University of Northampton

Evaluation Report

Delapré Cycling and Walking Social Prescription – Baseline Phase

For Delapré Abbey Preservation Trust and West Northamptonshire Council

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Project Brief

West Northamptonshire Council, in partnership with Delapré Abbey Preservation Trust, secured £93,000 of funding to conduct a feasibility study for the establishment of a cycling and walking social prescription programme in the grounds of Delapré Abbey. This funding has been awarded by the Department for Transport's Active Travel Fund – Active Travel Social Prescription Pilot. The objectives of the project were to deliver a pilot able to:

1. Address local community identified needs relating to underrepresented groups, high levels of deprivation and health inequalities.
2. Actively promote increased levels of physical activity through cycling and walking.
3. Demonstrate clear links between infrastructure development and the proposed social prescribing schemes.
4. Support modal shift to active travel providing people with travel choices and supporting changes in behaviour.

The feasibility study was used to design and develop the social prescription pilot, which includes a Cycling and Walking Hub, cycle hire, volunteering and skills development, and Delapré Park pathway upgrades (Figure 1). The feasibility study was submitted to the Department for Transport on the 29th of April 2022 as part of the next round of pilot funding application to secure a grant, which will be used, in addition to locally sourced funding, to establish the Cycling and Walking Social Prescription Programme, Cycling and Walking Hub, and Delapré Park pathway upgrades.

The University of Northampton was appointed to conduct a baseline evaluation, as part of the feasibility study, to determine current route use through Delapré Park and underpinning motivations, as well as public suggestions about the proposed delivery of the Cycling and Walking Social Prescription Programme and the Cycling and Walking Hub at Delapré Abbey.

Aims

The aims of this research were to:

1. Determine current route use for active modes of travel through Delapré Park, Northampton, UK.

2. Understand public motivations for using existing routes for active modes of travel through Delapré Park, Northampton, UK.

3. Explore public opinions about how a new Cycling and Walking Social Prescription Programme and Hub should be delivered in Northampton, UK.

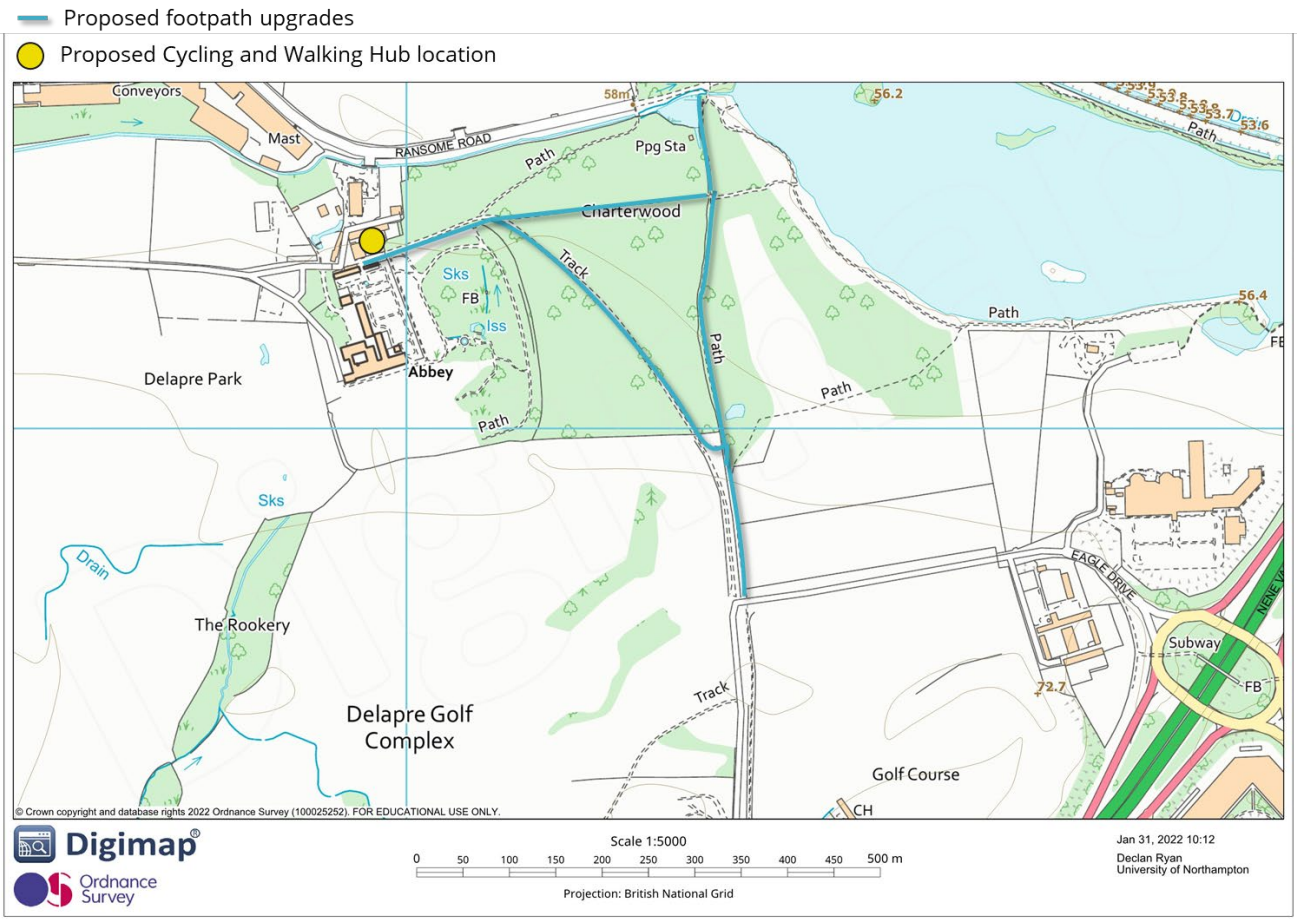


Figure 1. Proposed pathway improvements and the Cycling and Walking Hub location within Delapré Park.

Key Findings

Monitored Locations

Delapré Park was split into seven Segments to monitor footfall, using a combination of automated infrared counters, manual counts, and Strava Metro. The Segments are outlined in Figure 2 and are used as location IDs for the Current Route Use results. Baseline manual counts and Strava Metro observations were also recorded on one Segment in two control parks (Hunsbury Hill and St. Crispin's Park, Northampton). Details of Segment locations and control park selection processes are provided in the Methods section.

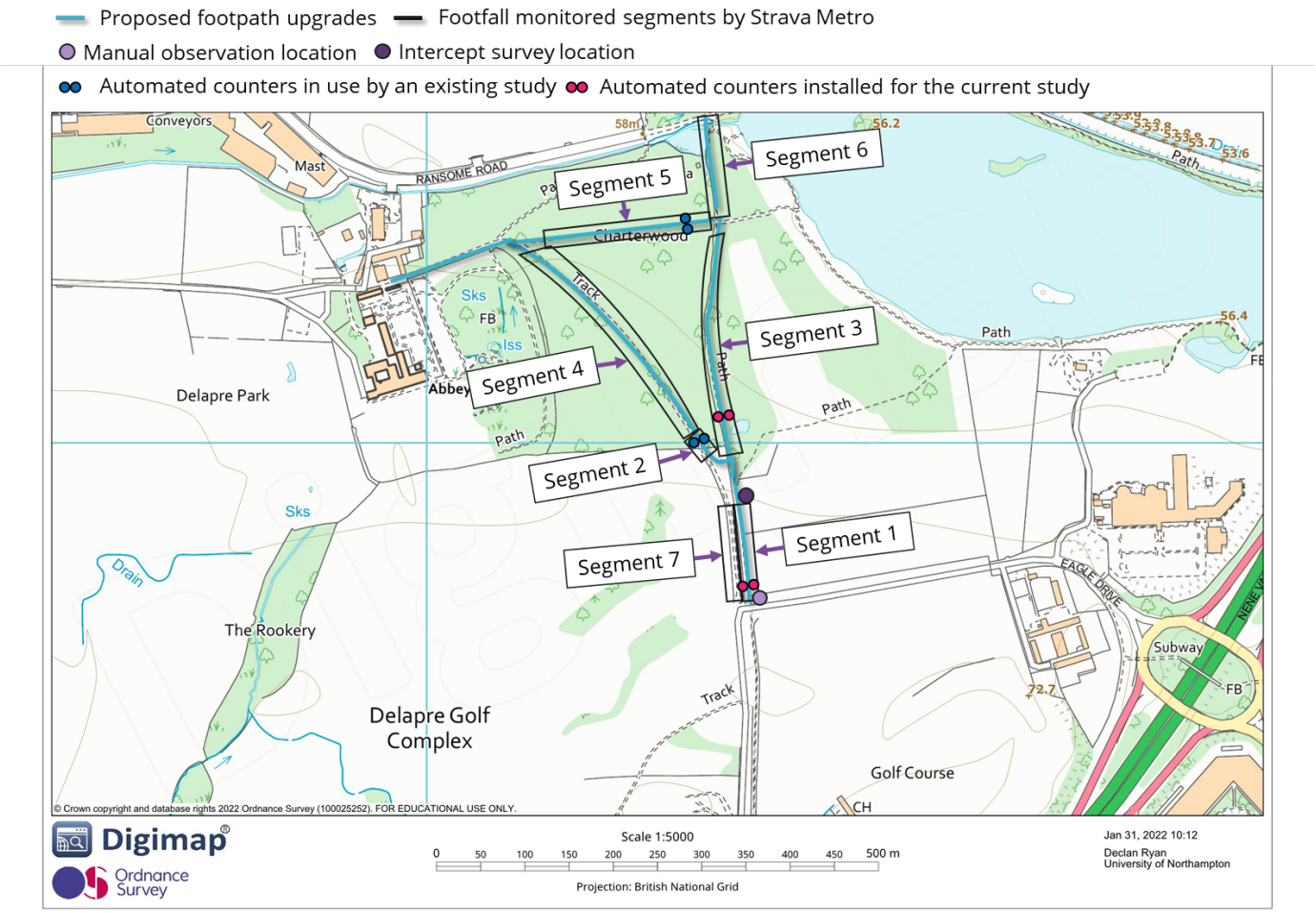


Figure 2. Breakdown of Delapré Park footpaths into observation Segments for footfall monitoring with automated infrared counts, manual counts, and Strava Metro.

Most of the Segments within Delapré Park are comprised of compacted trodden mud surfaces with differing underlayers, such as concrete or aggregate (Table 1). Many of the paths within the park are described as 'muddy' and can be difficult to access during Winter months due to a breakdown in the surfaces of the paths.

Table 1. Images of each Segment with Delapré Park. Photos taken in March 2022.

Segment 1	Segment 5
	
Segment 2	**Segment 6**
	
Segment 3	**Segment 7**
	
Segment 4	
	

Current Route Use

Manual Counts

In **Delapré Park (intervention)**, Segment 1 total footfall on the two weekday monitoring days was 96 people, with an even split in direction of travel (Table 2). Females represented 43% of total footfall (Males: 57%), while Black, Asian and Minority Ethnicities represented 18% of footfall (White Ethnicity: 82%). Adults represented the majority of total footfall (77%), followed by Older Adults (16%), Teen (5%), Infant (6%) and Child (1%). The most common activity was walking and running (43%), followed by riding a bike (23%) and dog walking (22%; Figure 3A). Thirty-nine people were travelling in groups, ranging from 2 – 5 people (average group size: 2.5 people). Segment 1 total footfall on the two weekend monitoring days was 118 people, with 61% entering Delapré Park (Exiting to Eagle Drive: 39%; Table 2). Females represented 50% of total footfall (Males: 50%), while Black, Asian and Minority Ethnicities represented 9% of footfall (White Ethnicity: 91%). Adults represented the majority of total footfall (63%), followed by Older Adults (22%), Teen (8%), Child (8%) and Infant (2%). The most common activity was walking and running (62%), followed by dog walking (20%), and riding a bike (16%; Figure 3B).

