UPPER HUTT CITY

Project documentation

H^2O Xtream Upgrade

Business case

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For 29 September 2020 Long Term Plan 2021 – 2031 workshop

Contents

Introduction

PURPOSE

The purpose of this business case is to request approval from Council for:

- the revised project budget for inclusion in the Long Term Plan 2021 - 2031
- the concept design direction and scope
- the next stages of project development to deliver an upgraded H^{2}0 Xtream aquatic facility.

APPROVAL

This business case was approved for distribution by:

- Geoff Swainson, Director Asset Management and Operations
- Mike Ryan, Director Community Services

The Case for Change

Background

A feasibility study was undertaken in 2017/2018 to determine the aquatic needs for the Upper Hutt Community and the role of H^{2}0 Xtream in aquatic provision to the community. The study investigated the current and future needs of the community. It also assessed trends in aquatic provision regionally, nationally and internationally.

Recommendations of the feasibility study are noted below under *Investment Objectives.*

The H^{2}0 Xtream Upgrade was an approved project outlined in the 2018 – 2028 Long Term Plan with an initial project budget of $16,167,000 based on a high-level concept design.

Problem statement

H^{2}0 Xtream is nearly 24 years old and in need of significant ongoing maintenance and asset renewal work. It is timely to invest in this core asset's provision of aquatic facilities and services in Upper Hutt, taking into account the age of the facility, changing community demographics, a growing population, the changing nature of recreation and sport, along with the recent developments of other aquatic facilities within the region.

Due to the facility's age, some aspects currently present safety concerns which the project aims to address. Notably the use of a carcinogenic filtration material, a lack of sufficient accessibility features (including ramps and changing facilities) and aspects of the current layout constraining the visibility and access the lifeguards have in some parts of the facility.

Investment Objectives

This project proposes to upgrade H^{2}0 Xtream with the addition of new aquatic offerings and water space within the facility, improve amenity facilities and carry out extensive asset renewal and maintenance work.

The primary drivers for undertaking this project is to enable achievement target attendance numbers; maximising any opportunities for operational cost savings; creating a more sustainable facility; to respond to the changing needs of our community, with an increase in both elderly and young family patrons.

The feasibility study outlined the following three key objectives as the focus of the redevelopment:

IMPROVE AQUATIC FACILITIES

- Reconfigure the rapid river and wave pool to eliminate the rip (No longer required as remedial work has been done to the river ride since the study was completed)
- Close the tunnel between wave pool and lane pool
- Construct a ramp into the lane pool
- Improve links and access between indoor and outdoor areas
- Upgrade plant and equipment with energy efficient equipment

ADDITIONAL AQUATIC FACILITIES

- Create a toddlers area including shallow water and play features
- Establish an Indoor or outdoor splash pad targeted to young children
- Construct a new program pool (25m x 6 or 8 lanes)
- Construct a warm water hydrotherapy/program pool (approximately 10m x 6m)

IMPROVE FRONT OF HOUSE AND AMENITIES

- Upgrade change rooms
- Redesign and upgrade entry, reception and offices
- Redesign former creche and meeting room as a dry activity/program space
- Redesign, upgrade and possibly relocate café to enable service to indoor and outdoor areas within the centre and non-aquatic centre customers
- Upgrade the outdoor space as a lounge, relaxation area

DESIRED OUTCOMES

The expected benefits from the project are as follows:

- An upgraded facility requiring lower maintenance costs.
- A facility that meets the needs of all sectors of our growing community.

- Lower utility costs and carbon emissions based on an upgraded and more efficient plant and a more energy efficient facility due to the implementation of sustainable technologies.
- Improved health and safety environment for both staff and customers (including removal of carcinogenic filtration material).
- An increase in customer satisfaction, meeting/exceeding targets.
- An increase in attendance figures, meeting/exceeding targets.
- An increase in all aquatic programs that the pool can run, resulting in increased revenue from aquatic programs.
- Increased water safety and wellness for the community.
- Improvements to the health and wellbeing of the community.

