

# Chain of Ponds

## Moonee Ponds Creek Plan Executive Summary



# EXECUTIVE SUMMARY

## INTRODUCTION

The Chain of Ponds is a comprehensive investigation into what the Moonee Ponds Creek is today and what it may become in the future. It is a holistic plan that explores the relationship amongst the many variables and forces that affect the creek.

It listens closely to the multitude of diverse ideas and opinions expressed by the community, including what the creek means to different people. It attempts to reconcile the many disparate and often divergent understandings of the creek and its role.

Most importantly, it stakes a claim for the creek itself, it's importance to people, animals and plants, it's endurance despite a history of neglect, and it's future as a crucial and increasingly important landscape that provides a powerful connection with nature within a large city.

## PROJECT VISION

*To provide innovative, collaborative and inspirational planning and management that will improve the ecological health of the Moonee Ponds Creek, while supporting a happy, active and healthy community and protect the creek from inappropriate urban development.*

## THE CATCHMENT

The Moonee Ponds Creek is a major tributary of the Yarra River that begins at the edge of suburban Melbourne and runs 35 kilometres south through the outer and inner suburbs of northern Melbourne.

The creek drains an area of approximately 145 square kilometres. The catchment extends from Greenvale through parts of Broadmeadows, Glenroy, Pascoe Vale, Essendon and Moonee Ponds, before flowing southward through Flemington, Kensington, North and West Melbourne into the Yarra River. The catchment is now largely urbanised.

Until the latter part of the 19th century, the lower reaches of the creek comprised a chain of ponds draining into the West Melbourne Swamp (also known as 'Batman's Lagoon'). Since then, the creek has undergone extensive drainage and infrastructure works including significant realignment and it now joins the Yarra at Docklands.

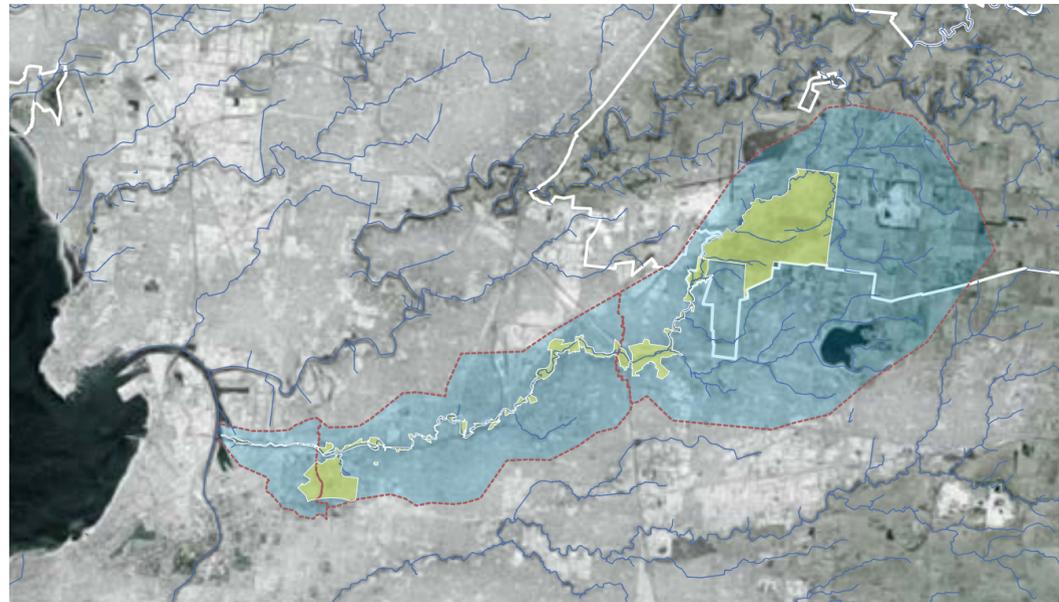
## THE STUDY AREA

The study area for this project stretches from Flemington Road in the south to the Jacana Wetlands in the north. This 14 kilometre stretch of creek is located within the middle portion of the Moonee Ponds Creek catchment. It falls within the City of Moonee Valley and City of Moreland.

Although heavily modified, the upper sections of the creek generally follow the original alignment of the creek. Further to the south below Bell Street, the creek course has been significantly altered to accommodate drainage and freeway works, and today much of this section is concrete channel.

