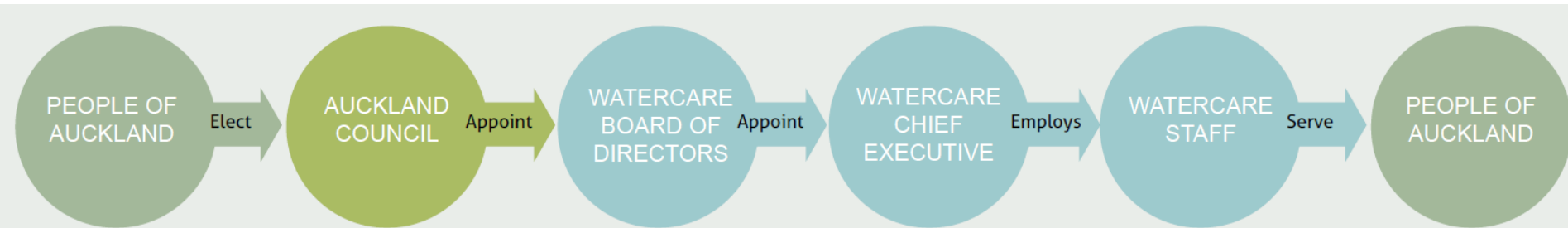


Developing Enterprise Risk Capability and the Challenge of Extreme Events

Raveen Jaduram
Chief Executive

Who we are

- Auckland's water and wastewater service provider
- Council-controlled organisation since 2010
- Serve 1.4 million Aucklanders
- Deliver 326 million litres of water daily
- Treat 400 million litres of wastewater daily
- 950 staff



Financial facts

MONEY IN



- 81% Customers (water and wastewater services, infrastructure growth charges)
- 18% New Borrowing (Net)
- 1% Other

MONEY OUT



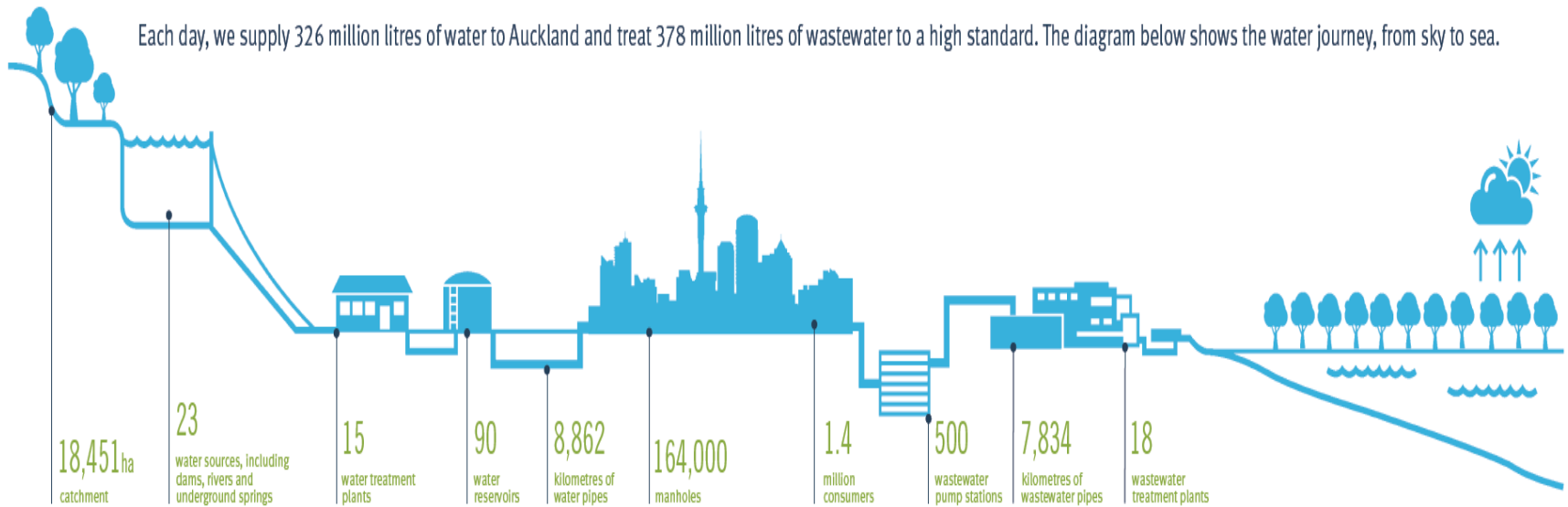
- 53% Capital Expenditure
- 32% Operating Expenses
- 15% Finance Costs



Overview of our assets and operations

From sky to sea

Each day, we supply 326 million litres of water to Auckland and treat 378 million litres of wastewater to a high standard. The diagram below shows the water journey, from sky to sea.



