

REALIZING THE CHINESE GOLD DIGGERS' FOOTPRINT IN BENDIGO (1854-1869)

MA, DING

School of Architecture and Urban Planning, Tongji University, China, Mad@Tongji.edu.cn

JOHN, ROLLO

School of Architecture and Built Environment, Deakin University, Australia, john.rollo@deakin.edu.au

YOLANDA, ESTEBAN

School of Architecture and Built Environment, Deakin University, Australia,
yolanda.esteban@deakin.edu.au

SHAO, YUHAN

School of Architecture and Urban Planning, Tongji University, China, shaoyuhan@tongji.edu.cn

ABSTRACT

The City of Bendigo, situated on the northern reaches of the Great Dividing Range in central Victoria, Australia, was formed during the gold-rush days of the 1850s and was often referred to by Chinese diasporic communities across the Pacific as 'Big Gold Mountain'. The City currently lists over 700 sites in its historic register, however only five of these sites reflect the presence of what was once an extensive and thriving Chinese community which placed Bendigo alongside San Francisco and Melbourne as a key diasporic hub during the 1850s and 1860s. This study applies desire line theory as an analytical instrument to provide a more informed understanding of the expansion process associated with the Gold Rush and examines Chinese settlement patterns in Bendigo between 1854 and 1869, focusing on the 6,000 Chinese miners who formed a dynamic network of camps and villages. Utilizing 184 newspaper extracts, heritage reports, and planning scheme map overlays, the research interpolates the extent of these settlements. Findings reveal an agile network responding to new opportunities of the time. While guidelines set out in the The Burra Charter: Australia ICOMOS Charter for Places of Cultural Significance (2013), clearly indicate that physical evidence needs to be identified for a location to meet the requirements of being listed in a heritage register, the research nonetheless provides evidence for extending recognition of the cultural landscape, to include potential locations of interest which illustrate the extent of the Chinese gold diggers' around the greater Bendigo area.

Keywords

Chinese Gold Diggers, Bendigo, Heritage Sites, Settlement Patterns, Gold Rush

1 INTRODUCTION

1.1 Background

Between 1857 and 1863, more than 17,000 Chinese sojourners embarked on the arduous journey of approximately 500 kilometers from Robe in South Australia to the Victorian goldfields. By 1859, the temporary Chinese resident population in Victoria had reached 46,000, constituting one-fifth of the total male population in the mining towns during the peak of the Gold Rush (Welch, 2006).

Bendigo became the hub of Central Victoria and the golden gateway to Northern Victoria. Like Ballarat and nearby Castlemaine, it is a city shaped by the Victorian gold rush of the 1850s. The area's abundant gold resources made it a center for Chinese settlement in Australia (Cushman, 1984). Unlike British, European, and American diggers, who were largely self-funded, most Chinese migrant diggers were indentured from southern China, financed by wealthy patrons in Canton and other cities. By 1854, Chinese migrants were arriving in large numbers, predominantly from southern China, particularly the Canton region and Sze Yap area of Guangdong Province, and their presence in the goldfields quickly grew into the thousands (Cushman, 1984). Some of these migrants had previously worked on the Californian goldfields and ventured to Australia in search of similar opportunities. Moreover, it was alleged that the English-style colonial government and policing provided a level of protection from the extreme racial violence experienced in California.

Eighty percent of the Chinese workers originated from Sze Yap, which comprises four old counties in the Pearl River Delta near Hong Kong: Xinhui, Taishan, Kaiping, and Enping. In addition to gold panning, these migrants engaged in land clearing, domestic work, and other forms of labor. Over time, they established businesses in laundry services, grocery stores, and restaurants. Yang (2014) argues that many migrants from Sze Yap arrived in Australia as manual laborers through illegal trafficking, a process known as "selling piglets." Few arrived as contract workers, with most working illegally in mining operations. Motivations were often straightforward: some were enticed by posters advertising gold in their hometowns or were misled by intermediaries in Hong Kong into signing contracts based on false promises. These circumstances were deeply tied to the political instability and poverty in China during that time.

Tang (2013) notes that the Beijing Treaty, signed by the Qing government, legalized the emigration of Chinese laborers. This coincided with the decline of agriculture in Fujian and Guangdong provinces in the 19th century, as well as the influx of European industrial goods, which led to the collapse of many small-scale handicraft businesses. Maritime transport advancements further fueled aspirations for wealth abroad. Reeves (2011) highlights how events such as the Opium Wars, the opening of China's coastal ports, corrupt political systems, the Taiping Rebellion, and the exploitative indenture system collectively drove mass migration. The pursuit of gold served as a strong motivator for these Chinese laborers to seek better lives in Australasia and North America.

The global significance of the Chinese sojourners' contributions placed Bendigo in the 1850s and 1860s on par with major diasporic centers like San Francisco. Known as 'Old Gold Mountain' to Chinese diggers, San Francisco, along with Melbourne's Chinatown ('New Gold Mountain'), symbolized key migration destinations, with Bendigo soon becoming globally renowned as 'Big Gold Mountain.' However, Bendigo lost this symbolic legacy over a century ago when the Bridge Street Chinatown—the city's last Chinese urban settlement—was largely destroyed by fire. Today, the Golden Dragon Museum serves as a repository of cultural artifacts and legacies from generations of Chinese immigrants. Yet, extensive urban development during the late 19th and 20th centuries has erased much of the physical evidence of this once-vibrant and transient community.

This paper focuses on Bendigo's Chinese heritage and reflects on the life of an estimated 6000 Chinese miners beginning with the time of the gold rush in the 1850s and extending through to the late 1860s. These two decades define the period of rapid expansion and decline of the Chinese gold-digging community in the Bendigo region. The paper explores the extent of Chinese settlement surrounding the township of early Bendigo by researching their widespread network of camps and villages during this time. Through the application of desire line theory as an analytical instrument to provide a more informed understanding of the expansion process associated with a Gold Rush, defined as the 'rapid movement of people to a newly discovered goldfield', research findings appeared to indicate that these settlements may

have formed a dynamic network of connections and movement patterns around the hinterland and landscape of the Bendigo township area, which is possibly still evident in parts of Bendigo's current configuration of streets, paths and laneways.

From a Chinese digger's perspective, the locations of 22 possible camps were assessed, of which just over half of these, or 13 locations, do not appear to have been mentioned in the Heritage Register. Two locations remain uncertain in their recognition, and 11 camps remain undefined. While the progress of urban development appears to have eradicated all physical evidence of their existence defined by their settlement patterns, the paper nonetheless presents this network of camps as an integral aspect of their legacy and the cultural landscape that these locations once defined, with respect to the last five remaining tangible heritage sites.

1.2 The Aim of Research

This research seeks to reconstruct the settlement patterns of early Chinese sojourners from 1854 to 1869, aiming to provide evidence for extending historical recognition to significant locations that highlight the enduring footprint of Chinese gold diggers in the Greater Bendigo area. Despite the profound contributions of Chinese sojourners to Bendigo's history, their legacy still remains underrepresented in both academic discourse and cultural heritage registers.

