The difference we make

Methods used to report data in Sustrans Annual Review 2018-19

August 2019

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1 The National Cycle Network

This chapter sets out the methodology that Sustrans' Research and Monitoring Unit (RMU) has used to estimate a number of key figures surrounding the National Cycle Network (NCN), as published in the 2018/19 Annual Review.

More specifically, this chapter describes the methodology behind the following figures, relating to the calendar year 2018.

1. 619 million walking and cycling trips were made on the National Cycle Network (pages 2, 3 and 7 in the Annual Review);

2. 90% of National Cycle Network users agreed that using the Network improves their wellbeing (page 9 in the Annual Review);

3. Approximately 8,000 serious long-term health conditions averted by walking and cycling on the National Cycle Network (page 8 in the Annual Review);

4. Approximately £1 billion saved through the prevention of 574 early deaths as a result of walking and cycling on the Network (page 8 in the Annual Review).

1.1 Background

1.1.1 The National Cycle Network

For the purpose of our reporting, the NCN has been taken to include all NCN routes, alongside all regional cycling routes and linking routes branded and managed by Sustrans. This decision was made to be consistent with the definition of the NCN used in Sustrans' 2016 NCN audit (a review of the physical condition of the Network to identify areas for improvement). Routes on the London Cycle Network (LCN) have not been included as they are managed by Transport for London, and were not reviewed as part of the 2016 NCN audit.

1.1.2 The evidence collection tools we use

Our method drew on two key data collection tools:

1. Automatic Cycle Counters (ACC),
2. Route User Intercept Survey(s) (RUIS).

Automatic cycle counters record continuous counts of cyclists during the course of a year or a period of the year. They provide robust data to inform analysis of annual levels of cycling at their location, as well as seasonal variations. Using a reference set of over 200 automatic counters (each with complete data), Sustrans have developed methodologies to calculate annual usage estimates (AUE) from ACC which have collected at least 100 days of data in any given year. An AUE reflects the

total number of cycling trips[1] which pass that particular location in a year, from this we are able to make estimates of the total number of walking trips at those same locations.

RUIS are Sustrans-designed field surveys, involving intercepting and surveying as many users (over the age of sixteen) on a route as possible. Sustrans have delivered more than 2,490 RUIS across the UK since 1998.The surveys ask users about their journey purpose, travel behaviour, perceptions of safety, physical activity levels and their health and wellbeing. Concurrent manual counts of users (recorded against age, gender and mode of travel) are conducted to enable survey results to be appropriately demographically weighted.

Together ACC and RUIS have been used to estimate the NCN figures detailed in the 2018/19 Annual Review.

1.1.3 ACC and RUIS data availability

Sustrans holds a database of all RUIS commissioned and delivered by RMU in the UK, as well as records of the many ACCs owned by local authorities and other partners.

Geographic Information Systems (GIS) were first used to identify all automatic cycle counters and user surveys located on the NCN and therefore suitable for use in this evaluation. ACC locations, RUIS locations and the NCN are all mapped as layers by Sustrans in GIS. To account for inaccuracies in location due to mapping ACC and RUIS at varying geographical scales, a 10m buffer was applied to the NCN layer to identify all ACC located on the network, and a 20m buffer to identify all RUIS (as these are likely digitised with less accuracy than the ACC). All RUIS data is owned and stored by Sustrans. However, most ACCs and their data are owned by the local authorities in which they are situated.

In total, nearly 1,000 operational ACCs were identified on the NCN. 2018 data was requested for as many of these as possible from the Local Authorities that own them. For any counter with more than 100 days of data in 2018, an AUE could be calculated for that year. AUEs for the 2018 calendar year were produced for 209 ACCs located on the NCN.

In addition there were also 87 ACCs with more than 100 days of data in 2017 but with no data available in 2018 (either through ACC failure, decommissioning, or us simply not able to access the data in time for this study). In order to increase our sample size of counters, AUEs for these ACCs have also been included in the analysis, assuming no change in usage between 2017 and 2018. This was the most reasonable and prudent assumption that could be made whilst allowing for the sample size of ACC to be increased to a more robust level.

