

The Infrastructure Planning Sustainability Framework and Criteria

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Blue Banded Bee



- *Amegilla cingulata*
- Buzz pollination
- 30% crops in SEQ

Overview of Presentation

- GCW projects
- What is the IPSFC
- Definition of sustainability
- Objective and methodology of IPSFC
- Diagram of IPSF & Criteria
- Learning's from trial and application
- Conclusion



The Gold Coast

- **Population to grow from 482,000 to 1.5 million (by 2056)**
- Growing at a rate of 14,000 persons per year
- 10.3 million tourists annually
- Area of 1,402 sq.km and **70 km of beaches**
- **Water consumption 145 ML/day to 466 ML/day 2056**
- Recycled water ~ 114 ML/day released, 14 ML/day reused
- Recycled water reuse by 2056 ~ 324 ML/day
- **Protection of water based lifestyle paramount**
- Changing community expectations & awareness in respect of sustainability



GCWs Sustainable Vision

- Sustainable Projects:
 - Gold Coast Waterfuture (GCWF) Strategy
 - Pimpama Coomera Waterfuture (PCWF) Master Plan
 - GCWF draft Recycled Water Strategy
- No consistency in method to assess sustainability
- Solution: develop an Infrastructure Planning Sustainability Framework and Criteria (IPSFC) for uniform inclusion of sustainability into all projects



Why develop/use a Sustainability Framework?

- Sustainability a key issue for government, industry and the community
- Diversification of water service measures
- Ensure a formalised, transparent and documented assessment process for options development
- Assist in including and measuring sustainability in a uniform manner



What is the IPSFC?

- A decision making tool to assist in determining sustainable solutions for water service planning
- A series of phases to assist in the development of options for a project with sustainable elements i.e. recycled water, water demand mgmt, reduction in pumping stations
- Uniform criteria for assessment of sustainability
- Phases loosely follow general project development/ management principles



Definition of Sustainability of IP GCW



The ability to maintain an improving quality of life for all people, both now and into the future, whilst ensuring the continued availability of the natural resources and ecosystem services essential to supporting life on earth.



Objective of IP Sustainability Framework

An overarching framework for the infrastructure planning of water services and products which, incorporates current and emerging sustainability principles, through the application of relevant assessment criteria, resulting in continuous improvement to protect and enhance our local and global environment now and in the future.



Development Methodology

- Rigorous development methodology involving:
 - International literature review
 - Sustainability gap analysis
 - Best practice benchmarking (e.g. WSAA, AGIC)
 - Peer review by independent international experts (>4)
 - Internal review process

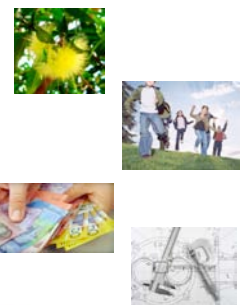


GCW Infrastructure Planning Sustainability Framework



Key Sustainability Themes & Primary Criteria.V1

Theme	Primary Criteria
Environmental	Resources
	Products and By-Products
	Ecology
	Hydrology and Hydrogeology
	Geology/Soils and Landuse
Social	Other
	Land Rights and Heritage
	Amenity
	Infrastructure and Public Facilities
Economic	Community Capacity Building
	Perception and Acceptance
	Health and Safety
Corporate	Other
	Whole of Life Cost
Technical	Cost to the Wider Community
	Other
Corporate	Advance Corporate Objectives
	Other
Technical	Operations and Maintenance
	Flexibility
Corporate	Other
	Other



Trial Application to date

- Application to:
 - Southport Infrastructure and Financial Strategy (SIFS)
- Partial Application to:
 - Merrimac (Streamline) Alliance (major wastewater main diversion)
 - CaSPA Alliance (major WWTP upgrade and construction of new WWTP)
 - WWTP in constrained environment



Purpose Trial Application

- Test IPSFC methodology
- Test uniform primary criteria
- Develop intent, definitions, measurements and scoring guides for sustainability criteria

Primary Criteria	Intent	Qualitative (Q1) /Quantitative (Q2)	Proposed Measures (indicators which are a proxy to measure each criteria)
Resources	Promote the efficient use of resources and the selection of the optimal types of resources by considering the impacts associated with resource consumption throughout the options life cycle	QUANTITATIVE	The consumption of potable water (quantity) per capita
Whole of Life Costs	Promote efficient financial investment taking into consideration all financial costs, potential sources of revenue, finance sources and constraints	QUANTITATIVE/ QUALITATIVE	NPV



Key Sustainability Themes & Primary Criteria.V2

Key Sustainability Themes	Standard Primary Sustainability Criteria
Economic	Whole of life cost (OPEX, financial sources & financial opportunities) Cost to wider community (current & future generations) Other (project specific criteria)
Environmental	Resources (efficient & optimal for water, energy, chemical & material use) Products & By-products - emissions to land (leachates, solid waste generation) Products & By-products - emissions to water (turbidity, discharge volume, quality) Products & By-products - emissions to air (GHGs, NOx, SOx) Ecology Hydrology & hydrogeology (groundwater) Geology/minerals & land use Other (project specific criteria)
Social	Land rights & heritage (land acquisition, direct & indirect impact of local residents and non-residential land, Aboriginal relics & sacred sites, historical heritage sites) Amenity (noise, odour & visual) Infrastructure & public facilities (transportation, footpaths, open spaces etc) Community capacity building (social employment, education & training, general awareness raising) Perception and acceptance Health & safety Other (project specific criteria)
Corporate	Corporate value Corporate image & legacy Level of governance Research initiatives Relationships with clients and regulators Other (project specific criteria)
Technical	Ability to achieve desired outcome Project delivery (implementation, accessibility, timeliness) Operations & maintenance (process capability, redundancy, maintenance & operational requirements) Flexibility (ability to stage/increase capacity/modify process & still meet project outcome) Other (project specific criteria)



Learning's from Trial Application

- **Primary criteria** – uniform approach seemed to work, weightings might eliminate the relevance of some, additions if necessary
- **Criteria weightings** – up front agreement/determination through survey & discussion at workshop
- **Sensitivity analysis** – importance for weightings to determine impact on final score/outcome
- **Culture** – supporting and implementing cultural change to implement new tools
- **User guide & summary doc** – to assist in understanding the process, how it differs from VfM, how to apply this method



How Stakeholders Responded

- 93.3% think that water services infrastructure should be assessed using sustainability principles
- Rated better or much better than the VfM & TBL approach
- Do the criteria adequately cover sustainability – 92.9% yes
- Completing weighting survey before workshop – 92.9% yes
- High support for summary report (88.9%), user guide (76.9%), group info sessions (72.7%)



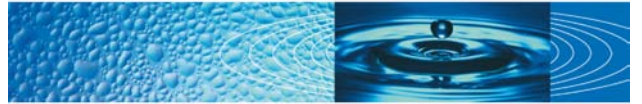
Conclusions & Recommendations

- Sustainability framework provides a decision making tool and platform for sustainable planning of water services
- Assists to formulate preferred options for projects with sustainability elements to diversify water services
- User guide and internal training workshops necessary
- Sustainability ambassadors and dedicated team to ensure IPSFC is applied and adhered to
- Platform for continuous improvement and support





Questions?



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