



QCoast 2100 Knowledge Sharing

# Moving on from the Townsville CHAS Pilot Study

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Townsville CHAS Pilot Study

# Project Partners

Joint project between

- Commonwealth Department of Climate Change and Energy Efficiency
- Queensland State Government
- Local Government Association of Queensland
- Townsville City Council
- GHD
- Griffith University



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## Townsville CHAS Pilot Study



## Project Overview

- Pilot study based on requirement under previous Qld Coastal Plan (Oct 2012)
- High level technical background study
  - Review impact of climate change on coastal hazards
  - Identify vulnerability and risk
  - Identify site specific adaptation options
  - Evaluate options
- Hazards considered included:
  - 1 in 100y Storm Tide event (0.8m sea level rise at 2100 & 10% intensification in cyclones)
  - Sea Level Rise (SLR) including (0.8m sea level rise at 2100)
  - Erosion Prone Areas
- Adaptation Options considered included:
  - Defend – Defend at all costs
  - Accommodate – Address SLR but not storm tide
  - Maintain Status Quo – Do nothing, community will move in time when impacts occur
  - Retreat – Managed withdrawal
- Broader outcomes
  - Compendium of Coastal Hazard Adaptation Options
  - Project Learnings Report

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## Townsville CHAS Pilot Study



## What it did not do

- Community engagement
- Assess storm tide events other the 1 in 100y event
- Uncertainty in sea level rise
  - Values beyond 2100
  - Range of projections
- Undertake local mapping for erosion prone areas
- Utilise surveyed floor levels
- Update asset management plans
- Identify emergency management measures



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## Moving On: Planning and Policy Response

# Townsville City Plan

## Coastal Hazard Response

- Commenced October 2014
- Coastal Protection Overlay
- Overlay mapping
  - 2100 Storm Tide
  - Erosion Prone Areas
  - 2100 Sea Level Rise
- No up-zoning in areas identified for retreat in CHAS
- Overlay Code
  - Defined Storm Tide Level
  - No intensification in Coastal Hazard areas
  - Response measures for Erosion Prone Areas
  - Response measures for Storm Tide Hazard
  - Inner City Area
    - Balance density push while addressing storm tide hazard
    - Stems from recommendation to Defend in CHAS
- Planning Scheme Policy to come



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## Moving on: Next Phases of CHAS

## Community Engagement

- TCC propose to engage an expert consultant to drive Community and Stakeholder engagement
- Communication and engagement plan to align with *Communication Guidelines for Coastal Hazard Adaptation* document prepared by LGAQ
- Key elements of engagement:
  - Hazard Awareness
  - Community Input Survey
  - Adaptation Option Engagement



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Moving on: Next Phases of CHAS

## Revised Hazard Mapping



- Assessment of non cyclonic contributions to storm tide
- A range of probabilities for hydrodynamic modelling of storm tide
- Additional climate change snapshots (intermediate, distant future)
- A review of erosion prone area mapping



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Moving on: Next Phases of CHAS

## Review Adaptation Options



- **Revised Risk Assessment**
  - Recently acquired floor level survey
  - Community Input Survey
  - Revised Hazard Assessment
  - Revised stage damage curves
- **Review adaptation options for localities**

### Considerations :

Level of immunity (AEP of measures)	Emergency management
Alignment of measures	Planning scheme implications
Estimates of quantities	Ongoing educational needs
Density uplift benefits	Individual responsibilities
Funding mechanisms and sources	Land swap programs
Operational considerations	Social implications

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Moving on: Next Phases of CHAS

# Review Adaptation Options

Continued



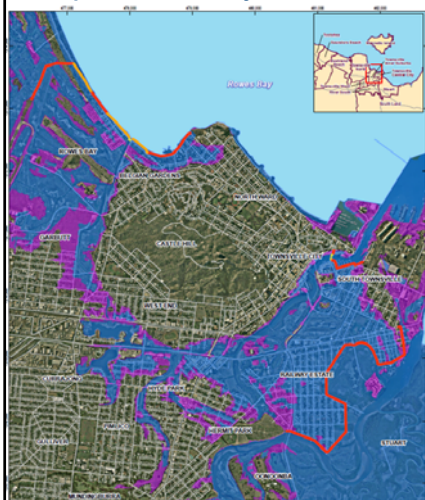
- Revised Multi-Criteria Analysis
- Revised Cost Benefit Assessment
- Identify actions for localities that align with adaptation measures:
  - Short Term
  - Medium Term
  - Long Term
  - Post- Disaster
- Identify relevant sea-level / coast-line recession triggers for localities

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Moving on: Next Phases of CHAS

# Townsville Inner Suburbs

Adaptation Feasibility Assessment



Warrants greater detail:

- Covers a substantial proportion of the City
- Defence measures in three key areas
- Planning scheme allows intensification in CBD

Propose a more detailed feasibility level assessment

- Revised hazards
- Revised risk assessment
- Option development
- Constraints and opportunities
- Concept design and costings
- Approvals
- Preferred option

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Moving on: Next Phases of CHAS

## Council Implementation



### Asset adaptation through updated Asset Management Plans

- succinctly communicate vulnerability and susceptibility of council assets with operational staff
- detail adaptation measures for specific asset ensuring alignment with locality adaptation pathways
- update asset management plans documents

### Coastal Hazards Adaptation Governance

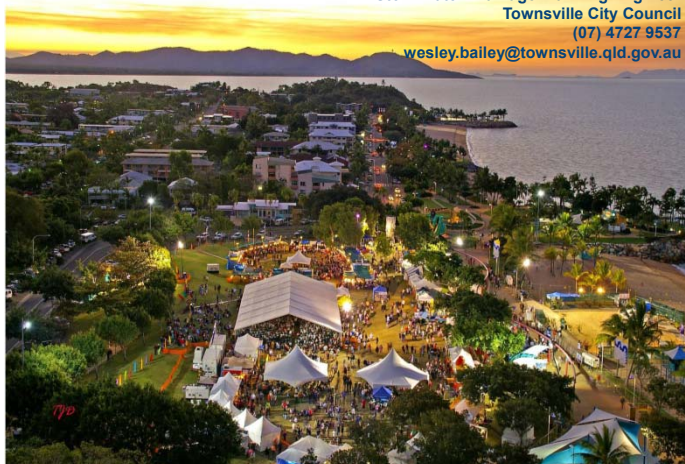
- corporate plan, strategic risk assessment, council policies and administrative directives to account for adaptation needs
- amendments for Townsville City Plan
- develop MoUs with Key delivery partnership landholders.

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## Questions



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