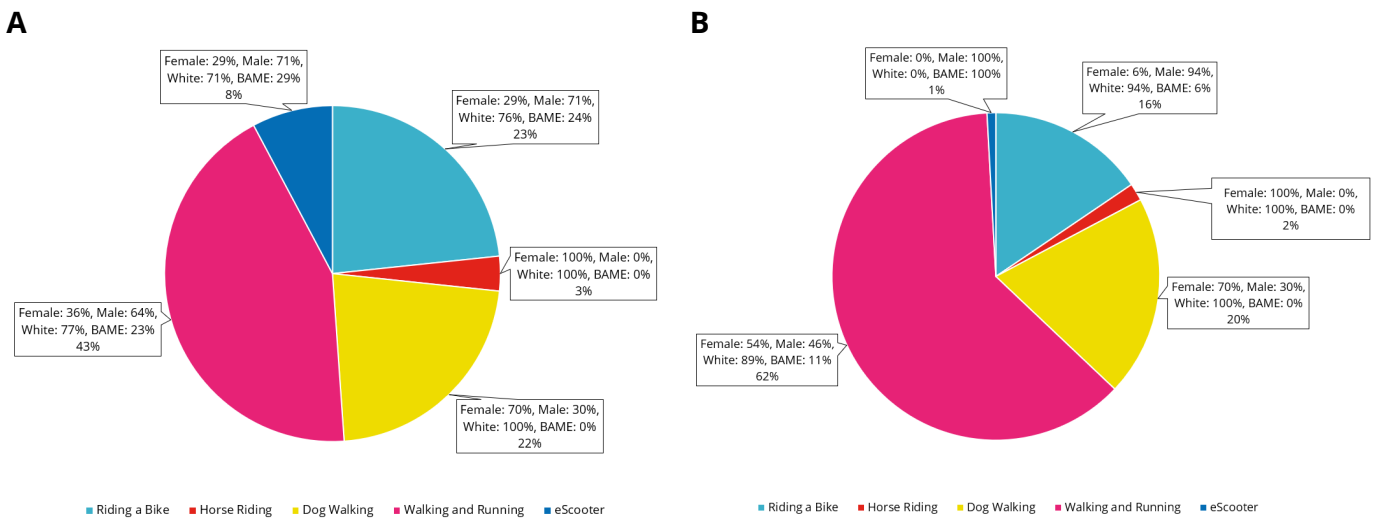


Figure 3. Physical activity type percentages of total weekday (A) and weekend (B) manual counts for Delapré Park. Data labels represent physical activity type demographic breakdown (% of physical activity type total) and physical activity type percentage. Weekday monitoring dates: Monday 21st March 2022 and Wednesday 23rd March 2022. Weekend monitoring dates: Saturday 26th March 2022 and Sunday 27th March 2022.

In **Hunsbury Hill (control)**, total footfall on the two weekday monitoring days was 138 people (Table 2). Females represented 44% of total footfall (Males: 56%), while Black, Asian and Minority Ethnicities represented 4% of footfall (White Ethnicity: 96%). Adults represented the majority of total footfall (57%), followed by Older Adults (25%), Teen (19%), Child (5%), and Infant (2%). The most common activity was walking and running (61%), followed by dog walking (30%), and riding a bike (7%; Figure 4A). Sixty-seven

people were travelling in groups, ranging from 2 – 7 people (average group size: 2.6 people). Total footfall on the two weekend monitoring days was 245 people (Table 2). Females represented 46% of total footfall (Males: 54%), while Black, Asian and Minority Ethnicities represented 5% of footfall (White Ethnicity: 95%). Adults represented the majority of total footfall (65%), followed by Children (24%), Older Adults (12%), Teen (8%) and Infant (3%). The most common activity was walking and running (52%), followed by dog walking (33%), and riding a bike (15%; Figure 4B).

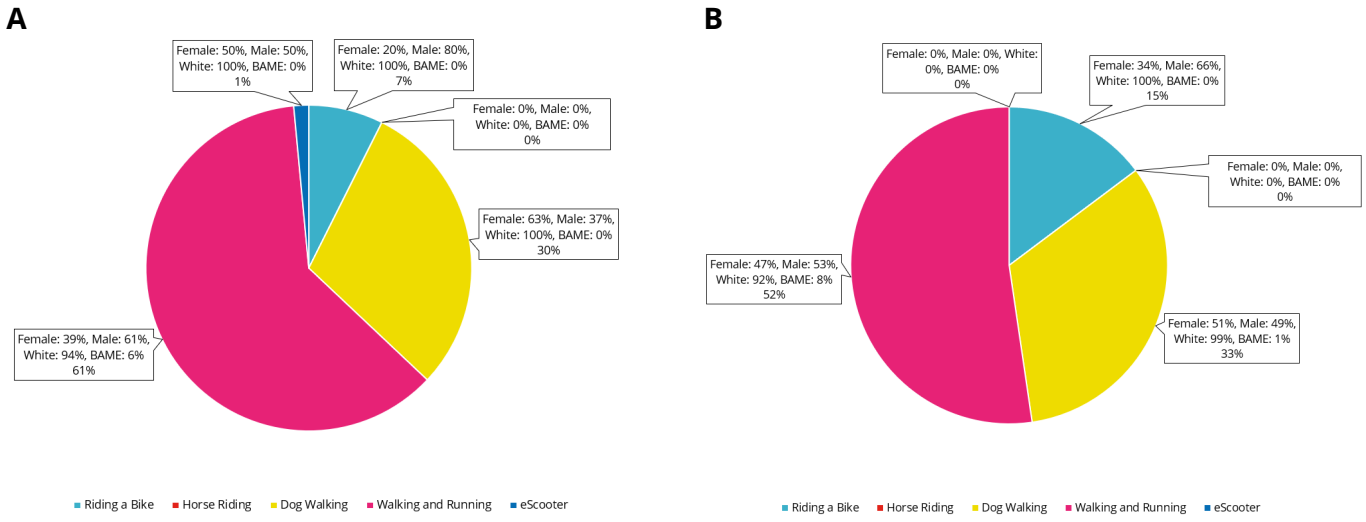


Figure 4. Physical activity type percentages of total weekday (A) and weekend (B) manual counts for Hunsbury Hill. Data labels represent physical activity type demographic breakdown (% of physical activity type total) and physical activity type percentage. Weekday monitoring dates: Monday 21st March 2022 and Wednesday 23rd March 2022. Weekend monitoring dates: Saturday 26th March 2022 and Sunday 27th March 2022.

In **St. Crispin's Park (control)**, total footfall on the two weekday monitoring days was 121 people (Table 2). Females represented 57% of total footfall (Males: 43%), while Black, Asian and Minority Ethnicities represented 15% of footfall (White Ethnicity: 85%). Adults represented the majority of total footfall (63%), followed by Older Adults (17%), Child (16%), Infant (5%), and Teen (4%). The most common activity was walking and running (56%), followed by dog walking (36%) and riding a bike (8%; Figure 5A). Fifty-nine people were travelling in groups, ranging from 2 – 8 people (average group size: 3.5 people). Total footfall on the two weekend monitoring days was 145 people (Table 2). Females represented 47% of total footfall (Males: 53%), while Black, Asian and Minority Ethnicities represented 6% of footfall (White Ethnicity: 94%). Adults represented the majority of total footfall (61%), followed by Older adults (23%), Child (10%), Teen (8%), and Infant (4%). The most common activity was walking and running (50%), followed by dog walking (45%), and riding a bike (4%; Figure 5B).

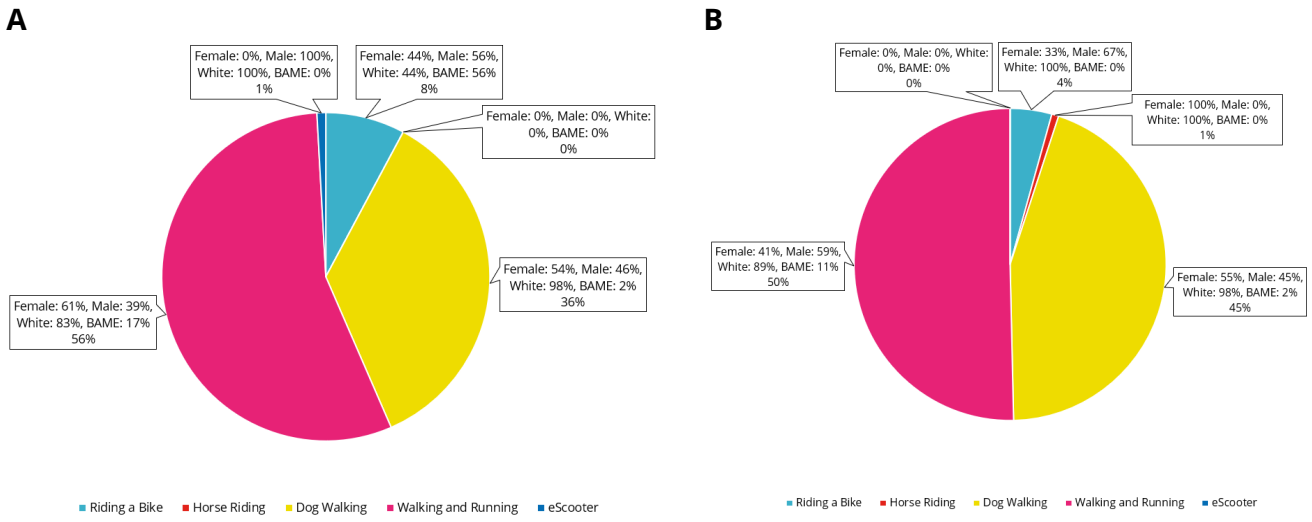


Figure 5. Physical activity type percentages of total weekday (A) and weekend (B) manual counts for St. Crispin's Park. Data labels represent physical activity type demographic breakdown (% of physical activity type total) and physical activity type percentage. Weekday monitoring dates: Monday 21st March 2022 and Wednesday 23rd March 2022. Weekend monitoring dates: Saturday 26th March 2022 and Sunday 27th March 2022.

Table 2. Total weekday and weekend manual counts at intervention and control locations.

Location	Direction of Travel	Total Weekday Footfall (*n*)†	Total Weekend Footfall (*n*)*	Difference
Delapré Park – Segment 1	Total	96	118	+22
	Into Delapré Park	48%	61%	+13
	Out of Delapré Park	52%	39%	-13
Hunsbury Hill	Either Direction	138	245	+107
St. Crispin's Park	Either Direction	121	145	+24
		Average Weekday	**Average Weekend**	
Weather	Temperature (˚C)	9.41 (2.62)	9.43 (1.64)	+0.02
	Rainfall (in)	0.00 (0.00)	0.00 (0.00)	0.00
	Wind (mph)	1.05 (0.35)	1.60 (0.57)	+0.55

† Monitoring dates: Monday 21st March 2022 and Wednesday 23rd March 2022. * Monitoring dates: Saturday 26th March 2022 and Sunday 27th March 2022. Weather presented as mean (standard deviation) for the monitoring days.

Delapré Park Intercept Survey

During weekdays, 39% (*n* = 11) of intercepted journeys were for commuting purposes with 61% (*n* = 17) for recreation. The average self-reported estimated time to complete the commuting journeys was 30 minutes, while recreational activities were estimated to last 50 minutes. The most common transport mode for commuting and recreation through Delapré Park was walking. Fifty-four percent of commuters were using the route through Delapré Park 2 – 5 times per week, while 23.5% of recreational route users were visiting 2 – 5 times per week or weekly. During the weekend, 9% (*n* = 2) of intercepted journeys were for commuting purposes (recreation: 91%, *n* = 21). The average self-reported estimated time to complete the commuting journeys was 30 minutes, while recreational activities were estimated to last 53 minutes. The most common transport mode for commuting and recreation through Delapré Park was walking. One hundred percent of commuters were using the route through Delapré Park 2 – 5 times per week, while 23.8% of recreational route users were visiting 2 -5 times per week.

Commuters were also asked about their motivations for using the route through Delapré Park for their journey. Sixty-nine percent strongly agreed that they could go directly to their destination and it was the most convenient route for them. Forty-six percent strongly agreed that walking or cycling was the best transport option for their journey and 85% strongly agreed that the journey was better for the environment. Seventy-seven percent strongly agreed that they can save money by commuting on foot or riding a bike as well as liking the surroundings on the route, while 85% strongly agreed that it was good exercise for them. Interestingly, only 23% strongly agreed that the route was safer than other ways of travelling (Figure 6).

