Is there a looming aggregate supply crisis in Auckland?

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Outline

1. Health & Safety
   - Ask the Second Question
2. Potential drivers of Auckland's shortage of aggregate
   - Quarry closures since 2001
   - Growth in Auckland's population
   - Aggregate facts
   - Infrastructure projects in Auckland
   - Forecast demands v forecast production - Auckland
   - Time and cost of obtaining consents to meet infrastructure needs
3. Solutions
   - Increase existing quarries' production ('Brownfields')
   - New quarries ('Greenfields')
   - Aggregates supply from out of the Auckland Region
4. Takeaways

Health & Safety

Ask the second question

Potential drivers contributing to Auckland's aggregate supply pressure

Auckland quarries today

Aggregate Production Capacity in Auckland 2022

Aggregate facts - Auckland

Aggregate is needed-

To maintain

- 7,452km of Roading[1]
- 7,137km of Footpaths[1]
- 325km of Cycleways[1]
- 540,000 Houses[2]
- 208,870 Workplaces[3]

To build[4]

- 14,000 tonnes for 1km of two-lane motorway
- 8,100 tonnes per 1km of aggregate and sand for infrastructure services underneath the road
- Aggregates make up 94% of asphalt and 80% of concrete
- An average house requires 250 tonnes
- Terrace housing requires 200 tonnes per unit
- Apartments require 46-51 tonnes per unit

Total demand is 9-10 tonnes per person per year [4]

1. Auckland at a Glance| AT |July 2019
2. Auckland Plan 2050|June 2018
3. NZ Statistics Department |Feb 2021
4. Aggregates & Quarries Assoc.|2022

Infrastructure projects in Auckland

Government announces $1.4 billion housing and infrastructure spend in Auckland

Auckland Airport to build a $1 billion domestic terminal

Auckland Council's $133 million plan to revitalise city's midtown unveiled

Government pumps $188m into drainage to accelerate Auckland housing projects

Funding boost to replace 50-year-old infrastructure at Auckland City Hospital

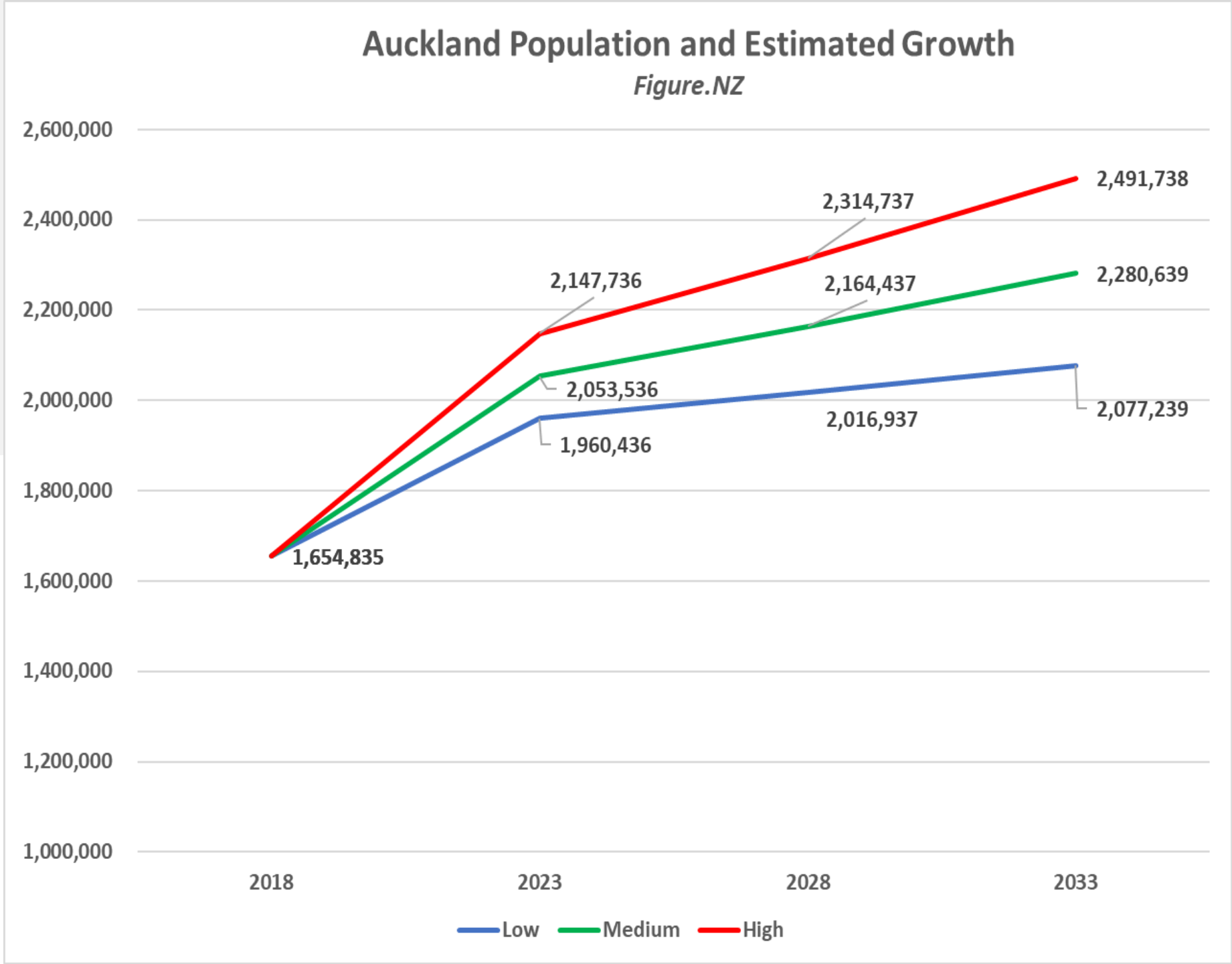
Auckland's Watercare reveals how it will spend $18.5b over the next two decades

