



CITY OF SOUTH PERTH

KARAWARA PEDESTRIAN AND CYCLE ACCESS PLAN 2025



City of
South Perth





*Kaartdjinin Nidja Nyungar Whadjuk Boodjar Koora Nidja
Djining Noonakoort kaartdijin wangkiny, maam, gnarnk
and boordier Nidja Whadjul kura kura.*

*We acknowledge and pay our respects to the traditional
custodians of this land, the Whadjuk people of the
Noongar nation and their Elders past and present.*

A city of active places and beautiful spaces

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ACCESS AND INCLUSION

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1. INTRODUCTION

Pedestrian Access Ways (PAWs) are narrow parcels of land that provide pedestrian access between streets and lots.

PAWs were originally introduced to provide unimpeded movement of pedestrians and cyclists through suburbs and followed the planning shift from grid layouts to cul-de-sacs and loop roads during the 1970s and 1990s. PAWs were also chosen as an efficient location for public infrastructure such as water, sewer, gas and electricity.

Karawara was developed in 1973 as a State Government initiative to accommodate War Service Homes and housing for the Department of Communities. It was designed in accordance with Radburn design principles, originating in America in 1929 with the promise of a modern and safe lifestyle for residents of the 'Motor Age'. This design approach centred on the 'Greenway', a central area of POS which adjoins most sites in the suburb.

To realise the Radburn design vision, houses in Karawara were arranged in a series of culs-de-sac within a 'superblock' encircled by perimeter roads. Homes were designed with double carports to the street and dwellings with full height windows to facilitate a visual connection between occupants and the Greenway. Boundary fencing to PAWs and the Greenway was designed to be visually permeable.

Subsequent changes to residential development including the installation of visually solid, full height side and rear fencing, has resulted in reduced surveillance of the original communal areas. Combined with discrete and somewhat hidden entry points to the Greenway, positioned along external ring roads and at cul-de-sac heads, this has resulted in a reduction in public awareness

and corresponding use of these spaces for both movement and recreational activities, and requests for community members to close PAWs.

In response to the increasing number of requests to close these PAWs, the City recognised the need to conduct an evaluation of all PAWs within the suburb through the development of the Karawara Pedestrian and Cycle Access Plan (KPCAP). This evaluation aims to create a coordinated assessment tool to make informed recommendations to the Western Australian Planning Commission (WAPC) on PAW closure applications, considering all relevant factors.

The City has identified a total of 32 'PAWs' in Karawara shown on Figure 1. An audit of each PAW is provided at Appendix 2.

2. OBJECTIVES

The objectives of this Plan are as follows:

- To provide a co-ordinated plan to guide future decision-making in relation to requests to close PAWs;
- To identify the role played by each PAW in the local movement network;
- To provide recommendations on PAWs for retention or closure; and
- To identify recommendations for the improvement, upgrading and maintenance of PAWs to be retained.

The Plan has been developed in accordance with the WAPC's Procedure for the Closure of Pedestrian Access Ways – Planning Guidelines 2009 (the Guidelines).



Figure 1 Pedestrian Access Ways in Karawara



3. PLAN AREA

The Study area generally aligns with the suburb boundary for Karawara and includes areas to the west comprising properties on both sides of Abjornson Street, the Meath Care Retirement Village and the Curtin Primary School as shown in Figure 2.

Karawara has a range of PAW widths, with several PAWs not meeting the recommended minimum dimension, achieving instead a 3 - 4m average width, for example, PAW Nos. 3, 5, 7, 9, 10, 11, 12, 13, 15, 25, 27, 29, 31. The widths of linear POS in Western Karawara range from 6 - 26.5m, achieving a 5m average width. In Eastern Karawara, POS varies considerably with widths ranging from 3m - 55m.

As shown in Figure 3, PAW distribution in Western Karawara is more regular in distribution with alternating short and long PAWs. The short PAWs are located at cul-de-sac heads, positioned to provide north-

south movement between two culs-de-sacs. In-between and running parallel with each cul-de-sac are long, linear POS areas, the reduced width of which limit use to access only. These linear POS areas connect external ring roads with wider diamond shaped areas of POS for passive recreation.

The shape and distribution of PAWs and POS within the Greenway changes in Eastern Karawara becoming less regular in configuration and more disjointed in distribution, including several isolated areas of POS not directly connected to the Western Karawara Greenway. Refer to Figure 4 for example PAWs which include PAW Nos. 14, 18, 19 and 23.

PAWs in Karawara are owned by the Crown, State Government and Water Corporation as shown in Figure 5.



Figure 2 Karawara Study Area

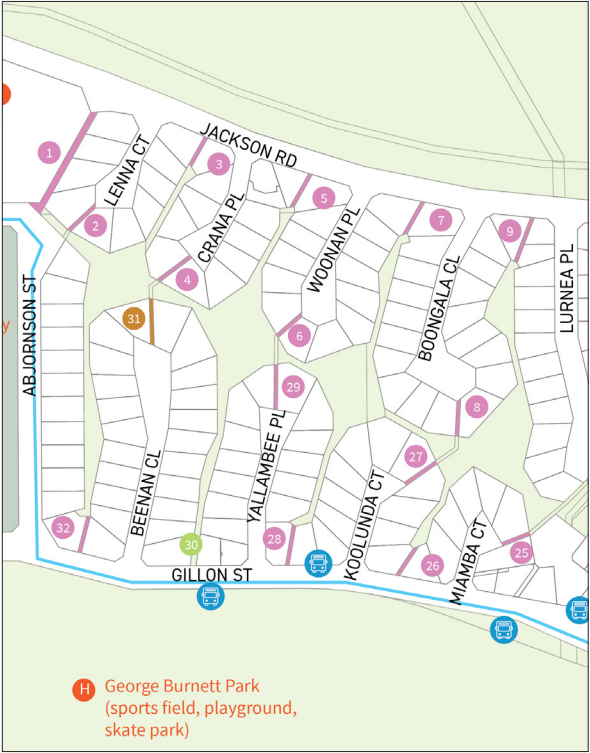


Figure 3 Western Karawara Regular Distribution of Long and Short PAWs



Figure 4 Eastern Karawara Irregular Distribution of PAWs and POS



Figure 5 Map Showing PAW Ownership



4. RESEARCH AND REVIEW

The City has undertaken a literature review including an examination and analysis of various planning instruments and relevant documentation as detailed below.

DOCUMENT	DETAILS	ALIGNMENT
Perth & Peel @3.5million	Perth and Peel @ 3.5 Million is the overarching report to the South Metropolitan Peel Sub Regional Planning Framework informed by the key principles of Directions 2031.	The KPCAP aligns with the following principles: - Promoting shared infrastructure corridors for transport, community, social and service infrastructure. - The provision of land use development and mutually compatible infrastructure.
Local Planning Strategy	The Local Planning Strategy is the key guiding document that identifies planning and development priorities for the City.	- The Local Planning Strategy identifies Karawara as a 'neighbourhood centre' within State Planning Policy 4.2 - Activity centres' hierarchy of centres with a walkable catchment of 200m. - Karawara's walkability score is 62; and area considered 'very walkable' would achieve a score above 70. - Karawara has 327,868m² of open space which represents 33.1% of the suburb. - Parts of Karawara are bushfire prone. - Notes that Council resolved not to proceed with several actions of the draft Local Housing Strategy 2011, including investigation of density increases in the part of Karawara known as the 'Karawara Greenways'.
City of South Perth Local Planning Scheme No. 7 (LPS7)	Local planning schemes set out the zoning of land, permissible land uses, the scale of development and other important information relating to building and development standards across the City of South Perth. It forms the basis for all planning decisions made by the City.	- Proposed infrastructure improvements identified in the KPCAP align with LPS7. - Should PAW and linear POS be closed in the future, land will require a zoning by scheme amendment.

DOCUMENT	DETAILS	ALIGNMENT
Local Integrated Transport Plan	To guide transport planning, programs, operations and advocacy in the City of South Perth 2021-2031.	- Development of the KPCAP is an identified action of the Integrated Transport Plan. Recommended improvements to signage will contribute towards development of a wayfinding strategy. - Recommendations to formalise closure of PAW Nos. 2 & 6 will align with the action requiring the City to liaise with the State Government regarding investigating reconfiguration of State Government land holdings to support improved movement networks.
Planning and Development Act 2005	An Act to provide for a system of land use planning and development in the State and for related purposes.	Enables land to be vested to the crown for the purpose of PAW through conditions of subdivision approval (s. 152).
Transfer of Land Act 1893	The statute governing the registration in WA of titles to Freehold land and dealings with those titles.	Enables the acquisition of private parcels of land.
Land Administration Act 1997	An Act to provide a system for the dealings with Crown land including the compulsory acquisition of land.	- Requests to close PAWs will be processed by the Department of Lands in accordance with Section 87 of the Land Administration Act 1987 (LAA). - Section 87 of the Land Administration Act 1997 sets out a self-contained process by which an amalgamation of remnant Crown land may be achieved
Local Government Act 1995	An Act to provide for a system of local government in WA.	- Section 3.52 requires public access to be maintained, and plans of public thoroughfares kept and made available to the public. - Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by Asset Management Plans for sustainable service delivery.
Planning and Development (Local Planning Schemes) Regulations 2015	Regulations made under the Planning and Development Act 2005 that cover local planning schemes and local planning strategies.	The Regulations guide future development activity on land within the plan area.



DOCUMENT	DETAILS	ALIGNMENT
Procedure for the Closure of Pedestrian Access Ways Planning Guidelines 2009	The Guidelines require the preparation of a pedestrian and cycle access plan, used to identify existing and future pedestrian and cycle access ways and includes a classification system to identify the relative importance of each access way in the local movement system.	- In addition to the process and requirements outlined in Appendix 1 of the Guidelines, the KPCAP also includes analysis of Human Mobility Data to better understand the role of each PAW within the movement network over multiple years and to inform and support recommendations. - The Guidelines offer two options for PAW closure – 'Option A' with an endorsed pedestrian and cycle access plan and 'Option B' without a plan. - Once endorsed, the KCACP will ensure that future modifications to the PAW network can be progressed in accordance with 'Option A', which will improve certainty of outcome for all parties and is a key step in ensuring the process can be resident led rather than requiring the City's intervention.
Reducing Crime and Anti-Social Behaviour in Pedestrian Access Ways – Planning Guidelines	The Reducing Crime and Anti-Social Behaviour in Pedestrian Access Ways Planning Guidelines are designed to be used by State and local government when evaluating the temporary or permanent closure of PAWs.	- The guidelines detail problems associated with PAWs and provide a tool for use by local governments to assess and respond to crime problems within PAWs. The safety level of each PAW within Karawara was assessed as per the criteria outlined within the document. The document outlines design methods that are seen to aid in the reduction of crime within PAWs which will be utilised in the potential upgrade of PAWs. - The Guidelines describe PAWs in locations with road layouts based on culs-de-sac and loop roads, as is the case in Karawara, to be essential to the pedestrian and cycling access network, but often poorly designed in terms of designing out crime given the narrowness of width located between property boundaries. Given security concerns have been regularly cited as a basis for recent closure requests, the City also conducted a 'situation crime prevention assessment' for each PAW as part of this Study. - The Guidelines identify four PAW classifications, with those in Karawara being broadly consistent with the following two: - PAWs in suburbs with road layouts based on cul-de-sac and loop roads; and - PAWs that are a pedestrian connection to a retail services area. Whilst the subject PAWs broadly align with both classifications, there are characteristics that make Karawara's local movement network unique, including noticeable differences in the distribution and design of PAW and POS across the suburb.

DOCUMENT	DETAILS	ALIGNMENT
Safer Places by Design: Crime Prevention though Environmental Design Planning Guidelines 2023	Safer Places by Design (2023) supports the creation of well-designed built environments through the principles of 'crime prevention through environmental design' (CPTED) and replaces the Designing out Crime Guidelines. It complements the Reducing Crime and Anti-Social Behaviour in Pedestrian Access Ways – Planning Guidelines.	The Guidelines encourage local government to select responses that meet the needs of each site when modifying PAWs. This is a key consideration for Karawara where PAWs form an integral part of the local movement network.
WAPC Development Control Policy 2.6 – Residential road planning	This policy is used to encourage the design of the road network within a residential neighbourhood with focus on amenity whilst maintaining the safe movement of vehicles, pedestrians, and cyclists.	The WAPC Development Control Policy 2.6 addresses the future of PAWs and the pedestrian network in the following manner: - Supports the implementation of dual use paths. - Supports the implementation of cyclist networks within the road carriageway. - Supports the increase in the amount of footpaths alongside roads. - Supports the implementation of direct route footpaths to major activity centers. - PAWs, if utilised, are encouraged to be located within open space. 3m wide PAWs are considered to be the most widely sought to close due to negative impacts. - PAWs between property boundaries are discouraged in new subdivisions.



DOCUMENT	DETAILS	ALIGNMENT
Liveable Neighbourhoods	Liveable Neighbourhoods (LN) is a Western Australian Planning Commission (WAPC) operational policy for the design of urban development. LN applies to structure planning in greenfield areas and brownfield development in urban infill areas and includes requirements for laneways.	- The Liveable Neighbourhoods document does not mention PAWs. - The WAPC has directed focus away from the construction of PAWs and has promoted the use of footpaths and cycle paths within road reserves that are fronted by dwellings as to increase casual surveillance. - The Draft Liveable Neighbourhoods (2015) does not encourage the development of new culs-de-sac unless it can include, amongst others design elements, a PAW with a minimum 8m width to provide connection to the nearest route cul-de-sac head. - Karawara has a range of PAW widths, with several PAWs not meeting the recommended minimum dimension, achieving instead a 3 - 4m average width, for example, PAW Nos. 3, 5, 7, 9, 10, 11, 12, 13, 15, 25, 27, 29, 31. The widths of linear POS in Western Karawara range from 6 - 26.5m, achieving a 5m average width. In Eastern Karawara, Public Open Space (POS) varies considerably with widths ranging from 3 - 55m. - In terms of POS contributions, Liveable Neighbourhoods does not support the inclusion of PAWs when designed as linear POS. It does however allow well-designed linear open space to contribute towards POS provided it achieves the following: - At least 15 metres average width (less than 15 metres wide is a PAW and cannot be credited as POS); - Used to connect with at least two key destinations in the public open space network; - Designed in accordance with Designing Out Crime Guidelines (WAPC 2006); and - Overlooked by residential lots for at least 50% of its length. - Whilst the majority of linear POS in Karawara does not meet the above criteria and therefore cannot be contribute towards POS, any changes to PAW and linear POS should ensure it remains functional and able to achieve the desired recreational, amenity, health, cultural and environmental outcomes for the community.

DOCUMENT	DETAILS	ALIGNMENT
Development Control Policy 2.3 Public Open Space in residential areas	The basic component of this policy is the requirement that 10 per cent of the gross subdivisible area of a conditional subdivision shall be given up free of cost by the subdivider for public open space (POS).	- A review of POS in Karawara identifies the following areas being reserved for POS, both with and without George Burnett Park which is reserved under the Metropolitan Region Scheme (MRS): 8.25% (or 6.99 hectares) excluding George Burnett Park; or 33% (or 27.97 hectares) including George Burnett Park.
City of South Perth Access and Inclusion Plan 2022-2027	The purpose of the Access and Inclusion Plan is to ensure that people with disability can access all information, services and facilities provided by the City of South Perth and be included in the community.	The KPCAP aligns with the intent of the Access and Inclusion Plan by proposing PAW and Greenway infrastructure improvements which will increase accessibility for disabled people.
New subdivisions in and abutting the plan area	Subdivision and development applications received.	There are no current subdivision or development applications otherwise impacting the PAWs in the plan area.
Active Travel to School Roadmap 2023-2030	Seeks to address the key barriers to active travel to school and support initiatives that encourage children to switch from private car to public transport trips.	The KPCAP aligns with the intent of encouraging active travel to school by including recommendations to improve the walkability and accessibility of the local movement network. By identifying essential PAWs, the Plan will ensure the functionality of the local movement network. Path improvements will strength key east-west movements.

Table 1: Planning Instruments



The following outlines the previous strategic decisions and submissions to the City seeking closure of PAWs in the plan area.

DOCUMENT	ALIGNMENT
Original planning provisions to support the Radburn design (1973-1998)	The City introduced special planning controls in 1973 in Town Planning Scheme No. 2 as a means of controlling the interface between POS and housing. These provisions were amended over time to better reflect changing expectations toward housing design. This included removing the requirement to provide visually permeable side and rear fencing in 1998.
Karawara Redevelopment Area & Scheme Amendment No. 89 (1998)	The Karawara Estate Improvement Program began in 1994 to revitalise State owned land in Eastern Karawara by zoning public reserves for residential development, reducing State ownership from 75% to 20%, and by improving the quality of housing stock retained by State Government. These changes brought about suspension of the original Radburn design for Eastern Karawara and introduced a more contemporary approach to urban design. Whilst planning for the redevelopment area sought to retain linkages for pedestrian movement by connecting existing pathways within linear POS to the modified local road system, continuity of pedestrian connection between East and West Karawara has been affected. Subsequent improvements to the area through the Karawara Public Open Space Master Plan and Collaborative Action Plan after 2015, sought to positively address negative impacts from these changes to the local pedestrian movement network.
Scheme Amendment No. 8 (2006)	In December 2006, Council resolved to review former Town Planning Scheme provisions for the Karawara Special Area which sought to control the interface between the Greenway and private properties. This included modifying building setback and boundary fencing requirements. Whilst this amendment did not proceed, it did inform development of the subsequent Karawara Community Vision.

DOCUMENT	ALIGNMENT
Karawara Community Vision 2009-2012	In 2009, the City engaged consultants Creating Communities Australia and Development Planning Strategies to undertake consultation with landowners, residents, and other local stakeholders to identify ways to further enhance and improve Karawara. Community feedback reported a lack of regular activity in the large areas of POS and lack of surveillance from adjoining properties as factors contributing to crime and anti-social behaviour in the area. Residents also expressed interest in retaining the open space network subject to its improvement. The project report recommended a range of community development strategies and physical improvement works, including closure of some PAWs, to address crime and enhance the suburb's appearance and social wellbeing. The consultants recommended that the City close some of the narrow POS links at the rear of houses and connecting PAWs, with the following closure options explored: 1. Closure of the pedestrian accessways at the ends of the cul-de-sac streets and retention of the open space links at the rear of houses; 2. Closure of the open space links at the rear of houses and retention of the pedestrian accessways at the ends of the cul-de-sac streets; or 3. A combination of Options 1 and 2, with some pedestrian accessway closures and some open space link closures. Further consultation with the Water Corporation revealed that owing to the location of water and sewer mains, Option 3 was the only viable possibility for further exploration. In January 2012 a proposed closure plan was mailed to all Karawara landowners and residents for comment. Responses were received from 60 property owners adjoining proposed PAW closures with 46 owners (74%) in support. The highest supporting response was received from Boongala Close and Lurnea Place, where 56% (or 9 properties) supported closure, 6% (or 1 property) opposed and 38% (or 6 properties) did not respond. In August 2012 Council considered the results of the community consultation and resolved to not proceed to progress potential closure of selected PAWs and linear POS in Karawara, resolving: (a) the City develops a procedural policy specific to PAW/POS reserve closures in Karawara to guide officers in the implementation of closures and this policy be adopted by Council before pursuing closures; and (b) the City advise submitters of the above Council decision.



DOCUMENT	ALIGNMENT
	(c) The procedural policy shall require that before any closure of a PAW/POS be considered, that all residents directly affected by the closure be required to provide their support; (d) The POS that runs between Meathcare and the rear of the four houses in Lenna Court be retained and that there be no requirement for the re-opening of the PAW between number 7 and 12 Lenna Court; and (e) No action be taken to require the owners of number 11 and 16 Woonan Place to reopen the PAW between their properties.
Karawara Public Open Space Master Plan and Collaborative Action Plan 2013	In a move away from focussing on PAWs, the City in 2012 engaged landscape architecture firms UDLA and CoDesign to develop the Karawara Public Open Space Masterplan and Collaborative Action Plan (the Master Plan). This Master Plan and associated Action Plan was developed to address spatial and social concerns in Karawara. Whilst the plan related to the whole of Karawara, it specifically focused on the Greenway. The plan identified upgrades to the Greenway to improve the overall character, connectivity, amenity, and safety of the area. The Masterplan sought to provide a holistic response to community feedback, with initiatives promoting improvements to the built environment and to social capital. It focussed on maximising community and stakeholder input with the consultants and City officers facilitating several community workshops and drop-in activities within Karawara between February and May 2013. The Master Plan was endorsed by Council at its December 2013 Ordinary Meeting of Council and included 14 projects that aimed to 'strengthen Karawara's public open space and community character'. Since adoption, the Master Plan has been delivered with 61 of 66 actions having been implemented. The City has allocated approximately \$1,377,033 towards implementing the Master Plan, which is inclusive of \$230,560 for CCTV and lighting upgrades around the central playground area. Remaining actions include development of a wayfinding strategy to be designed and implemented through PAWs and the Greenways, and to investigate and trial the installation of permeable fencing along rear property boundaries. Temporary trial PAW closure was investigated in 2015/16 with the City deciding to instead focus on alternative measures to improve the environment of Karawara, through other actions of the Masterplan. Wayfinding through the Greenway presents an opportunity to improve legibility and provide understanding of the areas rich cultural, planning and heritage value. It is recommended that future wayfinding be informed by this Plan and community development initiatives.

DOCUMENT	ALIGNMENT
PAW Closure Investigation (1993)	In August 1993 the City submitted a plan to close 10 PAWs in Western Karawara to the Department of Planning, Lands and Heritage (DPLH) along with four (4) utility service providers. The City cited social problems raised by residents as reason for the closure request. The PAWs selected were all 'short', being located at the end of several short cul-de-sac roads. The City argued these did not form part of the Greenway 'spine', acting more as a service corridor which could be protected through use of an easement. Whilst this plan did not proceed, this process identified 2 PAWs at the cul-de-sac head of Lenna and Court and Woonan Place as not being accessible
PAW Closure Karawara Estate Improvement Program (1998)	The following 2 PAWs were closed in 1998 by Scheme Amendment No. 89 to former Town Planning Scheme No. 5: • North-south PAW from Jackson Road between Wandarra Close and Lurnea Place; and • North-south PAW from Walanna Drive between Boona Court and Gillon Street.

Table 2 Previous Strategic Decisions



5. PUBLIC INFRASTRUCTURE

All relevant community facilities and public transport in the plan area have been plotted on Figure 6 and detailed below.

5.1 COMMUNITY FACILITIES

COMMUNITY FACILITY CATEGORY	COMMUNITY FACILITY/LOCAL ATTRACTOR/EMPLOYMENT NODE
Schools and other educational establishments	• Curtin Primary School • Como Secondary College • Gowrie Early Learning Centre • Curtin University - Curtin University is located to the east of Karawara. This is the largest university in Western Australia, with 34,485 full time student enrolments and 24,104 part time enrolments. Student housing located within the north-eastern corner of Karawara accommodates 324 students.
Shops	The Village Green Shopping Centre (formerly Waterford Plaza) and 3 Fast Food Restaurants. The local retail offering is concentrated in the south-eastern corner of the suburb where the Village Green Shopping Centre and 3 fast food restaurants are located alongside several fast food outlets. The Village Green is currently the largest retail centre in the City of South Perth, with two supermarkets, 38 specialty shops and a dining high street.
Retail recreation	Dome Café located at the corner of Manning Road and Goss Avenue at the site of the relocated Manning Library.
Parks and recreation facilities	• Kwel Playground is identified as providing district level play space. It includes a range of play equipment which has been upgraded between 2016-2020 and is rated as being in 'good' condition except for the 'twin peaks' equipment which is rated 'fair'. • Collier Park Golf Course is a public course providing a place for community recreation, engagement and socialisation. Its facilities include a clubhouse, pro-shop, function room, café, mini golf, driving range and 27 hole golf course. • The Karawara community has access to a range of greenspaces including the Greenway, and neighbouring George Burnett Reserve to the south and the Collier Park Golf Course to the North. Whilst Collier Park Golf Course is immediately to the north of Karawara, entry is limited to the north of the site off Hayman Avenue

COMMUNITY FACILITY CATEGORY	COMMUNITY FACILITY/LOCAL ATTRACTOR/EMPLOYMENT NODE
	George Burnett Park (sports field, playgrounds, skate park). To the south of Karawara is the George Burnett Recreation Precinct. In 2020 the George Burnett Recreation Precinct Masterplan 2020 was developed to guide future use and development of this community space. The precinct comprises a range of community facilities and open spaces, including the George Burnett Leisure Centre, George Burnett Park, the Manning Skate Park, the Manning Bike Track, the George Burnett Pavilion, and surrounding bushland. The precinct is currently home to a rugby league club, touch football association and a cricket club and is used by local residents for informal recreation purposes, such as walking, dog walking, jogging, bicycle riding, skateboarding and other wheeled sports
Community facilities	George Burnett Leisure Centre (sports halls & meeting rooms); Karawara Family and Community Centre (meeting rooms) at the Gowrie. Dome on Manning Road includes a community meeting room.
Employment nodes	Village Green Shopping Centre; Bentley Technology Park and Curtin University
Aged person facilities	Meath Care Retirement Village

Table 3 Community Facilities in Karawara



Figure 6 Community Infrastructure and Local Attractors in Karawara



5.2 PUBLIC TRANSPORT SERVICES

Connectivity within Karawara is facilitated by both bus and cycle infrastructure with this information mapped in Figure 7.

Public transport in Karawara includes four (4) local bus routes (Nos. 30, 34, 100, 101) to the Perth CBD and the Causeway in the north, the City of Canning and Town of Victoria Park in the east, and the Canning Bridge Station in the west. Bus stops are positioned around portions of Karawara's ring roads facilitating bus movement along the eastern section of Jackson Road, Walanna Drive, Gillon Street, and Abjornson Street. Access to bus stops along Gillon Street for properties in Northwestern Karawara is achieved by north-south PAW connections.

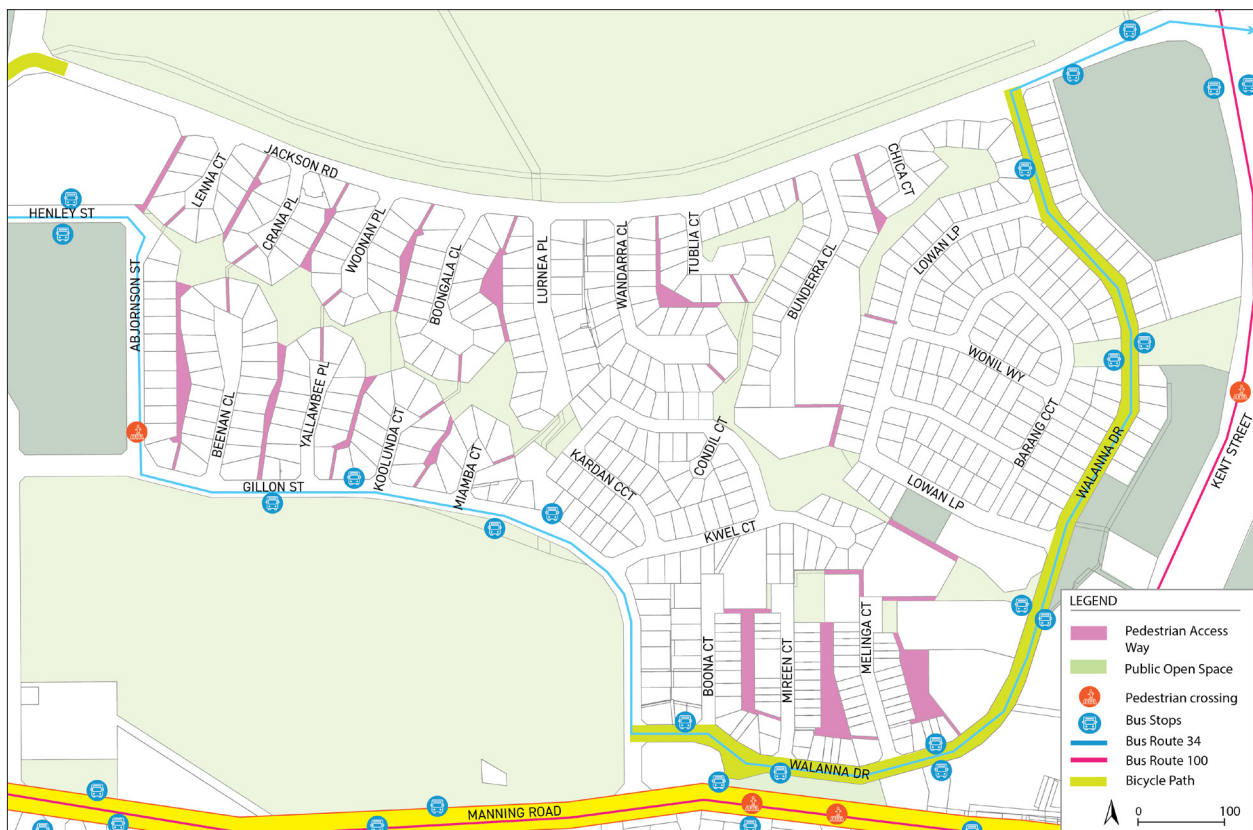


Figure 7 Public Transport and Pedestrian Movement Network in Karawara

6. CONNECTIVITY

An assessment of the connectivity of areas around each community facility was carried out based on a walkable catchment with a radius of 400 metres. Refer to Figure 8. This radius should be increased to 800 metres in

the case of large-scale community facilities such as town centres, train stations, bus stations, schools, district open space or other facilities likely to attract large numbers of people.

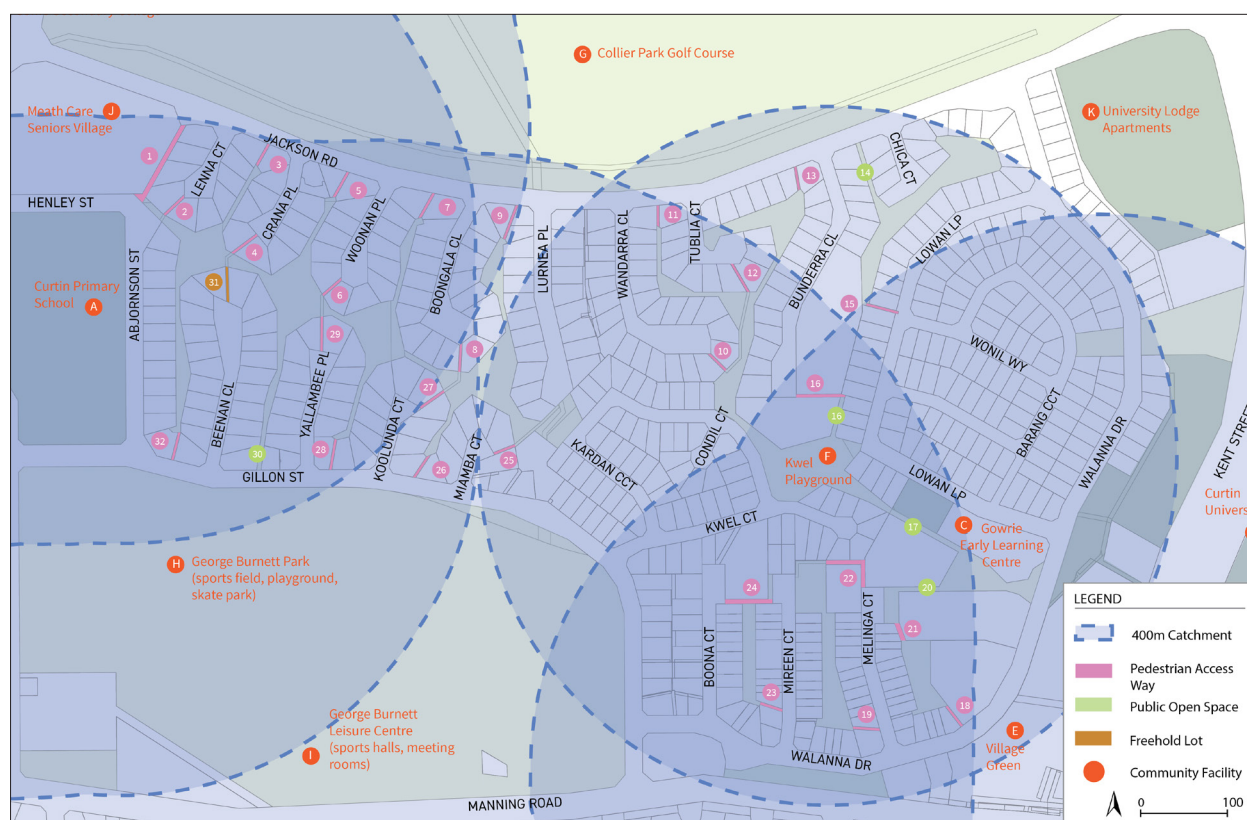


Figure 8 Karawara Ped Shed Assessment

6.1 PEDESTRIAN MOVEMENT

Pedestrian movement is facilitated through the shared path that runs east-west within the Greenway from Abjornson Street to Kardan Court, then from Condil Court to Walanna Drive.

Pedestrian movement in and out of Karawara is facilitated through use of signalised crossings at Kent Street for Curtin University, and across the intersection at Manning Road, Kent Street and Waterford Avenue.

A Traffic Warden Controlled Childrens' Crossing has been installed to facilitate movement across Abjornson Street for Curtin Primary School.

6.2 CYCLING

The Joint Bike Plan for the City of South Perth and Town of Victoria Park (2018) shows existing cycle infrastructure to include a bicycle lane/sealed shoulder along Walanna Drive and shared path along Kent Street and a new separated shared path between Jackson Road and Henley



Street. Refer to Figure 9 for current cycling infrastructure in the Study Area.

Additional infrastructure is planned to facilitate 'strategic' bike movements along Jackson Road via a separated path for bikes only, and along Manning Road as a high quality shared path for bikes and pedestrians. A section of bicycle lane of sealed shoulder is also proposed for the intersection of Kent Street and Manning Road.

Realignment of the shared path parallel to Manning Road is proposed to ensure it terminates at Walanna Drive, where

people riding can then transition to the existing bike lanes on Walanna Drive. From there, bike riders can enter the shopping centre car park or continue onto Curtin University via the Walanna Drive underpass and the Kent Street shared path. Refer to Figure 10 for a plan for proposed cycling infrastructure.

Local cycling routes are planned though George Burnett Reserve, along local roads including Gillon Street, Kardan Court, Kwel Court, Walanna Drive, and through PAW No. 17 and between PAW No. 26 and Paw No. 9.



Figure 9 Existing Cycling Network Karawara

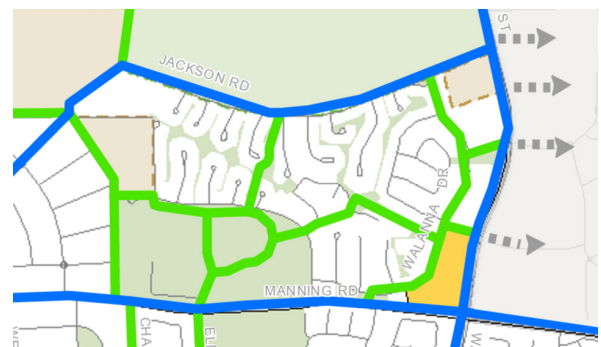
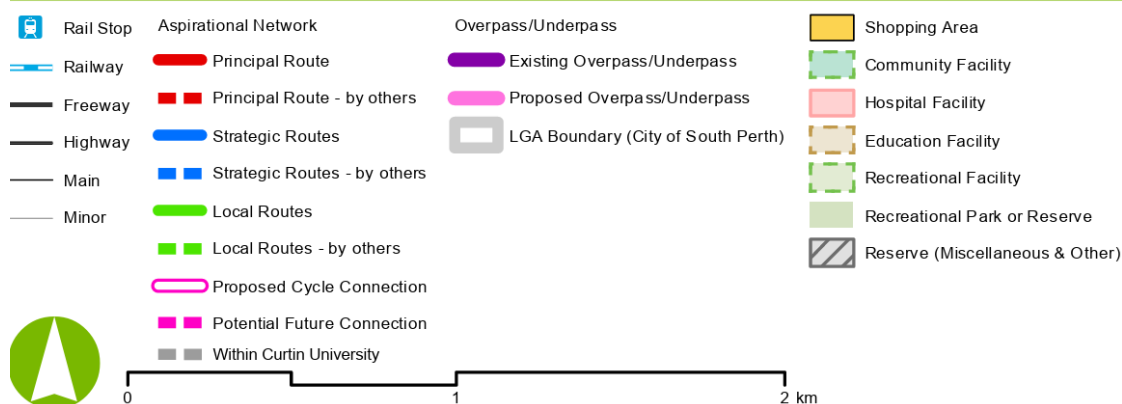


Figure 10 Aspirational Cycle Network Karawara

Legend



7. UTILITIES

7.1 DIAL-BEFORE-YOU-DIG

PAWs are often used to locate private and public infrastructure such as water, sewer and gas pipes or electrical cables.

Infrastructure providers that may have an interest in a particular pedestrian access way were identified using the Dial-Before-You-Dig Services website and recorded accordingly.

The City obtained spatial data through the Dial-Before-You-Dig platform in February 2024 to ascertain any obstructions such as essential infrastructure which may affect potential PAW upgrade or closure. A review of findings notes service infrastructure to be present in most of Karawara’s PAWs with Water Corporation infrastructure for water and sewerage making up the

bulk of services. Refer to Figure 11 for a diagrammatic representation of the number of services in each PAW.

7.2 CONSULTATION WITH ESSENTIAL SERVICE INFRASTRUCTURE PROVIDERS

While identification of PAWs affected by service infrastructure is essential for the purposes of this Plan, the extent of impact for service providers is also required. To better understand possible implications of any changes to the PAWs, the City engaged with the following providers in February and again in October 2024. The City received the following responses detailed in Table 4 and indicated in Figure 11.



Figure 11 Essential Service Infrastructure



UTILITY PROVIDER	COMMENT																																																																																																			
ATCO	ACTO assets are in PAW No. 15. ATCO has advised it has no objection to the proposed plan subject to protection of its infrastructure. Should PAW No. 15 be closed, it is recommended that an easement be imposed to ensure protection and access.																																																																																																			
NBN Co.	- nbn DBYD is not able to sign off or approve works which have been completed by third parties to say the works have not, or will not, impact nbn assets. - When civil works are going to take place a request should be lodged with Before You Dig Australia (BYDA) and cross-checked against the planned civil works. - Should nbn assets be discovered which may be impacted and which will require relocation, please lodge a request through our team via our online webform (Relocating or modifying nbn infrastructure nbn (nbnco.com.au)). - It is the responsibility of the third party completing the civil works to ensure all care is taken to avoid accidental damage to nbn assets by way of BYDA lodgements and the use of plant locator companies/tools.																																																																																																			
Water Corporation	The Water Corporation has both water and sewer assets the majority of PAW's identified detailed as follows: <table><tr><th>PAW No.</th><th>Water Mains</th><th>Sewerage</th></tr><tr><td>1</td><td></td><td>Yes</td></tr><tr><td>2</td><td>Yes</td><td></td></tr><tr><td>3</td><td></td><td>Yes</td></tr><tr><td>4</td><td>Yes</td><td></td></tr><tr><td>5</td><td></td><td>Yes</td></tr><tr><td>6</td><td>Yes</td><td></td></tr><tr><td>7</td><td></td><td>Yes</td></tr><tr><td>8</td><td>Yes</td><td></td></tr><tr><td>9</td><td></td><td>Yes</td></tr><tr><td>10</td><td>Yes</td><td></td></tr><tr><td>11</td><td></td><td>Yes</td></tr><tr><td>12</td><td>Yes</td><td></td></tr><tr><td>13</td><td></td><td>Yes</td></tr><tr><td>14</td><td>Yes</td><td></td></tr><tr><td>15</td><td>Yes</td><td></td></tr><tr><td>16</td><td>Yes</td><td></td></tr><tr><td>17</td><td>-</td><td>-</td></tr><tr><td>18</td><td>-</td><td>-</td></tr><tr><td>19</td><td></td><td>Yes</td></tr><tr><td>20</td><td>-</td><td>-</td></tr><tr><td>21</td><td>-</td><td>-</td></tr><tr><td>22</td><td>Yes</td><td>Yes</td></tr><tr><td>23</td><td>-</td><td>-</td></tr><tr><td>24</td><td>Yes</td><td>Yes</td></tr><tr><td>25</td><td>Yes</td><td></td></tr><tr><td>26</td><td></td><td>Yes</td></tr><tr><td>27</td><td>Yes</td><td></td></tr><tr><td>28</td><td></td><td>Yes</td></tr><tr><td>29</td><td>Yes</td><td></td></tr><tr><td>30</td><td></td><td>Yes</td></tr><tr><td>31</td><td>Yes</td><td></td></tr><tr><td>32</td><td></td><td>Yes</td></tr></table>	PAW No.	Water Mains	Sewerage	1		Yes	2	Yes		3		Yes	4	Yes		5		Yes	6	Yes		7		Yes	8	Yes		9		Yes	10	Yes		11		Yes	12	Yes		13		Yes	14	Yes		15	Yes		16	Yes		17	-	-	18	-	-	19		Yes	20	-	-	21	-	-	22	Yes	Yes	23	-	-	24	Yes	Yes	25	Yes		26		Yes	27	Yes		28		Yes	29	Yes		30		Yes	31	Yes		32		Yes
PAW No.	Water Mains	Sewerage																																																																																																		
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31	Yes																																																																																																			
32		Yes																																																																																																		



UTILITY PROVIDER	COMMENT
	Comments from the Water Corporation in March 2024 include: • It should be noted that water mains cannot run through private land, therefore the Corporation objects to the closure of any PAW with a water asset running through it. Water assets within PAW's listed below: 2, 4, 6, 8, 10, 12, 15, 16, 22, 24, 25, 27, 29, 31. • With regards to sewer assets the Water Corporation would require the sewer line to be protected by an easement if the PAW is determined to be closed. This would depend on the location of the proposed boundary as in some cases a sewer line can be protected by a boundary without requiring an easement. If some of the PAW's are closed and absorbed into the neighbouring lots, the Water Corp would ask that the lot boundaries not be placed on top of the sewer lines as the Water Corporation needs to be able to access its assets at all times. Sewer assets within PAW's listed below: 1, 3, 5, 7, 9, 11, 13, 14, 19, 22, 24, 26, 28, 30, 32. Additional comments received from in October 2024 include: • The Water Corporations previous feedback remains unchanged. • With regards to PAW Nos. 2 and 6 Water assets cannot run through private property. As such the Water Corporation does not support formal closure of PAW Nos. 2 and 6 in this situation and subsequent amalgamation into adjoining lots. It is however, prepared to allow the private fences to remain in place provided the Water Corporation can maintain unfettered access. • With regards to the sewer, some of the mains will be protected by existing lot boundaries but others will require easements to be place over them once the PAW's are removed. The easement requirements can only be determined once a final lot layout is provided as it will depend on which neighbouring lot absorbs the PAW. With regards to PAW 22: • Ohe sewer line may remain where it is and may not require an easement as it appears to be protected by the lot boundary. • The water main may be cut and capped subject to additional engineering work including a water mains extension and an additional flushing point at the end of every dead-end main in order to flush out any build up at the end of the main. The flushing point needs to extend past the last water service by a minimum of 6m. A civil engineers services are required to design the water main extension and undertake works. Costs associated with these works would not be borne by the Water Corporation.



UTILITY PROVIDER	COMMENT
Western Power	- Western Power has underground assets in PAW Nos. 2, 4, 6, 8, 10, 12, 15, 16, 22, 24, 25, 27, 29, 31. - Western Power advise that should these PAWs be closed or the property boundaries be realigned and where the new property boundary changes the relationship of distribution equipment to that boundary, i.e. poles, cables, or ground mounted equipment formerly in the road reserve or running in proximity to the old boundary are now well within the property, an application will need to be made to move or remove equipment. This application will determine if an easement is required or if a physical change is necessary. - Even if Western Power assets are present but not affected by a boundary change, continued physical access for maintenance and emergency response must be provided. If this is not via the original road path, changed access conditions should be communicated via a Land Entry Preferences form.
Telstra	- No objection to plan. - Telstra can utilise statutory notices in the future if it wants to access the land for the purposes of any inspection, maintenance and installation of low impact facilities.

Table 4 Utility Provider Comments

8. PAW ASSESSMENTS

8.1 PHYSICAL ASSESSMENT

The City understands the importance of good quality, working public infrastructure to the success of Karawara's local movement network, and undertakes regular infrastructure audits and maintenance in accordance with its adopted Asset Management Plan 2013-2023 which includes a Cycling & Pedestrian Pathways Asset Management Plan (July 2013).

To inform the KPCAP of any potential infrastructure deficiencies, physical assessments were undertaken of all 32 PAWs. This included evaluating the condition of footpaths, bollards, signage and security lighting. The outcomes have informed upgrade recommendations discussed in the following section. Refer to Appendix 1 for the outcome of the audit.

8.1.1 FOOTPATHS

As one of the first City suburbs to have concrete footpaths, Karawara's footpaths were originally constructed with a thinner profile. Over time, original paths have been replaced with paths of increased depth that comply with current specification standards. The audit confirmed footpaths to be in 'Good' or 'Fair' condition.

The audit identified each PAW entry to have a bollard structure to limit access by motor vehicles. These included yellow bollard pillars, wooden bollards, or 'U' grab path dividers. Refer to Figure 12. The audit identified additional footpath clearance is required around each bollard to improve universal accessibility and satisfy *Disability Discrimination Act 1992* requirements.

The audit identified a lack of footpath between the public street and PAW entrance at PAW No. 29 (Yallambee Place) and No. 31 (Beenan Close). This reduces the legibility of each entry with each 'reading' as private spaces which may reduce use. Refer to Figure 13.

PAW No. 22 is accessed via a driveway which is concealed by landscaping. Access to PAW No. 23 is via a footpath where vehicles have been noted blocking view of the entry. View of the entry is further reduced by landscaping in the verge to its north. Refer to Figure 14.



Figure 12 Images of PAWs Showing Insufficient Clearance Around Bollard Structures for Universal Access



Figure 13 Paw Entrances Reading as Private and Not Public Spaces

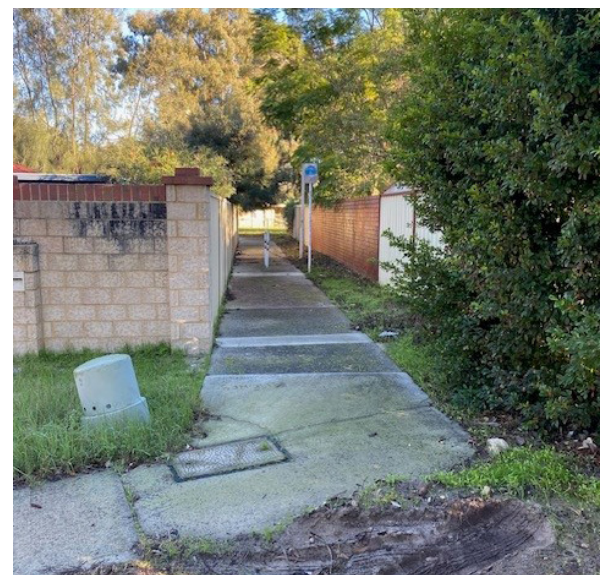


Figure 14 PAW Entrances Accessed Via Private Driveways

8.1.2 LIGHTING

Lighting is necessary to support safer nighttime use in both the Greenway and PAWs. In 2024 the City upgraded the lighting network to improve functionality and resolve systemic problems that compromised operability. This did not apply to lights around Kwel Court Playground, which had been upgraded as part of Stage 2 of the Karawara Greenways CCTV network.

This program of lighting upgrades involved replacing existing Halogen lights with new LED fixtures which included RCD (Residual Current Devices) to eliminate multiple light failures by isolating each individual pole from a current surge or earth leakage. As shown at Figure 15, these lights differ to previous fixtures by directing light downward rather than outward, reducing light spill into private residences.



8.1.3 CCTV

CCTV infrastructure was installed in Eastern Karawara as an action of the Karawara Public Open Space Master Plan and Collaborative Action Plan to improve local security. In 2020 as part of Stage 2 of the Karawara Greenways CCTV works, the City extended the CCTV facilities around the Kwel Court Playground to enhance the security.

These works were completed in conjunction with the upgrade and installation of additional lighting infrastructure, bringing the number of CCTV poles to eight (8), and cameras to twenty (20). Refer to Figure 16 for pictures of CCTV infrastructure and Figure 17 for a location map.



Figure 15 Security Lighting in Karawara (Former and Current)



Figure 16 CCTV Infrastructure in Eastern Karawara



Figure 17 Red Dots Indicate CCTV Pole Locations in Eastern Karawara

8.1.4 SIGNAGE

The City is responsible for the installation and maintenance of signage within PAWs. As shown in Figure 18, current messaging identifies cycleway and dog walking locations within PAWs and the Greenway.

The audit of signage shows evidence of missing signage (i.e. posts with nothing atop) which is reflected in the condition

report at Appendix 1. Ten (10) PAWs are identified to have the lowest ranking for signage condition i.e. 'Very Poor', with the remaining signage being 'Fair' and 'Poor'.

There is an opportunity to support the pedestrian movement network through installation of new signage which may include indication of navigation paths to the nearest street, bus stop, community facility and/or local attractors.



Figure 18 Bike Signage in Karawara

8.1.5 STORMWATER

The audit shows stormwater facilities to be present in PAW Nos. 17, 18, 19, 20, 23, 24. The condition of this infrastructure is rated 'Fair'. No improvements are proposed.

private property also be removed where they impact PAW accessibility at PAW Nos. 19 and 23, and that landscaping is trimmed back off the pathway to enable full use of PAW No. 30. Refer to Figure 19.

8.1.6 PARKS AND LANDSCAPING

Landscaping within the Greenway plays a valuable role in supporting the local sense of place. The audit shows vegetated garden beds, mature trees and areas of lawn to be well maintained. Within long areas of linear POS, landscaping includes 'park' trees, lawn and shrubs. Table 5 provides a brief description on trees present in 'long' PAWs containing linear POS.

