7 Adjourned Items - Nil
10 Confidential Items

10.1 Coastal Walkway Gullies Report for Construction	
Report Reference	GC221213F10.1
Originating Officer	Project Manager - Infrastructure – Alex Cortes
Corporate Manager	Manager City Activation – Charmaine Hughes
General Manager	General Manager City Development – Tony Lines

CONFIDENTIAL MOTION

That pursuant to Section 90(2) and (3)(k) of the Local Government Act 1999, the Council orders that all persons present, with the exception of the following persons: Chief Executive Officer, General Manager City Development, General Manager Corporate Services, General Manager City Services, Manager of the Office of the Chief Executive, Chief Financial Officer, Manager City Activation, Project Manager Infrastructure, Unit Manager Governance and Council Support and Governance Officer, be excluded from the meeting as the Council receives and considers information relating to Coastal Walkway Gullies Report for Construction, upon the basis that the Council is satisfied that the requirement for the meeting to be conducted in a place open to the public has been outweighed by the need to keep consideration of the matter confidential given the information relates to commercial expenditure.

REPORT HISTORY

Report Reference	Report Title
GC220524F11.3	Coastal Walkway Gullies Report for Construction
SFRAC220426F8.1	Coastal Walkway – Prudential Report
GC220308F18.4	Coastal Walkway Update
GC220222F11.3	Coastal Walkway Update
GC211214F18.3	Coastal Walkway Update
GC211026R10.5	Coastal Walkway Concept Design Update
GC210622F03	Coastal Walkway Update – Field River
GC201124R10	Coastal Walkway Concept Design & Outcomes of Community Engagement
GC191126R07	Coastal Walkway Project

REPORT OBJECTIVE

To provide Council with an update on the Coastal Walkway Project for Grey Gully (Segment 5) and Kurnabinna Gully (Segment 6).

To recommend Council endorsement for additional funding and approval to proceed with construction.

EXECUTIVE SUMMARY

The Coastal Walkway Project for Grey Gully (Segment 5), Kurnabinna Gully (Segment 6), and Field River (Segment 10) was endorsed as part of Council's 2019-2023 Business Plan aligned to Council's Coastal Walkway Asset Management Plan 2020- 2030.

In November 2019, Council committed $2.44 million for the reconstruction of these Segments. In June 2020, through the Open Space and Places for People grant funding application, State Government matched Council's funding commitment of $2.44 million bringing the total budget to $4.88 million.

The project is currently funded over three financial years (2019-2020 to 2022-2023) and in accordance with the State Government funding agreement requires all Segments to be completed by December 2023.

In November 2020, Council endorsed Administration to advance engineering designs for Segments 5, 6 & 10. Recognising Field River (Segment 10) having less engineering complexities to Segments 5 & 6, in June 2021 Council endorsed the construction of Segment 10 and supported an Early Contractor Involvement (ECI) procurement model to finalise design documentation for Segments 5 & 6.

The Field River (Segment 10) was completed earlier this year in March 2022.

The use of an Early Contractor Involvement (ECI) procurement model was selected as providing best procurement practice for Segments 5 & 6. This allowed dual contractors to work collaboratively with the design consultants on this complex project, providing sound construction methodology with respect to geology and environmental consideration throughout the design development phase, importantly reviewing the options for the Segments. The ECI procurement process for Segments 5 & 6 commenced in July 2021. The process recommended that bridges would provide a more suitable alternate to the boardwalks. A report to GC was provided 22 March 2022 and Council resolved for a Section 48 Prudential Report to be developed.

At the General Council meeting 24 May 2022, Council endorsed a Section 48 Prudential Report, endorsed suspension bridges, approved required budget and authorised contract execution for construction.