Wairoa dam



Wastewater treatment



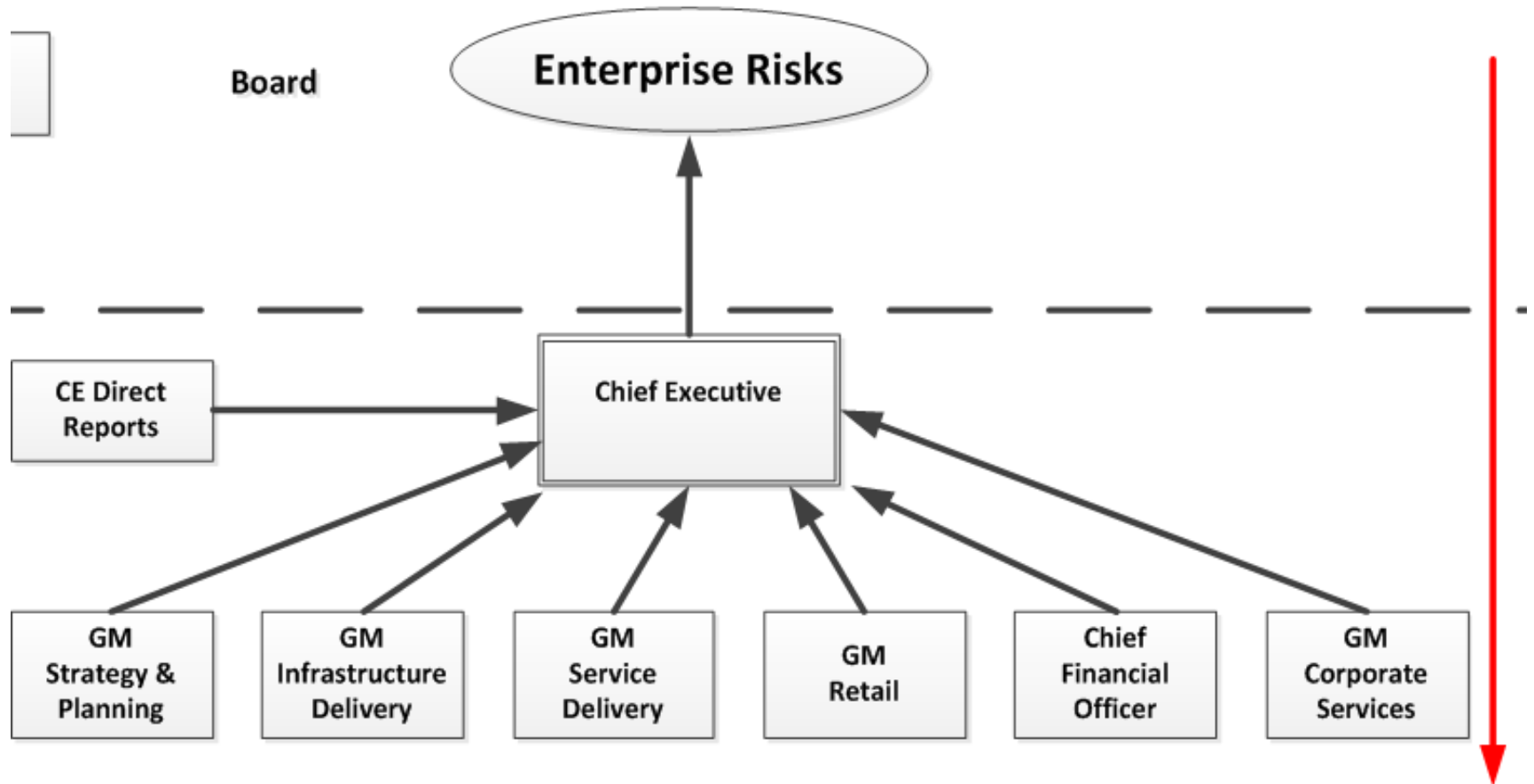
Infrastructure expansion



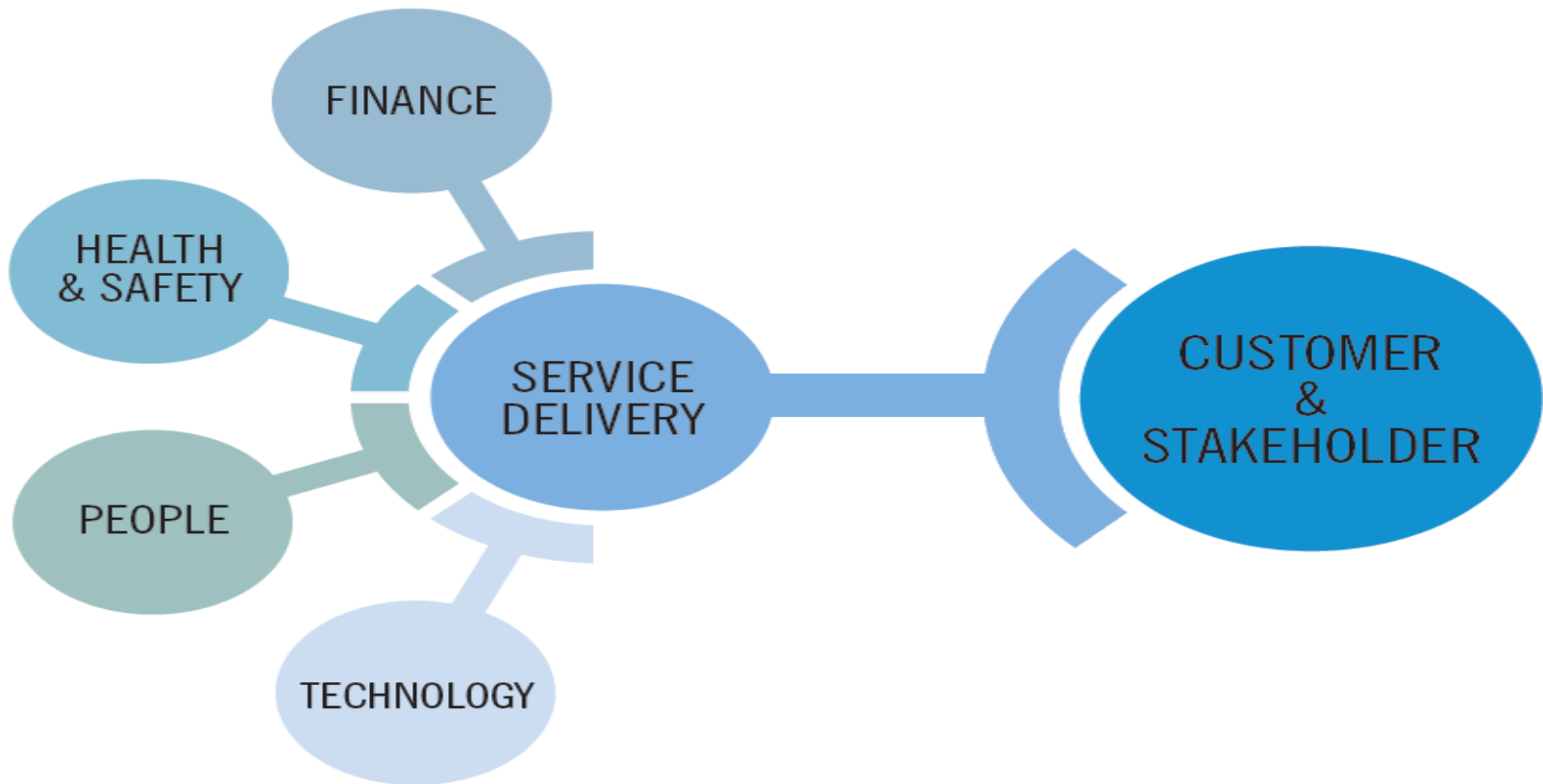
Enterprise risk management

- Enterprise risk policy
- Enterprise risk framework
- Business unit / GM risk registers
- Enterprise risks reported to the Board