### Scope Limitations Of The Plan

The project scope has restricted the analysis to the City of Moonee Valley and Moreland City Council, resulting in some limitations. Wherever possible this plan has considered the whole catchment, as all the modifications and improvements fall within the catchment and will necessarily span the creek channel. Given this, it is recommended that eventually the study area be extended to explore opportunities throughout the catchment.



## CHRONOLOGY - A SHORT HISTORY

Like any landscape, the Moonee Ponds Creek is in a long and ever changing journey. Understanding this evolution and how differing attitudes have shaped the creek is an important step in managing this inevitable change into the future.

The chronology represents an important collaboration between the project team, Council and the Friends of the Moonee Ponds Creek. It communicates the need to understand the past to effectively design the future.

### A Living Creek

Prior to white settlement, the creek played an important role in Wurundjeri life as a meeting and gathering place. Grasslands and patches of open woodland dot the landscape, with deep pools of water. It reminds us that the creek was once a source of abundant wildlife and was an integral component of the ecology and human occupation of the region.

### An Agricultural Creek

The arrival of Europeans and the establishment of Melbourne marked the sub-division of the land to the high water mark of the creek. The landscape was cleared, fencing was erected and farming commenced. Sheep grazing was followed by wheat and other grains. Sand mining took place along the creek. The land was celebrated for its productiveness and the first State Farm was established on the banks of the creek in Parkville.

### A Sewer Creek

This stage experienced the despoliation of the creek and its treatment as an open sewer. Due to the lack of vegetation, erosion of the delicate creek embankment occurs and sedimentation becomes a major problem along the creek. Health concerns become common place and calls are made to undertake 'improvement' works to the creek. Flooding is a regular occurrence. Within a short period, the creek has been significantly altered in form and appearance.

### A Drainage Creek

After the establishment of the Melbourne Metropolitan Board of Works, works commence to provide sewerage infrastructure to the city and solve ongoing flooding issues along the creek. Many people are concerned about health and safety along the creek and the MMBW embark on a long term drainage scheme for the creek, which includes substantial alterations to its alignment and form, including construction of the concrete lining.

### A Recreational Creek

Early in the twentieth century, there is growing recognition of the need to provide suitable spaces for recreation for a growing population. The only cheap and available land is flood prone land along the creek, which leads to the location of recreational and sporting facilities along the creek. The seeds are sown for a linear park along the creek, although it fails to be constructed.

### An Urbanised Creek

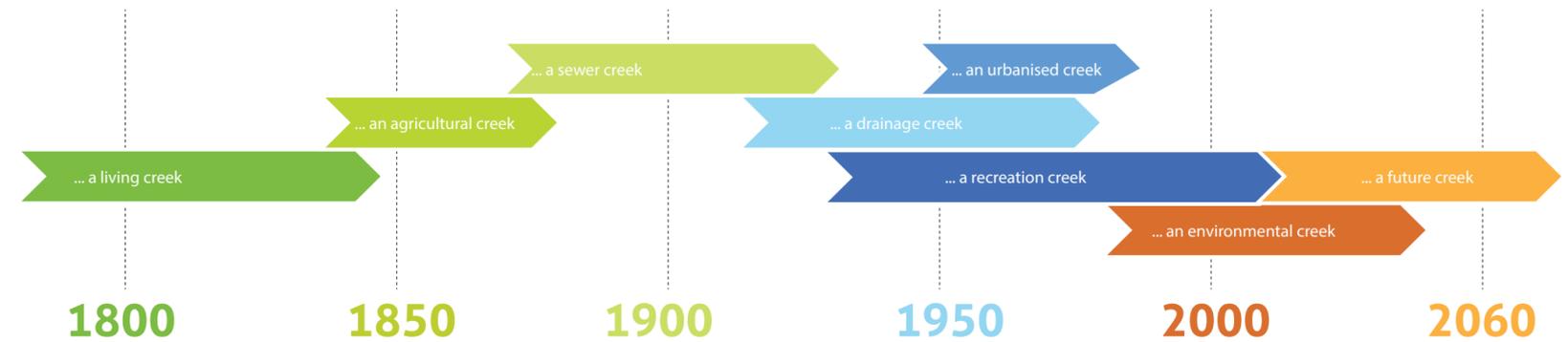
The post war period marks a significant phase in the growth of Melbourne with substantial migration from war ravaged Europe fuelling the rapid urban expansion of housing to the north along the creek. To service the new suburbs and the construction of a new international airport, as well as support the growing ownership of private vehicles, a new freeway is constructed on the creek floodplain. The creek is significantly realigned and channelled and the topography significantly altered.