Strategic fit

COUNCIL DIRECTION

The strategic fit of this project to justify Council's investment is as follows:

- **City vision and strategic priorities**: H^2O Xtream is the only facility in Upper Hutt providing aquatic opportunities and services to the community, supporting multiple strategic priorities areas (Community, Infrastructure, City Centre and Economy).
- **Long Term Plan 2018 – 2028**: The H^2O Xtream upgrade project was included for public consultation as part of a suite of 13 optional projects in 2018. The LTP received a record number of 377 submissions. The project received a very high level of community support averaging 82% across both submission and informal feedback during the LTP consultation (ranking it at second and third respectively out of the 13 projects consulted on).

  Specific submission comments included:

  - Numerous and detailed comments and requests about a separate toddler pool.
  - Support for an additional, separate lane pool.
  - Requests for improved accessibility for the elderly and disabled and good disabled changing facilities.
  - Comments on lower temperatures for lane pool swimming and warmer water for young children, the elderly and those with injuries or other health problems.
  - Comments on seeking external or collaborative funding for the upgrade and keeping charges affordable for lower income families.
  - Support for maintenance and additional improvements such as solar water heating, non-swimming recreational areas and space for spectators.
- **Infrastructure Strategy 2018 – 2048**: The upgrade of H^2O Xtream as a key community asset providing core leisure services was noted in this strategy. Changing demands and a growing

community are posing challenges for ageing property infrastructure such as H20 Xtream to remain up to standard to meet expectations.

- **Sustainability Strategy 2020:** H20 Xtream is the single largest energy user in Council's portfolio, and the majority of its heating currently is gas powered, with a comparatively high carbon footprint compared to other forms of energy. Investing in all-of-building technology, upgrades and refurbishment presents an opportunity to improve sustainability and future proof the pool. Due to the longevity of the asset and its components, the very rare frequency of this level of upgrade, and the scale of improvement that can be achieved in association with the upgrade can signify a major step-change for the environmental performance of the facility, including its carbon footprint.

COMMUNITY FEEDBACK SURVEY

During December 2019 – January 2020 a survey was published to seek further feedback from pool users to inform the concept design. The survey had 864 respondents.

The survey results are attached as **Attachment 1**.

REGIONAL AQUATICS MARKET POSITIONING

Engagement and discussions with other councils within the region (Wellington and Hutt City) along with discussions with Sport New Zealand in late 2018 indicated that the provision by Upper Hutt City of a family friendly, recreational aquatic play facility met the needs of the region. Other facilities providing for this segment for the market do not achieve the same attraction/uptake of the recreational aquatic play market, and it is not the key focus of their business.

H20 Xtream is the only facility in the region with three slides which are a regional attraction. There was general consensus that this should remain the focus of any development of the H20 Xtream to retain its niche in the regional market.

While this is the unique proposition of the facility, the ability to provide and meet other aquatic needs for the wider, growing Upper Hutt community must also be taken into account and improved.

The 2017/2018 Aquatics Facilities Feasibility Study commissioned by Council undertook an Aquatics Demand Analysis. Part of this analysis provided information on the aquatics market and determined that this market comprised of at least six distinct segments, each requiring a specific marketing mix to maximise market share:

- **Lap swimming** – tend to swim early in the morning or after work, supplemented by some who swim during their lunch time. Require lane space (at least 25 metre pool size), with speed indicators for each lane (ie slow, medium, fast). Tend to swim on a regular basis, and often more than once per week. Water temperature is preferably between 26^{0}C and 28^{0}C. Most lap swimmers prefer to swim year round.

- **Swim coaching/squads** – usually children and young people up to about 16 years, supplemented by adult squads mainly masters swim squads and triathlon swim squads. Main squad training times are early morning (from 5.30am) and early evening (5.30pm – 7.30pm). Require reserved lane space, for between three and 10 times per week. Water temperature is preferably between 26^{0}C and 28^{0}C. As with lap swimmers, squads swim year round.