The contract was subsequently executed with the construction contractor on 23 June 2022. As per standard process for a highly complex construction project, the design consultants then commenced preparation of the final Issue for Construction (IFC) drawings. Through the IFC process, the lead design consultant advised that an error in the engineering loads had been made by their sub-consultant. The lead design consultant had been notified by their sub-consultant of the error on 4 July 2022. CoM officers were notified of the issue on 3 August 2022 via email, however the magnitude and implications of the design issue were not known. Officers and the head contractor identified and progressed the resolution of 28-week supply chain issues. High level updates were provided to the Council due to the Caretaker period.

The IFC documents were finalised on 16 September 2022, enabling the construction contractor to price the revised design – incorporating the remedied design error and the alternative anchor products, also resolving the supply chain issue.

The Administration were notified of an additional cost requirement of [redacted] on 10th November 2022 (held for 15 days) and engaged the cost adviser, North Projects, to rigorously assess the additional cost, including the verification of quantities, rates and identification of potential duplication in material.

[redacted]

[redacted]

Due to the anchors supplier's terms (holding the price for 15 days only), and the timeframes to attend GC, the head contractor has advised that the materials have now increased in cost by [redacted] resulting in the project cost increase to [redacted]. However, North Projects have completed the verification of the cost assessment process and have confirmed a possible reduction of [redacted] against the revised [redacted] variation submission subject to agreement and confirmation with the head construction contractor. This could result in the overall project increasing in cost by an amount of [redacted]

On 6 December 2022, a report was provided to the Elected Members Forum providing an update.

The external project Superintendent has provided a high-level cost analysis of the boardwalk versus bridge option, drawing on the same logic applied for the bridges from a scope and escalation perspective (20%). Advice from both North Projects and the Head of Procurement confirms that the market is typically experiencing escalation rates between 15% - 25%, hence the adoption of 20% for purposes of the high-level cost analysis. This high-level analysis demonstrates that the bridges still provide a more cost-effective solution at [redacted] compared with [redacted] for the boardwalks (see High-Level Option Evaluation).

The Principal Geotechnical Engineer has confirmed that the bridges provide a more durable and stable option than the boardwalks due to the potential for corrosion to the boardwalk's shallower footings, which are more open to coastal erosion. This would impact on the durability of the boardwalk as a solution, increasing maintenance costs and reducing design life. The Council's Senior Environmental Planner also verifies concerns around the location's vulnerability to erosion and notes that high tides at the location reach the cliff face, which would further impact on erosion, especially to elements of the boardwalk on the beach (see Geological Considerations).

Additionally, the structural assessments undertaken through 2018/19 confirm that the boardwalks are at end of life. No documentation exists as to the construction of the boardwalks or associated footings. The Engineer has confirmed that should boardwalks have been the preferred option, significant Geotech analysis would have been required to understand the exact geology of the area to identify where to place footings.

[redacted] have confirmed that the bridge design provides the best option from a vegetation perspective (see Vegetation).

Administration therefore recommends that Council endorse the additional required funding of [redacted]. This variation will enable the ordering of the remaining materials and site mobilisation to commence mid to late January 2023. The Administration will immediately commence negotiations with the Superintendent, North Projects, and head construction contractor to agree the variation sum, securing a reduction of [redacted]. It should be noted that the prices for the additional materials will be held by the supplier until 21 December 2022.

Administration will update the Making Marion website with construction updates and provide notification to nearby residents adjacent to the works.

For perspectives and images please refer to **Attachment 8**.

RECOMMENDATION

That Council:

1. **Notes the Report for the Coastal Walkway Gullies (Segments 5 and 6).**
2. **Endorses the final construction costs for Coastal Walkway Gullies Segment 5 (Grey Road Gully) and Segment 6 (Kurnabinna Gully).**
3. **Allocates additional funding of [redacted] as part of the 2023/24 Annual Business Plan for Coastal Walkway Gullies Segment 5 (Grey Road Gully) and Segment 6 (Kurnabinna Gully), to be funded by way of loan.**
4. **Resolves to write to the State Government and the Federal Government for additional**

funding for the Coastal Walkway Project.