Risk escalation



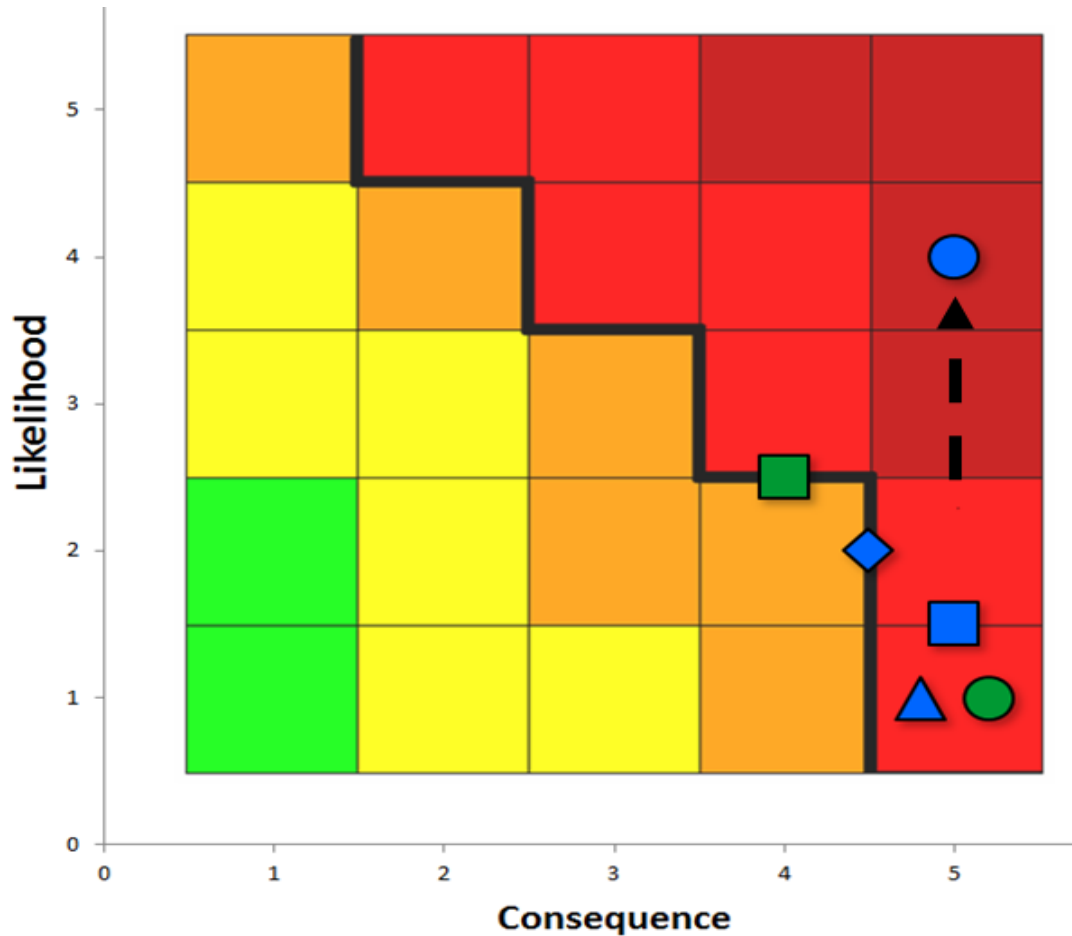
Strategic risk areas



Managing enterprise risks

- Clear risk descriptions
- Related controls identified
- Risks assessed with controls / mitigations
- Time assigned future mitigation actions
- Business continuity and contingency plans

Presentation of enterprise risks



The Challenge of Extreme Events

Aucklanders face largest water crisis in 23 years

Watercare urges Aucklanders to reduce water use in wake of torrential rain

Last updated 17:31, March 9 2017



CHRIS MCKEEN/FAIRFAX NZ

Watercare is calling for "voluntary savings following an extraordinary and unprecedented weather event in the Hunuas".