- **Learn to swim lessons (private, group and school)** – lessons are offered to all ages, from "mothers and babies" to adult lessons. Most lessons are conducted after school (4pm to 6pm) and on Saturday

and Sunday mornings. Adult lessons tend to be offered later in the evening and "mothers and babies" classes are usually on weekday morning between 9am and noon. Most classes are offered once a week, often for a ten week term or block. Water temperature is preferably between 29^{0}C and 31^{0}C. The number of people in swim lessons declines in winter, although many children participate in lessons year round.

- **Recreational aquatic play** – all humans play and socially interact. In an aquatic environment, play is often defined by the age of participants (ie pre-schoolers, junior primary school age, senior primary school age, young teenagers, young people and adults). Play equipment is larger and more adventurous the older the participant.

  Play experiences are enhanced by either moving water (eg water cannons and rapid rivers) or moving the participant (eg water slides and climbing structures). Most recreational play is conducted after school/work time (eg weekday evenings and weekends). It can also involve relaxation (eg sunbathing, and "hanging about") and supervising young children. Water temperature is preferably between 28^{0}C and 31^{0}C.

- **Aquatic fitness programs** – in addition to lap swimming, aquatic fitness programs include aqua aerobics (group exercise to music in water), water walking (using a floatation vest), and other similar exercise activities. These activities tend to attract older adults, particularly women. Classes are held at times to suit the participants (eg older women on weekday mornings). Water temperature is preferably between 28^{0}C and 31^{0}C.

- **Therapeutic, rehabilitation and wellness programs** – tend to be supervised by a physiotherapist. In some instances an individual will perform prescribed exercises for warm water exercise without supervision. The main requirement is warm water (approximately 34^{0}C) of about 1.5m in depth. A hydrotherapy or spa pool may be complemented by a sauna and/or steam room.

Project scope

OUT OF SCOPE

- Demolition and new build of the facility.
- Removal of or reduction in existing aquatic offerings.

IN SCOPE

- Upgrade to provide improved and additional aquatic offerings (as per the feasibility study recommendations).
- Front of house and amenity improvements.
- Scheduled maintenance and planned asset renewals which will also need to take place during any construction shutdown period, to maximize efficiency and cost-effectiveness and minimize future disruption
- Retention and provision of recreation services staff accommodation.
- Health and safety improvements to existing plant and systems (including removing use of carcinogenic filtration material and improved plant access), and the consolidation of remote plant rooms into a single pool water services plant space for ease of maintenance and operation.

- Sustainability improvement opportunities.
- Any overlap in work with other concurrent projects, eg. Expressions Whirinaki extension and/or civic centre seismic project, including changes to car parking.
- A further Detailed Seismic Assessment is planned to determine any urgent seismic improvements required as part of the project (some work was completed during the last scheduled maintenance shut down in 2018).

MAJOR SCOPE ADDITION SINCE 2018

Major changes or refurbishment of the hydro slides was not included in the original scope of the feasibility study in 2017/2018 or in the project budget estimates included in the LTP 2018 - 2028.

During the concept design process this has been included for two reasons:

- A significant upgrade of the slides would add to the overall project benefits, further enhancing the aquatic offerings to the community and renewing H^20 Xtream's niche position as a regional attraction for aquatic fun.
- Due to the site footprint available, it became apparent reconfiguration of the hydro slides was required to accommodate both additions in new water space and improved pedestrian access to parts of the facility (including new water space). In consultation with the architects, three slide configuration options were considered as follows:
    - up to $335,000 (status quo with minor required improvements),
    - $4.7m (retaining existing slides tower with reconfigured slides and height extension) - preferred
    - up to $7.5m for relocated slides with completely new tower and slides

Key parameters

CONSTRAINTS

- Affordability – While the cost increase set out in this document is as per the expected progression of a major capital project, additional funding for the project is contingent upon the wider project and funding landscape across the LTP 2021 – 2031 and affordability for the community.
- Site footprint – Extension works have considered the constraints of the pool location, with the site hemmed in by the roads on two sides, the carpark and Expressions Whirinaki.
- Facility operations during construction – As far as is safe and cost-effective for the overall project delivery, it is the intention for the pool facility to remain functional where possible during the construction period (estimated at 18-24 months) to continue generating income. However based on the level of invasive works and upgrades to core systems (such as pool plant), the expectation is the facility will be required to close for at least six months during this construction period.

