“Lessons Learned” from Clarence Valley Council’s ten year sewerage augmentation program

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Disclaimer:
The opinions expressed in this paper are the author’s and do not necessarily represent the views of Clarence Valley Council.
Presentation Outline

• Introduction
• Community Engagement
• Thoughts on design
• Procurement Strategy
• Early Tendering Involvement
• Some “lessons learned”
• Project recognition
About CVC:

- Formed by amalgamation of 4 General Purpose and 2 County Councils in 2004
- Population approx. 50,000
- At amalgamation 3 of the former Councils in planning stage of major sewerage augmentations
Scheme Descriptions

Grafton   Maclean   Lawrence   Townsend   Ilawrill   Junction   Hill

- Closing 7 small STPs
- New “greenfield” 8000EP STP, major augmentation of 2\textsuperscript{nd} STP and minor upgrading of 3\textsuperscript{rd} STP
- Associated transfer systems
- Sewering unsewered village of Lawrence (300 lots) with pressure sewerage
- 5 contract “packages” (STPs, 2 x Transfer Systems, River crossings, sewering village)
Scheme Descriptions (cont)

• **Iluka Sewerage Scheme**
  – Sewering largest unsewered town in NSW
  – Greenfields STP (5,800EP)
  – Pressure sewerage reticulation
  – Environmental release (ebb-tide)
  – 3 contract “packages” (STP, reticulation and transfer system, ebb-tide release)
Scheme Descriptions (cont)

- Yamba Sewerage Scheme
  - Major augmentation of existing STP from 7,800P to 16,200EP
  - Reticulation upgrades
  - New Environmental Release (ebb-tide release)
  - Two contract “packages” (STP and reticulation upgrade/ebb-tide release)
Community Engagement

- Sewerage projects take many years to progress from original concept to construction
- Adopted concept may need to change during design as more information is available
- Changing original concept can lead to community conflict
- Sustainable Future Australia’s *Dealing with our own Situation*™ (DWOOS) provided a model of collaborative public involvement which aims to give communities ownership of decisions
Dealing with our own Situation (DWOOS)

- DWOOS initially developed by Sustainable Futures Australia for Council’s Grafton, Iluka and Yamba sewer projects
- Key components of the DWOOS model are:
  - Establishment of a community consultative committee and consultative process
  - Communication strategy and “skilling” of committee
  - External facilitation
DWOOS Committee involvement in construction contracts:

• Used at Yamba & Iluka throughout project from concept development to construction
• DWOOS Committee representatives participated in contract evaluation meetings
• Gave representatives confidence that contractors were following approval requirements
• Representatives were able to provide Contractors early warning of potential issues
Thoughts on design

• STP and reticulation “packages” were detailed design with construct only contracts
• Many designers have limited construction or operational experience - operator involvement is crucial
• “Issued for Tender” designs contained numerous ambiguities which could have resulted in substantial variations
Thoughts on design (cont)

- Reviewing designs using RFIs from previous projects facilitated identification of ambiguities, which reduced variations.
- Iluka and Yamba projects had minimal RFIs.
Procurement

• Projects split into smaller specialist contracts
• “Construct only” where detailed design enabled detailed specification (STP & transfer systems)
• “Design and construct” for specialised work (ebb-tide release and pressure sewer reticulation)
• “Alliance” contracting not considered appropriate but consider similar benefits achieved through GC21 “Relationship” Contract system
Procurement (Cont)

• Early Tenderer Involvement (ETI) to maximise value for money while allocating project risks to party best able to manage it
• “Innovation” savings split 50% to each party
Early Tendering Involvement

- Enhanced contract documentation in which risk allocation is well understood by all parties
- Working relationships are established
- Active participation in process a factor in whether firms are invited to price project
- Appropriate risk allocation reduces tender prices as contractors not allowing for unknown risk
Early Tendering Involvement (cont)

• Yamba augmentation constructed $7 million (14%) below quantity surveyor pre-construction estimate
Key lessons learned:

• To maximise value:
  – risks need to be identified
  – responsibility for managing risk should be transferred to the party which is best able to manage it

• ETI process allows discussion about fair risk allocation

• All risks can be transferred to the Contractor, but this will be at significant cost to the Principal
Key lessons learned (cont):

• The Principal accepting some risks can reduce cost of project if risks do not eventuate
• GC21 facilitates relationship contracting
• Community participation in performance evaluation enables early issue resolution
• Using “team performance” criteria in contract evaluation ensures Contractor, Project Manager and Principal’s focus remains on partnership.
Key lessons learned (cont):

• Operational staff need to be involved in design (and regularly visit during construction)
• Biggest cause of RFIs (and variations) is lack of clarity in designs (e.g. pipe clashes)
• Cost of critically reviewing “issued for tender” designs (from someone who has construction experience) is much less than cost of managing variations!
Key lessons learned (cont):

- Project relationships are like any other relationships in life
- All projects involve individuals
- Every person has different strengths, weaknesses and attitudes
- How individuals involved in a project interact is the key factor
- Interaction determines RELATIONSHIPS
- Healthy relationships = smooth project
JH&GMLTI Project
JH&GMLTI Project (cont)
Iluka Project (STP Package)
Iluka Project (Ebb-tide)
Iluka Project (Community)
Yamba Project
Major Industry Awards

• Geoff Gorton (Public Works Project Manager) – AIPM National Project Manager of the Year (2009)
• Grafton-Maclean-Lawrence-Townsend-Ilarwill-Junction Hill project – Engineers Australia Newcastle Division Regional Award (2010)
• Iluka project – International Water Association – Asia-Pacific Winner and Global Honour Project Innovation Award in the “Planning” Category (2014) & Engineers Australia Newcastle Division Regional Award (2015)
• Yamba project – AWA NSW Branch Infrastructure Innovation Project Award (2017)
Those who cannot remember the past are condemned to repeat it
George Santayana (The Life of Reason)

Insanity: “doing the same thing over and over again and expecting different results”

(Atributed to Einstein)