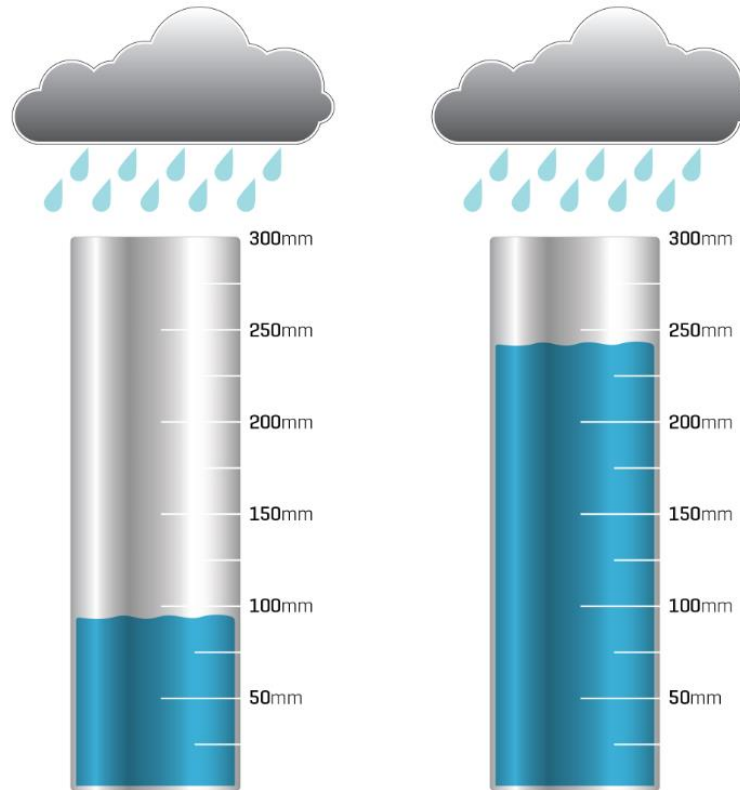
Water, water everywhere - and not a drop to drink.

Aucklanders are being urged to reduce their water consumption after torrential rain pummeled the region on Tuesday and Wednesday.

The Ardmore Water Treatment Plant - which is sourced from four water storage dams in the Hunua Ranges - is treating 50 per cent less water than usual in the wake of the wild weather.



Two months' rain in 12 Hours



During **Cyclone Bola**,
96mm of rain
fell in a 24-hour period

During the **Tasman Tempest**,
241mm of rain
fell in a 24-hour period



Slips put silt into dams



Looks like milo



More silt than water?



All Hunua dams impacted



Dams full and spilling?