The objectives of this study are threefold:

(1) to document and analyze the settlement patterns of Chinese gold diggers in Bendigo, (2) to integrate historical and spatial data using innovative mapping methodologies, and (3) to advocate for the recognition of historically significant locations through heritage and urban planning initiatives.

Adopting an interdisciplinary approach, this study combines archival research with spatial analysis. By reviewing 185 historical newspaper extracts and mapping settlement sites using desire-line analyses, it reconstructs the spatial dynamics of Chinese camps and their integration into Bendigo's evolving urban landscape.

By mapping the footprint of Chinese gold diggers in Bendigo, this research enriches the understanding of their cultural and historical contributions while providing practical insights for inclusive heritage planning. It underscores the potential for leveraging historical narratives to strengthen community identity, adding to the discussion on cultural landscape preservation, and fosters sustainable cultural tourism.

1.3 Literature Review - 700 Heritage Listings and Only 5 Remaining Chinese Sites

Keir Reeves and Tseen Khoo, in their editorial paper to 'Dragon Tails: Re-interpreting Chinese Australian History' (2011), cite Jennifer Cushman's paper 'A Colonial Casualty: The Chinese Community in Australian historiography' (1984), where she encourages "*researchers to move beyond the prevalent one-dimensional approach to understanding the Chinese presence in Australia, which primarily examined the nation's colonialist attitudes towards the Chinese.*" (Cushman 1984). Over the thirty years that have passed since Cushman's influential challenge, Reeves and Khoo indicate that "*many researchers directed their work towards in-depth community research, seeking to understand the Chinese 'on their own terms,' revealing a more complex picture of Chinese community cultures, identities and race relations in Australia.*" (Reeves & Khoo 2011 p4-5).

While scholars such as Cushman, and Reeves and Khoo have made a significant contribution to highlighting the complex layers of the Chinese heritage in Australia, the 'Assessment of the Experiential Value of Heritage Assets, of the Chinese Heritage Precinct, Bendigo' by Jennifer Laing, Fiona Wheeler, Keir Reeves and Warwick Frost (2014), appears to indicate that there exists a significant gap in the way that Bendigo's Chinese heritage and legacy is fundamentally communicated and celebrated, especially when considering that an appreciation of their cultural footprint is currently limited to only five listed heritage sites (see below). Hence given the significant lack of available literature relating to their settlement patterns, the research presented in this paper focuses predominantly on sources which assisted in developing a more complete spatial understanding of the extent of Bendigo's Chinese sojourners' cultural landscape.

A review of Bendigo's Planning Scheme heritage registers and planning overlays reveals a striking disparity: out of over 700 historic sites listed in the Greater Bendigo area, only five are specifically related to Chinese heritage:

- 1 HO581 – 3 Finn Street, North Bendigo, Bendigo Chinese Temple (Joss House)
- 2 HO719 – 44 Thunder Street, North Bendigo, Chinese Kiln & Market Garden
- 3 HO678 – 261-351 Holdsworth Road, White Hills, White Hills Cemetery
- 4 HO858 – Corner of Murphy Street and Nomad Lane, White Hills
- 5 HO720 – 57-59 Forest Street, Bendigo, Chinese Brick Walls

This is particularly extraordinary when considering that over 3,000 deceased Chinese migrants are interred at White Hills Cemetery, yet the recognition of Chinese heritage sites remains grossly underrepresented. The absence of other important sites, such as the Bridge Street Camp, Ironbark Camp, Eaglehawk Camp, Long Gully Camp, and Spring Gully Camp—each significant for their role in the Chinese community's settlement—reflects a glaring gap in the tangible history of Bendigo's Chinese diaspora.

This gap presents a unique opportunity for further research and heritage documentation. Through comprehensive mapping and appropriate illustration, it is possible to chart the extent of Chinese settlement across Bendigo and its surrounding hinterland. Given that many other potential sites of significance may have been long forgotten, this effort could not only help fill in some of the historical gaps but may also contribute to a more accurate and inclusive understanding of the region's past. Additionally, such research could inform heritage preservation efforts, ensuring that Chinese contributions to Bendigo's development are more fully acknowledged in the city's cultural landscape narrative. This gap underscores the need for expanded recognition of Chinese heritage in Bendigo's planning and heritage listing processes.

2 METHODS

The research methodology combines historical evidence, spatial analysis, and urban form studies to investigate the settlement patterns and cultural heritage of the Chinese gold prospectors in the Greater Bendigo area. The approach is structured into two key components:

2.1 Evidence Collection and Narrative Development

To establish the number, location, and development of the Chinese camps in Bendigo, this study conducted a comprehensive review of a number of historical sources. The evidence collection process involved examining heritage reports, 185 newspaper extracts from 1852 to 1869, and scholarly works such as those by Dr. Valery Lovejoy. The primary aim was to construct an informed narrative that captures the evolving attitudes toward Chinese settlers and gold diggers, while also mapping their settlement patterns over time.

Research focused on five major newspapers of the period: The Argus, The Bendigo Advertiser, The Age, The Mount Alexander Mail and The Geelong Advertiser, and engaged in a methodical review of all newspaper articles relating to the Chinese gold diggers from between 1850 and 1870. While many of the articles written present various interpretations of the Chinese community through a white, colonial Anglo-focused lens, they nonetheless were quick to highlight where, when, and how, the Chinese gold diggers established their settlement patterns as a particular demographic within the greater Bendigo area.

Newspaper articles were retrieved from the trove.nla.gov.au website, which includes electronic editions of the major newspapers mentioned above. A deliberate sampling strategy was used to download all published articles along with advertisements, mining reports and family notices, with the word prompts "Bendigo Chinese", "Chinese people", "Chinese camps", "Chinese market garden". The search counted 185 newspaper extracts of information, 84 from the first decade of 1850-1859, and 100 from 1860 to 1869, with articles comprising the majority of the extracts retrieved.

A critical first step was to contextualize the cultural background and historical significance of the five remaining Chinese heritage sites in Bendigo. Building on this foundation, the study's primary task was to identify the number and estimated locations of Chinese camps in the region. This process resulted in the identification of 39 potential camp locations, with 32 of these being interpolated and mapped.