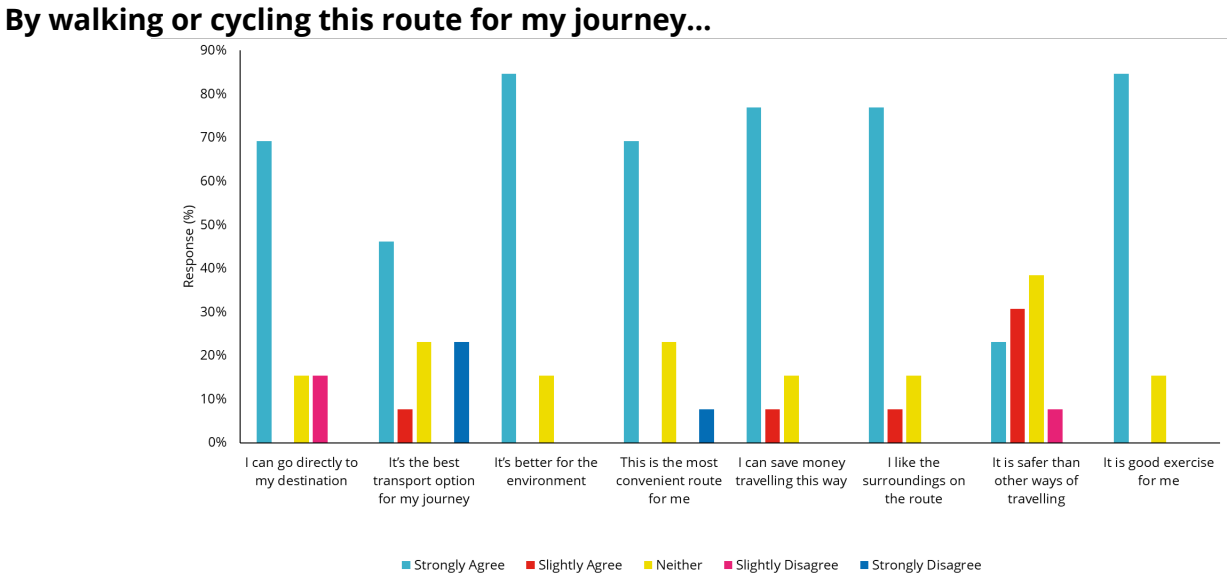
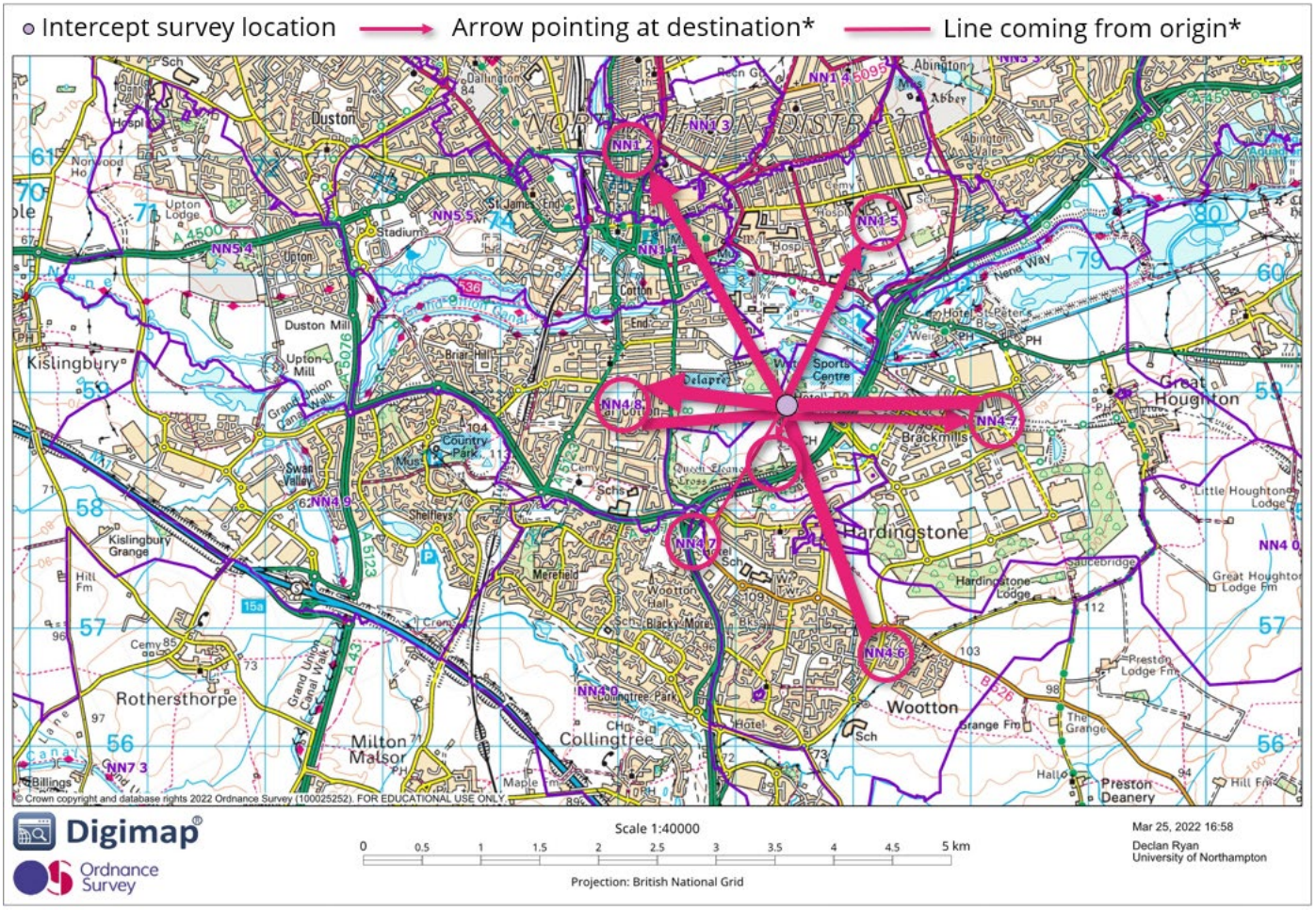


Figure 6. Motivations for using the route through Delapré Park for commuting purposes during weekdays and weekends. Responses from intercept survey.

The response rate for intercept surveys was 53.8% on weekdays and 88.5% on the weekend (Table 3). Female and male completion rates were similar (*n* = 23 and 28, respectively). There was an even spread of responses between age groups ranging from 25 – 74 years. Survey respondents were skewed to White Ethnicity and full-time employment, while 61% represented less deprived communities (deciles 6 – 10, Table 3). The most common origin and destination journeys connected Far Cotton and Brackmills Industrial Estate via Segment 1 in Delapré Park, followed by Hardingstone and the Town Centre via Segment 1 in Delapré Park (Figure 7).



* Thicker line illustrates more people travelling from the same origin or to the same destination.

Figure 7. Self-reported origin and destination journeys from weekday and weekday intercept surveys.

Table 3. Weekday and weekend intercept survey participant demographics in Delapré Park.

Self-reported characteristic	Weekday Responses		Weekend Responses	
	n	%	*n*	%
Response Rate				
Declined	24	46.2	3	11.5
Participated	28	53.8	23	88.5
Gender				
Male	18	64.3	10	43.5
Female	10	35.7	13	56.5
Age				
18-24	1	3.6	1	4.3
25-34	6	21.4	4	17.4
35-44	5	17.9	4	17.4
45-54	6	21.4	6	26.1
55-64	5	17.9	5	21.7
65-74	5	17.9	2	8.7
75-84	-	-	1	4.3
Ethnicity				
White	23	82.1	23	100
Black/Black British	1	3.6	-	-
Asian/Asian British	3	10.7	-	-
Mixed	-	-	-	-
Other	1	3.6	-	-
Employment				
Full time	13	46.4	10	43.5
Part time	5	17.9	8	34.8
Retired/Student/Other	10	35.7	5	21.7
Physical Activity Status*				
Active	14	50.0	14	73.9
Fairly Active	8	28.6	4	17.4
Inactive	6	21.4	2	8.7
Walking during intercept survey	24	85.7	23	100
Riding a bike during intercept survey	4	14.3	-	-
Home Postcode Index of Multiple Deprivation (Decile)				
1 (most deprived)	1	4.3	1	4.3
2	3	13.0	2	8.7
3	1	4.3	-	-
4	5	21.7	3	13.0
5	2	8.7	-	-
6	1	4.3	-	-
7	2	8.7	5	21.7
8	4	17.4	3	13.0
9	4	17.4	3	13.0
10 (least deprived)	-	-	6	26.1
Home Postcode distance from Delapré Park (miles)				
Less than or equal to 1	11	39.3	9	39.1
1 to 3	15	53.6	12	8.7
More than 3	2	7.1	2	52.2

* Active: 150 minutes per week or more of moderate intensity physical activity. Fairly Active: 30 – 149 minutes per week of moderate intensity physical activity. Inactive: Less than 30 minutes per week of moderate intensity physical activity.

Automated Counts

Hourly Footfall Patterns

On Segment 1, the highest footfall when exiting Delapré Park onto Eagle Drive occurred between 07:00 – 09:00, while the highest footfall into Delapré Park occurred in the afternoon between 15:00 – 18:00, during weekdays (Figure 8). These patterns suggest that the Segment is being used as a commuting route to Brackmills Industrial Estate. Sunday is the most popular weekend day for footfall, with peak footfall timings fluctuating throughout the day between 11:00 – 17:00. Saturday follows similar patterns to Sunday but with lower footfall (Figure 8).

On Segment 2, the highest footfall heading out of Delapré Park towards Eagle Drive occurred between 07:00 – 18:00, peaking at 08:00 – 09:00, while the highest footfall into Delapré Park occurred between 11:00 – 18:00, peaking at 17:00 – 18:00, during weekdays (Figure 9). During weekends, the highest footfall heading out of Delapré Park towards Eagle Drive occurred between 10:00 – 16:00 and heading into Delapré Park, the highest footfall occurred 09:00 – 16:00 (Figure 9).

On Segment 3, the highest footfall heading out of Delapré Park towards Eagle Drive occurred between 07:00 – 09:00 while the highest footfall into Delapré Park occurred at 10:00 – 14:00 and 16:00 – 18:00, during weekdays (Figure 10). On weekends, the highest footfall out of and into Delapré Park occurred between 10:00 – 17:00, with higher footfall occurring on Sunday, in comparison to Saturday (Figure 10).

On Segment 5, an automated counter was placed on one of the two paths so total footfall cannot be estimated. However, the highest footfall towards Delapré Abbey occurred between 10:00 – 18:00 on weekdays and weekends (Figure 11). Similarly, the highest footfall towards Delapré Lake occurred between 09:00 – 18:00 on weekdays and weekends (Figure 11).

Overall, the data suggests that the paths connecting to Eagle Drive are offering a commuter route whilst the path connecting Delapré Abbey to Delapré Lake is used as a recreational route.

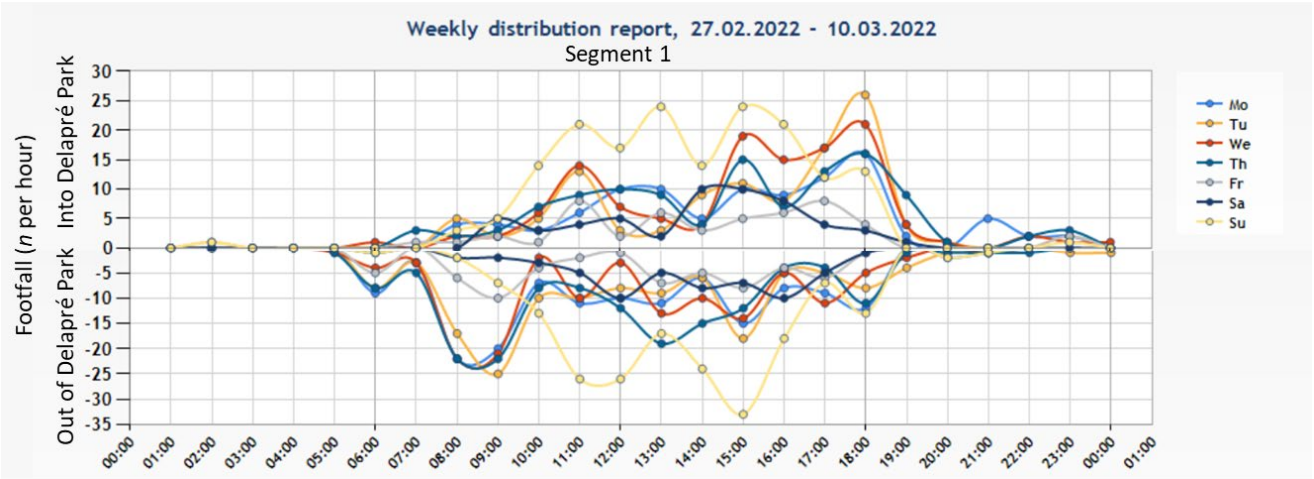


Figure 8. Average automated counts hourly patterns of footfall Out of and Into Delapré Park (Segment 1).