It is recommended that branches from



PAW NO.	CITY TREES PRESENT (DESKTOP AUDIT)
3	3 large eucalypts (marri)
7	2 large and eucalypts (significant)
9	20-30 trees
11	Nil
14	1-2 eucalypts on the boundary
18	12 trees
21	15-20 medium size eucalypts
26	1 tree (not significant)
28	2-4 trees small trees (not significant)
30	1-2 small trees
32	1-2 small trees

Table 5 Trees Located in 'Long' Areas of Linear POS

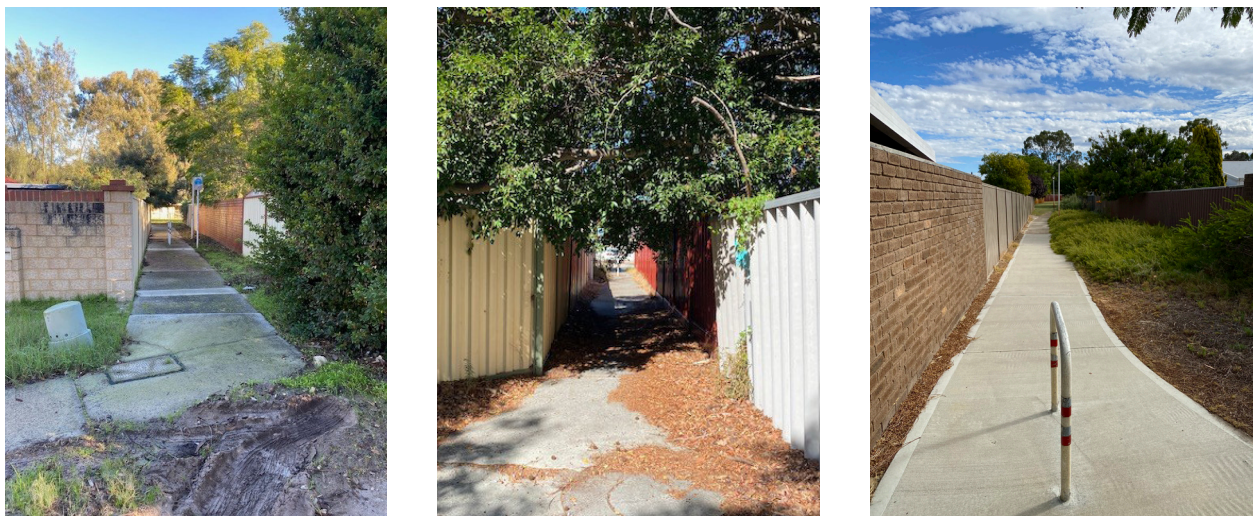


Figure 19 Landscaping Obscuring PAW Entries and Impacting Accessibility

8.1.7 GRAFFITI

As an indicator of anti-social activity, evidence of graffiti within the Greenway and PAWs is comparatively low. Reports to WA Police for graffiti offences are low with 5 incidents in Karawara reported between 2020-2023. When comparing incidents of graffiti reported across the City between October 2022 – September 2023, Karawara has the second lowest count with 125

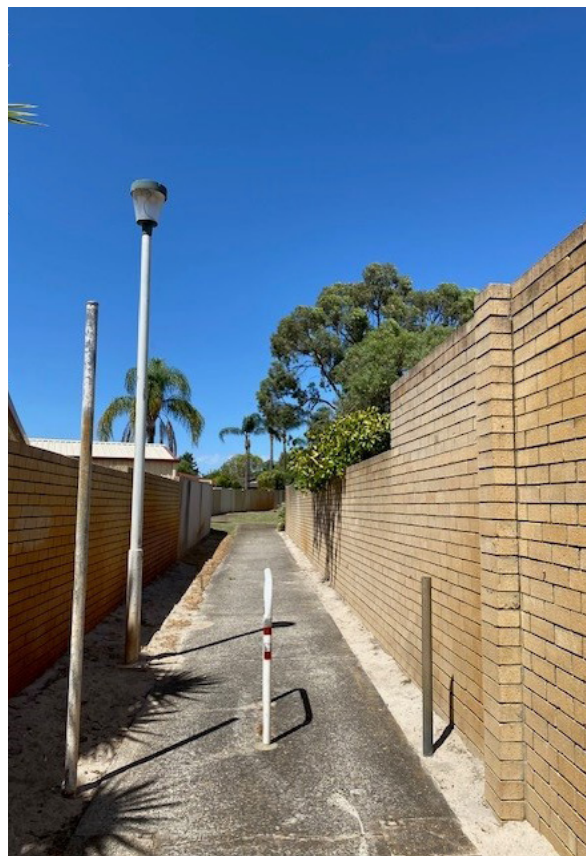
incidents reported.

8.1.8 OTHER

The audit identified a small number of remnant structures that have no identified benefit and can be removed. As shown in Figure 20, this applies to a partially removed gate structure at PAW No. 18 and a pole at PAW No. 13.



Figure 20 Other Structures in PAWs



8.2 USAGE ASSESSMENT

8.2.1 MAIN USES OF THE PEDESTRIAN ACCESS WAYS

Through consultation the following uses for PAWs were identified.

PAWs contribute towards the local movement network providing:

- Access to the Karawara Greenway Public Open Space;
- Access to surrounding ring roads and bus stops;
- Access to George Burnett Park and recreational facilities; and
- Access to educational establishments and shops and fast food restaurants.

PAWs accommodate trees and landscaping which provide habitat for local fauna, whilst

also contributing towards shade and the overall amenity of the location.

8.2.2 MAIN GROUPS USING THE PEDESTRIAN ACCESS WAYS

Through community feedback and staff observations, the main user groups of PAWs include community members within and outside Karawara:

- Accessing shops and visiting friends in the suburb.
- Accessing the Greenway for exercise (e.g. running, walking, dog walking).
- Performing weekly tasks (e.g using PAWs for weekly bin for collection).
- Performing daily journeys to/from school by bike or by foot.
- Accessing bus stops on Gillon Street,



Walanna Drive and Manning Road.

It is valuable to recognise that these groups include those using mobility aids such as mobility scooters, walking frames and wheelchairs as well as children traveling by foot or bicycle.

In addition, the road network in Karawara accommodates a range of car movements including that associated with 24 hour a day care. This results in additional car movements by staff across any given 24 hour period as well as service delivery vans and mini busses for residents.

8.2.3 MOVEMENT COUNTS

A key component of the KPCAP lies in understanding how the PAWs in Karawara are being used. This was undertaken by physical observation and pedestrian counts.

Over the course of eight weeks in February and March 2024, all 32 PAWs were observed twice a day on a Monday and Wednesday, during both morning and afternoon periods to coincide with before and after school movement peaks. In response to one incidence of very hot weather conditions, the City rescheduled counting. Results of the movement counts are summarised in Table 6 and Figure 21.

This investigation found PAW Nos. 1, 3, 10, 16, 17 and 32 to have the 'Most Movements'. The high use of PAW Nos. 1 and 17 can be attributed to a combination of elements including location within the movement network and positive urban design features. These features include:

- The 6m width of both PAWs supporting the passage of parties moving in different directions at a comfortable distance.
- Both PAWs provide good sightlines or visibility of the exit point from the entry point.

- Both PAWs have regular dimensions with no opportunity for concealment areas/indentations.
- Both PAWs include some degree of visually permeable fencing.
 - Fencing along the western side of PAW No. 1 is visually permeable to Meath Care Retirement Village, Como which provides aged care services.
 - Fencing along the northern side of PAW No. 17 is visually permeable to the carpark of the Gowrie Early Learning Centre and a vacant site.
 - Both PAWs connect with areas of high pedestrian and vehicle activity, including:
 - PAW No. 1 connects Jackson Road with Henly Street in north and Abjornson Street in the south and Curtin Primary School.
 - PAW No. 17 connects the underpass, the shopping centre (Village Green) with areas of public open space on the east and west including the Kwel Court playground and Kardan Court in the west.

In Western Karawara, north-south movement is predominantly occurring between the following PAWs:

- PAW Nos. 3 and 32 (both Plenty of Movement);
- PAW Nos. 4 and 31 (both Little movement); and
- PAW Nos. 8 and 27 (both Little movement).

Across the suburb, 10 PAWs did not show any pedestrian movements. Two of these PAWs are inaccessible (PAW Nos. 2 and 6). It is noted that whilst the PAW No. 6 is inaccessible, the connecting short PAW

No. 29 located to its south recorded 'Some Movement'.

In Western Karawara PAW Nos. 5, 7, 9, 11, 30 include linear POS. These have reduced visibility of exit and concealed locations which reduce the perception of safety. In Eastern Karawara, PAW Nos. 18, 19, 21, 23 and 24 open onto wider areas of POS which support recreational uses.

Pedestrian movement between the shopping centre and Jackson Road in the east of Karawara is mostly occurring via PAWs Nos. 16 and 17, with numbers along this path ranging from 'Most' to 'Plenty of Movement'. Pedestrian movement within the southern portion of Walanna Drive is occurring via PAWs Nos. 18 and 23 with 'Little' levels of movement recorded.



Figure 21 Pedestrian Counting Results

MOVEMENT DESCRIPTION	NO. OF PEOPLE COUNTED	COLOUR CODING
Most movement	8+ pedestrian movements	
Plenty of movement	5-7 pedestrian movements	
Some movement	3-4 pedestrian movements	
Little movement	1-2 pedestrian movements	
No movement	Nil pedestrian movements	



PAW NO.	MONDAY AM	MONDAY PM	WEDNESDAY AM	WEDNESDAY PM	TOTAL
1	2	4	0	2	8
2	0	0	0	0	0
3	0	4	4	0	8
4	1	1	1	0	3
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	1	0	0	1
9	0	0	0	0	0
10	0	0	0	1	8
11	3	2	4	0	0
12	0	0	0	0	0
13	0	2	0	0	0
14	0	2	0	0	3
15	0	2	0	0	2
16	3	1	1	3	8
17	12	6	1	7	26
18	2	0	1	0	3
19	0	0	0	0	0
20	0	2	2	4	8
21	2	0	1	0	3
22	0	1	2	2	5
23	1	0	0	0	1
24	0	1	0	1	2
25	2	1	3	0	6
26	0	0	1	0	1
27	0	0	1	0	2
28	1	0	0	1	2
29	3	0	1	0	4
30	0	0	0	0	0
31	2	0	0	0	2
32	1	4	1	2	8

Average Use: 3.6563

Table 6 Pedestrian Movements in PAWs Counted Between February 6 - 18 March 2024



8.2.4 SPATIAL ANALYSIS OF HUMAN MOBILITY DATA

The City recognises that the use of each PAW will vary across any given day, week and across the year. Given the City's pedestrian movement counting program did not provide a complete understanding of use, additional spatial analysis was undertaken by Element Advisory in June 2024 using Human Mobility Data captured across a 4 year period between June 2021 - June 2024. A copy of this report is provided as Appendix 3.

8.2.4.1 Human Mobility Data Analysis Approach

Human Movement Data refers to the digital traces, sometimes referred to as breadcrumbs, left behind by individuals' devices as they navigate through physical spaces. Aggregated from smartphones, GPS devices, and sensors, human movement data offers a wealth of information that can be harnessed to comprehensively analyse the utilisation of spaces both in terms of spatial distribution and temporal patterns. Data sources also included devices seen within the project area that were sending geolocation information out to a service such as Google, Uber, Garmin or TomTom. Not all devices or people that moved through this area were included due to devices not contributing data, or people not carrying spatially aware devices which is more likely for primary school children.

The data is anonymised to create a broad picture of where people move. A spatial analytic analysis of this data facilitates the identification of popular gathering spots, assessment of foot traffic density, and recognition of usage trends across different times of the day or year. This data is represented at Figure 22 as a heat map to provide an understanding of the macro

trends in movement.

8.2.4.2 Calendar movements across a week

Calendar Heat Charts visualise patterns in temporal data by aggregating data points into a calendar grid. As the human movement data collected from within the Karawara study area is timestamped, it can be grouped and summarised in this way. Each point of interest within the study area has been assigned a bounding area, with all human movement data points within each area grouped into the respective hour and day of week they were observed. This in turn provides a summarised, averaged view of the activity intensity of each hour of the day, for each day of the week across the three-year period the data spans. Refer to Figure 22 for the heat map of Karawara.

As shown in Figures 22 and 23, Human Mobility Data shows less pedestrian movement in Western Karawara when compared with Eastern Karawara. East-west movement across the suburb is not as strong in Western Karawara, when compared with movement in eastern parts of Karawara.

Across the suburb, patterns of distinct movement paths to/from Eastern Karawara are indicated from the southernmost underpass on Walanna Drive through PAW Nos. 17 and 20, and through PAW No. 19 to Walanna Drive and Manning Road. Likely destinations for these movement patterns include:

- Eastward - Curtin University and bus stops along Walanna Drive and Kent Street;
- Southward - the Village Green Shopping Centre, 3 fast food restaurants on Manning Road and bus stops along Walanna Drive and Manning Road.

Human Movement Data supports



findings from the City's pedestrian count. This includes patterns of north-south movements between Jackson Road and Gillon Street in Western Karawara and between the Village Green Shopping Centre and associated restaurants in the south-eastern corner of the suburb to Jackson Road in the north through PAWs Nos. 13, 14, 16 and 17.

Density of Human Mobility Data within the 32 PAWs reveals varying levels of activity which have been summarised as follows:

- Minimum activity levels on PAW Nos. 2, 4, 5, 6, 8, 10, 11, 12, 18, 24, 25, 27, 29, 31.
- Moderate activity levels on PAW Nos. 1, 3, 7, 9, 15, 21, 22, 26, 30.
- Maximum activity levels on PAW Nos. 13, 14, 16, 17, 19, 20, 23, 28, 32.

Human Mobility Data reveals the most popular locations or 'hotspots' to be areas within the Greenway itself, including:

- An area between PAW No. 16, the Kwel Court Playground through to Kwel and Kardan Courts;
- Within the Greenway to the south of PAW No. 10 where it meets with Condil and Kardan Courts;
- An area to the south of PAW No. 13 in the Greenway; and
- An area of Greenway between PAW Nos. 14 and 15 with a hotspot located at the southern end of PAW No. 14.

Other trends include the presence of hot spots of activity mid-way along the PAW itself which can be explained as high levels of pedestrian movements through a small number of rear boundary fences. Examples of this trend can be found along PAW Nos. 13, 14, 19, 28 and 32.

Examination of averaged daytime and evening trends over the 4 year period in

Figure 23, reveals activity within PAWs to be steady across day and night periods each day of the year. A notable trend is the popularity of PAWs at 7pm with peak activity occurring 6 of the 7 days of the week across an averaged year. Evening peak period include Monday between 7pm-9pm, Thursday between 7pm-midnight, Sunday between 7pm-10pm. These trends are consistent with PAW use appearing stronger in the late afternoon and evening, perhaps driven by residents arriving home from work and late night trading on Thursday nights (prior to standardisation of shopping hours).

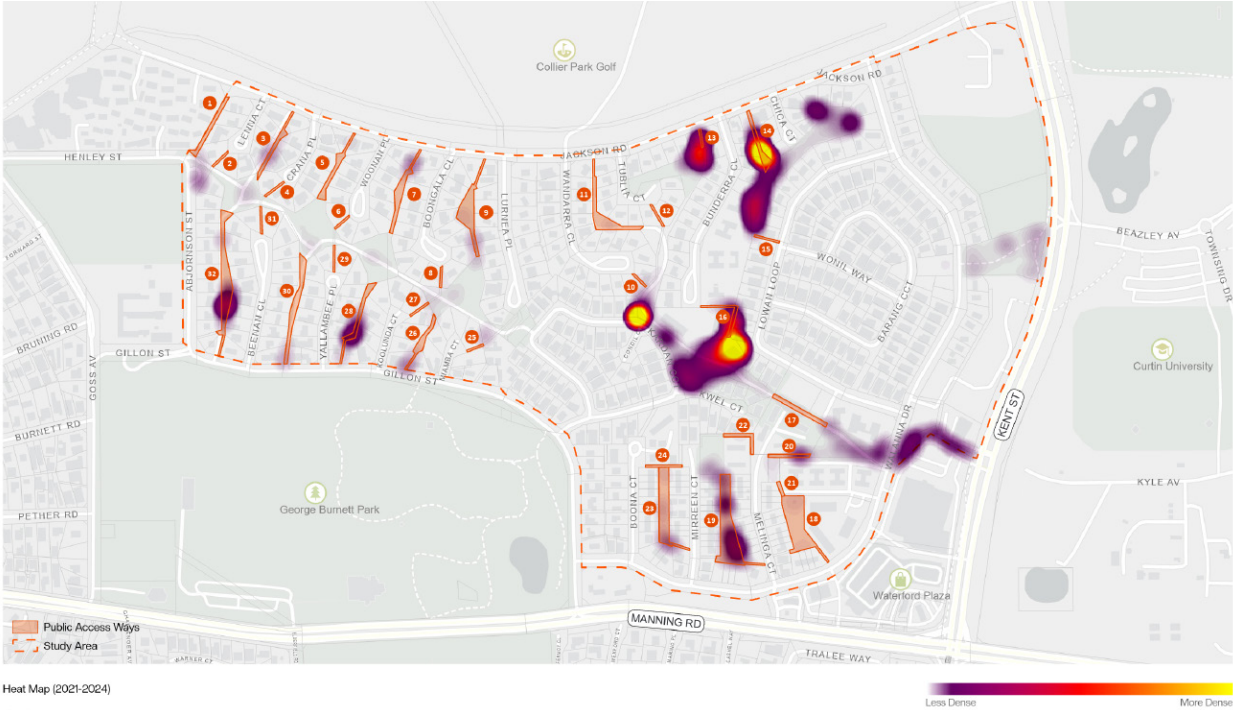


Figure 22 Heat Map (June 2021 - June 2024)



Figure 23 Daytime & Evening Trends (June 2021 - June 2024)



8.3 CONNECTIVITY ASSESSMENT - PEDESTRIAN ACCESS WAY DESIGN AND SAFETY AND SECURITY

The City undertook an assessment using the designing out crime PAW assessment from Reducing Crime and Anti-Social Behaviour in Pedestrian Access Ways to assess the safety of each PAW from a design perspective. This assessment provides a simple snapshot of the potential vulnerability of a PAW to crime by comparing a specific PAW with the key attributes of one designed to best practice designing out crime and CPTED standards.

The results of this assessment are arrived at by counting the number of 'yes' answers

to the questions outlined at Table 7 with PAWs with more 'yes' answers considered to be safer. These thresholds are as follows:

- High designing out crime PAW, being a low vulnerability PAW: 10-14
- Medium designing out crime PAW, being a medium vulnerability PAW: 5-9
- Low designing out crime PAW assessment, being a high vulnerability PAW: 0-4

The outcomes of the safety and security assessment are summarised in Table 8 and reflected in Figure 25. The assessment does not include PAWs No. 2 and 6 as these are not accessible to the public.

SAFETY AND SECURITY ASSESSMENT		
Risk Criteria	Yes	No
1. The PAW is overlooked (visual surveillance) at either of its ingress/ egress		
2. The PAW is overlooked (visual surveillance) along its route?		
3. Does the PAW have adequate lighting (e.g. facial recognition at 10m distance)?		
4. On entering the PAW, can you see the exit?		
5. There are no entrapment spots or hiding places along the length of the PAW?		
6 The PAW is appropriately maintained?.		
7. The boundaries between public space and private space are clearly defined?		
8. The boundaries between public space and private space are robustly fenced?		
9. Does the PAW have signs indicating acceptable behaviour?		
10. The PAW is wide enough to allow pedestrians to pass each other easily?		
11. The PAW is not adjacent to vacant land or property?		
12. The PAW is not close to a supplier of alcohol (e.g. retail store)?		
13. The PAW is not a path to a school?		
14. The PAW is not close to an ATM, public telephone box or public toilet?		
Total		

Table 7 Safety and Security Assessment



LOW VUNERABILITY PAW	MEDIUM VUNERABILITY PAW	HIGH VUNERABILITY PAW
	PAW Nos. 3, 5, 7, 9, 11, 15, 16, 17, 18, 19, 22, 23, 25, 26, 28, 29, 30, 31, 32	PAW Nos. 1, 4, 8, 10, 12, 13, 14, 20, 21, 24, 27

Table 8 Results of a Safety and Security Assessment for each PAW

An audit of each PAW shows a wide range of PAW lengths, widths and distribution. Together with an absence of standardised signage and within a landscaped setting that lacks distinguishing landmarks, can negatively affect legibility and perceptions of safety. This is further exacerbated by problems with sightlines along certain PAWs. For example, PAW Nos. 11, 16, 22, 28 are affected by 90 degree corners or ‘dog leg’ bends.

In a similar fashion, the long length and curved shape of PAW Nos. 3, 5, 7, 9, 11, 26, 32 also impedes entry sightlines. The audit also identified indentations built into the walls as creating opportunities for concealment that reduce actual and perceived pedestrian safety. As shown in Figure 24 and Table 9, this design feature can be found in PAW Nos. 3, 5, 7, 9, 11, 26, 32.



Figure 24 Examples of PAWs with Concealment Indentations



LOW VULNERABILITY PAW	MEDIUM VULNERABILITY PAW	HIGH VULNERABILITY PAW
3	54.5m ²	No. 9 Jackson Road No. 3 Crana Place
5	West - 64.9m ²	No. 13 Jackson Road No. 2 Crana Place No. 2A Crana Place No. 4 Crana Place
	East - 11.7m ²	No. 15 Jackson Road No. 3 Woonan Place
7	29.8m ²	No. 19 Jackson Road No. 3 Boongala Close
9	11.1m ²	No. 1 Lurnea Place No. 3 Lurnea Place
11	10m ²	No. 31 Jackson Road No. 3 Tublia Court
26	East - 77.2m ²	No. 18 Gillon Street
	West - 41.8m ²	No. 20 Gillon Street No. 2 Koolunda Court No. 4 Koolunda Court
32	46.66m ²	No. 22 Abjornson Street No. 2 Gillon Street No. 2A Gillon Street

Table 9 Locations of Concealment Indentations within PAWs

The safety and security assessment show Karawara's PAWs to have a low or medium vulnerability score and no PAWs with a high vulnerability score. In purely physical design terms this indicates Karawara's PAWs to have characteristics associated with low – medium opportunities for crime.

Notwithstanding, antisocial behaviour relates to more than just design, and it is recognised that a PAW with a high designing out-crime assessment score and a corresponding low crime risk, can still

facilitate antisocial behaviour.



Figure 25 CPTED Design Assessment Results



9. RECOMMENDATIONS

9.1 ESSENTIAL AND NON-ESSENTIAL PEDESTRIAN ACCESS WAYS

The City has provided a recommendation for each PAW based on its role within Karawara's local movement network as either 'Essential' or 'Non-Essential'. Refer to Table 10 for an explanation of each category.

This process considered the following elements to allocate a recommended classification:

- Pedestrian use data from the City's pedestrian counting exercise and the Human Mobility Data investigation;
- The number and type of service

infrastructure present and potential impact from closure;

- The potential vulnerability of each PAW to crime;
- The role played by the PAW connecting locations within the local movement network; and
- Feedback from the community on specific PAWs and PAW/Greenway infrastructure improvements received through the consultation process.

Outcomes are summarised in a map at Figure 26 and in table format at Appendix 4.

CLASSIFICATION	DESCRIPTION
Essential (E)	The PAW should be retained and kept open, as it forms an essential or important function in the local pedestrian and cycle movement network.
Non-essential (NE)	The PAW/accessway could be closed without significantly affecting the local pedestrian and cycle movement network. Closure would be undertaken in accordance with the PAW Closure guidelines.

Table 10 PAW Classification of Importance

9.1.1 WESTERN KARAWARA

In Western Karawara the City has identified most 'short' PAWs as 'Essential' for the following reasons:

- These PAWs provide direct access from the street to the Greenway;
- They provide the most direct north-south route across the suburb;
- Their short length and clear sightlines provide a lower vulnerability to crime environment; and
- They contain Western Power and Water Mains infrastructure. The Water Corporation have advised that access to this infrastructure is critical and unlikely

to be managed via an easement.

This recommendation does not apply to PAW Nos. 2 and 6 which are both inaccessible. Investigation of their role within the movement network identified the role of PAW No. 2 to be duplicated by PAW No. 1 with both terminating in the same location on Abjornson Street. The north-south route provided by PAW No. 6 can be provided via PAW No. 5.

Given both PAW Nos. 2 and 6 are currently inaccessible and have been for many years, the City has recommended they be classified "Non-Essential". This is consistent with a resolution from 8 August 2012 Ordinary Meeting of Council where closure



of selected PAWs within Karawara was considered, and the following was resolved:

- *the POS that runs between Meathcare and the rear of the four houses in Lenna Court be retained and that there be no requirement for the re-opening of the PAW between number 7 and 12 Lenna Court; and*
- *no action be taken to require the owners of number 11 and 16 Woonan Place to reopen the PAW between their properties."*

Should Council seek to formally close these PAWs, a motion to change the previous Council decision is recommended.

During consultation, the City liaised with the Water Corporation seeking feedback on a proposal to formally close the PAWs. The Water Corporation advised it did not support cutting and capping the water main infrastructure and also advised the City that existing fences may remain in situ subject to uninterrupted access by the Water Corporation to the infrastructure.

The City also liaised with the Department of Lands who considered the PAWs as unvested facilities under the control of the City, pursuant to section 3.53 of the *Local Government Act 1995*, and that it was at the City's discretion as to whether the boundaries are enforced, or whether longer term actions (such as closure and rationalisation) are pursued.

The Department of Lands advised that if formal closure was pursued, the agreement of the Water Corporation for closure would be required, which would likely require asset relocation for protection, as well as the preliminary agreement of the adjoining landowners to acquire all/ a portion of the PAWs in accordance with the Guidelines and the *Local Government Act 1995*.

Given the above, it is recommended that

the status quo remain, however, should any transactions occur to the properties, the City can notify prospective owners of the existence and requirements of the PAWs.

PAW Nos. 9 and 11 are both proposed to be classified 'Non-Essential' for the following reasons:

- The length and shape of these PAWs includes curves, doglegs and concealment indentations that reduce necessary sightlines required to provide a lower vulnerability to crime environment;
- These PAWs provide access past the backs of dwellings providing opportunity for access in a low surveillance environment; and
- They do not provide the most direct north-south route across the suburb, nor direct access to the Greenway from external roads.

The following PAWs are proposed to be classified 'Essential' for the following reasons:

- PAW No. 3 – Amend the recommendation to 'Essential' in response to community feedback identifying PAW No. 3 as essential for local movement. The City reviewed the urban design, the potential vulnerability of the PAW to crime, and its role in connecting locations within the local movement network and on balance can recommend support for PAW No. 3 given the relative straightness of the PAW contributing towards better sightline for users. A trial to reduce use of indentations within the PAW for concealment by installing temporary fencing for 12 months will further improve the PAW.
- PAW No. 5 - As discussed above should PAW No. 6 be closed in the future, PAW No. 5 is required to ensure long



term north-south connectivity between Jackson Road and Gillon Street via PAW No. 29.

- PAW No. 7 - Amend the recommendation to 'Essential' in response to community feedback identifying PAW No. 7 as essential for local movement. A trial to reduce use of indentations within the PAW for concealment by installing temporary fencing for 12 months will further improve the PAW.
- PAW No. 14 - Amend the recommendation to 'Essential' in response to community feedback identifying PAW No. 14 as essential for local movement. The City reviewed the urban design, the potential vulnerability of the PAW to crime, and its role in connecting locations within the local movement network and on balance can recommend support for PAW No. 14 given the straightness of the PAW contributing towards better sightline for users.
- PAW No. 26. Amend the recommendation to 'Essential' in response to community feedback identifying PAW No. 26 as essential for local movement. especially those connecting with George Burnett Park. The City reviewed the urban design, the potential vulnerability of the PAW to crime, and its role in connecting locations within the local movement network and on balance can recommend support for PAW No. 26 given the relative short length of the PAW when compared with other PAWs that connect to Gillon Street. A trial to reduce use of indentations within the PAW for concealment by installing temporary fencing for 12 months will further improve the PAW.
- PAW No. 30. It is recommended that PAW No. 30 be amended to 'Essential'

in response to community feedback identifying PAW No. 30 as essential for local movements especially those associated with daily school movements. The City reviewed the urban design, the potential vulnerability of the PAW to crime, and its role in connecting locations within the local movement network and on balance can recommend support for PAW No. 30 given the straightness of the PAW which doesn't include a concealment indentation contributing towards better sightline for users.

- PAW No. 32 It is recommended that PAW No. 32 be amended to 'Essential' in response to substantial community feedback identifying PAW No. 32 as essential for local school related movements as it terminates onto Gillon Street near the school crossing on Abjornson Street into Curtin Primary. A trial to reduce use of indentations within the PAW for concealment by installing temporary fencing for 12 months will further improve the PAW.

9.1.2 NORTHEASTERN KARAWARA

In Northeastern Karawara the City is identifying PAW Nos. 10, 12, 13 and 14 as 'Essential' for the following reasons:

- PAW Nos. 10, 12 and 13 provide direct access from the street to the Greenway;
- The short length and clear sightlines of these PAWs provide a lower vulnerability to crime environment; and
- PAW Nos. 10 and 12 contain Western Power and Water Mains infrastructure with Water Corporation advising against closure as access to their infrastructure is critical.

It is recommended that the classification for PAW No. 14 is amended to 'Essential'



to reflect local movements especially those related to the bus stop on Jackson Road to the east of Walanna Drive. This recommendation is in response to community feedback identifying this PAW as essential to local movement and high pedestrian usage. This notwithstanding, the role of PAW No. 14 is duplicated by Chica Court which connects directly from Jackson Road to the Greenway through a 23m wide opening at the cul-de-sac head.

9.1.3 SOUTHEASTERN KARAWARA

In Southeastern Karawara the City is identifying PAW Nos. 16, 17, 19, 20, 23, 24 as 'Essential' for the following reasons:

- PAW Nos. 17 and 20 provide important east-west connections through the Greenway to bus stops on Walanna Drive, Curtin University and the Village Green Shopping Centre;
- PAW No. 24 provides an important east-west link between Boona and Mireen Courts.
- The short length and clear sightlines of PAW Nos. 17, 19, 20, 23, 24 provide a low vulnerability to crime environment; and
- PAW No. 24 contains Western Power and Water Mains infrastructure. The Water Corporation have advised that access to infrastructure is critical.

PAW Nos. 18, 21 and 22 are 'Non-Essential' for the following reasons:

- Overall pedestrian usage for these PAWs is low to moderate, with pedestrian preference given to neighbouring PAW Nos. 19 and 23 for north-south routes to Walanna Drive;
- PAW Nos. 18 and 21 do not contain Water Corporation or Western Power infrastructure.
- PAW No. 22 includes a 90 degree corner

that limits sight lines required for a low crime vulnerability environment. This is exacerbated by landscaping within the PAW itself. The Melinga Court entry to PAW No. 22 is somewhat illegible because of landscaping at No. 24 Melinga Court, and the need to move across the driveway of No. 27 Melinga Court to gain access to the PAW.

- Closure of PAW No. 22 will not impact access to the Public Open Space that runs north-south between Melinga and Mireen Courts. This is accessed by PAW No. 19 and an area of public open space at the end of the Mireen Court cul-de-sac.



9.2 CONSULTATION

Following Council's resolution on the matter, the draft Plan was advertised for public comment between 10 October - 11 November 2024 in the following manner:

- Written consultation to relevant State Government agencies as required by the Guidelines, including but not limited to the Department of Planning, Lands and Heritage, the Public Transport Authority, the Department of Transport, the Department of Education, the Disability Services Commission and the Crime Prevention and Community Liaison, Kensington Police;
- Written consultation to local community centres including the Village Green Shopping Centre, the Gowrie Early Learning Centre, Curtin Primary School, Como Secondary College, Meath Care Retirement Village;
- Written consultation to Service Utility Providers (i.e. Water Corporation, Western Power, ACTO Gas, NBN No and Telstra);
- Written consultation to all residents, businesses, landowners, and local interest or community groups;
- Provision of a project specific page on the City's YourSay page and e-news;
- Decal stickers were applied to the pavement of each PAW and 2 core-flute signs installed in the Kwel Court Playground. These contained a QR code which provided a link to a mapping tool to facilitate community feedback (refer to Figure 27);
- A community drop-in information session held 16 Wednesday October 2024 was well attended at the Village Green Shopping Centre (Karawara); and
- City officers were available to provide project information and respond to queries.



Figure 27 Images of Advertising Collateral (Decal Stickers on a PAW and Core Flute Sign)



9.2.1 STATE AGENCIES AND DEPARTMENTS

State agencies, departments and local businesses were consulted on the draft

Plan in October 2024. The City received the following responses which are detailed in Table 11.

COMMENT PROVIDED	CITY RESPONSE
Public Transport Authority 1. Transperth supports the retention of PAW Nos. 1, 4, 5, 31, 6, 29, 8, 27 and 25 to provide north-south pedestrian access to public transport along Gillion Street. It noted that Bus Route 34 is a strategically important bus route for the area providing connections to Perth CBD, Curtin University, Bentley Plaza, Carousel Shopping Centre, and Cannington Station. Based on Smartrider data from the bus stops on Gillion St, there are passengers who have registered addresses in the northern part of Karawara, so its crucial pedestrian access is maintained. Pedestrian amenity is a huge proponent of making public transport attractive to users and walking distance is a huge factor. For this reason, Transperth would not support any closures of the above PAW mentioned. 2. In the eastern section, Transperth has no issues with the proposed changes as pedestrian links to the bus stops on Walanna Dr have been maintained.	1. PAW Nos. 1, 3, 4, 5, 7, 8, 32, 31, 30, 29, 27, 26, 25 are proposed to be classified 'Essential' to facilitate north-south movements between Gillon Street and Jackson Road. PAW Nos. 2 and 6 are proposed to be classified 'Non-Essential' as these are both currently inaccessible and have been for many years. PAW No. 9 is also proposed to be classified 'Non-Essential' given the length and design of this PAW inhibiting necessary sightlines. The Plan seeks to preserve key movements corridors both east-west and north-south to ensure access to facilities such as bus stops located within the suburb. 2. Noted.
Department of Transport The Urban Mobility (UM) division of DoT has reviewed the submitted documents and advises that DoT has no objection to the proposal with the exception of laneways 9 and 26 which form part of the Long Term Cycle Network (LTCN). The LTCN is DoT's strategic cycle network plan which was endorsed by the City of South Perth Council at its meeting of 28 July 2020. This strategic cycling network has been developed	The City notes PAW Nos. 9 and 26 as currently forming part of the Long Term Cycle Network. The Plan proposes to classify PAW No. 9 'Non-Essential' and PAW No. 26 'Essential'. The City is considering an alternative bike route between Jackson Road and Gillon Street along Lurnea and PAW No. 25 (Miamba Court). This alternate route



COMMENT PROVIDED	CITY RESPONSE
in collaboration with respective Local Government Authorities and aims to ensure State and Local Governments continue to work together towards the delivery of a continuous cycling network providing additional transport options, recreational opportunities and support for tourism and commercial activity. It is therefore recommended that laneways 9 and 26 are retained as 'essential'. If the City wishes to review the LTCN route in this location it is advised that DoT's Active Transport branch be consulted, and the City begin the change procedure found at: Long-term cycle network (transport.wa.gov.au) .	has been selected as it is close to the current route and will provide ease of connection with Kardan Court and the eastern local bike route which terminates here. The City will consult with the Department of Transport on any changes to the Long Term Cycle Network.
Department of Lands Provided a response on PAW Nos. 2 and 6 in the Karawara Pedestrian and Cycle Access Plan area as follows: 1. These pedestrian accessways are unvested facilities under the control of the City, pursuant to section 3.53 of the Local Government Act 1995. In that regard it is at the City's discretion (and perhaps in liaison with the Water Corporation with regard to their assets) as to whether the boundaries of them are enforced, or whether longer term actions (such as closure and rationalisation) are pursued. 2. If closure is the preferred option for the City, we would expect any submission to include the Water Corporation's agreement to the closure (I understand that their current position does not support this approach, however that may change) via asset relocation or protection, consideration of the requirements of the WAPC Procedure for the Closure of Pedestrian Access Ways – Planning Guidelines, as well as the preliminary agreement of adjoining landowners to acquire all/a portion of the PAW.	1. The City proposes to classify PAW Nos. 2 and 6 'Non-Essential'. Should any transactions occur to the properties, the City can notify prospective owners of the existence and requirements of the PAWs. 2. Noted. Any future request to close PAWs will be required to follow the requirements of the WAPC Procedure for the Closure of Pedestrian Access Ways – Planning Guidelines, as well as the preliminary agreement of adjoining landowners to acquire all/a portion of the PAW.



COMMENT PROVIDED	CITY RESPONSE
Department of Planning, Lands and Heritage No response.	Noted.
Kensington Police No response	Noted.
Curtin University No response	Noted.
Village Green Shopping Centre No response	Noted.
Curtin Primary School No response	Noted.
Como Secondary College No response	Noted.

Table 11 State Agency and Local Business Feedback

The above comments are addressed in the Recommendation section of the KPACAP.



9.2.2 PUBLIC FEEDBACK

At the close of public consultation period the following submissions were received:

- 74 feedback form submissions;
- 111 mapping pin drop comments;

- 6 direct email submissions; and
- 48 proforma submissions which included a tick box system across a range of matters.

Key matters raised in submissions are summarised as follows:

SUBMISSION THEMES	CITY RESPONSE TO THEMES
Support for draft Plan as: • Detailed and informative. • Making streets safer. • Providing a clearer framework for decision making for future requests to close PAWs.	The purpose of the Plan is to provide a decision-making framework to assist Council to respond to requests and identify infrastructure improvements.
Support PAW infrastructure improvements as: • Sensible and workable. • Will significantly help the area.	PAW infrastructure improvements are proposed to make the PAWs more visible and accessible including trimming of landscaping and extending footpaths around bollards to enable prams or wheelchairs. Greenway entry treatments and signage is proposed to support the pedestrian movement network, link areas of disconnected POS, and attract additional patronage including: • A style guide for directional signage and entry statements. • PAW directional signage where cul-de-sacs intersect with ring roads. • PAW directional signage where PAW entry intersects with the cul-de-sacs. • Directional signage within the Greenway to assist navigation to outside points of interest (nearest street, bus stop, community facility and/or local attractors). Treatments or new paths are proposed for key east-west and north-south pedestrian and cycle routes between Curtin University/Village Green shopping centre in the east and Curtin Primary School, Como Secondary College and Meath Care in the west.



SUBMISSION THEMES	CITY RESPONSE TO THEMES
Do not support draft Plan <i>per se</i> as it: • Will not protect resident safety. • Is considered a 'land grab'. • Is a waste of money. • May result in PAW closures.	Developing a Pedestrian and Cycle Access Plan for Karawara is an identified action of the City's Integrated Transport Plan 2021-2031. It will provide a decision-making framework to assist Council to respond to requests pertaining to PAW closures and identify infrastructure improvements.
Do not support closure of any PAWs as these: • Form part of Karawara's character. • Are a community asset. • Provide homes for trees and birds. • Enable safe and easy bike and pedestrian access to schools and shops. • As Crown Land, these should not be sold off. • Support active pedestrian movements	The City values the Karawara Greenway as a shared asset for the community. The draft Plan identifies critical pathways for the local movement network for pedestrians and cyclists. In so doing, it will ensure their long-term protection. The process to close a PAW is outlined in the Department of Planning, Lands and Heritage 'Procedure for the Closure of Pedestrian Access Ways Guidelines'. The State Government does not currently support closure and amalgamation into adjacent landholdings without the land being allocated and purchased by adjoining landowners.
Request that all PAWs are closed as these: • Enable illegal access to property. • Enable antisocial behaviour. • Are considered to be unsafe spaces. • Negatively affect the residential amenity for abutting residences. • Enable motorcycle access into the Greenway. • Enable criminal offenders to evade Police pursuit.	Karawara was designed in accordance with Radburn principles with no through roads and a central focus on the Karawara Greenway for daily pedestrian movement. Closure of all PAWs would compromise the functionality of Karawara, reduce easy access to bus stops, schools, shops, and isolate the Karawara Greenway Public Open Space from public access. The City values its parks and does not support the total closure of all PAWs.
The community value the PAWs as providing access to/enabling: • Cross suburb movement to bus stops. • George Burnett Park/Leisure Centre. • Curtin Primary School, Como Secondary College and Curtin University.	The City notes the valuable contribution the played by PAWs to the local movement network as being consistent with the original intent of the Radburn design for the suburb. The draft Plan will ensure this is protected and not affected negatively by future community requests to closure PAWs.



SUBMISSION THEMES	CITY RESPONSE TO THEMES
• Village Green Shopping Centre/Dome Café/Fast Food restaurants. • Community facilities (Gowrie ELC). • Neighbours. • The street for weekly bin collection. • Recreational pursuits (dog walking, exercise etc.).	
General suggestions to improve Karawara's PAWs and Greenway include: 1. Encourage visually permeable fencing to increase surveillance of PAWs and the Karawara Greenway. 2. Develop programs to support families (e.g. youth programs). 3. Involve community in neighbourhood improvement projects, public art initiatives, and cleanup events to foster pride in the PAWs and discourage vandalism. 4. Offer rates reduction to encourage installation of security measures. 5. Paint murals to improve attractiveness and enhance local sense of place. 6. Add more park furniture to encourage use of the Greenway such as benches, bins, water fountains. 7. Name the laneways. Ensure the process includes local Indigenous people and primary school. 8. Increase Police or Community Patrols.	1. Changes to the planning framework now permit visually solid fencing abutting PAWs and the Greenway. This was in response to community requests in line with contemporary expectations pertaining to residential privacy and boundary fencing 2. The City provides a number of services and facilities for families to enjoy together. 3. The City provides a number of services for community development. 4. The City offers a yearly rebate for home security to eligible applicants. 5. The City facilitates painting of murals across the City including recently at the Village Green Shopping Centre for community building and place celebration. 6. The City is developing an Urban Greening Strategy which may address more plantings for the Karawara Greenway. Design for improvements will consider ways to improve amenity, foster recreation and movement within the Greenway. 7. The City will consider Indigenous design for new signage to positively influence a local sense of place. 8. The City's Community Rangers play a valuable role in community development including involvement in addressing suspicious behavior. They work closely with the WA Police Force and encourage reporting of criminal activity to the Kensington Police.



SUBMISSION THEMES	CITY RESPONSE TO THEMES
Comments on PAW and Greenway landscaping and maintenance: 1. Request improved maintenance of PAWs and the Greenway to maximise pedestrian use. This should include improvements to the lawn which is currently brown and dead. 2. Noting that Western Karawara has attractive raised garden beds. 3. Noting trees to provide valuable wildlife habitat. 4. Request retention of mature trees for shade and to counter the 'heat island effect'. 5. Noting trees as under threat by 'shot hole borer'. 6. Request the City identify significant trees for retention. 7. Request the repair of broken lights. 8. Request the removal of graffiti. 9. Request the removal of rubbish. 10. Requests the use of landscaping to maximise surveillance, reduce antisocial behaviour and concealment.	1. The draft Plan proposes PAW improvements which will make the PAWs more visible and accessible. The City is developing an Urban Greening Strategy which may address more plantings for the Karawara Greenway. 2. Noted. 3. Noted. 4. The draft Plan recommends trees within PAWs be retained to support future canopy cover as part of any future closure unless there are safety or condition reasons to the contrary. 5. Noted. The City is working with the Department of Primary Industry and Regional Development to address incidents involving the borer within the City. 6. The City is responsible for trees in its parks. The draft Plan recommends trees within PAWs be retained to support future canopy cover. 7. The City will repair any broken lights within PAWs or the Greenway. 8. The City's Rangers are involved in a variety of issues including graffiti removal, littering and rubbish dumping and encourages reporting of incidents for actioning. 9. Public bins for the Karawara Greenway are located where people congregate such as the Kwel Court Playground. 10. The City is developing an Urban Greening Strategy which may address more plantings for the Karawara Greenway. Design for improvements will consider ways to improve amenity, foster recreation and movement within the Greenway.
Comments on lighting include: • Request improvements to security lighting (e.g. operation and reduce light spill).	• The City recently completed a suburb wide upgrade of all lights within the Greenway and PAWs to resolve problems with operation and to reduce light spill.



SUBMISSION THEMES	CITY RESPONSE TO THEMES
• Test lights to ensure no light spill. • Lighting should be facing down to the path and not the older style that lights in all directions. • Install in 'short' PAWs.	• The majority of 'short' PAWs have a streetlight at entry which provides illumination along its short length. • As part of any 'long' PAW closure, the City can consider installing additional lighting within nearby 'short' PAWs where a need for additional lighting can be demonstrated.
Comments on paths and footpaths include: 1. Concerned that a lack of footpaths in Karawara will force people onto public roads when existing PAWs that intersect within the street. 2. Install a footpath along the southern side of Gillon Street. 3. New footpath on Kwel Court between playground and George Burnett. 4. Improve access across Gillon Street to George Burnett Park especially from the primary school at Abjornson Street. 5. Traffic calming required for Gillon Street. 6. Footpaths are required to facilitate safe movements along cul-de-sacs. 7. Develop wider, smoother paths in Greenway and PAWs 8. Sealed path on PAW Nos. 29 and 32 between street and PAW. 9. Ensure bollards are easier-to-navigate for all mobility levels. 10. Do not support installation of a mirror for PAW No. 22. 11. Install raised pedestrian crossings where they meet roads.	1. Many PAWs in Karawara provide access to a public road be it a cul-de-sac or through road, the exception being PAW Nos. 17 and 21 which connect areas of Public Open Space. In general, cul-de-sacs are low traffic volume roads well suited to pedestrian traffic. The draft Plan proposes PAW improvements which will make the PAWs more visible and accessible including trimming of landscaping, extending footpaths around bollards to enable prams or wheelchairs better access and wayfinding signage. 2. The City can consider improvements along Gillon Street to facilitate movement between the residential area and George Burnett Park. 3. A new footpath is proposed for Kardan Court linking the playground with George Burnett Park. 4. The City can consider improvements along Gillon Street to facilitate movement between the residential area and George Burnett Park. 5. The City can consider improvements along Gillon Street to facilitate movement between the residential area and George Burnett Park.



SUBMISSION THEMES	CITY RESPONSE TO THEMES
	6. Karawara was originally developed in the early 1970's and footpaths were not installed along its cul-de-sacs. The intention was for community movement to occur though the Karawara Greenway or park lands via PAWs. Previous discussions around installing footpaths into Karawara have not been well received by the community as it understood that this may affect landscaping and the ability for residents to park on the verge. The draft Plan proposes PAW improvements to address connectivity gaps in footpaths which will facilitate wider movement patterns. This includes a new footpath link between Kwel Court playground and Gillon Street which will meet high levels of active through traffic. 7. New paths are proposed to demarcate key east-west and north-south pedestrian and cycle routes between Curtin University/ Village Green shopping centre in the east and Curtin Primary School, Como Secondary College and Meath Care in the west. 8. The draft plan proposes to develop a path connecting the PAW with the street for PAW Nos. 29 and 31. 9. The draft Plan proposes to extend footpaths to achieve a 1.5m clearance around bollards to improve accessibility. 10. The proposal to install a mirror in PAW Nos. 16 and 22 has been removed. 11. The draft Plan proposes PAW improvements which will make the PAWs more visible and accessible. Whilst the City will consider additional measures on a case and case basis, as most cul-de-sac locations in Karawara are considered low speed, low traffic volume roads that do not warrant additional treatments such as traffic calming.



SUBMISSION THEMES	CITY RESPONSE TO THEMES
Comments on proposed signage include: - The Karawara Masterplan includes action to develop a wayfinding strategy (signage), heritage interpretation and Noongar naming. - Support for wayfinding signage to local points of interest. - Include signage to encourage acceptable behaviour and safe use of public open space. - Include emergency contact information on signage.	Greenway entry treatments and signage are proposed to support the pedestrian movement network, link areas of disconnected POS, and attract additional patronage through: - A style guide for directional signage and entry statements. - PAW directional signage where cul-de-sacs intersect with ring roads. - PAW directional signage where PAW entry intersects with the cul-de-sacs. - Directional signage within the Greenway to assist navigation to outside points of interest (nearest street, bus stop, community facility and/or local attractors).
New PAW request for the end of Boona Court to reflect movements over fence.	Development of new PAW at the end of Boona Court is not recommended as pedestrian and cycle movement can occur here without an additional PAW.
Comments on PAW Nos. 2 and 6 include: - Concerned owners have taken Crown Land without permission. - City classification is inconsistent with overall approach in Western Karawara (i.e. long PAWs are 'Non-Essential' and short PAWs are 'Essential'). - City supported closure of PAW No. 6 in principle 44 years ago.	PAW Nos. 2 and 6 are both inaccessible and have been for several years. Both PAWs are 'crown land' and cannot be adversely affected by adjoining property owners. Investigation of their role within the movement network identified the role of PAW No. 2 to be duplicated by PAW No. 1 with both terminating in the same location on Abjornson Street. The north-south route provided by PAW No. 6 can be provided via PAW No. 5. Closure of these PAWs is subject to support of both the Water Corporation as both house water mains infrastructure, and ultimately the State of Western Australia. The Water Corporation has advised a lack of support for closure of these PAWs, however advised that existing fences may remain in situ subject to uninterrupted access by the Water Corporation to the infrastructure. The City liaised with the Department of Lands who advised that it was at the City's discretion as to whether the boundaries are enforced, or whether longer term actions (such as closure and rationalisation) are pursued.



SUBMISSION THEMES	CITY RESPONSE TO THEMES
	A review of previous resolutions by Council on this matter include the 8 August 2012 Ordinary Meeting, where Council resolved the following: <i>"the POS that runs between Meathcare and the rear of the four houses in Lenna Court be retained and that there be no requirement for the re-opening of the PAW between number 7 and 12 Lenna Court; and</i> <i>no action be taken to require the owners of number 11 and 16 Woonan Place to reopen the PAW between their properties."</i> Given the above, it is recommended that the status quo remain, however, should any transactions occur to the properties, the City can notify prospective owners of the existence and requirements of the PAWs.

Table 12 Submission Themes and Responses

A schedule of submissions for the draft Plan is contained at Appendix 6.

9.3 RECOMMENDATIONS TO IMPROVE PAWS

The City has identified a series of improvements to the PAW and local movement network in Karawara.

These improvements are explained below in Table 13 and included in Appendix 2 and 4 where relevant for each PAW



RECOMMENDATION	DETAIL
Entry Treatments and Signage	There is an opportunity to support Karawara's pedestrian movement network, link areas of disconnected POS, and attract additional Greenway patronage through the installation of new signage. New signage should also form part of any future wayfinding strategy as a requirement of the Karawara Public Open Space Masterplan and Collaborative Action Plan. Development of a style guide and signage hierarchy for signage and entry statements is recommended to assist in supporting use of the Greenway. This could include a unique symbol that reflects local Aboriginal culture and heritage such as is used on the Munda Biddi Trail which runs between Mundaring and Albany Karawara was not originally developed with footpaths along its cul-de-sacs. This approach was in part continued in Eastern Karawara when that land was redeveloped in the early 2000's. The absence of footpaths and the discreet nature of PAW entries between 2 property boundaries is likely to negatively impact the overall legibility of the Greenway. This Plan does not recommend installation of footpaths along local roads given that these would interfere with mature street trees and the ability of residents to park on verges. Instead, as that cul-de-sacs are low traffic volume roads well suited to pedestrian traffic, to encourage and direct pedestrians along cul-de-sacs toward PAWs, entry treatments and signage are recommended for key entry points and along the Greenway itself. This notwithstanding, as part of any future PAW closure request, the City will investigate opportunities for footpaths or alternative measures to facilitate a shared environment for pedestrians and vehicles. Specific entry statement and signage initiatives are summarised as follows: • Recommendation 1.1: Development of a style guide for all new signage, entry statements and furniture. • Recommendation 1.2: Installation of entry statements in the following locations: • Western Greenway entry at Abjornson and Henley Streets; • Along Kardan and Kwel Courts connecting Western, Eastern and Northern Greenway; • Eastern Greenway entry at the Walanna Drive underpass; and



RECOMMENDATION	DETAIL
	• Eastern Greenway entry to Kwel Court Playground between Nos. 43 and 47 Lown Loop. • Recommendation 1.3: Installation of signage at cul-de-sac entry points where these intersect with the outer ring roads (e.g. Gillon Street, Jackson Road and Walanna Drive). • Recommendation 1.4: Installation of signage at the PAW entry where it intersects with cul-de-sacs. • Recommendation 1.5: Installation of signage within the Greenway to assist navigation to the outside points of interest such as the nearest street, bus stop, community facility and/or local attractors.
Concealment Locations	It is recommended that concealment indentations are removed from PAW Nos. 3, 5, 7, 9, 11, 26, 32. This can be achieved by trialling the installation of temporary fencing to close off the affected portion of land over a period of 12 months. At the end of this period, the City will liaise with adjoining landowners and the community to ascertain the success of the closure. Should the closure improve both sightlines, perceptions of safety and PAW use, the City can advocate for permanent closure of the affected portions with landowners and the DPLH.
Lighting	Lighting improvements include an additional light to provide continuous illumination along the east-west leg of PAW No. 22.
Mirrors	The proposal to install a mirror in PAW Nos. 16 and 22 has been removed in response to feedback and concerns the use of mirrors is inappropriate for this pedestrian environment.
Landscaping	It is recommended that landscaping is trimmed away from PAWs to maximise accessibility. This applies to the following PAWs: • PAW Nos. 19 and 23 – remove branches from private property that encroach the PAW. • PAW No. 30 - that landscaping is trimmed back where it encroaches the path. • Tree retention within closed linear POS is recommended to support future canopy cover. Any future closure investigations should recommend that mature trees of local species be retained unless there are compelling safety or condition reasons to the contrary.