### An Environmental Creek

The 1960's and 70's heralds a growing environmental awareness, with a significant shift in community attitudes towards the creek. There is growing recognition of the ecological and social importance of the creek and the need to protect and improve the creek from further works. The establishment of community groups seeking to improve the creek's health and function is a critical development.

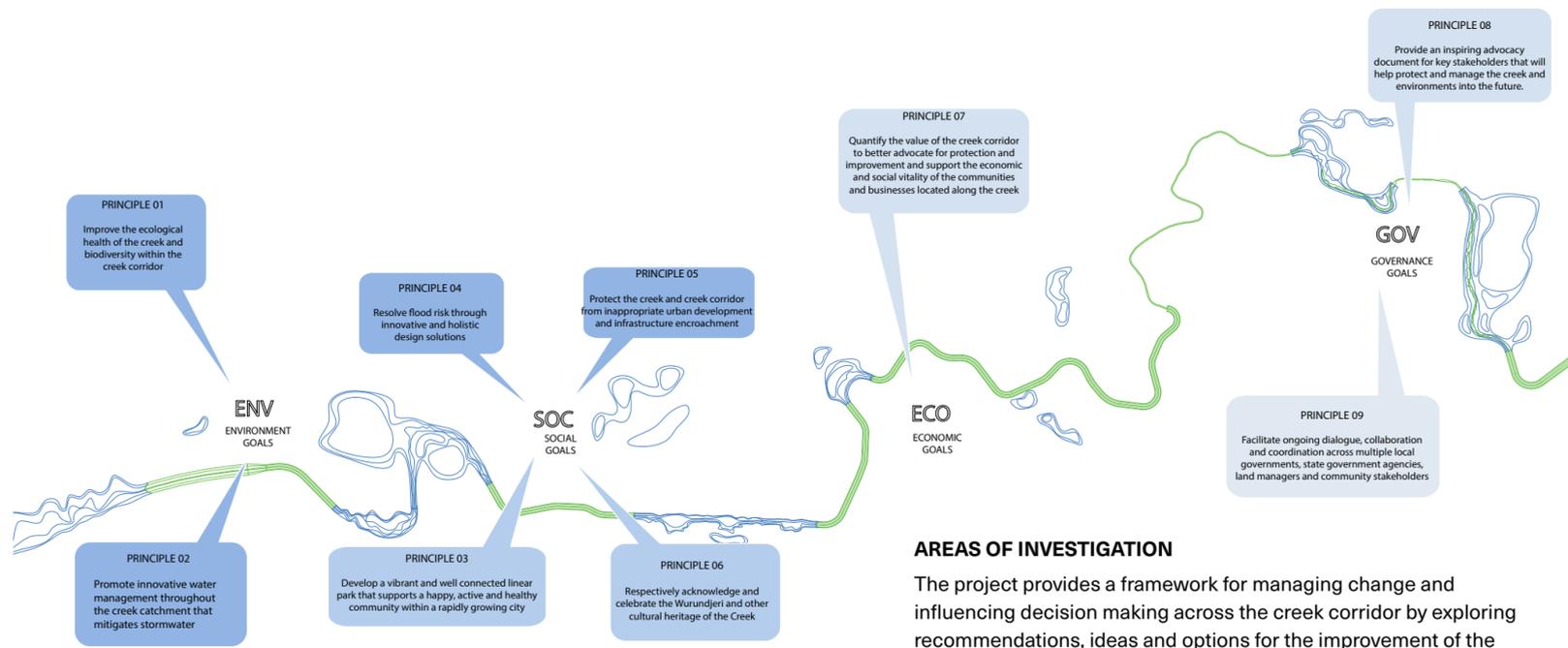
### A Future Creek

Today, Melbourne faces important decisions about the type of city we would like to inhabit, and how we should live our lives. There is almost universal recognition of the magnitude of human intervention in global natural systems, and the need to significantly change our management of the natural and urban ecosystems. Melbourne commences its 'second gold rush' with substantial population growth and urban development rapidly reshaping the city.





