Confidential Item

CAMPBELLTOWN CITY COUNCIL

Confidential Item

For Council meeting to be held on

Tuesday 18 August 2020 at 7.00 pm

Refer Item 11.10

Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020

Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020

Confidential Item

11.10 River Torrens Linear Park Smart Light Proposal

General Manager Infrastructure Services, Andrian Wiguna's Report

Purpose of Report

To consider an Unsolicited Proposal for the provision of Smart Lighting solution for the River Torrens Linear Park.

Strategic Plan Link

Strategy 1.5.2 Support programs and initiatives that enhance Community safety

Strategy 2.3.1 Establish strategic and/or collaborative partnerships and explore new technologies to create greater opportunities for Council to improve service delivery

Background

As part of the 2020/2021 Annual Business Plan and Budget, Council allocated $600,000 to light the access paths along the RTLP (River Torrens Linear Park) that links adjacent roads to the primary shared use path and at key points at playgrounds, exercise equipment, toilets and other public facilities, or as per Option 3 of the report tabled at the 5 November 2019 meeting (the report is attached for Members' information).

Council was presented an unsolicited proposal from a company in Sydney to install smart lighting along the RTLP. This company is well known in providing smart lighting/pole technologies and has installed number of similar projects in Australia and overseas.

A Briefing Session with Elected Members to outline their proposal was conducted on 20 July 2020. This proposal is unique in nature due to the way it is structured to deliver a number of innovative outcomes through a public private partnership utilising assets owned by a third party.

Discussion

Under Council's Unsolicited Proposals Guidelines, the Chief Executive Officer has been in discussions with a company known as ENE.Hub to provide an alternative design solution for lighting along the RTLP.

The shared path network within the RTLP is Council's largest continuous path network. With a total reserve length of approximately 12 km and the path network within nearing 14.4 km, RTLP covers Council's northern boundary.

The proposal is to install a smart lighting solution through the installation of Smart Nodes and Light Nodes along the path that incorporate Smart City technologies that integrate IoT (Internet of Things) central management system and analytics platform. The typical designs of the Smart Node and Light Node are shown below.



Figure 1: Smart Node



Figure 2: Light Node

The proposed smart lightings/poles have numerous capabilities such as (however not limited to):

- Transport (record number of pedestrian and cyclist movement)
- Environment (record climate, ambient lighting capability, noise level)
- Energy (utilising LED technology and pole that has the capability to provide charging stations for e-bike, scooter or vehicle)
- Communication (Wi-Fi capability and also could be used as a notification siren)
- Safety (CCTV and help assist button).

The proposal is to install a combination of Smart Node and Light Node poles to light up the entire RTLP (as shown in the picture below) with the inclusion of a number of smart city features such as CCTV, help assist buttons, monitoring stations and other features as listed in the table below.

The project is proposed to be delivered in three stages:

- Stage 1 – Linear Park to Campbelltown Memorial Oval
- Stage 2 - Campbelltown Memorial Oval to River Drive
- Stage 3 – River Drive to George Road.

