

Constraints on Extractive Resource Development in the Gold Coast Region and Implications for Queensland

June 2018

Michael O'Flynn

Constraints on Extractive Resource Development Gold Coast City (and Implications for Queensland)

Overview of Gold Coast Extractive Resources

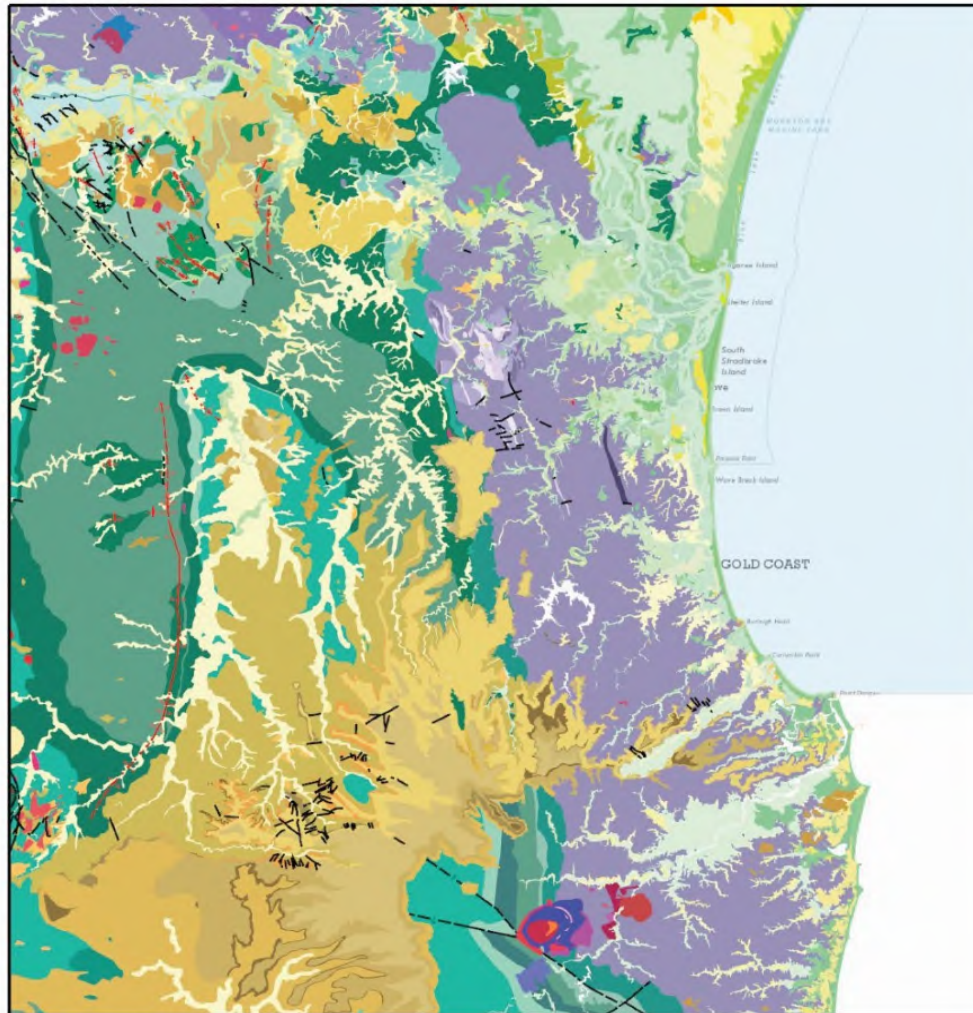
- **Geology/Resource Endowment**
- **Planning Context : Growth of Gold Coast /Per Capita Consumption**
- **History of Quarrying and Planning Policies**
- **Current Situation**
- **Future Supply and Constraints**
- **Community View**
- **Implications for Queensland Resource Sector**

Constraints on Extractive Resource Development in the Gold Coast Region (and Implications for Queensland)

Geology/ Resource Endowment

- Neranleigh Fernvale Beds
- Cainozoic/Quaternary estuarine, alluvial, and dune deposits
- Mesozoic Rocks (Woogaroo Subgroup etc)
- Tertiary Volcanics (minor)