5. [redacted]
6. **Resolves for officers to update the community information on the Making Marion site and provide notification to nearby residents adjacent to the works.**
7. **In accordance with Section 91(7) and (9) of the *Local Government Act 1999*, orders that this report, Coastal Walkway Gullies Report for Construction, any attachments and the minutes arising from this report having been considered in confidence under Section 90(2) and (3)(k) of the Act, except when required to effect or comply with Council's resolution(s) regarding this matter, be kept confidential and not available for public inspection until a construction contract has been executed. At this time the information will be released in its entirety. This confidentiality order will be reviewed at the General Council Meeting in December 2023.**

BACKGROUND

The City of Marion Coastal Walkway from Marino to Hallett Cove is a highly valued and important community asset that attracts visitors and contributes to the liveability of the city.

The original boardwalks were designed and delivered in the mid 1990's by the State Government. Due to the age of the existing boardwalks, few records are available for review. The boardwalks were constructed utilising materials and technology which are now superseded.

In early 2019 Council engaged an engineering consultancy firm to undertake a structural audit of all the structures associated with the Coastal Walkway. The audit created a database classifying condition and defects for this group of assets. This information then informed the development of Council's Coastal Walkway Asset Management Plan.

At the conclusion of the structural audit, it was identified that certain segments of the Coastal Walkway were deemed high risk of failure due to the inadequacy of the footings and concerns with safety to users. Subsequently, Grey Gully (Segment 5) and Kurnabinna Gully (Segment 6) was closed off to the public.

In November 2019, Council committed $2.44 million for the re-construction of these segments including a new connection for Field River (Segment 10). The State Government provided matched funding through the 2020 Department for Infrastructure & Transport (DIT) open space funding stimulus bringing the total budget to $4.88 million.

Field River (Segment 10) has been fully constructed. A well-attended opening ceremony was held Saturday 9 April 2022. The total cost of construction was $1.126 million.

At the General Council meeting on 26 October 2021 (GC211026R10.5) Council endorsed the cable bridge concept designs for Grey and Kurnabinna Gullies, following consideration of community feedback.

Council's procurement team initially engaged with five contractors for the delivery of Grey and Kurnabinna Gullies. Procurement recommended the use of a best practice Early Contractor Involvement (ECI) procurement model. At the General Council meeting 14 December 2021 (GC211214F18.3), Council noted the ECI procurement model with a preferred contractor working collaboratively with the design team to finalise all aspects of the final construction design, construction methodology and value management opportunities.

Through the ECI process, it was determined that the original boardwalk option should be superseded by two suspension bridges due to the associated benefits. The proposed design comprised suspension bridges consisting of galvanized steel structures, supported by pillars at each end, connected by steel wire rope, with a fibre reinforced plastic (FRP) enviro walk mini-mesh decking.

The preferred contractor then worked collaboratively with the design team to finalise all aspects of the final construction design, construction methodology and potential value management opportunities.

At the General Council meeting on 8 March 2022 (GC220308F18.4) Council noted the project's status and an Evaluation report on the bridge versus boardwalk approach. This report explored the benefits of the bridges over the original boardwalk solution. It confirmed that whilst the bridges provided a more cost-effective solution, this was backed up by the significant improved accessibility, minimised environmental impact, reduced future maintenance liabilities as well as reduced construction risk. For Bridge & Boardwalk evaluation report, refer to **Attachment 2.**

It should be noted that an average annual maintenance allocation of $20k was recommended for the bridges in the North report. However, further to feedback from [redacted] Prudential Report and comments received from the Finance Risk and Audit Committee (FRAC) on 26 April 2022. The Administration increased this allocation by 50% to $30k to ensure that sufficient budget provision is available for the maintenance regime throughout the asset life cycle.

BRIDGE DESIGN

This section of the report focusses on the approved design solution and particular relating to the bridge.