RECOMMENDATION	DETAIL
Footpath Design	The following recommendations are provided for footpath design in Karawara: • Additional paving is installed around bollards to achieve a minimum footpath clearance of 1.5m to ensure universal accessibility for prams, wheelchairs and similar vehicles. • A dedicated footpath between the public street and PAW entrance at PAWs' Nos. 29 and 31 to improve PAW legibility and accessibility. These paths will require a design response that maximises pedestrian safety whilst respecting the unique characteristics of each location including streetlights and the narrow land dimensions between two existing driveways. • The City explore measures such as a dedicated footpath between the PAW and road, or the use of signage to improve PAW legibility and accessibility of entry to PAW Nos. 22 and 23. • Remnant structures with no identified benefit can be removed from PAW Nos. 13 and 18.
Bike & Pedestrian Paths	• It is proposed to retain 'strategic bike' routes along Jackson Road, Kent Street and Manning Road as proposed in the Joint Bike Plan, and 'local' routes proposed and developed for Eastern Karawara along Kwel Court, PAW No. 17, and Walanna Drive. • A review of 'local' routes for bike movement providing north-south connections in Western Karawara between Jackson Road and Gillon Street is recommended. This includes the north-south connection proposed via PAW Nos. 9 and 26. Given the length and reduced sightlines of both PAWs, it is recommended this route be reconsidered and new north-south routes identified as part of future bike plan reviews. The preferred alternative route is via Lurnea Close and PAW No. 25. This provides a direct connection between Jackson Road and Gillon Street, whilst being close to the current north-south link. It also provides ease of connection with Kardan Court, connecting with the eastern local bike route at Kardan Court. • To delineate and enhance key east-west connections and assist wayfinding across Karawara, use of coloured paving such as red asphalt or similar path treatment is recommended. The use of colour can help visually differentiate shared and separated paths from the road network, with asphalt recognised as providing a smooth surface for cyclists. This process may include the following in the Greenway:



RECOMMENDATION	DETAIL
	• A new east-west shared path that runs between Abjornson Street and the underpass on Walanna Drive. • New north-south paths in Western Karawara to connect PAWs across the Greenway. • Identifying paths for removal where they are duplicated and are deemed unnecessary for movement. • Identifying new more central alignments for PAW paths as part of long term upgrades. Given the good condition of Karawara's PAW pathways, replacement is not urgent. It is therefore recommended new pathways and removal of non-required pathways be delivered to coincide with the City's longer term path upgrades for Karawara.
Asset Management	Future upgrades and improvements to PAWs should consider the outcomes of this review and seek to employ the design approaches recommended in the WA State Government's <i>Safer Places by Design CEPTED Guidelines</i> (July 2023) to support better public safety and local pedestrian movements. Specific improvements have been recommended where they meet the following criteria: • Required to satisfy legislative requirements e.g. <i>Disability Discrimination Act 1992</i>, • Demonstrated as supporting the local movement network, and • Demonstrated as contributing toward improved wayfinding. It is recommended that these improvements are included in the City's Asset Management Plan (AMP). This AMP identifies responsibilities, maintenance standards and inspection regimes required to manage civil liability. Through the AMP, the City ensures assets that support the delivery of services to the community are cost effectively managed over their lifecycle and take into consideration community expectations for levels of service (time, quality and value for money). It is noted that any costings included with recommendations are only valid at time of issuing and will need review prior to implementation

Table 13 Infrastructure Improvements



APPENDIX 1 - INFRASTRUCTURE QUALITY ASSESSMENT



PAW NO.	PATHWAY CONDITION	LIGHTING POINTS		SIGNAGE POINT CONDITION	
		NUMBER OF LIGHTS	CONDITION OF LIGHTS		
1	3	3	3	3	4
2	Nil	Nil	Nil	-	
3	3	3	3	5	
		1	4		
4	2	Nil	-	-	
5	3	3	3	5	
		1	4		
6	Nil	Nil	Nil	-	
7	3	4	3	5	
		1	4		
8	2	Nil	-	-	
9	3	4	3	5	
		1	4		
10	3	Nil	-	-	
11	2	5	3	3	
12	3	Nil	-	-	
13	3	1	4	5	
14	3	3	3	5	
15	2	3	3	-	
16	2	2	3	-	
17	2	3	3	-	
18	2	3	3	5	
19	3	8	3	4	
		1	4		
20	3	1	3	-	
21	3	1	3	-	
22	2	3	3	-	
23	3	2	3	5	
		3	4		
24	3	2	4	-	
25	2	Nil	-	-	
26	2	3	3	5	
		1	4		
27	3	Nil	-	-	
28	3	4	3	-	
29	3	Nil	-	-	
30	2	3	3	-	
		2	4		
31	3	Nil	-	-	
32	2	6	3	5	
		1	4		

CONDITION SCORE	DESCRIPTION OF CONDITION	
1	Very Good	
2	Good	
3	Fair	
4	Poor	
5	Very Poor	

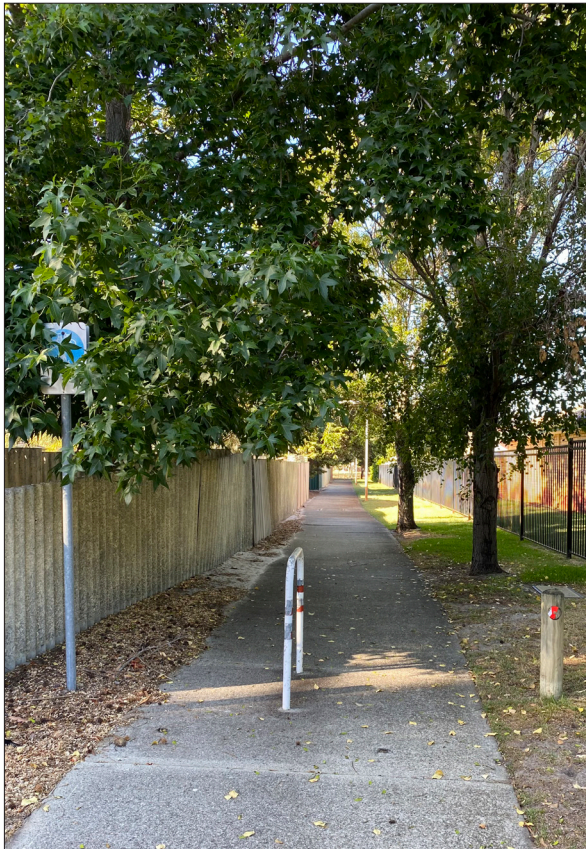
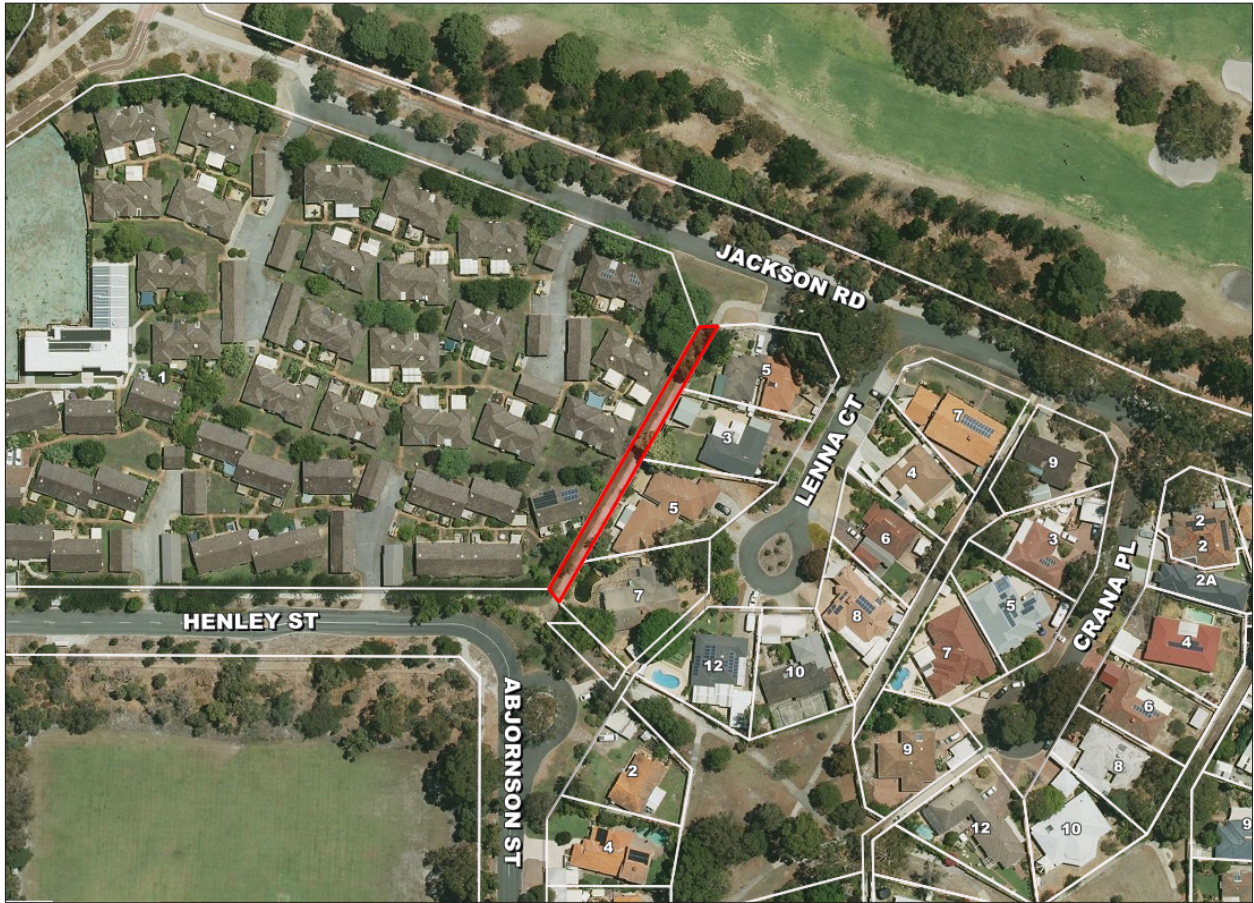


APPENDIX 2 - PAW ASSESSMENT SHEETS

PAW 1 - LOT 3605 ON PLAN 217021 JACKSON ROAD			
LOCATION	Between Jackson Road and Abjornson Street/Henley Street		
RESPONSIBLE AGENCY	Reserved under management order to City of South Perth		
LEGAL STATUS	Pedestrian Access Way Reserve 41339	LOT/VOLUME/FOLIO	3605/LR3055/712
ZONING	Local Road	PLAN NO.	Deposited Plan 217021
AREA	529m ² approx.		
PHYSICAL ASSESSMENT:			
SAFETY	10 = low vulnerability	LANDSCAPING	City Parks (trees and grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight at each entry. 3 City security Lights: Condition 3 (Fair)	PASSIVE SURVEILLANCE	Good. Opportunity for passive surveillance from adjoining properties with permeable fencing along western boundary.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal print sign and 'U' shaped handrail and wooden bollards at both entrances.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	City signage condition 3 (Fair) and 4 (Poor)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	Yes
COMMENTS	Recommend new directional signage for both entries and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Northern entry Jackson Road



Southern entry Abjornson Street

PAW 2 - LOT 56 ON PLAN 11702 LENNA COURT - CLOSED TO PUBLIC ACCESS

LOCATION	Lenna Court Cul-de-sac head		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	56/2752/475
ZONING	Residential R20	PLAN NO.	11702
AREA	95m ² approx.		
PHYSICAL ASSESSMENT:			
SAFETY	N/A	LANDSCAPING	N/A
LIGHTING (NUMBER AND CONDITION)	1 streetlight Lenna Court entry. Nil City security lights	PASSIVE SURVEILLANCE	N/A
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	N/A	FOOTPATH CONDITION	N/A
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	N/A
		STORM WATER STRUCTURE CONDITION	Nil
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	Yes
COMMENTS	Recommend formalising current state of 'closure' with Department of Lands.		
RECOMMENDATION	Non-Essential		



Photographs



View of PAW from Lenna Court (inaccessible)



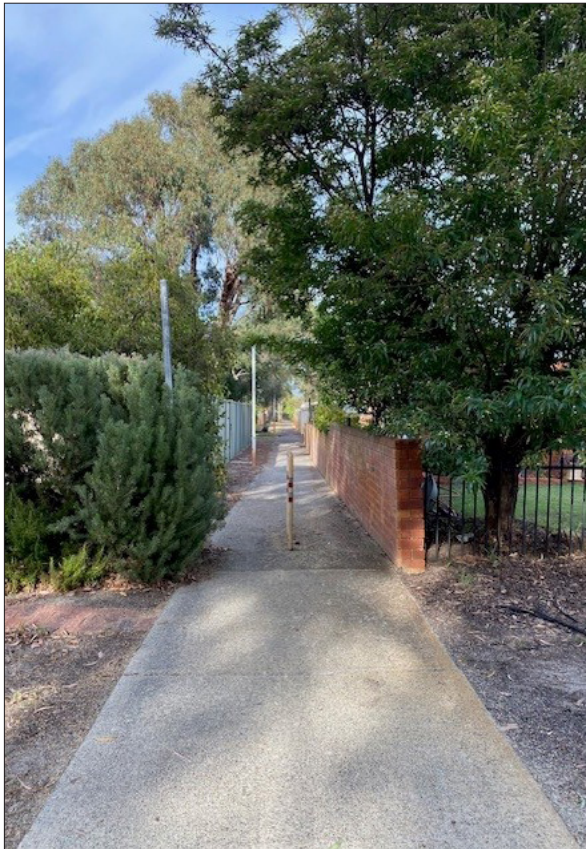
View of PAW from Greenway (inaccessible)

PAW 3 – PORTION OF LOT 3205 JACKSON ROAD & LOT 56 ON PLAN 11702

LOCATION	Between No's 7-9 Jackson Road		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reserve 34691	LOT/VOLUME/FOLIO	56/2752/475, 3205/LR3013/502
ZONING	Local road; Public Open Space	PLAN NO.	Plan 11702
AREA	525m2 approx		
PHYSICAL ASSESSMENT:			
SAFETY	8 = medium vulnerability	LANDSCAPING	City Parks (trees and grass)
LIGHTING (NUMBER AND CONDITION)	Nil immediate streetlight. 4 City security lights:- Condition 3 (Fair) & 4 (Poor)	PASSIVE SURVEILLANCE	Poor. PAW's length and absence of 2-storey dwellings reduces passive surveillance.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal post with sign missing and bollard at Jackson Road entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.		
RECOMMENDATION	Essential		



Photographs



Northern entry Jackson Road



Southern entry Greenway

PAW 4 - LOT 56 ON PLAN 11702 CRANA COURT

LOCATION	Crana Place Cul-de-sac		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	56/2752/475
ZONING	Local road	PLAN NO.	11702
AREA	107m ² approx.		

PHYSICAL ASSESSMENT:

SAFETY	10 = low vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Crana Place entry. Nil City security lights	PASSIVE SURVEILLANCE	Poor. No opportunity for passive surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Wooden bollards at Crana Place entry.	FOOTPATH CONDITION	City pathway condition 2 (Good)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	Nil City signs
		STORM WATER STRUCTURE CONDITION	Nil City stormwater

INFRASTRUCTURE ASSETS WITHIN PAW:

Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Northern entry Crana Court



Southern entry Greenway

PAW 5 – LOT 55 ON PLAN 11701, LOT 3219 ON PLAN 11701 & LOT 2893 ON PLAN 11414

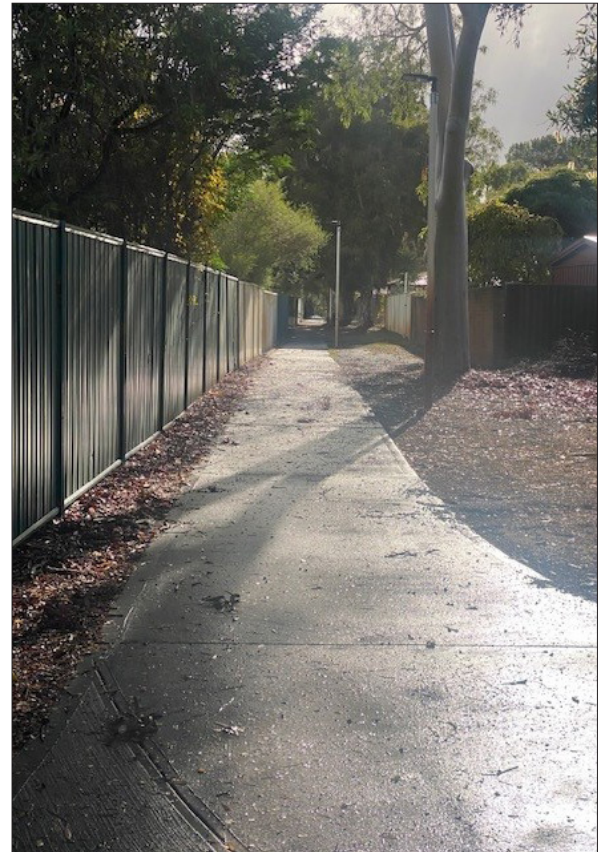
LOCATION	Between No's 13-15 Jackson Road		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reserve 34691	LOT/VOLUME/FOLIO	55/2751/357, 3219/LR3013/504, 2893/LR3013/499
ZONING	Local road; Public Open Space	PLAN NO.	11701, 11414
AREA	670m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	9 = medium vulnerability.	LANDSCAPING	City Parks (trees and grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight Jackson Road entry. 4 City security lights:- Condition 3 (Fair) & 4 (Poor)	PASSIVE SURVEILLANCE	Poor. Opportunity for surveillance from 2-storey dwelling to west.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Sign post without sign and 'U' shape shaped handrail at Jackson Road entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.		
RECOMMENDATION	Essential		



Photographs



Northern entry Jackson Road



Southern entry Greenway

PAW 6 - LOT 55 ON PLAN 11701 WOONAN PLACE - CLOSED TO PUBLIC ACCESS

LOCATION	End of Woonan Place Cul-de-sac		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	55/2751/357
ZONING	Local road	PLAN NO.	11701
AREA	86m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	Nil. Closed to public access.	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	Streetlight Woonan Place entry. Nil City security lights	PASSIVE SURVEILLANCE	Nil. Closed to public access
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Nil City infrastructure.	FOOTPATH CONDITION	Nil City pathway present
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend formalising current state of 'closure' with Department of Lands.		
RECOMMENDATION	Non-Essential		



Photographs



Northern entry Woonan Place (inaccessible)



Southern entry Greenway (inaccessible)

PAW 7 – LOT 55 ON PLAN 11701 & PORTION OF LOT 3220 GILLON STREET

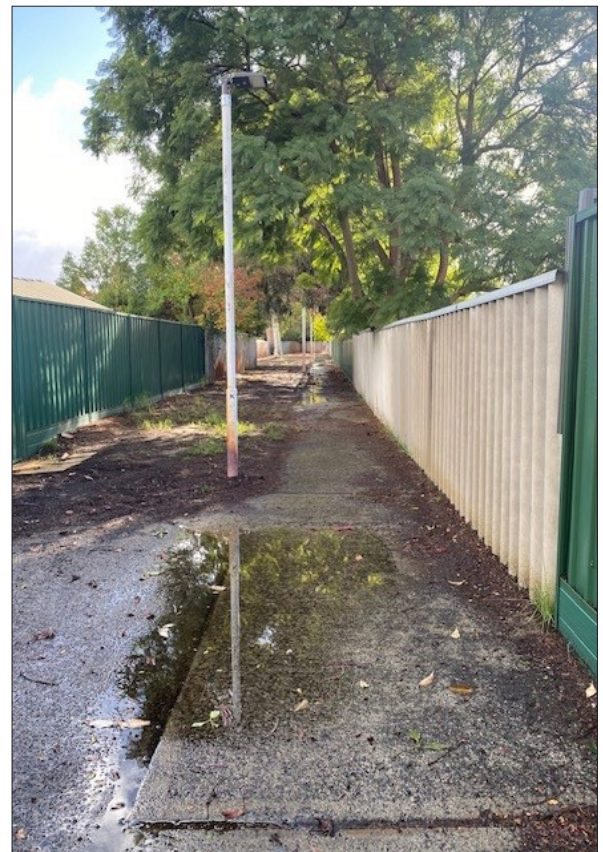
LOCATION	Between No's 17-19 Jackson Road		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reserve 34691	LOT/VOLUME/FOLIO	55/2751/357 3220/LR3013/505
ZONING	Local road; Public Open Space	PLAN NO.	Plan 11701
AREA	837m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	9 = medium vulnerability	LANDSCAPING	City Parks (trees and grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight Jackson Road entry. 5 City security Lights:- Condition 3 (Fair) & 4 (Poor)	PASSIVE SURVEILLANCE	Poor. No opportunities for passive surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal pole with sign missing and 'U' shaped handrail at Jackson Road entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.		
RECOMMENDATION	Essential		



Photographs



Northern entry Jackson Road



Southern entry Greenway

PAW 8 – LOT 57 ON PLAN 11413 BOONGALA CLOSE

LOCATION	End of Boongala Close Cul-de-sac		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	57/2745/983
ZONING	Local road	PLAN NO.	Plan 11413
AREA	96m2 approx.		

PHYSICAL ASSESSMENT:

SAFETY	11 = low vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Boongala Close entry. Nil City security lights.	PASSIVE SURVEILLANCE	Poor. No opportunities for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal bollard at Boongala Close entry.	FOOTPATH CONDITION	City pathway condition 2 (Good)
PEDSHED ACCESSIBILITY	Within 450m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater

INFRASTRUCTURE ASSETS WITHIN PAW:

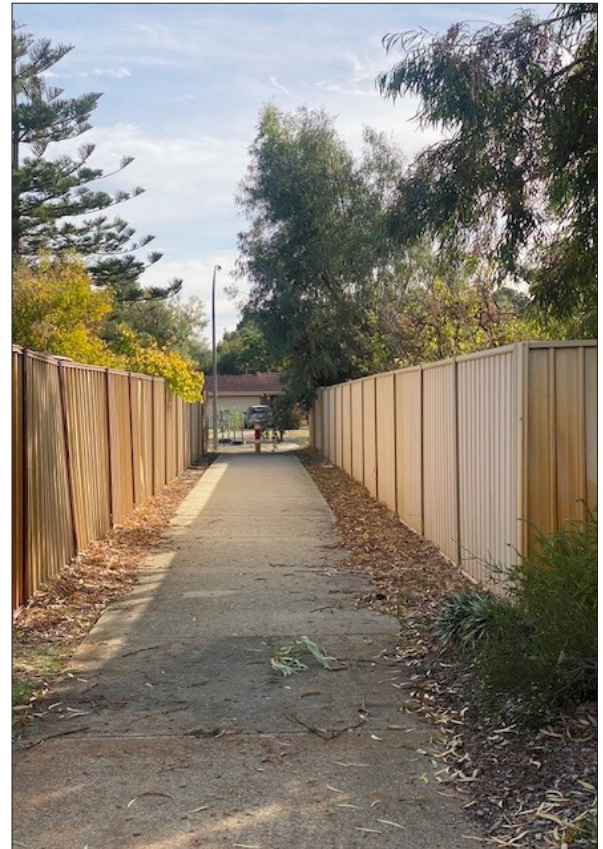
Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Northern entry Boongala Close



Southern entry Greenway

PAW 9 - LOT 57 ON PLAN 11413 & PORTION OF LOT 3201 BOONGALA CLOSE

LOCATION	Between No's 21-23 Jackson Road		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reservation 36791	LOT/VOLUME/FOLIO	57/2745/983 3201/LR3103/702
ZONING	Local road; Public Open Space	PLAN NO.	Plan 11413
AREA	1575m2 approx.		

PHYSICAL ASSESSMENT:

SAFETY	8 – medium vulnerability	LANDSCAPING	City Parks (trees and grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight Jackson Road entry. 5 City security lights Condition 3 (Fair) & 3 (Poor)	PASSIVE SURVEILLANCE	No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal bollard at Jackson Road entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 500m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	City signage condition 5 (Vey Poor)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater

INFRASTRUCTURE ASSETS WITHIN PAW:

Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation. Identify alternative north-south bike path between Jackson Road and Gillon Street in future Bike Plan.		
RECOMMENDATION	Non-Essential		



Photographs



Northern entry Jackson Road



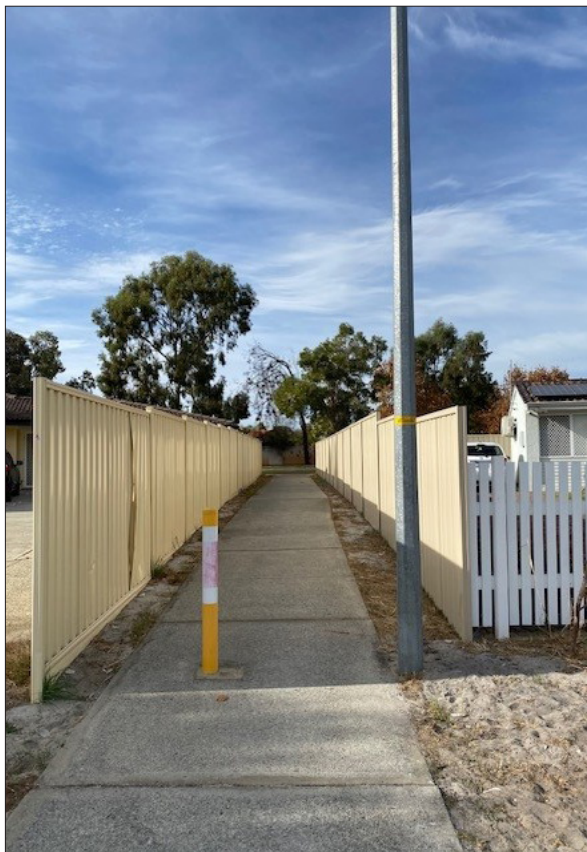
Southern entry Greenway with indentation

PAW 10 – LOT 56 ON PLAN 11412 WANDARRA CLOSE

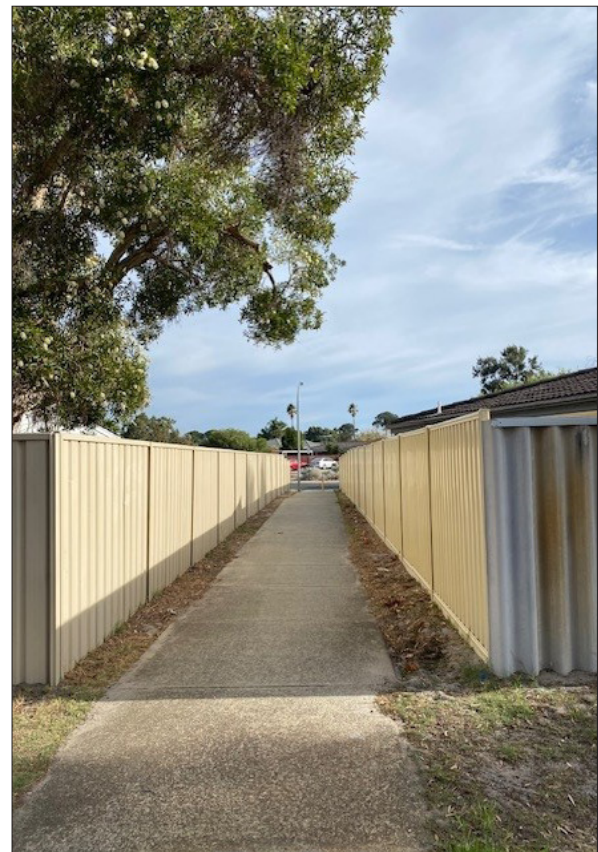
LOCATION	End of Wandarra Close Cul-de-sac		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	56/2751/355
ZONING	Local road	PLAN NO.	Plan 11412
AREA	82m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	11 = low vulnerability PAW	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Wandarra Close entry. Nil City security lights.	PASSIVE SURVEILLANCE	Moderate. No opportunities for passive surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal bollard at Wandarra Close entry.	FOOTPATH CONDITION	City pathway condition 2 (Good)
PEDSHED ACCESSIBILITY	Within 800m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards. Recommend review should PAW Nos. 12 & 13 be closed.		
RECOMMENDATION	Essential		



Photographs



Northern entry Wandarra Close



Southern entry Greenway

PAW 11 – LOT 56 ON PLAN 11412 AND PORTION OF LOT 4360 ON PLAN 220692

LOCATION	Between No's 2-31 Jackson Road		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reserve 36791	LOT/VOLUME/FOLIO	56/2751/355 4360/LR3115/364
ZONING	Local road; Public Open Space	PLAN NO.	Plan 11412 Plan 220692
AREA	1154m ² approx.		

PHYSICAL ASSESSMENT:

SAFETY	8 = medium vulnerability	LANDSCAPING	City Parks (trees and grass)
LIGHTING (NUMBER AND CONDITION)	No immediate streetlight. 5 City security lights Condition 3 (Fair)	PASSIVE SURVEILLANCE	Moderate. Opportunity for surveillance from adjoining two-storey dwellings. Corner shape in PAW reduces surveillance.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal print sign and 'U' shaped handrail at Jackson Road entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 800m of Curtin Primary School, Meath Care, George Burnett Leisure Centre, Village Green Shopping Centre.	SIGNAGE CONDITION	City signage condition 3 (Fair)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater

INFRASTRUCTURE ASSETS WITHIN PAW:

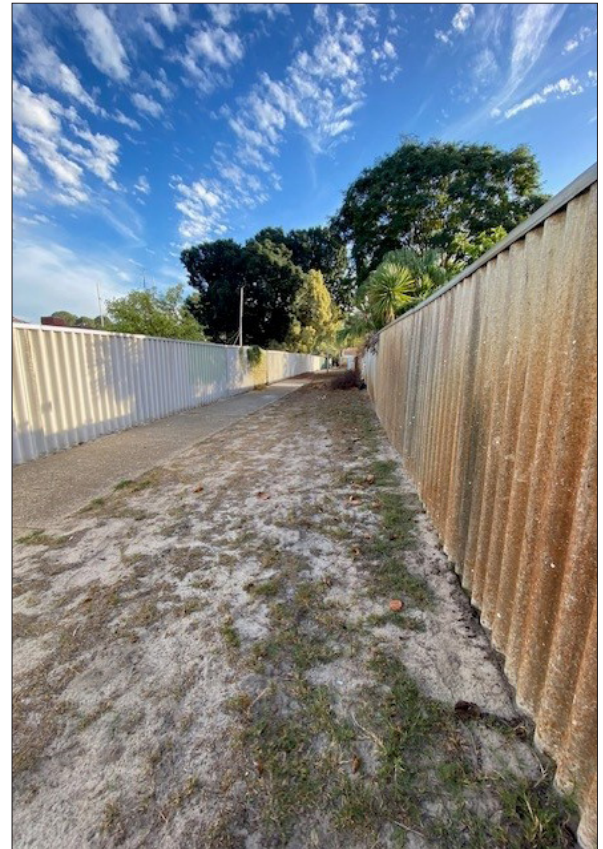
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.		
RECOMMENDATION	Non-Essential		



Photographs



Northern entry Jackson Road



Southern entry Greenway

PAW 12 – TUBLIA COURT

LOCATION	End of Tublia Court Cul-de-sac		
RESPONSIBLE AGENCY	City of South Perth		
LEGAL STATUS	Local road	LOT/VOLUME/FOLIO	P ROAD
ZONING	Local road	PLAN NO.	Nil
AREA	111m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	11 = low vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Tublia Court entry. Nil City security lights	PASSIVE SURVEILLANCE	Moderate. No opportunity for surveillance form adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	U' shaped handrail at Tublia Court entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 800m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	Nil
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Northern entry Tublia Court



Southern entry Greenway

PAW 13 – LOT 56 ON PLAN 11412 JACKSON ROAD

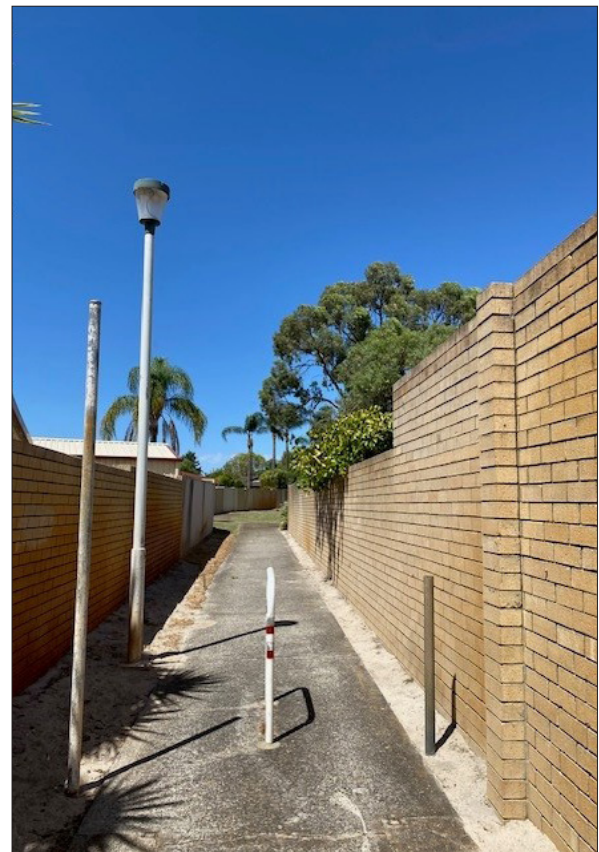
LOCATION	Between No's 14 – 43-45 Jackson Road		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	56/2751/355
ZONING	Local road	PLAN NO.	Plan 11412
AREA	82m ²		
PHYSICAL ASSESSMENT:			
SAFETY	11 = low vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	No immediate streetlight. 1 City security light Condition 4 (Poor)	PASSIVE SURVEILLANCE	Moderate. No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Sign post with missing message and 'U' shaped handrail at Jackson Road entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 800m of Curtin Primary School, Meath Care, George Burnett Leisure Centre.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	Nil Cty stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Southern entry Greenway



Northern entry Jackson Road

PAW 14 – PORTION OF LOT 4362 ON PLAN 220679

LOCATION	Between No's 47A and 49 Jackson Road		
RESPONSIBLE AGENCY	Reserved under management order to City of South Perth		
LEGAL STATUS	Public Recreation Reserve 36791	LOT/VOLUME/FOLIO	4362/LR3115/366
ZONING	Public Open Space	PLAN NO.	Plan 220679
AREA	310m2 approx.		

PHYSICAL ASSESSMENT:

SAFETY	10 = low vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight at Jackson Road entry. 3 City security lights:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Poor. No opportunity for surveillance from neighbouring dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Sign post with message missing and 'U' shaped handrail at Jackson Road entry.	FOOTPATH CONDITION	City pathway condition 3 - (Fair)
PEDSHED ACCESSIBILITY	Within 600m of the Gowrie Early Learning Centre and Village Green Shopping Centre.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater

INFRASTRUCTURE ASSETS WITHIN PAW:

Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Northern entry Jackson Road



Southern entry Greenway

PAW 15 – LOT 55 ON PLAN 11311 LOWAN LOOP

LOCATION	Between Nos. 25 and 27 Lowan Loop		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	55/2748/37
ZONING	Local road	PLAN NO.	Plan 11411
AREA	97m ² approx.		
PHYSICAL ASSESSMENT:			
SAFETY	9 = medium vulnerability PAW	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Lowan Loop entry. 1 City security light:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Moderate. No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Nil.	FOOTPATH CONDITION	City pathway condition 2 (Good)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre and George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	Yes
Water	Yes	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards. Recommend review should No. 14 Bunderra Close be redeveloped.		
RECOMMENDATION	Essential		



Photographs



Eastern entry Lowan Loop



Western entry Greenway

PAW 16 – LOT 55 ON PLAN 11411 & PORTION OF LOT 4361 BUNDERRA CLOSE

LOCATION	End of Bunderra Close Cul-de-sac		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reserve 36791	LOT/VOLUME/FOLIO	PAW 55/2748/37; POS 4361/LR3115/365
ZONING	Local road; Public Open Space	PLAN NO.	Plan 11411; Deposited Plan 220692
AREA	382m ² approx.		

PHYSICAL ASSESSMENT:

SAFETY	6 = medium vulnerability Includes 90 degree corner.	LANDSCAPING	City Parks (tree)
LIGHTING (NUMBER AND CONDITION)	No immediate streetlight. 4 City security lights:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Poor. No opportunity for surveillance from neighbouring dwellings. Corner shape of PAW reduces surveillance
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Nil.	FOOTPATH CONDITION	City pathway condition 2 (Good)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie ELC and George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater

INFRASTRUCTURE ASSETS WITHIN PAW:

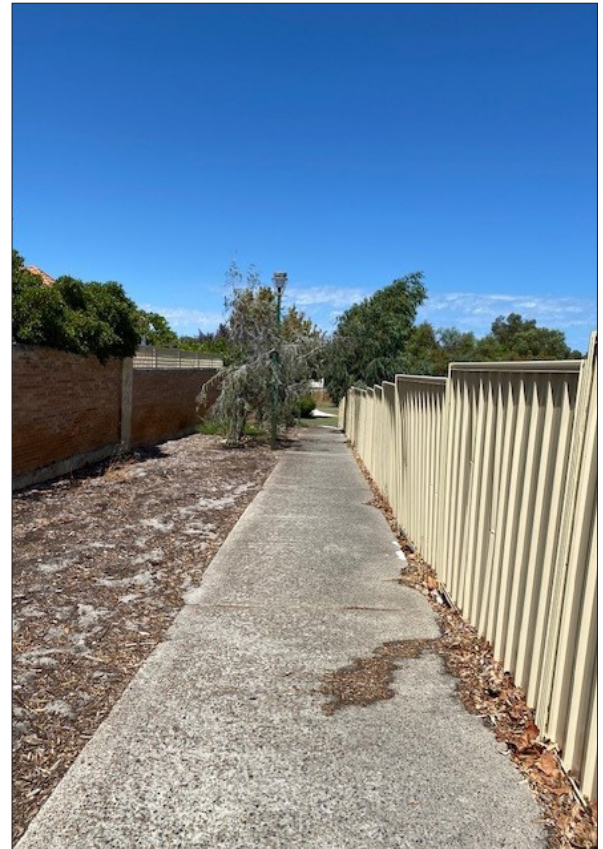
Power	Yes	Gas	No
Water	Yes	Telecommunications	Yes
Sewage	No	NBN	Yes
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and upgrade lighting .Recommend review should Nos. 14-16 Bunderra Close be redeveloped.		
RECOMMENDATION	Essential		



Photographs



PAW 16 looking east toward corner



PAW 16 looking south from corner

PAW 17 - LOT 2836 ON PLAN 11228

LOCATION	To the south of Lowan Loop and east of Kwel Court		
RESPONSIBLE AGENCY	Reserved under management order to City of South Perth		
LEGAL STATUS	Public Recreation Reserve 34241	LOT/VOLUME/FOLIO	2836/LR3057/668
ZONING	Public Open Space	PLAN NO.	Plan 11228
AREA	553m2 approx.		

PHYSICAL ASSESSMENT:

SAFETY	9 = Medium vulnerability	LANDSCAPING	City Parks (grass)
LIGHTING (NUMBER AND CONDITION)	3 City security Lights:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Good. Opportunity for surveillance through a large vacant site on the northern boundary, and visually permeable fencing and two-storey dwellings facing the PAW along the southern boundary.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Nil.	FOOTPATH CONDITION	City pathway condition 2 (Good) & 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre and George Burnett Leisure Centre and playing fields. Direct route to Curtin University.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	City stormwater condition 2 (Good)

INFRASTRUCTURE ASSETS WITHIN PAW:

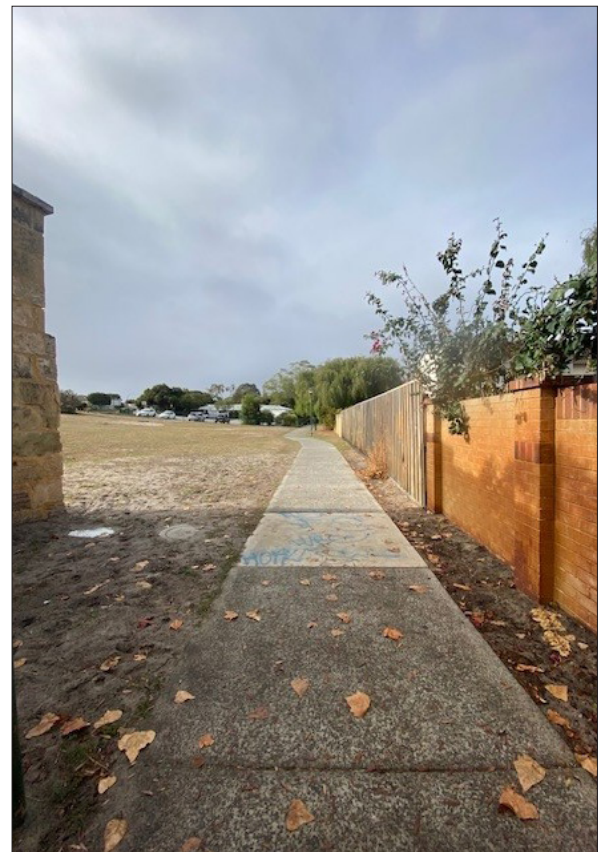
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards. Recommend review should Nos. 14-16 Bunderra Close be redeveloped.		
RECOMMENDATION	Essential		



Photographs



Eastern entry looking west



Western entry looking east

PAW 18 – LOT 55 ON PLAN 11228 WALANNA DRIVE

LOCATION	Between No's 34-36 Walanna Drive		
RESPONSIBLE AGENCY	State of Western Australia, Department of Planning, Lands and Heritage		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	PAW 55/2754/19
ZONING	Local road	PLAN NO.	Plan 11228
AREA	92m2		
PHYSICAL ASSESSMENT:			
SAFETY	9 = medium vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	2 streetlights near Walanna Drive entry. 1 City security light:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Moderate. Opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal print sign, 'U' shaped handrail and fence posts.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre and George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	City stormwater condition 3 (fair)
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage, lighting along PAW path and trial fencing off concealment indentation. Recommend PAW closure and amalgamation of POS into PAW No. 17 should PAW No. 21 be closed or No. 36 Walanna Drive be redeveloped.		
RECOMMENDATION	Non-Essential		



Photographs



Southern entry Walanna Drive



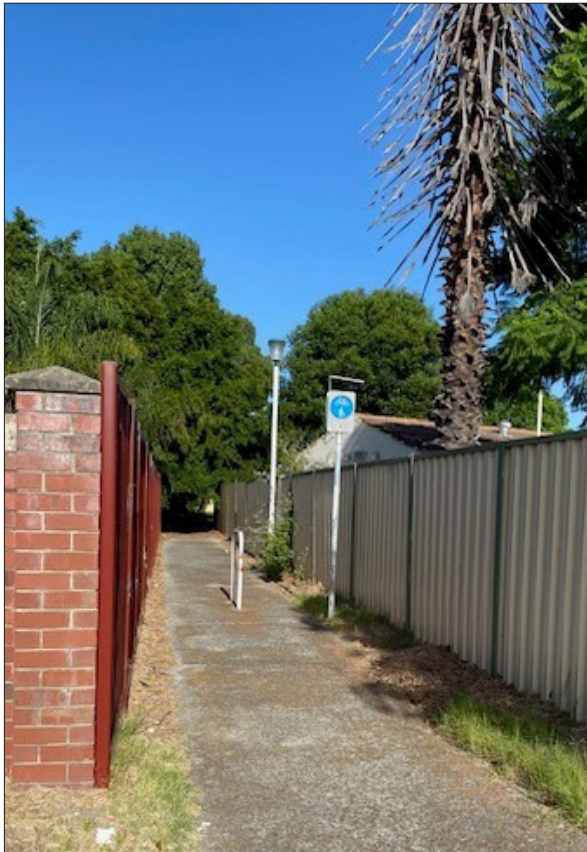
Northern entry Greenway

PAW 19 – LOT 55 ON PLAN 11228 MELINGA COURT

LOCATION	Between Nos. 1-3 Melinga Court		
RESPONSIBLE AGENCY	State of Western Australia; Department of Planning, Lands and Heritage		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	PAW 55/2754/19
ZONING	Local road	PLAN NO.	Plan 11228
AREA	90m ²		
PHYSICAL ASSESSMENT:			
SAFETY	9 = medium vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Melinga Court entry. 1 City security light:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Moderate. Opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal print sign and 'U' shaped handrail at Melinga Court entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre and George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	City signage condition 4 (Poor)
		STORM WATER STRUCTURE CONDITION	City stormwater condition 3 (Fair)
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards, repair of buckled path and trial fencing off concealment indentation.		
RECOMMENDATION	Essential		



Photographs



Eastern entry Melinga Court

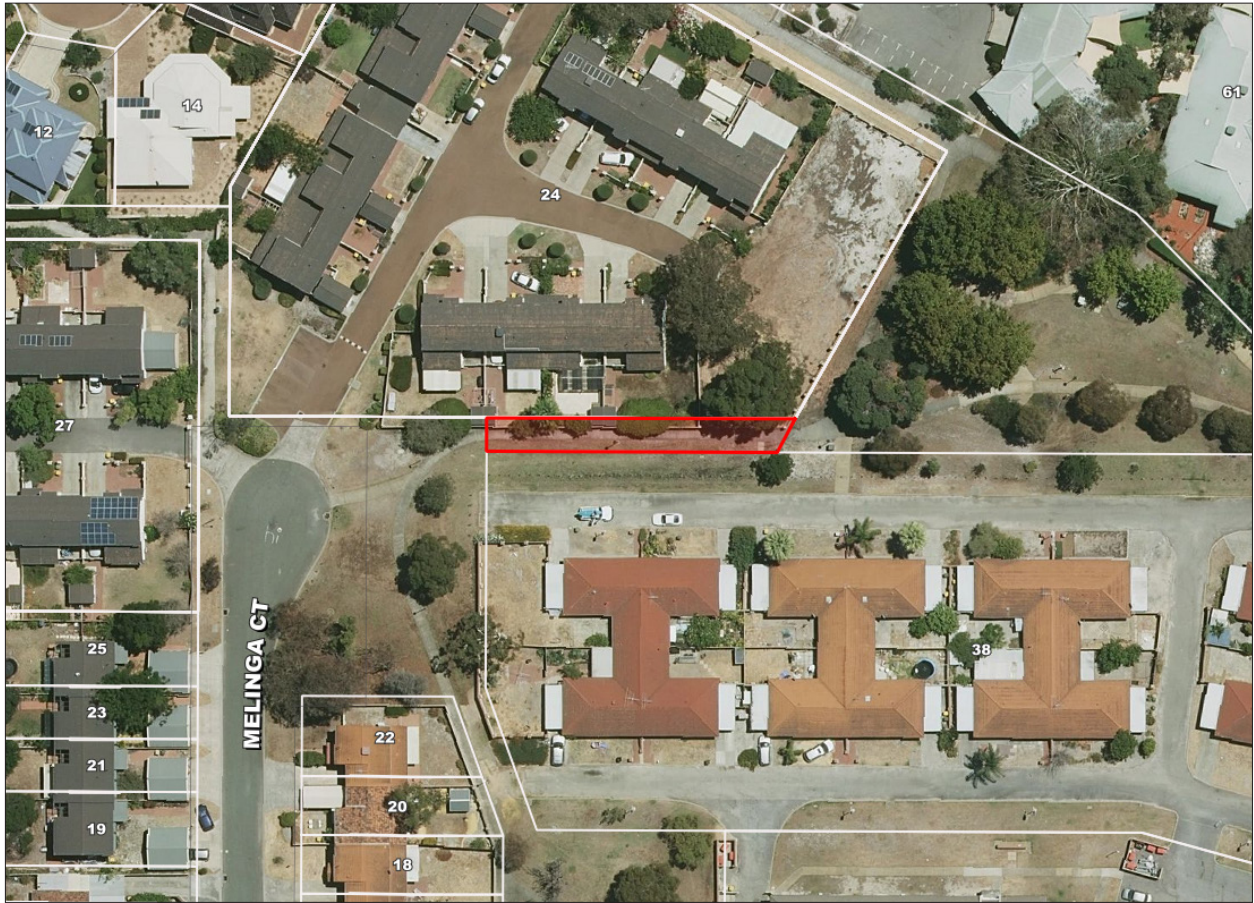


Western entry Greenway

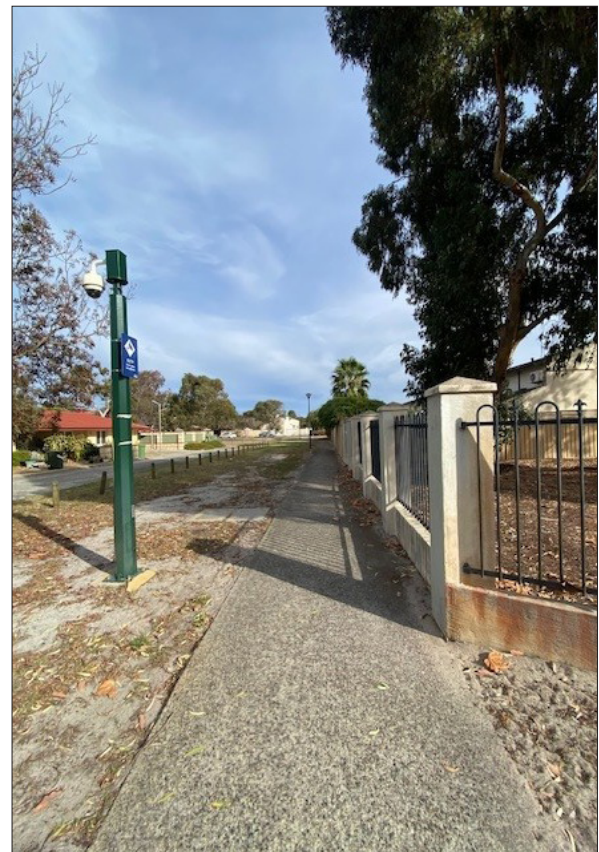
PAW 20 – PORTION LOT 2836 ON PLAN 11228 MELINGA COURT			
LOCATION	End of Melinga Court Cul-de-sac, to the east		
RESPONSIBLE AGENCY	Reserved under management order to City of South Perth		
LEGAL STATUS	Public Recreation Reserve 34241	LOT/VOLUME/FOLIO	2836/LR3057/668
ZONING	Public Open Space	PLAN NO.	Plan 11228
AREA	234m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	12 = low vulnerability	LANDSCAPING	City Parks (grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight opposite Melinga Ct entry. 1 City security light:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Good. Opportunity for passive surveillance from adjoining dwellings and open style wooden bollard fencing and from the Greenway.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	CCTV and series of wooden bollards along Southern PAW boundary.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre and George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	City stormwater condition 3 (Fair)
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	Yes
Sewage	No	NBN	Yes
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Western entry Melinga Court



Eastern entry Greenway

PAW 21 – PORTION OF LOT 2836 ON PLAN 11228 MELINGA COURT

LOCATION	End of Melinga Court Cul-de-sac, to the southeast		
RESPONSIBLE AGENCY	Reserved under management order to City of South Perth		
LEGAL STATUS	Public Recreation Reserve 34241	LOT/VOLUME/FOLIO	2836/LR3057/668
ZONING	Public Open Space	PLAN NO.	Plan 11228
AREA	110m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	10 = low vulnerability	LANDSCAPING	City Parks (grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight opposite Melinga Court entry. 1 City security light:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Good. Opportunity for surveillance available from adjoining two-storey dwellings on western boundary and from the Greenway.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Nil.	FOOTPATH CONDITION	City pathway northern section condition 3 (Fair), southern section condition 2 (Good).
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre and George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards. Recommend PAW closure and amalgamation of POS into PAW No. 17 should PAW No. 18 be closed or No. 38 Walanna Drive be redeveloped.		
RECOMMENDATION	Non-Essential		