Gold Coast Region Geology



MinesOnlineMaps

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 Selected Features

(see page 2 for a complete legend)

Scale 1 : 510,828

0 5.1 10.2 15.3 20.4
Kilometres

Geocentric Datum of Australia 1994 EPSG: 4283

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Constraints on Extractive Resource Development in the Gold Coast Region (and Implications for Queensland)

Hardrock Resources

- Meta-greywacke
- Quartzite
- Greenstone
- Basalt, rhyolite

Constraints on Extractive Resource Development in the Gold Coast Region (and Implications for Queensland)

Sand and Gravel

- Deposits of sand and gravel in some flood plains predominantly Coomera River
- Fine to medium sand in channel and flats of Logan, Albert, Coomera, Nerang, and Tweed Rivers and Currumbin Creek

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Fine Sand

- Large deposits of fine sand in estuarine, dune and alluvial flats

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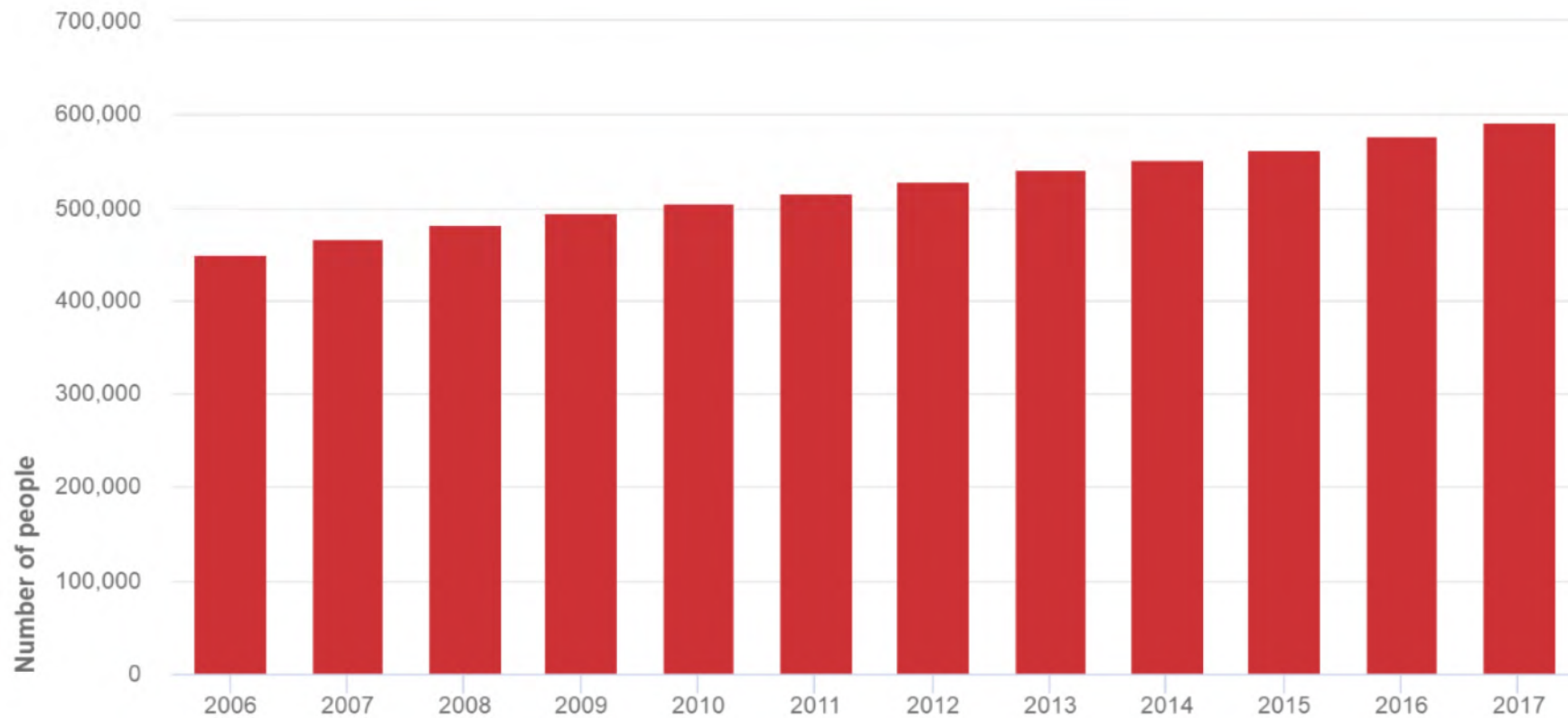
Planning Context -Growth of Gold Coast /Per Capita Consumption

