Building our Regions

Submitted on 28/04/2017 15:24

Building our Regions

Round 3

Application - BoR R03 GLAD 0030 - Gladstone Waste Water Treatment Plant Stabilisation and

All Applications must be received by the department in full by **5pm, 7 April 2017.**

Please refer to the Building our Regions Program Guidelines when completing this form.

Please ensure all sections of this form are completed.

All figures in this form must exclude GST.

Following the assessment process, applicants will be notified in writing of the outcome of their submissions for funding.

Should you have any questions or require any assistance, please contact the Building our Regions program team on (07) 3452 7377 or 13 QGOV (13 74 68).

APPLICANT DETAILS

Council	Gladstone Regional Council

PROJECT DETAILS

Project title:	Gladstone Waste Water Treatment Plant Stabilisation and Dewatering â€“ Bio-solids for Beneficial Re-use
Project description:	There is an emerging opportunity in the Gladstone agricultural sector for increased use of bio-solids as fertiliser. However, the existing sludge handling system at Gladstone Waste Water Treatment Plant (GWWTP) requires upgrading to reduce the sludge handling time and increase dry solids content. In order to respond to the market for drier-bio-solids, Gladstone Regional Council (GRC) is seeking funding to urgently upgrade the current sludge handling practices to provide a safe and environmentally compliant means of treating and beneficially re-using bio-solids. This will allow for faster and more direct beneficial re-use to agriculture. Other benefits of the upgrade include savings from in handling time, transport and environmental benefits from lower stockpiling times and a significant reduction in runoff. This will contribute to the growth of an economic node in Gladstone, and open up the market for a product with an environmentally friendly approach to farm fertilisation.
Indicate which best describes the project:	Water/Sewerage/Waste Infrastructure
Is this Project:	Upgrade of Existing Infrastructure
Specify other infrastructure type:	

The following information is to be provided for Road projects:

Why was TIDS funding not allocated to this project? Why is the project still considered a priority for the region?	
Chainage:	
Road Classification:	
Crash History:	
AADT (% of Heavy Vehicles):	
Deficiencies:	
Future safety assessment:	
Other information:	

PROJECT CONTACT

Please provide a contact person from the council for correspondence and enquiries regarding this project and application for funding.

Title:	Mr				
First name:	Mark	Last name:	Holmes		
Position:	Acting Chief Executive Officer				
Phone:	07 4976 6902	Mobile:		Fax:	
Email:	markh@gladstone.qld.gov.au				
Project manager's name:	Daniel Mackin				

Other Contacts

Full Name	Position	Business Phone	Email
Anna Scott	Manager Water Services	07 4975 8458	AnnaS@gladstone.qld.gov.au

ESTIMATED PROJECT TIMEFRAME

Project start date:	01/07/2017	Project completion date:	18/12/2018
Construction commencement date:	19/03/2018		

To be eligible for Building our Regions funding, projects must be ready to commence construction by 30 April 2018.

Project Readiness

Please indicate which of the following documents have been attached as evidence that construction can be expected to commence during the required period.

Gantt chart showing the project's delivery:	Yes
Detailed project delivery/works schedule:	No

Please indicate if any additional documentation is attached to demonstrate the project's readiness.

Tender documents:	No
Professional designs (for tender or construction):	No
Other Documents:	Yes
Other (please specify):	- CH2M report - Councilâ€™s commitment to funding (letter and meeting minutes)

What stage has the project reached at the time of application:	Other

If the project is not ready to proceed to construction, please describe what action is being taken to ensure the project will be able to commence construction within the required timeframe:

The project feasibility and options study has been completed with the selection of a preferred design, and a functional specification for design and construct contract is currently underway. This is being completed by CH2M. Furthermore, Council has visited other water authorities in Queensland to aid with the selection process. The tender process, including the preparation of tender documentation, will commence once Council has analysed the report and findings provided by CH2M. To ensure construction is commenced and completed successfully, Council has made available the relevant staff to manage this project who have extensive experience in the delivery of infrastructure projects of this scale. These resources include mechanical and electrical engineers who will be available for technical and project progress oversight. The contract style Council is seeking to deliver project is a Design and Construct approach, which will fast track delivery.

PROJECT COSTINGS

Total estimated project cost (ex GST):	$7,609,000.00
Building our Regions funding sought (ex GST):	$3,043,600.00
Council's financial contribution (ex GST):	$4,565,400.00

Funding Category	Funding Contributor	Contribution Description	Amount (ex GST)	Funding Status	Funding Status Details

Total other funding contributions (ex GST):	$0.00

If financial contributions are not being made by other organisations, please describe any actions taken to attract financial contributions and any reasons why they are not available:

Council will fund the project with aid from Building our Regions as it is considered that this project has the potential to be a significant contributor to the Gladstone economy and addresses an emerging need and demand within the community. This project also meets eligibility criteria as outlined by Building our Regions.