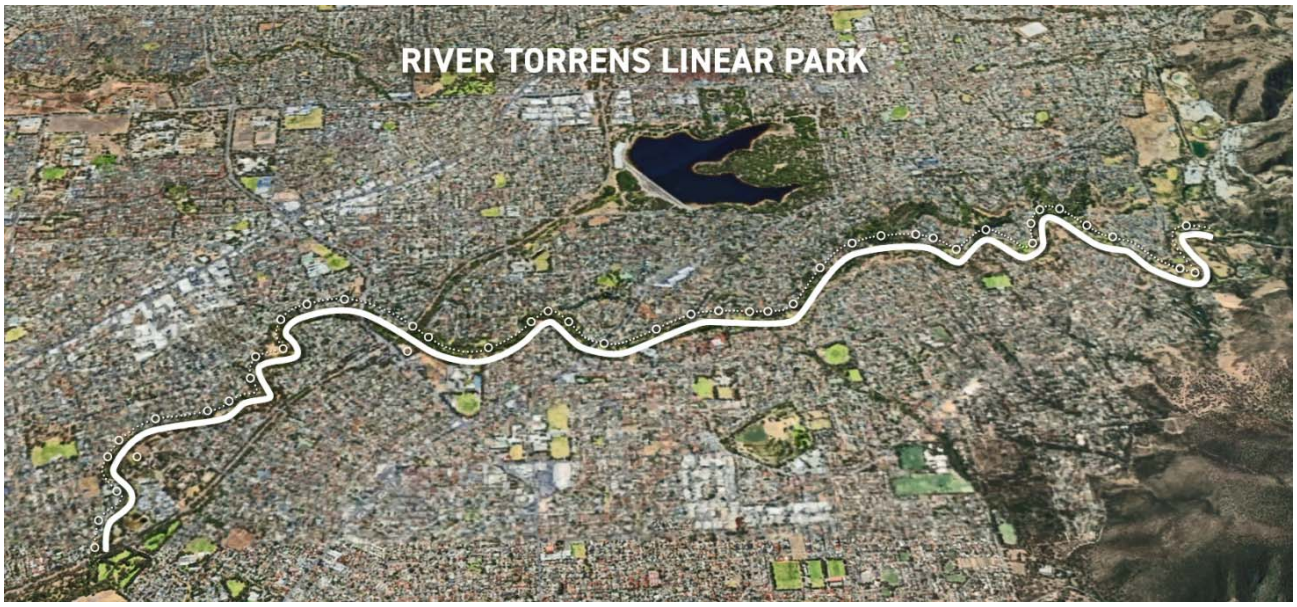


Figure 3: Scope of works and proposed location of Smart Node and Light Node

	STAGE 1	STAGE 2	STAGE 3	TOTAL PROJECT
SMART.NODE™	18	12	15	45
LITE.NODE™	86	77	87	250
LoRaWAN AP	1	1	2	4
Climate Monitoring	1	1	2	4
EVC	1	0	0	1
CCTV	39	24	37	100
Bicycle Analytics	4	3	4	11
Pedestrian Analytics	4	3	4	11
Help Assist Button	18	12	15	45

Table 1: Smart City features

Based on the information provided by this company, the cost to deliver this project in the traditional way (ie Council pay the whole cost) would be in the order of $10 million. The proposal offers a shared infrastructure and financing model that will reduce the upfront and operational cost to Council.

There are some requirements that Council needs to undertake to further minimise the upfront contribution, such as installing the duct and pit works, facilitate power connection and provide communication room or space at Lochend House. Furthermore, Council also will be required to pay an on-going maintenance tariff for the maintenance and operation of the infrastructure and the electricity cost. The tariff cost still needs to be negotiated.

Should Council consider accepting this proposal, the company could deliver the project in nine months. By introducing this innovative solution, it could transform RTLP into a National Significant Smart City Precinct.

Staff believe there is merit in investigating this proposal further. However, Staff recommend that detailed investigation needs to be undertaken to further explore the benefits, risk, cost implication, other smart technologies available and experience from those Councils who already have a similar arrangement. Furthermore, Staff would also explore if there is other funding opportunities available to fund this project.

Therefore, it is recommended that Council support Staff to further explore this proposal and request Staff to provide a detailed report once the investigation is completed.

Social Implications

Council supports Community safety and this will improve safety for pedestrians using the RTLP shared use pathway. Installation of smart light pole with CCTV and Help assist buttons will definitely improve the safety of the public, whilst well lit areas are likely to attract more users.

Environmental Implications

Lighting will have a significant impact on nocturnal animals living within the Riparian zone of the River Torrens. Night time activities are compromised by lighting and increased human activity. Breeding habits and cycles of some amphibians can be affected by lighting in such areas. The proposed smart lighting will have the dimming capability that can be controlled remotely or through sensors to minimise the impact to the surrounding habitat.

Should Council support Staff's recommendation to further investigate this proposal, Staff will obtain the detailed energy consumption (hence the emission produced). However, based on the street light bulk change over, by utilising LED lights technology, the energy consumption can be reduced significantly.

Asset Management Implications

There are no asset management implications associated with this initiative, as Council will not own the assets. In the proposal, Council has the right of use for 20 years with 4 x 5 year of operation and maintenance periods.

At the expiry of the contract period, Council could consider to roll over the contract and extend the term. The company will replace the assets or update the technology if required. Staff will also explore the option of a change in the contract to buy the assets at the end of the 20 year term at a significantly reduced rate.