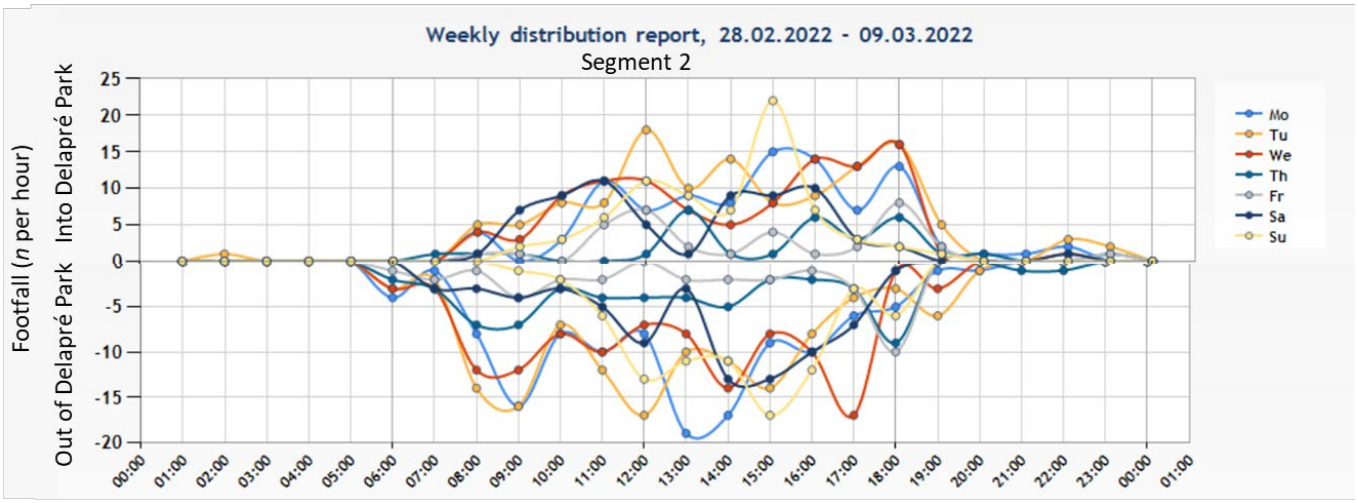


Figure 9. Average automated counts hourly patterns of footfall Out of and Into Delapré Park (Segment 2). Outlier data was removed for the 27.02.2022.

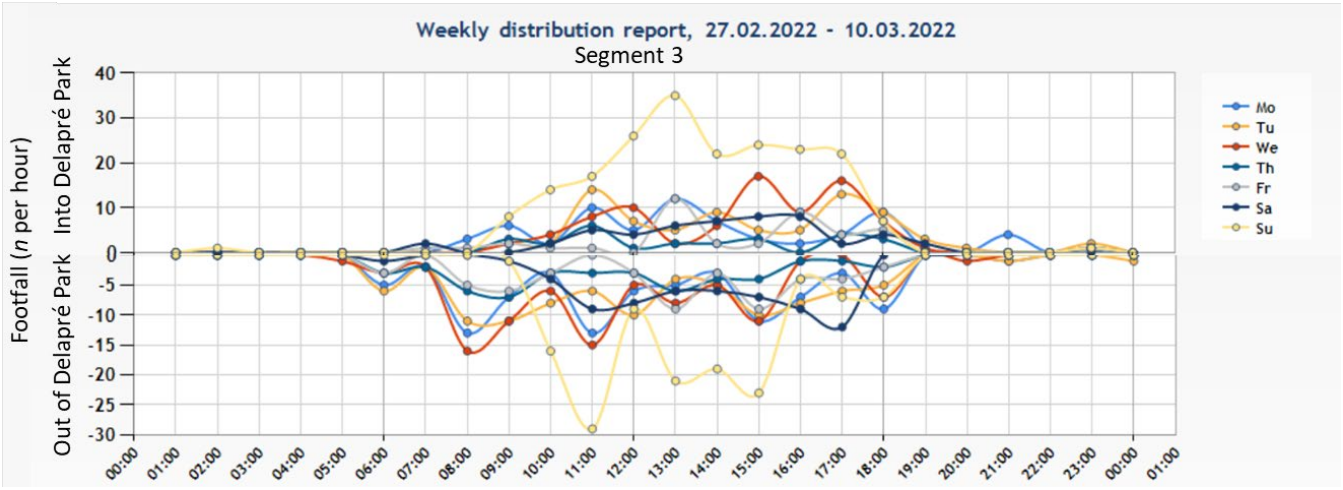


Figure 10. Average automated counts hourly patterns of footfall Out of and Into Delapré Park (Segment 3).

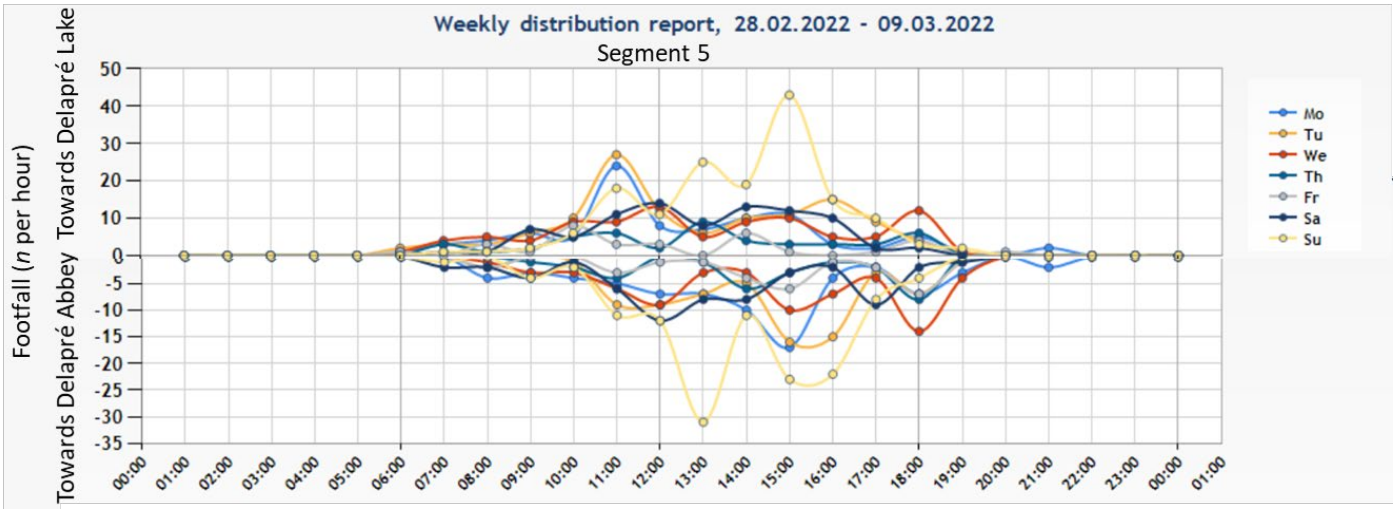


Figure 11. Average automated counts hourly patterns of footfall Towards Delapré Abbey and Towards Delapré Lake (Segment 5). Outlier data was removed for the 27.02.2022.

Daily Footfall

Automated infrared count data suggested that Segment 1 had the highest footfall in both directions during a weekday, with the other Segments displaying similar levels of footfall to one another (Table 4). On the weekend, Segment 5 had the highest footfall in either direction, with the other Segments displaying similar levels of footfall to one another. All Segments displayed an increase in footfall at the weekend in either direction, in comparison to weekdays, apart from Segment 1 heading out of Delapré Park towards Eagle Drive (Table 4).

Table 4. Average automated counter footfall and weather for weekday and weekend within Delapré Park, 28th February – 6th March 2022. Data presented as mean (standard deviation).

Segment	Direction of Travel	Average Weekday Footfall (*n* per day)	Average Weekend Footfall (*n* per day)	Difference
1	Into Delapré Park	45 (6)	56 (1)	+11
	Out of Delapré Park	63 (11)	62 (4)	-1
2	Into Delapré Park	38 (9)	71 (4)	+33
	Out of Delapré Park	46 (13)	78 (6)	+32
3	Into Delapré Park	30 (7)	68 (25)	+38
	Out of Delapré Park	46 (3)	58 (7)	+12
5	Towards Delapré Lake	38 (10)	121 (49)	+83
	Towards Delapré Abbey	30 (4)	95 (49)	+65
		Average Weekday	**Average Weekend**	
Weather*	Temperature (˚C)	6.96 (0.95)	5.42 (0.59)	-1.54
	Rainfall (in)	0.15 (0.10)	0.06 (0.06)	-0.09
	Wind (mph)	2.38 (0.86)	3.60 (0.99)	+1.22

* Historical monthly data accessed from weather station, Northampton – INORTHAMP95, via Weather Underground (date accessed: 17th March 2022). URL: https://www.wunderground.com/dashboard/pws/INORTHAM95/table/2021-12-31/2021-12-31/monthly

Meteorological Seasonality

Automated infrared counts from ongoing research, which have been monitoring two paths within the current evaluation for the previous year, suggested that footpath use is influenced by the seasons. Footfall on Segment 2 suggested that path-use was significantly lower in Winter in comparison to Spring, Summer, and Autumn during 2021 – 2022 (Table 5). No other seasonal differences in footfall were apparent. Follow-up observations will need to take place during Spring or Summer to avoid seasonality bias on the pre-post intervention comparisons.

Table 5. Meteorological seasonal differences in automated infrared monitored footfall on Segment 2 of the footpaths within Delapré Park. Data presented as median (interquartile range).

Season	Dates of observation	Median Daily Footfall (*n* per day)†	Significance value (1-tailed *p* value) Bold indicates significant difference
Spring 2021 and 2022	May 2021 and March 2022*	92 (33)	vs Summer: 0.143 vs Autumn: 0.432 **vs Winter: 0.048**
Summer 2021	June – August 2021	109 (8)	vs Autumn: 0.500 **vs Winter: <0.001**
Autumn 2021	September – November 2021	94 (29)	**vs Winter: <0.001**
Winter 2021-22	December 2021 – February 2022	57 (21)	

*Automated infrared counters were installed for another research project in Delapré Park on 1st May 2021 therefore, Spring dataset is missing April data. † Daily counts were firstly smoothed by a 7-day weekly average.

Feasibility of using Strava Metro for Monitoring and Evaluation

Current Route Use

Open source GPS data from the social media app, Strava, was used to estimate footfall within Delapré Park and the control parks. Strava Metro accumulates route use, from publicly viewable Strava memberships, into monthly totals on each Segment for 'Cycling' and 'Walking, Running and Hiking'. Demographics for Gender (Male, Female or Not Specified) are obtained from the Strava members' public profiles. Descriptive statistics (Table 6) of Cycling footfall in Delapré Park throughout the four seasons was ranked (highest footfall to lowest):

1. Segment 1
2. Segment 6
3. Segment 5
4. Segment 2
5. Segment 3
6. Segment 7
7. Segment 4

NB: Ranking calculated by summing monthly ranks.

This ranking suggested that Delapré Park is being used by people on bicycles to connect to other surrounding areas, such as Ransome Road/University of Northampton (connected by Segment 6) or Eagle Drive/Brackmills Industrial Estate (connected by Segment 1). As Segment 2 had higher Cycling

footfall than Segment 4, it suggested that people on bicycles are accessing other footpaths that lead into the neighbouring Golf Course, Delapré Abbey's South Lawn or other informal paths, rather than connecting through to Segment 5, or *vice versa*.

For Walking, Running, and Hiking, descriptive statistics of Segment footfall across the four seasons (Table 6) was ranked (highest footfall to lowest):

1. Segment 5
2. Segment 1
3. Segment 6
4. Segment 2
5. Segment 3
6. Segment 7 and Segment 4

NB: Ranking calculated by summing monthly ranks.

Segment footfall for Walking followed a similar pattern to Cycling, with the North (Segment 6) and South (Segment 1) access points to Delapré Park appearing as the most popular, after Segment 5. Segment 5 is known as a recreational rather than active travel route, as visitors often use the Segment to access the walking loop around Delapré Lake.

Ranking of Segment footfall was fairly consistent across the four seasons as each Segment's ranking either did not change or changed by 1 position for both Cycling and Walking. Only for Cycling did Segment ranking change by 2 or more positions between the seasons. Segment 3 was ranked 6th in Spring and Summer for Cycling footfall but moved up to 3rd in Winter. Segment 5 ranked 2nd in Summer for Cycling footfall but moved down to 4th in Winter. Segment 7 ranked 4th in Spring for Cycling footfall but moved down to 6th in Autumn and Winter.

Overall, Strava Metro data suggested that people are accessing Delapré Park as part of a larger recreational or active travel route, rather than using only Delapré Park for recreation. This is evident as the most popular Segments, 1 and 6, connect to the surrounding areas through footpaths, such as the Ransome Road and the University of Northampton (Segment 6), which leads to Becket's Park and the Town Centre, and Eagle Drive, which leads to Hardingstone Village and Brackmills Industrial Estate (Segment 1).

Table 6. Strava Metro monthly cycling and walking footfall within Delapré Park and control locations. Data presented as mean (standard deviation).