Please detail any funding the Qld Govt has provided for any component of this project,incl earlier stages:

No previous funding has received or sought from external sources for this project.

Inkind Contributions

In-Kind Contribution Contributor	Contribution Description	Value (ex GST)	Funding Status	Status Details

Total in kind contributions: $ 0.00

Cost Breakdown

Cost Type	Cost Description	Building our Regions Funding Sought	Council Contribution	Other Funding Contributions	Total Cost
Building Escalation (if not included in quote)	Building Escalation	$0.00	$138,591.00	$0.00	$138,591.00
Construction Costs	Civil and Buildings	$600,000.00	$624,890.00	$0.00	$1,224,890.00
Construction Costs	Commissioning	$100,000.00	$178,872.00	$0.00	$278,872.00
Construction Costs	Electrical Instruments and Controls	$150,000.00	$188,286.00	$0.00	$338,286.00
Construction Costs	Installation of Piping	$150,000.00	$198,639.00	$0.00	$348,639.00
Construction Costs	Mechanical Works	$600,000.00	$704,000.00	$0.00	$1,304,000.00
Construction Costs	Structural Works	$30,000.00	$30,000.00	$0.00	$60,000.00
Contingency (allow max 15%)	Contingency	$443,600.00	$548,063.00	$0.00	$991,663.00
Other (please specify)	Overhead Cost - Corporate overhead cost and risk allocation	$0.00	$824,259.00	$0.00	$824,259.00
Other (please specify)	Project Management Fees - Dedicated Project manager, Site Mobilisation and Setup	$700,000.00	$795,000.00	$0.00	$1,495,000.00
Professional Fees	Design	$270,000.00	$334,800.00	$0.00	$604,800.00

How have the project costs been calculated or determined: The total indicative cost of the project has been identified and calculated by the options analysis and feasibility study completed by CH2M outlined in Attachment G.

PROJECT SITE DETAILS

Project Site Details

Street number/location name: 17

Street name: Albert Road

Town/suburb: CALLEMONDAH, QLD, 4680

Real Property description of the project site

Title Reference	Lot	County	Parish	Registered Plan
49010203	77	Clinton	Auckland	CTN2052

Latitude start	-23.844800	Latitude end	-23.844800
Longitude start	151.221500	Longitude end	-23.844800

State Electorates
Gladstone
Federal Electorates
Flynn

LAND OWNERSHIP

Who owns the land where the project will be located?	Queensland Govt
If Crown Land, please specify the agency responsible	Department of Natural Resources & Mines
If other, provide details	

If council does not own the land

(a) Does Council have control over the land? (e.g. crown reserve)	Yes

If yes please provide details and supporting documentation:

Reserve for Sewerage Treatment - Res13996

(b) Does Council intend to acquire ownership or control over the land? (e.g. purchase, lease, be granted an easement)	No

Please provide details and supporting documentation:

This is not required as the current and proposed infrastructure is consistent with the purpose of the land use.

(c) Has the owner approved the development on the proposed project site?	Yes

Please provide details and supporting documentation:

Not required as the proposed infrastructure is consistent with the purpose of the land.

Is there any third party interest in the land?	No

If yes please provide details and supporting documentation:

Are there any land issues (e.g. a road reserve, native title or strategic cropping land etc) that need to be addressed before construction can commence?	No

If yes please provide details and supporting documentation:

REGULATORY REQUIREMENTS

Please list all licences and/or development approvals required to deliver this project and indicate current status.

Licence Required / Development Approval Required	Regulatory Agency	Approval Status	Details
Building and Plumbing Permit	Gladstone Regional Council	Not Approved	Building and Plumbing permit required prior to commencing works. Based on experience, obtaining this approval will not pose any risks to project delivery timeframes due to short approval time of approximately 2 weeks.

RESPONSE TO CRITERIA

What is the critical need or opportunity to be addressed?

The response should explain what the need or opportunity is; who or what is or will be affected by it; whether it is a current need or opportunity or something that will occur in the future; and the potential consequences of not acting to address the need or opportunity.