This line of research draws significant inspiration from the work of Dr. Valery Lovejoy. In her thesis, *The Fortune Seekers of Dai Gum San: First Generation Chinese on the Bendigo Goldfield 1854 – 1882* (La Trobe University, 2009), Lovejoy presents a table detailing the names and demographics of nine early Chinese camps in Bendigo, based on data retrieved from the Resident Warden's fortnightly report for the Sandhurst District, dated 15 September 1855. Lovejoy's meticulous research expanded this initial list by identifying an additional four camps, bringing the total to 14 camps (Table 1)

Table 1. Valery Lovejoy's noted camps retrieved from the map included in her thesis (Lovejoy V. 2009)

Camp identification and source	Number of Villages/Camps Cited	Serial Number	Where Located
1856 - 13 Chinese Villages/Camp Locations, includes: 9 camps from the 1855 Government List and 4 additional camps identified in V. Lovejoy 2009	13	1	Golden Gully
		2	Spring Gully
		3	Back Creek
		4	White Hills
		5	Peg Leg
		6	Eagle Hawk
		7	other White Hills
		8	Long Gully
		9	Ironbark
		10	Jackass Flat
		11	Tin Pot Gully
		12	Kangaroo Gully
		13	Milk Maids Flat

The research was able to verify the existence of eight camps listed in both the Sandhurst Resident Warden's report of 1855 and Valery Lovejoy's 2009 list of thirteen camps. In addition to these two additional camps were identified, Kangaroo Flat and Myers Flat, through an extensive review of the 185 newspaper extracts analyzed in this study (Table 2). These findings further enhance the understanding of the distribution and extent of Chinese settlement in Bendigo during the gold rush era, contributing valuable new data to the existing body of knowledge.

Table 2. Ten camps identified from a review of 185 newspaper extracts between 1852 and 1869

Camp identification and source	Number of Villages/Camps Cited	Serial Number	Where Located
1859 - 10 Chinese Villages/Camp Locations Identified by 'Author' from a review of 192 newspaper extracts between 1852 and 1869. NB the articles make reference to: 8 verified government listed camps 2 further camps not listed by Lovejoy 2009	10	1	Golden Gully
		2	Spring Gully
		3	Back creek
		4	White Hills
		5	Peg leg
		6	Eaglehawk
		7	Long Gully
		8	Iron Bark
		9	Kangaroo flat
		10	Myers Flat

The research expanded the combined list of fifteen Chinese camps by consulting three major heritage studies conducted in 1993, 2011, and 2013. These studies have significantly contributed to the heritage

value of Greater Bendigo, particularly in the development of the Heritage Overlay and the Schedule specified in Clause 43.01 of the City of Greater Bendigo's planning scheme. The studies include:

1) Three volumes on the Eaglehawk and Bendigo Heritage Study written by Graeme Butler and Associates in 1993:

"The Eaglehawk and Bendigo Heritage Study Recommendations and Guidelines" Vol 1

"The Eaglehawk and Bendigo Heritage Study Environmental History" Vol 2

"The Eaglehawk and Bendigo Heritage Study Significant Areas" Vol 3

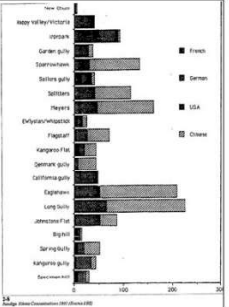
2) "Heritage Policy Citations Review for the City of Greater Bendigo" by Lovell Chen Architectural Heritage consultants 2011

3) the "Greater Bendigo Thematic Environmental History" Prepared for City of Greater Bendigo by Lovell Chen Architectural Heritage consultants in 2013

While each of the studies acknowledge the significant presence of Chinese diggers in Bendigo during the gold rush, they support the listing of only five heritage sites specifically related to the Chinese community. However, in the publication Eaglehawk and Bendigo Heritage Study – Environmental History (Vol. 2), 1993, the authors (Graeme Butler & Associates) present a bar chart sourced from the Australian Bureau of Statistics, titled 'Bendigo Ethnic Concentrations 1861.'

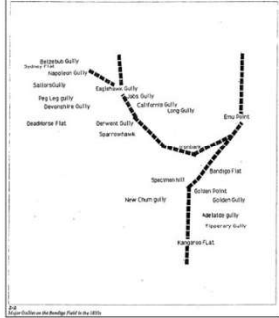
This chart, reproduced as Table 3, graphically represents population numbers across twenty locations, categorized by four nationalities: French, German, American, and Chinese. The chart uses a distinct hatched rendering to illustrate the Chinese population, clearly indicating that the Chinese were the majority demographic in at least eleven of these areas. These locations correspond to areas of gold fossicking and digging activity, reflecting settlement patterns six years after the original 1855 Sandhurst Resident Warden's data set.

Table 3. Correlating camps listed in Bendigo Ethnic Concentrations 1861 (Source ABS in G. Butler Ass), Lovejoy's list 2009, and camps identified from newspaper extracts between 1852 and 1869.

Camp identification and source	Number of Villages/Camps Cited	Serial Number	Where Located	Camps correlated with the 1855 district warden's list, Valery Lovejoy's list, and the Authors list	Balanced Chinese, and French, German USA	French German USA Dominant demographic	Chinese Dominant demographic
Bendigo Ethnic Concentrations 1861 - of French, German, USA and Chinese, (ABS) in G. Butler and Ass. 2-8 	20	1	New Chum	not listed		D	
		2	Happy Valley/Victoria	not listed		D	
		3	Ironbark	listed	B		
		4	Garden Gully	not listed			D
		5	Sparrowhawk	not listed			D
		6	Sailors Gully	not listed	B		
		7	Splitlers	not listed			D
		8	Myers (Meyers)	listed			D
		9	Ewlystan/Whipstick	not listed	B		
		10	Flagstaff	not listed			D
		11	Kangaroo Flat	listed			D
		12	Denmark Gully	not listed			D
		13	California Gully	not listed		D	
		14	Eaglehawk	listed			D
		15	Long Gully	listed			D
		16	Johnston Flat	not listed			D
		17	Big Hill	not listed	B		
		18	Spring Gully	listed			D
		19	Kangaroo Gully	listed	B		
		20	Specimine Hill	not listed	B		

The Eaglehawk and Bendigo Heritage Study (Vol. 2) also includes a diagram that Butler and Associates developed to present indicative locations of twenty-three active prospecting locations in the Bendigo goldfields. The diagram uses dashed lines to imply nodes and a simple hierarchical network, possibly reflecting a dominant North-South movement pattern with a single branch towards the North-West. The information from this diagram was further tabulated and formatted into Table 4, which correlates the twenty-two camps from Butler's diagram, the Sandhurst Resident Warden's dataset of 1855, Valery Lovejoy's extended map of camp locations, and two additional camps identified during this research from Newspaper extracts between 1852 and 1869.