Council is required to pay an ongoing tariff for the operation and maintenance of those smart lights.

Governance / Risk Management

There are no governance / risk management implications in relation to this report. However, Staff will undertake a detailed risk assessment should Council wish to explore this proposal further.

Community Engagement

There are no Community engagement implications in relation to this report.

Regional Implications

Currently Staff are unaware of similar smart technology having been installed along the RTLP. By introducing this innovative solution, it could transform RTLP into a National Significant Smart City Precinct and this project could attract attention from the State Government to collaborate with Council in delivering this project. Furthermore, should this project be successful, this type of smart technology could be the standard that could be installed along the entire RTLP or other areas.

Economic Development Implications

There are no economic development implications in relation to this report. However, should this project go ahead, it may create local employment through the construction phase and possibly during the contract period. Furthermore, ENE.Hub are looking to establish an ongoing arrangement in South Australia and this project is likely to provide the stimulus for this to occur.

Financial Implications

There is a financial contribution that Council needs to allocate with this proposal. This cost should be investigated further, including exploring further funding opportunities from third parties, such as State Government. Staff will present the detailed financial implication at a future meeting should Council wish to explore this proposal further.

Recommendation

That Council:

- **authorise the Chief Executive Officer to further explore the opportunity of entering into an agreement with ENE.Hub through this Unsolicited Proposal including funding options to install Smart Lighting Technology along the River Torrens Linear Park, and**

- **request Staff to prepare a further report once the investigation is complete.**

11.4 River Torrens Linear Park Lighting

Acting Manager Asset and Engineering, Walter Iasiello's Report

Purpose of Report

To advise Council of the options and associated costs to install lighting along the River Torrens Linear Park path.

Strategic Plan Link

Strategy 1.5.2 Support programs and initiatives that enhance community safety

Strategy 3.2.2 Safe, reliable and accessible pedestrian network

Background

At the Council meeting of 2 July 2019 Council resolved for Staff to investigate and prepare a report on lighting options for the River Torrens Linear Park path near the Lochiel Park development.

Council has also received a request from a resident through the Member for Hartley, the Hon Vincent Tarzia MP, for Council to provide improved lighting along the Linear Park generally and for the lights to be connected to the SAPN network rather than continuing to install solar lights.

The shared path network within the RTLP (River Torrens Linear Park) is Council's largest continuous path network. With a total reserve length of approximately 12 km and the path network within nearing 14.4 km, RTLP covers Council's northern boundary. Currently, a combination of mostly off grid (68 solar lights) and some grid connected lighting is used along this path network (see attached plans).

These lights were installed over 15 years ago. Lighting along the RTLP is made up of these lights as well as any lighting spill from adjacent street lights when the pathway is situated in close proximity to the roadway.

In the early 2000s Council decided to install solar lighting through the RTLP. As the locations were spaced at large intervals, it was economical to pick locations that had reasonable exposure to sunlight and install solar lights without the need to excavate trenches for cabling to connect to the grid. This lighting was designed to have minimal impact to the fauna living within this riparian corridor.

There are sections of the RTLP which have no lighting at all, for example the section adjacent to Lochiel Park. Lochiel Park was not constructed at the time the solar lights were installed. It was decided that at the time of installation the solar lights were only to be placed sparsely in areas of complete darkness to allow users to see the oncoming path.

Recently, Council has been approached by residents and path users to look at upgrading the lighting levels in the RTLP. This has gained momentum since Port Adelaide Enfield Council and Tea Tree Gully Council have installed lighting along their sides of the RTLP.

Increasing the brightness of the existing lights or changing the whole luminaire to LED will slightly improve the lighting levels around each existing pole. However, given the section from Lochiel Park to Darley Road contains six solar lights over a 3 km section, making each of these lights brighter would have no significant effect in total lighting over the length of the shared path.

Discussion

Council supports public lighting of its streets and off street public areas. This includes some of the reserves and pathways, including the RTLP, to:

- improve public safety
- provide equity for public lighting across the municipality
- ensure Community expectations, cost effectiveness, sustainability and environmental issues, are addressed.