- Growth in Gold Coast has been high since at least 1980s
 - 1981 - 135000 ; 2017 – 592000
 - 1981-1991 grew from 135000 – 226000
 - 1991-2001 387000
 - Last decade growth has slowed

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Estimated Resident Population (ERP)

Gold Coast City



Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0). Compiled and presented by .id the population experts

.id the population experts

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Planning Context Growth of Gold Coast /Per Capita Consumption

- What is the per capita consumption of aggregates ?
- Locally and internationally 10tonnes/ person/ annum
- Estimated GC in 1980s >20tpppa (unofficial)
- Lot of accommodation unoccupied ; infrastructure for tourists

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Planning Context Growth of Gold Coast /Per Capita Consumption

- Fragmented administration of extractive resources
- Responsibility for geological/resource planning, Resource Planning, Geological Survey of Queensland
- Provided input into Planning Schemes etc since the late 1960s
- Lead State agency responsible for investigating and protecting resources

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History of Quarrying and Planning Policies 1980s

- Transition to Hardrock Quarrying in 1980s in parallel with rapid growth
- New quarries applied for and approved in Albert Shire/Gold Coast
- Lot of resources recognised on Planning Schemes

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History of Quarrying and Planning Policies

1980s

- Extensive residential and rural residential development in southern Gold Coast City
- Planning Policy- new quarrying restricted northern Shire in the Darlington Range / Ormeau/Stapylton
- By late 1980s the viability of hauling 40km down the M1 was being questioned
- Need to retain local sources for the growth in the Gold Coast was being recognised

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History of Quarrying and Planning Policies

1990s

- Sources closer to Gold Coast were applied for (and rejected) ie Nerang - Springbrook
- An extension of West Burleigh quarries was recognised on Planning scheme
- Industry transition to manufactured sand for in-stream sources, Brisbane River, Coomera etc
- Importance of fine sand increased
- However, no large resources protected in GC

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History of Quarrying and Planning Policies
2000s

- State Planning Policy for Extractive Resources 2001-2007
- Key Element was Key Resource Area (KRA)
- 100 KRAs throughout the State protected

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Current Situation

Quarry Rock

- Diminishing sources of quarry rock conveniently located
- Major resource applications rejected Reedy Creek West Burleigh
- New quarry on Gold Coast now difficult

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Current Situation

Sand and Gravel

- Instream and alluvial resources depleted
- In-stream extraction largely phased out
- Coarse sand largely supplied from manufactured sands

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Current Situation

Sand

- Large deposits but scarce approval- available sources of sand
- Most sand in the islands estuaries and rivers unavailable for environmental reasons
- Grading of remainder is sub-optimal
- No large sand resources protected locally