Table 4. Correlating camps listed in 'Major Gullies on the Bendigo Field in the 1850s' (G. Butler and Ass. 2 -8, 1993), the Sandhurst Resident Warden's List 1855, Lovejoy's list 2009, and camps identified from newspaper extracts between 1852 and 1869

Camp identification and source	Number of Villages/Camps Cited	Serial Number	Where Located	Camps correlated with the 1855 district warden's list, Valery Lovejoy's list, and the Authors list
List of Camps derived from G. Butler and Associates (1993) - indicative map diagram 'Major Gullies on the Bendigo Field in the 1850s' (2-2 1993) 		1	Belzebug Gully/Sydney Flat	not listed
		2	Napoleon Gully	not listed
		3	Sailors Gully	not listed
		4	Peg Leg Gully	Listed
		5	Devonshire Gully	not listed
		6	Dead Horse Gully	not listed
		7	Eaglehawk Gully	Listed
		8	Jobs Gully	not listed
		9	California Gully	not listed
		10	Derwent Gully	not listed
		11	Sparrowhawk	Listed
		12	Long Gully	Listed
		13	Ironbark	Listed
		14	Emu Point	not listed
		15	Bendigo Flat	not listed
		16	Specimen Hill	not listed
		17	Golden Point	not listed
		18	Golden Gully	Listed
		19	New Chum Gully	not listed
		20	Adelaide Gully	not listed
		21	Tipperary Gully	not listed
		22	Kangaroo Flat	Listed

Cross-referencing this data with locations worked by European miners, including English, Irish, and Scottish diggers, led to two significant observations:

1. **Profound Chinese Footprint:** The Chinese footprint across the Bendigo goldfields during the 1850s and 1860s was extensive, with a presence in nearly two-thirds (60%) of the identified locations.
2. **Diverse Collaboration:** The diagram also indicates that Chinese diggers were not entirely segregated, for by 1861, in approximately 30% of the locations, they appeared to work alongside European miners, which during the latter stages of the rush may demonstrate a balanced and diverse mix of laborers.

These observations may suggest that the settlement patterns of Chinese diggers were neither always static nor isolated but rather part of a more dynamic and integrated settlement and movement network. Based on extensive research and analysis, the Chinese camps in Bendigo were ultimately identified and temporarily categorized into 22 distinct locations, as illustrated in Figure 1. The mapped locations in Figures 2a and 2b provide a clearer understanding of the spatial distribution of Chinese settlements during the gold rush era, serving as a foundation for further analysis of their cultural, economic, and social impact on the Bendigo region.

Camp identification and source	Number of Villages/Camps Cited	Serial Number	Where Located	Date of Citation and possible establishment of camp settlement
1855-1861 - 22 Chinese Villages/Camp Locations which have been mapped in their inferred locations on the LSIOLand Subject to Inundation Overlay - City of Greater Bendigo Planning Scheme The list includes: 9 camps from the 1855 Government List of the Resident Warden's Fortnightly Report, Sandhurst (Bendigo) District 4 additional camps identified in V. Lovejoy 2009 2 further camps not listed by Lovejoy 2009 but appear in the newspaper extracts between 1852 and 1869 as identified by the 'Author' 7 possible Camps derived from the Bendigo ethnic Concentrations 1861 (Source ABS) - Ref: 'City of Greater Bendigo Eaglehawk & Bendigo Heritage Study - Environmental History Volume 2 1993'	(22)	1	Golden Gully	1855 ●
		2	Spring Gully	
		3	Back Creek	
		4	White Hills	
		5	Peg Leg	
		6	Eagle Hawk	
		7	other White Hills	
		8	Long Gully	
		9	Ironbark	
		10	Jackass Flat	1856 ●
		11	Tin Pot Gully	
		12	Kangaroo Gully	
		13	Milk Maids Flat	1856-59 ●
		14	Kangaroo Flat	
		15	Myers Flat	1861 ○
		16	Garden Gully	
		17	Sparrowhawk	
		18	Sailors Gully	
		19	Ewlystan/Whipstick	
		20	Denmark Gully	
		21	Big Hill	
		22	Specimine Hill	

Figure 1. Twenty-two Chinese camps extrapolated from the combination of: The 1855 Sandhurst Government list, Lovejoy's 2009 list, two camps identified from newspaper extracts between 1852 and 1869, and camps selected from the 1861 ABS Bendigo Ethnic Concentration Chart

What is interesting to note is the pace of development. With the rush for gold and what seems to be the desire to make the next find, it would appear that extensive tracts of land running adjacent to the gullies and creek beds along the flood plains of the surrounding hinterland had been opened up well beyond the area mapped by the government surveyor, Richard Larritt, before the ink of his survey had time to dry (See Figure 2b). Note in particular Peg Leg Gully, Dead Horse Gully, Bezelbub Gully, Sailor's Gully, Devonshire Gully, Myers Flat, Napoleon Gully and Whip Stick to the North West, all of which fed into the water shed of Myers Creek (Not included in Larritt's map). In addition, Milk Maids Flat to the South East also falls outside the mapped area.