The River Torrens Linear Park Strategic Asset Management Plan which was commissioned by all the River Torrens Riparian Councils states that the following strategic service standards for the public lighting are identified to provide a safe environment for all users of the Linear Park corridor:

- Public Lighting provision along the entire length of the shared use path along the Linear Park to enable safe transport for cyclists and pedestrians

- Public Lighting provision on shared use access paths to link adjacent roads to the primary shared use path at key points

- Public Lighting provision at playgrounds, exercise equipment, toilets and other public facilities

- Consideration of lighting times to encourage appropriate usage of the Linear Park corridor and minimise environmental impacts (ie lighting to assist pedestrians or cyclists during commuting periods in the morning and evening, light spill avoided to protect residential amenity)

- Lighting designed to Australian Standards

- Review public lighting assets once the condition rating reaches 4 (poor) and plan for renewal once the condition rating is 5 (very poor).

As part of developing the Strategic Asset Management Plan a Community Survey was undertaken and of the over 800 responses received primarily from people living in the nine Council areas along the RTLP, only a fifth of the participants consider the path lighting to be good/excellent, more than a quarter were neutral and more than a third consider the path lighting is inadequate. Three quarters of participants indicated that path lighting was important with 50% stating that it was very important. Only 7% of participants considered that path lighting was not important.

A question has been included in the upcoming Council Community Satisfaction Survey regarding the Campbelltown Community's views of the adequacy of lighting along the River Torrens Linear Park Shared Use Path.

Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020
Ref: 6288993

Factors to be considered for increasing any type of lighting within RTLP:

- Tree canopy in some areas is not conducive to solar lighting
- Light spill may not be welcome by residents onlooking the Park
- Some zones are subject to flooding
- Native animals nocturnal networks and habits within the riparian zone are complex and delicate
- Pedestrian generators such as Paradise O'Bahn Terminus, BBQ/playground areas, Skate Park, and river crossings
- Ground trenching within root zones of significant trees
- Does the path need to be lit at all.

There are a number of options that can be considered.

Having considered the many diverse factors influencing lighting in the RLTP, it is suggested that grid connected lights would be the best way to increase the lighting levels to meet the Australian Standard for pedestrian paths.

Given the length of the RTLP, if Council endorses any lighting up-grade, it should be staged over a number of financial years. If Council decides to install lighting along the RTLP, consideration should be given to lighting the path on the southern side of the O'Bahn track from the western end of Lincoln Road, Paradise to James Street, Campbelltown.

A grid connected lighting system would be the most suitable as many sections of the path have significant canopy cover and less than 30% of the lights in non-consecutive locations would have sufficient sunlight to be able to operate on solar power.

Grid connected light poles would be spaced around 40-45 metres, a total of 10 lights every 400-450 metres powered from an SAPN service point.

Neighbouring Councils have installed grid connected lighting along their side of the Torrens. This presents as a brighter and safer environment for pedestrians and cyclists using the path. Community expectations have, as a result of neighbouring Councils' actions, increased to a point where there is an expectation that Campbelltown should follow suit.

To increase lighting standards to this level would require the installation of a grid connected and evenly spaced light system. To install such a system using LED lights would be $200,000 per kilometre of pathway. This treatment would provide a light spacing of 40 – 45 metres with a power supply connection every 400m. A spin off from this system would allow Council to install BBQs or other power using equipment within more sections of the RTLP. The following options provide a summary of how the lighting could be changed along the RTLP Pathway. The light poles would be 4.5 m high.

Option 1

Install grid connected LED lights to P3 in accordance with 'AS/NZ1158.3.1:2005 Lighting for roads and public spaces Part 3.1: Pedestrian area (Category P) lighting— Performance and design requirements' standard from MacFarlane Place to Kareda Drive which is adjacent Lochiel Village and which covers approximately 1 km of path at a cost of $200,000 (see attached plans 2 and 3). Staff have explored the possibility of installing solar lights, however due to the extensive canopy cover only small number of lights can be installed. Therefore, Staff recommend the installation of grid connected lights for this section of the RTLP. This option will meet the request of Council, however it may create inequity for other RTLP users as the rest of the RTLP will still have non-compliant lighting.