		Spring Mar. – May 2021	Summer Jun. – Aug. 2021	Autumn Sep. – Nov. 2021	Winter Jan. – Feb. 2021 and Dec. 2021
Weather*	Temp. (˚C)	8.61 (2.09)	17.48 (1.17)	12.40 (4.36)	5.50 (1.72)
	Total Monthly Rainfall (in)	1.82 (1.24)	2.29 (0.40)	2.02 (1.27)	3.02 (1.19)
	Wind (mph)	2.85 (0.61)	2.13 (0.15)	2.27 (0.42)	2.67 (0.21)
Segment	**Travel Mode**	**Delapré Park – Intervention Park**			
1	Cycling	105 (31)	93 (15)	77 (23)	62 (8)
	Walking	255 (80)	175 (23)	297 (220)	190 (66)
2	Cycling	65 (0)	67 (18)	50 (0)	30 (15)
	Walking	187 (58)	110 (17)	97 (26)	97 (30)
3	Cycling	55 (13)	47 (10)	37 (8)	37 (10)
	Walking	115 (52)	70 (13)	70 (56)	83 (46)
4	Cycling	33 (8)	33 (14)	25 (10)	20 (10)
	Walking	68 (13)	55 (13)	60 (41)	30 (15)
5	Cycling	80 (20)	73 (16)	62 (18)	35 (15)
	Walking	318 (75)	228 (32)	328 (199)	187 (54)
6	Cycling	97 (25)	68 (18)	65 (10)	52 (14)
	Walking	197 (60)	132 (12)	110 (40)	128 (60)
7	Cycling	65 (0)	50 (18)	35 (5)	22 (15)
	Walking	80 (23)	38 (8)	50 (7)	57 (25)
Hunsbury Hill – Control Park					
1	Cycling	107 (19)	78 (12)	57 (3)	60 (30)
	Walking	273 (86)	172 (16)	118 (12)	168 (68)
St. Crispin's Park – Control Park					
1	Cycling	28 (12)	17 (8)	15 (5)	22 (12)
	Walking	182 (40)	113 (8)	88 (18)	137 (84)

* Historical monthly data accessed from weather station, Northampton – INORTHAMP95, via Weather Underground (date accessed: 17th March 2022). URL: https://www.wunderground.com/dashboard/pws/INORTHAM95/table/2021-12-31/2021-12-31/monthly

Gender Breakdown

Cycling gender demographics were biased towards Men within the Delapré Park Strava Metro Segment data, representing 80 – 96% of footfall (for those who provided gender data). However, Walking, Running, Hiking gender demographics were more equally split with Men representing 45 – 58% of footfall in Delapré Park across the seven Segments (Figure 12). Gender breakdown was also similar for Hunsbury Hill (Cycling Men: 85%, Women: 15%; Walking Men: 52%, Women: 48%) and St. Crispin's Park (Cycling Men: 92%, Women: 8%, Walking Men: 47%, Women: 53%).

Gender demographics were typically provided by 90 – 100% of monthly Strava members. Out of the 72 observations (12 months x 6 Segments) within Delapré Park, there were only 9 instances where provision of gender demographic information (Men and Women) fell below 90%.

A. Cycling **B. Walking**

Figure 12. A) Strava Metro 2021 breakdown of men and women using the seven Segments within Delapré Park for Cycling. B) Strava Metro 2021 breakdown of men and women using the seven Segments within Delapré Park for Walking, Running, Hiking. Values represent the minimum and maximum percentage of men using the Segments. Each layer represents a Segment. Outermost ring – Segment 1, Innermost ring – Segment 7.

Validity

An automated infrared counter had been installed on Segment 2 of Delapré Park since 1st May 2021 therefore, it was possible to assess the validity of using Strava Metro as an indicator of total footfall on the Segment. Cycling and Walking Strava Metro counts were summed for each month while daily automated infrared counts bi-directional counts were summed for each month. July, October, and November were missing automated infrared footfall counts for some days (7, 2, and 4 days, respectively). In these instances, the daily average footfall for each month was calculated and replaced the missing data.

Across observation months May – December 2021, Strava Metro underestimated total footfall by 6639 counts per month, on average (95% confidence intervals: -9967 to -3311 counts per month). In addition,

as monthly footfall increased, the difference between Strava Metro and automated infrared counts also increased (Figure 13). However, a strong positive correlation (r^2 = 0.57, p = 0.015) was found between Strava Metro and automated infrared counts, which suggested that Strava Metro could be used to detect directional changes in footfall (Figure 14).

A further regression was conducted to estimate a correction factor for Strava Metro. On Segment 2 in Delapré Park, 1 Strava Metro count represented 31.832 automated infrared counts (Automated infrared counts [*n* per month] = 1878.783 + (31.832 x Strava Metro count) +/- 11.276 error, r^2 = 0.57, p = 0.03). The correlation coefficient and explained variance for the model were similar to that of previous studies that have compared Strava Metro cycling counts to manual and automated counts [1]. The current evaluation's validity check only provides a small sample from one Segment and therefore, further validation should be done to estimate a correction factor for Strava Metro that can be generalised to other paths or locations.

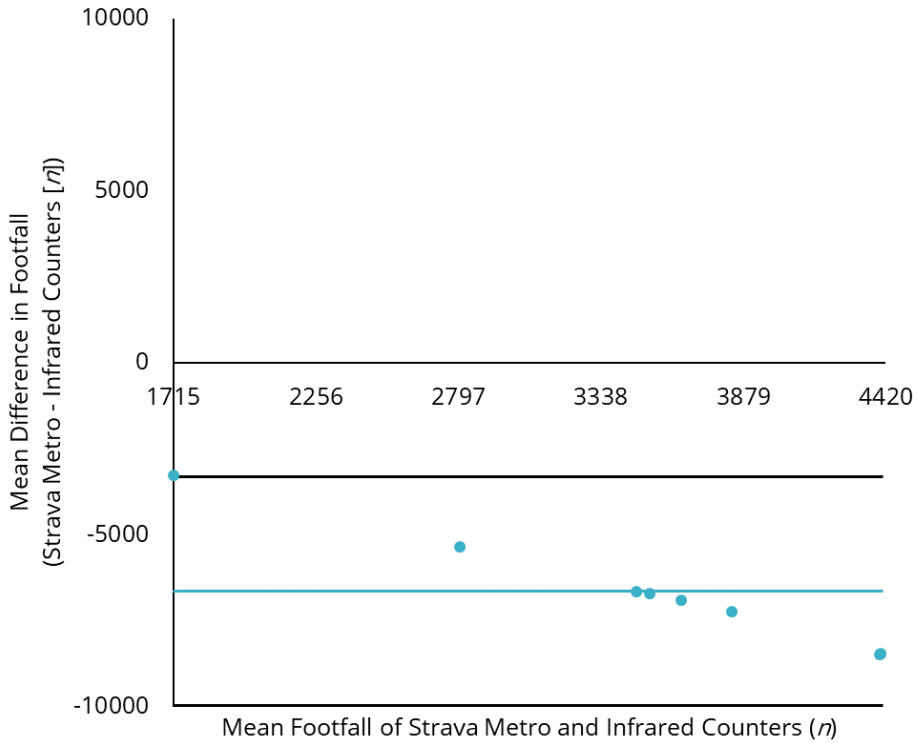


Figure 13. Bland-Altman plot displaying the underestimation of monthly footfall by Strava Metro in comparison to automated infrared counts on Segment 2 of Delapré Park. Markers indicate May – December 2021 mean differences in footfall between Strava Metro and automated infrared counts. Blue line indicates average mean difference between Strava Metro and automated infrared counts, while black lines indicate the 95% confidence intervals. *P* value was <0.001 for mean difference systematic bias and <0.001 for proportional bias correlation.

[1] Lee, K. and Sener, I.N., 2021. Strava Metro data for bicycle monitoring: a literature review. Transport reviews, 41(1), pp.27-47.

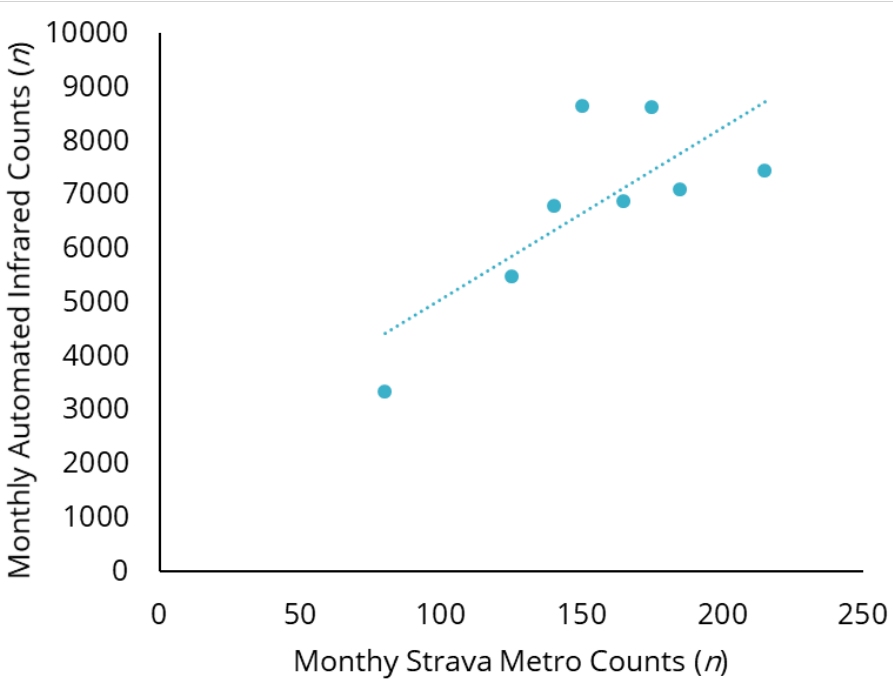


Figure 14. Correlation between monthly Strava Metro counts and monthly automated infrared counts. r^2 = 0.57, p = 0.015.

Public Suggestions for the Cycling and Walking Hub and Cycling and Walking Social Prescription

Survey Respondent Demographics

A total of 305 individuals from Northampton and surrounding areas responded to the public opinion survey. Self-reported data suggests respondents were predominately Female (62%), White (97%) and aged between 55-64 (27.3%) or 45-54 (27%). A full breakdown of the demographic data on survey respondents can be seen in Table 7. The project was grounded in the COM-B[2] ('capability', 'opportunity', 'motivation' and 'behaviour') model of behaviour change. Specific components of the Behaviour Change Wheel were identified to shape a number of the survey questions, and subsequent proposed interventions. Where relevant, findings below are discussed in how they relate to this model.

[2] Michie, S., van Stralen, M.M. & West, R. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Sci* **6,** 42 (2011). https://doi.org/10.1186/1748-5908-6-42

Table 7. Demographic Characteristics of Public Opinion Survey Respondents

Self-reported characteristic	Responses	
	n	%
Gender		
Male	113	37.9
Female	184	61.7
Prefer not to say	1	0.3
Age		
18-24	4	1.3
25-34	20	6.7
35-44	52	17.3
45-54	81	27
55-64	82	27.3
65-74	50	16.7
75-84	11	3.7
Ethnicity		
White	283	96.6
Black/Black British	1	0.3
Asian/Asian British	4	1.4
Mixed	4	1.4
Other	1	0.3
Employment		
Full time	141	47.6
Part time	57	19.3
Retired/Student/Other	98	33.1
Annual Household Income (Per Year)		
≤£6,499	6	2.2
£6,500 - £9,499	5	1.8
£9,500 - £16,105	22	8
£16,106 - £24,999	42	15.2
£25,000 - £39,999	53	19.2
£40,000 - £59,999	51	18.5
£60,000 - £74,999	25	9.1
≥£75,000	32	11.6
Do not know	40	14.5
Self-rated health		
Very good	78	26.3
Good	147	49.5
Fair	66	22.2
Bad	5	1.7
Very Bad	1	0.3
Physical Activity Status*		
Active	153	50.7
Fairly Active	82	26.9
Inactive	70	22.4

Note. N = 305. *Active: 150 minutes per week or more of moderate intensity physical activity. Fairly Active: 30 – 149 minutes per week of moderate intensity physical activity. Inactive: Less than 30 minutes per week of moderate intensity physical activity.

Current use of Delapré Park

Survey respondents were asked about their current use of Delapré Park to understand usage patterns and different demographic engagement with the space. It should be noted that the data presented is only representative of local community members that took the survey and not the whole community. From the sample, the most reported recreational activities that take place in Delapré Park were Walking (74.8%), Dog Walking (29.6%) and Riding a bike (23.9%). The frequency of space use was primarily Monthly (41.9%) followed by Weekly (29.7%), Daily (15.8%), and Annually (12.5%). Twenty-one (7%) respondents reported not currently using Delapré Park for recreational purposes. Analysis of open text responses found the primary reasons for this to be geographical location (too far away to visit regularly), lack of cycle paths and pathway conditions. Suggested improvements from respondents that do not currently use the space for recreational purposes included improved pathways and access, increased signage, and greater advertising of the space and activities offered.