Photographs



Northern entry Melinga Court



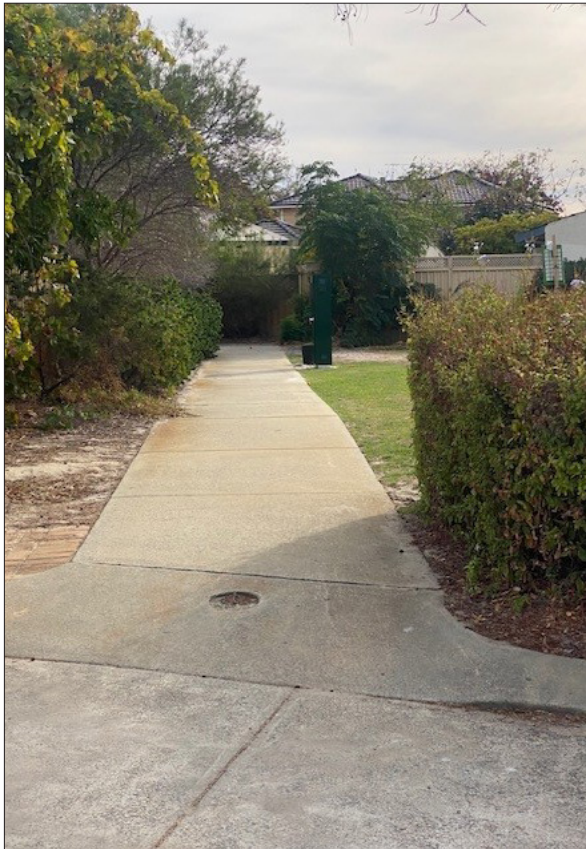
Southern entry Greenway

PAW 22 - LOT 55 ON PLAN 11228& PORTION OF LOT 4363 MELINGA COURT

LOCATION	End of Melinga Court Cul-de-sac, to the west		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reservation 36791	LOT/VOLUME/FOLIO	PAW 55/2754/19 POS 4363/LR3115/367
ZONING	Local road	PLAN NO.	Plan 11228; Deposited Plan 220692
AREA	340m ² approx.		
PHYSICAL ASSESSMENT:			
SAFETY	7 = medium vulnerability	LANDSCAPING	City Parks (trees and shrubs).
LIGHTING (NUMBER AND CONDITION)	1 streetlight at Melinga Court entry. 1 City security light:- Condition 3 (Fair)	PASSIVE SURVEILLANCE	Poor. No opportunity for surveillance from adjoining dwellings. Corner shape and landscaping reduces surveillance.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Nil. NOTE: no dedicated pedestrian crossover from Melinga Court	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre, George Burnett Leisure Centre & playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	Yes
Sewage	Yes	NBN	Yes
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and additional lighting on east-west leg. Recommend review should Nos. 24 or 27 Melinga Court be redeveloped.		
RECOMMENDATION	Non-Essential		



Photographs



Southern entry Melinga Court



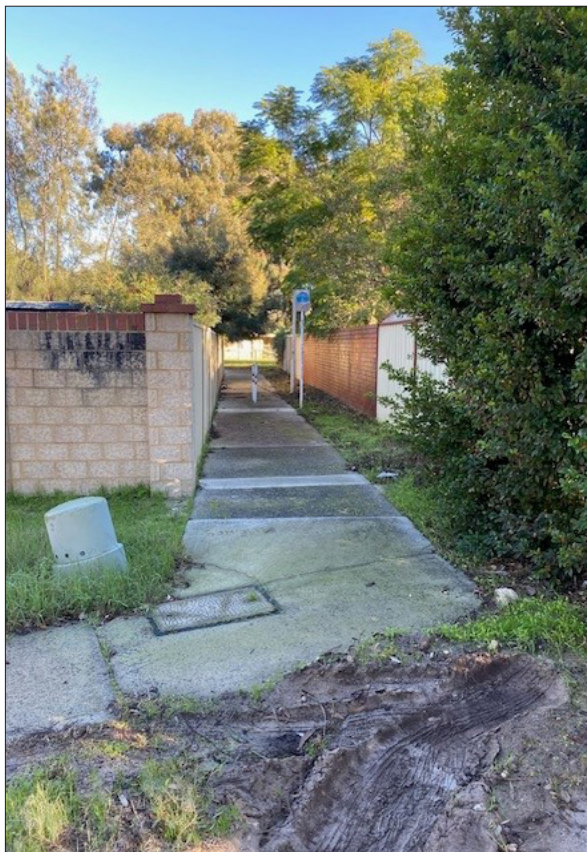
Western entry Mireen Court

PAW 23 – LOT 55 ON PLAN 11228 MIREEN COURT

LOCATION	Between No's 1-3 Mireen Court		
RESPONSIBLE AGENCY	State of Western Australia; Department of Planning, Lands and Heritage		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	PAW 55/2754/19
ZONING	Local road	PLAN NO.	Plan 11228
AREA	80m2		
PHYSICAL ASSESSMENT:			
SAFETY	8 = medium vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight near Mireen Court entry. 1 City security light:- Condition 4 (Poor)	PASSIVE SURVEILLANCE	Moderate. Opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal print sign and 'U' shaped handrail at Mireen Court entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre and George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	City stormwater condition 3 (Fair)
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Eastern entry Mireen Court



Western entry Greenway

PAW 24 – LOT 55 ON PLAN 11228

LOCATION	Between Mirreen Court and Boona Court Cul-de-sacs		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	55/2754/19
ZONING	Local road	PLAN NO.	Plan 11228
AREA	244m ² approx.		
PHYSICAL ASSESSMENT:			
SAFETY	10 = low vulnerability	LANDSCAPING	City Parks (trees)
LIGHTING (NUMBER AND CONDITION)	2 streetlights at each entry. 2 City security lights:- Condition 4 (Poor)	PASSIVE SURVEILLANCE	Poor. No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Nil	FOOTPATH CONDITION	City pathway condition 2 (Good)
PEDSHED ACCESSIBILITY	Within 400m of Village Green Shopping Centre, the Gowrie Early Learning Centre and George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	City stormwater condition 3 (Fair)
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	Yes
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards. Recommend review should No. 20 Boona Court be redeveloped.		
RECOMMENDATION	Essential		

Photographs



Eastern entry Mireen Court



Western entry Boona Court

PAW 25 – LOT 57 ON PLAN 11413 MIAMBA COURT

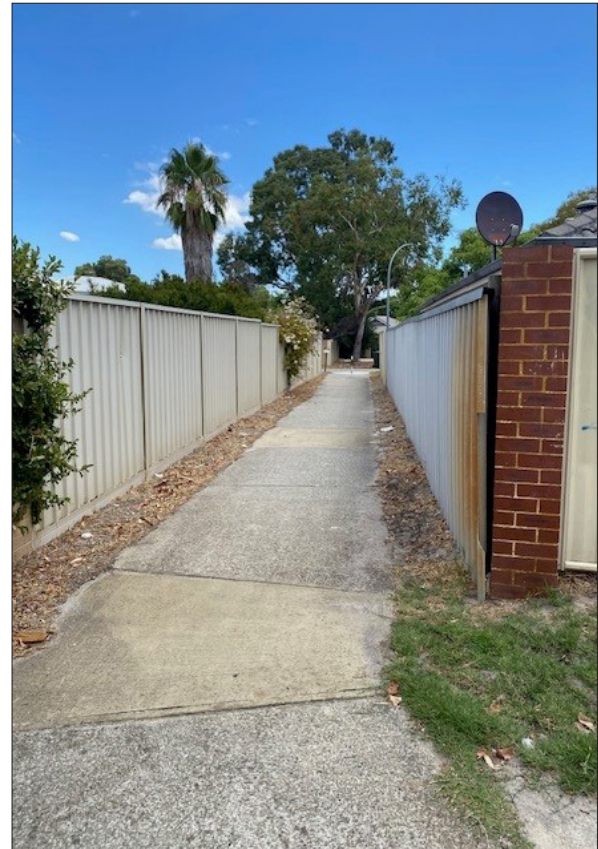
LOCATION	End of Miamba Court Cul-de-sac		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	57/2745/983
ZONING	Local road	PLAN NO.	Plan 11413
AREA	74m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	9 = medium vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight at Miamba Court entry. Nil City security lights	PASSIVE SURVEILLANCE	Moderate. No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	'U' shaped handrail at Miamba Court entry.	FOOTPATH CONDITION	City pathway condition 2 (Good)
PEDSHED ACCESSIBILITY	Within 500m of Curtin Primary School, Meath Care, George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards. Recommended for north-south local bike route with Lurnea Place.		
RECOMMENDATION	Essential		



Photographs



Southern entry Miamba Court



Northern entry Greenway

PAW 26 – LOT 57 ON PLAN 11413 AND PORTION OF LOT 3201 GILLON STREET

LOCATION	Between No's 2-18 Gillon Street		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reserve 36791	LOT/VOLUME/FOLIO	PAW 57/2745/983 POS 3201/LR3103/702
ZONING	Local road; Public Open Space	PLAN NO.	Plan 11413
AREA	524m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	7 = medium vulnerability	LANDSCAPING	City Parks (trees, grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight Gillon Street entry. 4 City security lights Condition 3 (Fair) & 4 (Poor)	PASSIVE SURVEILLANCE	Poor. PAW's long length and a lack of adjoining two-storey dwellings act to reduce opportunities for surveillance.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal bollard and 'U' shaped handrail at Gillon Street entry.	FOOTPATH CONDITION	City pathway condition 3-average (Fair)
PEDSHED ACCESSIBILITY	Within 500m of Curtin Primary School, Meath Care, George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation. Identify alternative north-south bike path between Jackson Road and Gillon Street in future Bike Plan.		
RECOMMENDATION	Essential		



Photographs



Southern entry Gillon Street



Northern entry Greenway

PAW 27 - LOT 75 ON PLAN 11413 KOOLUNDA COURT

LOCATION	End of Koolunda Court Cul-de-sac		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	57/2745/983
ZONING	Local road	PLAN NO.	Plan 11413
AREA	96m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	10 = low vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Koolunda Court entry. Nil City security lights	PASSIVE SURVEILLANCE	Moderate. No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Two 'u' shaped handrail at Koolunda Court entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Essential		



Photographs



Southern entry Koolunda Court



Northern entry Greenway

PAW 28 - LOT 56 ON PLAN 11414 AND PORTION OF LOT 2893 GILLON STREET

LOCATION	Between No's 2 Yallambee Place and 12 Gillon Street		
RESPONSIBLE AGENCY	State of Western Australia; Reserved under management order to City of South Perth		
LEGAL STATUS	Vested as a Pedestrian Access Way; Public Recreation Reserve 34691	LOT/VOLUME/FOLIO	PAW 56/2753/322 POS 2893/LR3013/499
ZONING	Local road; Public Open Space	PLAN NO.	Plan 11414
AREA	700m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	7 = medium vulnerability	LANDSCAPING	City Parks (trees and grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight Gillon Street entry. 4 City security lights Condition 3 (Fair) & 4 (Poor)	PASSIVE SURVEILLANCE	Poor. No opportunity for passive surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	'U' shaped handrail at Gillon Street entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	No improvements recommended as PAW is subject to closure application with DPLH.		
RECOMMENDATION	Non-Essential		



Photographs



Southern entry Gillon Street



Northern entry Greenway

PAW 29 – LOT 56 ON PLAN 11414 YALLAMBEE PLACE

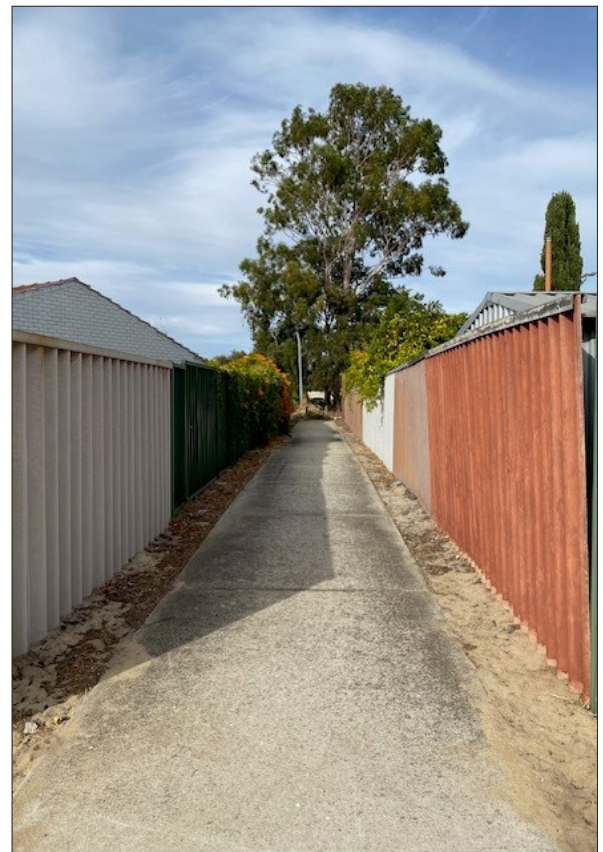
LOCATION	End of Yallambee Place Cul-de-sac		
RESPONSIBLE AGENCY	State of Western Australia		
LEGAL STATUS	Vested as a Pedestrian Access Way	LOT/VOLUME/FOLIO	56/2753/322
ZONING	Local road	PLAN NO.	Plan 11414
AREA	124m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	9 = medium vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Yallambee Place entry. Nil City security lights	PASSIVE SURVEILLANCE	Moderate. No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Wooden bollards at Yallambee Place entry. NOTE: no dedicated pedestrian crossover from Melinga Court	FOOTPATH CONDITION	City pathway condition 2 (Good)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	No	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	Yes
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and additional path connecting between PAW and road.		
RECOMMENDATION	Essential		



Photographs



Southern entry Yallambee Place



Minimal surveillance along PAW

PAW 30 – PORTION OF LOT 2893 ON PLAN 11414 GILLON STREET

LOCATION	Between No 2 Beenan Close and 8 Gillon Street		
RESPONSIBLE AGENCY	Reserved under management order to City of South Perth		
LEGAL STATUS	Public Recreation Reserve 34691	LOT/VOLUME/FOLIO	2893/LR3013/499
ZONING	Public Open Space	PLAN NO.	Plan 11414
AREA	1046m2 approx.		

PHYSICAL ASSESSMENT:

SAFETY	7 = medium vulnerability	LANDSCAPING	City Parks (grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight Gillon Street entry. 5 City security lights:- Condition 3 (Fair) & 4 (Poor)	PASSIVE SURVEILLANCE	Poor. No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	'U' shaped handrail at Gillon Street entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater

INFRASTRUCTURE ASSETS WITHIN PAW:

Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage and 1.5m footpath extension around bollards.		
RECOMMENDATION	Non-Essential		



Photographs



Southern entrance Gillon Street



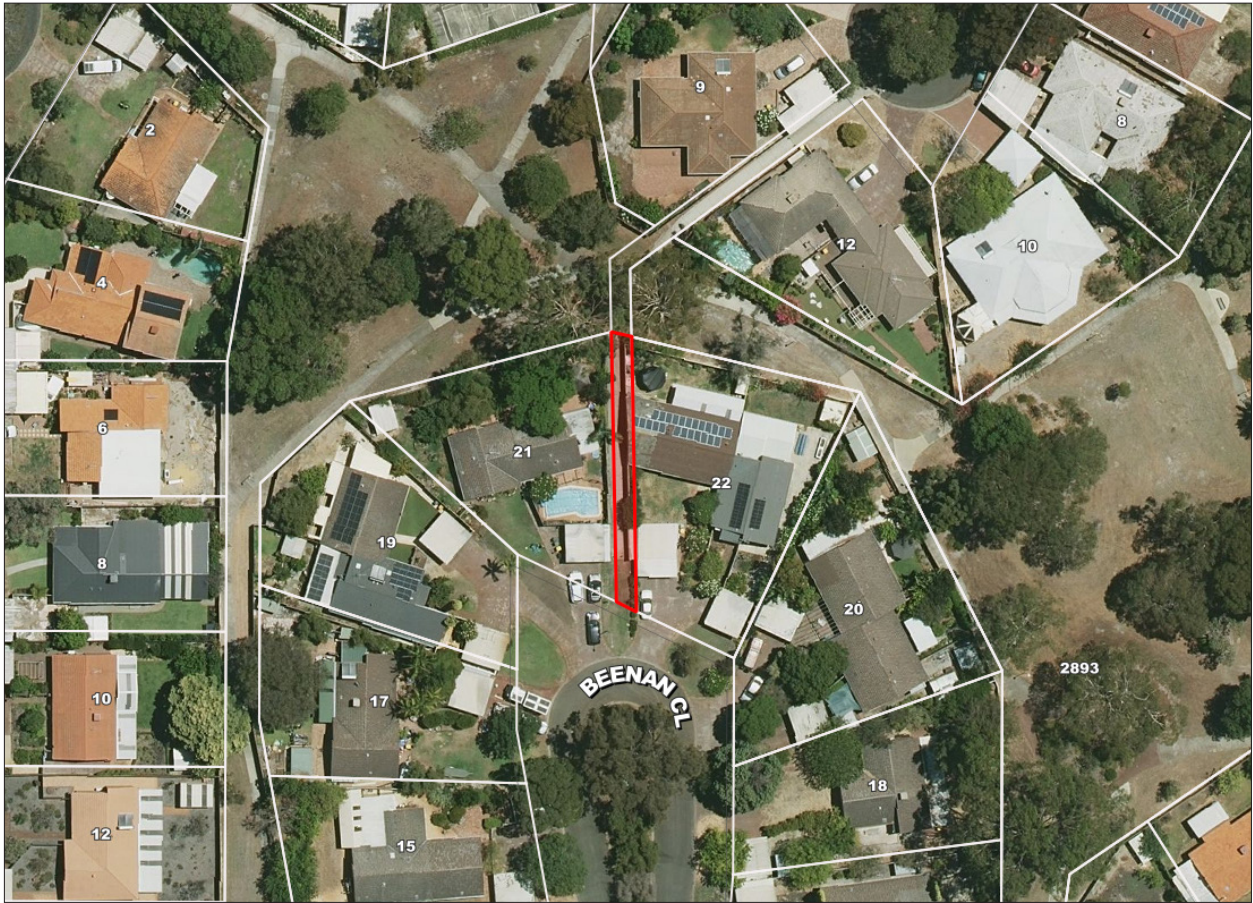
Northern entrance Greenway

PAW 31 - LOT 57 ON PLAN 11415 BEENAN CLOSE

LOCATION	End of Beenan Close Cul-de-sac between Nos. 21 & 22 Beenan Close		
RESPONSIBLE AGENCY	Water Corporation proprietor		
LEGAL STATUS	Freehold	LOT/VOLUME/FOLIO	57/2090/549
ZONING	Local road	PLAN NO.	Plan 11415
AREA	125m2 approx.		
PHYSICAL ASSESSMENT:			
SAFETY	9 = medium vulnerability	LANDSCAPING	Nil City Parks
LIGHTING (NUMBER AND CONDITION)	1 streetlight Beenan Close entry. Nil City security lights	PASSIVE SURVEILLANCE	Moderate. No opportunity for surveillance from adjoining dwellings
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Wooden bollards at Beenan Close entry. NOTE: no dedicated pedestrian crossover from Melinga Court	FOOTPATH CONDITION	City pathway condition 2 (Good) NOTE: Crossover absent between street and PAW.
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	Nil City signage
		STORM WATER STRUCTURE CONDITION	Nil City stormwater
INFRASTRUCTURE ASSETS WITHIN PAW:			
Power	Yes	Gas	No
Water	Yes	Telecommunications	No
Sewage	No	NBN	No
COMMENTS	Recommend new directional signage and additional path connecting between PAW and road.		
RECOMMENDATION	Essential		



Photographs



Northern entry Greenway



Southern entry Beenan Close

PAW 32 – LOT 56 ON PLAN 11415 AND PORTION OF LOT 2893 GILLON STREET

LOCATION	Between Nos. 2A-4 Gillon Street		
RESPONSIBLE AGENCY	State of Western Australia – Vested as a pedestrian accessway; Reserved under management order to City of South Perth		
LEGAL STATUS	Pedestrian Access Way; Public Open Space Reserve 34691	LOT/VOLUME/FOLIO	PAW 56/1448/101 POS 2893/LR3013/500
ZONING	Local road; Public Open Space	PLAN NO.	Plan 11415
AREA	1758m ² approx.		

PHYSICAL ASSESSMENT:

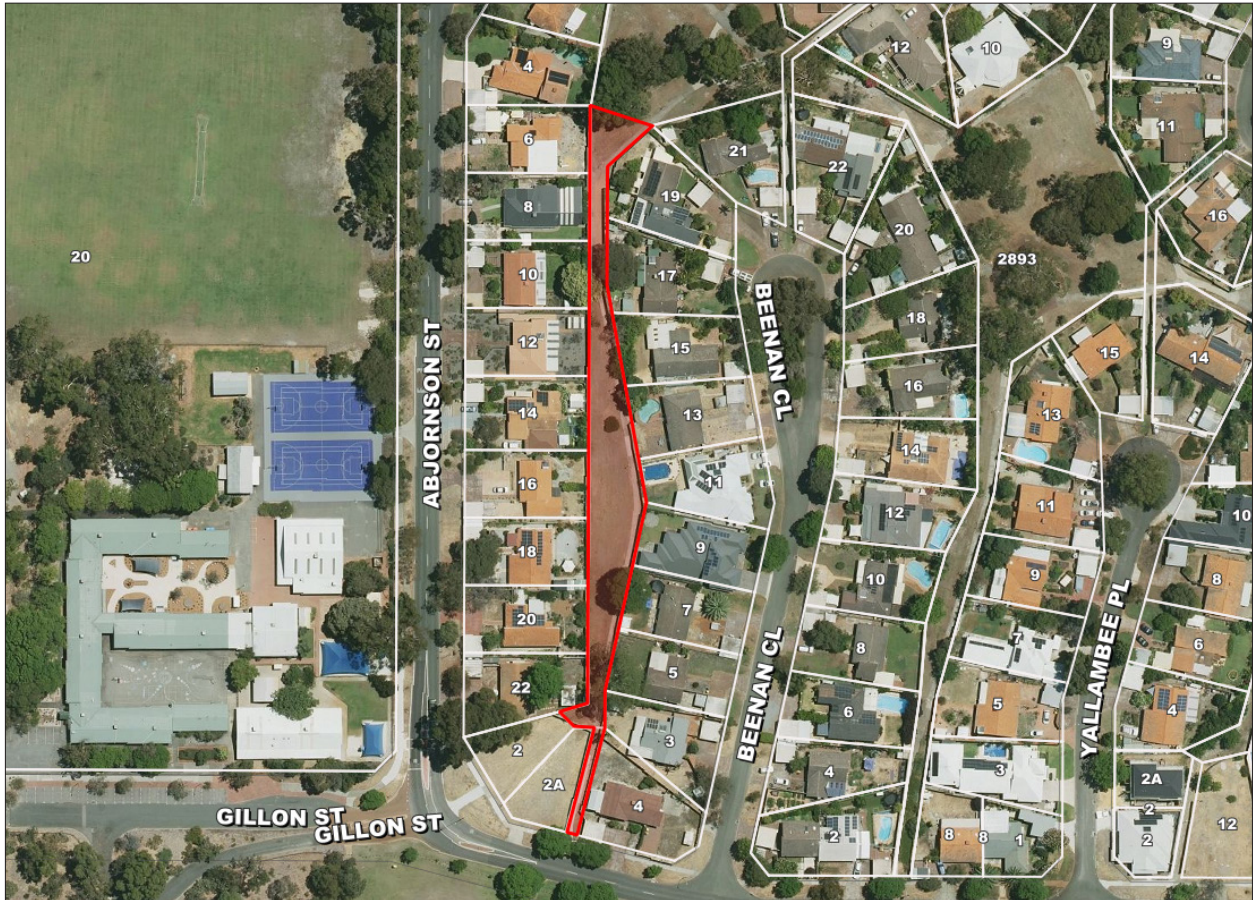
SAFETY	7 = medium vulnerability	LANDSCAPING	City Parks (trees and grass)
LIGHTING (NUMBER AND CONDITION)	1 streetlight at each entry. 3 City security Lights: Condition 3 (Fair)	PASSIVE SURVEILLANCE	Poor. No opportunity for surveillance from adjoining dwellings.
PATH INFRASTRUCTURE (BOLLARDS, SIGNAGE)	Metal print sign and 'U' shaped handrail at Gillon Street entry.	FOOTPATH CONDITION	City pathway condition 3 (Fair)
PEDSHED ACCESSIBILITY	Within 400m of Curtin Primary School, Meath Care, George Burnett Leisure Centre and playing fields.	SIGNAGE CONDITION	City signage condition 5 (Very Poor)
		STORM WATER STRUCTURE CONDITION	Nil City stormwater

INFRASTRUCTURE ASSETS WITHIN PAW:

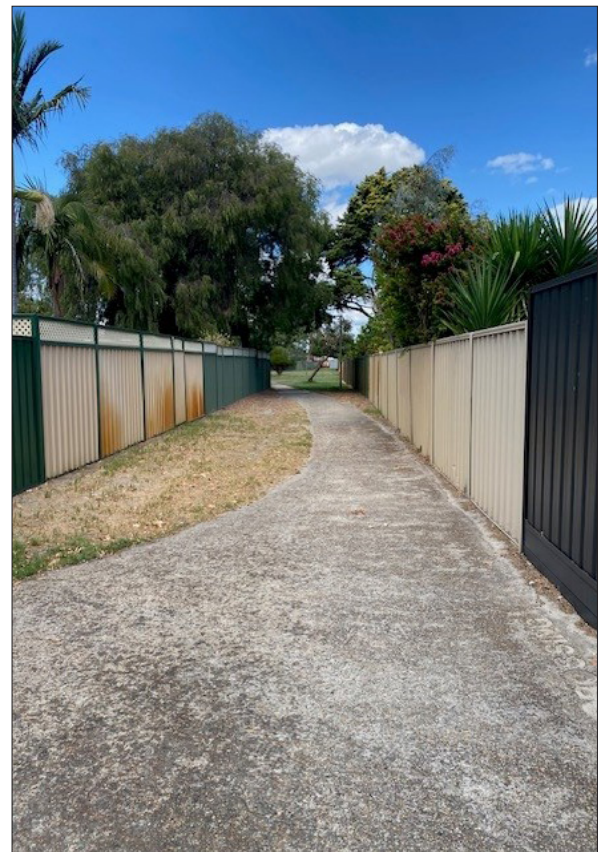
Power	No	Gas	No
Water	No	Telecommunications	No
Sewage	Yes	NBN	No
COMMENTS	Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.		
RECOMMENDATION	Essential		



Photographs



Southern entry Gillon Street



Northern entry Greenway



APPENDIX 3 - HUMAN MOBILITY DATA BY ELEMENT ADVISORY PTY LTD



Karawara Human Mobility Analysis

City of South Perth

Acknowledgement to Country

We acknowledge the custodians of this land, the Whadjuk people of the Noongar nation and their Elders past, present and emerging.
We wish to acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

Document ID: BE-HMA					
Issue	Date	Status	Prepare by	Approved by	File
1	03/07/2024	Draft	Yasmine Mnahy	James Parker	D1
2	16/07/2024	Final	Yasmine Mnahy	James Parker	F2

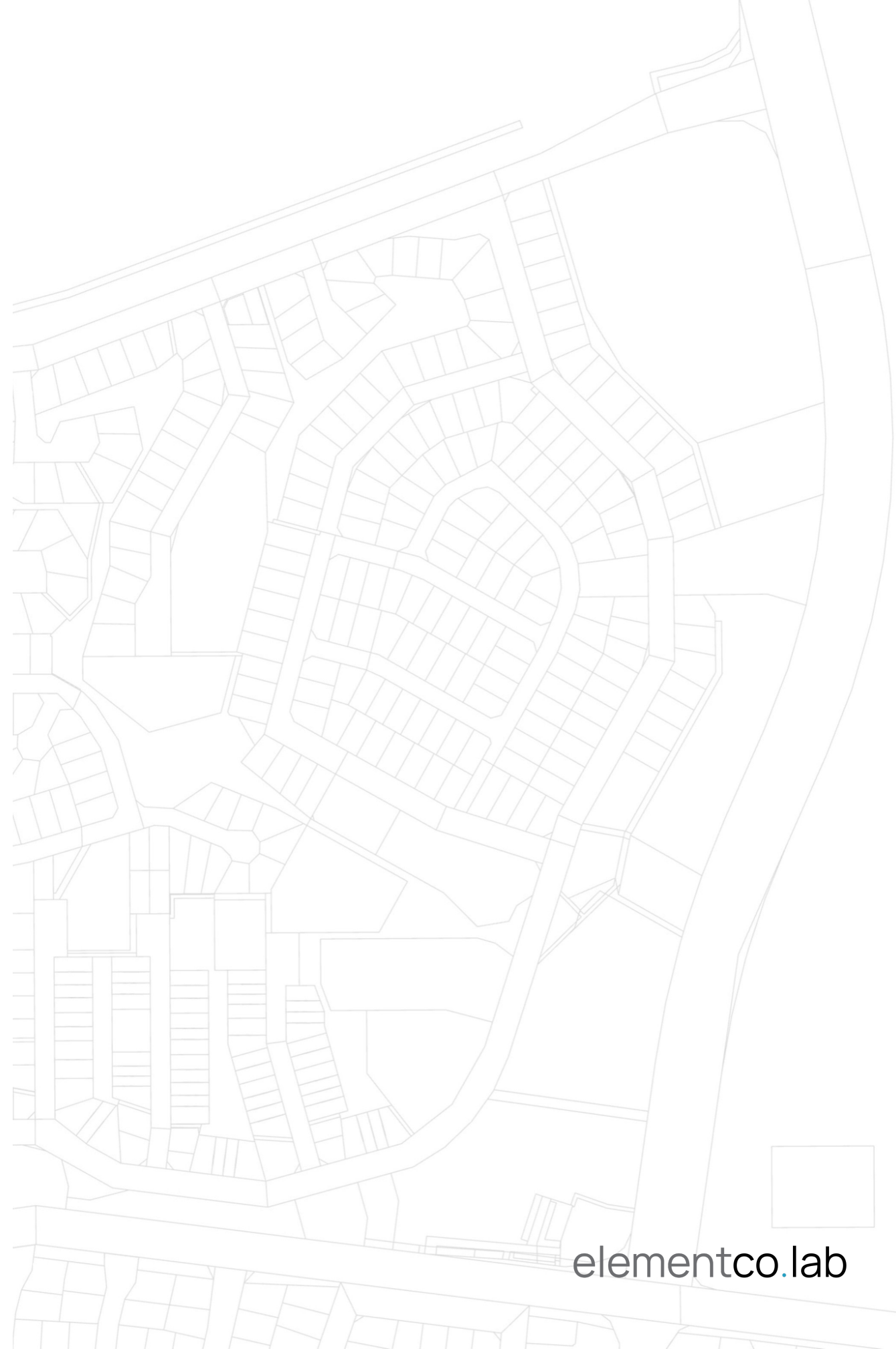
This report has been prepared for the exclusive use of the Client, in accordance with the agreement between the Client and Element Advisory Pty Ltd (**element**) ('Agreement').
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Project Background

The City of South Perth is preparing a Pedestrian and Cycle Access Plan for the suburb of Karawara. The Plan is a requirement of the Department of Planning, Lands and Heritage to close pedestrian access ways (PAWs).

It has identified 32 PAWs in the suburb. The development of this plan involves a physical assessment, CPTED assessment, and usage assessment of each PAW to identify which should remain open, and which may be closed. The City is also identifying which require maintenance or upgrades.

This human mobility analysis has been prepared to aid the City in assessing the usage of all PAW's.



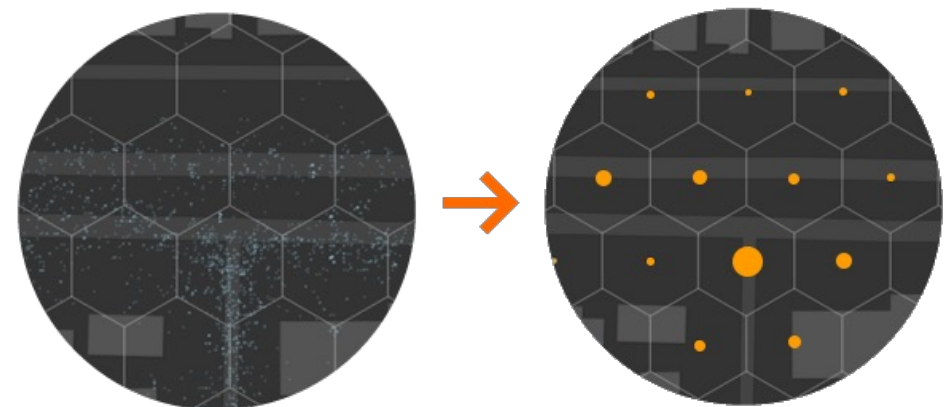
Digital Breadcrumbs

Human Mobility Data refers to the digital traces (or breadcrumbs) left behind by individuals' devices as they navigate through physical spaces. This data provides invaluable insights into human behaviors, preferences, and interactions within various environments. Aggregated from smartphones, GPS devices, and sensors, human mobility data offers a wealth of information that can be harnessed to comprehensively analyze the utilization of spaces both in terms of spatial distribution and temporal patterns. The data is anonymized to create a broad picture of where people move.

A spatial analytic analysis of this data facilitates the identification of popular gathering spots, assessment of foot traffic density, and recognition of usage trends across different times of the day or seasons.

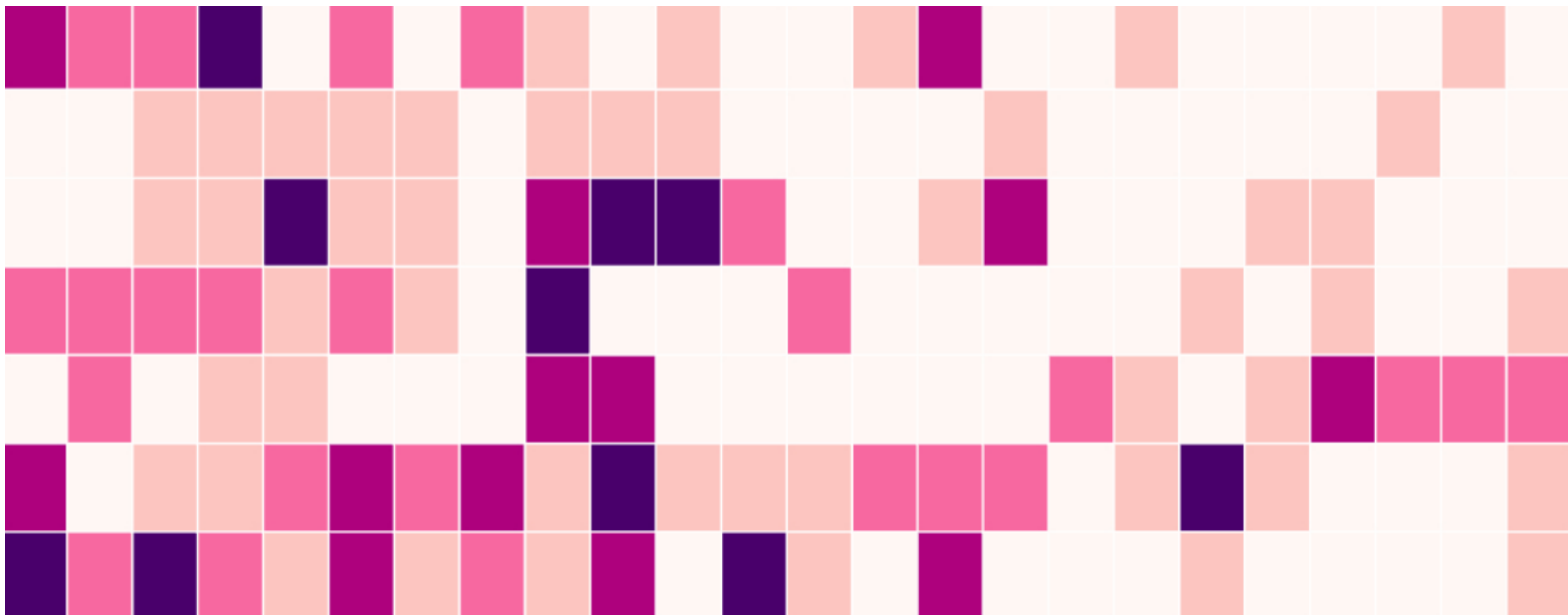
The following series of maps includes an analysis of human mobility data captured within Karawara and the 32 PAWs, as well as respective calendar heat charts.

The data used in this analysis was captured between June 2021 – June 2024. It includes devices seen within the project area that were sending geolocation information out to a service such as Google, Uber, Garmin or TomTom. Not all devices or people that moved through this area are included due to devices not contributing data or people not carrying spatially aware devices. When interrogated closely the data is often unintelligible, random and lacks clarity. However, when viewed at scale with hundreds of thousands –sometimes millions – of datapoints, patterns emerge and insights are revealed.



Calendar Heat Charts

Calendar heat charts visualize patterns in temporal data by aggregating data points into a calendar grid. The human mobility data collected from within the Karawara study area is timestamped and can therefore be grouped and summarised in this way. All human mobility data points within each Public Access Way are grouped into the respective hour and day of week they were observed. This in turn provides a summarised, averaged view of the activity intensity of each hour of the day, for each day of the week across the three-year period the data spans.



Karawara Human Mobility Trends

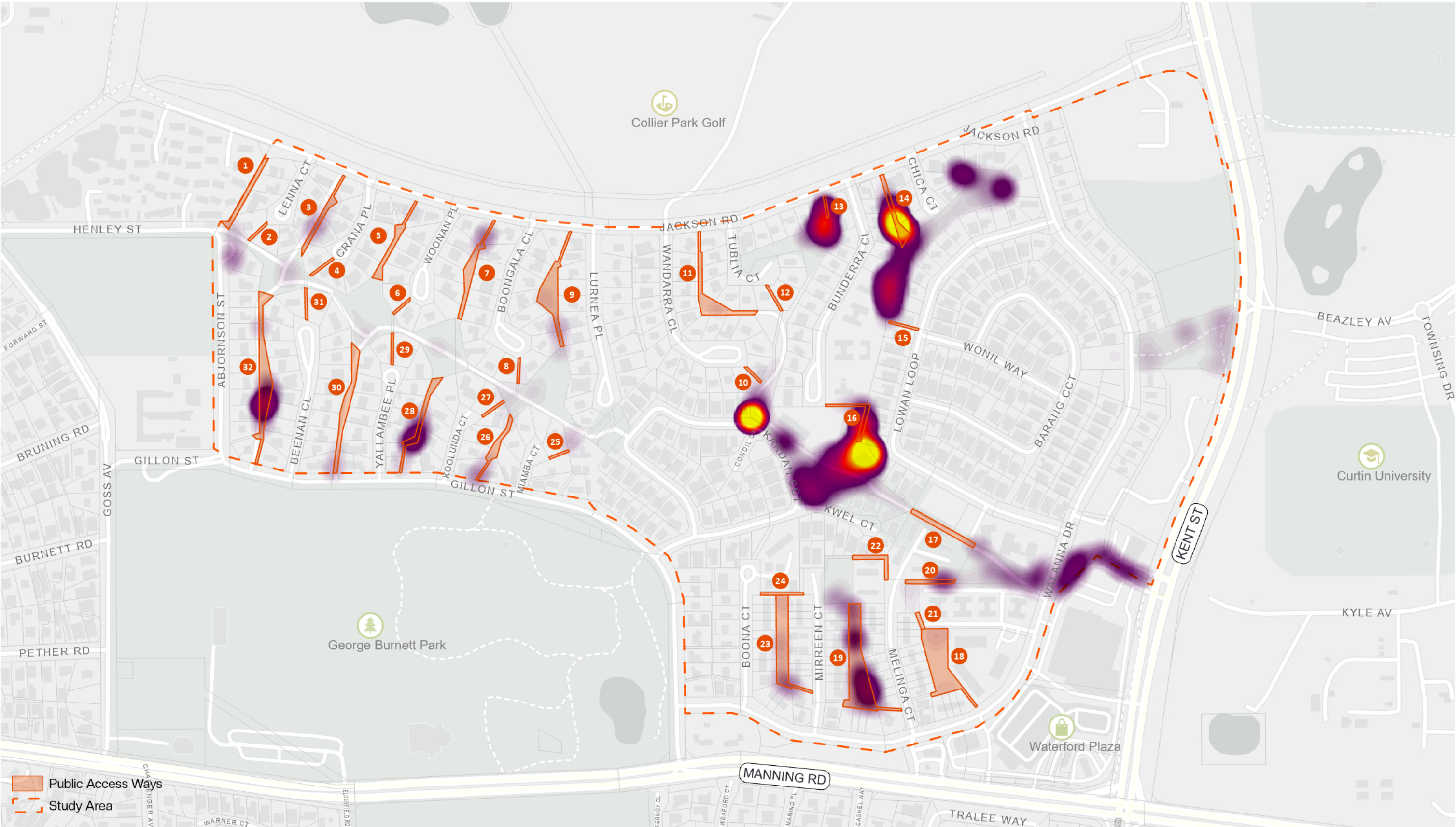
Human mobility trends through public access ways and public open spaces from 2021-2024.



Pin Report (2021-2024)

Karawara Human Mobility Trends

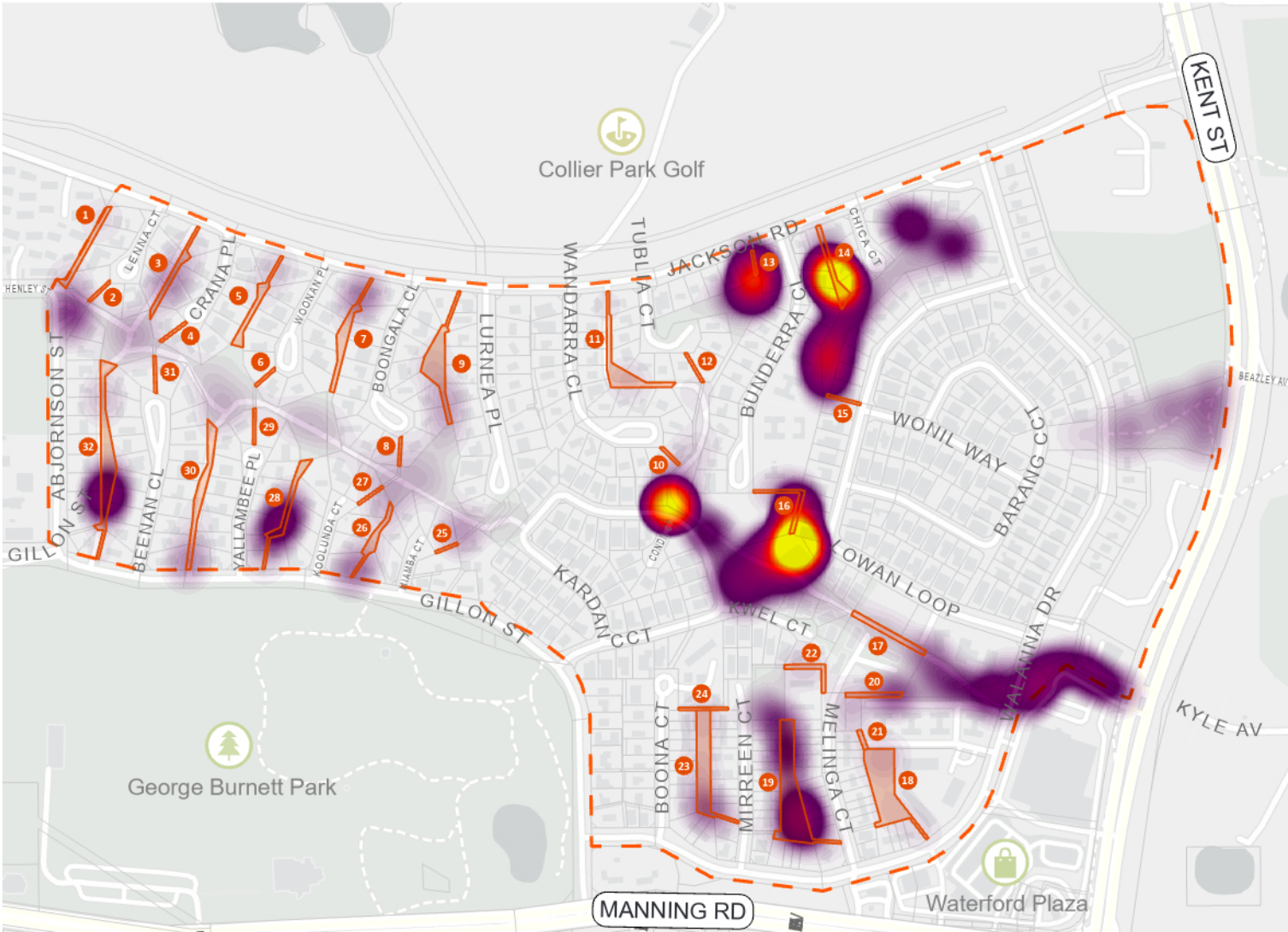
Human mobility trends through public access ways and public open spaces from 2021-2024.



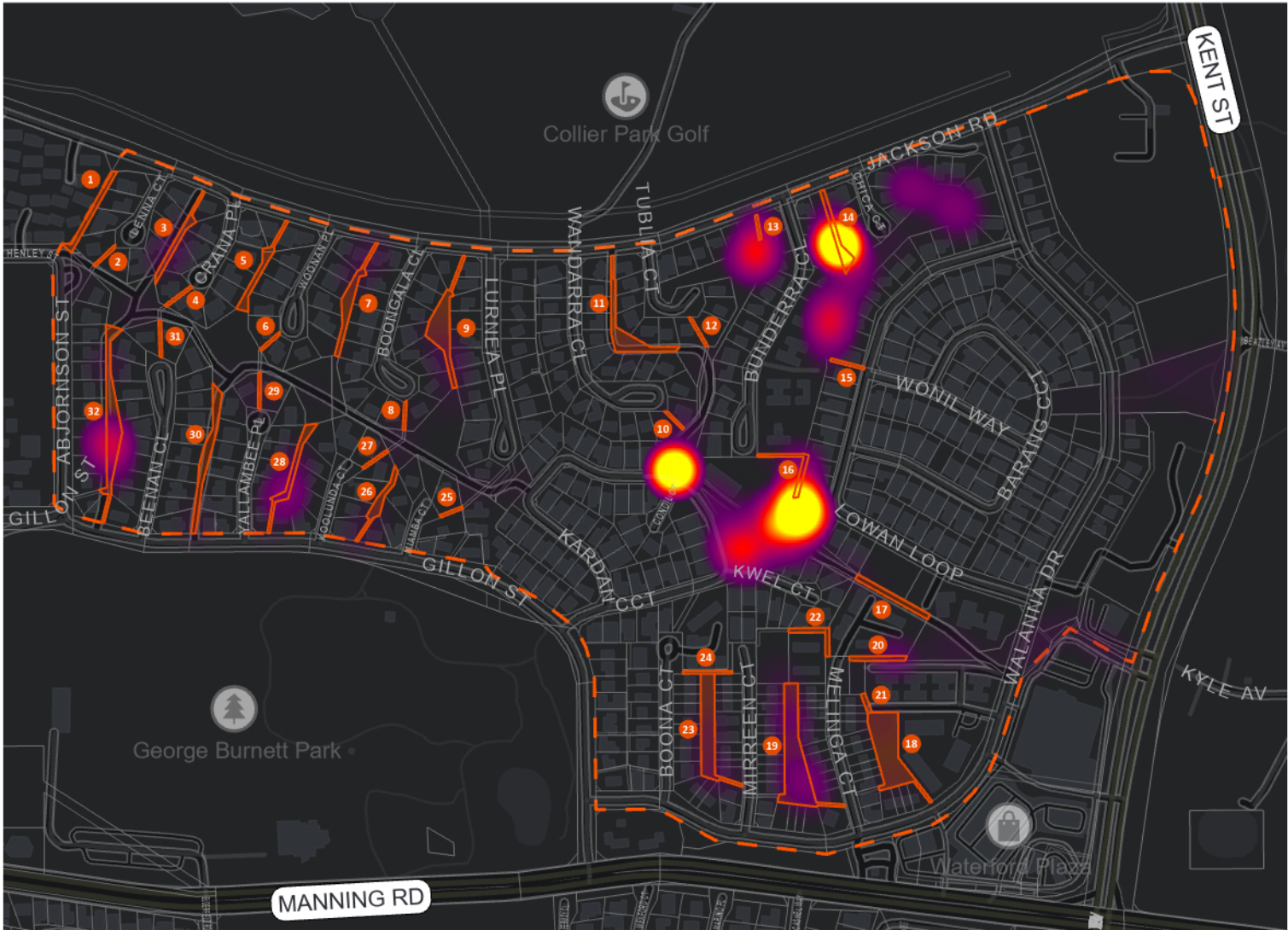
Heat Map (2021-2024)

Daytime & Evening Trends

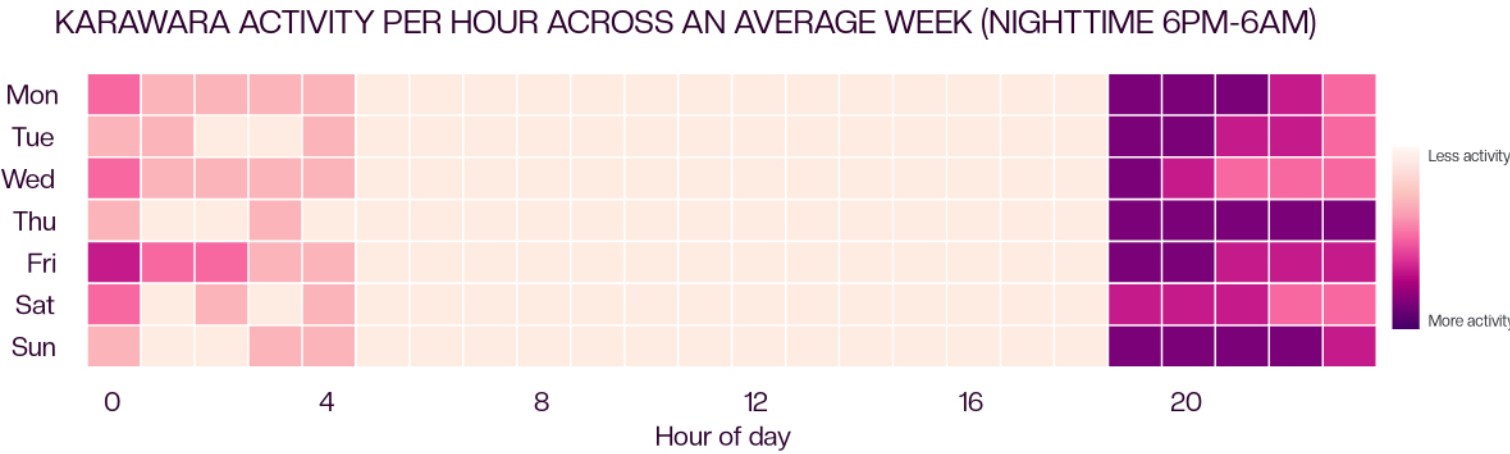
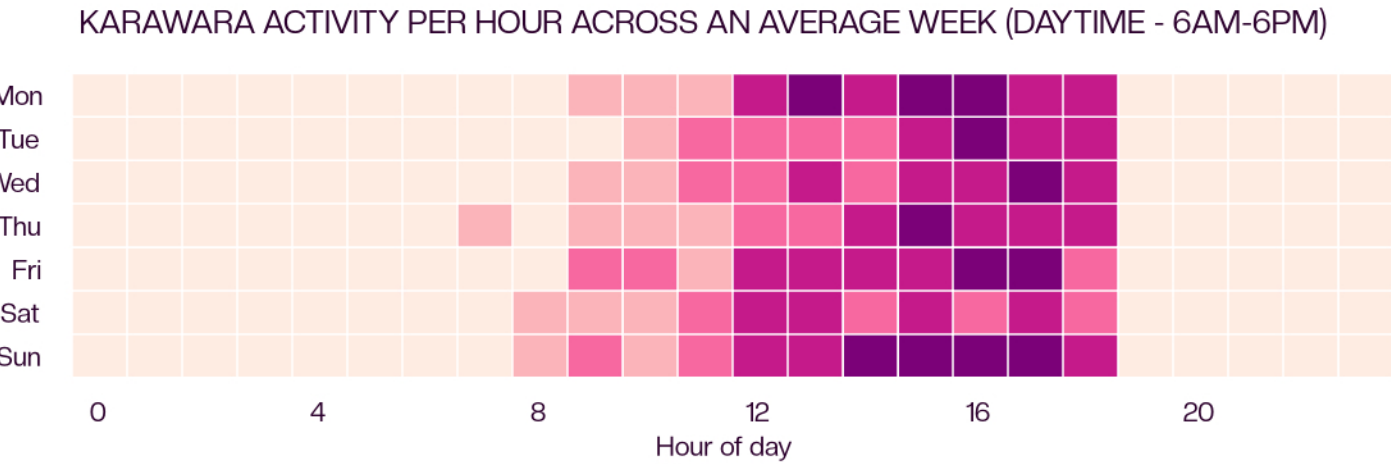
Human mobility trends through public access ways and public open spaces from 2021-2024.