Vision of a looking south towards Flemington Road at Travancore  
Robert Lovick for Urban-Water Transect studio, led by Dr. Michaela Prescott, RMIT University, 2017



**AREAS OF INVESTIGATION**

The project provides a framework for managing change and influencing decision making across the creek corridor by exploring recommendations, ideas and options for the improvement of the creek. It identifies appropriate design and ecological strategies with outcomes directed to four key areas.

**ENVIRONMENT – ECOLOGY**

*Improve the ecological health of the creek and biodiversity within the creek corridor through the protection, enhancement and restoration of natural systems.*

With growing evidence pointing to the environmental, social and economic benefits of nature in cities, ongoing conservation of biodiversity is an important objective.

What is both surprising and encouraging is the extent to which both plants and animals still inhabit the Moonee Ponds Creek, despite the degree of modification and damage to the original landscape. It is important not to underestimate the ecological value of the creek, as degraded as it may be, or the extent of revegetation works that have occurred within the last thirty years. The creek remains an extremely important habitat corridor within the city that should be protected, enhanced, improved and celebrated.

There are a range of threats and constraints to the ecological operation of the Moonee Ponds Creek corridor including –

- Loss of vegetation cover (lack of protection)
- Limited floral and habitat diversity
- Fragmentation of habitats
- Human and urban impacts (heat island, pollution, litter, impervious surfaces)
- Urban encroachment and loss of permeability
- Predation from domestic and feral animals
- Introduced and invasive plant species
- Impacts from proposed roads, buildings and infrastructure

**ENVIRONMENT – WATER INVESTIGATION**

*Promote innovative water management throughout the creek catchment that mitigates stormwater runoff and pollution to improve water quality.*

Comprehensive water investigations were developed in response to the overwhelming community desire to remove the concrete channel of the Moonee Ponds Creek. It was realised quickly that this could not be solved with one intervention. One of the issues with the Moonee Ponds Creek is not only that it can suffer from too much water, it can also experience not enough.

Improvements to urban waterways such as the Moonee Ponds Creek require integrated stormwater management based on a catchment wide approach. The creek and the immediate adjacent linear park form are affected by, and are the direct result, of the management and planning of stormwater and flood management, built form policy and controls, designs of public infrastructure and the movement of people and animals.

The investigation recognises opportunities within the broader creek catchment (offline) and those which operate more directly on water within the creek itself (on-line).

**Offline (In the Creek Catchment)**

These are initiatives that operate on storm water within the broader creek catchment which can have an impact on the health and operation of the creek. They include strategies that manage stormwater runoff and quality prior to the water entering the creek itself. A total of 18 offline opportunities have been identified through the following categories,-

- Catchment Scale – through water harvesting and wetland opportunities;
- Street Scale – canopy trees, permeable surfaces and raingardens;
- Lot Scale – water tanks and permeable surfaces.

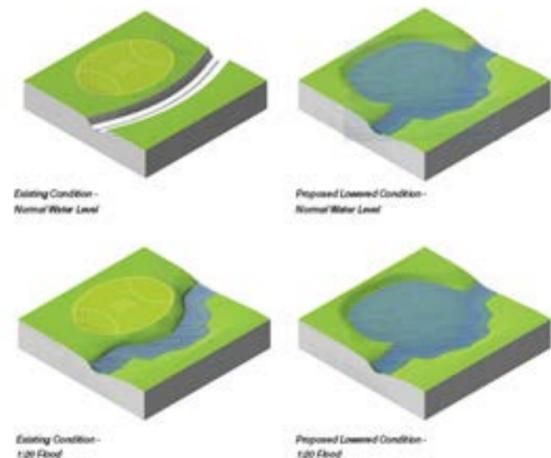
**On-Line (On the Creek)**

Within the Chain of Ponds, a total of 18 online initiatives have been identified that would improve Moonee Ponds Creek waterway corridor itself and the open space on both sides of the creek. This is from the creek centre line to the adjacent property boundary.