Public opinions on the current quality of pathways at Delapré Park were mixed, with most responses reporting they were 'Neutral' (43.7%) on rating the currently quality of pathways (see Figure 15 for full responses.) Those that responded pathways were 'Good' or 'Very good' were asked to provide open-text responses expanding on this. Key themes drawn from the responses (n=91) were that they are well maintained, fit into the natural surroundings and are easy to follow/navigate. Those that responded pathways were 'Bad' or 'Very bad' were also asked to provide open-text responses expanding on this. Key themes drawn from the responses (n=46) were that paths get muddy and inaccessible in wet weather, limited paths for wheelchair users and pushchairs, and limited signage.

Local funds are being sought to improve pathways and signage at Delapré Park. Data obtained from the public opinion surveys suggests there is need and desire for this in the local community. Further, such improvements align with increasing physical opportunities through environmental restructuring drawing a link to the 'COM-B' model for behaviour change. It is hoped this will contribute to sustained changes in physical activity behaviours in the local community.

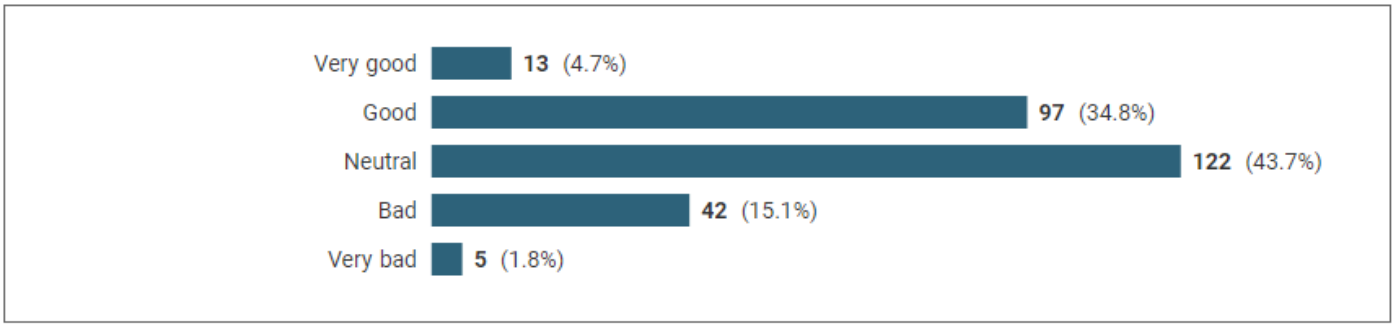


Figure 15. Survey responses to the question: How would you rate the current quality of the pathways at Delapré Park?

Respondents were asked about their feelings of safety when using outdoor spaces at Delapré Park. Responses differed greatly from daytime use to after dark, with 56% reported feeling 'Very safe' using the space for recreational purposes during the daytime whereas after dark respondents reported that they felt 'Very unsafe' (16.2%) or that they would never go out alone during this time (42.3%). Analysis of open-text responses found a lack of lighting in the area to the biggest factor influencing feelings of safety after dark and the presence of groups of adolescents using the space for social purposes.

Public opinions on the Cycling and Walking Hub at Delapré Park

Use of the Cycling and Walking Hub

Overall responses suggest positive engagement with the proposed Cycling and Walking Hub at Delapré Park. Responses indicating use of the proposed Hub and associated activities to be 'Very Likely' or 'Likely' were 118 (39.5%) and 94 (31.4%), respectively. Responses suggested those that would use the facilities would plan to use them for more than 60 minutes (46.9%), 31-60 minutes (40.6%), and 0-30 minutes (12.6%). The planned Cycling and Walking Hub would offer a range of activities, of which respondents reported they would be most interested in Individual (non-supervised) sessions (71.8%). Full responses can be seen in Table 8. Weekends were reported as the most likely days the Hub would be used (Saturday, 71.9%; Sunday, 74%). Weekdays were largely homogenous in responses (Monday: 34.2%, Tuesday: 30.6%, Wednesday: 34.5%, Thursday: 32.7 % and Friday: 37.7%). Times of the day most likely to use the Hub were 12:00-15:00 (69.5%), 09:00-12:00 (64.2%), 15:00-18:00 (40.8%) and 18:00-21:00 (10.6%). Respondents mostly reported that use of a private car (40.5%) would be the mode of transport to access the Hub, followed by walking (33.7%) and riding a bike (24.5%).

Table 8. Interest in proposed cycling and walking activities at the Cycling and Walking Hub.

Activity	Response (*n* [%])
Individual (non-supervised)	201 (71.8%)
Walk leader led group walk	95 (33.9%)
Family group sessions (non-supervised)	86 (30.7%)
Ride leader led group cycle	85 (30.4%)
Specific training sessions (All ages)	46 (16.4%)
Individual (Supervised)	39 (13.9%)
Child 'Learn to Ride' sessions	32 (11.4%
Family group session (Supervised)	28 (10%)
Other	14 (5%)

Most respondents that selected they would use the Cycling and Walking Hub reported they would want to hire a Standard Mountain Bike (81.9%), Standard Mountain eBike (31.2%) and Standard Children's Mountain Bike (11.5%). The full breakdown of options can be seen in Figure 16. Respondents reported they would expect to be charged Hourly for cycle hire (50%), followed by Fixed rate per type of bike (21.3%), Fixed rate per activity type (20.2%), Pay what you can scheme (7.7%) and Charged to a Personal Health Budget (0.7%).

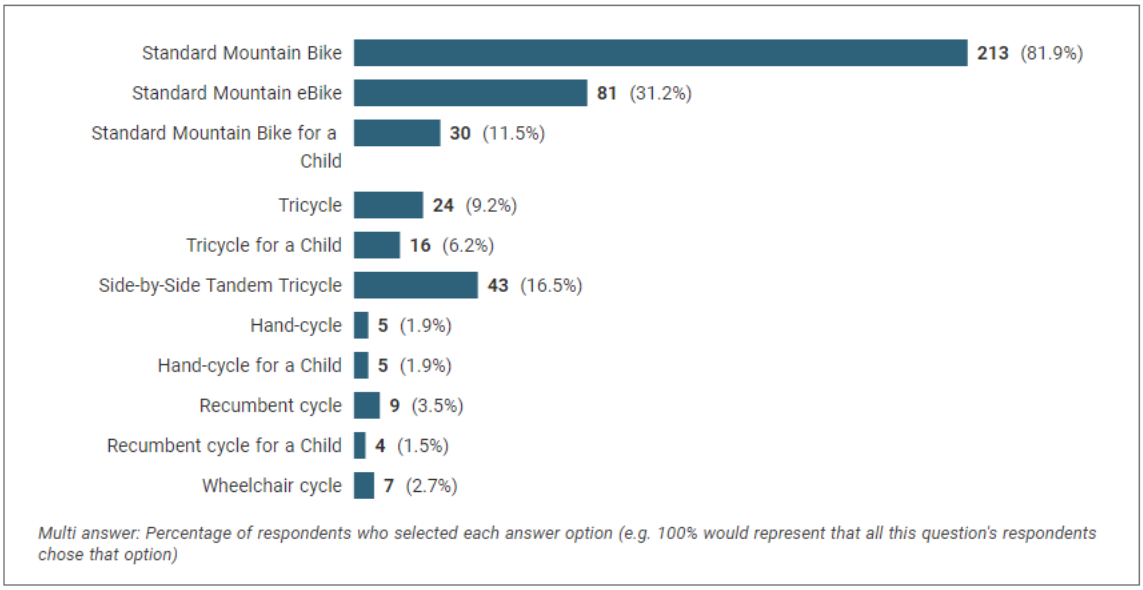


Figure 16. Bicycle requirements for respondents that reported wanting to use the proposed Cycling Hub for cycle hire.

Wayfinding

Respondents indicated that users of Delapré Park would find signage (75%) around routes the most helpful for navigating cycling and walking routes around the area. This was followed by printed maps (12.3%), Global Positioning System (GPS) routes to follow (6%), Staff-led activities (2.8%) and online videos of routes (1%). Use of signposts and wayfinding has been trialled at Delapré Park for a related project, with good initial success. This would be built on with the proposed improvements to pathways and provision of cycling and walking routes in the space. The use of wayfinding is favoured for its ability to support psychological capability of individuals using the space and reduce anxieties associated with using unfamiliar outdoor spaces. This aligns with an 'Enablement' approach to interventions in the COM-B model to encourage behavioural change towards initial use of the space and then ensuring this behaviour is sustained.

Volunteering

Volunteering and/or skill development opportunities at the Cycling and Walking Hub are hoped to provide social connection, career development and wellbeing opportunities for the local community. Whilst most survey respondents reported not being interested in these opportunities (63.5%), this is possibly reflective of the demographics mostly represented in the respondents. However, of those that reported they were interested, the activities selected were as follows; walk leader (13.2%), ground maintenance (12.8%), ride leader (11.3%), bike repairs and cleaning (10.2%), and cycle hub assistant (9.4%).

Awareness of Social Prescription Services

Knowledge of what social prescription means prior to taking the survey suggest limited awareness in the local community. Responses to the question on having knowledge of what social prescription refers to were 'No' (52.4%), 'Yes' (24.7%) and 'Somewhat' (23%). The same distribution of responses can be seen for knowledge of access to social prescription services in Northampton, with most respondents not knowing how to access services (81.4%). Please see Figures 17 and 18. Only 2% of respondents reported previously being referred to social prescription services in Northampton. These findings highlight a key area for development in the local area and need for increased efforts for the visibility and opportunities for social prescription in Northampton and surrounding areas.

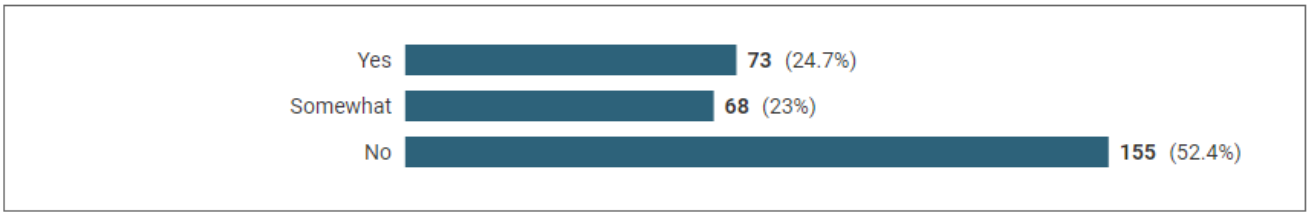


Figure 17. Self-responses to the question: Before this survey, did you know what social prescription meant?

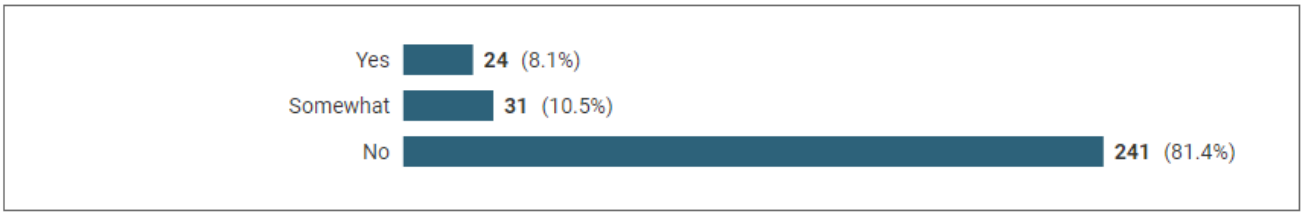


Figure 18. Self-responses to the question: Before this survey, did you know how to access social prescription services in Northampton?

Cycling in the local area

Most respondents reported having the ability to ride a bicycle (93.3%) and having access to a bicycle for personal use (69.4%). Frequency of bicycle use can be seen in Figure 19. Route use when cycling was mixed. Respondents predominantly reported using cycle tracks away from the road (45.5%), roads without cycle lanes (28.9%) and in public parks (13.7%). The primary purposes of these journeys were simply for pleasure (48.1%), exercise purposes (24.5%) and commuting (11.8%).