Option 2

Light the entire 14.4 Km of the RTLP and the 1.2 km of O'Bahn path with grid connected LED Lights to P3 standard. This would require a total allocation of $3,120,000 which is a large outlay, however could be staged over a five year programme of $624,000 pa + CPI (see attached plans 4 to 6). It should be noted that if Council was to choose this option, there would be 68 surplus solar lights that would need to be removed and possibly relocated throughout Council's other reserves at a cost of $200 to remove and $1,500 per light to relocate (total cost of $115,600). Furthermore, Staff believe this would be the best option to light up the RTLP as it will meet the AS/NZ1158.3.1:2005 and provide a consistent level of service (in particular during winter months) along the entire length of the RTLP.

Option 3

Only light the access paths that link adjacent roads to the primary shared use path and at key points at playgrounds, exercise equipment, toilets and other public facilities. Depending on the canopy cover it may be possible to install solar lights at some locations which overcomes the need for a connection to the grid for just one light. This option will require 26 lights (or 29 if the O'Bahn path is included) in addition to the 68 solar lights that are currently in place (see attached plan 7). This would not meet the Australian Standard for lighting of pedestrian paths. The estimate of costs for this will require detailed investigation as to the location and length of the connection points for each light and the feasibility of solar lights for some locations. The estimated cost is anticipated to be between $400,000 and $600,000.

Option 4

Do not proceed with installing any additional lighting along the RTLP.

Social Implications

Community safety is supported by Council and this will improve safety for pedestrians using the RTLP shared use pathway. Lighting can be used to lower crime rates as well lit areas are likely to attract more users and there is an increase in passive surveillance.

Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020
Ref: 6288993

Environmental Implications

Lighting will have a significant impact on nocturnal animals living within the Riparian zone of the River Torrens. Night time activities are compromised by lighting and increased human activity. Breeding habits and cycles of some amphibians can be affected by lighting in such areas. In the interest to help balance the existing ecosystem, the existing solar lights are programmed to burn for four hours after sunset and two hours before sun rise. This gives a dark period through the night for nocturnal activities to continue as required. It would be suggested that any changes to the lighting within the RTLP follow this same practice.

LED lights are available in different temperature ranges (white colours) and it would be better for any new lights to be cooler in the 3000 Kelvin to 4000 Kelvin range. Any increased lighting levels will impede on the surrounding properties. Light pollution has been experienced in other suburbs (Tee Tree Gully) and this may also occur to properties adjacent to Linear Park.

Asset Management Implications

All new assets will be added to Council's Asset Register. Existing lights, if re-used, will be treated as assets booked to their new location. The luminaries would have a life of 15 years and the poles a life of 40 years.

If the existing solar lights are disposed of, the remainder of their depreciated life will be lost, while selling the lights will help recoup some of the costs.

Governance / Risk Management

A detailed Risk Assessment has been completed.

Should Council only have a section of the RTLP that has grid connected lights, there may be a risk from the Community that feel a section of the RTLP has better levels of service compared to the remainder of the shared path which may lead to an increased expectation to provide a consistent level of service, over the entire length of the RTLP in the Council area.

Community Engagement

Community engagement will be necessary as this project will affect the many shared use path users and adjacent properties.

Regional Implications

The RTLP provides a continuous link from the foothills at the eastern end of Athelstone to the coast at West Beach. This link provides an important network for social, recreational and commuter use beyond the Campbelltown Boundary, both longitudinally and across the River Torrens.

Economic Development Implications

Promoting safer longer connection to the O'Bahn (especially during the winter months) will promote greater use of this public transport facility and place less reliance on the use of private vehicles.

Financial Implications

Depending on the outcome of Council's decision there will be financial implications which will need to be addressed in future budgets. The installation of grid connected lights will require an allocation of operating budget for electricity consumption to power the lights. The LED lights consume very little power and cost $6 per light per annum which is approximately $180 - $200 pa per km of path lit, equating to approximately $3,000 pa if the whole path was lit.

Should Council support the installation of lighting all of the RTLP as per Option 2, Staff recommend that a procurement process be undertaken for the overall project (all 5 stages) to ensure Council maximises the economies of scale to achieve the best financial outcome and that the cost of this project be reflected in the Long Term Financial Plan.