30/07/2021 ... **Auckland** Council has signed off on its record $32 billion 10-year budget. It aims to support the city's recovery from the impacts of Covid-19 ...

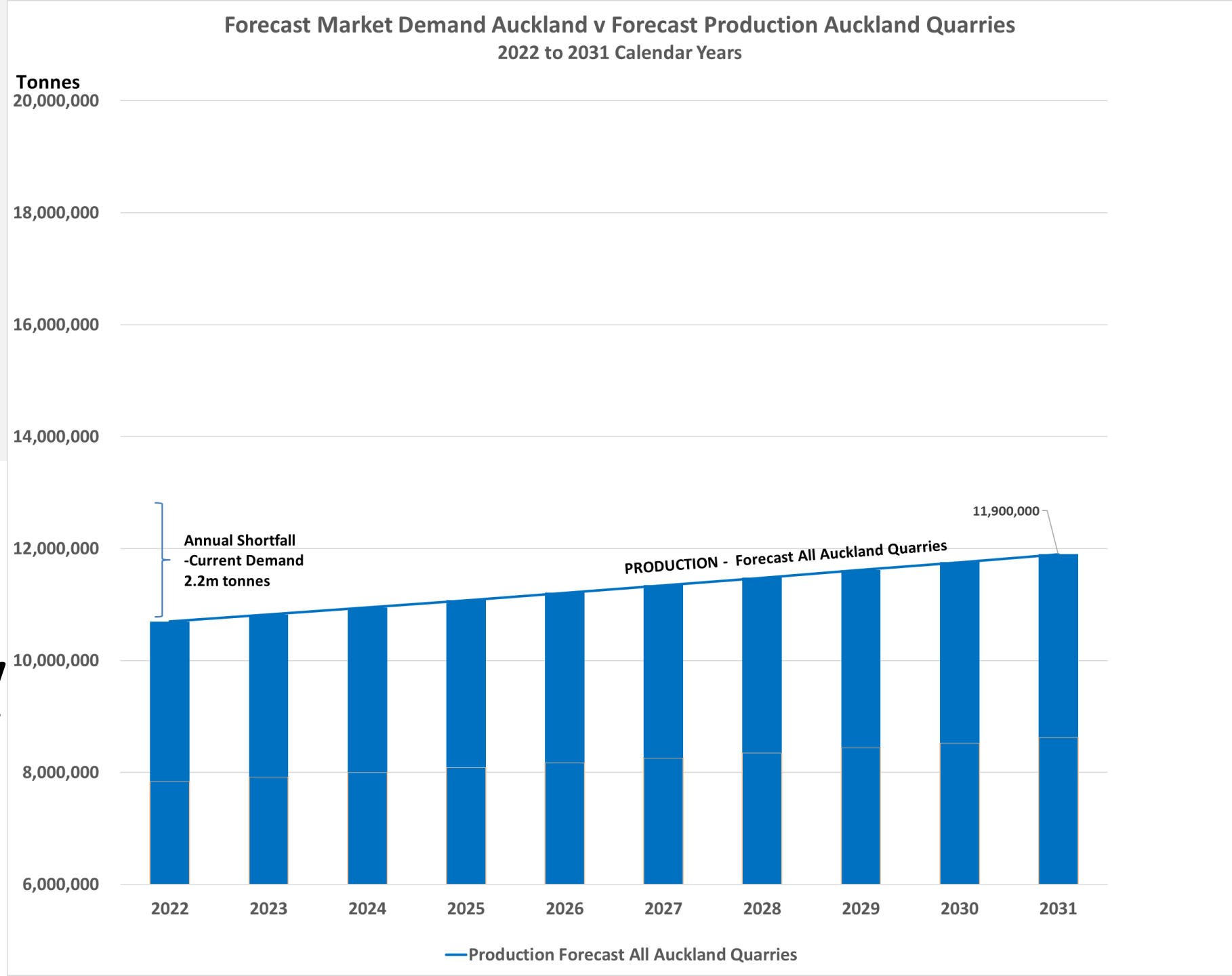
Auckland Transport Alignment Project $31.4 billion (2022-2031)