AM Heat Map (2021-2024)

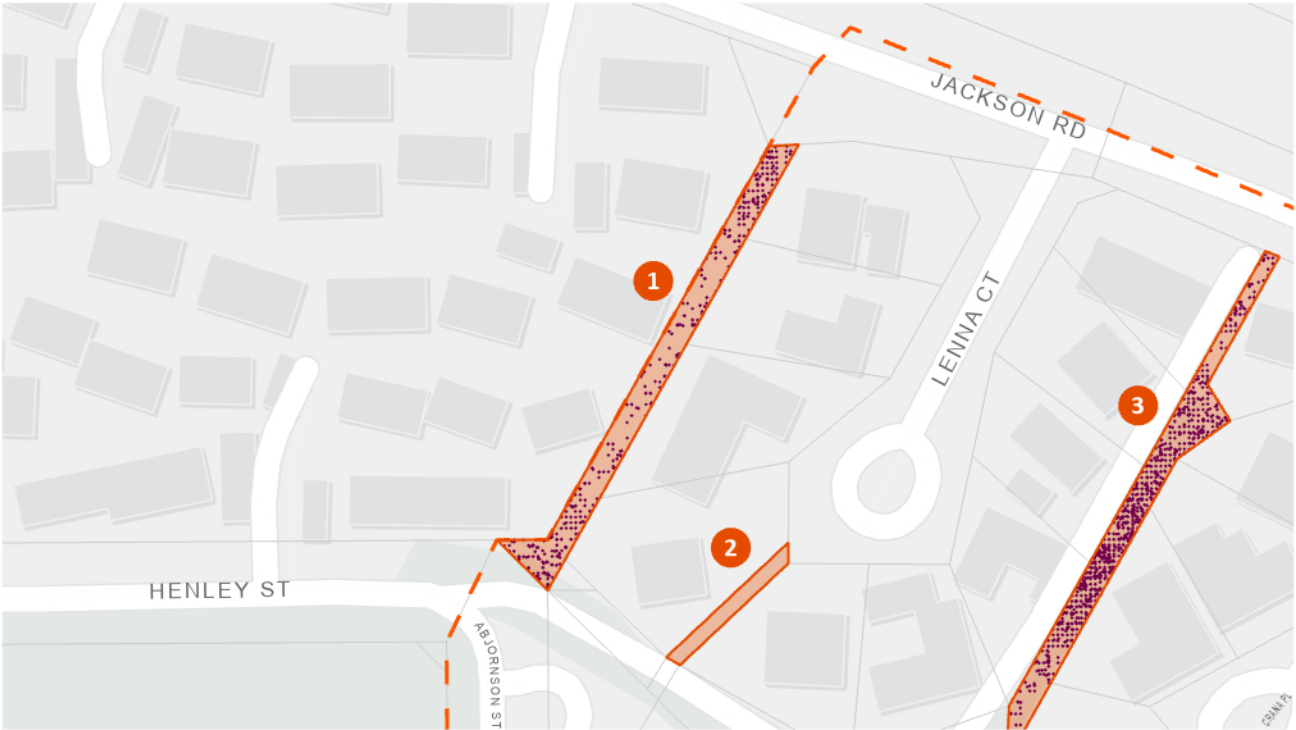
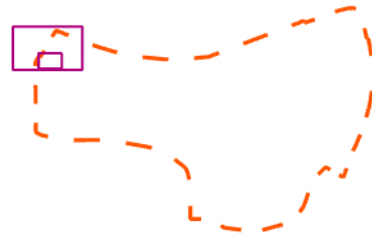


PM Heat Map (2021-2024)

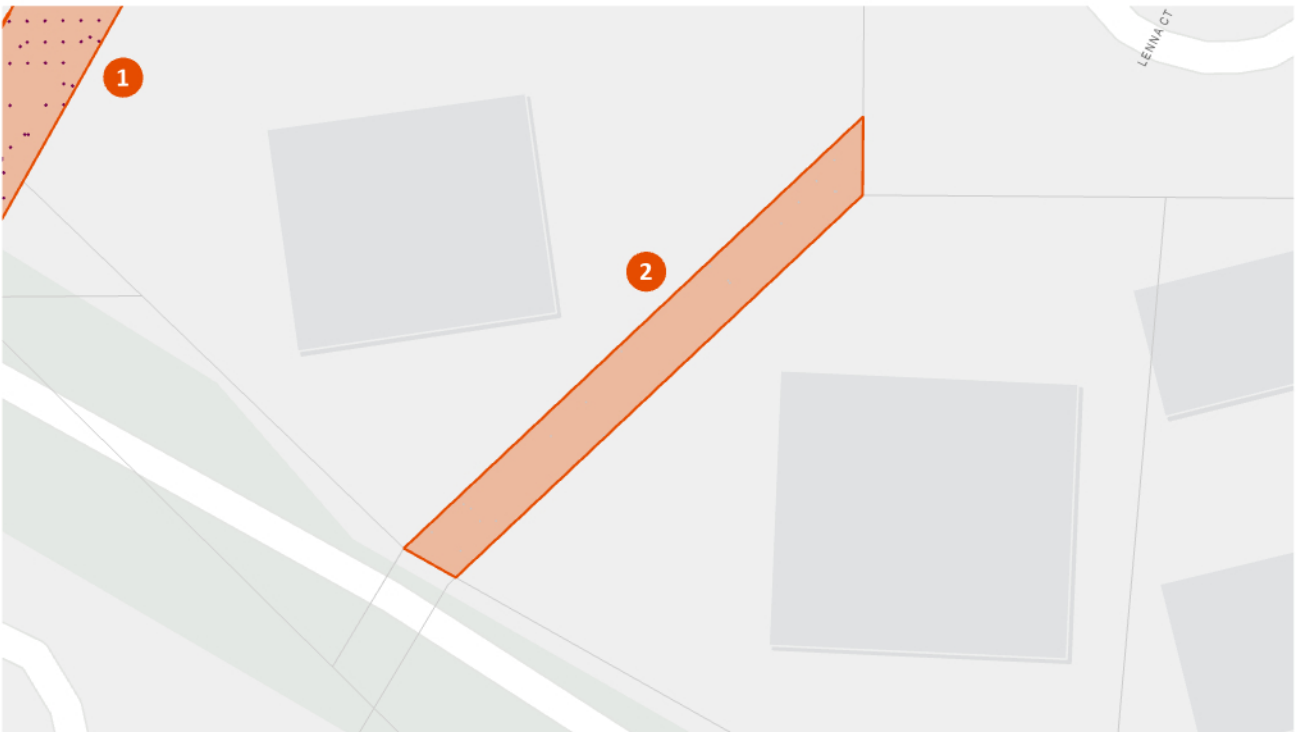
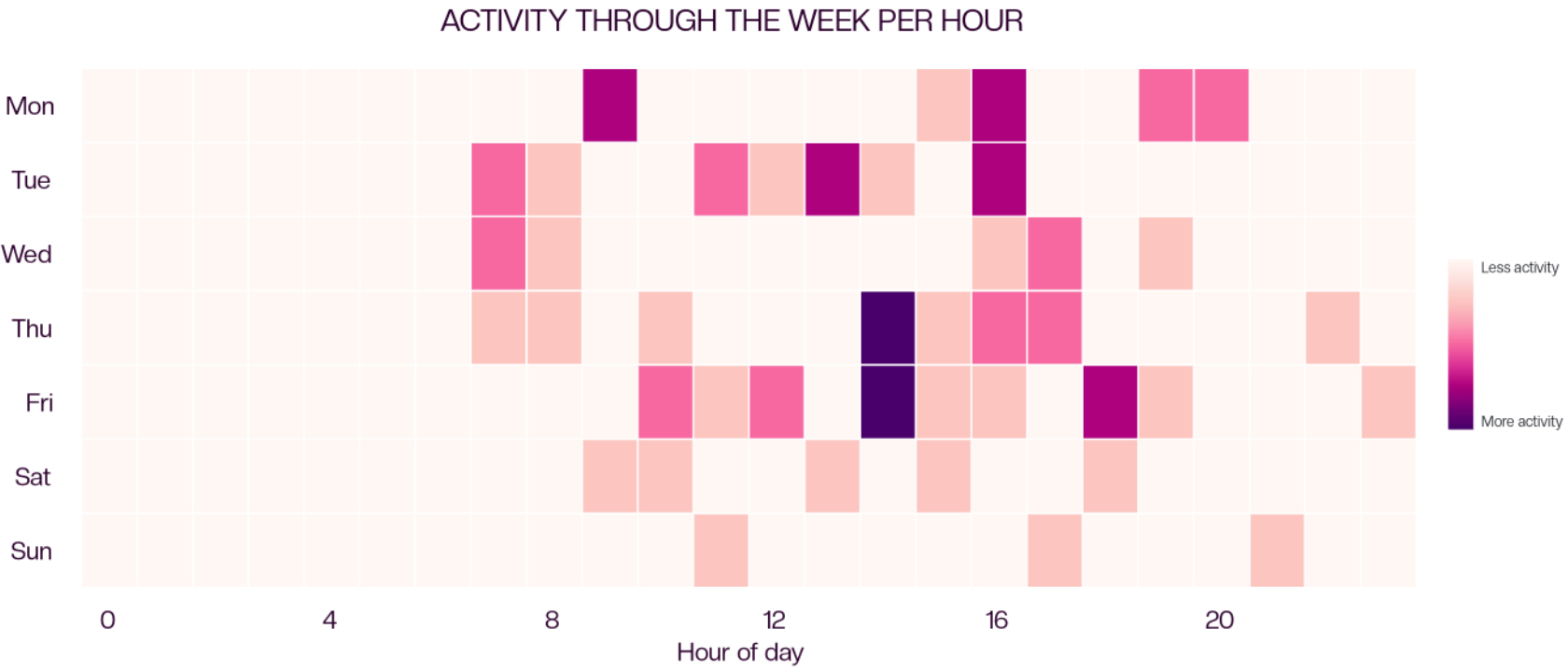


Trends Per Public Access Way

Human mobility trends through public access ways from 2021-2024.



PAW 1

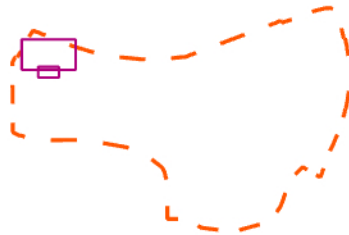


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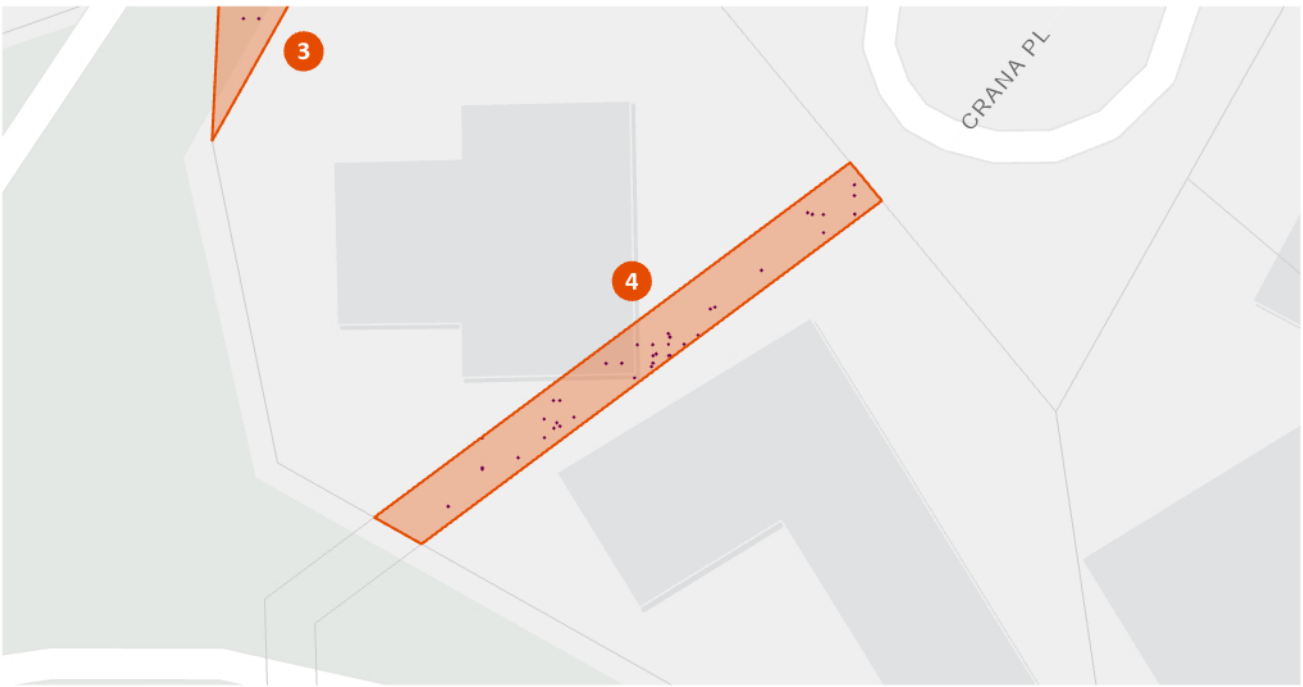
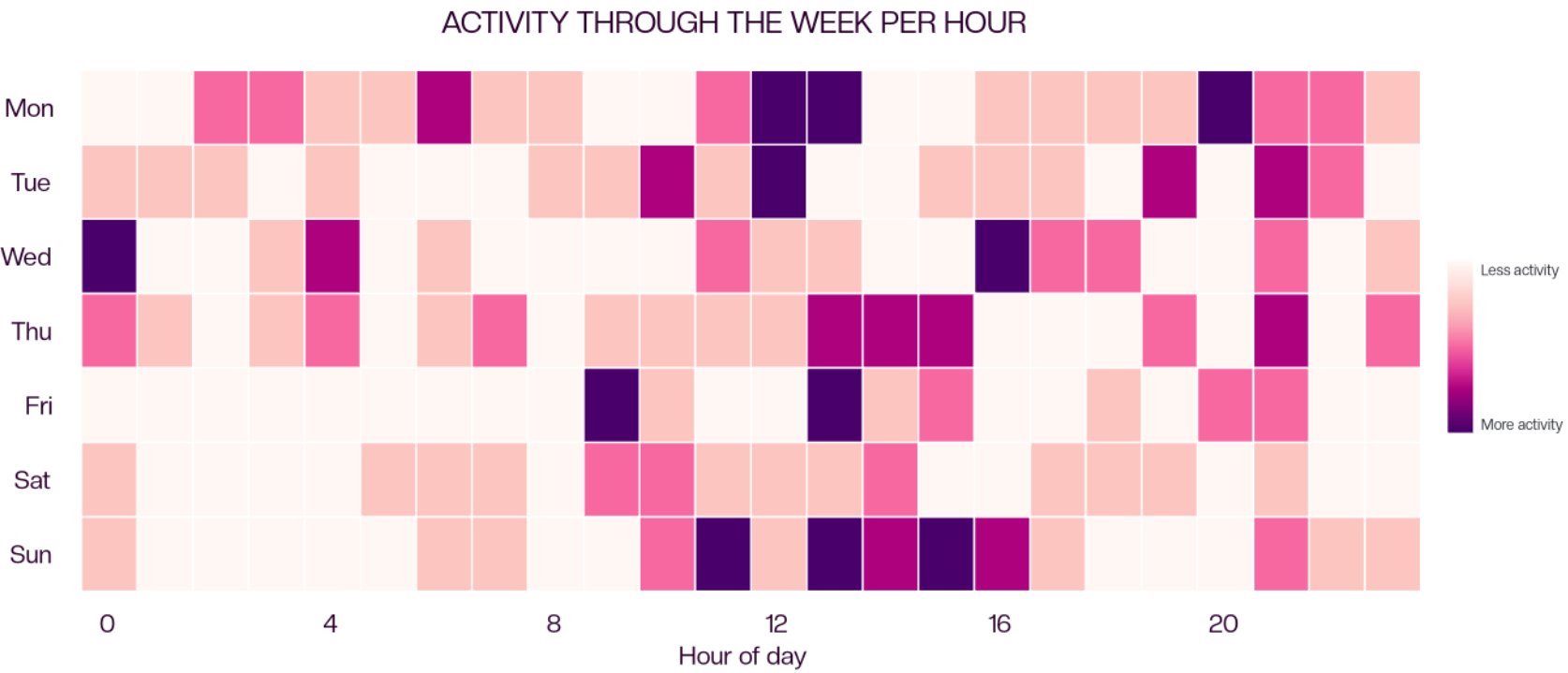


Trends Per Public Access Way

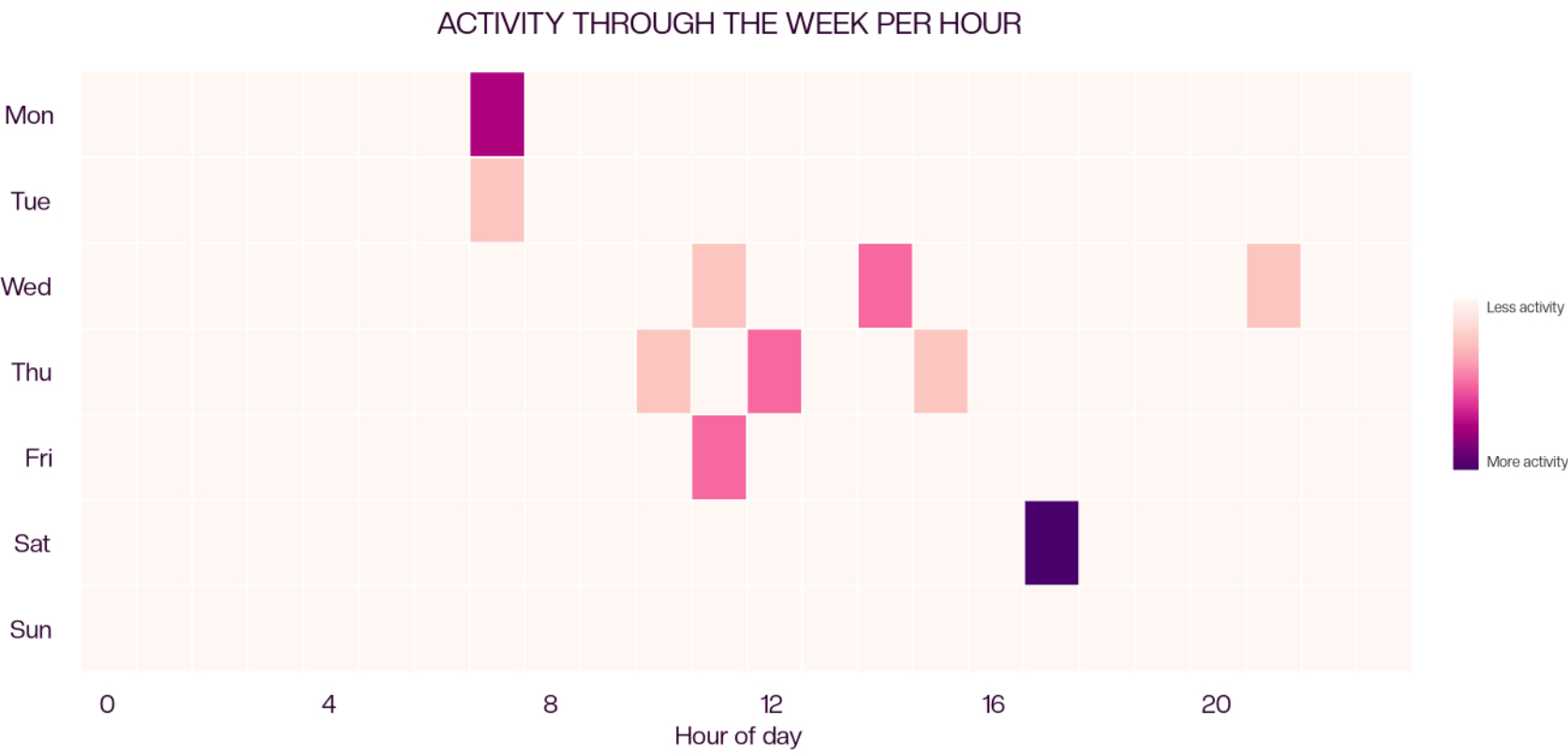
Human mobility trends through public access ways from 2021-2024.



PAW 3

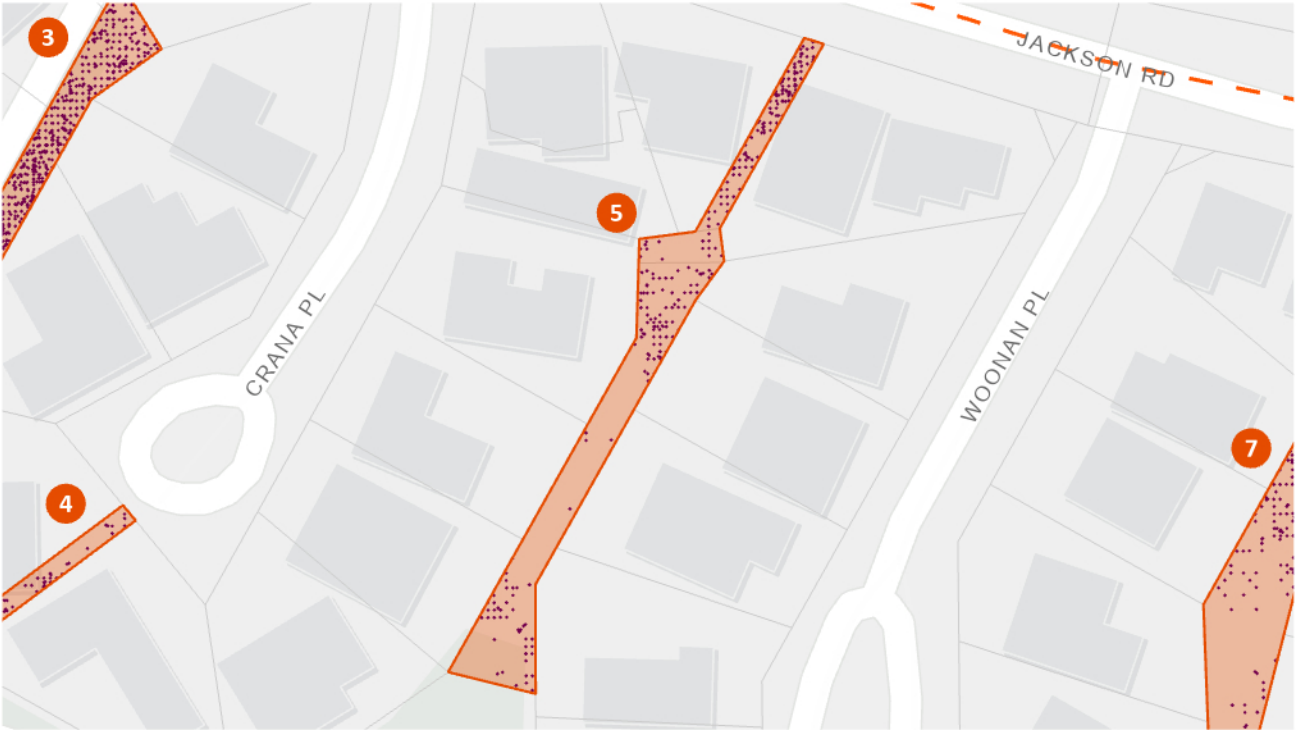
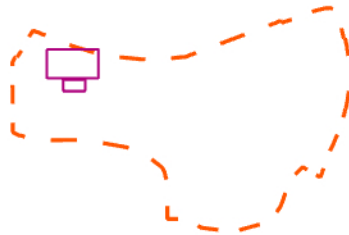


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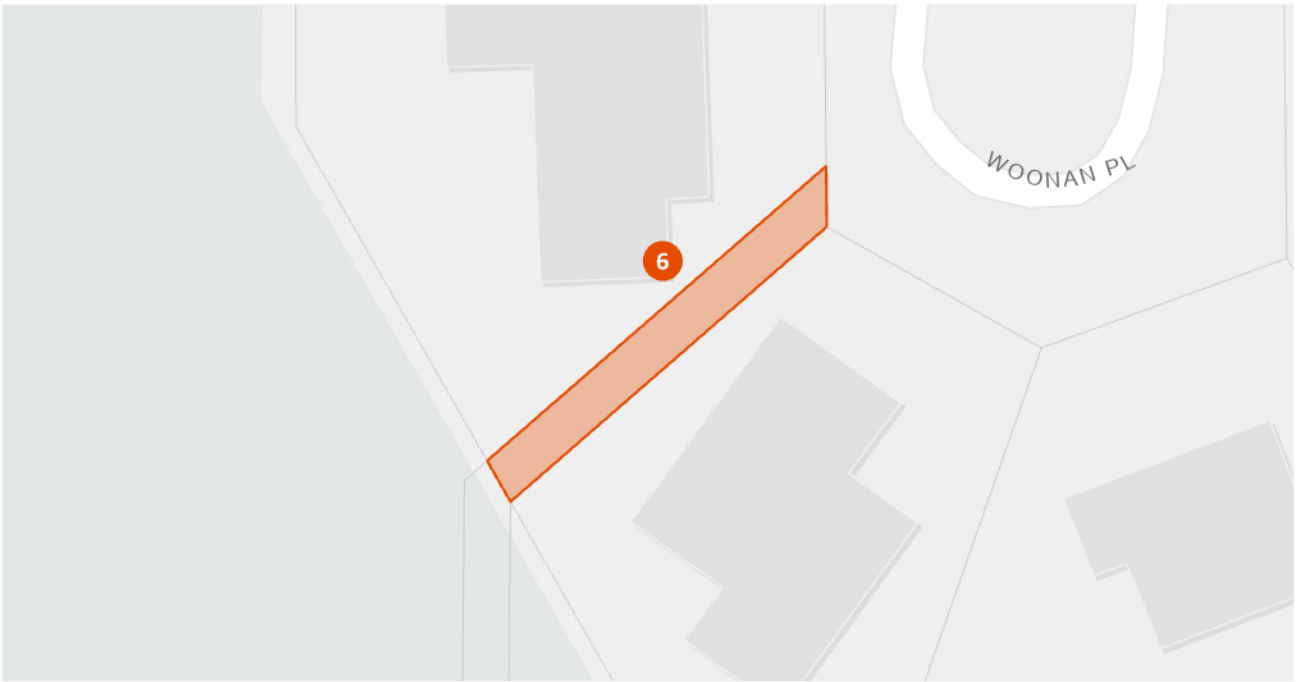
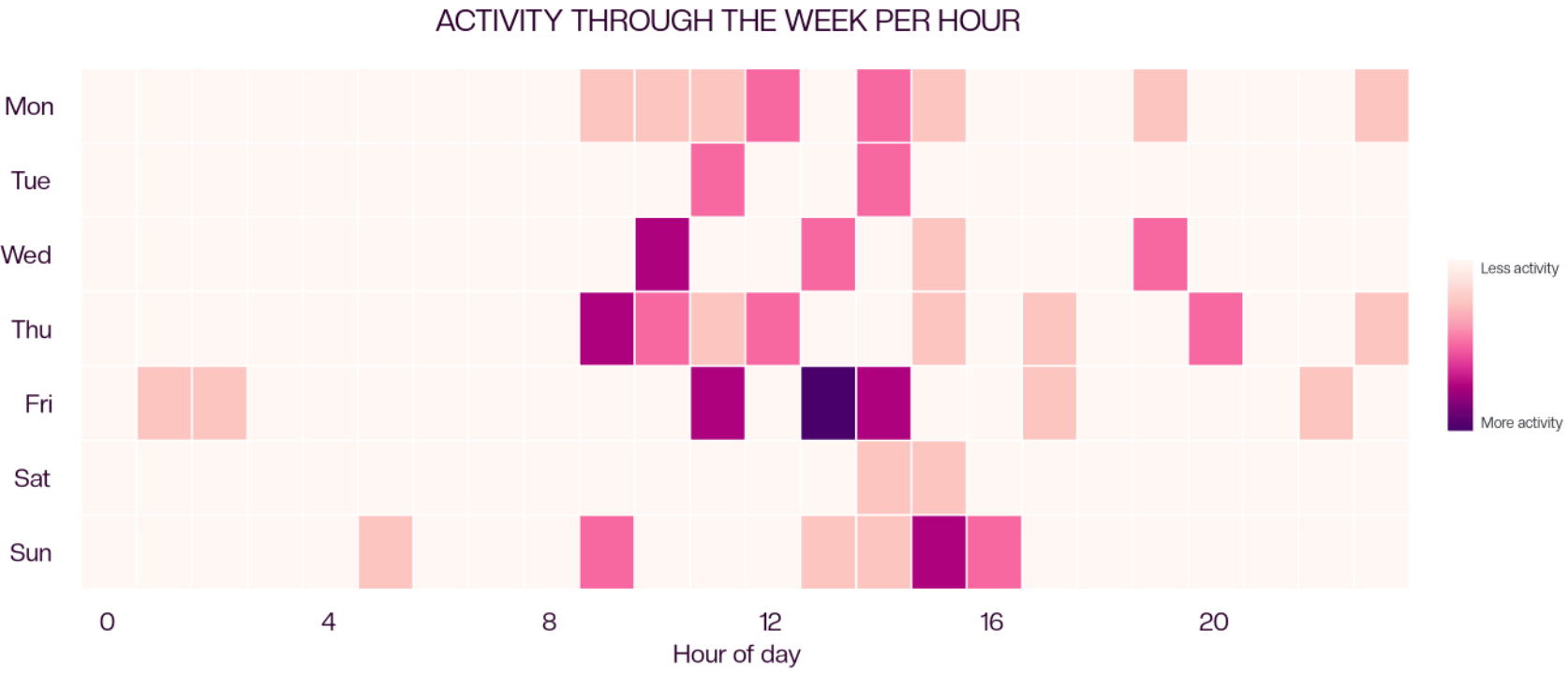


Trends Per Public Access Way

Human mobility trends through public access ways from 2021-2024.



PAW 5

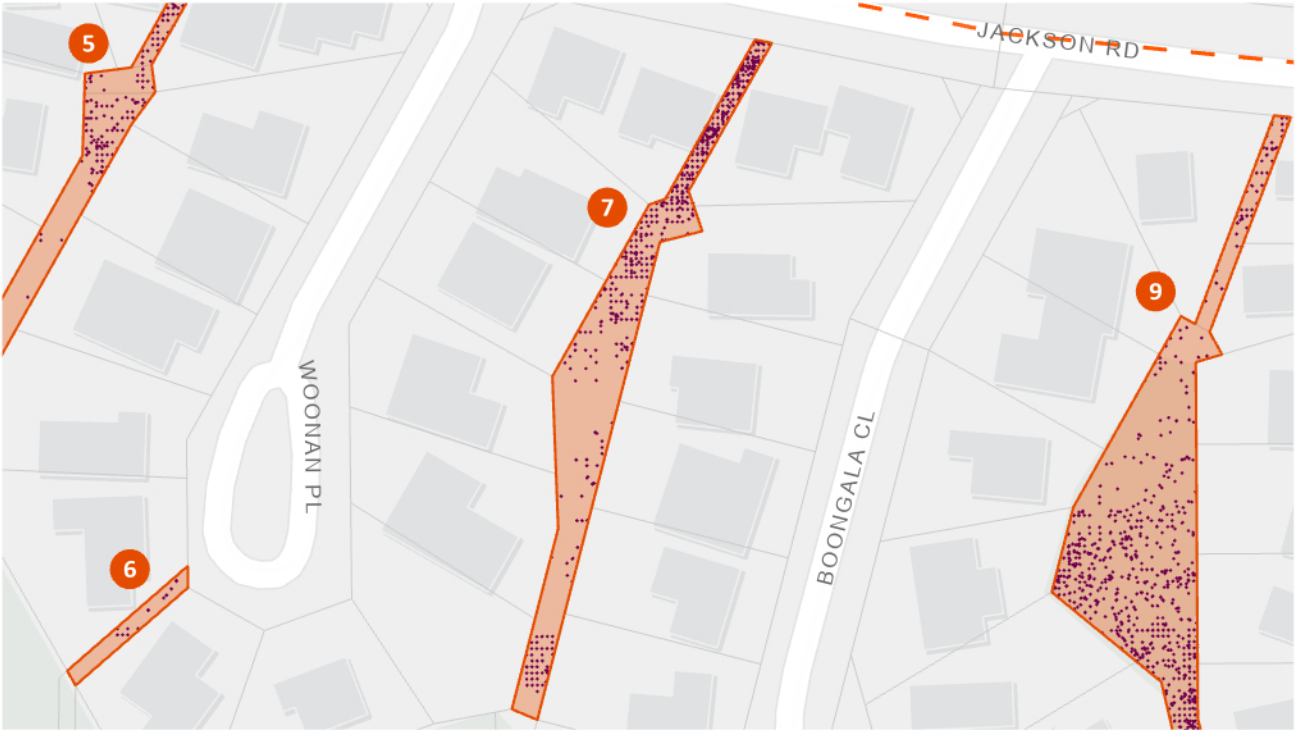


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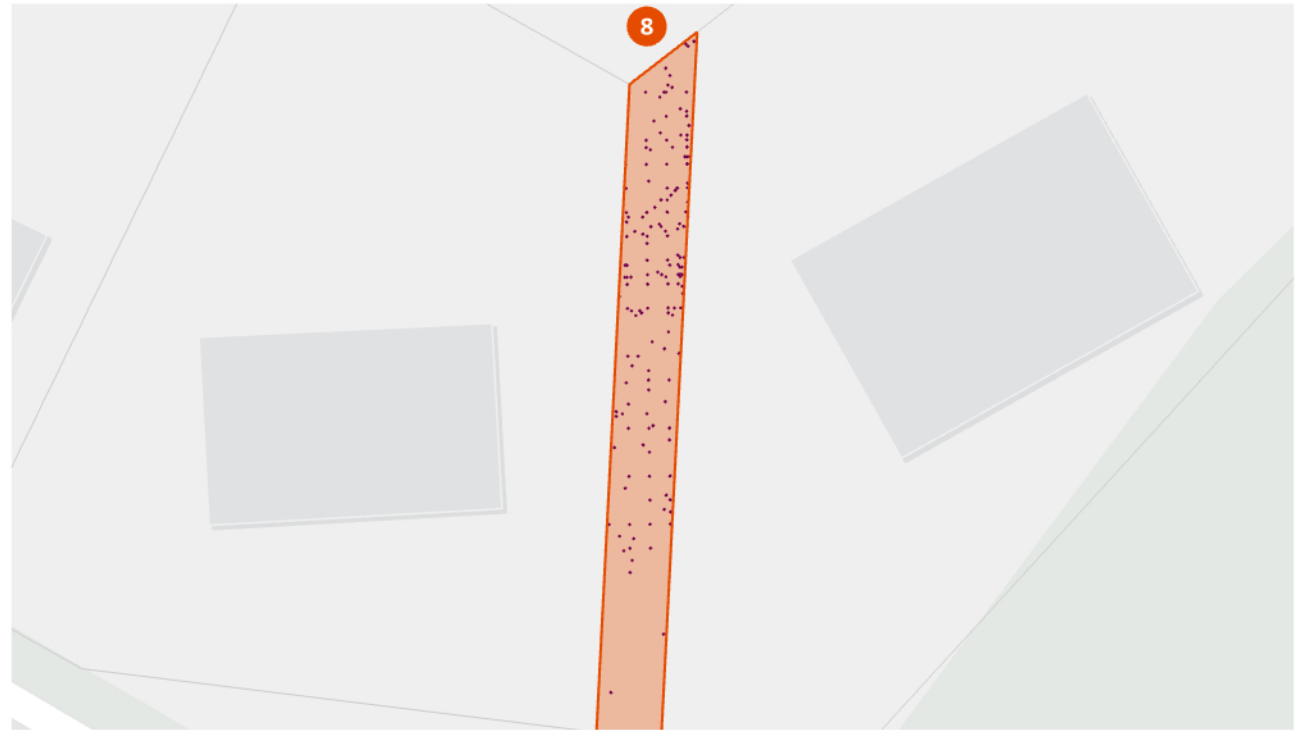
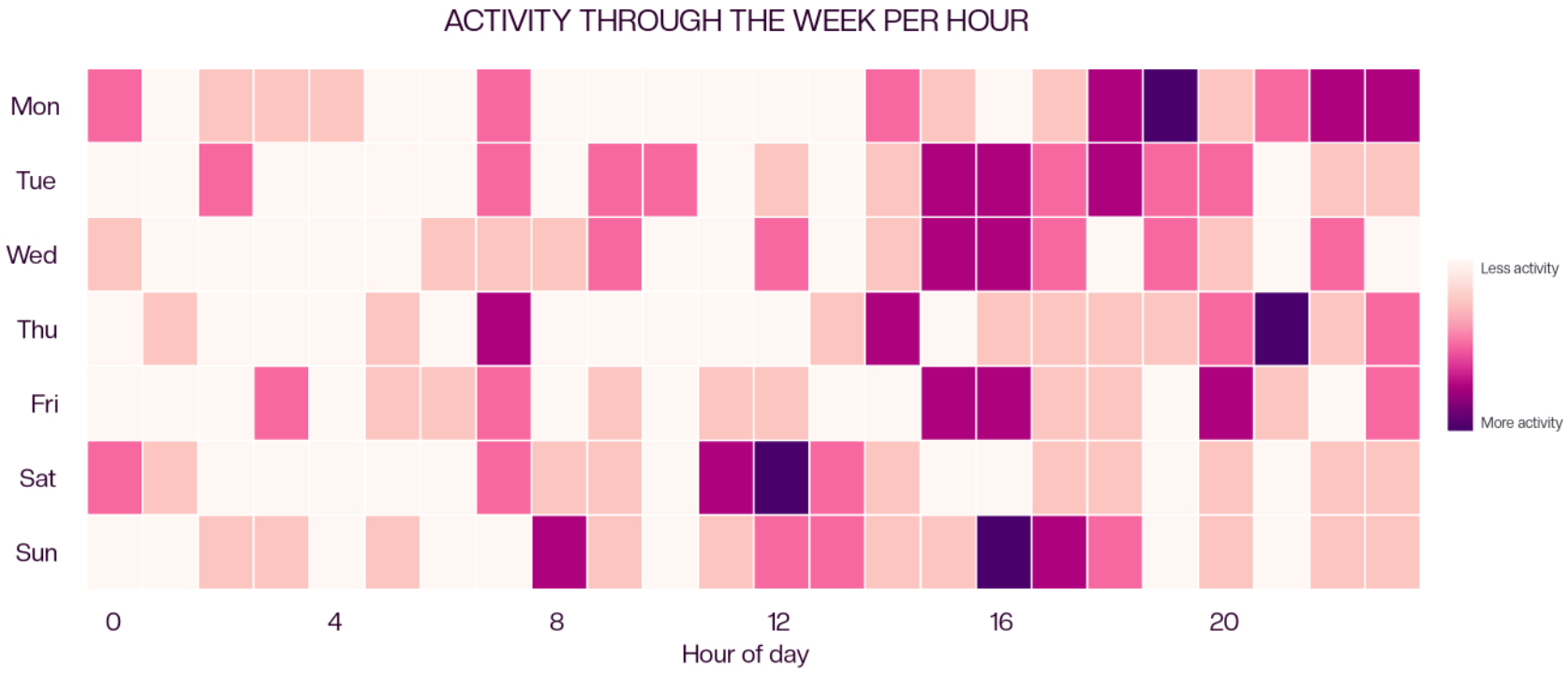


Trends Per Public Access Way

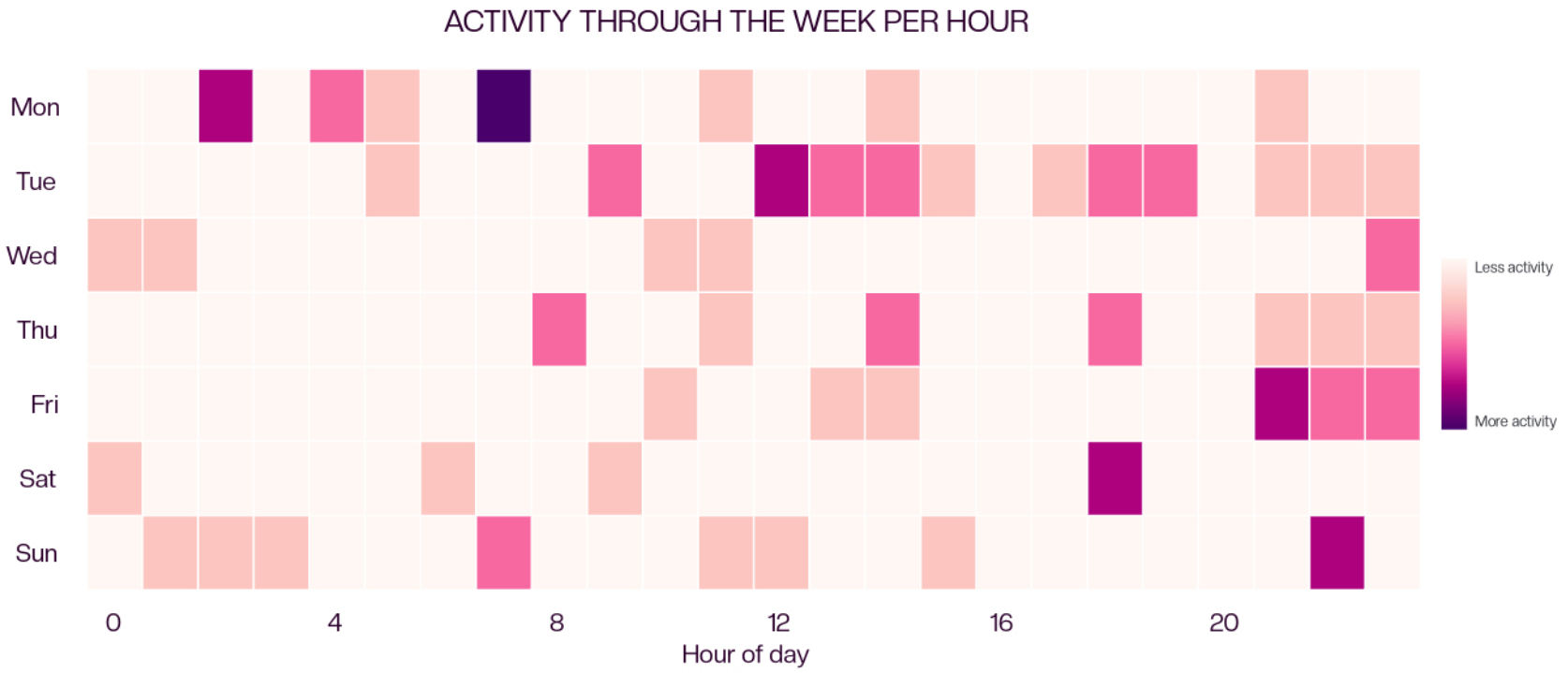
Human mobility trends through public access ways from 2021-2024.



PAW 7

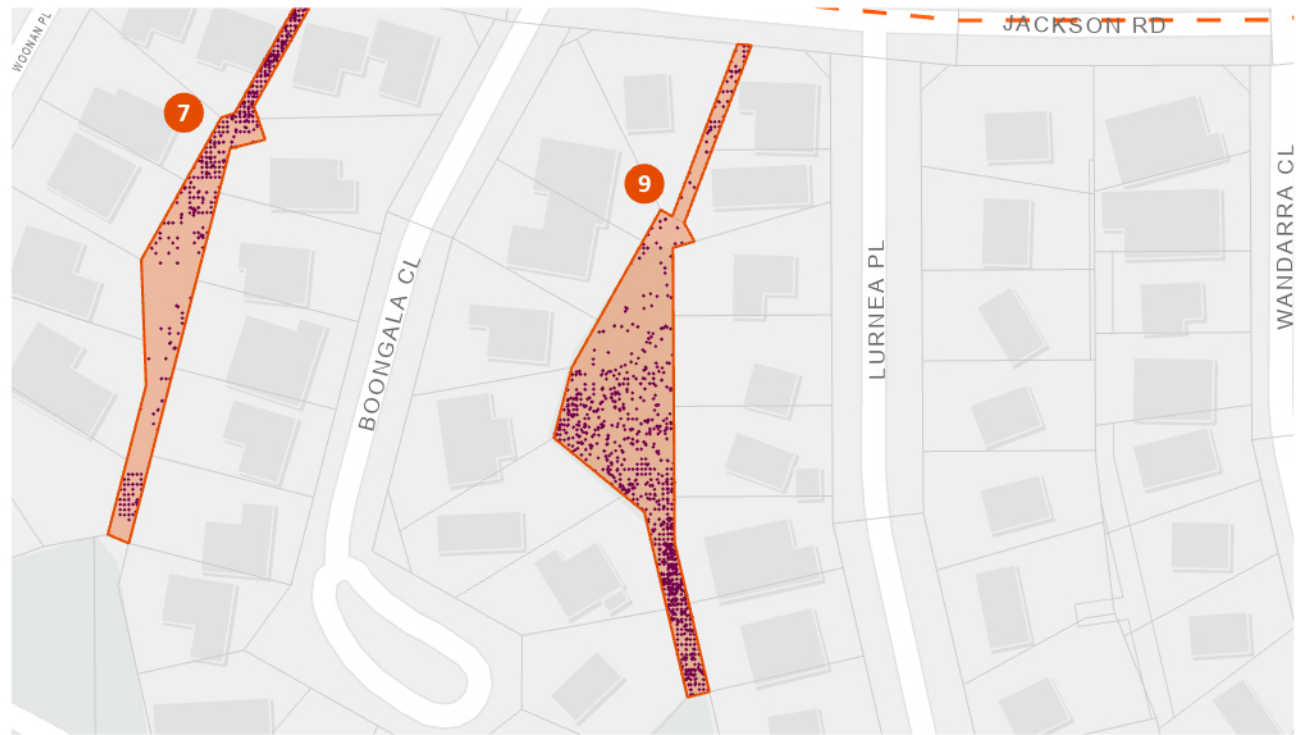
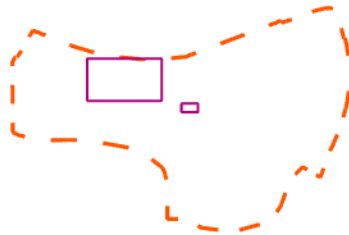


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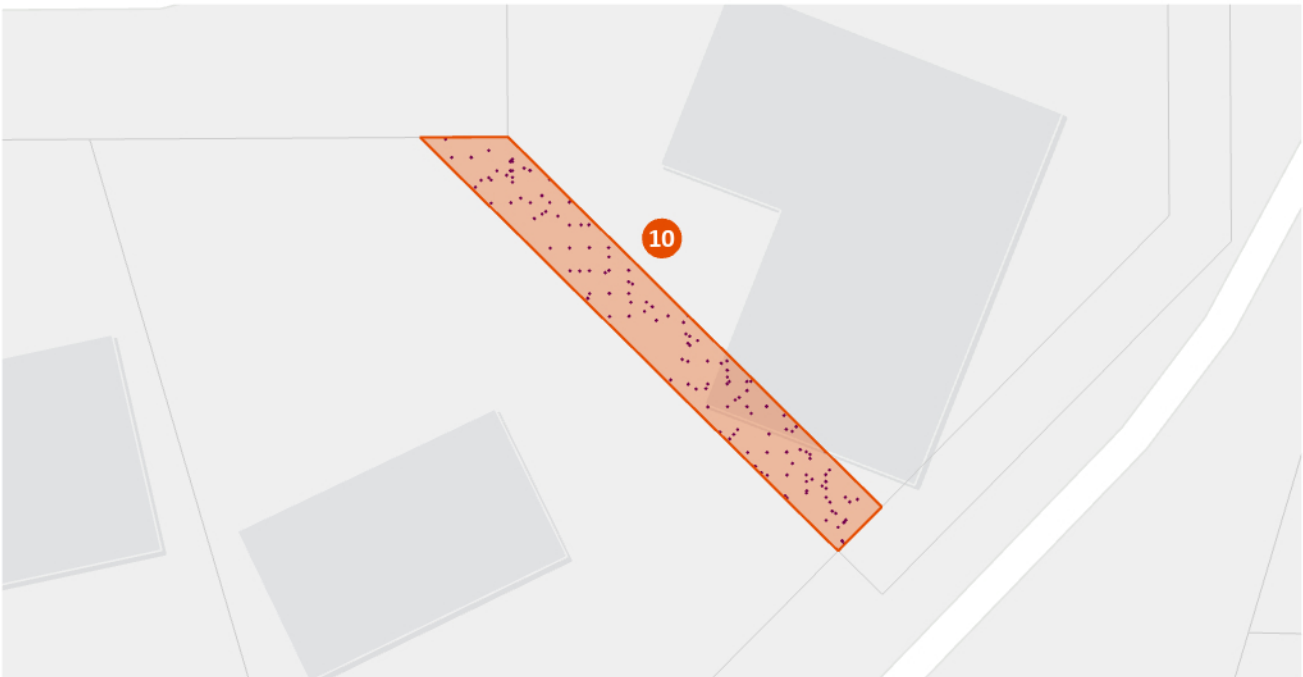
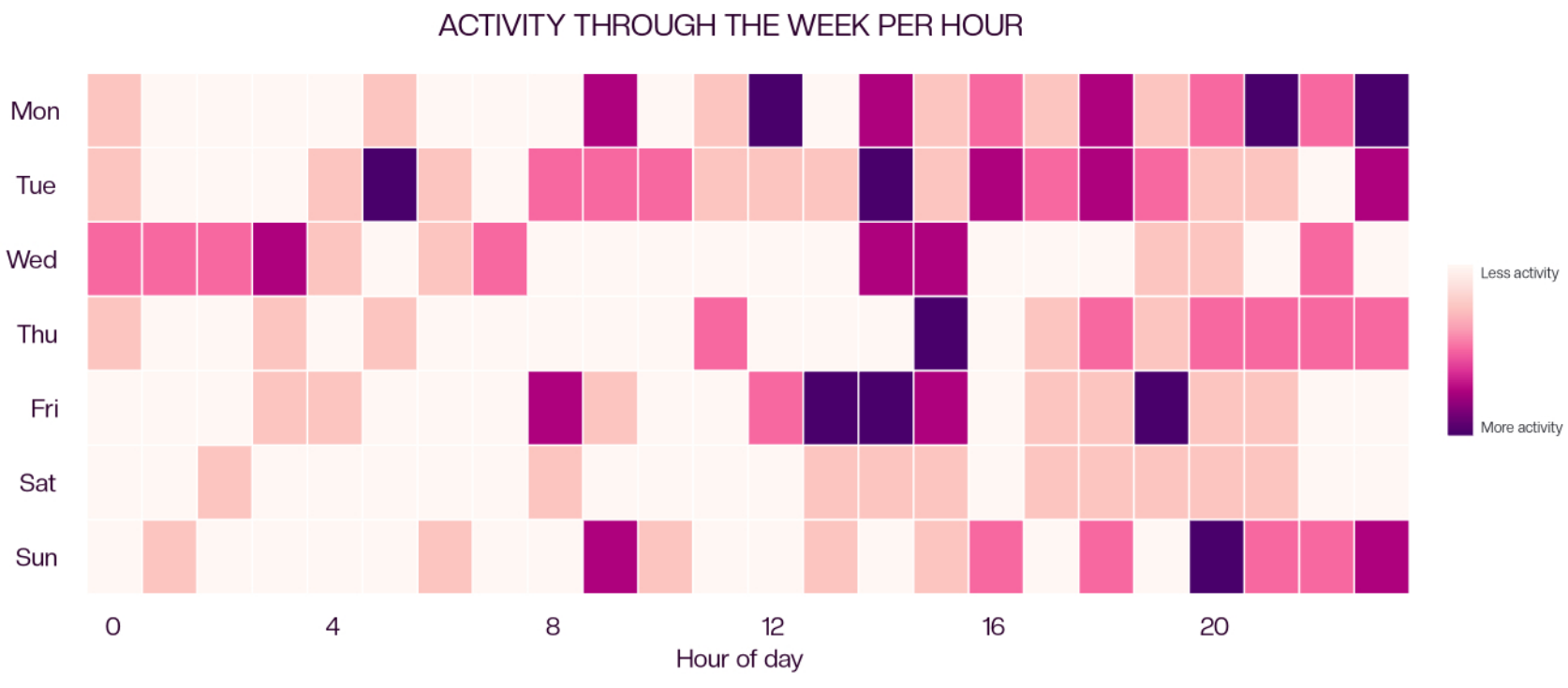


Trends Per Public Access Way

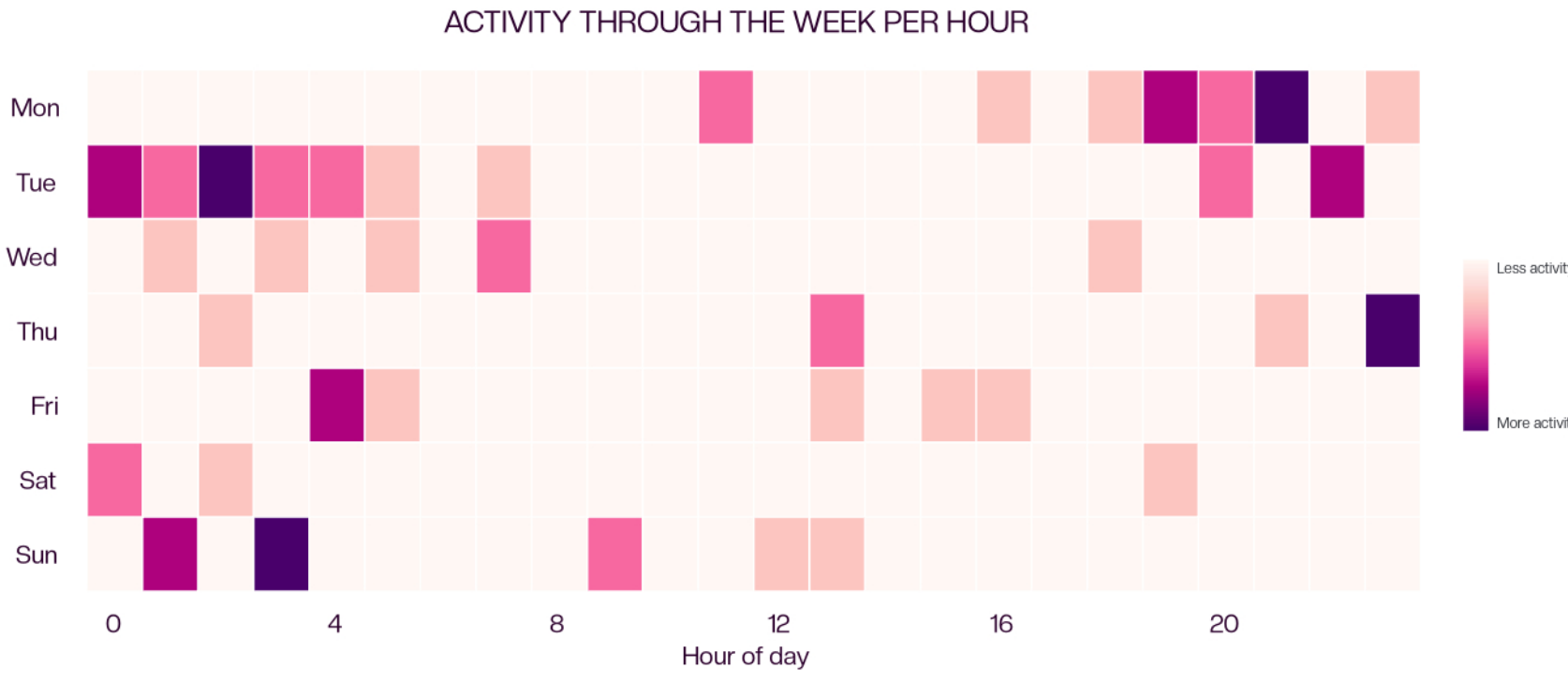
Human mobility trends through public access ways from 2021-2024.