Ardmore treatment capacity reduced



Turn this into this



Conventional resilience

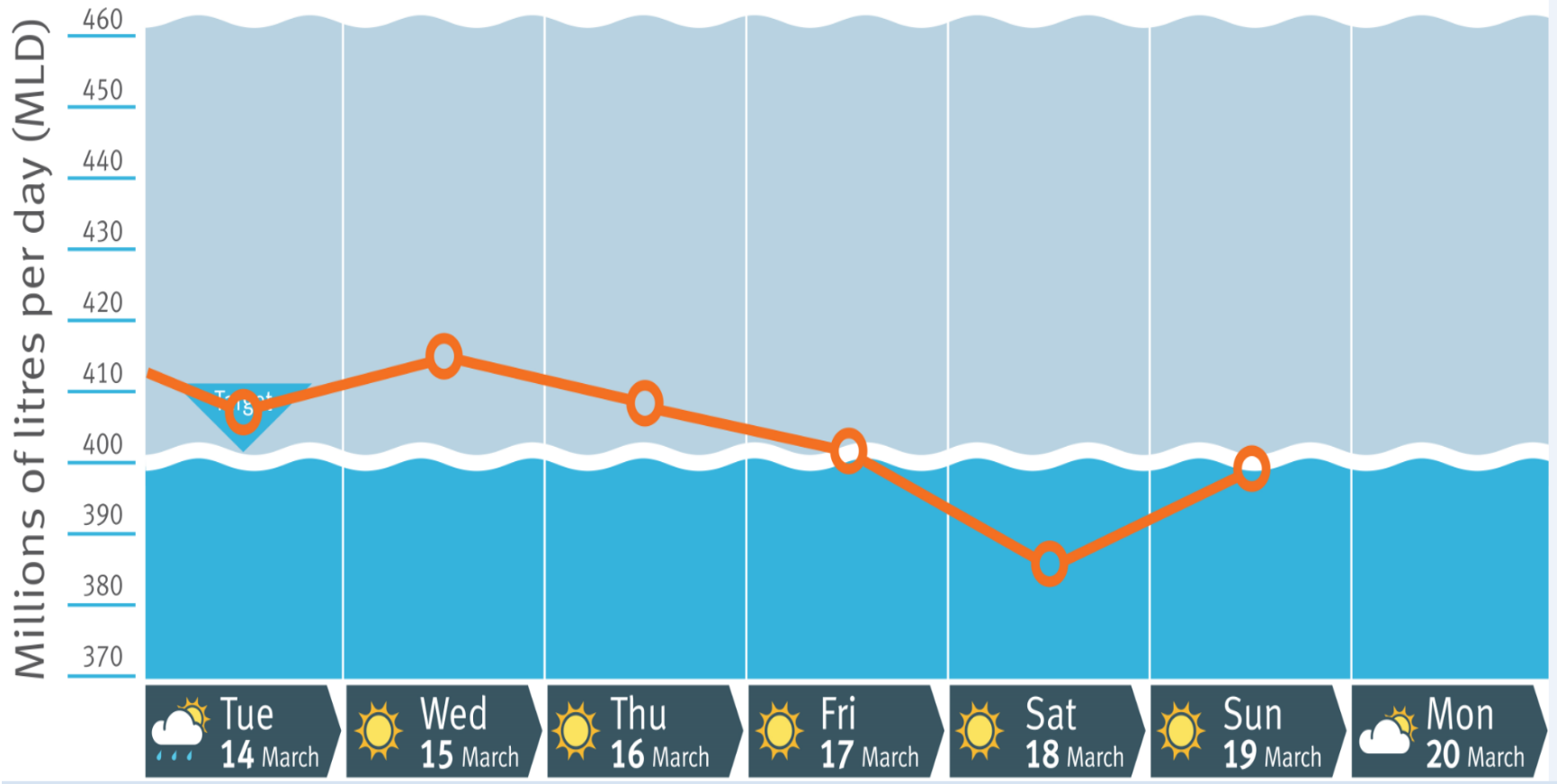
- Water treatment plants operating as planned
- Exceeding all design parameters
- Designed with significant contingency
- Operated by expert staff

The capability gap in extreme events

Normal Treatment Plant	Design	Expert	Extreme Event
Design Parameters	Contingency	Staff	Gap