Online initiatives manage water quality and flows once the water has entered the creek. These ideas operate directly on the physical form and function of the creek itself and tend to be more visible and identifiable than the offline options. Online opportunities can be divided into the following categories-

- Flow control and water aeration - through weirs, rifle choke points and channel materials;
- Creek profile – through terracing, benching utilising different materials for increased community connection and ecology outcomes;
- Landform – utilising adjacent landform in order to detain water before it enters the creek, to recharge water tables, improve soil condition and provide landscape opportunities to increase social connection and habitat value of the landscape.

While individual options within each category can be pursued in isolation, the potential for significant improvements in creek health is only achieved when multiple options across both the catchment (off-line) and the creek (on-line) are considered in unison. In this manner, is highly likely that creek improvements will be achieved through a multi-faceted and diverse



**SOCIAL – LINEAR PARK**

*Develop a vibrant and well connected linear park that supports a happy, active and healthy community within a rapidly growing city.*

During a site walk along the Moonee Ponds Creek in 2016, Wurundjeri elders lamented the anonymity, loss of identify and lack of visibility of the creek today. In contrast, they noted that the creek would have been both highly visible and extremely important to people, assuming great importance within the landscape as a gathering place and as a source of both food and shelter.

The purpose of a linear park along the Moonee Ponds Creek is to make the creek visible once more in the landscape and to celebrate its importance and great value to Melbourne. The linear park unites a series of fragmented and disconnected spaces along the creek that in isolation struggle to operate, but collectively offer enormous potential to the city.

An expanded linear park along the Moonee Ponds Creek can improve the health of the city and its inhabitants. The creek becomes visible once more, a new focus for a connected and healthy community.

Large urban parks were originally created as the 'green lungs' of the city, a respite from the negative effects of industrialisation such as pollution and noise.

While the industry has moved on, the role of the park remains as important today, when cities are now substantially larger and more densely populated and contact with outdoors and nature more removed and areas to relax and recreate are more readily sought. The linear park offers a place for social interaction, recreation and reflection. An outlet for people to connect with each other and the natural environment.

There is an opportunity for urban parks to house underlying ecological systems that are still present within the city, but are currently masked by the scale and simplicity of the built form and its infrastructure.

A total of 54 components have been developed to reimagine the linear park and provide direction for infrastructure, landscape and water to create a distinct urban park.

The creation of a significant linear park and reinstatement of the 'chain of ponds' is central to improving the visibility of Moonee Ponds Creek and the key component to the creation of a distinct linear park. The ponds signify how the creek by can be reclaimed by people, animals and plants. Rather than draining water away from the city as quickly as possible, hidden within buried pipes and concrete channels, the chain of ponds represents the emergence of a new urbanism that recognises the

essential role that natural systems and biodiversity play within the health of the city. The water is slowed and cleaned, and allowed to pond along the creek, providing a unique landscape attracting people through its offering of experience and difference.

Through its diverse history and potential as a critical asset to the city, the Moonee Ponds Creek Linear Park can be transformed.

To achieve this planning and constructing infrastructure to support a linear water focused park and its natural processes needs to be implemented within the creek corridor and its related catchment. The project reconnects the creek to its regional and ecological context, to achieve the community's desire to reimagine the creek. Once again, it can become a living and functioning asset to people and living things, within a more sustainable, social and functionally healthier city.

Areas of improvement are shown within the base plans. To achieve this, expanding the linear park corridor, removing pinch points and encouraging neighbourhoods to address and acknowledge the creek environment need to be delivered. Increased access to the waterway, other parklands (landbridge to Royal Park) shared paths, ephemeral environments, activities and a diverse, experiential landscape will attract visitors and the existing community.

**SOCIAL - FLOODING RISK**

*Resolve flood risk through innovative and holistic design solutions.*

A critical Melbourne Water requirement for any modification to the Moonee Ponds Creek is to avoid increasing the risk of flooding to properties along the creek.

At the time of the development of this plan, Melbourne Water had not yet undertaken updated flood modelling for the entire Moonee Ponds Creek Catchment that takes into account the projected 32% increase in rainfall intensity by 2100 as a result of climate change. This is really critical at understanding how flood waters will be contained within the existing channel.

**SOCIAL - URBAN DEVELOPMENT AND INFRASTRUCTURE**

*Protect the creek and creek corridor from inappropriate urban development and infrastructure encroachment.*

As the city's population continues to grow, urban development and new and expanding infrastructure is required to meet the increased demand.