Approved Design Solution

The Council endorsed ECI design solution comprises two suspension bridges consisting of galvanized steel structures, supported by portals at each end, connected by steel wire rope, with a fibre reinforced plastic (FRP) enviro walk mini-mesh decking.

A series of exploratory investigative (geotechnical) works were undertaken from 70% to 100% design by the team of specialists informing the final bridge design with consideration to practical and visual sensitivities.

The extensive geotechnical investigations included:

- Detailed survey works for accuracy of proposed bridge footing locations.
- Engagement of a specialist contractor to drill into bedrock with exploratory boreholes at each bridge abutment.
- Engagement of specialist geotechnical engineer providing direction and supervision for borehole testing.
- Creating temporary access tracks to allow drilling rigs and equipment to the proposed bridge abutment areas.
- Installation of trial anchors located adjacent to proposed bridge alignment.
- Load and pull testing for each anchor location in accordance with design and anticipated bridge loadings.

Following improvements from the design investigative process, and in line with feedback from residents through the community consultation process, the Grey Gully (Segment 5) bridge span was reduced from 50m to 39m and Kurnabinna Gully (Segment 6) bridge span reduced from 50m to 41m. The portal heights were also reduced from the original concept designs. For Civil and Structural Drawings including Bridge Renders, refer to **Attachments 4, 5 & 6.**

Bridge Design Particulars

The bridges have been designed in accordance with the Australian Standards, AS5100 for Bridge Design. The design has been completed by a competent bridge designer [redacted]), Proof Engineered by a competent bridge proof engineer ([redacted])

and further reviewed [redacted] on behalf of City of Marion. The Bridges have been thoroughly reviewed and design meets the required standard without 'over engineering'.

Live loads for each bridge have been designed in accordance with AS5100 Australian Standard for Bridge Design for "Pedestrian Loads".

In accordance with the requirements of the Australian Standard, the bridges have been designed for the minimum applicable pedestrian live loadings acceptable under the bridge standard, which is equivalent to 500kg/m2. This cannot be directly correlated to a maximum capacity of users. This is generally considered to be equivalent to a "crowd loaded" area.

There is no option to reduce the loads under the standard.

The bridge standard does not permit a reduction below 500kg/m2 in pedestrian live loadings excepting for structural elements supporting an area greater than 85m2.

The design loads within the Australian Standards are based on International best practice, research, review of bridge failures, statistical assessments and acceptable risk profiles with respect to a range of load combinations not specifically limited to just personnel loadings and any reduction in the acceptable load would come at significant risk to Council for departing from the minimum requirements of Australian Standard.

The footing geotechnical conditions substantially vary between the gullies. For example, The Kurnabinna Gully has substantially shallower rock than Grey Gully, and footing designs have been customised accordingly.

For loads applicable to the bridge footings, please refer to **Attachment 9.**

ENVIRONMENT CONSIDERATIONS

This section provides further detail on several key issues around geology, vegetation and consultation with Kaurna representatives and summary of consultation with groups.

Geological Considerations

The Principal Geotechnical Engineer has confirmed that the Kurnabinna and Grey Gully site's ground conditions vary from exposed rock to reactive near surface clay. At the concept level through to design and construction, the subsurface conditions beneath the foundation of a structure (that is soil and rock strengths) need to consider the impact of seasonal weather changes and climate. Also, in consideration is the topography (surface water flows) and chemistry of groundwater (at this site salinity is the key item). These variable elements have the greatest change in the near surface soils or bedrock and become less prone to weathering and change, during the design life, at depth. As such where possible, deep anchored foundations (piles, concrete footings, embedded anchors) are preferential and mitigation measures to limit corrosion are to be implemented and maintained. The Engineer has therefore advised that the Bridge are therefore the bridges provide a more durable and stable option than the boardwalks due to the potential for corrosion to the shallower footings, which are more open to coastal erosion and that this would impact on the longevity of the design life.