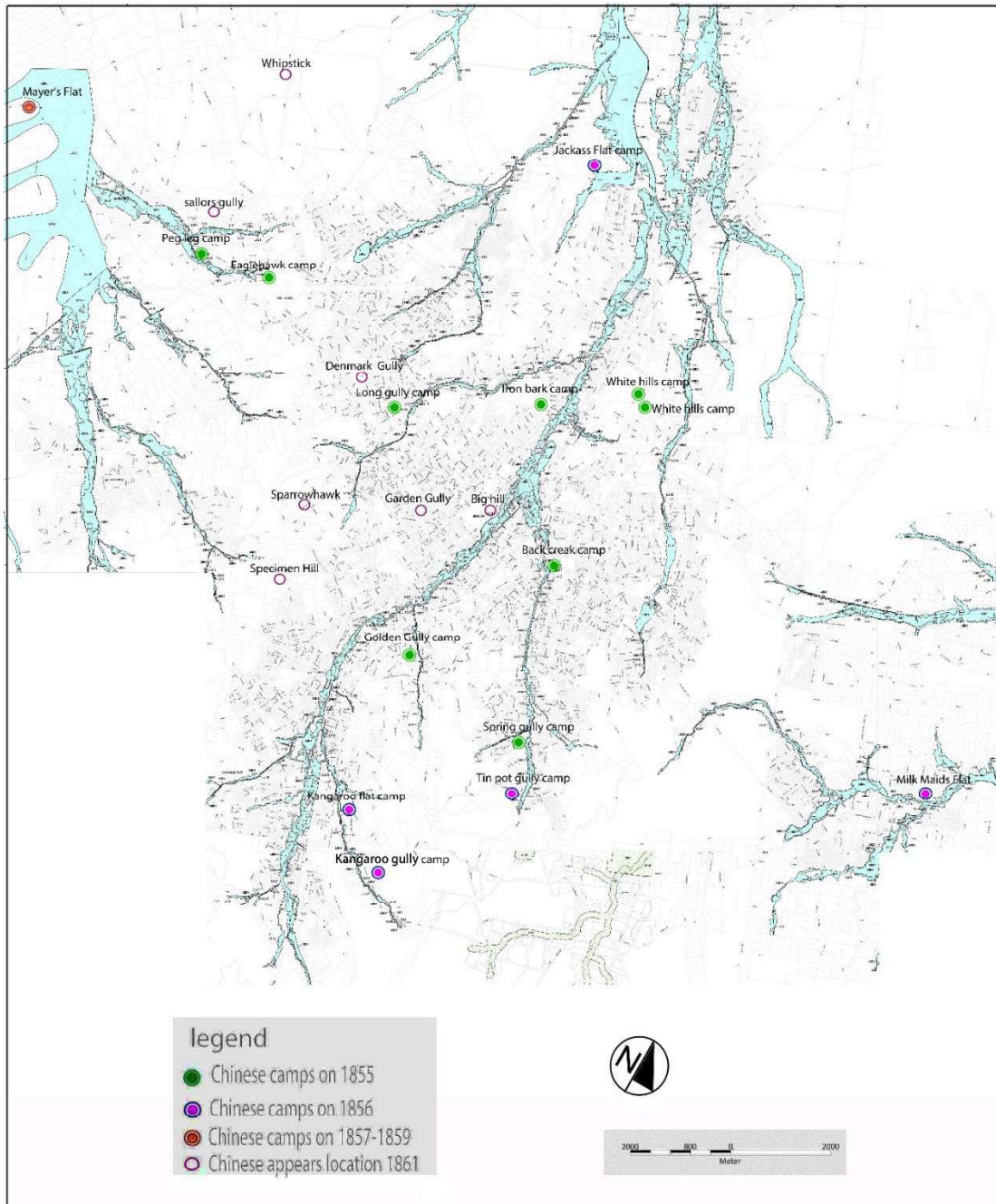


Figure 2a. Map of the 22 Chinese camp Locations by 1861.

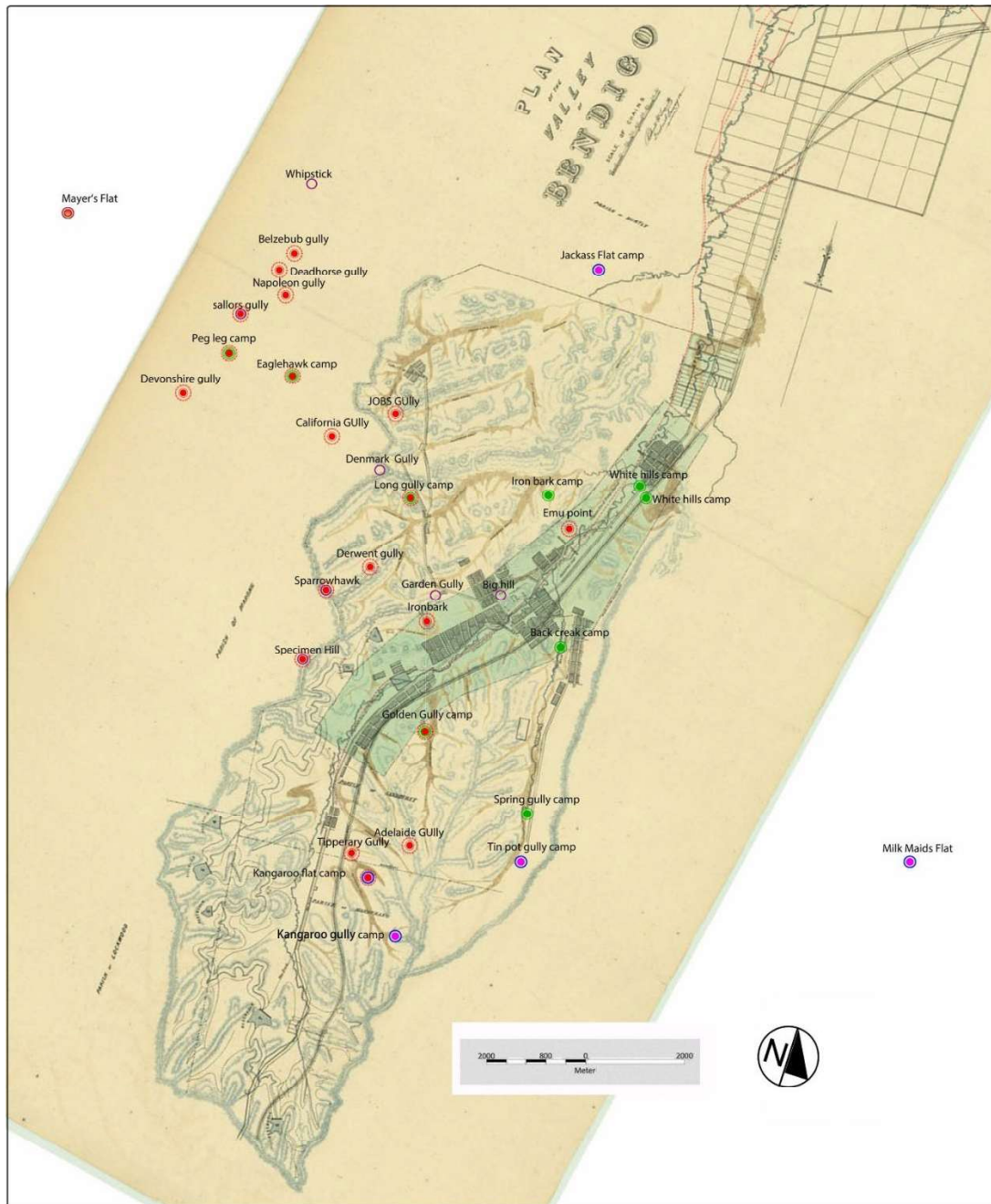


Figure 2b. Plan of the valley of Bendigo [cartographic material] / Richard W. Larritt, district surveyor, 1858 - Adjusted to include possible Chinese and European camp locations by 1858

2.2 Context Assessment - Desire Line analysis

"The term 'desire path' was coined by French scientist, philosopher and poet Gaston Bachelard in his 1958 book La Poétique de L'Espace (or 'The Poetics of Space'). He described them as paths 'created by usage' which pedestrians have taken to get 'from point A to point B more quickly than the predetermined paths (like sidewalks) that have been put in place'" (Hannah Tones 2022)

The second component involves assessing the context of Chinese settlement in Bendigo, focusing on the spatial distribution of camps and potential movement patterns. To do so, this study applied desire line analysis to model potential movement routes based on spatial patterns.

Desire line analysis is often used in contemporary Landscape Architecture and Urban Design practice as a design tool, but in this case, it has been applied as an analytical tool employed to visually connect estimated Chinese camp locations across the Bendigo goldfields, representing the paths prospectors may have envisioned or "yearned" to follow in their pursuit of striking the next lucrative claim. Desire lines are illustrated as simple straight-line vectors between camps, symbolizing a direct route between destinations. While these lines offer a conceptual representation of movement trajectories, they are virtual and do not account for the region's challenging topography.

