Q5 Do you have any comment to make about the future of Kerbside Recycling?

Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer.

Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Respondent skipped this question

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

Clean Earth .pdf (1.4MB)

Napier City Council Annual Plan 2019/2020 - Your Feedback

#218

Collector:
 Started:
 Last Modified:
 Time Spent:
 IP Address:

Page 1

Q1 Your details:

Full name	Pauline Doyle
Address	
Email	
Daytime phone number (or mobile number)	Respondent skipped this question

Q2 Please provide a postal address if different from above

Q3 If you are providing feedback on behalf of a group or organisation, please give us their name.

Guardians of the Aquifer

Page 2

Q4 Waste Management - Tick which option you prefer. Respondent skipped this question

Q5 Do you have any comment to make about the future of Kerbside Recycling? Respondent skipped this question

Q6 Regional Disaster Relief Trust - Tick which option you prefer. Respondent skipped this question

Q7 Water Supply - What do you think of the changes for the plan 2019/20?

Disagree,

Comment::

1. Chlorine undermines the immune system. It depletes the good bugs in the human gut which are vital for a healthy intestine. Since Napier City Council added chlorine many people have experienced stomach problems and skin conditions they've never had before. Chlorine is known to be carcinogenic - this is why the Dutch stopped using chlorine. Just one example: the link between water chlorination and

459 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

colorectal cancer is well established:
www.ncbi.nlm.nih.gov/pmc/articles/PMC4824718/ 2.
 Chlorination is mandatory in the UK, including Northern Ireland. But in 2015 chlorine failed to keep people safe from a serious outbreak of Cryptosporidium in a city in Northern Ireland. The crisis was managed by maintaining a BOIL WATER regime for five months while the source of contamination was identified and the problem solved. The incidence of waterborne diseases in the UK is five times higher than in the Netherlands where chlorine is not used, not even as a "residual disinfectant" in the pipe network. Other Western European countries have followed the Dutch method and instead of using chlorine they rely on pro-active management and a programme of regular maintenance/replacement of infrastructure. 3. A false sense of security: "Chlorine residual" disinfection is being promoted by our council but it does not guarantee protection against all waterborne diseases – it does not kill protozoa such as Cryptosporidium. Under Napier City Council's current policy of trying to maintain a permanent "chlorine residual" in the network E.coli would be de-activated before most pathogens, which means that cryptosporidium would go undetected. This is what happened in a city of 750,000 people in Northern Ireland in 2015. 4. Another problem: The chlorine taken up by organic matter in the early part of the network can mean there is no remaining "residual" protection against E.coli for consumers further along the network. In December 2016 the Havelock North Water Inquiry ordered urgent re-commissioning of Brookvale Bore 3 using Log 5 chlorination [the highest level permitted for drinking water under NZDWS] in the mistaken belief that it would help provide protection all the way to the end of the pipe. The panel failed to understand that "chlorine residual" is just a theory and in practice it can lead to a false sense of security. Info from attachment submitted: We urge the council to carry out an independent investigation of the Christchurch model for supplying healthy, safe drinking water. The attached NCC Chlorination Review purports to be an objective assessment of Napier's ability to follow the Christchurch example and apply the Dutch model. It is not. It has merely revised last year's response to the 38 submissions in favour of chlorine-free water: "The capital cost to develop a water distribution network that is suitable to remove chlorine as a treatment methodology is likely to be in the billion dollar range and would take decades to implement." The billion dollar estimate has been revised down to roughly \$110 million with a potential rates increase of 22% in the March 2019 report. This is scare-mongering: the review overly exaggerates the contamination risks within Napier's distribution network and makes unsubstantiated claims regarding the effectiveness of chlorine. [#1 Supporting Documents] NCC would benefit from