DEPENDENCIES

- LTP funding – It is important to note the 2018 budget was a high-level estimate based on limited scope, high uncertainty, and indicative numbers from other pool upgrade projects happening at the time. This has subsequently been developed in scope and detail, with an associated increase in the estimated cost.
- Assets coming to end of life – The asset management plan indicates that some assets are coming to the end of life and will need to be replaced, there are also areas of the existing facility that are looking tired. It is anticipated that the funds for improving and, in some cases, replacing these items will need to be included in the project.
- Staff onsite – Staff need a location onsite where they can be housed during the upgrade, and during some periods where this is not possible, alternative staff accommodation will be required.
- Car Parking – There will be some loss of car parks as a result of the proposed footprint extension (estimated 9 car parks).

  Initial indications are this does not pose a major planning risk and mitigations are being implemented in association with other changes to manage parking provision across the civic precinct (notably the proposed Upper Hutt station car park expansion planned as a result of the Expressions Whirinaki extension project). Some car parking and the traffic flow will be reconfigured to improve pedestrian safety and access to the facility.
- The pool heating system is linked to and provides heating for the Expressions Whirinaki building(s).
- Depending on the progress of the Expressions extension and Civic Centre seismic project, construction of H^{2}0 Xtream could be delayed to avoid the impact of having both buildings under construction at the same time. This situation will be reviewed as we approach the construction stage.

Risks

Further detailed risk identification and management will form part of ongoing project management practice as the project develops.

INITIAL HIGH-LEVEL PROJECT RISKS

Risk	Description	Rating
Uncertainty and impacts from COVID-19	It is not known for how long or to what extent COVID-19 will continue to impact on Council, the community, pool operations, the project and the construction sector.	High
The designs do not meet Council or community expectations.	Council and the community may be expecting something like what was presented in the Feasibility Study and may not approve what is put forward following the concept design stage.	Low
The cost of the design is significantly more than the approved budget.	To achieve what is need in the upgrade along with some upgrades and repairs required to the existing building the overall project cost may exceed the existing approved budget.	High
Car parking issues.	Any extension into the carpark will mean the removal of carparks which service the facility and surrounding facilities.	Low

Delays due to Expressions extension and civic centre seismic project.	Construction on Expressions and H2O Xtream should not be undertaken concurrently due to the pressure on the parking and civic precinct space.	Low
Delays causing cost increases.	Delays during construction may have an impact on the final budget.	Medium
Extension of the close down period	Operational and staffing costs during closedown are not offset by income. The closure may cause some staff dissatisfaction and attrition.	Medium
Loss of revenue during construction closure	Based on the level of invasive works and upgrades to core systems (such as pool plant), the expectation is the facility will be required to close for at least six months during the project construction period.	Medium
Lack of contractors and key suppliers	Construction market conditions, competition for sector resources, and limited availability of specialist suppliers may hinder project delivery.	High