[1] Note that a trip is considered to be a single one-way movement. Therefore if an individual travels to and from work on the same route and passing the same automatic counter, this will be considered two trips.

In total, AUEs were produced for 296 automatic cycle counters located on the NCN. This includes the 209 ACC with data for 2018 and the additional 87 ACC with 2017 data only.

1.2 Estimating usage on the NCN

Key figures:

1. 619 million walking and cycling trips were made on the National Cycle Network

1.2.1 Determinants of usage on the NCN

Sustrans' methodology for estimating levels of walking and cycling on a network involves scaling up what is known from monitored sections of a network (e.g. the 296 locations on the NCN where AUEs have been calculated), to make assumptions about the remaining unmonitored sections of that network. It operates on the following premise:

Any section of a network which shares the same characteristics (which are known to affect walking and cycling levels) as another, will share the same AUE.

Previous Sustrans research (2014) used linear regression analysis to identify the variables which are most important to predicting walking and cycling levels at any location. From this study, two key characteristics were identified as relevant determinants of usage along a network:

- **Population in proximity** – a measure of population, which gives greater weight or value to any section of route which has a greater population size living in closer proximity to it;
- **Proportion of the population who cycle to work** – a measure of cycle commuting, which gives greater weight or value to any section of route which has a greater proportion of the nearby population who cycle to work.

Whilst many other variables were also tested in this study, the above two variables were shown to be the best predictors of usage. It is our intention to expand this study in the future to explore the impact of other possible variables on predicting usage too.

1.2.2 Categorising the NCN according to characteristics that determine usage

Given the variability of different elements of the NCN, it was necessary to first divide the NCN into segments for which each of these usage determining characteristics could be calculated.

We used GIS to divide the network into segments of maximum 1km in length, under the assumption that usage determining characteristics would change little over 1km.

Where any section of the network met a junction, this forced the end of that section and the creation of a new one at the start of that junction. This means that 62% of the NCN was divided into 1km sections and 38% into sections shorter than 1km. The centre-point of each of these route sections was identified, and values for the population in proximity and the proportion of the population who cycle to work calculated. Whilst these characteristics might vary between each route segment, within each segment they are assumed to remain constant.

1.2.3 Calculating the population in proximity values

We used population weighted centroid (geographical centre) data from the 2011 Census to calculate the population in proximity to each network segment. In England and Wales this data was obtained at Lower Layer Super Output Area (LSOA) level, and in Scotland at data zone level (equivalent geography to LSOA). 2011 Census data in Northern Ireland is only available at Super Output Area (SOA) level, and is unavailable in a population weighted centroid format. We therefore had to manually calculate the population weighted centroid data from Northern Ireland's 2011 Census data.