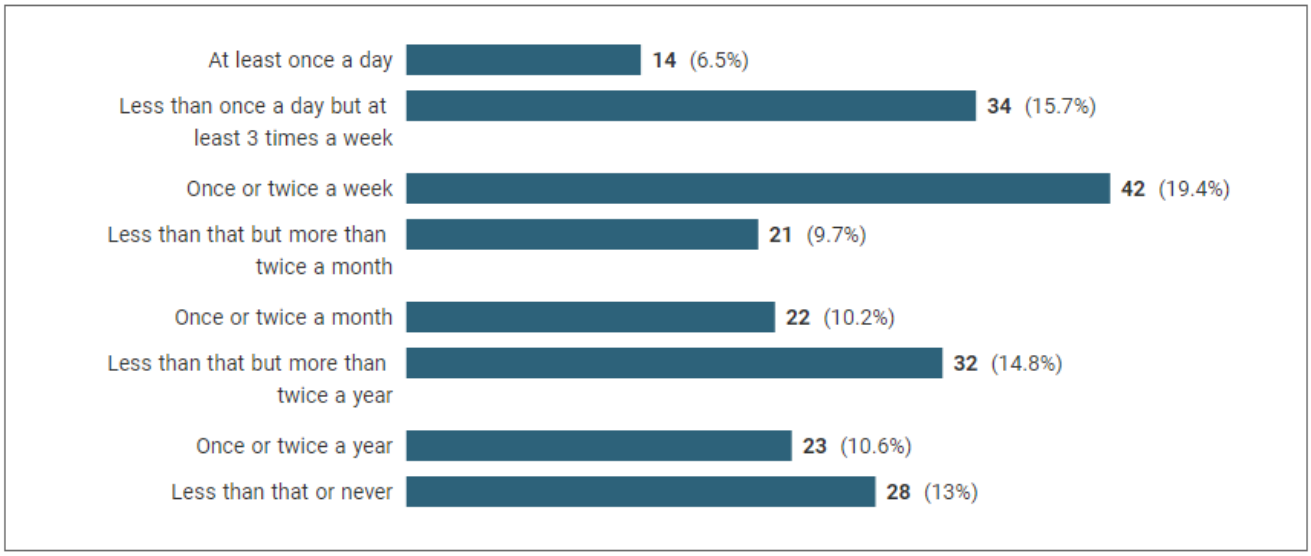


Figure 19. Frequency of reported bicycle use.

Most respondents reported not completing any formal cycling proficiency training, such as 'Bikeability' (66.4%). Confidence in cycling on public roads was mixed, Figure 20 provides a breakdown of responses. The statement 'It is too dangerous for me to cycle on the roads' was asked of the respondents. Responses were skewed toward agreeance with 'Agree' (37.2%) and 'Agree strongly' (26.7%). Perceptions of cycling conditions in the local area were asked on the survey: 47% reported being dissatisfied with conditions and 32.3% reported satisfaction with conditions. Respondents reported that cycling conditions in the local area in the last two years have stayed the same (57.8%), got worse (20.4%), Don't know (15%) and Improved (6.8%). Analysis of open text responses (n=60) found key themes of potholes/road conditions and traffic to be the main contributing factors to the view conditions have got worse.

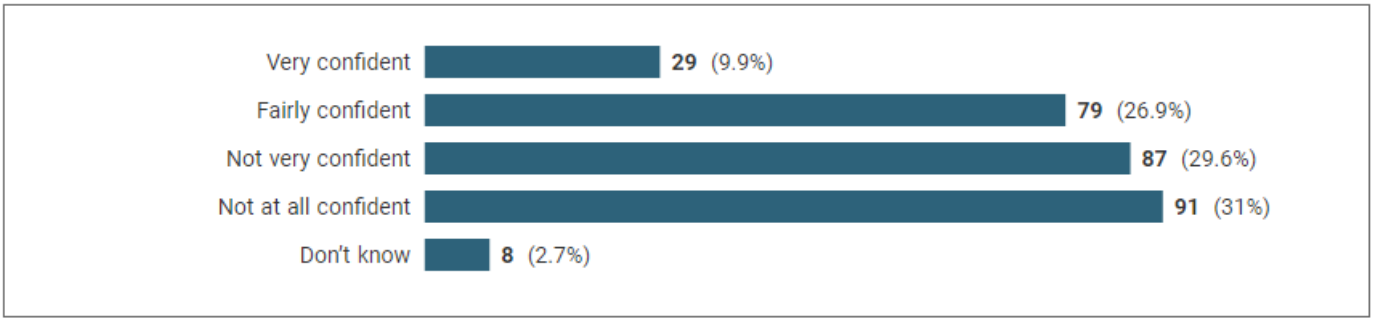


Figure 20. Responses to the question: How confident would you say you feel about cycling on the roads?

Recommendations & Conclusions

Overall, the observations suggested:

1. Delapré Park is currently used for active modes of commuting and recreation.
2. Delapré Park provides a direct route for commuting journeys.
3. Walking is the most popular activity within Delapré Park.
4. Footfall in Delapré Park is higher on weekends in comparison to weekdays.
5. Footfall in Delapré Park is lower in Winter in comparison to other seasons.
6. Members of the public are using Delapré Park to connect to other surrounding areas.
7. White ethnicities were the most common ethnic group using Delapré Park.
8. Strava Metro can provide an indication of trends in footfall.

Overall, the community survey suggested:

1. Residents of Northampton and surrounding areas are supportive of the proposed Cycling and Walking Hub at Delapré Park.
2. From the findings it would be expected the Hub would get regular use from community members, mostly at the weekends.
3. The local community would be most interested in autonomous and unsupervised activities at the proposed Cycling and Walking Hub, once improved infrastructure is in place.
4. The current pathways present a barrier to use when there has been recent rainfall.
5. Increased signage and improved pathways would increase use of Delapré Park.
6. There is a gap in knowledge in the local area around social prescription, both in understanding and access.
7. Cycling conditions in Northampton and surrounding areas are perceived to be dissatisfactory.
8. Confidence to ride on public roads is low, which is likely related to the above point.

It is recommended:

1. Cycling infrastructure in the local area is improved to help facilitate modal shifts to active travel and promote physical activity.
2. Pathways in Delapré Park are improved to increase, and sustain, recreational and commuting usage of the space.
3. A wayfinding signage strategy is developed to help visitors navigate Delapré Park and the surrounding areas.
4. That progress with the Cycling and Walking Hub continues, as the local community would use the services.
5. Cycle hire at the Cycling and Walking Hub would need to provide a range of bicycles and findings suggest a fixed hourly charge is most feasible for public use.
6. Local stakeholders and health partners increase advertisement of social prescription services in Northampton and surrounding areas.
7. The development of the proposed Cycling and Walking Hub is supported as it will form an important element of the Local Cycling and Walking Infrastructure Plan in Northampton. This is because, as demonstrated in the data presented in this report, Delapré Park is regularly used for recreation and commuting purposes on bicycle and foot. It is also a space that connects a variety of local amenities, communities, and workplaces. Therefore, it is hoped that development of the Hub will contribute to increased capacity and uptake of cycling and walking in the local area by providing direct off-road routes.

Methods

The project methods were pre-registered prior to data collection on the Open Source Framework, full details can be viewed at https://archive.org/details/osf-registrations-bqkvw-v1 (DOI: 10.17605/OSF.IO/BQKVW).

Automated Counters

Four automated infrared bi-directional person counters (DE Model, SensMax, Riga, Latvia) were installed along key corridors within Delapré Park between 27th February – 11th March 2022 (Figure 21). Intentions were to collect data until 30th March 2022 however, the counters were vandalised and therefore, data collection was suspended on the 11th March 2022. The counters had a 95% accuracy when the transmitter and receiver were placed up to 2-metres a part. Within the current project, the distance between a transmitters and receivers was less than 2 metres. The automated counters are only able to count footfall and cannot provide any demographic details.

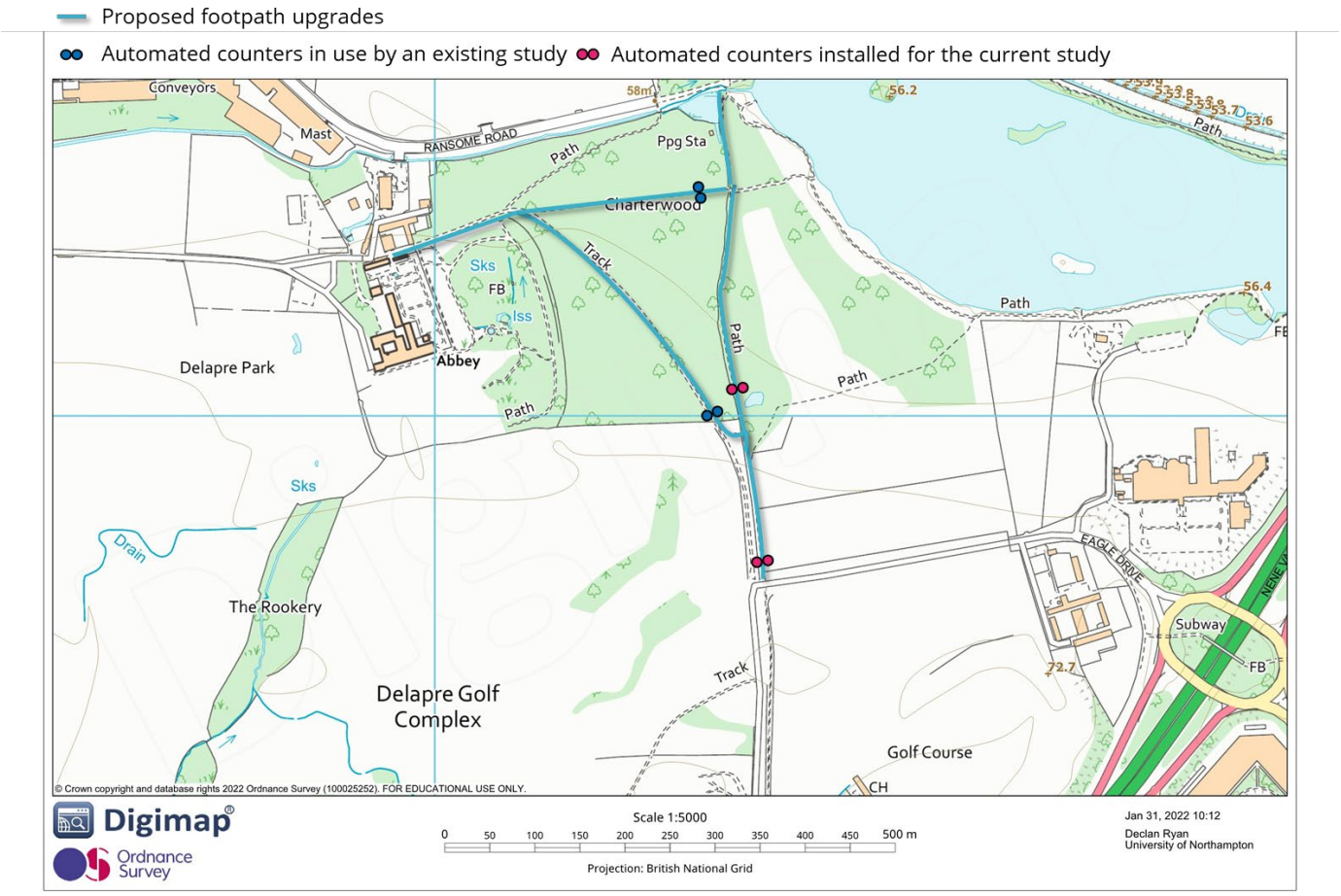


Figure 21. Automated counter positions within Delapré Park on the proposed footpaths that will receive infrastructure upgrades.

Manual Counts

Manual counts were conducted on Monday, Wednesday, Saturday, and Sunday (week beginning 21st March 2022) with four 1-hour observation periods per day (08:30 – 09:30, 11:30 – 12:30, 14:30 – 15:30, 17:30 – 18:30) as recommended in previous validation studies [3,4]. The manual counts were conducted using the validated Method for Observing pHysical Activity and Wellbeing (MOHAWk) [1], which estimates demographic characteristics, type of activity, activity intensity, group presence, taking notice of surroundings, and connecting with others. Manual counts occurred on a key corridor within Delapré Park (Segment 1), as well as at two control parks (Figure 22). The control parks (Hunsbury Hill and St. Crispin's Park) were identified in a previous footfall study for Delapré Park [5]. The control parks and Delapré Park were matched based on Lower Super Output Area (LSOA):

- population density (Census 2011),
- combined ranks score of average distance to the nearest park or public garden, average size of the nearest park of public garden, average number of parks and public gardens within a 1000 metre radius, and average combined size of parks or public gardens within 1000 metre radius (Access to public parks and playing fields, Great Britain, April 2020),
- Index of Multiple Deprivation decile (Access to public parks and playing fields, Great Britain, April 2020),
- visual inspection of park amenities, layout, and access points, and
- Strava Metro/Heatmap count data to locate corridors with similar footfall between parks.

Full details about the control park selection methods have been previously described [3].

Reliability

A Krippendorff's Alpha was used to assess the inter-rater reliability between nine observers for manual counts. Reliability was determined with a 15-minute observation of 21 people. Reliability ratings for alpha were classified as: >0.8 (good reliability), 0.667 – 0.8 (tentative reliability). Reliability was calculated for each demographic: Gender - 0.8035 (good reliability), Age Group - 0.081 (low reliability), Ethnicity - 0.7694 (tentative reliability), Activity Type - 1.000 (good reliability) – NB only eScooter and Walking was

[3] Benton JS, Anderson J, Pulis M, Cotterill S, Hunter RF, French DP. Method for Observing pHysical Activity and Wellbeing (MOHAWk): validation of an observation tool to assess physical activity and other wellbeing behaviours in urban spaces. Cities Heal [Internet]. 2020 [cited 2022 Feb 1];1–15. Available from: https://www.tandfonline.com/action/journalInformation?journalCode=rcah20

[4] Cohen DA, Setodji C, Evenson KR, Ward P, Lapham S, Hillier A, et al. How much observation is enough? Refining the administration of SOPARC. J Phys Act Heal. 2011;8(8):1117–23.