INITIAL HIGH-LEVEL RISKS IDENTIFIED OF NOT UNDERTAKING THE PROJECT

Risk	Detail	Rating
User and community dissatisfaction	Extensive and detailed feedback has been received from pool users on its current short comings and following the project being proposed in 2018 and receiving strong support there is an expectation of improvement to the facility.	High
Loss of revenue due to reduced patronage	Reduced satisfaction with the facility may cause some customers to stop visiting or visit less frequently	Medium
Environmental impact of the facility	Gas heating results in a high carbon footprint and if this is not changed it will limit Council's ability to achieve sustainability targets.	High
Failure of ageing assets and resulting service disruption (including closures)	These disruptions occur periodically and can be expected to continue if required asset renewals and maintenance is deferred.	Medium
Health and safety risk	The use of a carcinogenic filtration material; a lack of sufficient accessibility features (including ramps and changing facilities); and aspects of the current layout constrain the visibility and access the lifeguards have in some parts of the facility.	Medium
Increased operational costs from maintenance of ageing asset	Unplanned reactive maintenance will continue to rise as the asset continues to deteriorate with age.	Medium
Reputational damage	Council reputation damage due to lack of follow through on a significant project with high community support.	Medium
Increased future project costs	Construction inflation will continue and borrowing costs for large capital works such as this may increase in the future. Based on the value of the project, this is estimated to be around $1.5m per year.	Medium

Options and costs

Short list options – for reference only

The following is a recap of the short list options considered when the project was proposed in August 2017 for the LTP 2018 – 2028.

Note: Unless stated, these are August 2017 dollars, not including inflation adjustment or escalation.

Option	Estimated cost	Direction
Option 1: That the upgrade of the current H²O Xtream facility and the addition of further aquatic offerings within the facility, as identified in the feasibility study, are included in the 2018-2028 LTP. This will lead to a significant upgrade of the facility and create a facility that remains an ongoing attraction and provider of aquatic programmes and services to the community of Upper Hutt and wider region.	$16.6m (inflated, as included in the LTP 2018 – 2028)	Preferred
Option 2: Undertake a facelift of the existing facility. The maintenance costs for building, plant and energy costs will continue to rise based on a facility of that age, with little opportunity to generate greater income. H²O Xtream will continue to fall behind other regional aquatic facilities in meeting the needs of the community.	$2-4m dependent on scope	Discarded
Option 3: Do nothing - status quo. The 2017 Asset Management Plan for H²O Xtream shows $2,027,661 being required for extraordinary maintenance for the period up to 2027/28.	$2.02m	Discarded

Development of the Preferred Option – estimated costs

The concept design is at **Attachment 2**.

This is at a relatively more advanced stage that standard for a concept design, nearing the robustness of preliminary design. The developed and detailed design stages are to follow, and with the construction contractor on board, this will include value engineering.

Final costs will not be confirmed until construction tender pricing is received.

ESCALATION OF 2018 BUDGET

When applying general construction market escalation of 7% per year to the 2018 budget of $16.6m the adjusted base figure for the project is $20.97m.

ASSET RENEWAL COSTS

As has been signaled to Council in earlier LTP workshops, there is a significant amount of major asset renewal work required at the 24 year old pool facility. It is proposed to complete these works concurrently to the upgrade project to maximise efficiency and cost-effectiveness, and minimise future disruption.

This work totals $4,751,150.00.

SUSTAINABILITY INVESTMENT

The replacement of the gas boiler heating with an electric heat pump system is priced at $1,291,000 while the plant upgrade to use sand filtration costs $680,000. It is estimated the heat pump should reduce running costs of the upgraded facility by $109,000 per year (a 25% saving on current) and result in an 80% reduction in CO^2.

(Note: the gas boiler system will be retained as an emergency back-up for H^20 Xtream and will continue to provide the heating for Expressions.)

Option	Annual Operating Cost	Saving ($)	Saving (%)	Annual CO_2 production (t-CO_2e)	Saving (t-CO_2e)	Saving (%)
Current Operation on existing site	$272,000	-	-	806	-	-
Baseline: Site Extension with new heat recovery and new gas boilers	$429,000	-	-	1405	-	-
Optimal: Site Extension plus core upgrade work new heat pump heat recovery system and air source heat pump backed up with existing boilers)	$320,000	$109,000	25%	283	1122	80%

CONCEPT DESIGN COST SUMMARY

The following concept design cost summary shows the main components as per **Attachment 1**, with colour coding corresponding to the components as shown on the concept design plan.