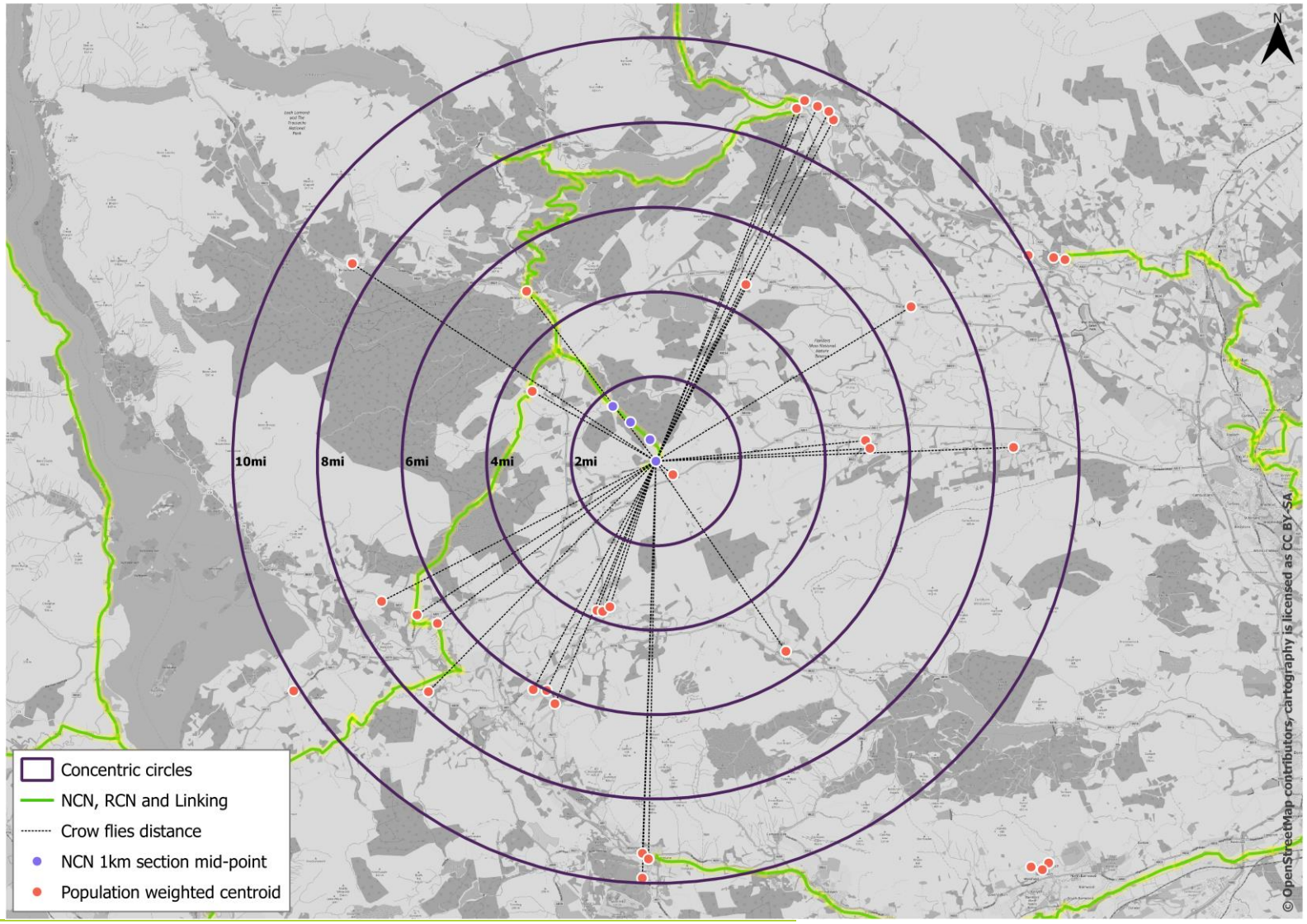
Figure 1 below shows the process for calculating the population in proximity value for a single section mid-point on the NCN. The NCN is represented by the green line, with purple markers indicating the mid-points of selected adjoining1km sections. Concentric circles at 2, 4, 6, 8 and 10 mile radii from one of these midpoints are drawn, and all the population weighted centroids that fall within each concentric circle identified. The population estimate values for each weighted centroid within each concentric circle are summed, and divided by the squared linear[2] distance of that concentric circle from the NCN mid-point. This gives a single distance-weighted population value for each concentric circle. These are then summed to give an overall population in proximity value for that NCN section mid-point. This process is repeated for every single 1km section mid-point on the NCN. The greater the number of residents living closer to the NCN, the higher the population in proximity value for each section.

1.2.4 Calculating the proportion that cycle to work

Using 2011 Census data, the proportion of the population who cycle to work was calculated for each 1km section mid-point according to the closest population weighted centroid.

[2] It should be noted that a linear decay function has been adopted here. This means that the straight line distance of a population weighted centroid from an NCN section mid-point is taken, rather than a non-linear estimation of distance taking into account the road network. Although it is known that there is not a linear relationship between distance and propensity to cycle, the approach adopted here represents the best approach possible given the time and resources available.