A structural audit of the structures was undertaken in 2019, confirming that certain segments of the Coastal Walkway were deemed high risk of failure due to the inadequacy of the footings and concerns with safety to users - confirming that the boardwalks are at end of life. No documentation exists as to the construction of the boardwalks or associated footings. The Engineer has confirmed that should boardwalks have been the preferred option, significant Geotech analysis would have been required to understand the exact geology of the area to identify where to place footings. From a safety perspective, it would not therefore be possible to reuse the existing boardwalk footings. The Planner also notes that high tides at this location can already reach the cliff base which would impact on the integrity of a boardwalk in this location.

The Administration's Senior Environmental Planner is currently awaiting the receipt of an updated Coastal Climate Change Study for the cells, however they advise that it is expected that the information for this cell will be largely the same as the 2018 report which was used to inform the project. The Planner has advised that from a coastal climate risk perspective the surface is covered with undifferentiated material with current evidence of surface erosion. This cell has therefore been assessed as "likely vulnerable" to erosion and that the proposed bridges will have piling connected to the deeper geology and would be less vulnerable to the surface erosion indicated below. Project consultants have advised that due to the above factors, especially around erosion, that the Bridges would have a longer design life.

Vegetation:

[redacted] completed an Environmental report which informed the design and recommendations for construction. Recommendations included weed and vegetation management and advice from Birdlife Australia to minimise the impact to local bird species.

CoM requested additional commentary from [redacted] regarding the Bridge design solution specifically to the environmental assessment. [redacted] have provided the following advice:

- *Bridge portal locations – Impact on vegetation specifically at these locations.*
  Impact to native vegetation can only be avoided if a 'do nothing' approach is taken. However, impact can be minimised by taking the approach with the smallest construction footprint. Building a new boardwalk through the gullies, even over the current alignment, would involve a larger construction footprint than a bridge over the gullies, since many additional footings would be required requiring additional machinery access. Thus, a boardwalk would impact a greater extent of vegetation than a bridge.

- *Bridge alignment (portal locations) compared to the current boardwalk alignment.*
  Building the bridge further inland still impacts some vegetation. However, it avoids other potential impacts such as increased erosion caused by increased proximity to the cliffs edge. Vegetation condition improves closer to the cliff and shoreline since it is less impacted by weeds and garden escapes. Impact to better condition vegetation is also minimised by building the structure further inland.

[redacted] professional opinion, as far as impact to flora and fauna is concerned, is that the bridge design is the best option.

Administration commissioned [redacted] to undertake a consolidation of associated reports. This report reviews and summaries previous work undertaken to evaluate the environmental impacts of the project. A copy is provided in **Attachment 3.**

Kaurna Consultation

Consultation been undertaken with Kaurna representatives. On 16 September 2020, the Administration and design consultants engaged with Kaurna representatives and shared the Marion Coastal Walkway Aboriginal Cultural Heritage Report **(Attachment 10).** The report demonstrated that the area was not of cultural significance.

Consultation Groups

A wide range of consultation has been undertaken over the last 3 years. Community groups include but are not limited to Friends of the Lower Field River, Friends of the Hallett Cove Conservation Park, Hallett Headland Bush for Life Group and Hooded Plover Volunteers. Extensive engagement has been undertaken with State Government during this period including Department for Environment and Water, Coastal Protection Board, Environment Protection and Biodiversity

Conservation, Attorney Generals Department – Planning and Land Use Services. Department Transport and Infrastructure – Open Space and Property Directorate.

Summary of Construction Benefits

The Blue Built report dated 2 December 2022 has recommended that the design process for the footings should avoid the use of large machinery to minimise the need for temporary tracks. It supported a design with reduced number of footings to decrease disturbance to local flora and fauna. The bridge solution had significantly less impact on the environment with only eight footings instead of the hundreds of footings required to install the boardwalk as well as substantial reductions in the temporary access tracks down the embankments. In decreasing the overall footprint within the gullies, it significantly minimised the potential impact to the environment and eased the environmental management obligations of Council and the contractor. Importantly, due to the geology of the cliff faces, there were also concerns from the consultants that the selection of boardwalks with a significant increase in the number of footings, would result in significant future erosion issues.