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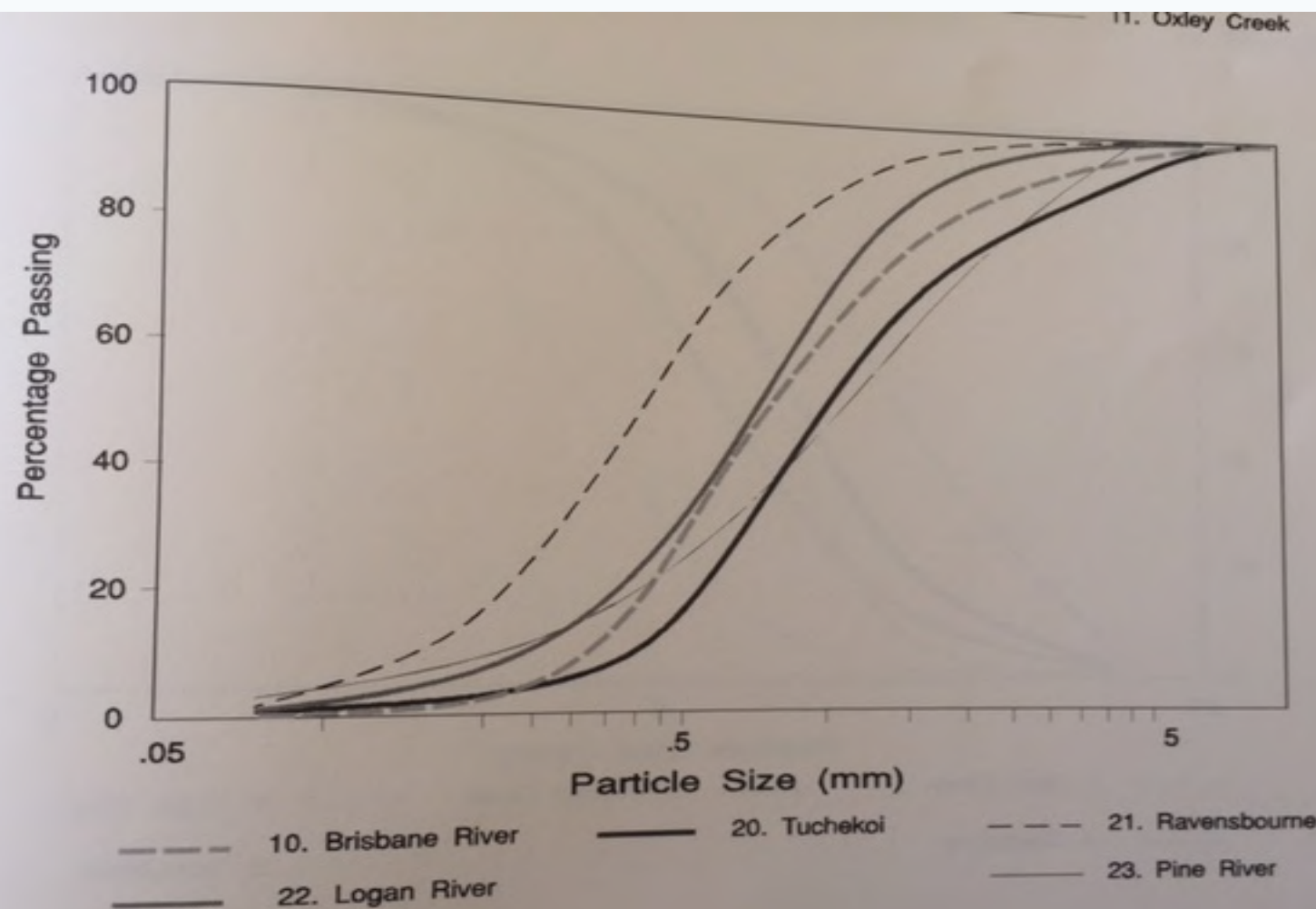