Need 460MLD – available 400MLD

Auckland's total water use



Partially treated water

Boil Water Notice

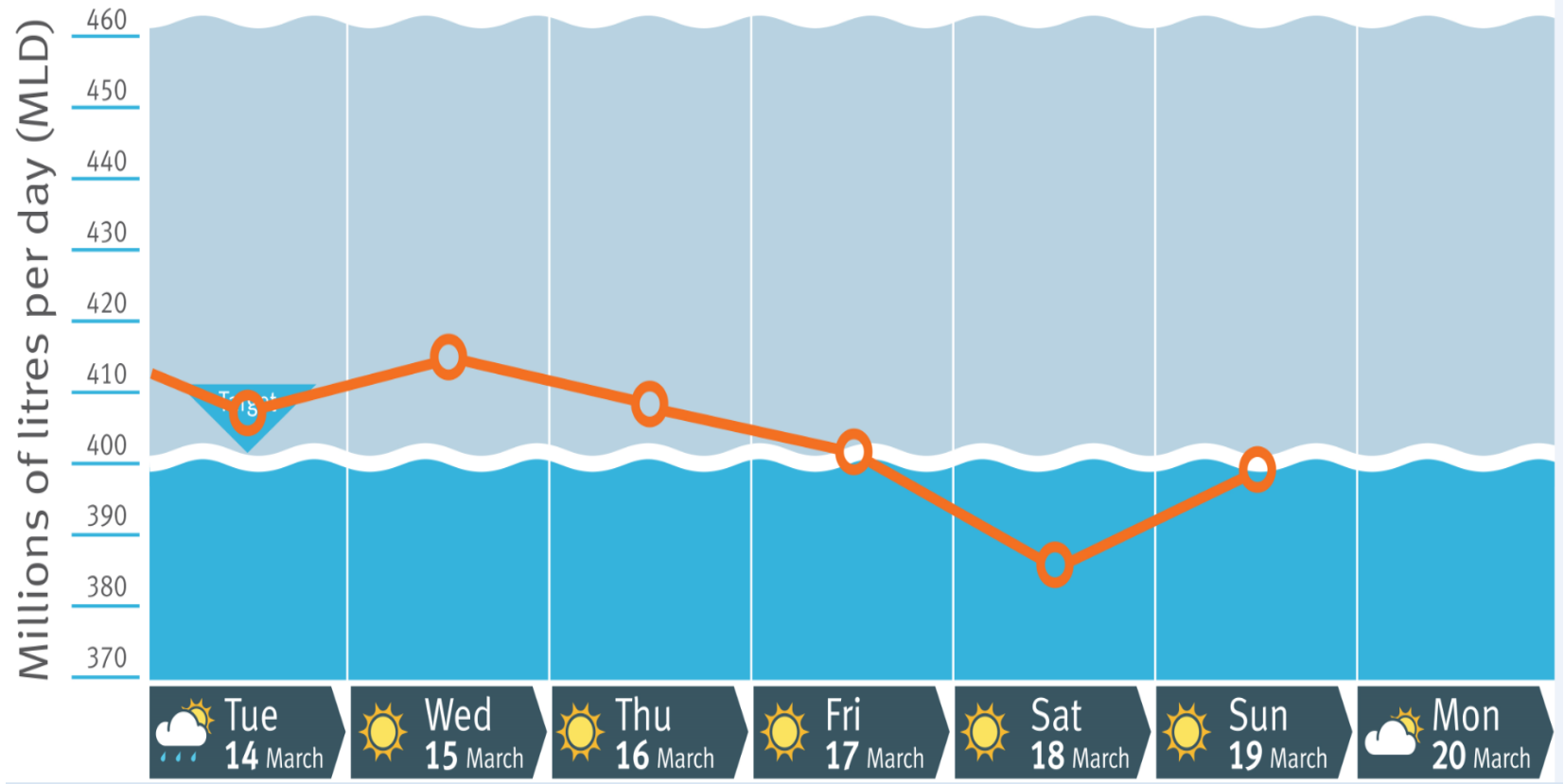
Personal and business impacts for all Aucklanders

Increase plant capacity

- More staff – 24-hour manning to nurse key water treatment plants
- Additional staff and other resources required – drawn from across the business
- Health and safety – ensure staff get food, drink and appropriate rest. Don't assume

Need 460MLD – available 400MLD

Auckland's total water use



Reduce residential consumption

'Save 20' campaign

Auckland.
It's important we
continue to reduce
water use.

Recent storms are impacting our water treatment plants. We need every Aucklander to continue to reduce their water use by 20 litres a day – which is about two buckets of water.



Cut your shower time
by 2 minutes.



Turn off the tap when
brushing your teeth
or shaving.



Only run dishwashers
and washing machines
when they're full.



Visit
watercare.co.nz
for more ways to
reduce your water use.

#Save20AKL to keep our water clean.

Watercare
An Auckland Council Organisation



Auckland.
It's important we continue
to reduce water use.

Recent storms are impacting our water treatment plants. We need every Aucklander to continue to reduce their water use by 20 litres a day – which is about two buckets of water.



Keep your
shower short.



Visit
watercare.co.nz
for more ways to
reduce your water use.

#Save20AKL

Watercare
An Auckland Council Organisation



Reduce commercial consumption

- Leverage relationships with major commercial water users
- Voluntary reduction is preferable to mandatory restrictions or partially treated water

Keep the public and media engaged



Auckland, it's important we
all continue to reduce water use.



Watercare
An Auckland Council Organisation



UK Met Office study findings 2017

- There is an increased risk of ‘unprecedented’ winter downpours
- High risk of record-breaking rainfall in England and Wales in the coming decade
- These events could break existing records by up to 30 per cent

When is the risk closed?

- Water in the dams is slowly improving
- Demand will increase from November 2017 onwards
- How common is a 1:200+ year (extreme) weather event

Questions