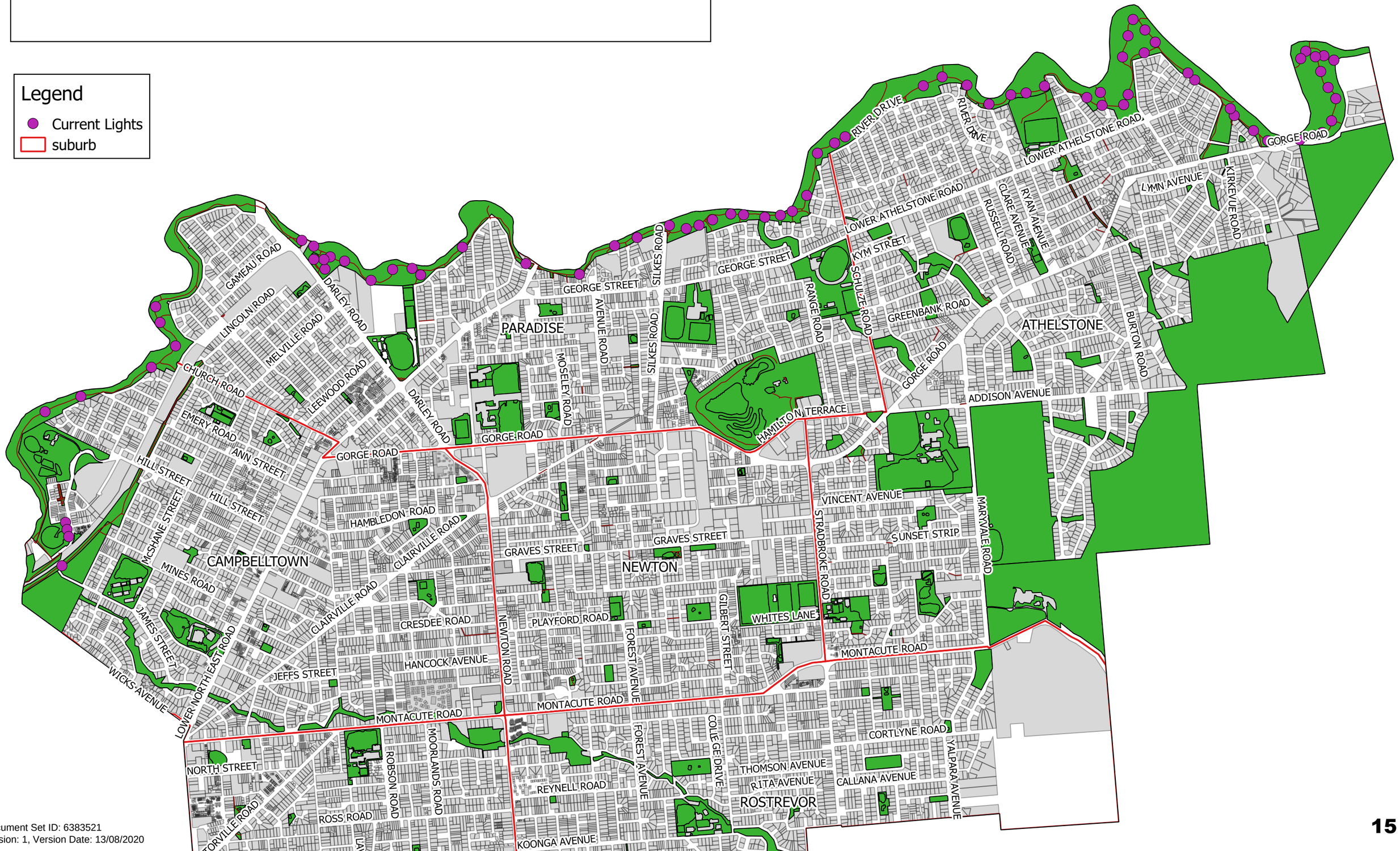
Recommendation

That Council consider:

- **Option 2 as the preferred option to light the entire length of the River Torrens Linear Park Shared Use path and the O'Bahn path**
- **staging the work over a five year period commencing in the 2020/2021 financial year and the staged costing be reflected in the Long Term Financial Plan**
- **undertaking a procurement process to light the entire length of the River Torrens Linear Park Shared Use path and O'Bahn path**
- **allocating $650,000 as Capital-New in the preparation of the draft 20120/2021 Annual Business Plan and Budget.**

Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020
Ref: 6288993

RIVER TORRENS / LINEAR PARK
CURRENT LIGHTS



Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020

CAMPBELLTOWN LINEAR PARK SECTION A

Macfarlane entry point

Legend

- Lochiel Park
- Stop 21 Fourth Av - South East side
- Windsor Gardens Caravan Park

APPROX 70 METRES

EXISTING IRRIGATION METERED SW/BD "A"

CAMPBELLTOWN COUNCIL BOUNDARY - CENTRE OF RIVER BRIDGE

MACFARLANE ENTRY POINT TO LINEAR PATHWAY

Lochiel Park Southern Wetland Walkway

Lochiel Pkwy

NE Busway

James St

Google Earth

© 2018 Google

100 m

N

Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020

CAMPBELLTOWN LINEAR PARK SECTION B

Pathway determination point Kareda Drive

Legend

- Lochiel Park
- Stop 21 Fourth Av - South East side
- Windsor Gardens Caravan Park

TERMINATION POINT KAREDA DRIVE

63M APPROX

MENS SHED - NEW SERVICE POINT "B"

LOCHEND HOUSE

McNaughtan Rd
Pamela Ave
Scenic Dr
Knight Ave
Mumham Ave
Windsor Grove
Kareda Dr
Greenglade Dr
Ann St
Colman Rd
Hall St
Brookway Dr
Lochiel Pkwy
Google Earth
© 2018 Google
200 m
N

RIVER TORRENS / LINEAR PARK
PROPOSED LED
LIGHTING INSTALLATION

Legend

- Linear_Park_Lighting_PROPOSED
- suburb



Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020

RIVER TORRENS / LINEAR PARK
PROPOSED LED
LIGHTING INSTALLATION

Legend

- Linear Park Proposed Lighting
- suburb

PARADISE

NEWTON

ATHELSTO

WOODMERE AVENUE
GAMEAU ROAD
LINCOLN ROAD
WALKER AVENUE
BALLAD AVENUE
DARLEY ROAD
BLANCHE STREET
MELVILLE ROAD
JUNCTION ROAD
THEPARKWAY
DORAN STREET
GOTHIC DRIVE
PITT STREET
ATHOS PLACE
LEEWOOD ROAD
CHURCH ROAD
ARCADIA AVENUE
LOWER NORTH EAST ROAD
DAY STREET
HARDY STREET
DARLEY ROAD
GORGE ROAD
ELSINORE DRIVE
PACKER CRESCENT
BRIAN GROVE
LAMARY AVENUE
PRIMROSE AVENUE
RIVERVIEW DRIVE
RIVERVIEW DRIVE
PHILPOTT AVENUE
URBAN AVENUE
VAGNONI AVENUE
VAGNONI AVENUE
MAPLE ROAD
CAMPBELL ROAD
IND STREET
EDMUND AVENUE
MOSELEY ROAD
BAKER STREET
VERA STREET
AVENUE ROAD
GREENWILLOW AVENUE
SILKES ROAD
SILKES ROAD
WOOD ROAD
GEORGE STREET
GEORGE STREET
DONALDSON DRIVE
CLARK CRESCENT
HEATHER COURT
HEATHER COURT
FAYDEN DRIVE
RIVER DRIVE
HARRIS STREET
ADELE AVENUE
LOCHINVAR STREET
RANGE ROAD
SCHULZE ROAD
OZONE PARADE
RESERVOIR ROAD
RESERVOIR ROAD
SILVERMERE AVENUE
RIDGEFIELD AVENUE
NICOLA COURT
STONEYBROOK DRIVE
HAMILTON TERRACE
STRADBROKE ROAD
BERRY AVENUE
GORGE ROAD

Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020

RIVER TORRENS / LINEAR PARK
PROPOSED LED
LIGHTING INSTALLATION

Legend

- Linear Park Proposed Lighting
- suburb



Document Set ID: 6383522
Version: 1, Version Date: 13/08/2020

Potential Light Locations
Option 3



Document Set ID: 6383521
Version: 1, Version Date: 13/08/2020