Auckland current & projected population

Source: Dept of Statistics data and forecasts



Auckland aggregate demand versus supply 2022 - 2031



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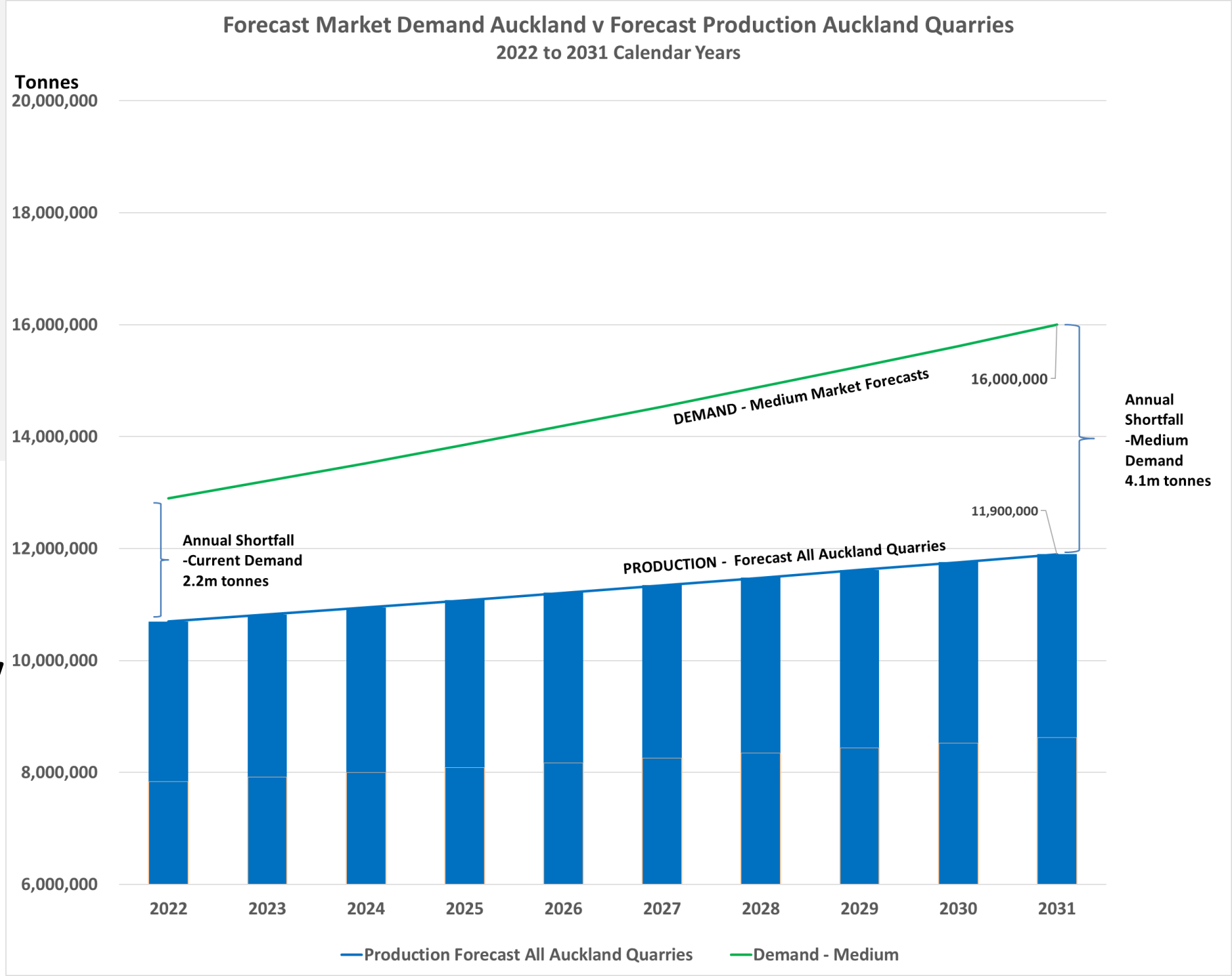