Note: At the workshop on 29 September, officers will discuss components of the proposed design which may be considered to be reprioritised or adjusted from the full package set out below and in Attachment 1, to reduce project costs.

Component		
Upgrade construction estimate		$19,555,350
Major asset renewal works		$4,751,150
	Subtotal	$24,306,500
Contingencies		$4,612,281
Professional fees		$3,805,000
Consents		$195,000
Total estimated cost		**$32,918,781**

Funding Approach

The current budget as per the LTP 2018 – 2028 at $16,167,000 and the project is loan funded. When general construction market escalation is applied to this, the revised base figure for the project is $20.97m

The revised budget inclusion in the LTP 2021 – 2031 will be phased over the duration of the project (timeframes to be confirmed through further planning, but likely to be 2-3 years (from July 2021).

Funding Contingencies

On the advice of the architects and quantity surveyor the current contingencies included in the project are:

- Construction contingency $2,609,691
- Design development $2,002,590

Assumptions

A significant number of asset renewals and maintenance which would otherwise be budgeted for over the ten years of the LTP 2021 – 2031 are proposed to be completed as part of the project.

Due to the invasive nature or association with proposed upgrade works (such as the main pool plant being extended and renewed to accommodate additional water space), some of this work simply has to take place during a construction shutdown period, to maximize efficiency and cost-effectiveness and minimize future disruption.

The value of the core asset renewals and maintenance components of the project which otherwise would have been spent over the coming years is $4,751,150.00.

Post project funding

With the upgrade to newer, more efficient and more sustainable plant and components there will be some operational cost savings once the upgrade is complete. It is estimated the electric heat pump system will result in annual cost savings of approximately $109,000 to operate the extended facility compared to if the current system were to be retained for this purpose (i.e not based on the current operation).

There is a requirement for some additional asset management plan items to be budgeted for from 2024/25 (LTP Year 4) onwards as standard maintenance of the new upgraded facility will still be required.

This will be budgeted for on completion of a new AMP post project as part of the next LTP for 2024 – 2034.

Delivery Approach

Project Management

The project is being managed internally by Council's Assets and Programme team.

The methodology for this project's delivery is in accordance with the recently developed Project Delivery Framework (PDF) guiding all major capital projects.

Project structure

Role	Name and position
Project sponsor	Mike Ryan, Director Community Services
Business Owner	Royce Williams, Recreation Services Manager
Project Manager	Royden Mayfield, Project Manager
Project Team	Kristen Raynes, Assistant Operations Manager

Project stages

The project is divided into the following stages:

- Concept Design – Agree requirements and design brief, create concept designs, public engagement, and present to Council for decision/approval to proceed with inclusion in the LTP 2021 - 2031.

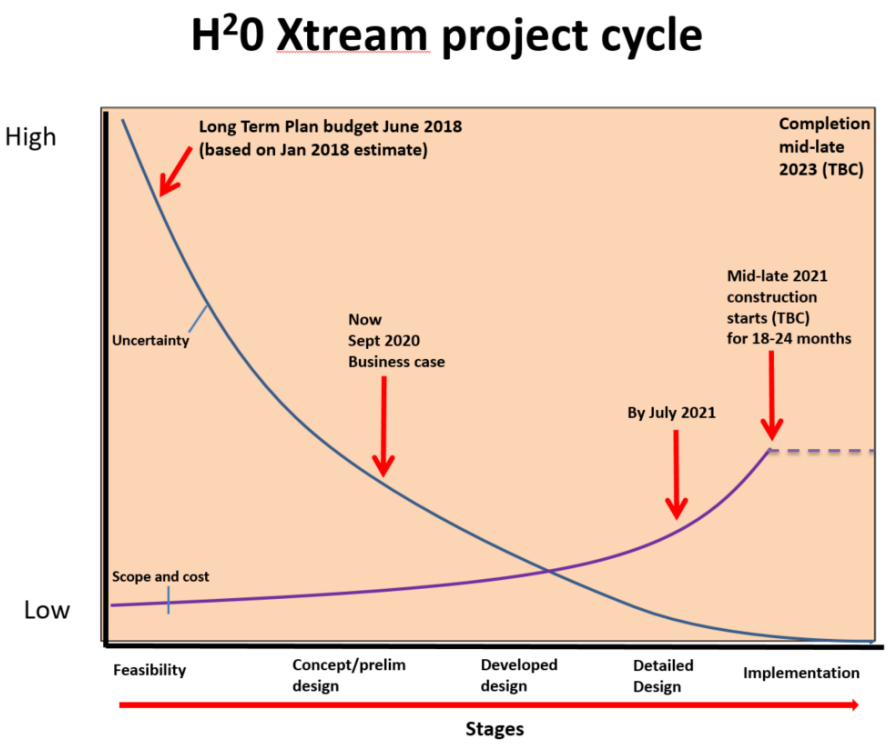
  The project has currently completed the Concept/Preliminary Design stage, and next steps are subject to Council confirmation of its direction and revised costs.