One of the defining characteristics of the Moonee Ponds Creek, particularly south of Essendon Airport, is the presence of prominent elements of urban infrastructure, including freeways, railways bridges, and drainage and sewer pipes. This infrastructure has dramatically shaped the form and alignment of the creek, resulting in a highly modified urban waterway with little remaining pre-settlement form.

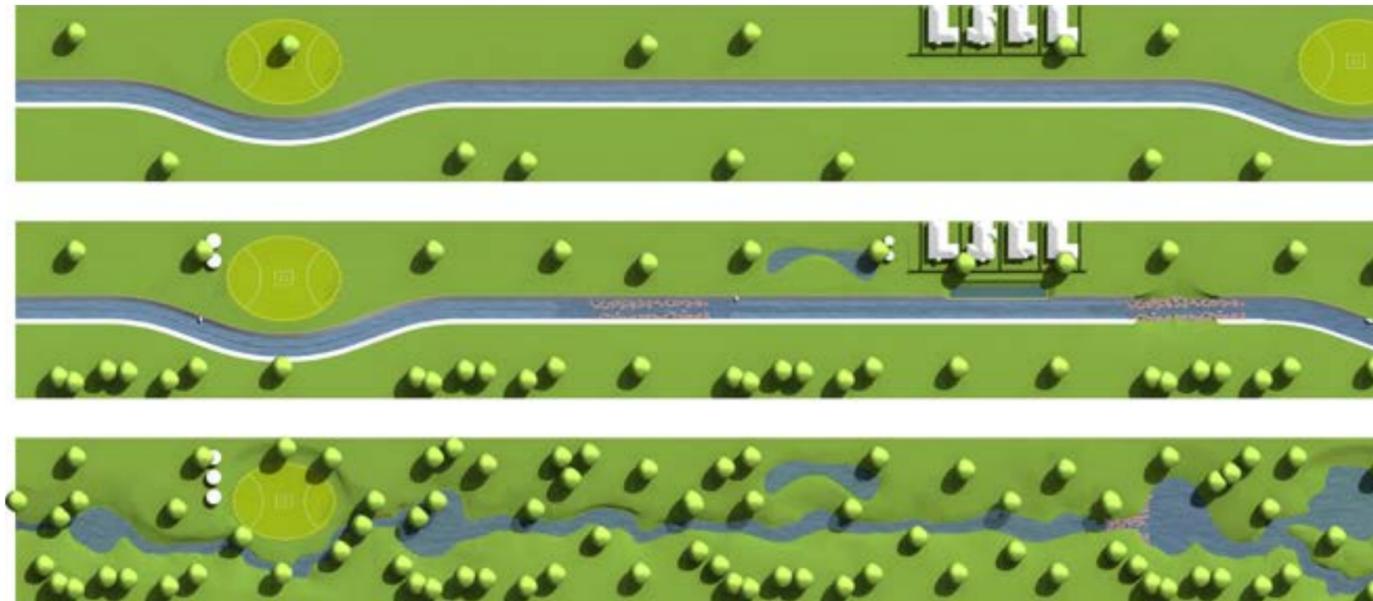
With increased urban growth, the provision of open space in the city becomes more and more important and the protection of these spaces is paramount if they are to service future populations well. These spaces often need to provide for a range of sometimes complementary but sometimes contradictory services.

The complex web of varying parkland users and potential impacts from surrounding infrastructure needs careful consideration to ensure the valuable intention of these spaces is not compromised, whether that be for environmental, social or economic reasons.

It should also be acknowledged that the creek is an 'urban stream' and offers a range of experiences that more natural settings may not. Opportunities to acknowledge, celebrate and embellish the unique infrastructure should be explored.



Removal of pinch points and the creation of connectivity along the Moonee Ponds Creek



## CULTURAL HERITAGE

*Acknowledge and celebrate the Wurundjeri and other cultural heritage of the Creek.*

Despite the disruptive effects of colonisation, Wurundjeri people have maintained their attachment to, and custodial responsibility for 'Country'. The manner in which Aboriginal people identify with Country includes practicing culture and being present and active in that environment.