460 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

an objective, independent review of the GHD Report to Christchurch City Council on Non-Chlorinated Case Studies dated July 2018 attached. In 2018 Christchurch City Council appointed GHD to collaborate with Royal HaskoningDHV in the Netherlands for expert support for its study on the feasibility of residual chlorine-free operation of the Christchurch water supply network. Page 15 of the GHD report deals with Management of Key Risk Areas within the Network and states that while risk management in the distribution network is important "serious water supply contamination events worldwide (including the Havelock North event, refer to Appendix D), indicates that source (e.g. well head) or storage infrastructure contamination appears to be more likely to cause severe disease outbreaks, than distribution network contamination." However the permanent chlorination of Napier's water supply is based on the premise that, while our source water is pristine, we need a "chlorine residual" in the network because the risk of contamination in the distribution network is "major". This appears to be an over-reaction to the Havelock North outbreak in 2016 and based on limited understanding of the cause of contamination of the two HDC bores in Brookvale Road. [#2 Supporting Documents] Christchurch City Council is following the Dutch model where chlorine is not used, not even as a "residual disinfectant" in the pipe network. In 1975 the discovery of toxic by-products from chlorinating water led the Dutch government to revolutionize their approach. Their prime concern was the health risks associated with chlorinated water supplies. [#3 Supporting Documents] Christchurch has budgeted approximately \$35million for their upgrade to enable supply of chlorine-free water. They expect that 98% of their network will be chlorine-free by the end of June 2019. In contrast Napier has budgeted \$20million – and what do we get for our money - a chlorinated water supply. Christchurch has 146 wells while Napier has 7 operational wells. We need an investigation of the Christchurch/Dutch model, carried out by independent experts with an open mind. Napier's bores have been thoroughly serviced and their "secure bore" status has been reinstated, making Napier's bores compliant for E.coli and Protozoa risk at the bore head. Council staff confirm that UV treatment is not required, which means we don't need expensive treatment plants and millions of dollars could be saved if Napier City follows Christchurch and goes chlorine-free. [#4 Supporting Documents] Why did Napier get chlorinated? There was no proof of any contamination: in May 2017 the current council started chlorinating Napier's water following the Havelock North gastro outbreak, even though council staff have since admitted that the two overly sensitive E.coli test results which triggered chlorination in Napier were "on the edge of detection". Email responses from council staff indicate to us

461 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

that in the last five years tests for E.coli have demonstrated no need for permanent chlorination of Napier's municipal supplies, but this is contradicted by claims made in the NCC Engineers Report, March 2019. [#5 Supporting Documents] Since May 2017 "Chlorine residual" disinfection has been promoted by NCC but it does not guarantee protection against all waterborne diseases – it does not kill protozoa such as Cryptosporidium. Under Napier City Council's current policy of trying to maintain a permanent "chlorine residual" in the network E.coli would be de-activated before most pathogens, which means that cryptosporidium would go undetected. This is what happened in a city of 700,000 people in Northern Ireland in 2015 where chlorine disinfection led to a false sense of security. Why is NCC continuing to rely on chlorine treatment when council engineers admit that it provides no protection against Protozoa such as Cryptosporidium? [Attached NCC Engineers Report and #6 Supporting Documents] Chlorination is mandatory in the UK, including Northern Ireland. But in 2015 chlorine failed to keep people safe from a serious outbreak of Cryptosporidium in a city in Northern Ireland. The crisis was managed by maintaining a BOIL WATER regime for five months while the source of contamination was identified and the problem solved. The incidence of waterborne diseases in the UK is five times higher than in the Netherlands where chlorine is not used, not even as a "residual disinfectant" in the pipe network. Their health authorities have rigorous monitoring for early warning signs of illness in the community. In 2016 it took six days for our DHB to notify HDC that there was a health crisis in the Havelock North community. Water engineers are aware that consumers are not getting consistent protection even against E.coli contamination because the chlorine taken up by organic matter in the early part of the network can mean there is no remaining "residual" protection against E.coli for consumers further along the network. The Dutch decided to stop using chlorine because of the harmful effects on human health. Chlorinated water : used for human consumption may contain mutagens and carcinogens generated during the disinfection process with chlorine
Reproductive Issues and Pregnancy Anomalies Harmful Impacts to Respiratory System and Skin Colorectal and Bladder Cancer: An association between water chlorination and the development of colorectal carcinoma is well established Weakening of the Immune System. Chlorine destroys most of the pathogenic bacteria, but also the beneficial gut bacteria, like acidophilus, a probiotic which helps building and maintaining friendly bacteria in your colon (70-80% of your immune cells operate from your digestive tract). [#3 Supporting Documents] Napier can and should return to the chlorine-free water supply we enjoyed prior to

462 / 463

Napier City Council Annual Plan 2019/2020 - Your Feedback

the 2016 Havelock North gastro outbreak. The 2016 outbreak in Havelock North was NOT caused by any failure in the distribution network. A chlorine residual in the pipe network would not have prevented 5,000 people from being poisoned in Havelock North. CONCLUSION Christchurch is following the Dutch system and will seek exemption if central government decides to make permanent chlorination mandatory throughout New Zealand. All of Napier's productive bores have "interim" secure bore certification from the Hawke's Bay DHB's Drinking Water Assessors. NCC could also seek exemption from mandatory chlorination - we draw from secure confined aquifers and our bores are well constructed. We urge the council to seek expert support to investigate the feasibility of following the Christchurch example.

Q8 Whakarire Revetment - What do you think of the way this work will be funded?

Respondent skipped this question

Q9 Provincial Growth Fund Projects - Do you have any thoughts on us making applications to this fund?

Respondent skipped this question

Q10 Do you have any other feedback?

Respondent skipped this question

Q11 If you have more to say or additional information please upload your file here.

GUARDIANS of the Aquifer - Pauline Doyle - Merged supporting Docs.pdf(8MB)