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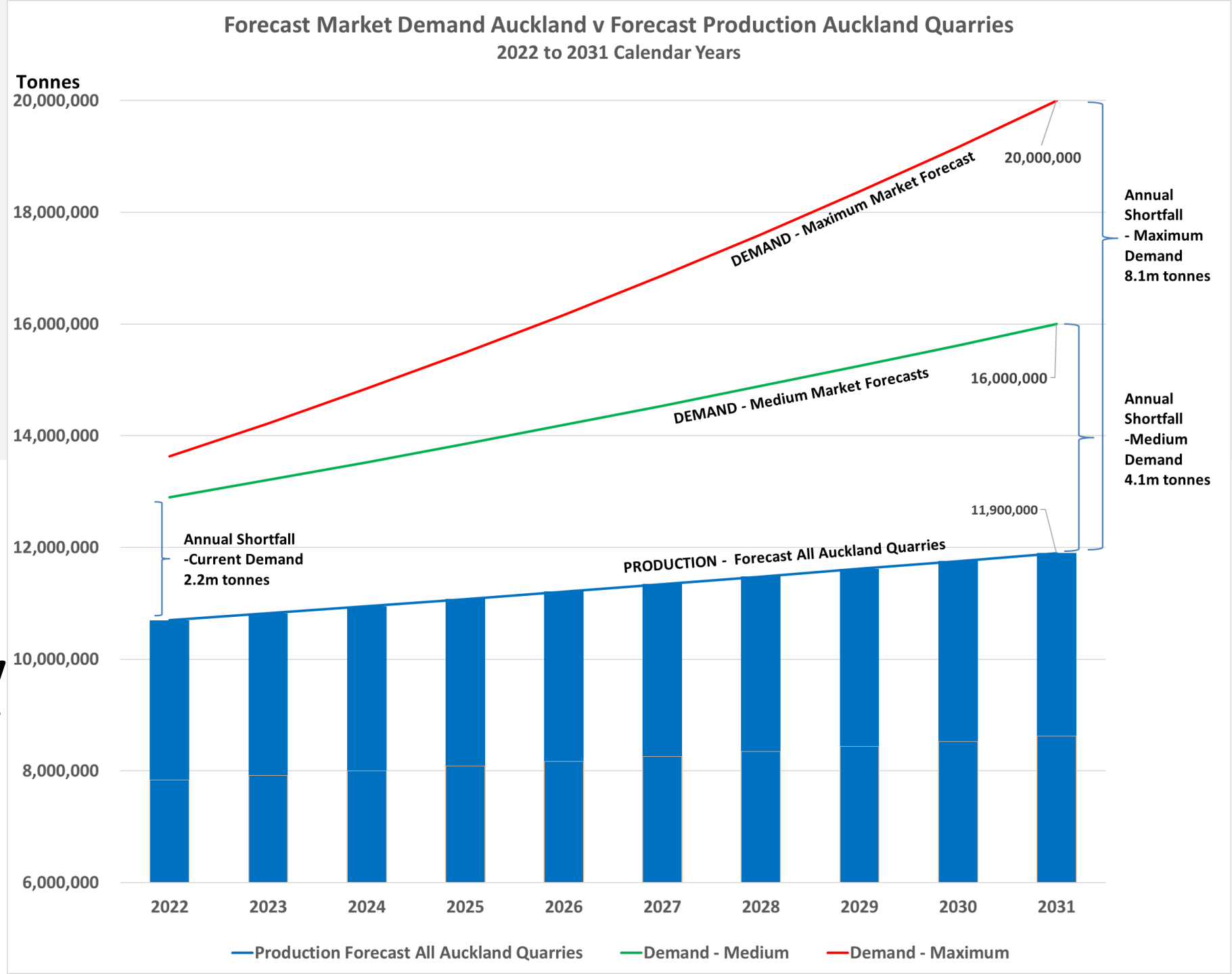