This project will address 5 key needs including:

â€¢ A drier biosolid product to meet reuse demand

â€¢ Compliance with environmental reuse standards

â€¢ Compliance with environmental regulations

â€¢ Protection of effluent reuse markets

â€¢ Restrictions to growth

Existing customers have successfully trialled the current product as crop fertiliser, however they have advised that the product needs to be drier to be economically feasible (Att J - letter from local farmer).

The current plant does not efficiently produce a biosolid that meets the Department of Environment and Heritage Protection (EHP) standards for reuse, restricting Councilâ€™s capacity to utilise this material to generate revenue. At present, the biosolids need to be stockpiled on site for extended periods of time increasing the plantâ€™s operational expenditure, resulting in a decrease in the potential margins.

EHP has issued Council with a warning (Att H) relating to the current stockpile and sludge handling areas. Run-off from the stockpile and handling areas flows into the treated effluent lagoon and off-site. Current stockpile also results in negative impacts on community well-being and amenity through unpleasant odours.

Effluent from the plant is currently reused by industrial customers as it represents a low cost water source for industry. This industrial reuse avoids effluent being discharged into the lower Great Barrier Reef Marine Park. Current biosolid processes are impacting on the quality of effluent, thereby jeopardising reuse opportunities.

A process review undertaken by MWH (Att I,S6.3.11.1) identified that the existing sludge handling system is limited the plants ability to accept more wastewater. Without upgrading the sludge handling growth in the Gladstone area will be limited.

Council has commissioned specialist advice (Att G), which has confirmed that an upgrade is essential in achieving contemporary standards for efficiency, reliability, sustainability, public health and cost effectiveness.

How will the proposed project address or respond to the identified need or opportunity?

Describe howthe project will address or respond to the identified need or opportunity.

GRC has undertaken a review of the current facilityâ€™s equipment and operational practices using independent industry specialists. This review recommended upgrading the stabilisation, dewatering and load out facilities to provide a safe, efficient and environmentally compliant means of producing a biosolid product suitable for beneficial reuse.

The upgraded stabilisation facilities will produce a Grade B stabilised sludge which will meet EHP effluent reuse requirements. This will eliminate the need to stockpile the biosolids on-site for long periods of time (up to 12 months). The stabilised sludge will increase performance of the dewatering unit, producing drier biosolids.

The new dewatering facilities will enable a significantly drier biosolids product to be produced. Conservative estimates suggest that the solid content will increase from 15% to 20% for efficient transport and processing. This drier sludge will be suitable for direct load out to beneficial reuse customers, without the need for additional drying.

Removing the need to air dry on the ground and stockpiling the material on-site, GRC will minimise odours, increasing the local communityâ€™s wellbeing. In addition the potential for contaminating the valuable effluent will be eliminated. This will ensure effluent supply can be maintained to reuse customers and reduce impact on the lower Great Barrier Reef Marine Park.

The larger capacity dewatering unit will also remove current load restrictions on the wastewater treatment plant, allowing develop to continue within the Gladstone area.

The investment through the Building our Regions program will allow GRC to produce a final product suitable for use as agricultural or horticultural fertiliser, representing sustainable treatment of the resource and an initiative for offsetting GRCâ€™s operating costs â€“ this is not currently possible from the current site. The commercial potential of the new equipment enhances the value for money offered by the investment.

Why is this project the most appropriate way to address or respond to the need or opportunity?

Discuss howthe project was determined to be the most appropriate way to address the need or opportunity. Detail any specific considerations that were used in making the decision.

Council has based the solution on technical assessments from independent external specialists (CH2M) who have recommended the application of new technologies to replace the current approach in an environmentally sustainable and cost effective manner (Attachment G). The project is the optimum response to a range of policy, environmental, critical infrastructure and service delivery, commercial, sustainability, and community health drivers identified by the Council. It is consistent with best practice within the waste water management sector.

The preferred solution incorporates the digestion of primary sludge and waste activate sludge along with the technology of a centrifuge. This technology is commonly used within Australia to dewater bio-solids. This equipment operates by increasing the gravitational force that helps separation and dewatering of solids from liquid. Centrifuges are able to be used for both thickening and dewatering of solids. The project will allow Council to introduce efficiencies in waste water management which will minimise both resource intensive inputs and result in fewer adverse public health and amenity consequences for the community and Council staff at the facility.

The project is consistent with the objectives of the Stateâ€™s BioFutures Policy to develop a sustainable industrial biotechnology and bioproducts sector creating regional, high value and knowledge-intensive jobs. Through the completion of this project, the quality of the final bio-solid product will be increased. The equipment is able to be designed and commissioned to adhere to a set of standards and requirements to enable the final product to be sold to an external market. Through the sale of this product, additional revenue can be generated from this facility.