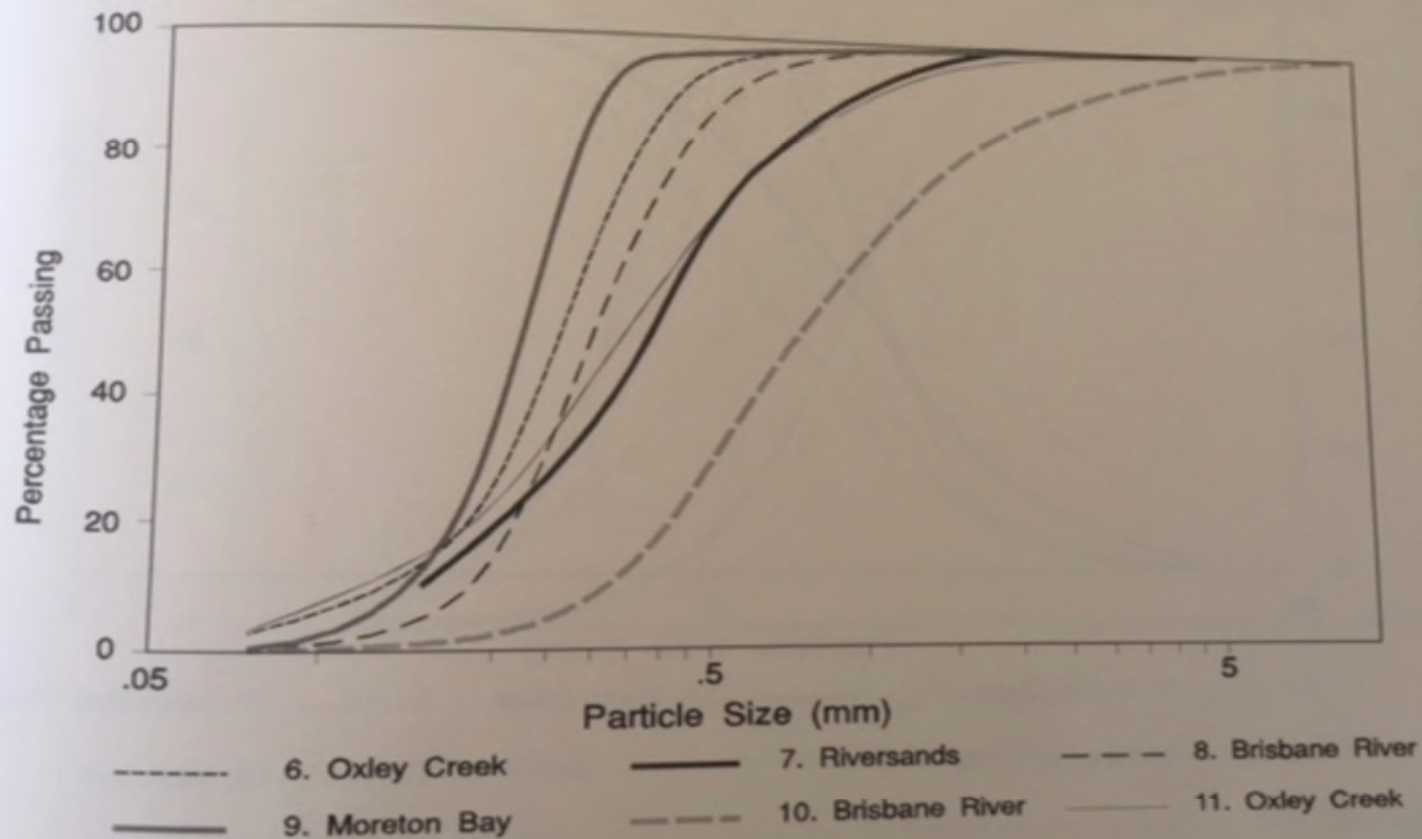
Figure 11:

Constraints on Extractive Resource Development in the Gold Coast Region (and Implications for Queensland)

EXTRACTIVE MATERIALS

99

Figures 10 - 14 Sieve Analyses, selected samples, % passing B.S. Sieve Equivalent



Constraints on Extractive Resource Development in the Gold Coast Region (and Implications for Queensland)