In providing context as to why a bridge option was originally tabled during the ECI phase, several significant risks and environmental aspects were identified as key factors influencing investigation of bridge option, summarised below.

Risk/ Aspect	Boardwalk Negatives	Bridge Benefits
Existing topography, site access and logistical constraints	Inability to get larger plant to upper gully access locations and on existing embankments due to the steepness.	Localised anchor works are limited to upper embankment areas only. Some are accessible by larger equipment.
Structure collapse due to batter erosion / collapse –	Extensive erosion is evident and has impacted the structural integrity of the existing boardwalk. Likely to be recuring with no means to control overland/ embankment water flow.	Limiting the extent, founding deeper and relocating further away from the ocean facing cliffs reduces erosion risk in comparison to the multiple, shallower boardwalk anchors.
Personnel safety during construction	Extensive manual handling and construction works at height, requiring implementation of appropriate fall prevention systems.	Extensive works on the embankment face, at multiple locations is eliminated. Fall prevention system installation simplified.
Extensive environmental footprint associated with Concept Design (boardwalk/ stairs)	Construction of a new boardwalk requires boardwalk anchor, fall prevention anchors and general personnel access across the entire footprint of the proposed boardwalk.	Works limited to one area on each gully embankment. Boardwalk option potentially increases the risk of embankment erosion.

The report articulates that the bridges still provide a more robust option from a construction site accessibility perspective, general community accessibility, erosion prevention, safety during construction and reduced environmental footprint to the boardwalks. Refer Construction Contractors letter, **Attachment 7.**

FINANCIAL OVERVIEW

Approved Construction Costs

The Section 48 Prudential Report was provided to the Council on 24 May 2022. The Report concluded that all requirements of Section 48 had been met and that an appropriate level of due diligence had been applied to the project.

The associated Council report noted that the preferred contractor had submitted a project contract price of $6.855 million for Grey Gully (Segment 5) and Kurnabinna Gully (Segment 6).

The total construction cost for Segments 5, 6 and 10 (Field River) including professional fees and contingencies was estimated at $9.450 million. The original budget for the project was $4.880 million, leaving a funding gap of $4.570 million. The significant increase in project cost had resulted from extensive site investigations and construction costs increases resulting from Covid-19 and current global trends.

Market Conditions

The Head of Procurement has confirmed that current global market conditions have and will have an impact on project delivery. In addition to supply chain issues (namely the bridge anchor fabrication and supply). With the shortened price validity periods coupled with the month-on-month material price increase (most notable steel, concrete and timber), prices for materials associated with projects of this nature will continue to escalate if not locked in contractually.

Engineering Errors

Through the IFC process, the main lead Design Consultant identified that an error in the engineering load for the bridges had been made by a sub-contractor. At that point, the magnitude and full implications of the issue were unknown. The discovery of the error in the load footing values led to a review of the approved design. The review concluded that additional footings were necessary to meet the design requirements, requiring the clarification of further engineering and geotechnical matters.

Additionally, due to national and global market conditions, it was identified that significant supply chain issues had arisen for key construction materials, leading to a 28-week project delay.

Administration worked with the head construction contractor and sub-contractors to identify alternative solutions for the design to resolve the supply chain issues. High level update was provided to the Council during this period.

The IFC documents were finalised on 16 September 2022, enabling the construction contractor to price the revised design – incorporating the remedied design error and the alternative anchor products, also resolving the supply chain issue.

Variation Construction Costs

As a result of the lead design consultant making an error with the engineering load calculations, the construction contractor submitted a variation to cover the additional reinforcement elements, namely the bridge anchors and materials required to meet the design requirements. These updated costs have been confirmed and assessed by Council's cost consultant (North Projects).