PAW 9

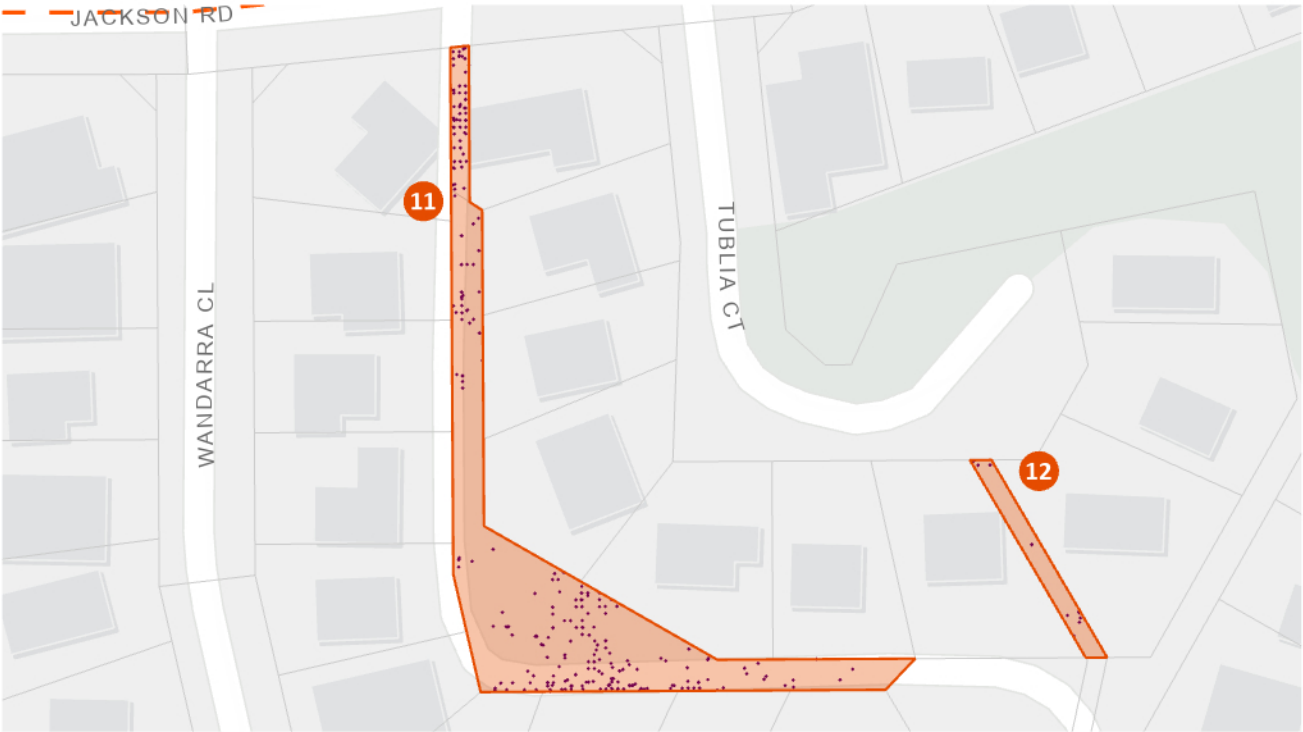
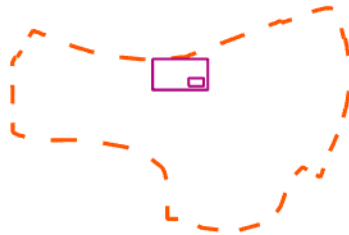


PAW 10

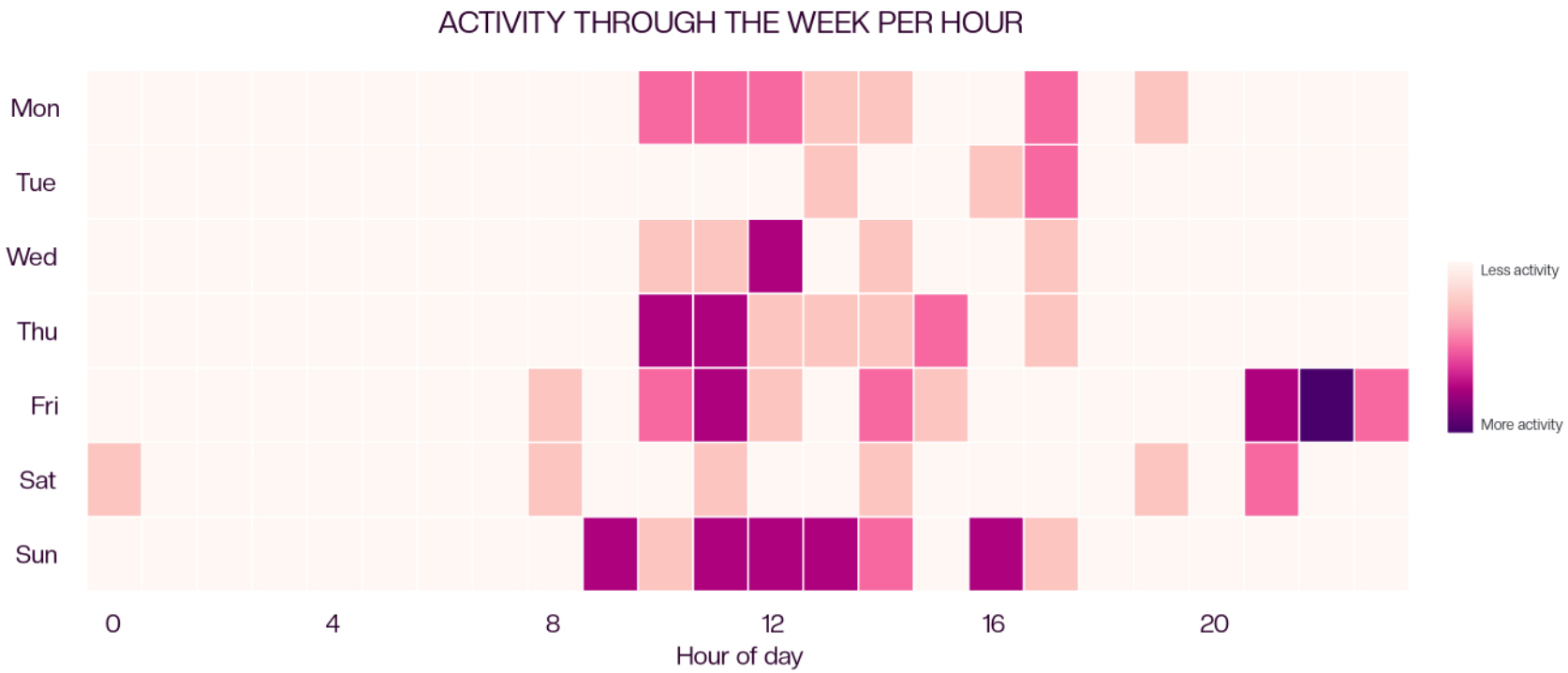


Trends Per Public Access Way

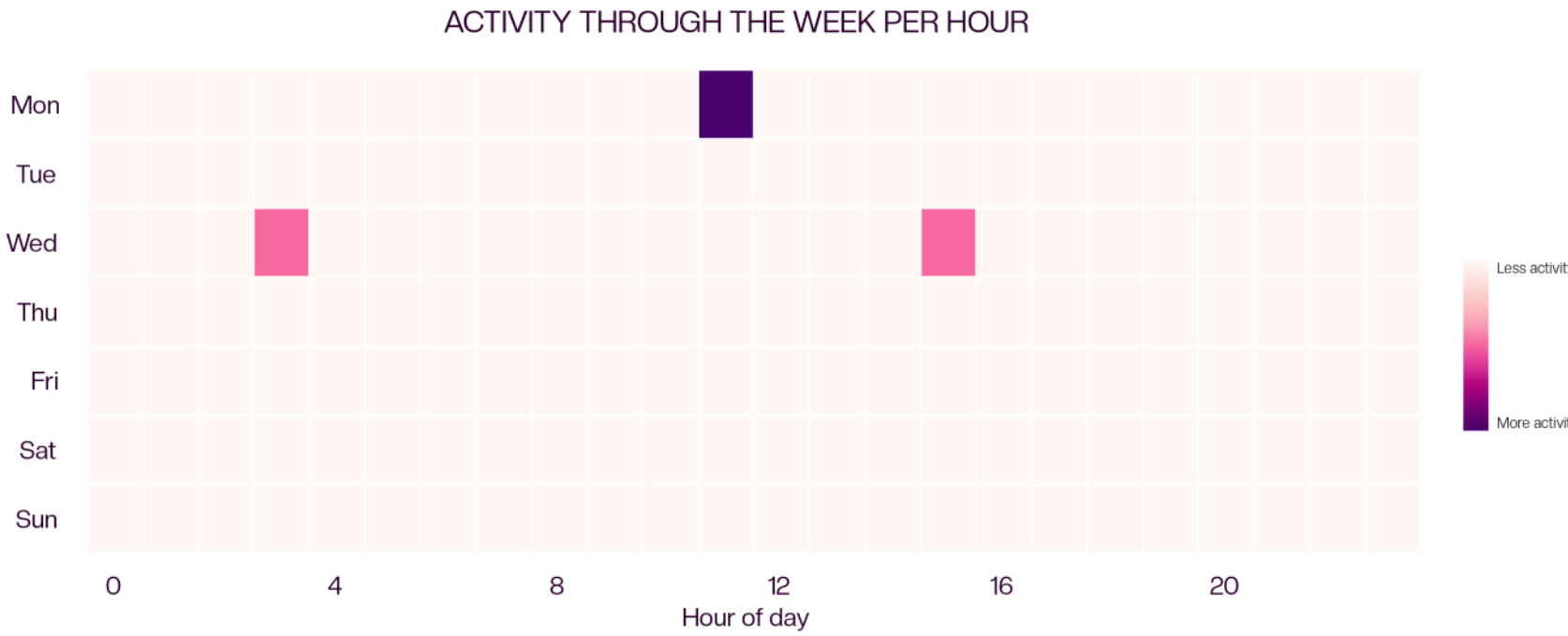
Human mobility trends through public access ways from 2021-2024.



PAW 11

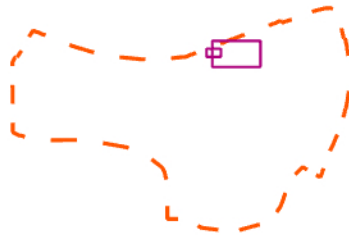


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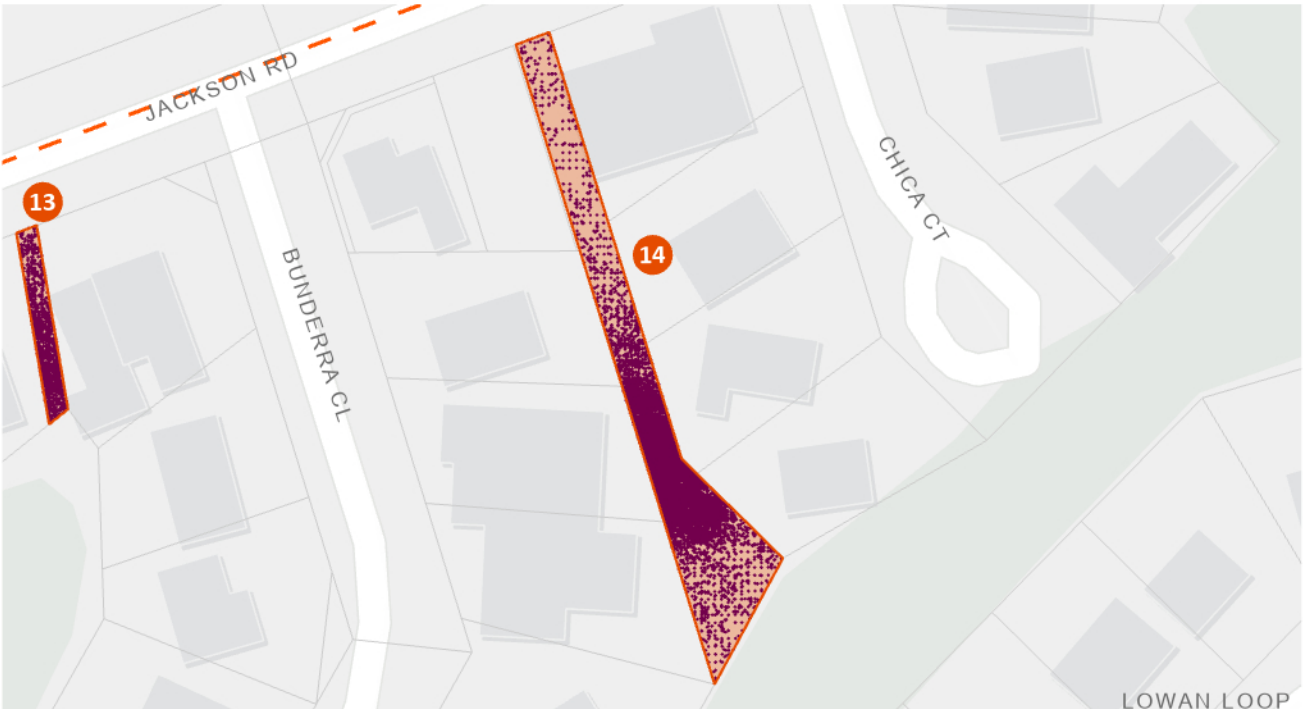
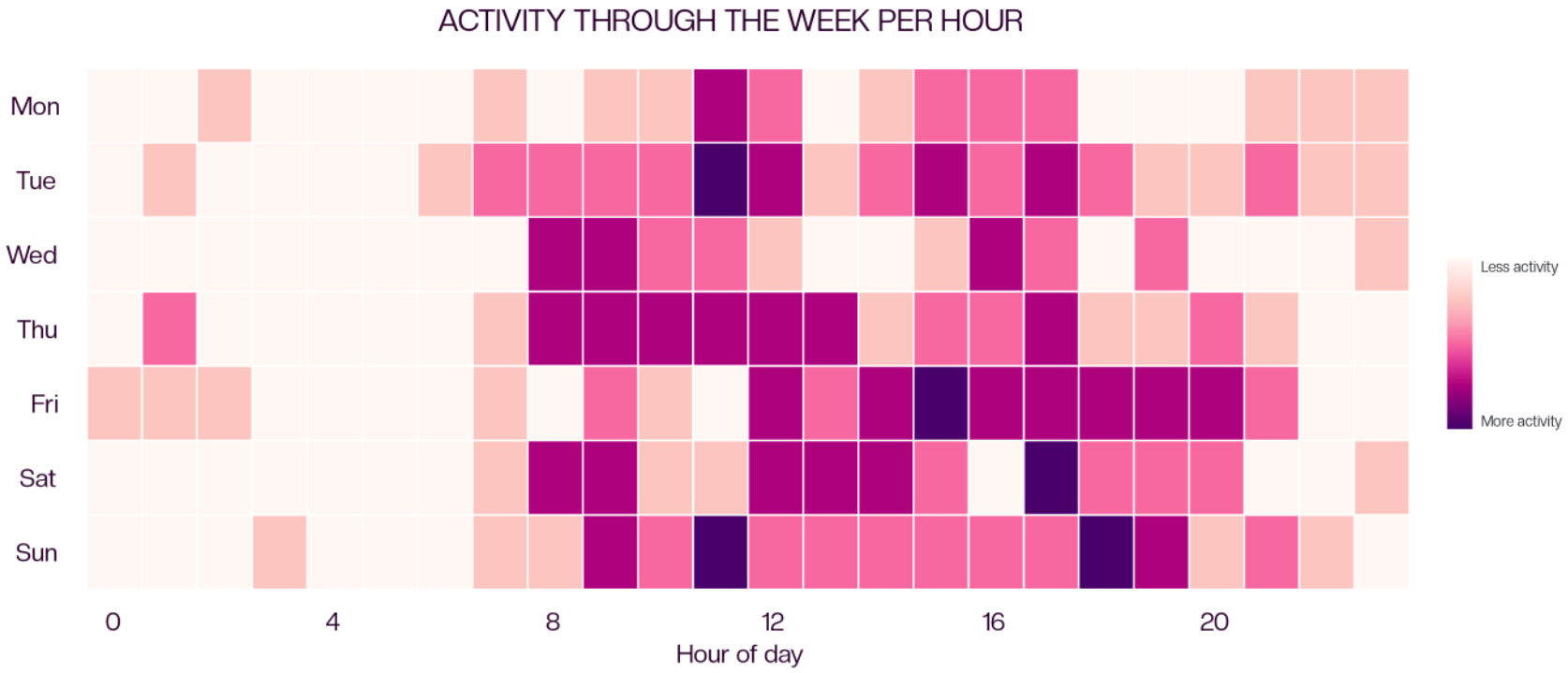


Trends Per Public Access Way

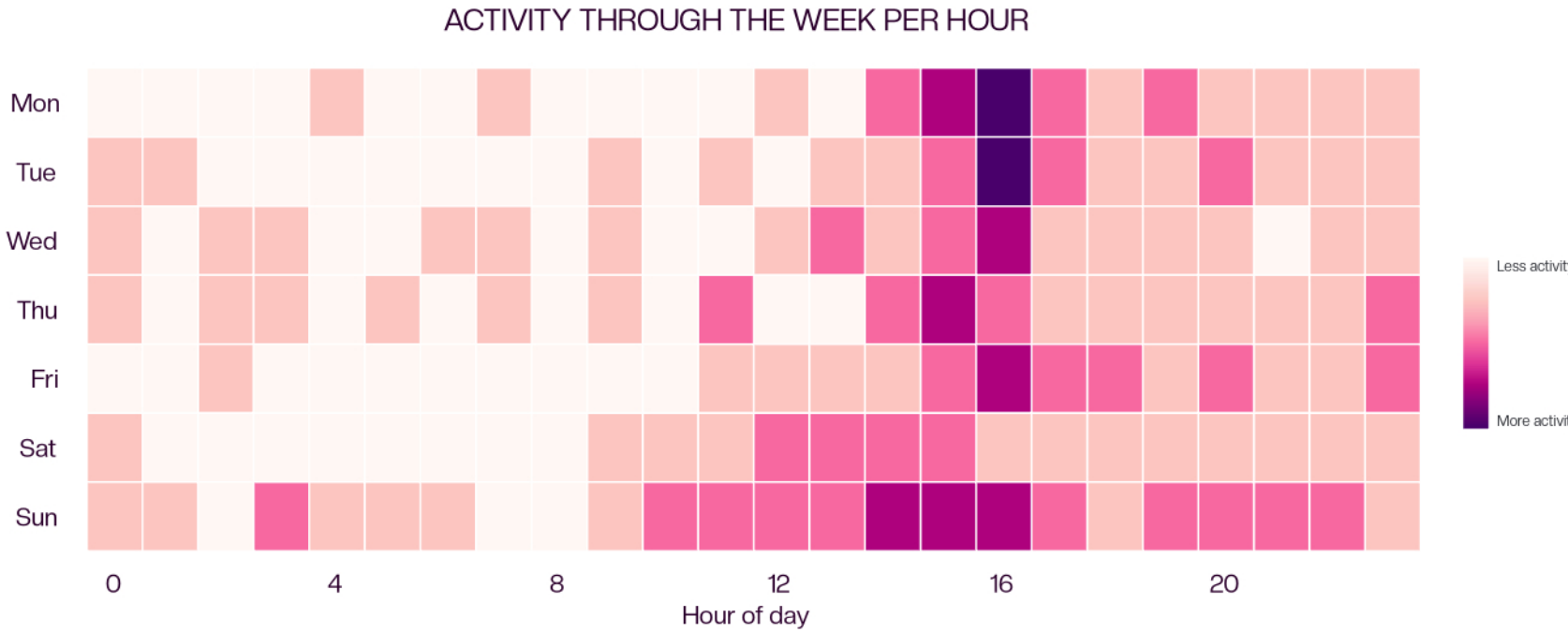
Human mobility trends through public access ways from 2021-2024.



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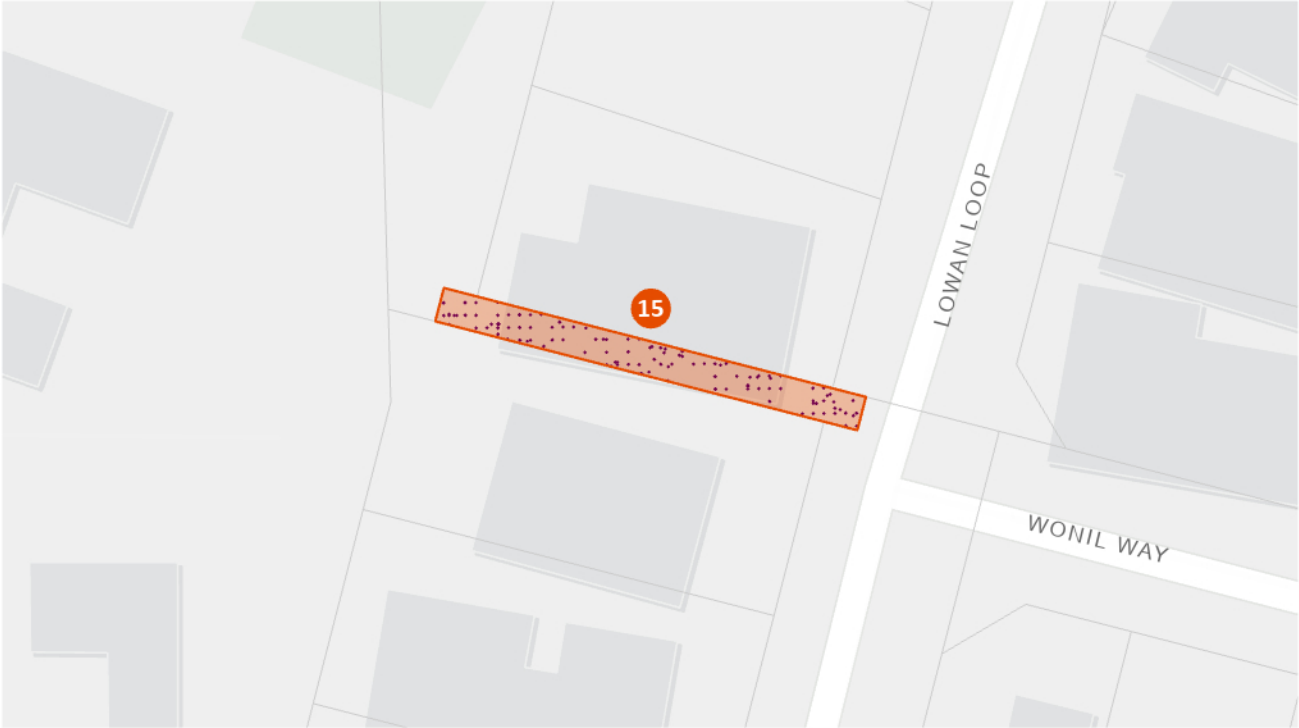
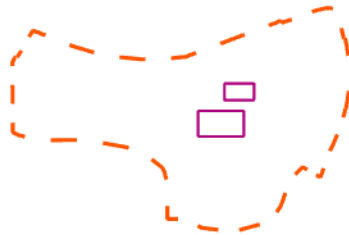


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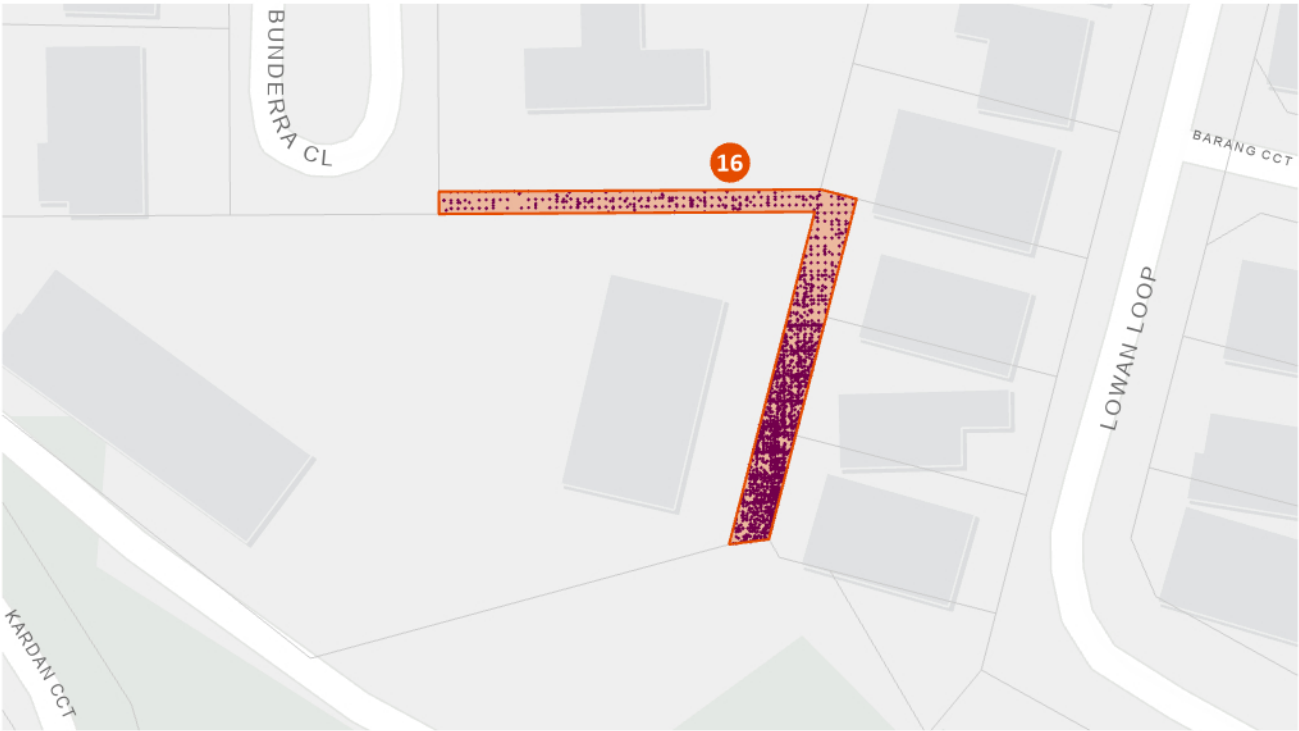
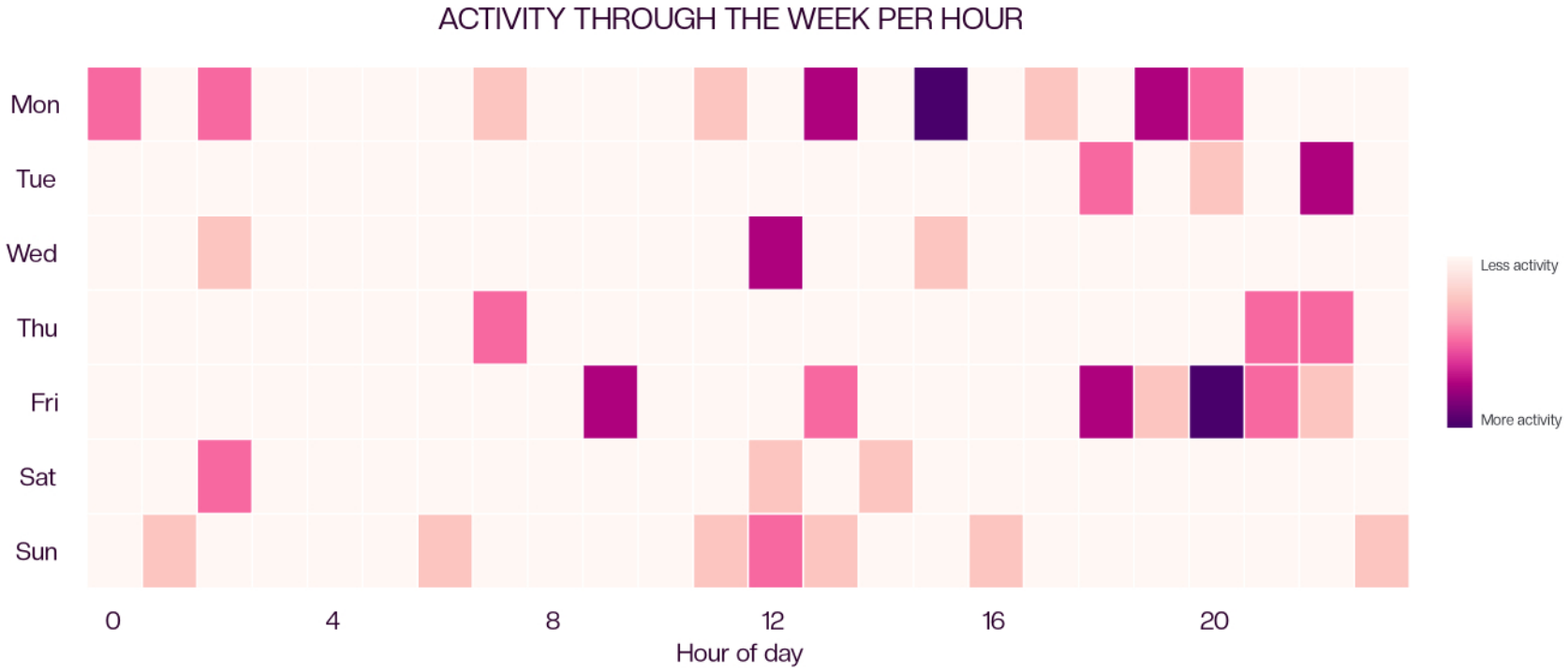


Trends Per Public Access Way

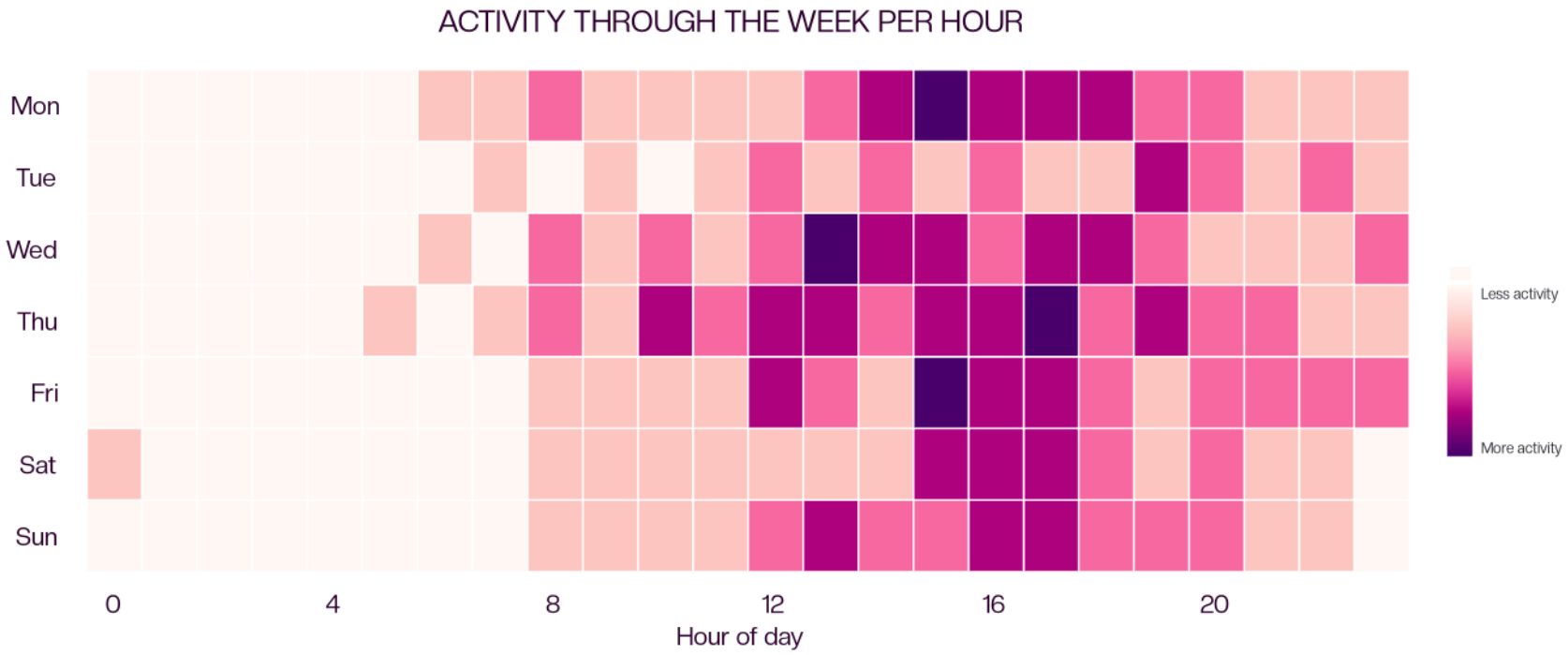
Human mobility trends through public access ways from 2021-2024.



PAW 15

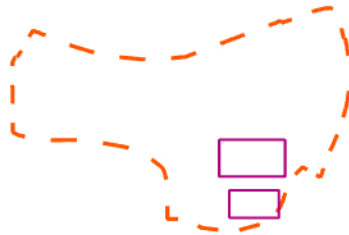


PAW 16

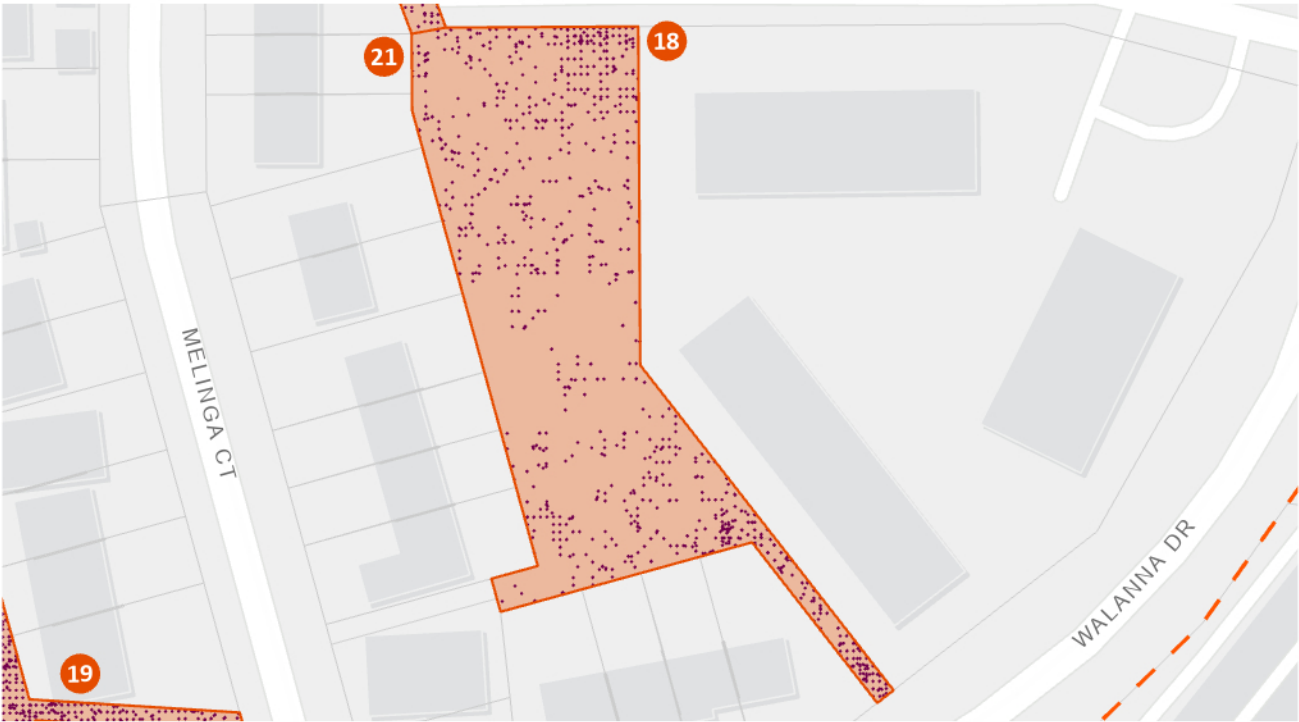
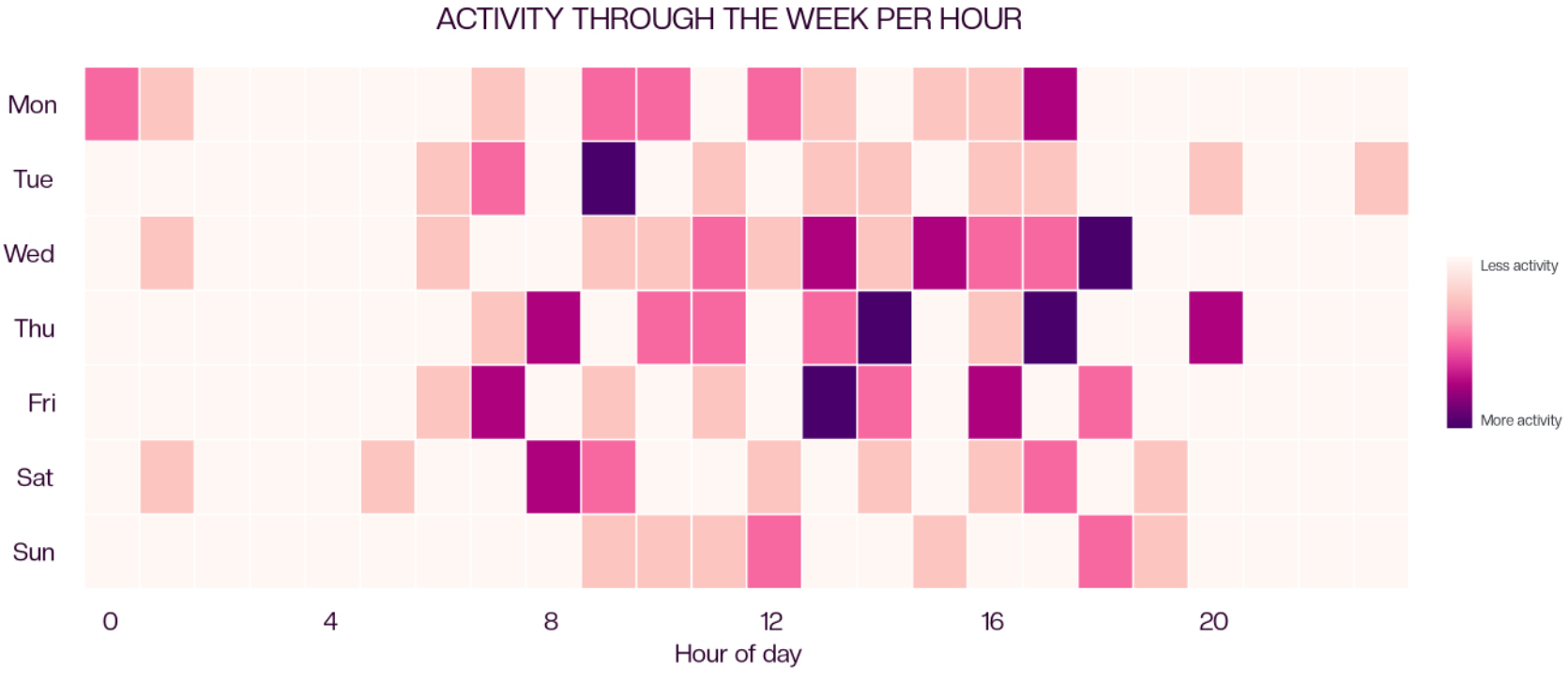


Trends Per Public Access Way

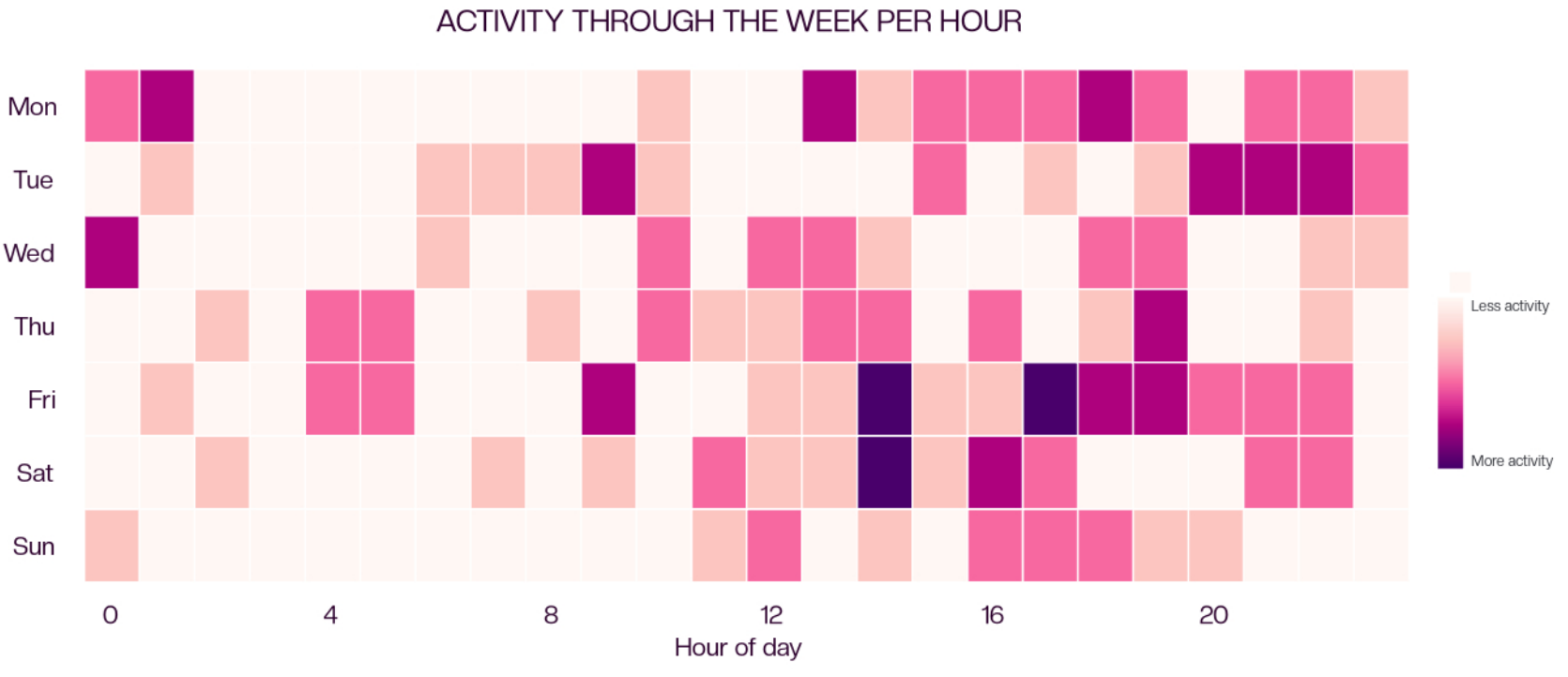
Human mobility trends through public access ways from 2021-2024.