- Developed and Detailed Design, and Planning – Refine the concept design ready for construction tendering, select the construction vendor, submission/approval of all consents required, plan the construction and present final tender costs to Council for approval to proceed.

- Construction – Construction of the upgraded facility over stages as planned. Monitor progress, and communicate regularly to Council/key stakeholders and to the public.

- BAU Handover - Document all assets and handover the ongoing maintenance/management plans for the facility.

- Project Closure – Complete the Project Implementation Review (PIR) to capture any lessons learnt through the process.



Procurement

In the next development stage the concept design will be refined ready for consents and construction. During the refinement of the design it is proposed to use the Early Contractor Involvement (ECI) model to tender for the Construction Party and thus have them on board to consult on the final design process.

Parties already engaged on this project:

- Architects HDT Ltd – engaged for concept design (also the original architects of H20 Xtream).
- Urban Perspectives Ltd. – Planning consultants
- H20 Power Ltd. – Mechanical engineering
- BECA – Civil structural engineering
- BBD Ltd. – Specialist Quantity Surveyor

MARKET ANALYSIS

There is growing awareness that a significant number of projects are likely to hit the market at about the same time. These projects are a combination of pre COVID-19 planned works and the recent economic stimulus projects announced by Government.

In addition there is evidence to show that in these uncertain times contractors are pricing risk into tenders. This risk is combination of factors including uncertainty about the return of COVID-19 and the impact that it is having on human and physical resource availability.

Risk combined with the above "glut" of work are driving price increases at rates previously unseen and normally not associated with recessionary times.

The key mitigation is to “go early and go fast”. In other words get ahead of the market, de-risk contractor availability through innovative procurement and be prepared to share risk.

SPECIALIST SUPPLIERS

A key component of this project is that some works involve specialist skills which are likely to come under short supply as the number of similar projects around the region and country come on stream. Again if we don’t “go early and go fast” we may find that key elements of the project are delayed having a detrimental effect upon completion dates and total costs.

As above the key mitigation will be through innovative procurement locking in key suppliers and contractors at an early stage. A number of these will need to be nominated sub-contractors.

Next Steps

Following this workshop:

- Targeted user engagement via focus groups and with iwi is planned to seek input on the concept design and to inform the next stages of detailed design.
- Preparations for the ECI procurement process will commence to secure a construction contractor to participate in next design stages. This is relatively urgent to avoid risks associated with current market conditions and sector resourcing.
- Detailed design will commence based on the scope and direction agreed to by Council.

Recommendation

It is recommended that Council approve and include the preferred option presented in this business case in the LTP 2021 – 2031 as follows:

- confirm the concept design direction and scope
- subject to Council direction, a revised project budget be included in the draft Long Term Plan 2021 – 2031 budgets (and for appropriate community engagement to occur through that process)
- agree to the next steps outlined above and next stages of project development to deliver an upgraded $H^2$0 Xtream facility.