Furthermore, the use of the fertiliser will aid local farmersâ€™ agriculture to grow at expedited rates. Agriculture will yield greater dividends for the individual promoting growth and investment within the region.

Have other solutions been considered?

Yes

Please provide details of other options considered or explain why other options were not considered.

Identify the options considered. Explain why the proposed project was chosen and why the other options were not suitable. If other options were not considered, explain why.

Each of the options noted above draw on current or emerging technologies for the safe and sustainable treatment of waste and bio-solids were rigorously assessed before arriving at a recommended solution. Council established a formal process to assess the relative merits of these options to identify the most feasible option which can meet a range of criteria that Council, as the organisation responsible for this critical community service, must balance.

Given the importance of the decision, Council has sought to incorporate value for money (cost and affordability against benefits and risk) with the need to guarantee supply and public health outcomes. As demonstrated through the MCA (Attachment G), the proposed project technology represents the optimal solution across the range of financial and non-financial criteria including minimising impacts on Council staff, securing the future water supply, reducing significant inefficiencies, cost and health and community risk.

There are potentially negative and compounding consequences if the project need is not addressed in the short term, as the machinery is approaching the end of its useful life:

â€¢ The status quo option is not feasible against any of the criteria as there is high risk and only marginal benefit in attempting to maintain or improve the current equipment given its age and condition

â€¢ Each of the new equipment options has individual technical merit however, the combination of primary sludge and waste activated sludge with a centrifuge dewatering system identified as the most appropriate technical and value for money solution

Of the four options, the recommended solution best provides Council an opportunity to review bio-solids management practices in order to provide a better, more reliable and optimised solution for solids handling at the plant. Council has determined that the solution can be implemented within the timeframes driven by the need to respond to the current issues.

Value for money assessment

A Cost Benefit Analysis is required for this application	Yes
A Benefits Assessment is required for this application	Yes

How many direct jobs will be supported during construction, and for how long?

Provide an estimate of the number of Full Time Equivalent (FTE) positions directly supported by the construction phase

51

What assumptions have been used to identify the number of direct jobs supported by the construction phase?

Provide details of assumptions and source of information used to estimate direct jobs supported by construction phase. Identify the duration of employment in days or months

The FTEs identified have been based on factors drawn from Queensland Treasuryâ€™s Office of Economics and Statistical Research. This office has produced data for the employment supported by final demand for construction services. The employment ratios developed by Queensland Treasury, adjusted for both price and labour productivity changes indicate the projected employment per $1 million output FTE jobs is 6.7 employees. This number has been multiplied by $7.609 million (the projected construction cost of the project) to give the total FTE persons to be approximately 51.

How many direct jobs (if any) will be supported by project facilities on an on-going basis?

Provide an estimate of the number of Full Time Equivalent (FTE) positions that will be directly supported as a result of the project on an ongoing basis

3

What assumptions have been used to identify the number of direct jobs that will be supported by the project on an ongoing basis?

Provide details of assumptions and source of information used to estimate direct jobs supported by project facilities as a result of the project

Council has assumed that staffing levels at the GWWTP will not increase after the project is completed. In regard to benefits from the availability of quality bio-solids, Council has previously provided bio-solids to agricultural producers and the anticipated benefits are based on consultation about output with these producers.

Project Delivery and Management

How is the Council planning to deliver the project? (e.g. council staff, building contractor etc.)

Identify if council will project manage and construct the project or outsource any or all components of the project. Explain howcouncil will ensure appropriate technical expertise is available?

Council will utilise internal resources that have both extensive technical knowledge and experience with project delivery and management as reflected in the CVs provided with this submission (Attachment F). Councilâ€™s project delivery history and internal resources has allowed Council to establish a clear approach to project delivery and to ensure that deliverables are met within scheduled timeframes and budget. This will include the appointment of a dedicated project manager and engineer to oversee the implementation, and a schedule of activities to provide certainty and clarity in tasks. The dedicated projects officers will be supported by Councilâ€™s Contract and Procurement Team, Water Services operating and maintenance teams, and external resources. Council will prepare and release tender packages for the project to seek external support. In evaluating tenders, Council will be looking for contractors with proven capabilities and history the successful delivery of projects that reflect a similar size and complexity. The balance of internal and external resources will result in committed resources with a balanced skillset that can effectively deliver the project and achieve value-for-money.

Please explain how council will fund the ongoing (whole-of-life) operation, maintenance and replacement costs of the infrastructure?