Rising cost of consenting

1. NZ infrastructure developers in total spend $1.29 billion each year getting projects consented.
2. Consenting becoming more complex and costly.
   - Costs increased by 70% since 2014
   - Average time for decisions for all consent applications has increased by 50% from 2014/2015 to 2021.
   - Infrastructure applications may have increased by as much as 150% over same period.
3. Significant indirect costs caused by-
   - Delay
   - Uncertainty of outcome
   - Costs of designing and redesigning to improve chances of favourable decision
4. Other issues
   - Lack of institutional knowledge in consenting authorities
   - Bias towards negative effects versus positive benefits
   - Consenting costs 10 to 15 times higher if require public or Environment Court hearing

Source: A report for the New Zealand Infrastructure Commission by Sapere, July 2021

Solutions

Increase production

Current mobile plant

Increase production

Current fixed plant, stockpiles, people

Increase production





Mobile Plant to double output


Increase production

Fixed plant, stockpiles, people to double output

Expansion of existing producers ('Brownfields')

1. Three major producers in Auckland account for 83% of annual production
   - Fletchers
   - Fulton Hogan
   - Kaipara Quarries
2. No shortage of aggregate resource to expand existing quarries
2. Timeframe to double production 3 - 5 years
3. Cost of doubling production
   - Capital $112 million
   - Additional annual operating costs $35 - $40 million
4. Challenges and risk to achieve increases in production
   - Obtaining additional mains power supply
   - Obtaining resource consents to expand
   - Additional stockpile capacity area/land available
   - Access for additional cleanfill (overburden disposal)
   - Availability of new plant – COVID production and shipping constraints
   - Achieving net environmental gain

'Greenfields' quarries

1. Identify potential resource
2. Obtain Crown Minerals Permit for exploration if applicable
3. Buy land or obtain access agreement with owner
4. Complete exploration
5. Undertake full feasibility study
6. Lodge resource consents
7. Obtain Crown Minerals Permit for mining if applicable
8. Commence project build, acquire equipment, employ people
9. Commission project
10. Time frame 10 years
11. Capital costs $250 million
12. Operating costs $70 - $80 million per year

Takeaways

1. Current production is 11.1 million tonnes per year
2. Auckland population could grow to about 2.5 million by 2033
3. Aggregate demand currently in Auckland equal to 9-10 tonnes per person per year
4. Auckland's aggregate use by 2033 could be between 20-25 million tonnes pa
5. 5.7 million tonnes capacity has already been lost to the market in the past two decades
6. Numerous infrastructure projects planned for Auckland with $85 billion in expenditure forecast over the next two decades
7. Time and costs of obtaining consents have ballooned out of control
8. Resource Management Act (To be repealed and replaced by 3 Acts)
9. Significant investment required for existing quarries to expand production in a brownfields project (3-5 years)
10. Greenfields quarries would take 10 years to come on stream with substantial capital investment required

Questions