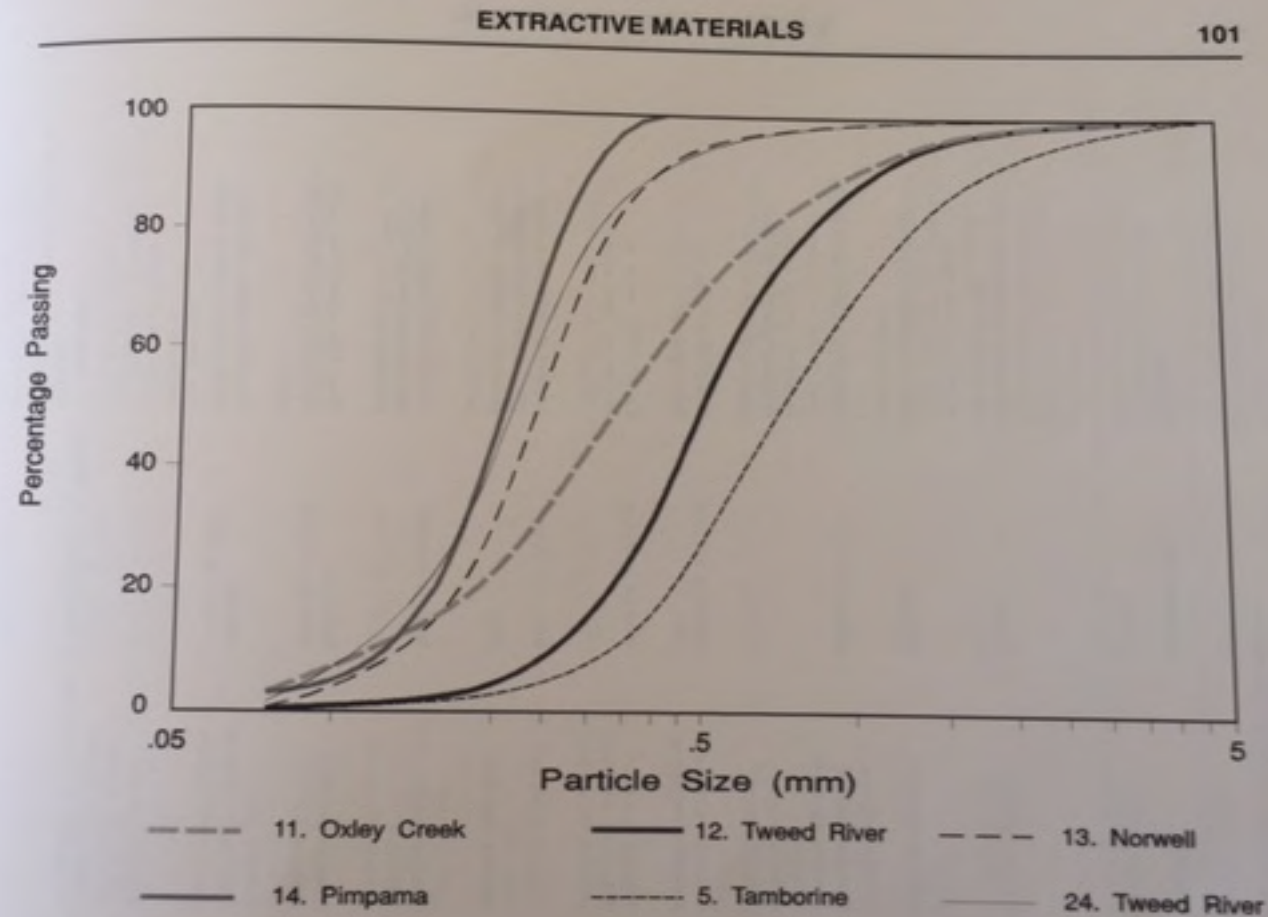


Figure 14:

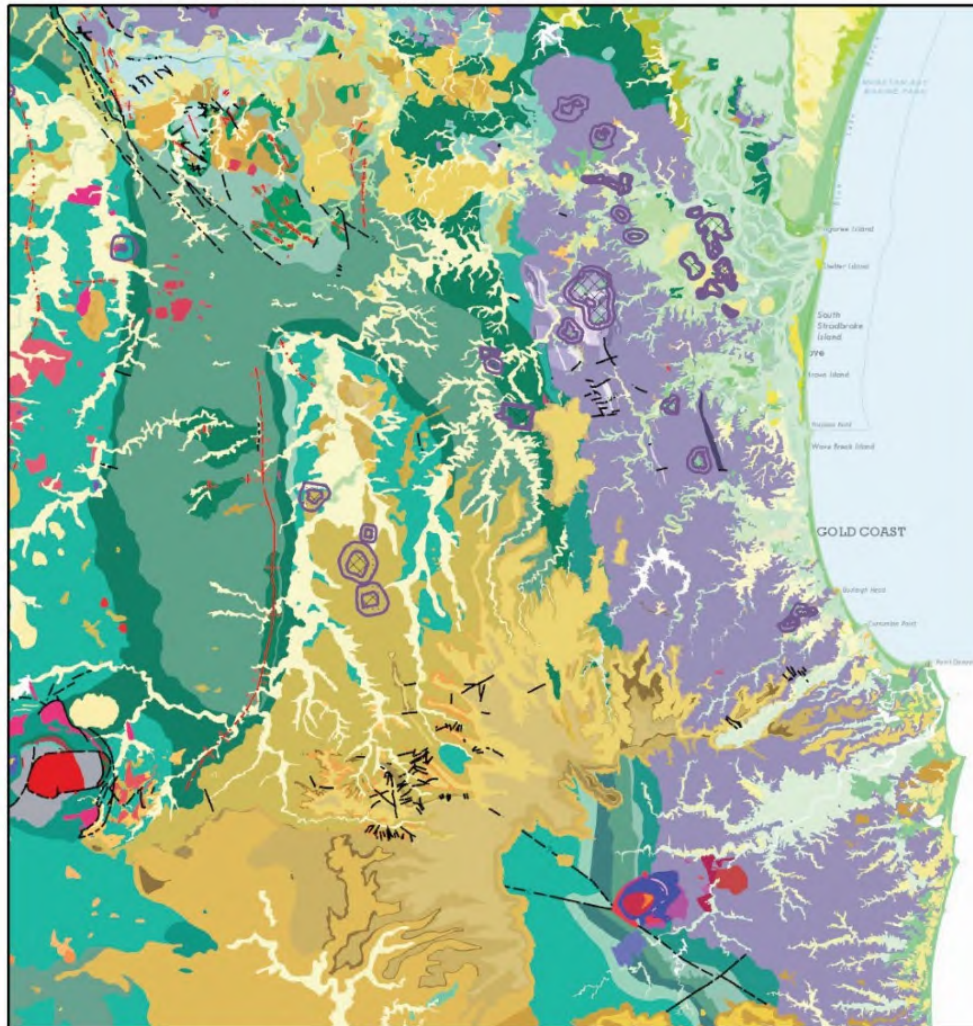
Constraints on Extractive Resource Development in the Gold Coast Region (and Implications for Queensland)

Current Situation

Closer resources hardrock

- Boral Reedy Creek is probably the last likely approval although recently rejected
- Hinze Dam catchment resources; background tenure and environmental
- Canungra Land Warefare Centre depending on ownership and availability

Gold Coast Region Geology and KRAs



MinesOnlineMaps

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Current Situation

Closer resources fine sand

- Small or short-term opportunistic operations (no long term security)
- Norwell Pimpama estuarine areas
- Tweed River and flats
- Issue is settlement is so close now

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Constraints

- Development, conservation areas land costs
- Community perception
- Councils risk unpopularity if they approve extractive operations near residents
- Invariably determined in expensive court appeals
- Community bears the cost eventually in private and public infrastructure and truck traffic

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More Distant Sources - Quarry Rock

- Large approved resources in Darlington Range (North and South)
- South of Ipswich-Boonah-Bromelton basalts, trachytes (range, new road)
- Kholo Creek /Mount Crosby long way and approval after 30 years uncertain
- Underground mining in Gold Coast? cost

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More Distant Sources – Fine Sand

- Large longterm source not obvious
- Free up constraints, islands or coastal plain, (Norwell)
- Moreton Bay dredging and channel maintenance and transport
- Meridan Plains, Caloundra (long haul)
- Tantitha Bundaberg barging operation; port infrastructure and competing land uses

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Community Views

- Can we achieve greater acceptance through education and public awareness
- Improved operating procedures
- Underground quarrying

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Community Views

- Insight into the attitude to mining proposals
- Economic and social benefits not understood or appreciated by the community
- Companies, lending institutions, banks, approval agencies all operate under extreme scrutiny

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Solutions

- More informed Community Attitude
- Representations to Local Members, Government;
- Development of Communication Strategy by Peak Bodies and Government;
- Media coverage
- Planning protection of resources in KRAs

Constraints on Extractive Resource Development in the Gold Coast Region (and Implications for Queensland)

Lead Agency

Resource Planning, Geological Survey of Queensland,
Department of Natural Resources and Mines

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Thank You