3 RESULTS

3.1 Mapping Camp locations, Desire Lines 1855-1861

Mapping Chinese camps extensively, research utilized the City of Greater Bendigo's Land Subject to Inundation Overlay (LSIO) as a foundational tool for exploring approximate camp locations and conducting the desire line analysis. The focus was predominantly on the emergence of Chinese camps between 1854 and 1859 and the combined presence of both Chinese and European camps by 1861. Given that alluvial gold catchments were the primary focus of prospecting during the gold rush, the LSIO overlay, with its aqua wash highlighting creek lines, water ways and land subject to inundation, provided an ideal base map to illustrate interpreted camp locations and settlement patterns across the Greater Bendigo region.

The mapping process depicted the approximate locations of Chinese camps and their development over six distinct time periods: 1855, 1856, 1857 – 1859, and 1861. This chronological framework enabled a visual representation of the growth and spatial distribution of camps as the gold rush progressed.

Additionally, the mapping incorporated a time/walking distance analysis, categorizing camps into four tiers based on their connectivity: The method employed in the research was based on an analogue technique of printed base plans with desire lines being mapped and measured haptically and documented with Adobe Illustrator and Adobe Photoshop.

Central Camps: Functioning as key nodes for movement and interaction.

Peripheral Camps: Connected to central nodes by desire lines reflecting walking distances.

The analysis revealed how more centrally located camps served as hubs, connecting outlying camps and shaping the overall movement network. This approach underscores the interplay between natural landscapes and human settlement patterns during Bendigo's gold rush era, offering critical insights into the spatial dynamics of Chinese and European mining communities.

Figure 3 depicts the configuration of Chinese camps in the Bendigo region as per the government listing in 1855. The first nine camps had a significant impact on the subsequent two decades and some of these may have become key distribution centers and base camps for new arrivals to the area before moving onto other camps further afield. Their utility steadily extended and evolved as time passed. It may be, as Lovejoy indicates, the Sandhurst district administration determined the development and establishment of Chinese camps in the Bendigo region, however it would appear that the first Chinese miners didn't have as much power or choice in establishing their camp sites. In some articles, for example Huang (1995), it is suggested that the layout of many of the Chinese camps was determined by feng shui and eight orientation diagrams. While White Hills and Iron Bark may have followed, or were adjusted over time to meet such standards, this would appear to not be the case in the first Eleven camps.

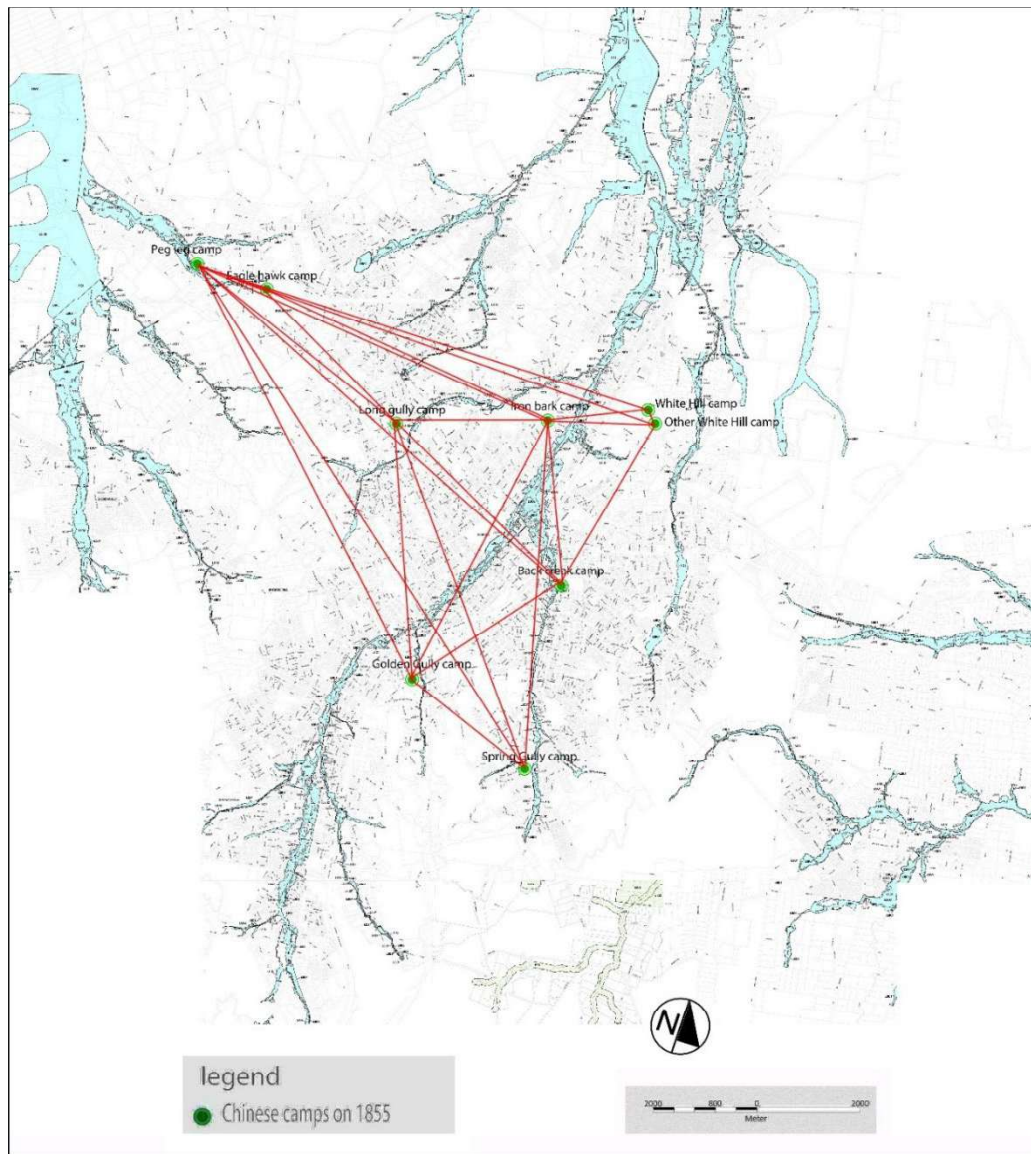


Figure 3. the Chinese camp 1855 Desire line Network (34 SQ.Km)

It appears that Long Gully, Ironbark, Golden Gully, and Back Creek were utilized as initial nodes for the four camps, as seen in Figure 3's desire line network, which aided the surrounding camp mining regions. Moreover, Eaglehawk Camp in the north is believed to have either inherited the camp from European miners or collocated an adjacent camp. It may be argued that the Chinese assisted in construct the original Eaglehawk camp, and in 1855 they began to use it and alter it into a camp that suited their needs as their status shifted from hired labor to mining.

The original concentration of camps was in the city's north and north-west regions covering an area of some 34 SQKm. The desire line distance between adjacent camps varies from approximately from 25 to 30 minutes (such as Ironbark to White Hills, Long Gully and Back Creek) but can extend out to 40 and even 55 minutes (such as Long Gully to Eaglehawk or to Golden Gully).