[5] Ryan DJ. Does the creation of a walking loop using directional wayfinding signage increase the physical activity of country park visitors? A natural experiment [Internet]. OSF. 2021. Available from: osf.io/pge72

observed during training, Activity Intensity - 1.000 (good reliability) - NB only eScooter and Walking was observed during training, Connecting - 0.3801 (low reliability).

This reliability testing was conducted on a small sample size (15-minute observation), whereas previous research has found good to excellent inter-rater reliability for each MOHAWk category when using 8-hour observations [6].

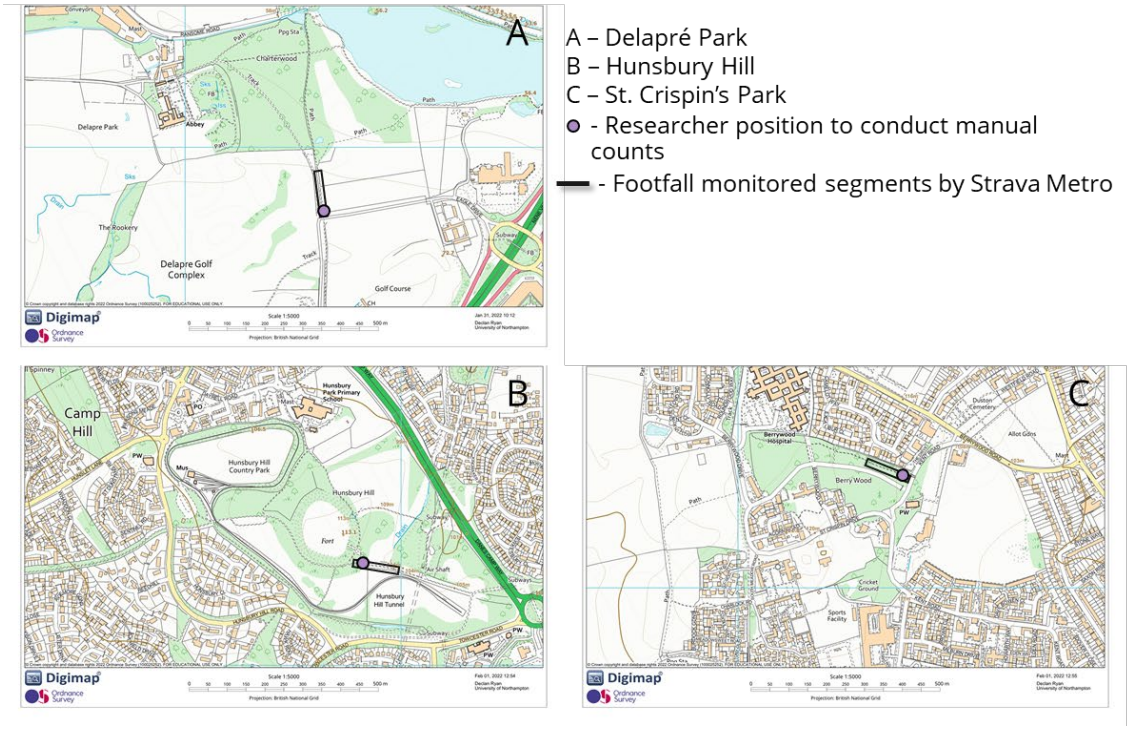


Figure 22. Researcher positioning to conduct manual counts and Strava Metro segment observations between intervention (A) and control (B and C) sites.

[6] Benton JS, Anderson J, Pulis M, Cotterill S, Hunter RF, French DP. Method for Observing pHysical Activity and Wellbeing (MOHAWk): validation of an observation tool to assess physical activity and other wellbeing behaviours in urban spaces. Cities Heal [Internet]. 2020 [cited 2022 Feb 1];1–15. Available from: https://www.tandfonline.com/action/journalInformation?journalCode=rcah20

Intercept Survey

Route User Intercept Surveys (RUIS) involve short interviews with walkers and cyclists on targeted sections of a route. Originally developed by Sustrans, this method is advocated by the Department for Transport for monitoring active travel and use of physical spaces. The RUIS for the current study was developed using guidance from Sustrans [7] and the Department of Transport's Active Travel Fund Monitoring Guidance [8].

Two researchers were based at Delapré Park on Monday, Wednesday, Saturday, and Sunday (week beginning 21st March 2022) with four 1-hour observation periods per day (08:30 – 09:30, 11:30 – 12:30, 14:30 – 15:30, 17:30 – 18:30). Each researcher had an electronic device with access to the RUIS. Members of the public entering the designated observation space were approached and asked if they would be happy to participate in the research. All relevant information about the research taking place was available to provide to approached members of the public. Posters were also placed in designated spaces to inform park users that research was being conducted. Ethical approval was received from the University of Northampton prior to data collection.

Strava Metro

Although Strava Metro tends to be mainly representative of a White, Male, middle-aged population it has been found to provide a valid, albeit underestimating, estimate of total footfall use [9]. Monthly cycling and walking activities on key corridors within Delapré Park and the control parks were recorded between January and December 2021 to provide a longitudinal baseline estimate of footfall and activity type. Monthly total activities per Segment were extracted from Strava Metro as well as a percentage breakdown of the self-reported gender of Strava members who travelled through the Segments.

Public Survey

The use of public opinion surveys is a recommended method for feasibility studies related to the Active Travel Fund [10]. As such, an online self-report survey was developed on Jisc [11] by the research team and in consultation with local stakeholders. The survey was designed to help Local Authorities identify perceptions, barriers, and opportunities for social prescription delivery at Delapré Park. Specifically, the

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[7] Research, monitoring and evaluation - Sustrans.org.uk

[8] Department for Transport. Active Travel Fund Monitoring Guidance. 2020. URL: https://s3-eu-west-2.amazonaws.com/commonplace-customer-assets/emergencyactivetravelfunddemo/201209%20ATF%20M%26E%20Guidance%20Updated%20FINAL%20(1).PDF

[9] Lee K, Sener IN. Strava Metro data for bicycle monitoring: a literature review. Transp Rev [Internet]. 2021 [cited 2021 Feb 20];41(1):27–47. Available from: https://www.tandfonline.com/doi/abs/10.1080/01441647.2020.1798558

[10] Department for Transport. Active Travel Fund public opinion surveys, good practice guidance. 2020.

[11] https://www.jisc.ac.uk/

aim of the survey was to gain insight into community opinions on proposed pathway improvements and Cycling and Walking Social Prescription at Delapré Park to improve local health and wellbeing. The survey was distributed through local community networks to gather the views of residents (18+ years old) of Northampton and surrounding areas between 21st March and 11th April 2022.

The 34-item survey comprised of three sections; 1) Current use and views of Delapré Park; 2) Bicycle use, perceptions, and behaviours; and 3) Demographics. The Active Travel Fund Public Opinion Surveys Good Practice Guidance [12] was used to inform survey design and questions. This was to ensure consistency and comparability with related research in other locations. Rigour of survey design was also enhanced by following this guidance. Closed questions were analysed using descriptive statistics and open questions through qualitative content analysis. Ethical approval was received from the University of Northampton before the distribution of the survey. Participant information was provided as preamble to the survey and confirmation of consent to participate was obtained.

Statistical Analysis

The impact of seasonality on footfall was assessed using a Kruskal-Wallis Test with Bonferroni post-hoc adjustment. A non-parametric test was used as the data violated a Levene's Test of equal variance. A one-tailed p value threshold of 0.05 was used as it was hypothesised that changes in footfall would decline as Spring and Summer changed to Autumn and Winter.

To assess the validity of Strava Metro in comparison to automated infrared counts, a one-samples t-test was conducted (as data was normally distributed) to determine systematic bias and a Pearson's correlation was used to assess proportional bias. Furthermore, a Pearson's correlation and liner regression were used to estimate the correction factor for Strava Metro to align with automated infrared counts.

Weather

Daily measurements of average temperature, average wind speed, and total amount of precipitation were collected from a local weather station during the automated infrared counter monitoring [13] to allow for future statistics to account for the impact of weather conditions on footfall.

[12] Department for Transport. Active Travel Fund public opinion surveys, good practice guidance. 2020.
[13] https://www.wunderground.com/dashboard/pws/INORTHAM95/graph/2022-02-2/2022-02-2/daily

Strengths and Limitations

This baseline data collection utilised three validated observation methods to triangulate footfall within the intervention Park. In addition, multiple control locations with similar surrounding infrastructure and demographics were monitored for baseline assessment. Manual observations used the recommended number of clusters (observations, durations, timings, locations) in order to obtain valid and reliable footfall estimates. Manual observations for the three locations were conducted on the same days, allowing for direct comparisons. Weather co-founding variables were recorded for future statistical analysis and Department for Transport recommended monitoring and evaluation techniques and questions were utilised to ensure comparability with other pilots. Whilst the use of public opinion and route intercept surveys are recommended by The Department for Transport, there is a limitation in the inherent selection bias that must be acknowledged. The data are only representative of individuals that chose to complete the survey, and not the entire community. Therefore, results are presented tentatively and as indications, not absolute findings. Finally, the methods of this natural experiment had been pre-registered on an open-source framework to follow best practice guidance and reduce the risk of bias within natural experiments [14]. Unfortunately, automated counts could not be conducted throughout the full month of March 2022, due to vandalism.

[14] Benton, J.S., Anderson, J., Hunter, R.F. and French, D.P. The effect of changing the built environment on physical activity: a quantitative review of the risk of bias in natural experiments. International journal of behavioral nutrition and physical activity, 2016, 13(1), pp.1-18. Available from: https://link.springer.com/article/10.1186/s12966-016-0433-3

Appendices

Appendix 1. Press release for local community.

Local community backing for Cycling and Walking hub at Delapré Abbey

A recent public survey showed that Northampton residents were largely supportive of a new Cycling and Walking hub at Delapré Abbey. The survey was conducted by the University of Northampton on behalf of West Northamptonshire Council and Delapré Abbey Preservation Trust. The survey was part of a £90,000 grant by the Department for Transport's Active Travel Fund – Social Prescription Pilot to conduct a feasibility study for the establishment of a Cycling and Walking Social Prescription programme at Delapré Abbey. Social Prescription involves helping patients to improve their health, wellbeing and social welfare by connecting them to community services which might be run by the council or a local charity. The proposed Cycling and Walking Hub at Delapré Abbey will become a social prescription service by offering cycle hire, group led walks and rides, volunteering opportunities, and skill development classes, such as bike repair.

The study was interested in current route use through Delapré Park and underpinning motivations, as well as public suggestions about the proposed delivery of the Cycling and Walking Social Prescription programme and the Cycling and Walking Hub at Delapré Abbey. A total of 305 Northamptonshire residents completed the survey. Analysis of the responses found:

1. Residents of Northampton and surrounding areas are supportive of the proposed Cycling and Walking Hub at Delapré Park.

2. The local community would be most interested in autonomous and unsupervised activities at the proposed Cycling and Walking Hub.

3. The current pathways present a barrier to using Delapré Park when there has been recent rainfall.

4. Increased signage and improved pathways would increase use of Delapré Park.

5. There is a gap in knowledge in the local area around social prescription, both in understanding and access.

The study also used monitored visitor habits at Delapré Park and found:

1. Delapré Park is currently used for commuting to work and leisure by walkers and people riding a bike.

2. Delapré Park provides a direct route for commuting journeys to Brackmills Industrial Estate and the Town Centre.

3. Walking is the most popular activity within Delapré Park.

4. Members of the public are using Delapré Park to connect to other surrounding areas.

5. White ethnicities were the most common ethnic group using Delapré Park.

The feasibility study was submitted to the Department for Transport on the 29th of April 2022 as part of the next round of pilot funding applications. If successful, the grant funding and locally sourced funding will be used to establish the Cycling and Walking Social Prescription Programme, Cycling and Walking Hub, and pathway upgrades at Delapré Abbey and Park.

Senior Lecturer in Exercise Physiology at The University of Northampton, Dr Declan Ryan, has been leading on the research. He said: “We’re really grateful to all the people who spoke to us during our park observations and completed the survey. We are able to clearly demonstrate the local community’s barriers to accessing Delapré Park and the preferences for how the cycling and walking hub should be delivered. Visiting parks is a great way to improve wellbeing and we hope the evidence from our study will help secure the required funding to create the Cycling and Walking Hub and footpath improvements in Delapré Park.”

For more details on the project please follow the link: [Link to full report]

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