Applicants are responsible for the ongoing costs and maintenance of the project. Detail how council will fund the whole-of-life costs of the project

Council is committed to the ongoing maintenance of the project as per the General Meeting Minutes 21 February 2017 (included within the Project Plan provided with this submission). On page 1 of that document â€œCouncil affirms its commitment to meeting the relevant operating and maintenance costs of the facilities once completedâ€. Funding of this operation will be gained through ratepayers and distributed to each division. Council has a dedicated team of staff responsible for the upkeep and maintenance of assets within each region; allowing for specialist technical ability to be applied for maintaining assets. The Water Services â€“ Urban Sewerage (Gladstone) â€“ Business Unit 229 will be responsible for the maintenance of this facility. Funding is provided each year to the business units for ongoing operational and maintenance costs. The maintenance of the asset is reflected in the Asset Management Plan, (included within the Project Plan provided with this submission), which incorporates routine and targeted assessments of the asset.

Please provide any further information to support the application.

Include any other information Council considers relevant in support of the application that has not been captured elsewhere in the application or supporting documents

To support the submission, Council would like to highlight the statements of support for this project, from the Department of Agriculture and Fisheries indicating their previous involvement and support for these projects to improve farm productivity and enhance water quality in the Great Barrier Reef. State Member for Gladstone Mr Glenn Butcher MP supports this development to generate local jobs along with the development of technical industry knowledge with the opportunity to deliver growth for

employment. Federal Member for Flynn Mr Ken Oâ€™Dowd promotes the use of this bio-product to generate additional revenue for council along with wider economic and environmental benefits within the Gladstone Region. Mr Peter Durkin, a current user of the bio-solids product as an agricultural fertiliser. These documents are included as Appendix E within the Project Plan provided with this submission.

Please provide relevant details on key personnel below and attach copies of CVs.

Full Name	Date of Birth	Project Role	Key Skills
Ratnam (Mani) Manivasagan	17/12/1952	Senior Project Engineer	â€¢ Project management and quality control â€¢ Design of minor works â€¢ Supervision of construction and maintenance projects â€¢ Practical understanding of mechanical and electrical components in the water industry â€¢ Liaising with Council Stakeholders, consultants and contractors in preparing tender documents
Anna Scott	14/06/1972	Manager Water Services	â€¢ Leadership in water and environment management â€¢ In depth knowledge of water and wastewater treatment â€¢ Delivery of value for money for clients and customers â€¢ Experience in project manager from design, asset owner and contractor perspectives â€¢ Promotion of sustainability performance to drive innovation and change
Daniel Mackin	07/09/1983	Project Manager & Superintendent	â€¢ Project management and quality control â€¢ Cost Control and scheduling â€¢ Supervision of construction and maintenance projects â€¢ Practical understanding of structural, piping and mechanical engineering â€¢ Liaising with Council stakeholders, consultants and contractors in preparing tender documents and execution of the same
Jessica Dennien	18/05/1993	Design Engineer	â€¢ Project Management and Quality Control â€¢ Design Estimating â€¢ Management and Supervision of Civil Design Projects â€¢ Comprehensive knowledge of Civil and Public Works Engineering â€¢ Design of transport, storm water and sewer projects

APPLICATION DOCUMENTS

Mandatory attachments

Copy of a Council Resolution indicating that the local government: Yes

- supports submission of the detailed application - please ensure the project name is included
- is committed to delivering the project and approves any applicant financial and/or in-kind contributions; and
- is committed to the management and costs associated with the ongoing operation and maintenance of the infrastructure

Project Gantt Chart or Detailed Delivery/Works Schedule showing timeframes for all project stages up to and including project completion	Yes
If applicable: Letters from other contributors confirming financial or in-kind contributions	No
Detailed Project Plan (refer to template)	Yes
Project Cash Flow (refer to template)	Yes
Cost Benefit Analysis or Benefits Assessment (one required based on total project cost - refer to templates)	Yes
CVs for all key project personnel identified in the application	Yes

Additional / Optional attachments

Additional documentation supporting project readiness such as professional designs ('for tender' or 'for construction'), tender documents, etc	Yes
Mapping files - for GIS spatial mapping purposes, please attach either an ESRI Shape File or MapInfo Tab File for this project site if available - please attach ALL file layers	No
If building on land not owned or controlled by local government: supporting documentation demonstrating the current status of negotiations with the land owner	No
If the local government will not own, operate and maintain the infrastructure: supporting documentation demonstrating the current status of negotiations with the proposed owner/operator	No
Copies of all supporting documents referred to and relied on as evidence in the application form (unless web addresses/hyperlinks have been provided in the relevant response field)	No