North have assessed the variation of [redacted]. They believe the total claim to be in the order of [redacted], a reduction of [redacted] from the revised variation submission of [redacted]. North Projects are currently negotiating with the head construction contractor on this reduction.

For the purpose of the report and understanding the final price needs to be agreed, the original variation submission is the [redacted] price. See revised costings in Table 1.

Table 1:

Revised Construction costs for for Grey Gully (Segment 5) and Kurnabinna Gully (Segment 6) are tabled below:

Item	Description	
1.	Preliminaries	$748,515
2.	Segment 5	~~$3,076,907~~ [redacted]
3.	Segment 6	~~$2,910,200~~ [redacted]
4.	Provisional Sums	$120,000
	Total Construction Cost	~~**$6,855,622**~~ [redacted]

Total Project Costs

Total Project costs for Grey Gully (Segment 5), Kurnabinna Gully (Segment 6), **and** Field River (Segment 10) are tabled below:

Item	Description	
1.	Professional Services (Segments 5, 6 and 10)	$909,387
2.	Segment 10 – Field River Construction (Completed)	$1,125,910
3.	Segments 5 and 6 – Gullies Construction	~~$6,855,623~~ [redacted]
4.	Contingencies for Segments 5 and 6 (including $100k potential contingency for Nungamoora)	$560,000
	Total Construction Cost	~~**$9,450,920**~~ [redacted]

Variation Funding Summary

Additional funding requirement for Grey Gully (Segment 5) and Kurnabinna Gully (Segment 6) are tabled below:

Item	Description	
1.	Total Costs for Segments 5, 6 and 10	~~$9,450,920~~ [redacted]
2.	Original Budget Allocation for Cells 5, 6 and 10	$4,881,208

3.	Approved Funding (GC 24.5.22)	$4,569,712
	Additional Funding Required	[redacted]

An additional budget of $4.100 million was incorporated into the draft 2022/23 Annual Business Plan for public consultation endorsed by Council on 12 April 2022. A further additional budget of $0.470 million was endorsed by Council for inclusion within the 2022/23 Annual Business Plan.

Total additional budget required is now [redacted] with probable reduction of [redacted], providing the total project increasing in budget by [redacted].

It should be noted that the costings of [redacted] are predicated on the reinforcement material supplier holding prices for a period of 15 days, which expires on 21 December 2022. The reinforcement materials are highly in demand, being used extensively by the mining industry. The current lead times of 8-10 weeks are predicated on availability of stock. Usual mining industry procedures are for materials to be procured in December, therefore should Council resolve to support the additional construction costs, the Administration will move swiftly to secure the remaining materials, hence avoiding any further supply chain issues.

Through discussion at the Elected Members Forum on 22 November 2022, there is an opportunity for the Council to resolve to write to the State Government and the Federal Government for additional funding for the Coastal Walkway Project.

High-Level Option Evaluation

The external project Superintendent has provided a high-level cost analysis of the boardwalk versus bridge option, drawing on the same logic applied for the bridges from a scope and escalation perspective (20%). Advice from both North Projects and the Head of Procurement confirms that the market is typically experiencing escalation rates between 15% - 25%, hence the adoption of 20% for purposes of the high-level cost analysis.

This high-level analysis demonstrates that the bridges still provide a more cost-effective solution at [redacted] compared with [redacted] for the boardwalks.

Table 2

[redacted]

The Superintendent has confirmed that typical escalation rates for other projects are between 15% - 25%, hence the adoption of 20%.

The Administration's Head of Procurement has verified North's use of the 20% figure. confirming that market conditions currently being experienced globally have seen material costs increase dramatically for construction projects. Utilising market research from Rawlinson's (Industry Cost Surveying publications), the annualised increases for structural steel and timber has continued to be over 20% from a year-on-year perspective. In addition, there are emerging increases with associated labour costs (CPI and labour shortage) which has seen 8-10% increases experienced over recent months. The indication from all publications suggests these trends will continue throughout the 2023 calendar year.