Tier one: From a review of the 1855 Desire Line Network map in Figure 3, The Tier One examples delineate four main nodes, the camps of Iron Bark, Back Creek, Long Gully and Golden Gully. With each of these nodes being directly linked to either four or five other camps in the network.

Tier Two: Often the time and distance between the first tier of campus to one camp further, extends the time and distance from the original camp an additional 25-35+ minutes. Making the journey from 65 to 80 minutes for the second tier of locations in their network. For example, Iron Bark to Golden Gully, and White Hills to Spring Gully.

Tier Three: Similarly, the time and distance between the first tier of campus to two camps further on, extends the time and distance from the original camp an additional 25-35 minutes. Making the journey from between 98 to 118+ minutes for the third tier of locations in their network

Tier Four: The time and distance between the first tier of campus to three camps further on, extends the time and distance from the original camp an additional 25-35 minutes. Making the journey from between 123 to 153+ minutes for the fourth tier of locations in their network. If it is assumed that the 1855 map essentially charts the footprint of the Chinese diggers desire lines, then the two examples of Tier four essentially link the outer most camps of their network which are essentially Spring Gully to the south, White Hills in the north and Peg leg in the Northwest.

This aspect of the analysis would appear correlate with the time and distance that people would travel between neighboring locations as referenced in Jonathan English's paper 'The commuting Principles that Shaped Urban History', where he clearly writes that "*From ancient Rome to modern Atlanta, the shape of cities has been defined by the technologies that allow commuters to get to work in about 30 minutes*" (English 2019). In this place time and setting, that is the alluvial waterways and gold fields of the greater Bendigo area, the mode of commuting was predominantly walking. Therefore, as additional diggings and alluvial fields became established, the distances would appear to increase, and hence so too the number of camps. It would be interesting to explore the relationship between the rush for gold and the application of Walter Christaller's Central Place Theory, especially as settlement patterns become further established and the mapping of social/community and local commerce activities developed. However.

By 1856, camps expanded to Bendigo's north and south, as miners sought better water supplies and improved gold prospects to adapt to environmental challenges. (Korzelinski, 1979).

As circumstances improved, new camps such as Kangaroo Flat, Kangaroo Gully, Tin Pot, Milk Maids Flat (south), and Jackass Flat (north) emerged. These camps were often isolated due to the clan-based structure of Chinese communities, where groups from different regions often formed separate settlements. This segregation sometimes led to internal conflicts, particularly as smaller camps combined into larger ones (Tackett, 2019).

The 1856 route network coverage seems to have increased from 34 SQ. Km to 100 SQ.Km, as depicted in Figure 4, which highlights the evolution of connections between camps. The four original core camps, Long Gully, Ironbark, Golden Gully, and Back Creek solidified their status, forming new routes that connected additional camps. Camps in Bendigo's northwest, south, and southeast regions remained dense yet isolated, with gaps of 45–90 minutes between camps. These settlements often evolved along ethnic and regional lines.

Between 1857 and 1859, Figure 4, shows that Myers Flat was the only new camp added but nonetheless expanded the network coverage to 170 SQ.Km. With increasing exchanges arising between camps the four core camps appeared to remain central to the network, possibly establishing distinct service zones, with each one covering specific areas of activity and support.

By 1861, as illustrated in Figure 4, the expansion of Chinese camps across Bendigo marked the zenith of their growth. The settlement network had transformed into a cohesive "Chinese network," emphasizing the importance of clan connections and inter-camp cooperation. Social interactions extended beyond individual camps, creating a unified network that contrasted sharply with earlier, more isolated patterns as seen in 1855. This integration reflects the maturation of the Chinese community as they became more embedded in the regional landscape.

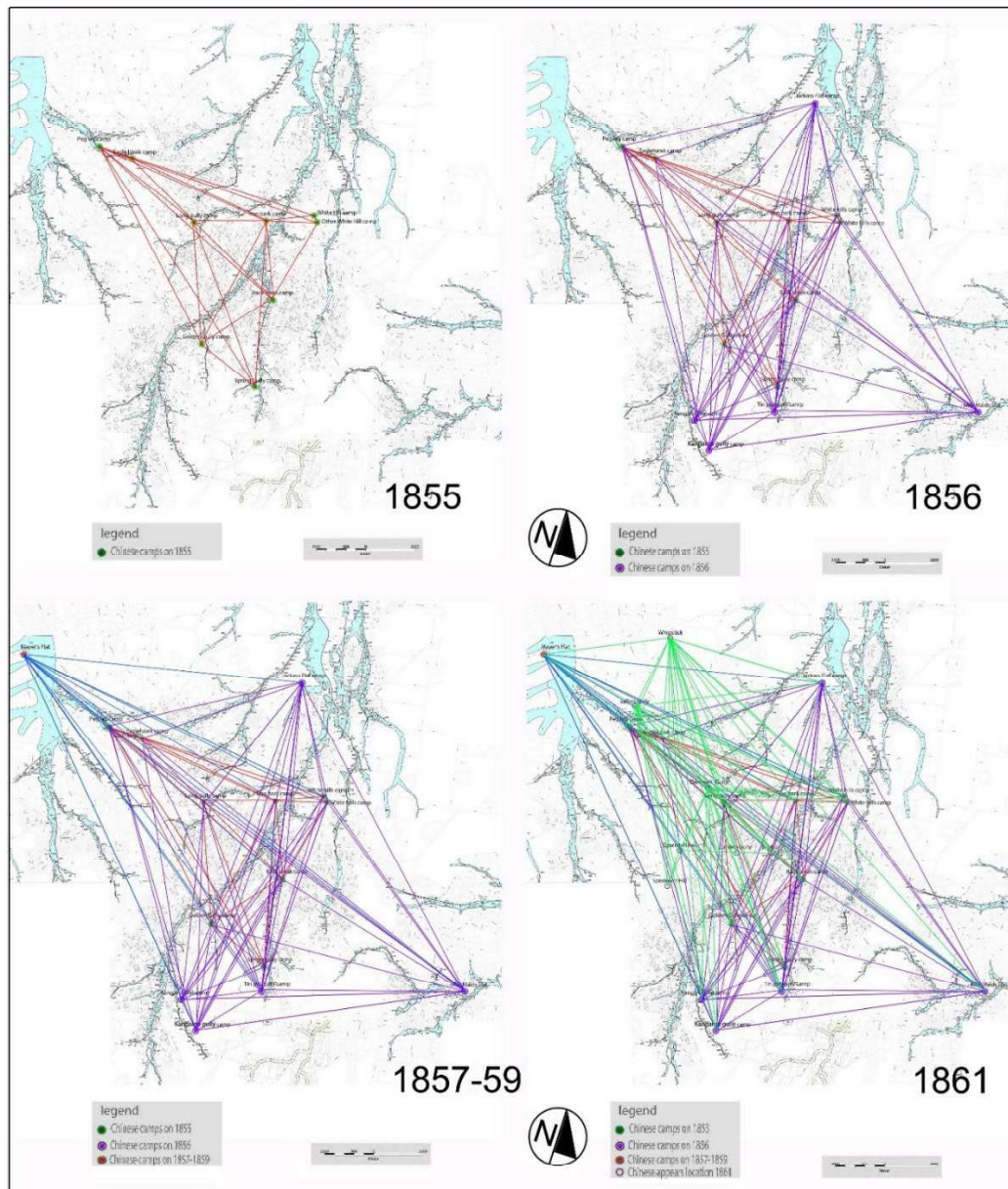


Figure 4. Chinese Camp desire line network 1855 (34 SQ. Km), 1856 (100 SQ. Km), 1857-1859 (170 SQ. Km) and 1861 (180 SQ. Km)