In July 2016, a Cultural Heritage Values Recording (CHVR) was undertaken by the Wurundjeri, as an important part of this project. The purpose of the recording was to identify and understand traditional and contemporary cultural values and meanings held by the Indigenous community associated with the creek corridor, and ways in which these values can be interpreted in a meaningful and practical way. The findings can be summarised into five themes.

### Tangible Aboriginal Cultural Heritage

Moonee Ponds Creek and its associated corridor are amongst the most sensitive areas for Aboriginal Cultural Heritage in the municipality. However, the landscape has undergone significant modification since European contact and this has affected the integrity and overall intactness of tangible Aboriginal cultural heritage along the creek. This brings into question the broad brush designation of the whole creek corridor as an area of cultural heritage sensitivity under the Aboriginal Heritage Regulations 2007. However, in areas of low ground disturbance, investigations undertaken in proximity to the creek have located sub-surface cultural material.

### Intangible Cultural Heritage

A primary part of the CHVR, intangible cultural heritage includes aspects of spirituality, law, knowledge, practices, traditional resources or other beliefs and attachments that tell a story about the land, its environment and the people who belong to it. The relationship between tangible and intangible values along the creek is particularly important because of the extent to which it has become altered.

### Traditional Ecological Knowledge (TEK)

This relates to the accumulated knowledge, belief and adaptive practices handed down from generation to generation by Aboriginal people. TEK is increasingly being considered as providing a more sustainable approaches to land management.



*'The Totems', Glen Romanis (2003) in Travancore Park, (left) and Boeing Reserve, Strathmore Heights (right), as inspected during the recording*

### Importance of Water

Waterways are highly significant in Indigenous custom as the source of important resources traditionally used by Aboriginal people, and as the focus of deep traditions for cultural practice

Aboriginal people have long understood that water is directly connected to the health and wellbeing of the natural environment, and the state of waterways is an important part of the integrity of culturally important places.

It is in turn, important for the wellbeing of Aboriginal communities that they continue to have access to waterways for recreation, gathering resources and practicing and teaching traditional culture.

## ECONOMIC

*Quantify the value of the open space along the creek to better advocate for protection and improvement. Support the economic and social vitality of the communities and businesses located along the creek.*

In order for the city to be resilient to different climate condition, infrastructure which worked very well over the last century will need to be adapted over the coming years. Renewing our infrastructure from grey to green, can create a number of complementary benefits for health and wellbeing, long-term economic prospects and liveability.

In the long term Moonee Ponds Creek might not be capable of coping with more intense rainfall, which can lead to further flooding and extending our flood overlays. It could be extremely disruptive and costly to modify grey infrastructure, but we can build naturalised infrastructure to detain and slow down water movement through detention basins, raingardens, wetlands and living streams. Stormwater can be mitigated and we can create diverse community spaces and enhance our local environment. Such ecosystem services save money in the long term and provide health benefits to our community such as urban cooling, recreation opportunities, disease prevention, and psychological benefits.

The final benefits are economic and range from energy savings, reduced burden on health and emergency services and increased land values, to greater productivity and creativity. Historically, economic benefits have driven decision making and city design, while ecological, environmental and human benefits (or costs) have largely been ignored, but have major economic consequences.



In 2016, Deloitte Economics produced a report for the State Victorian Planning Authority (VPA) found that the overall value of open space was approximately \$121,093 per hectare per annum. The authors noted that not all benefits have been quantified. The same report emphasised the value of linear and linkage corridors are much higher. State government short term budgetary considerations and KPIs around disposing of open space through the Fast Track process should be very seriously considered because it is very difficult, if not impossible, to reverse such decisions in the future. The incremental loss of open space may appear prudential from a short-term budgetary perspective, but needs to be considered from a strategic perspective for the whole community and the liveability of the city.

Unfortunately, too many earlier disposal decisions have been made along the Moonee Ponds Creek that make it very difficult and expensive to: improve connectivity, ensure the equitable provision and realise the full value of open spaces.

## GOVERNANCE - COLLABORATION

A major challenge for the effective management of the creek corridor is multiple land ownership and management boundaries. Melbourne Water, Environment Protection Authority (EPA), VicRoads, Local Governments, CityLink/Transurban, community groups and local residents all have a role to play in how the creek is managed. Because agency objectives often differ, there are many conflicting agendas.