PAW 17

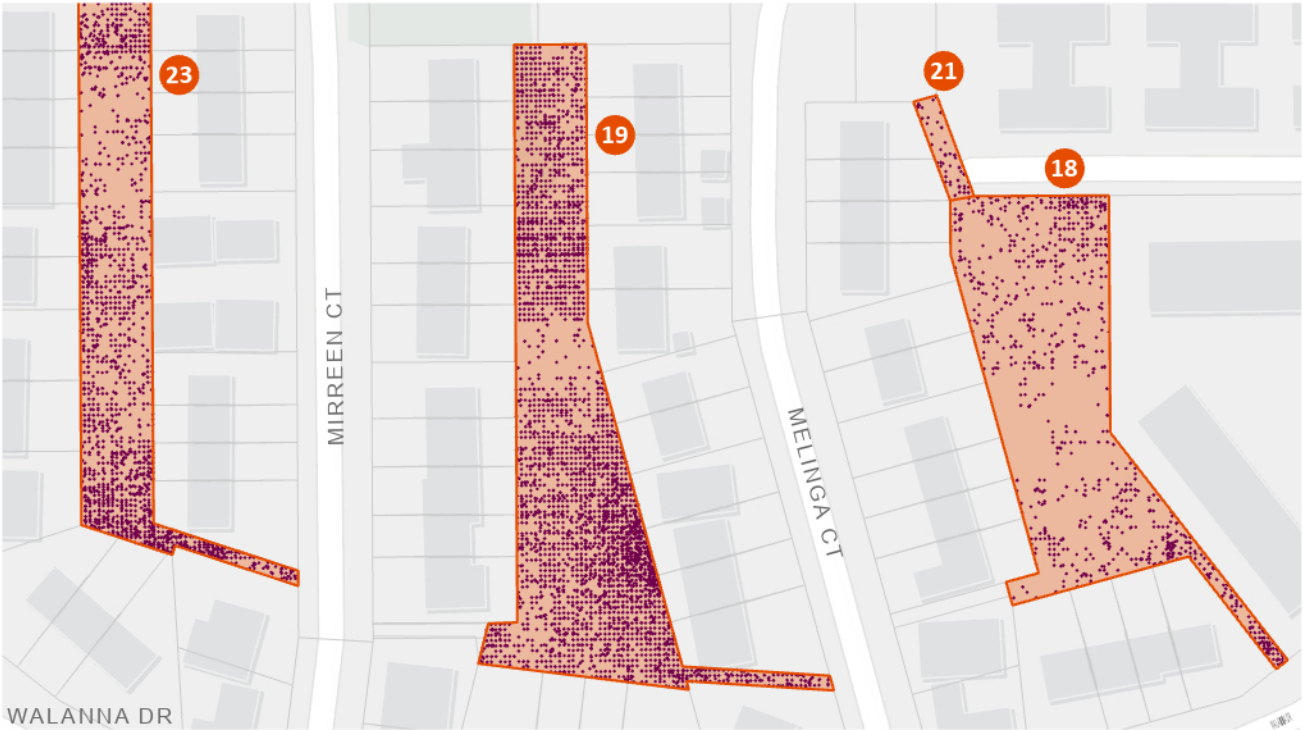
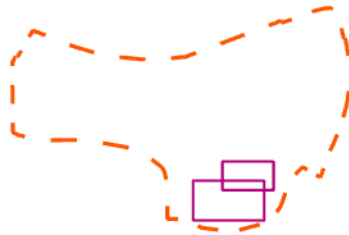


PAW 18

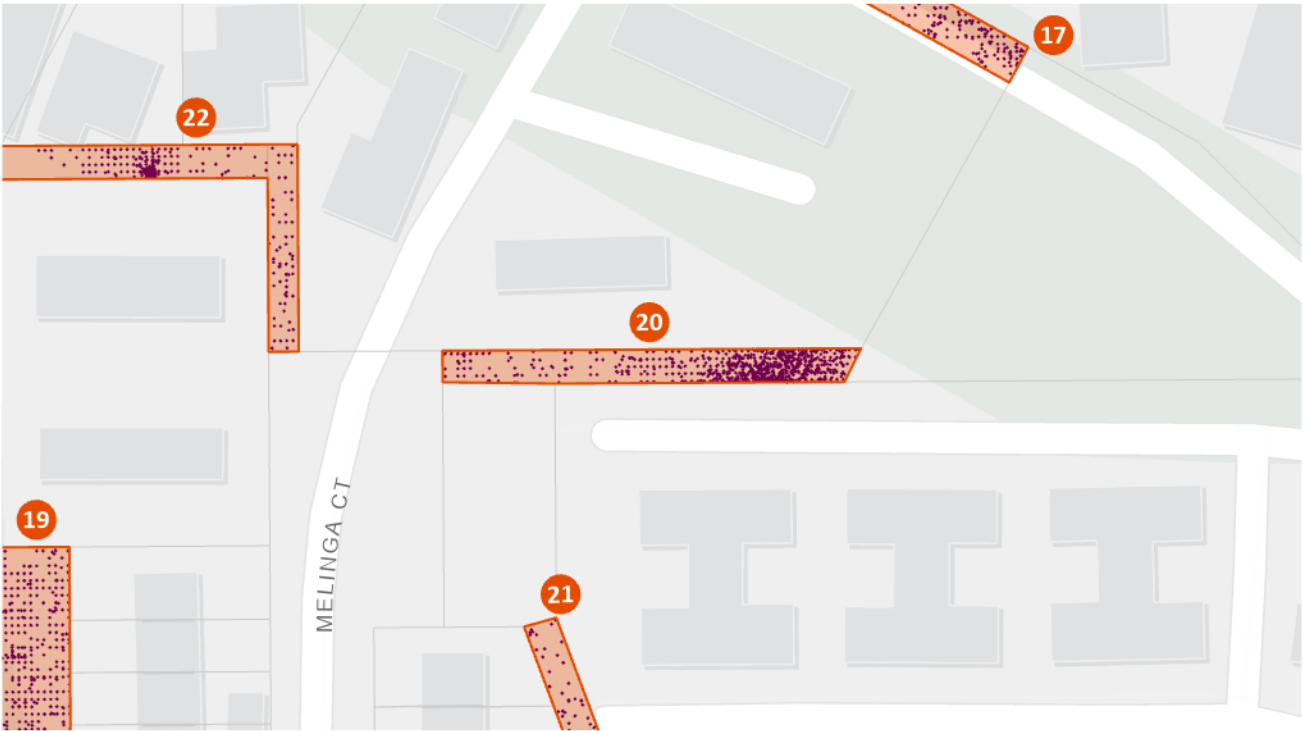
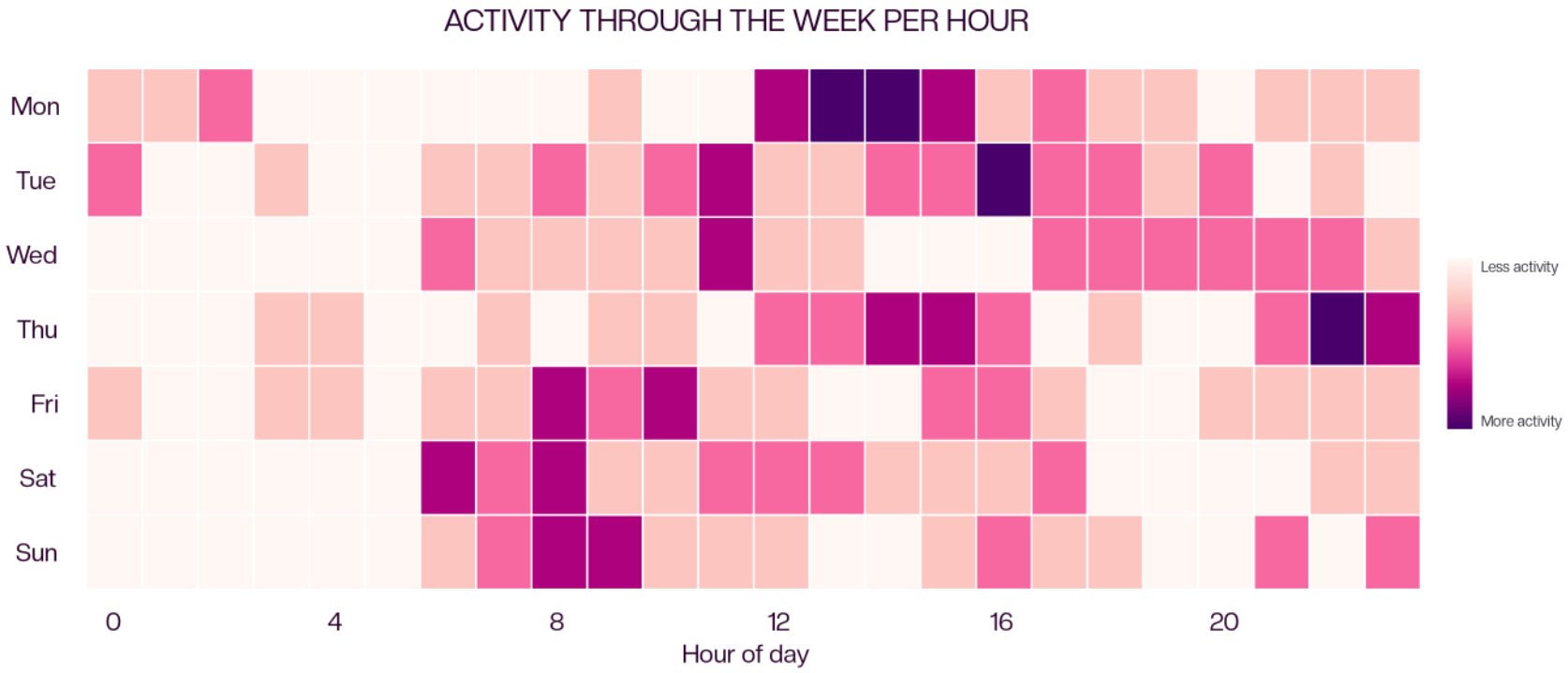


Trends Per Public Access Way

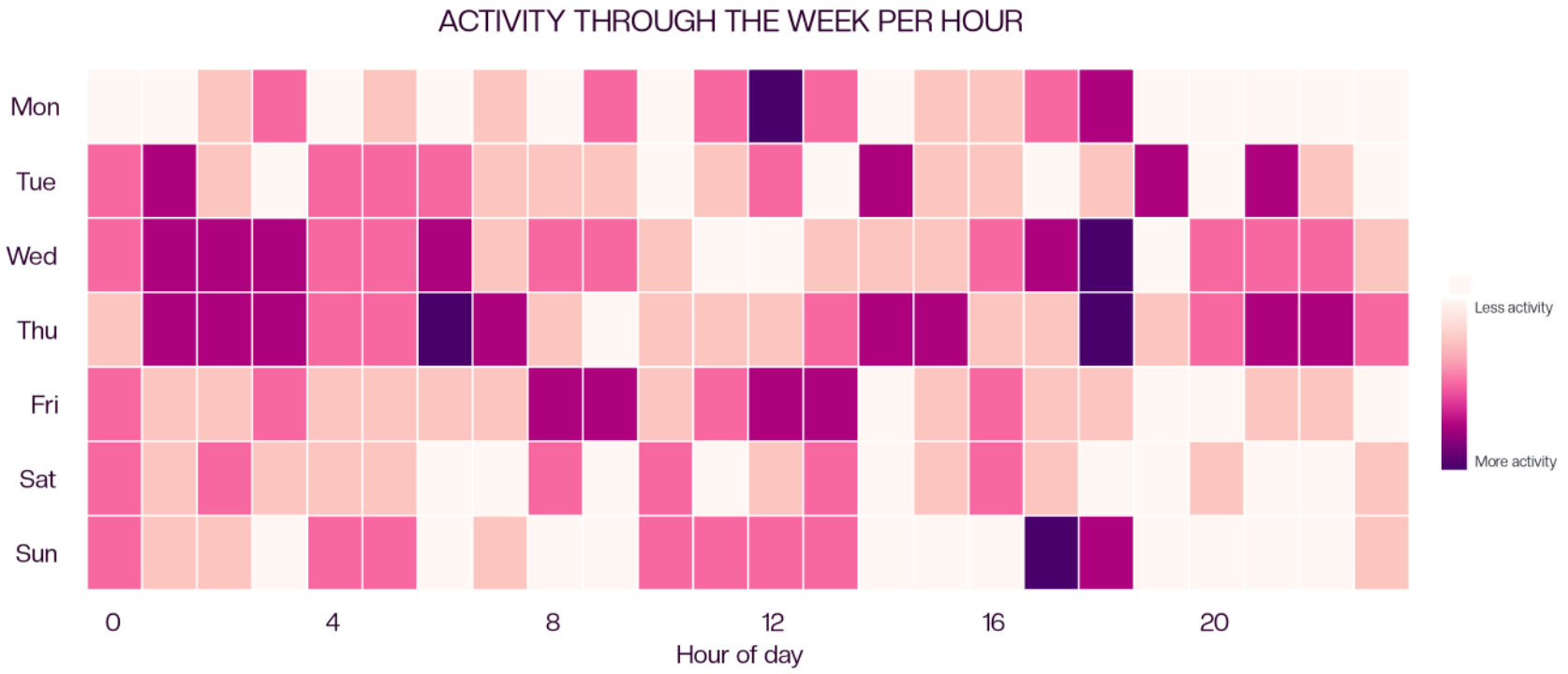
Human mobility trends through public access ways from 2021-2024.



PAW 19

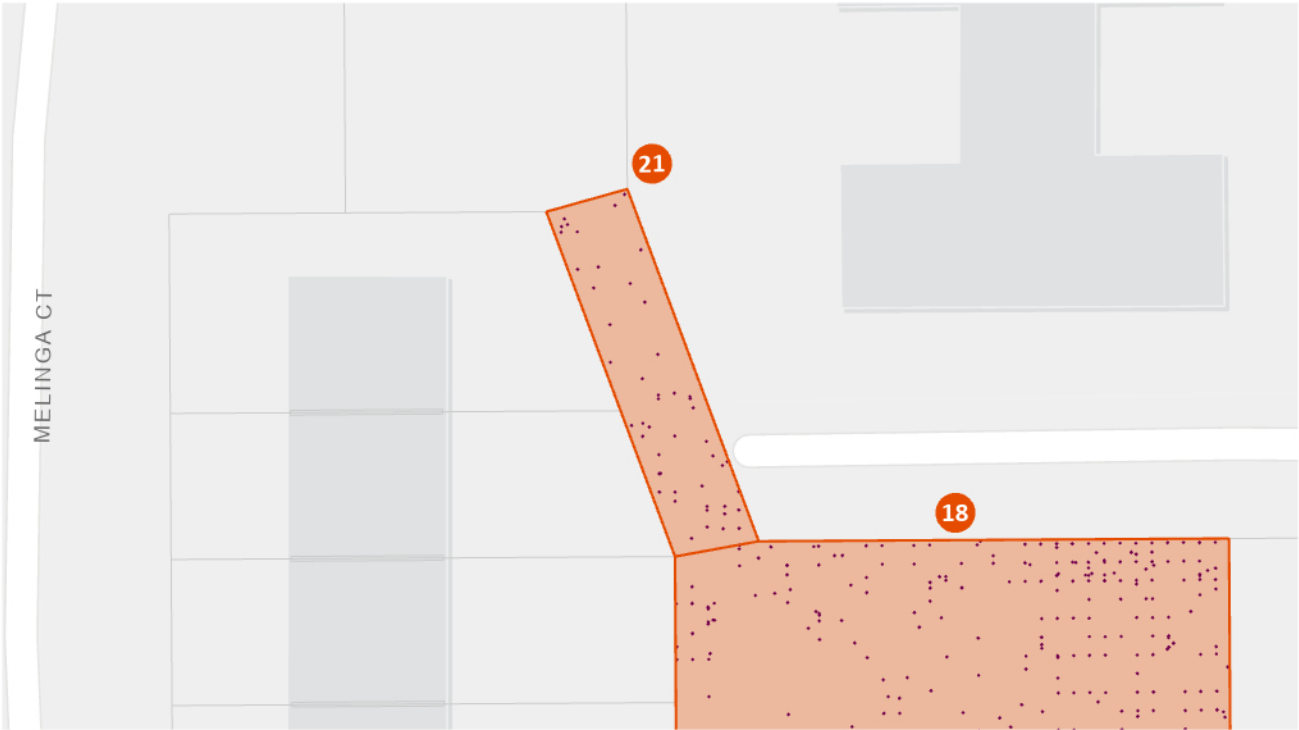
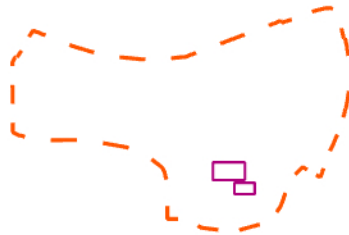


PAW 20

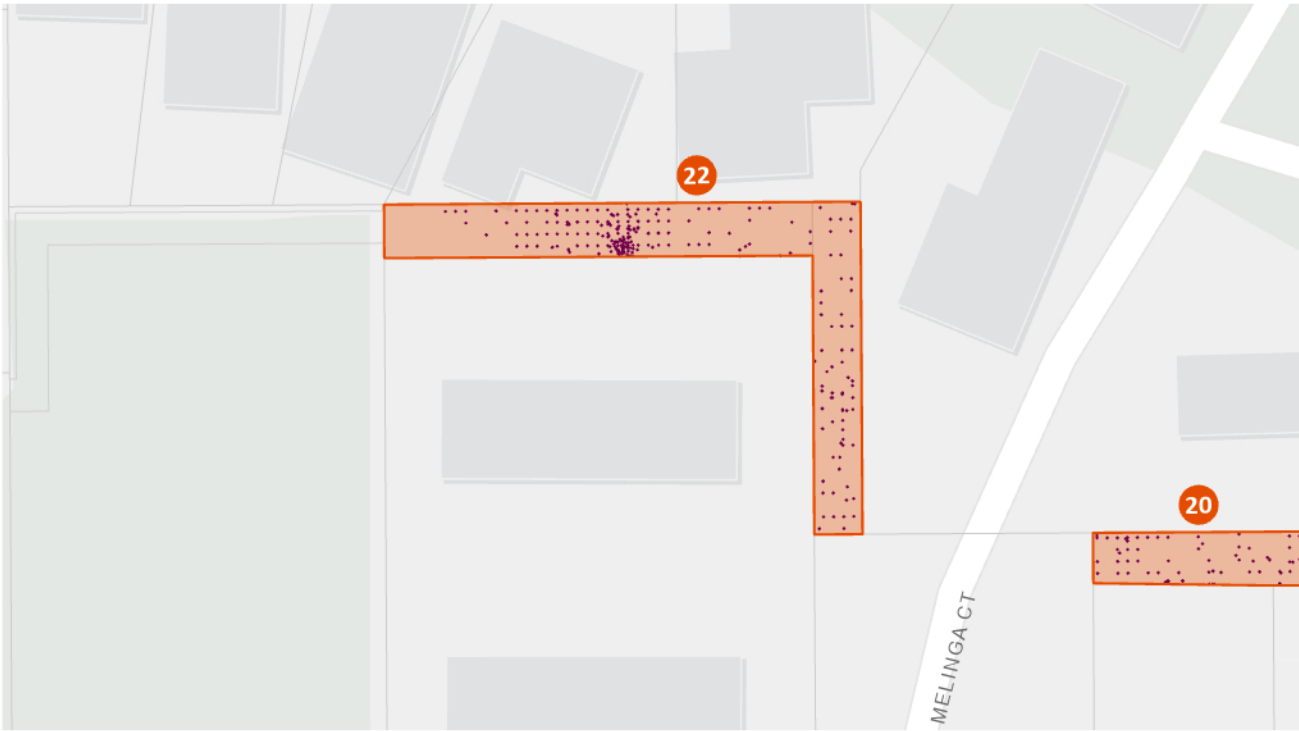
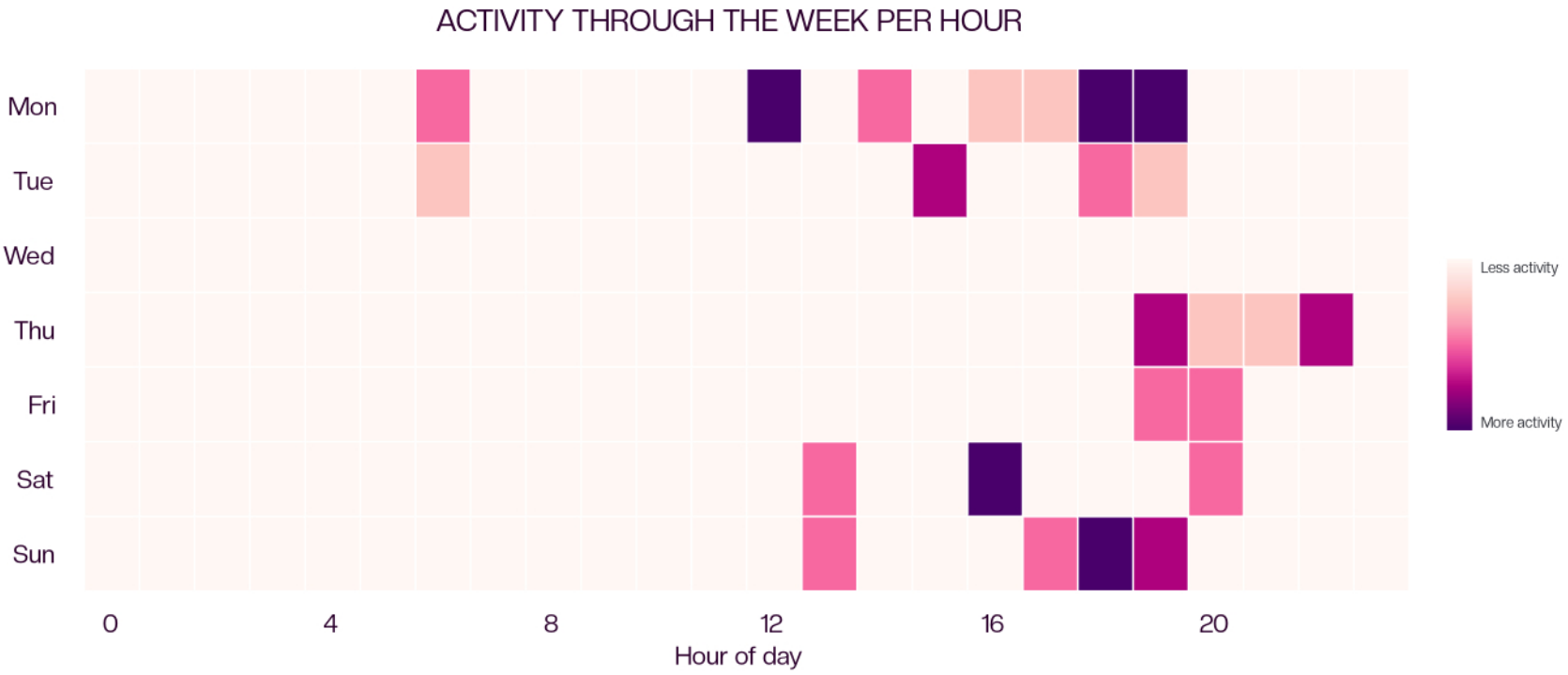


Trends Per Public Access Way

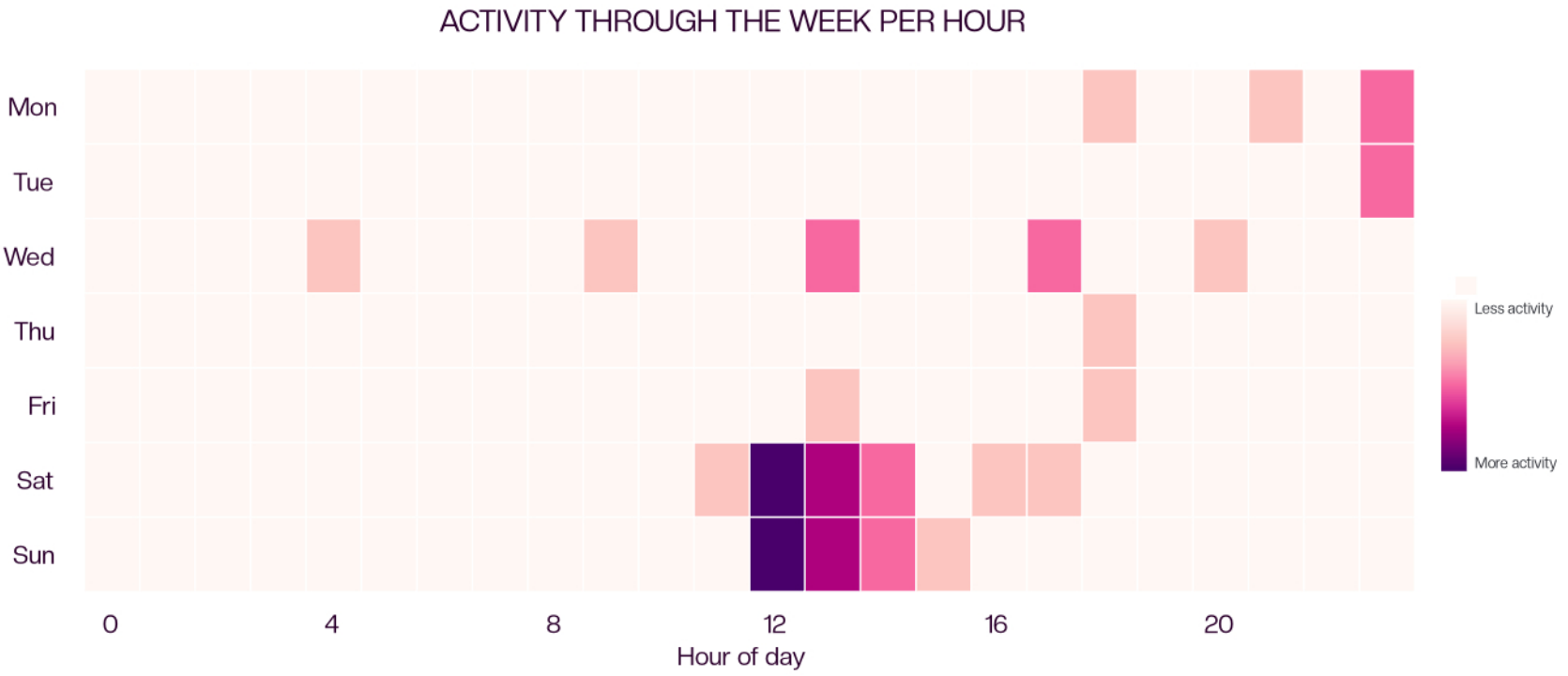
Human mobility trends through public access ways from 2021-2024.



PAW 21

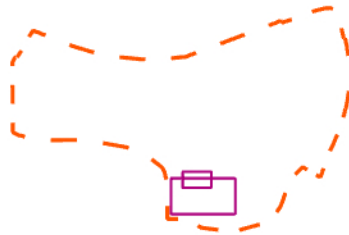


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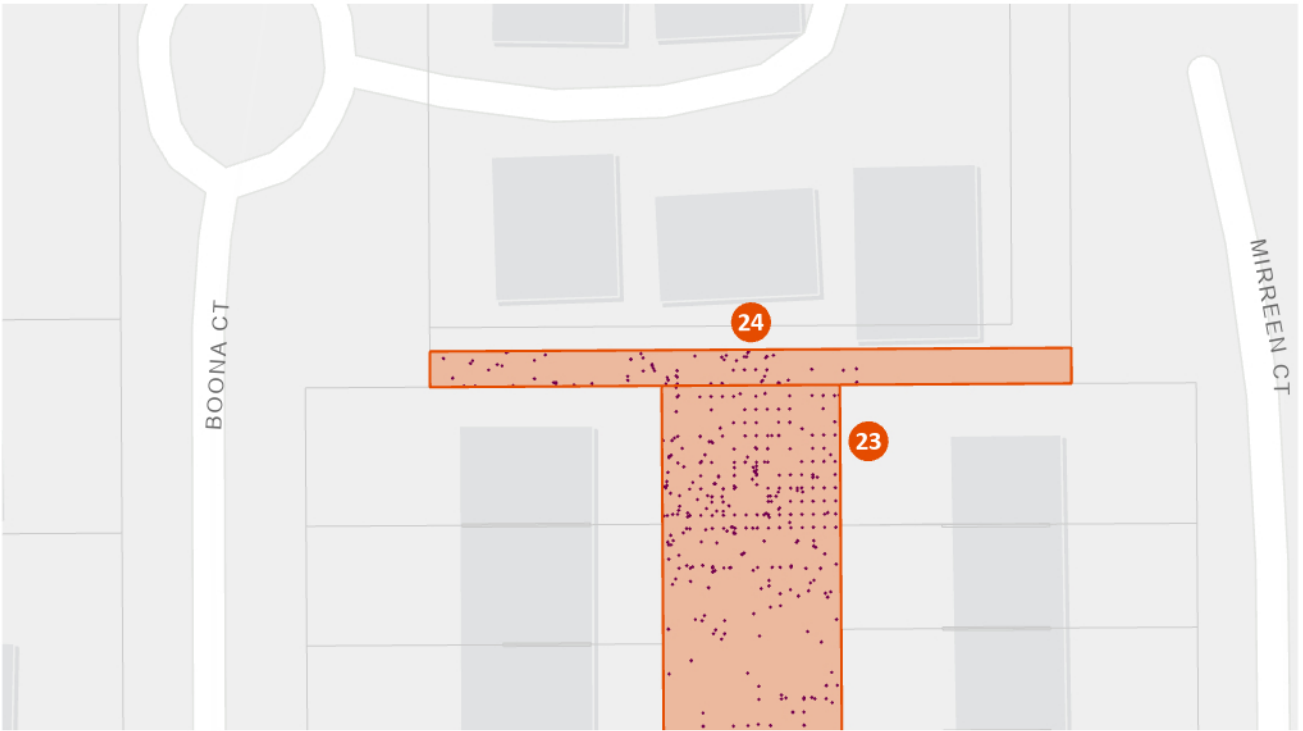
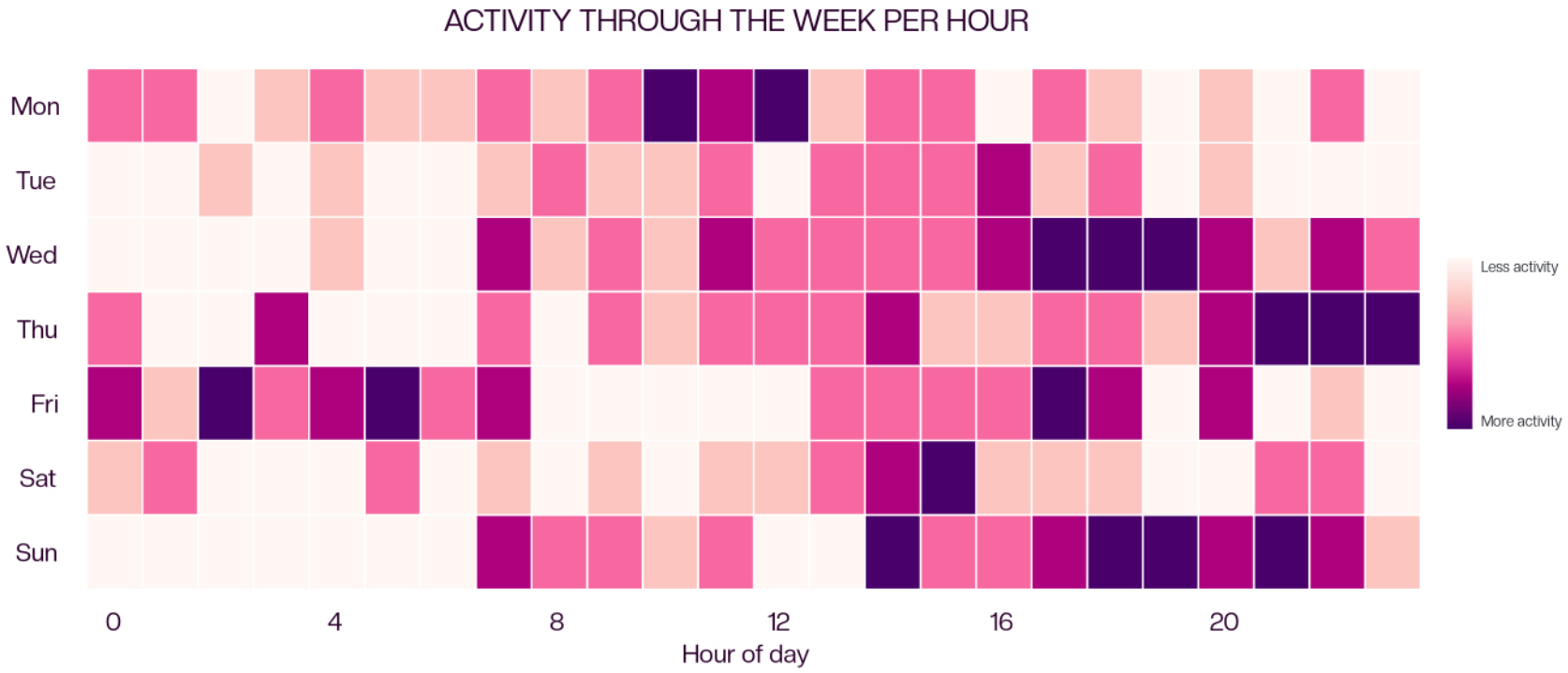


Trends Per Public Access Way

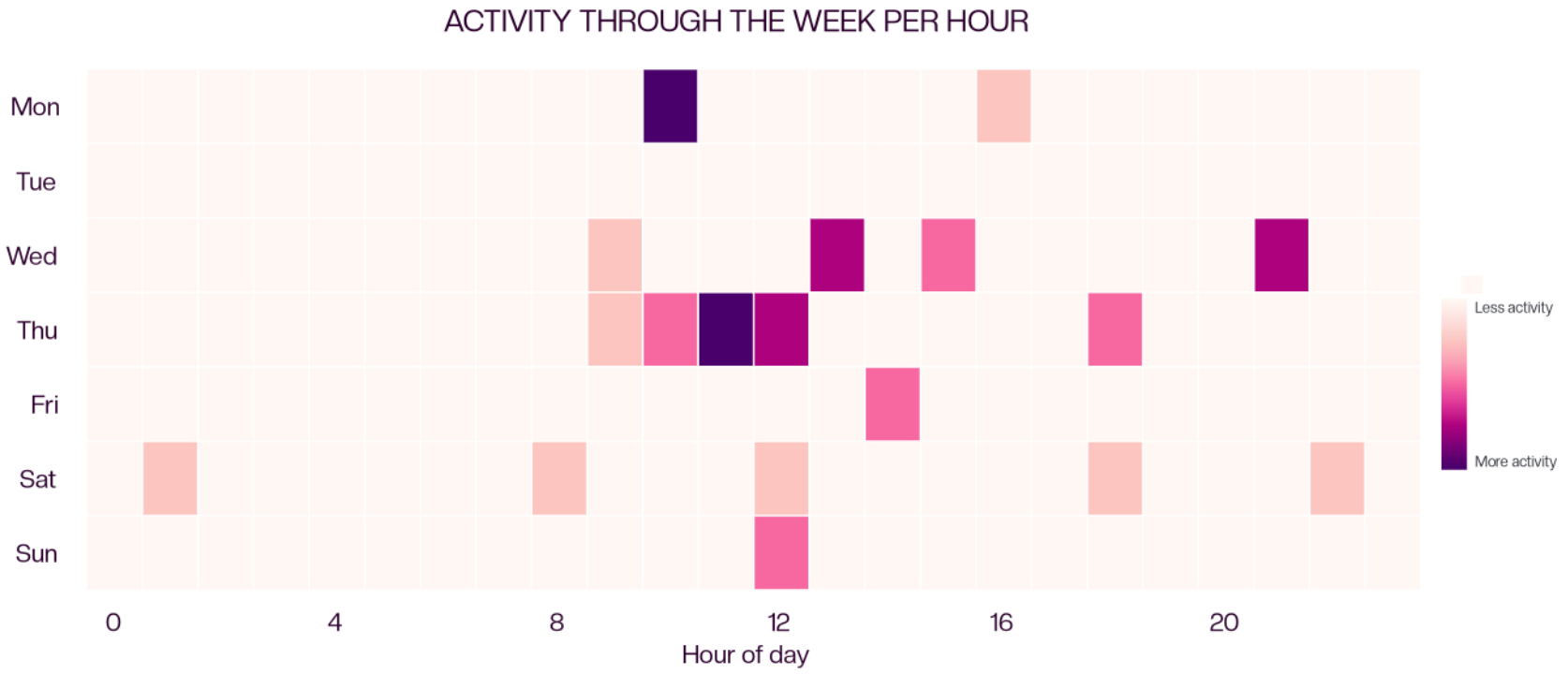
Human mobility trends through public access ways from 2021-2024.



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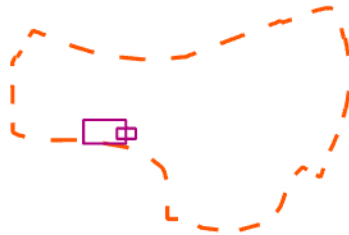


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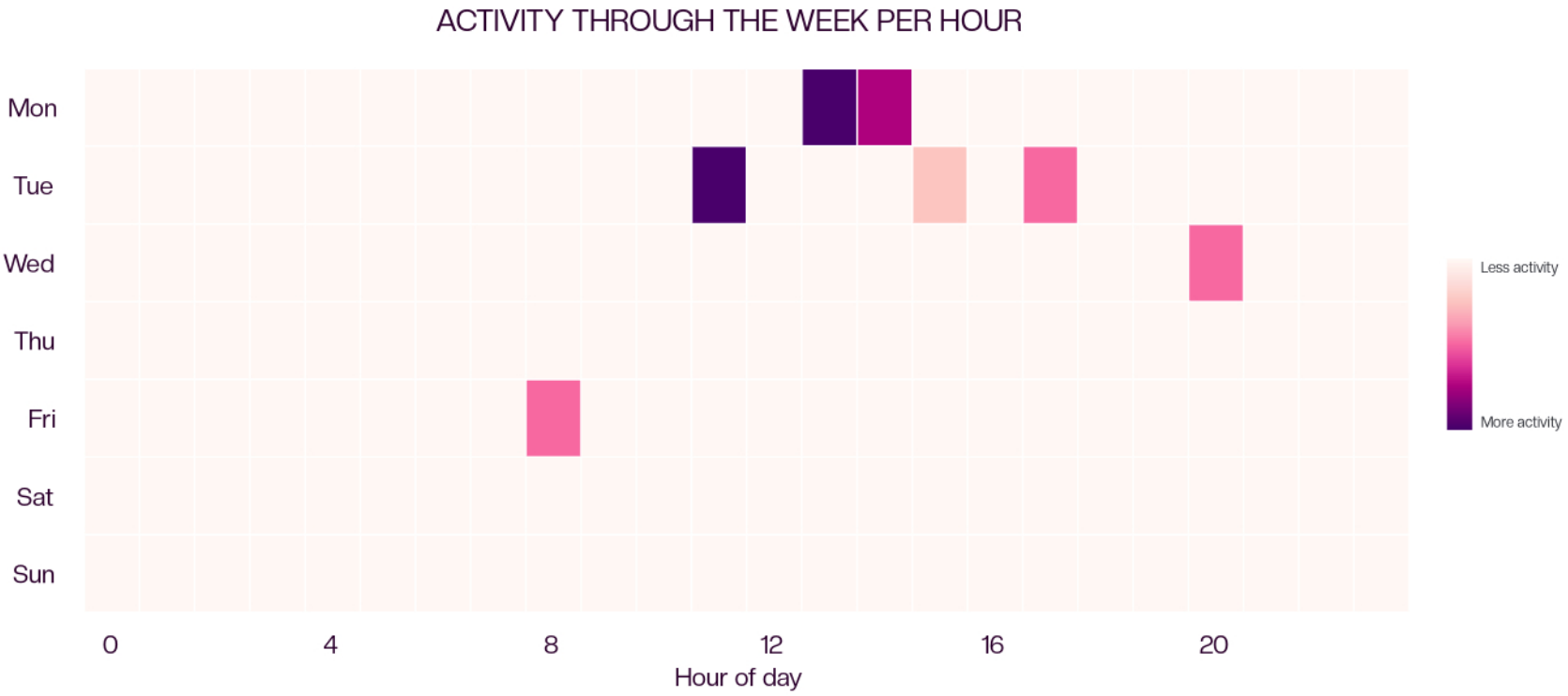


Trends Per Public Access Way

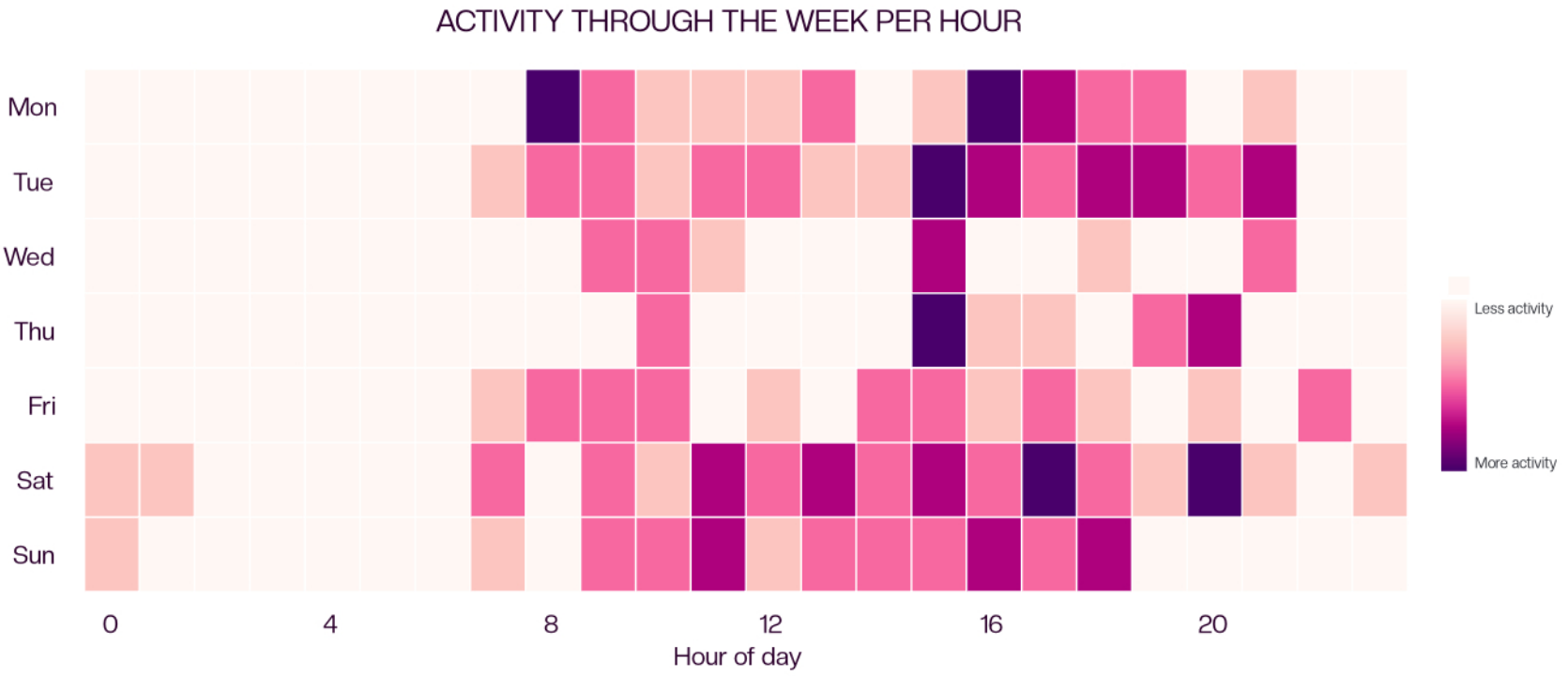
Human mobility trends through public access ways from 2021-2024.



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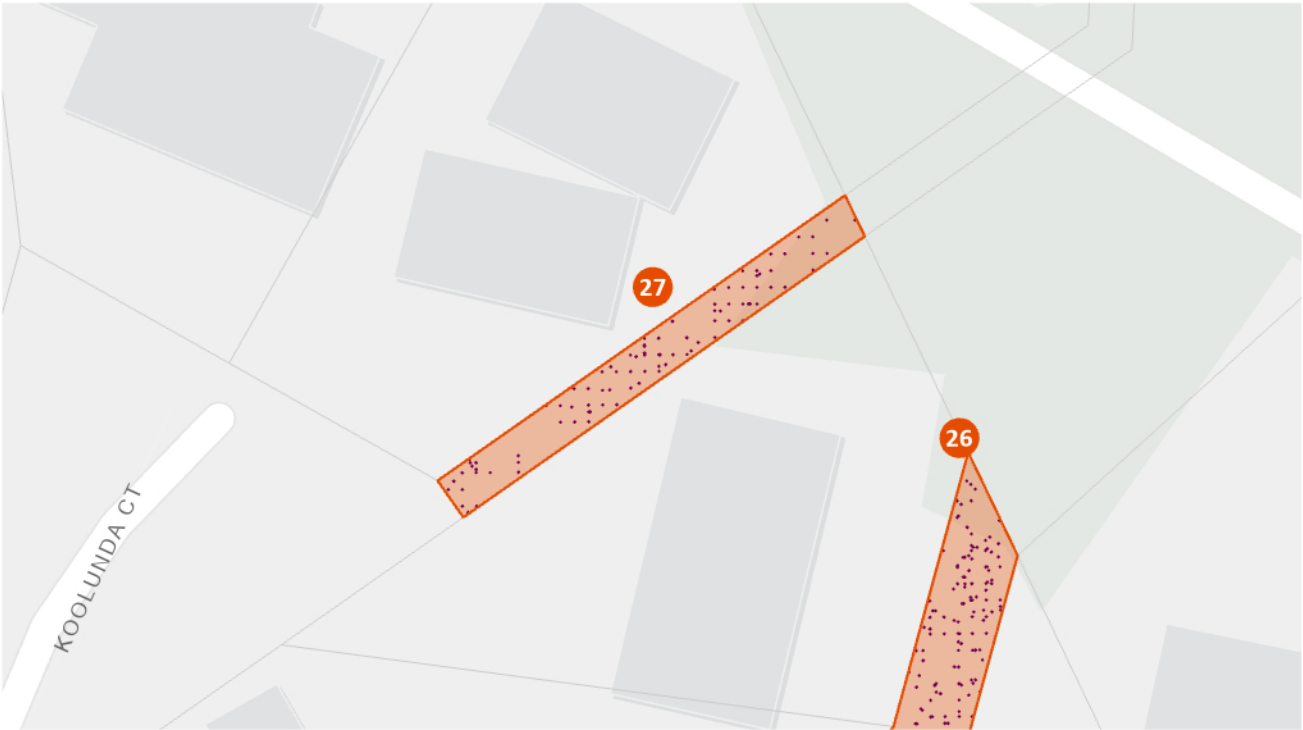
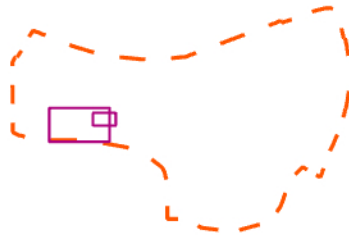


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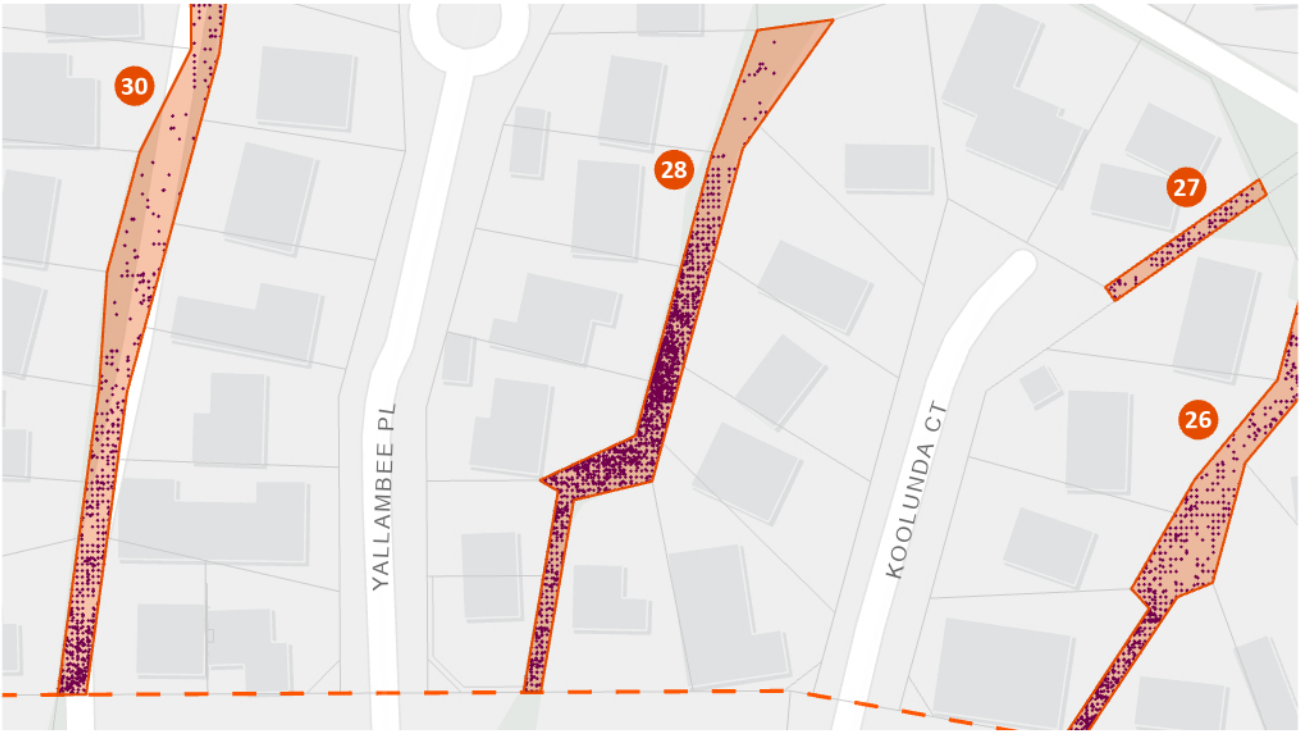
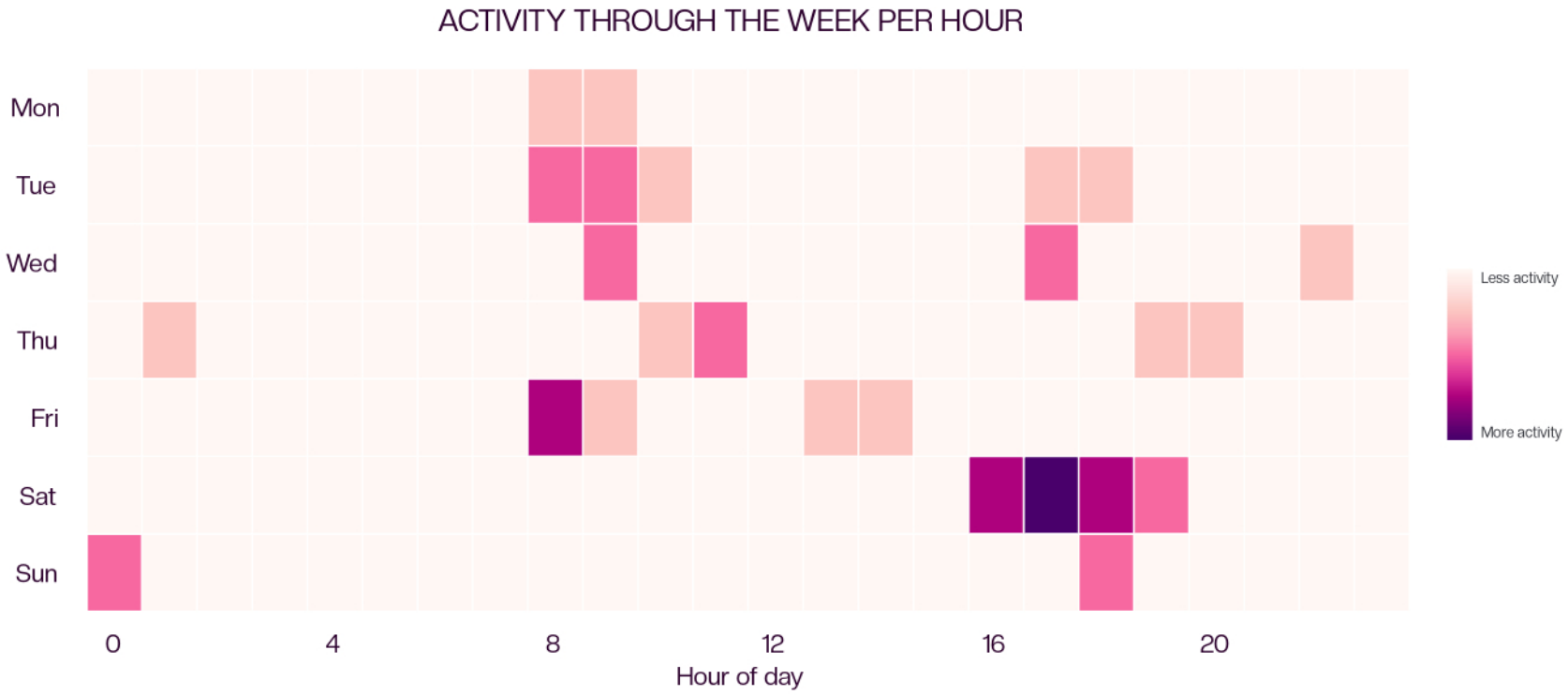


Trends Per Public Access Way

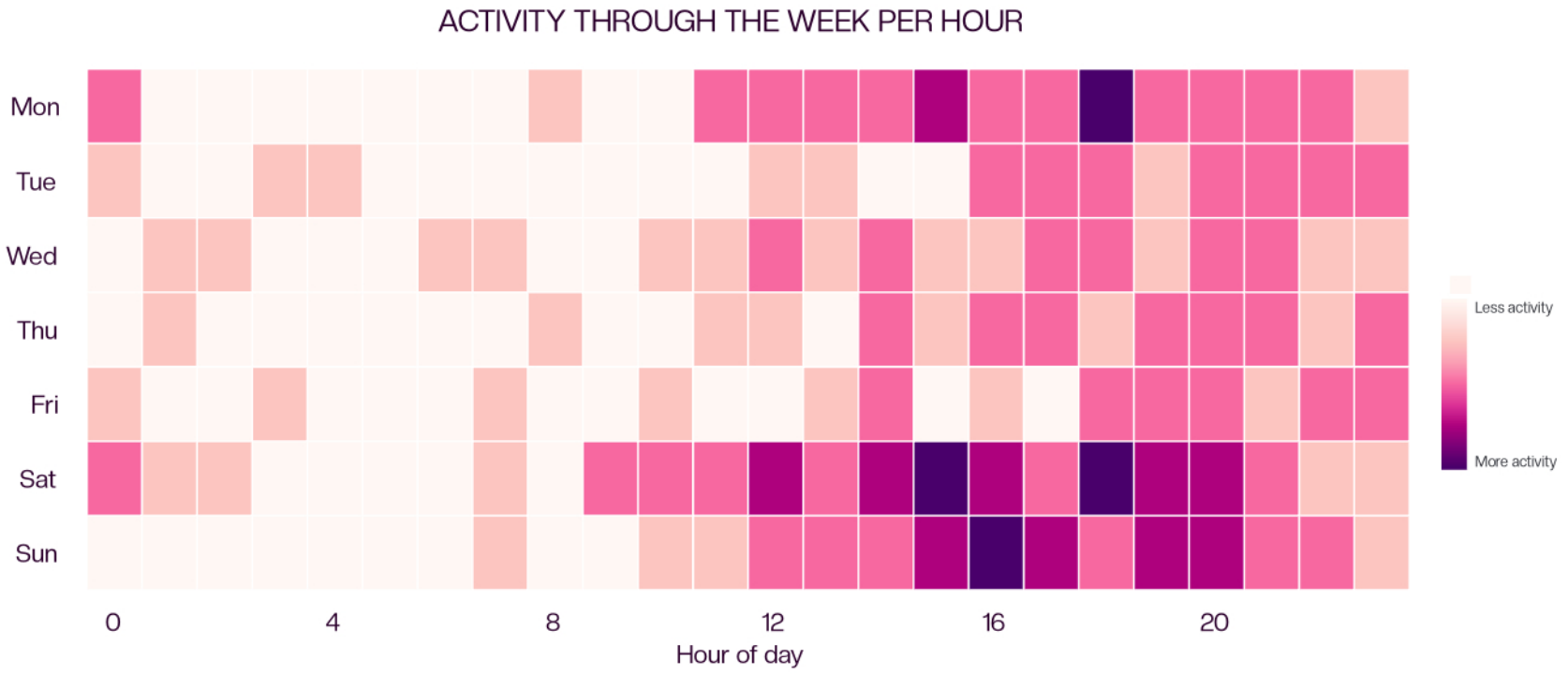
Human mobility trends through public access ways from 2021-2024.