[redacted]

[redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted] [redacted]

[redacted]

[redacted]

[redacted] [redacted]

[redacted]

[redacted]

[redacted]

CONSTRUCTION PROGRAMME

Should Council support the additional construction cost, the Administration will immediately procure the remaining reinforcement materials to enable construction works to commence late January/February 2023 for an anticipated completion date of December 2023.

The following construction program identifying key dates has been submitted by the contractor.

1 SITE ESTABLISHMENT	January 2023
2 GREY GULLY	
2.1 Demolition	February 2023
2.2 Bridge Construction	March 2023
2.3 Boardwalk Construction	July 2023
2.4 General Landscaping	November 2023
3 KURNABINNA GULLY	

3.1 Demolition	February 2023
3.2 Bridge Construction	March 2023
3.4 Boardwalk Construction	July 2023
3.5 At-Grade Paths	October 2023
3.6 General Landscaping	November 2023
4 PRACTICAL COMPLETION	December 2023

RECOMMENDED NEXT STEPS

Project continuation

The above report articulates that the bridges still provide a stronger solution from many perspectives including cost, environment risks and safety in construction.

[redacted]

It should be noted that the deposits for materials were placed after contract execution and during development of IFC's to minimise the impact of issues with national and global supply chains.

Escalation of [redacted] for materials has occurred in recent weeks. Prices are held until 21 December 2022. Any further delay in endorsing the additional expenditure for the bridges will result in CoM incurring costs. Such increases would be applicable for either bridges or boardwalk solutions.

Whilst it is not possible to foresee unforeseen conditions such as latent conditions, the bridge solution provides limited touch points for the footings in contrast to the boardwalk option which would require hundreds of shallow footings across both gullies.

The Administration has previously achieved endorsement for an additional $560k project contingency in additional to construction contingencies and preliminaries.

Additional Budget Allocation and Grant Funding

Further to the Forum update on 22nd November 2022, North Projects have completed the verification of the revised cost assessment. North have assessed the variation and believe the total claim to be in the order of [redacted] a reduction of [redacted] from the revised variation submission of [redacted]. North Projects are progressing negotiations with the head construction contractor.

Therefore, the total construction cost of the project will require an additional [redacted] to be allocated within the 2023/24 Long-Term Financial Plan.

Administration recommend that Council endorse the additional required funding to approve the variation to enable the ordering of the remaining materials and site mobilisation to commence mid-late January 2023.

Additionally, in December 2021 the Council resolved (GC211214F18.3) that the Administration can seek opportunities to source more funding from the State and / or Federal Government. Given the

ongoing design and only recent determination of the final project cost, the seeking of additional funds has not yet been undertaken.

There is an opportunity for the Council to resolve to write to the State Government and the Federal Government for additional funding for the Coastal Walkway Project. This has been incorporated as a recommendation.

[redacted]

[redacted]

Communication

The Administration recommends that pending GC endorsement officers will update the community information on the Making Marion site and provide notification to nearby residents adjacent to the works.

ATTACHMENTS

1. Letter to City of Marion - [redacted] [**10.1.1** - 15 pages]
2. Bridge & Walkway Evaluation Report [**10.1.2** - 22 pages]
3. Coastal Walkway Environmental Review - [redacted] [**10.1.3** - 28 pages]
4. Civil Drawings [**10.1.4** - 1 page]
5. Kurnabinna Gully - Drawing [**10.1.5** - 1 page]
6. Coastal Walkway - Civil - 13 December 2022 Attachment [**10.1.6** - 4 pages]
7. Contractor Construction Advise [**10.1.7** - 5 pages]
8. Perspectives and Images [**10.1.8** - 5 pages]
9. Bridge Foundation Loads [**10.1.9** - 2 pages]
10. H X 200701 Marion Coastal Walkway Upgrade Cultural Heritage Report FINAL [**10.1.10** - 35 pages]