The desire line network in Figure 4 connects the twenty-two mapped settlements informed from the collected evidence, forming a quadrilateral shape that indicates a mapped network coverage of 180 SQ. Km. The rapid growth of the settlement footprint, from an initial 34 square kilometers in 1855 to a much larger area within six years by 1861, illustrates the dynamic evolution of Bendigo's Chinese camps and their lasting impact on the region's development.

Chinese movement patterns in the early stages of settlement, particularly before the 1860s, were likely to have been more independent from those of European and British miners. This independence was possibly driven by the need to avoid conflicts, as the local press often reported negative attitudes towards the Chinese miners. This earlier separation may have allowed the Chinese miners to establish their own networks and settlements, distancing themselves from the tensions and prejudices faced by the broader mining community, yet over time, towards the latter stages of the rush, 1861-1869, these routes appear to

have become integrated with the overall movement and network pattern across the greater Bendigo area. With increasing urban development, the Chinese diggers who chose to remain in Bendigo, managed to pivot and transition from mining to a service industry based on market gardening, food production/distribution and small business enterprise.

4 DISCUSSION

The maps presented in this paper depict the locations of Chinese camps at various times, as well as the desire line network connecting them. The first locations of the Chinese camps were not chosen by the Chinese, possibly indicating that their geomantic placing may be somewhat erroneous, at least in the Bendigo region. After 1861, the purpose of the Chinese camps shifted due to considerable media attention and advice from concerned individuals such as James M'Culloch Henley, an Anglo-Chinese linguist and advocate, and regular contributor to the Bendigo Advertiser. Emerging sectors began to flourish, and as the urban network became more comprehensive, the city of Bendigo benefited from continued growth.

When considering the rapid expansion of both the Chinese and European diggers' footprints, the complexity of the connections appears to contradict the simplified movement pattern presented in the City of Greater Bendigo Eaglehawk & Bendigo Heritage Study - Environmental History Volume 2 1993, reproduced in Figure 5 below. While the diagrammatic map lacks an explanation, it would appear to be a generalized interpretation of the connections and links between different areas of activity across the Greater Bendigo/Eaglehawk area. Placing Emu Point as the primary link between the North-South and East-West gullies does not appear an oversimplification, but actually an incorrect and possibly uninformed understanding of the extent of the network of paths crisscrossing the greater Bendigo goldfields area. Hence, it would appear that Emu Point was just one of at least five major nodes along the North south Bendigo Creek axis. A forthcoming paper that examines the location of ped-sheds around the camps appears to give rise to a network of tracks and roads across the entirety of Bendigo and seems to contribute to a movement network that may well still be present today.

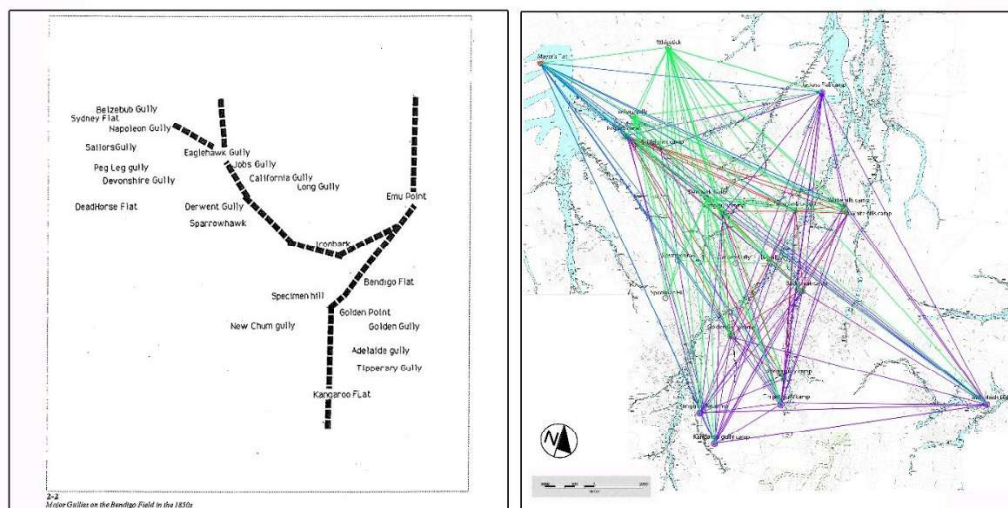


Figure 5 Comparison of the 1993 G Butler Ass. Interpretive diagram of the connections between the Major Gullies on the Bendigo Goldfields, and the combined interpretive mapping of the Chinese and European Desire Line networks as of 1861.

5 CONCLUSION

The main contribution of the paper is the development of an informed and extensive body of applied research and analysis to support the historic recognition of the Chinese diggers. This recognition could be considered through the development of a creative component for the City of Greater Bendigo that extends an appreciation of a lost cultural landscape which could be revealed and perhaps celebrated through the design of wayfinding landscape architectural installations, in conjunction with an annual festival of lights

held during the Easter celebrations, that would link the last five remaining Chinese heritage sites with the Chinese gold diggers' camp locations. This would provide recognition of the settlement patterns and of the streets and roads echoing the paths and tracks that defined the desire lines of the Chinese gold diggers who walked the future footprint of the City of Greater Bendigo.

The findings of the study have yielded a systematic understanding of the spatial-temporal qualities of historic settlements. They constitute a new contribution to knowledge in the field. The quantitative outcomes of the research presented in this paper may have further practical value in the context of heritage conservation and planning of traditional urban cores, rekindling urban memory and the celebration of authentic heritage in contemporary urban studies. In attempting to further uncover spatial-temporal aspects of Chinese gold diggers cultural landscape, further research builds on the desire line analysis presented in this paper, and applies pedestrian-shed analysis to the mapped camp locations. The results, to be presented in a forthcoming paper, correlates the findings with historic and contemporary iterations of the City of Greater Bendigo's street network and open public space strategy.

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