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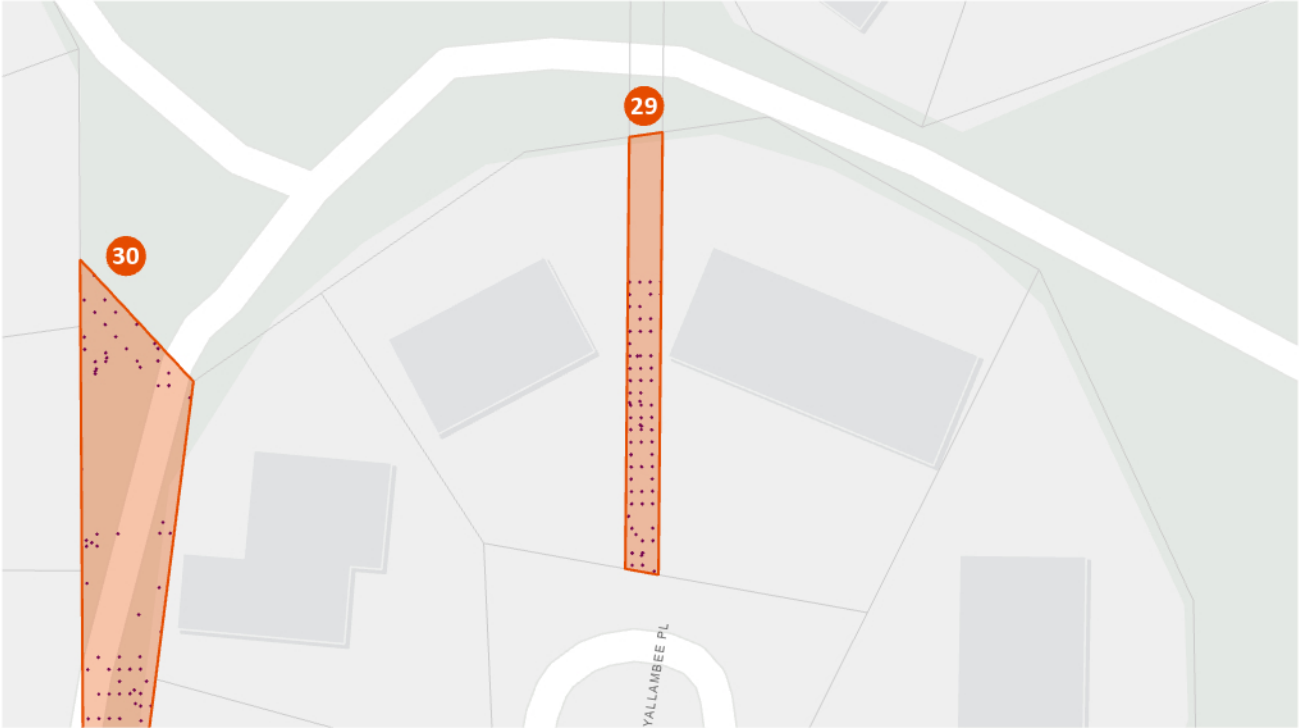
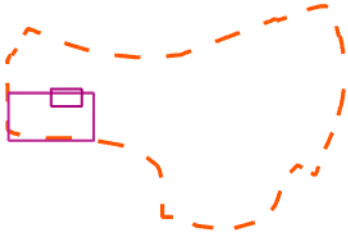


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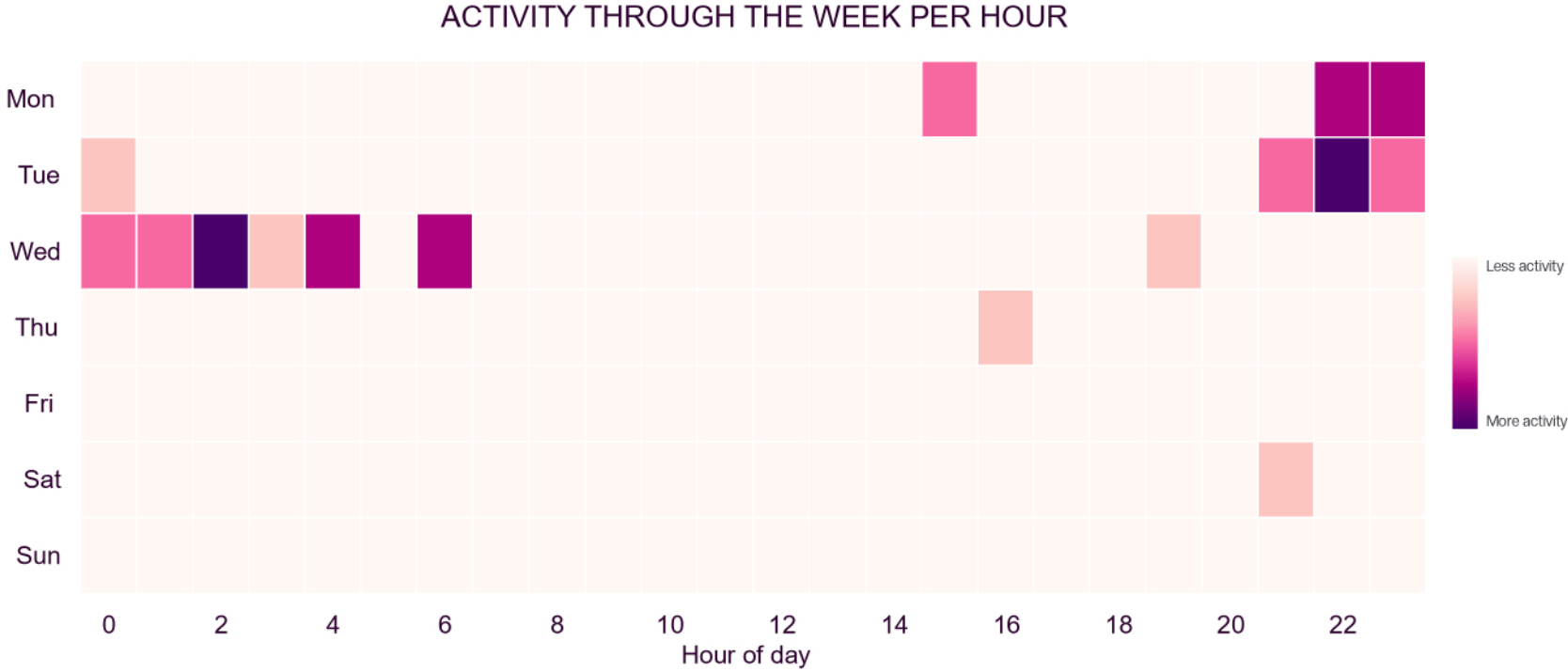


Trends Per Public Access Way

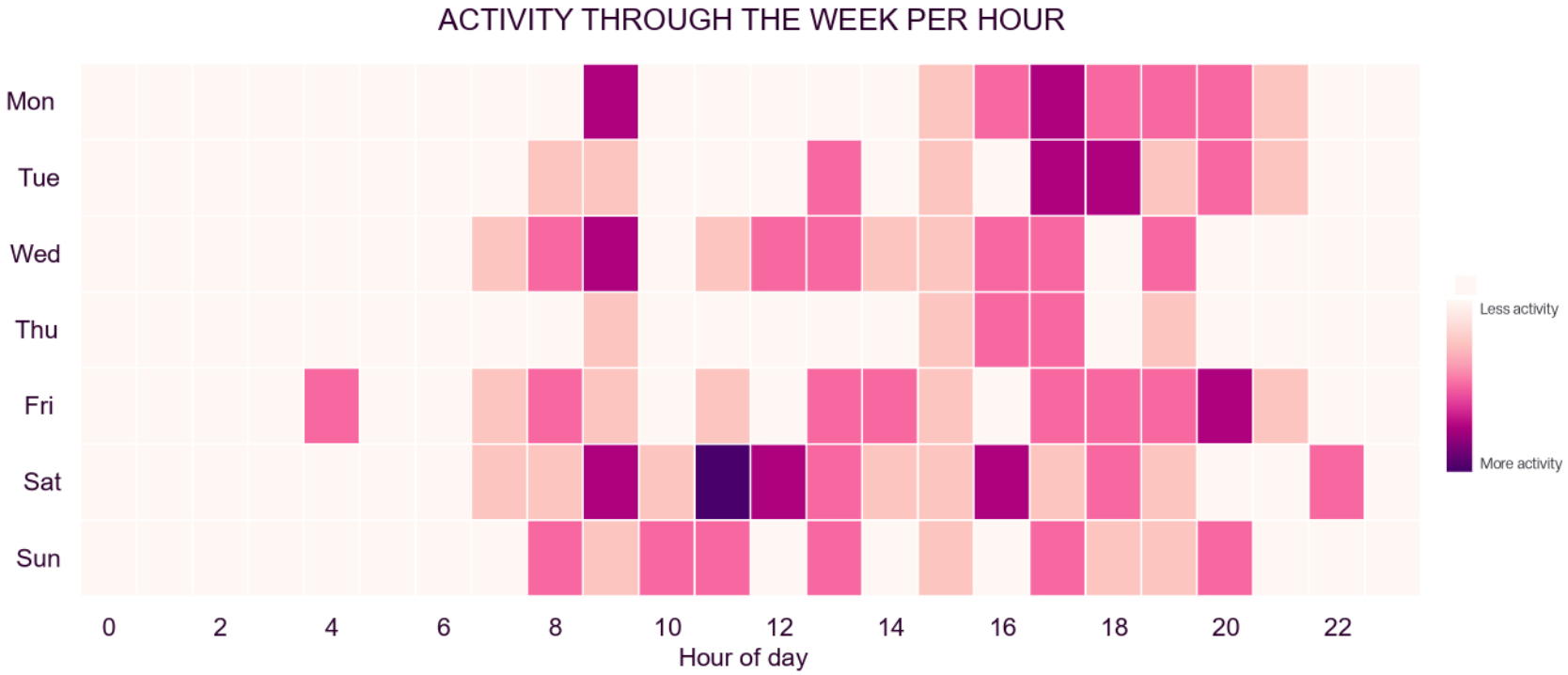
Human mobility trends through public access ways from 2021-2024.



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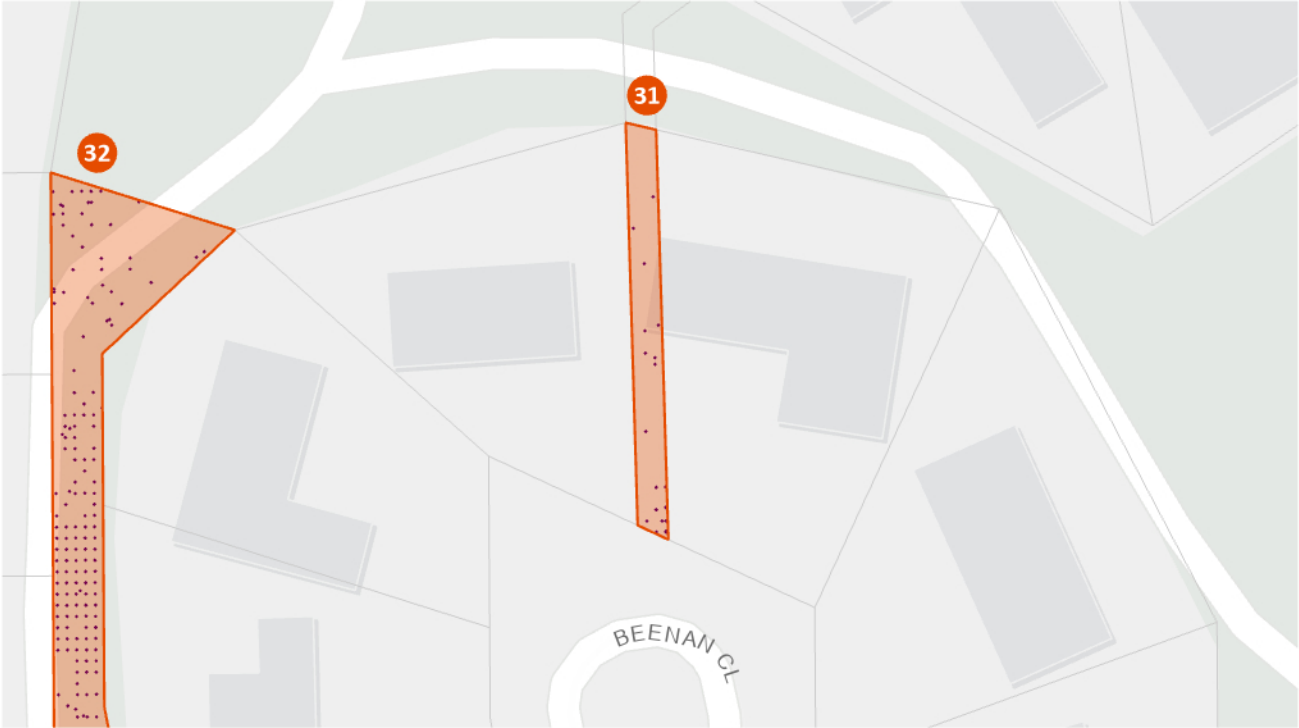
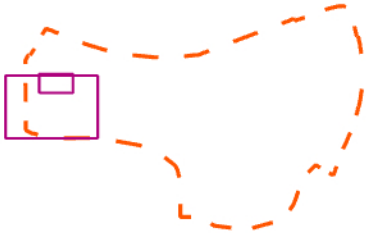


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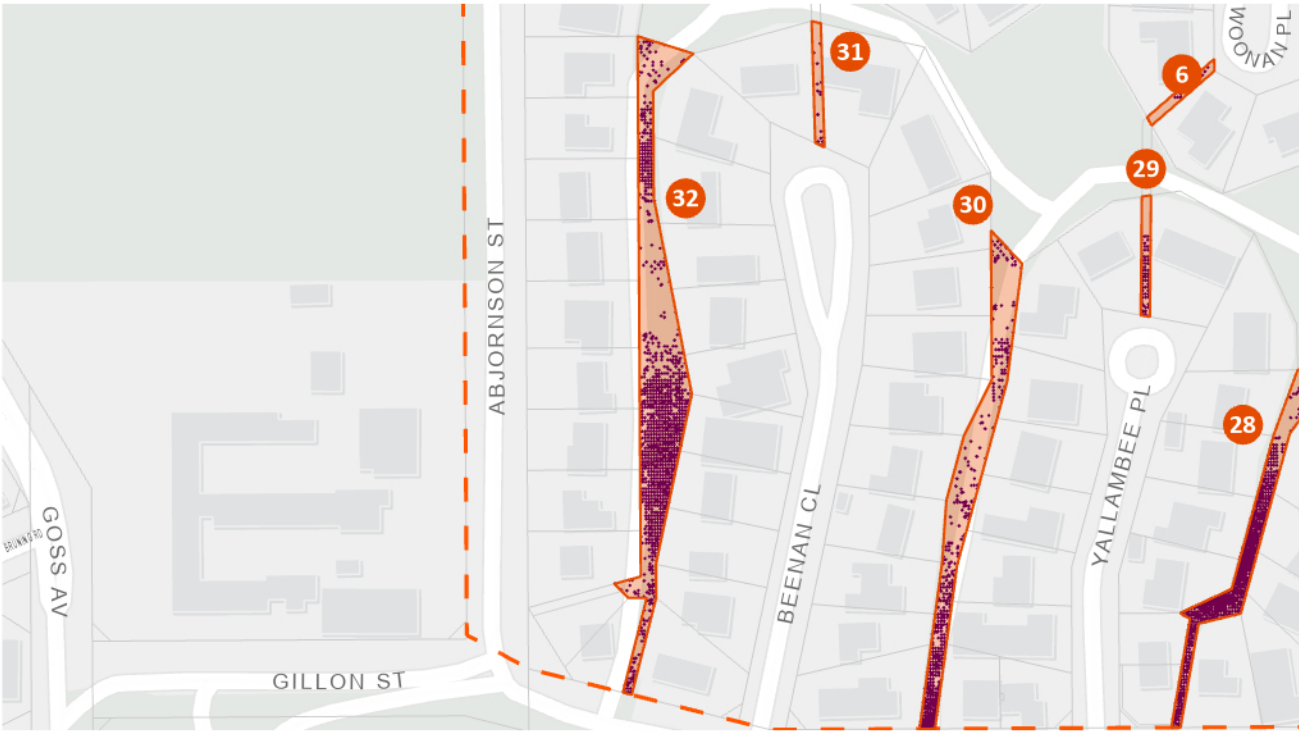
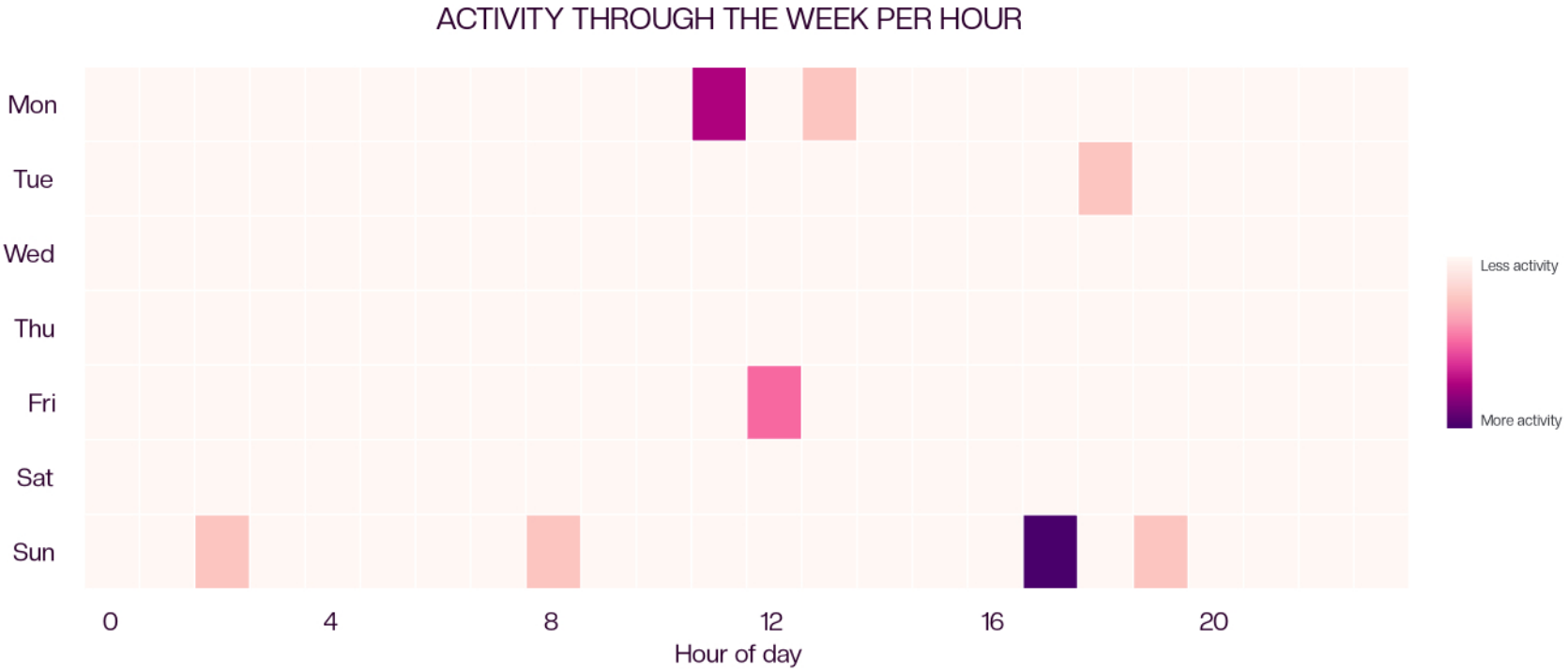


Trends Per Public Access Way

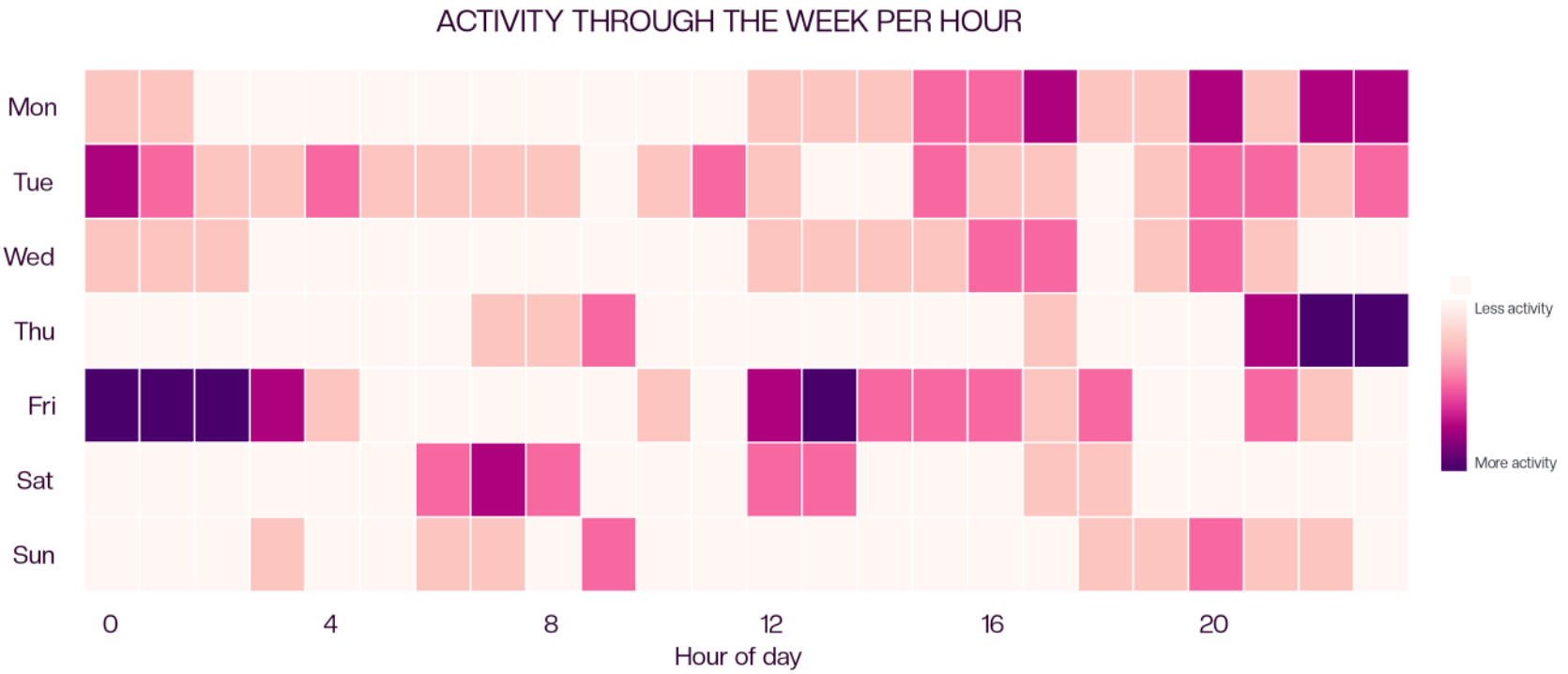
Human mobility trends through public access ways from 2021-2024.



PAW 31



PAW 32



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APPENDIX 4 - RECOMMENDATIONS TABLE

PAW No.	Pedestrian Usage		Service infrastructure restrictions	CPTED	Connectivity within network		Community feedback	Draft comments / recommendation
	City's Ped Count	Human Mobility Data			Connectivity	Comments on connectivity role		
1 Long	Most Movement (8 persons counted)	Moderate Activity	Multiple services present: Sewer easement (if closed). NBN Co comment required.	10 = low vulnerability - Width (5.96m) - Length (93m) - Straight shape - Open side fencing - Abuts 5 properties.	Connects north-south between Jackson Road and Abjornson Street/ Gillon Street. Connects with Greenway west entry.	High connectivity role: - Moderate-high pedestrian use. - Low CEPTEd vulnerability. - Important north-south connection. - Important connection with western entry to Greenway. - Connects with Curtin Primary School.	100% support 'Essential' recommendation (5 responders).	Essential Multiple services present (Sewer, NBN Co) Recommend new directional signage for both entries and 1.5m footpath extension around bollards.
2 Short	Nil movement	Nil Activity	Multiple services present: Water Corporation does not support PAW closure. Western Power easement or relocation to be determined if closed.	No CPTED measured as PAW inaccessible to public. - Width (4m) - Length (32m) - Straight shape - Abuts 2 properties.	Currently inaccessible to public.	Low connectivity role: - Currently inaccessible to public. - Alternative connection available via PAW No. 1 (Essential). - PAWs' southern entry terminates near PAW No. 1 (i.e. PAW No. 2 duplicates PAW No. 1 role).	50% support 'Non-Essential' recommendation (2 responders).	Non-Essential Multiple services present (Water Mains, NBN Co) Recommend formalising current state of 'closure' with Department of Lands.
3 Long	Most Movement (8 persons counted)	Moderate Activity	Water Corporation recommends sewer easement if closed.	8 = medium vulnerability - Width (3m) - Length (107m) - Straight shape - Concealment indentation (10m wide) - Abuts 9 properties.	Connects north-south between Jackson Road and Gillon Street via PAW Nos. 31 (Essential) & 32 (Non-Essential)	Medium connectivity role: - Moderate-high pedestrian use. - Medium CPTED vulnerability (entrapment indentation present). - Currently provides north-south connection. - Alternative north-south connection available via PAW Nos. 1 (Essential) and 4 (Essential)	72% oppose 'Non-Essential' recommendation (8 responders).	Essential Recommendation is proposed to be changed to 'Essential' in response to community feedback identifying PAW as essential to local movement network. Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.
4 Short	Some movement (3 persons counted)	Low Activity	Multiple services present: Water Corporation does not support closure. Western Power easement or relocation to be determined if closed.	10 = low vulnerability - Width (3m) - Length (35m) - Straight shape - Abuts 2 properties.	Connects north-south between Jackson Road and Gillon Street via PAW No. 31 (Essential)	High connectivity role: - Low pedestrian use - Low CPTED vulnerability - Important north-south connection - Provides direct shortest and most direct path from public realm to Greenway. - Role increases should PAW Nos 3 (Non-Essential), 5 (Essential), 30 (Non-Essential) or 32 (Non-Essential) be closed.	50% support 'Essential' recommendation (1 responder).	Essential Multiple services present (Water Mains, Power) Recommend new directional signage and 1.5m footpath extension around bollards.
5 Long	No movement (no persons counted)	Moderate Activity Activity concentrated at north entry within	Water Corporation recommends sewer easement if closed.	9 = medium vulnerability - Width (3m). - Length (107m). - Straight shape	Connects north-south between Jackson Road and Gillon Street via PAW No. 29 (Essential).	High connectivity role: - Low to moderate pedestrian use. - Medium CPTED vulnerability (entrapment indentation present).	80% support 'Essential' recommendation (5 responders).	Essential Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.

		concealment indentation		- Concealment indentation (12m wide). - Abuts 11 properties.		- Length (107m) is less than alternative PAW No. 7 (131m) with 11 adjoining landowners affected. - Alternative north-south connection available via PAW Nos. 4 (Essential), 6 (Inaccessible), 30 (Non-Essential).		
6 Short	No movement (no persons counted)	Nil Activity	Multiple services present: Water Corporation does not support PAW closure. Western Power easement or relocation to be determined if closed.	No CPTED measured as PAW inaccessible to public. - Width (4m) - Length (29m) - Straight shape - Abuts 2 properties.	Currently inaccessible to public.	Low connectivity role: - Currently inaccessible. - Possible north-south connection with PAW No. 29 (Essential) to the south. - Role increases should PAW Nos. 5 (Essential) or 7 (Non-Essential) be closed - Provides direct shortest and most direct path to Greenway.	60% support 'Essential' recommendation (3 responders).	Non-Essential Multiple services present (Water Mains, Power) Recommend formalising current state of 'closure' with Department of Lands.
7 Long	No movement (no persons counted)	Moderate Activity Concentrated at north entry close to Jackson Road	Water Corporation recommends sewer easement if closed.	9 = medium vulnerability - Width (3m) - Length (131m) - Curved shape - Concealment indentation (present 10m wide) - Abuts 12 properties.	Connects north-south between Jackson Road and Gillon Street via PAW No. 28 (in the process of being closed).	Low connectivity role: - Low to moderate pedestrian use. - Medium CEPTED vulnerability (entrapment indentation present). - Alternative connection available via PAW No. 8 (Essential).	90% oppose 'Non-Essential' recommendation (9 responders).	Essential Recommendation is proposed to be changed to 'Essential' in response to community feedback identifying PAW as essential to local movement network. Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.
8 Short	Little Movement (1 person counted)	Moderate Activity	Multiple services present: Water Corporation does not support closure. Western Power easement or relocation to be determined if closed.	11 = low vulnerability - Width (4m) - Length (31m) - Straight shape - Abuts 2 properties.	Connects north-south between Jackson Road and Gillon Street via Boongala Close and PAW No. 27 (Essential).	Medium connectivity role: - Low-moderate pedestrian use. - Low CPTED vulnerability. - Provides direct shortest and most direct path from public realm to Greenway. - Role increases should PAW Nos. 7 (Non-Essential) or 9 (Non-essential) be closed.	50% support 'Essential' recommendation (1 responder).	Essential Multiple services present (Water mains, Power) Recommend new directional signage and 1.5m footpath extension around bollards.
9 Long	No movement (no persons counted)	Moderate – High Activity	Water Corporation recommends sewer easement if closed.	8 = medium vulnerability - Width (3m) - Length (146m) - Curved shape - Concealment indentation present (10m wide) - Abuts 16 properties.	Connects north-south between Jackson Road and Gillon Street via both PAW No. 26 (Non-Essential) and 25 (Essential). Identified in Joint Bike Plan as north-south bike path through PAW No. 9 (Non-Essential).	Low connectivity role: - Low-moderate pedestrian use. - Medium CPTED vulnerability (entrapment indentation present). - Alternative connection available via PAW No. 8 (Essential) and the Lurnea Place cul-de-sac head. - Potential impact to proposed bike path (Joint ToVP & CaSP Bike Plan).	67% oppose 'Non-Essential' recommendation (10 responders).	Non-Essential No change to recommendation is proposed given the length and curve of the PAW which impede necessary, and alternative movement options available via PAW No. 8 and Lurnea Place. Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.

								Identify alternative north-south bike path between Jackson Road and Gillon Street in future Bike Plan.
10 Short	Little Movement (1 person counted)	Moderate Activity	Multiple services present. Water Corporation does not support closure. Western Power easement or relocation to be determined if closed.	11 = low vulnerability - Width(4m) - Length (27m) - Straight shape - Abuts 2 properties.	Connects north-south between Jackson Road and Kardan Court via Wandarra Close and the Greenway. Connects with other PA Nos. (11 (Non-Essential), 12 (Essential), 13 (Essential) via the Greenway.	High connectivity role: - Low pedestrian use. - Low CPTED vulnerability. - Important north-south connection. - Provides direct shortest and most direct path from public realm to Greenway. - Alternative connection available via PAW No. 12 (Essential)).	100% support for 'Essential' recommendation (3 responders).	Essential Multiple services present (Water mains, Power). Recommend new directional signage and 1.5m footpath extension around bollards.
11 Long	9 Most movement	Low Activity Movement is dispersed widely along the PAW	Water Corporation recommends sewer easement if closed.	8 = medium vulnerability - Widths vary (3m-5m-24m) - Length (193m) - Dogleg shape - Concealment indentation present (5m wide) - Abuts 16 properties.	Connects north-south between Jackson Road and Kardan Court via the Greenway. Connects with other PAW Nos. 10 (Essential), 12 (Essential), 13 (Essential) via the Greenway.	Low connectivity role: - Low – medium pedestrian use. - Medium CPTED vulnerability (entrapment indentation present and overall dogleg shape). - Alternative connections are available (PAW Nos. 10 (Essential) and 13 (Essential)).	67% oppose 'Non-Essential' recommendation (2 responders).	Non-Essential No change to recommendation is proposed given the low number of responses received and urban design concerns including poor sightlines from 90 degree bend. Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.
12 Short	No movement (no persons counted)	Low Activity Movement is distributed evenly along the PAW.	Multiple services present. Water Corporation does not support closure. Western Power easement or relocation to be determined if closed.	11 = low vulnerability - Width (3.5m) - Length (36m) - Straight shape - Abuts 2 properties.	Connects north-south between Jackson Road and Kardan Court via the Greenway. Connects with other PAW Nos. (10 (Essential), 11 (Non-Essential), 13 Essential) via the Greenway.	Medium connectivity role: - Low pedestrian use. - Medium CPTED vulnerability. - Provides direct shortest and most direct path to Greenway. - Alternative connections are available (PAW Nos. 10 (Essential), 13 (Essential) and the Tublia Court cul-de-sac head.	66% oppose 'Essential' recommendation (2 responders).	Essential No change to recommendation is proposed given the low number of responses received and importance of the PAW to local movement. Recommend new directional signage and 1.5m footpath extension around bollards. Multiple services present (Water mains, Power).
13 Short	Little Movement (2 persons counted)	Moderate-High Activity Movement is distributed evenly along the PAW.	Water Corporation recommends sewer easement if closed.	11 = low vulnerability PAW - Width (3m) - Length (26.5m) - Straight shape - Abuts 2 properties.	Connects north-south between Jackson Road and Kardan Court via the Greenway. Connects with other PAW Nos. (10 (Essential), 11 (Non-Essential), 12 (Essential), 13 Essential) via the Greenway.	High connectivity role: - Range of pedestrian uses from low to high. - Low CPTED vulnerability. - Important north-south connection. - Provides direct shortest and most direct path to Greenway. - Alternative connections are available (PAW No. 12 (Essential).	66% support 'Essential' recommendation (2 responders).	Essential Recommend new directional signage and 1.5m footpath extension around bollards.

14 Long	Little Movement (2 persons counted)	High Activity Movement is distributed along the PAW with areas of concentration mid-way along path.	Water Corporation recommends sewer easement if closed.	10 = low vulnerability - Width (5m) - Length (79m) - Straight shape. - Abuts 7 properties.	Connects north-south between Jackson Road and Lown Loop via PAW No. 15 (Essential). Not directly connected to east-west Greenway.	Medium connectivity role: - A range of pedestrian use from low to high. - Low CPTED vulnerability. - Alternative connections to the Greenway and PAW No. 15 (Essential) are available via the Chica Court cul-de-sac head (entry 40m to east).	88% oppose 'Non-Essential' recommendation (8 responders).	Essential Recommendation is proposed to be changed to 'Essential' in response to community feedback describing PAW as essential to local movement network. Recommend new directional signage and 1.5m footpath extension around bollards.
15 Short	Little Movement (2 persons counted)	Moderate Activity Movement is distributed evenly along the PAW.	Multiple services present: Water Corporation does not support closure. An ATCO Gas easement may be required if closed. Western Power easement or relocation to be determined if closed.	9 = medium vulnerability - Width (3m) - Length (32m) - Straight shape - Abuts 2 properties.	Connects north-south between Jackson Road and Lown Loop via PAW No. 14 (Non-Essential) and Chica Court cul-de-sac head. Connects east-west to Walanna Drive via Wonil Way. Connects north-south between Walanna Drive via Lowan Loop. Not directly connected to east-west Greenway.	Medium connectivity role: - A range of pedestrian use from low to high. - Medium CPTED vulnerability. - Important north-south and east-west connections. - Connects to 2 bus stops on Walanna Drive. - Abuts large Department of Communities site (No. 14 Bunderra Close). - PAW No. 15 (Essential) provides access to an isolated area of POS unconnected from the Greenway proper. Closure has the potential to reduce surveillance and safety. - Provides direct shortest and most direct path to Greenway.	86% support 'Essential' recommendation (6 responders).	Essential Multiple services present (Water mains, ATCO, Power). Recommend new directional signage and 1.5m footpath extension around bollards. Recommend review should No. 14 Bunderra Close be redeveloped.
16 Long	Most Movement (8 persons counted)	High Activity Movement is concentrated along the north-south leg of PAW	Multiple services present: Water Corporation does not support closure. Telstra does not object. Western Power easement or relocation to be determined if closed.	6 = medium vulnerability - Widths vary: 3m east-west, 5m north-south - Length (100m) 90 degree corner. - CCTV available from Kwel Court Playground.	Connects north-south between Jackson Road and Lowan Loop via Bundarra Close. Connects east-west between: - Bunderra Close and Lowan Loop; and - Walanna Drive underpass via PAW No. 17 (Essential).	Medium connectivity role: - High pedestrian use. - Medium CPTED vulnerability. - Important north-south and east-west connections. - Connects with Kwel Court Playground (south) and bus stops on Jackson Road. - Design flaws (shape) reduce role in movement network.	66% support 'Essential' recommendation (2 responders).	Essential Multiple services present (Water mains, Power, Telstra). Recommend new directional signage and 1.5m footpath extension around bollards. Recommend review should Nos. 14-16 Bunderra Close be redeveloped.
17	Most Movement (26 persons counted)	High Activity Movement is distributed evenly along the PAW	Nil services	9 = Medium vulnerability - Width (6m) - Length (90m) - Straight shape - CCTV available within PAW	Connects east-west between Walanna Drive Underpass and Gillon Street via Kwel Court.	High connectivity role: - High pedestrian use. - Medium CPTED vulnerability. - Important east-west connection. - Connects to Curtin, Kwel Court Playground, Village Green	60% support 'Essential' recommendation (3 responders).	Essential Recommend new directional signage and 1.5m footpath extension around bollards.

				Abuts 3 properties.		shopping precinct and bus stops on Walanna Drive.		
18 Long	Some Movement (2 persons counted)	Low Activity Movement is distributed evenly along the PAW	Nil services	10 = Low vulnerability - Width (3m) - Length (30m) - Straight shape - Abuts 2 properties including 1 Department of Communities group dwelling site (No. 36 Walanna Drive).	Connects north-south between Walanna Drive and Melinga Court via PAW No. 21 (Non-Essential). Not directly connected to northern or western areas of Greenway.	Low to Medium connectivity role: - Low pedestrian use. - Low CPTED vulnerability. - Connects to fast food restaurant and bus stops on Walanna Drive. - PAW Nos 18 (Non-Essential) and 21 (Non-Essential) provide access to an isolated area of POS unconnected with the wider Greenway. Closure of either PAW has the potential to reduce its surveillance and safety. - Alternative connections are available via PAW No. 19 (Essential).	100% oppose 'Non-Essential' recommendation. (1 responder).	Non-Essential No change to recommendation is proposed given the low number of responses received (1). Recommend new directional signage and 1.5m footpath extension around bollards. Recommend PAW closure and amalgamation of POS into PAW No. 17 should PAW No. 21 be closed or No. 36 Walanna Drive be redeveloped
19 Long	No movement (no persons counted)	High Activity Movement is distributed evenly along the PAW	Water Corporation recommends sewer easement if closed.	9 = Medium vulnerability - Width (3m) - Length (30m) - Straight shape - Abuts 2 properties.	Connects north-south between Walanna Drive and Mireen Court via Melinga Court and through an area of POS at the Mireen Court cul-de-sac head. Not directly connected to northern or western areas of Greenway.	High connectivity role: - High pedestrian use. - Medium CPTED vulnerability. - Important north-south connection. - Connects to fast food restaurants and bus stops on Walanna Drive. - PAW No. 19 (Essential) provides access to an isolated area of POS unconnected with the wider Greenway. Closure of PAW has the potential to reduce its surveillance and safety.	100% oppose 'Essential' recommendation. (1 responder).	Essential No change to recommendation is proposed given the low number of responses received (1) and importance of PAW for access to an area of Public Open Space and local movement. Recommend new directional signage and 1.5m footpath extension around bollards.
20 Short	Most Movement (8 persons counted)	High Activity Movement is distributed towards the east of the PAW.	Multiple services present: Telstra does not object. NBN Co comment required.	12 = Low vulnerability - Width (5m) - Length (50m) - Straight shape - Open sided bollards to private internal driveway (No. 38 Walanna Drive). - CCTV available on PAW. - Abuts 2 properties both grouped dwelling sites (No. 38 Walanna Drive owned by	Connects east-west between Walanna Drive and Melinga Court. Connections to wider network: - Kwel Coutt Playground via PAW No. 17 (Essential). - Mireen Court via PAW No. 22 (Essential). - Boona Court via PAW No. 24 (Essential).	High connectivity role: - High pedestrian use. - Medium CPTED vulnerability. - Important east-west connection. - Connects with Walanna Drive Underpass, shopping centre and bus stops on Walanna Drive. - Provides direct shortest and most direct path to Greenway.	50% support 'Essential' recommendation. (1 responder).	Essential Multiple services present (NBN Co and Telstra). Recommend new directional signage and 1.5m footpath extension around bollards.

				Department of Communities and privately owned No. 24 Melinga Court)				
21 Short	Some Movement (3 persons counted)	Low Activity	Nil services	10 = low vulnerability PAW - Width (5m) - Length (23m) - Straight shape. - Abuts 3 properties including a Department of Communities group dwelling site (No. 38 Walanna Drive).	Connects north-south between Melinga Court and PAW No. 18 (Non-Essential).	Low connectivity role: - Low pedestrian use. - Low CPTED vulnerability. - Connects to bus stops on Walanna Drive. - PAW Nos 18 (Non-Essential) and 21 (Non-Essential) provide access to an isolated area of POS unconnected with the Greenway. Closure of either PAW has the potential to reduce its surveillance and safety.	100% oppose 'Non-Essential' recommendation. (2 responders).	Non-Essential No change to recommendation is proposed given the low number of responses received. Recommend new directional signage and 1.5m footpath extension around bollards. Recommend closure should PAW No. 18 be closed or No. 38 Walanna Drive be redeveloped.
22 Long	Plenty of movement (5 persons counted)	Low Activity	Multiple services present: Water Corporation does not support closure. Water Corporation recommends sewer easement if closed. Telstra does not object. Western Power easement or relocation to be determined if closed. NBN Co comment required.	7 = Medium vulnerability - Width (4.5m) - Length (70m) 90 degree corner creates concealment opportunity. - Abuts 4 properties including 2 privately owned grouped housing developments.	Connects east-west between Melinga and Mireen Courts via POS located at Mireen Court cul-de-sac head. Connections to wider network: - Mireen Court and Boona Court via PAW No. 24 (Essential); and - Melinga Court and Walanna Drive Underpass via PAW No. 20 (Essential). Not directly connected to northern or western areas of Greenway.	Low to medium connectivity role: - Low to medium pedestrian use. - Medium CPTED vulnerability. - Moderate east-west connection. - Connects to bus stops on Walanna Drive. - Design flaws (shape) reduce safety in movement network.	100% oppose 'Non-Essential' recommendation. (7 responders).	Non-Essential Recommendation is proposed to change to 'Non-Essential' in response to feedback received and urban design features within the PAW which includes a 90 degree corner which acts to impede necessary sightlines. Multiple services present (Water Mains, Sewer, NBN, Power, Telstra). Closure will require the support of all service agencies. Recommend new directional signage, 1.5m footpath extension around bollards and lighting along east-west path. Recommend review should Nos. 24 or 27 Melinga Court be redeveloped.
23 Long	Little Movement (1 person counted)	High Activity	Nil services	7 = Medium vulnerability - Width (3m) - Length (26m) - Straight shape - Abuts 2 properties.	Connects north-south between Walanna Drive and PAW No. 24 (Essential). Not directly connected to northern or western areas of Greenway.	High connectivity role: - Low to High pedestrian use. - Medium CPTED vulnerability . - Important north-south connection. - Connects to fast food restaurants and bus stops on Walanna Drive. - PAW Nos. 23 (Essential) and 24 (Essential) provide access to an isolated area of POS unconnected with the wider Greenway. Closure of either PAW has the potential to reduce its surveillance and safety.	60% support 'Essential' recommendation. (3 responders).	Essential Recommend new directional signage and 1.5m footpath extension around bollards.

24 Short	Little Movement (2 persons counted)	Low Activity	Multiple services present: Water Corporation does not support closure of water mains. Water Corporation recommends sewer easement if closed. Telstra does not object Western Power easement or relocation to be determined if closed.	10 = low vulnerability PAW - Width vary (3m, 15) - Length (112m) - Straight shape - Abuts 3 properties including 1 grouped housing site owned by Department of Communities at No. 20 Boona Court.	Connects east-west between Mireen and Boona Courts. Connections to wider network: - Mireen Court and Melinga Court via PAW No. 22 (Essential). - Not directly connected to northern or western areas of Greenway.	Low to Medium connectivity role: - Low to medium pedestrian use. - Low CPTED vulnerability. - Important east-west connection. - PAW Nos 23 (Essential) and 24 (Essential) provide access to an isolated area of POS unconnected with the wider Greenway. Closure of either PAW has the potential to reduce its surveillance and safety.	50% support 'Essential' recommendation (2 responders).	Essential Multiple services present (Water mains, Sewer, Telstra, Power) Recommend new directional signage and 1.5m footpath extension around bollards. Recommend review should No. 20 Boona Court be redeveloped.
25 Short	Plenty of movement (6 persons counted)	Low Activity	Multiple services present: Water Corporation does not support closure. Water Corporation recommends sewer easement if closed. Western Power easement or relocation to be determined if closed.	9 = Medium vulnerability - Width vary (3m, 15m) - Length (25m) - Straight shape - Abuts 2 properties (1 owned by Department of Communities)	Connects north-south between Gillon Street and Jackson Road via the Lurnea Place cul-de-sac head.	High connectivity role: - Low to medium pedestrian use. - Medium CPTED vulnerability. - Important north-south connection. - Connects to bus stops on Gillon Street. - Provides direct shortest and most direct path to Greenway.	100% support 'Essential' recommendation (4 responders).	Essential Multiple services present (Water Mains, Sewer, Power). Recommend new directional signage and 1.5m footpath extension around bollards. Preferred new north-south local bike route location connecting through Lurnea Place for future Bike Plan.
26 Long	Little Movement (1 person counted)	Moderate Activity	Water Corporation recommends sewer easement if closed.	7 = Medium vulnerability - Width vary (3m, 12m) - Length (90m) - Curved shape - Concealment indentation present (15m wide). - Abuts 7 properties.	Connects north-south between Gillon Street and Jackson Road via PAW No. 8 (Essential) and Boongala Place. Identified in Joint Bike Plan as north-south bike path through PAW No. 9 (Non-Essential).	Low to Medium connectivity role: - Low to medium pedestrian use. - Medium CPTED vulnerability. - Alternative north-south connections to Jackson Road are available via: - PAW No. 25 (Essential) to Lurnea Place; and - PAW No. 27 (Essential) via PAW No. 8 (Essential).	80% oppose 'Non-Essential' recommendation (12 responders).	Essential Recommendation is proposed to be changed to 'Essential' in response to community feedback identifying PAW as essential to local movement network. Recommend new directional signage and trial fencing off concealment indentation. Identify alternative north-south bike path between Jackson Road and Gillon Street in future Bike Plan.
27 Short	Little Movement (2 persons counted)	Low Activity	Multiple services present: Water Corporation does not support closure.	10 = low vulnerability PAW - Width (3m) - Length (32m) - Straight shape	Connects north-south between Gillon Street and Jackson Road via PAW No. 8 (Essential) and Boongala Place.	High connectivity role: - Low to medium pedestrian use. - Medium CPTED vulnerability. - Important north-south connection.	100% support 'Essential' recommendation (1 responder).	Essential Multiple services present (Water mains, Power).

			Western Power easement or relocation to be determined if closed.	Abuts properties.		- Connects to bus stops on Gillon Street. - Provides direct shortest and most direct path to Greenway.		Recommend new directional signage and 1.5m footpath extension around bollards.
28 Long	Little Movement (2 person counted)	High Activity	Water Corporation recommends sewer easement if closed.	7 = Medium vulnerability - Width vary (3m, 8m) - Length (130m) - Curved shape with dog leg kink - Abuts 12 properties.	Connects north-south between Gillon Street and Jackson Road via PAW No. 7 (Non-Essential) or PAW No. 8 (Essential).	Low connectivity role: - Low to high pedestrian use. - Medium CPTED vulnerability. - Alternative north-south connections to Jackson Road are available via PAW Nos. 27 (Essential) and 29 (Essential).	96% oppose 'Non-Essential' recommendation (46 responders).	Non-Essential No change in recommendation recommended as PAW is subject to current closure with DPLH. No improvements recommended as PAW is subject to closure application with DPLH.
29 Short	Some Movement (4 persons counted)	Moderate Activity	Multiple services present: Water Corporation does not support closure. NBN Co comment required	9 = Medium vulnerability - Width (3m) - Length (37m) - Straight shape - Path to road missing. - Abuts 2 properties.	Connects north-south between Gillon Street and Jackson Road via PAW Nos. 5 (Essential) and 7 Non-Essential).	High connectivity role: - Low to medium pedestrian use - Medium CPTED vulnerability - Provides direct shortest and most direct path to Greenway.	66% oppose 'Essential' recommendation (2 responders).	Essential No change in recommendation recommended given low number of responses received (2). Multiple services present (Water mains, NBN Co). Recommend new directional signage, 1.5m footpath extension around bollards and additional path connecting between PAW and road.
30 Long	No movement (no persons counted)	Moderate to high Activity Movement concentrated toward southern entry	Water Corporation recommends sewer easement if closed.	7 = medium vulnerability - Width varies (5m, 8.4m) - Length (130m) - Curved shape - Abuts 15 properties.	Connects north-south between Gillon Street and Jackson Road via PAW No. 5 (Essential) and 4 (Essential).	Low connectivity role: - Low to moderate pedestrian use. - Medium CPTED vulnerability. - Connects to bus stops on Gillon Street. - Alternative routes available via PAW Nos. 29 (Essential) and 31 Essential).	94.5% oppose 'Non-Essential' recommendation (12 responders).	Essential Recommendation is proposed to be changed to 'Essential' in response to community feedback identifying PAW as essential to local movement network. Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.
31 Short	Little Movement (2 persons counted)	Low Activity	Multiple services present: Water Corporation does not support closure. Western Power easement or relocation to be determined if closed.	9 = medium vulnerability - Width 3m - Length (39m) - Straight shape - Path to road missing. - Abuts 2 properties.	Connects north-south between Gillon Street and Jackson Road via PAW No. 4 (Essential).	High connectivity role: - Low pedestrian use. - Medium CPTED vulnerability. - Important north-south connection. - Provides direct shortest and most direct path to Greenway.	50% support 'Essential' recommendation (3 responders).	Essential Multiple services present (Water mains, Power). Recommend new directional signage and additional path connecting between PAW and road.

32 Long	Most movement (8 persons counted)	High Activity Movement is concentrated toward the southern entry	Water Corporation recommends sewer easement if closed.	7 = medium vulnerability - Width varies (3m, 16.5m) - Length (212m) - Curved shape - Concealment indentation (6- 9m wide) - Abuts 20 properties.	Connects north-south between Gillon Street and Jackson Road via PAW Nos. 1 (Essential) and 3 Non- Essential).	Low connectivity role: - High pedestrian use. - Medium CPTED vulnerability. - Connects to bus stops on Gillon Street. - Alternative routes available via PAW No. 31 (Essential).	87% oppose 'Non- Essential' recommendation (19 responders).	Essential Recommendation is proposed to be changed to 'Essential' in response to community feedback identifying PAW as essential to local movement network. Recommend new directional signage, 1.5m footpath extension around bollards and trial fencing off concealment indentation.
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