The Moonee Ponds Creek Collaboration Group was established in 2016, in response to the growing concerns from Council that the overall health of the creek and environs was further deteriorating due to the impact of infrastructure projects, development and management within the catchment. As an urban waterway, the creek had yet been established as a priority, however its role in the proposed Arden Macaulay precinct and the development of the Chain of Ponds document, provided the much need impetus to focus on the waterway, bringing together a wide variety of stakeholders, interest groups and landowners to the discussion.

The Collaboration Group has embraced the principles of the Chain of Ponds document, recognising a need for a coordinated approach to this asset. The group consists of 28 stakeholder groups.

The development of a Memorandum of Understanding, an agreement to undertake Planning Controls, data sharing and a mapping project have been some of the catchment wide initiatives that have developed from this group but there is momentum and commitment to achieve much more.



## GOVERNANCE - STRATEGIC DIRECTION

*Provide an inspiring advocacy document for key stakeholders that will help protect and manage the creek and environments into the future.*

The Chain of Ponds document builds upon the important work that has already been completed by both the community and government over many years.

The Chain of Ponds does not seek to replicate these earlier investigations, but rather to extend upon the thinking and ideas already proposed. These documents include the Northern Waterways Study completed in 1976, which marked a crucial turning point in community attitudes towards the creek and heralding a new era of environmental awareness.

This was followed sixteen years later by the ground breaking Moonee Ponds Creek Concept Plan completed by the Melbourne Metropolitan Board of Works (MMBW) for the Moonee Ponds Creek Association in 1992. More recently, the 2011 Strategic Plan reaffirmed the need for ongoing work to improve the fortunes of the creek. These documents chart a collective vision for the creek and form a powerful statement of intent, which still resonates with the community today. It is sought that this document will assist with preparation of a reference document for the Moonee Ponds Creek, to create a new ESO overlay that covers the entire extent of the creek.

These documents remind us that any plan for the creek must be long term. The changes required to improve the health and function of the creek are significant and will not happen overnight. Any ideas for the creek must be flexible and adaptable to account for the significant changes that will occur over the next 50 years.

*"The way in which so many agencies are sharing our vision for Moonee Ponds Creek makes me the most positive I have felt for the Creek's future in all my 30 years of advocating for it,"*

*The Hon Kelvin Thomson, President and founder of the Friends of Moonee Ponds Creek, October 2018*

**THE FUTURE CREEK – BROSAN CRESCENT PRECINCT**

The Brosnan Crescent precinct offers the perfect opportunity and location to realise many of the actions and recommendations of the Chain of Ponds and see the first steps in naturalising the creek along the creek.

In the 1970's the Strathmore Progress Association succeeded in halting the extent of concrete channel being constructed in this location. Now this site provides a symbolic setting for change, to remove the concrete channel and provide a revitalised creek setting.

The area straddles the Moreland and Moonee Valley councils and stretches from Herbert St to Margaret St, Oak Park next to Brosnan Crescent Strathmore North. It is adjacent to the Strathmore North Primary School, Lebanon Reserve and Oak Park Aquatic Centre, this precinct is a hub of educational and recreational activity.

The Creek from this point upstream to the Railway Viaduct at Strathmore Heights had already been realigned but had significant revegetation.

As noted by Anna Lanigan – Friends of Moonee Ponds Creek:

*'This now provides an impressive example of rescued biodiversity and one that I, among many others, would like to see replicated downstream. The evidence is in the wildlife that frequents the creek within metres upstream of the concrete channel. The potential gain of visual amenity for residents and for the many recreational visitors to the Moonee Ponds Creek corridor is beyond measure'.*

The benefits of this significantly more naturalised section is the visible increase in wildlife and habitat that this provides. However this diminishes quickly within the concrete section. Revitalising this section of creek, will provide a unique opportunity to provide

educational and monitoring opportunities for the community and improve the experience and amenity to recreational users of the Moonee Ponds Creek trail.

A future creek with improved ecology and setting for habitat, experiences with nature and green relief from the urban form is possible.

The authors respectfully acknowledge the traditional custodians of this land - the Wurundjeri people of the Kulin Nation, their spirits, ancestors, elders and community members past and present.



*Vision of Moonee Ponds Creek, Brosnan Cres Precinct by Robert Lovick*