Figure 1 A map illustrating the process for calculating the population in proximity of a single 1km section mid-point on the NCN



1.2.5 Extrapolation of cycling usage data to route sections with matching characteristics

For each section of the NCN, a value for its population in proximity and a value for the proportion of the population who cycle to work were calculated. But the range of these values is considerable, making it extremely difficult to identify route segments which share the same characteristics (and therefore, following our assumption, the same AUE). To facilitate this, both variables are grouped into equal third terciles:

1. Highest third population in proximity/proportion cycle to work scores,
2. Middle third population in proximity/proportion cycle to work scores,
3. Lowest third population in proximity/proportion cycle to work scores.

Table 1 below shows the minimum and maximum population in proximity and proportion of the population who cycle to work scores in each tercile group.

Table 1 The minimum and maximum population in proximity and proportion of the population who cycle to work scores in each tercile group

Tercile	Population in proximity score		Proportion cycle to work score (%)	
	Minimum	Maximum	Minimum	Maximum
1	26,278.6	431,293.6	0.989	20.455
2	2,890.3	26,267.1	0.447	0.989
3	0	2,888.4	0	0.447

The population in proximity and the proportion of the population who cycle to work tercile scores are now known for every 1km section of the NCN. This includes the 296 locations where we have ACCs, and therefore an AUE calculated.

Table 2 below shows the number of NCN sections, and number of cyclist AUEs that are available for each tercile score combination.

Table 2 Population in proximity and proportion cycle to work tercile values, number of NCN sections that fall within these terciles, and the number of available AUEs.

Population in proximity tercile	Proportion cycle to work tercile	Number of NCN sections	Number of AUEs available
1	1	6,202	149
	2	3,303	57
	3	1,931	17
2	1	3,613	40
	2	4,238	16
	3	3,585	6
3	1	1,620	0
	2	3,896	8
	3	5,920	3

The median AUE from each tercile score combination was taken to represent the 'average' AUE for any route section with that score – this was to avoid the AUEs being skewed by extreme values in each group. The greater the number of available AUEs for each tercile score combination, the more robust the median AUE is for that group.

However, Table 2 above shows there to be no AUE available for sections of route with a population in proximity score of 3 and a proportion of the population who cycle to work score of 1. Furthermore, very few AUEs are also available for other sections of route with a population in proximity tercile score of 3 – just eight for those which also have a proportion who cycle to work score of 2, and only three for those with a score of 3.

It was therefore decided that all AUEs available for route sections with a population in proximity score of 3 would be aggregated together. There are now 11 AUEs which all represent route sections with a population in proximity score of 3, and a proportion of the population who cycle to work score of 1, 2 or 3. The median AUE from this group was therefore taken to represent all route sections with these scores.

Every section of the NCN could then be assigned a cyclist AUE according to the tercile score combination of that section and the median AUE for sections with that same tercile score.

Table 3 shows the minimum, maximum, mean and median cyclist AUE given to any section of route with each tercile score combination. Given the large variability in minimum and maximum AUE within each tercile score group, it is sensible to use the median AUE (as opposed to the mean) to avoid the values being skewed by any extreme usage estimates in each group.

Table 3 The minimum, maximum, mean and median cyclist AUE in each tercile score

Population in proximity tercile	Proportion cycle to work tercile	Number of AUEs available	Minimum cyclist AUE	Maximum cyclist AUE	Mean cyclist AUE	Median cyclist AUE
1	1	149	2,555	772,867	105,309	65,153
	2	57	716	214,874	39,577	27,192
	3	17	3,640	222,876	48,529	18,615
2	1	40	4,015	335,708	61,205	45,494
	2	16	5,927	108,645	34,040	27,472
	3	6	5,110	56,940	21,203	14,144
3	1, 2 ,3	11	1,455	87,670	23,543	10,585

Figure 2 (below) uses fictitious data to demonstrate how each NCN section mid-point are assigned population in proximity and proportion of the population who cycle to work tercile values, and the annual usage estimates assigned to them.

It should be noted that an AUE estimate is a count at a single location, and that this count is assumed to be equivalent to a single trip on the NCN. However, this will not hold true if counters are located close to one another and one trip is therefore counted twice.

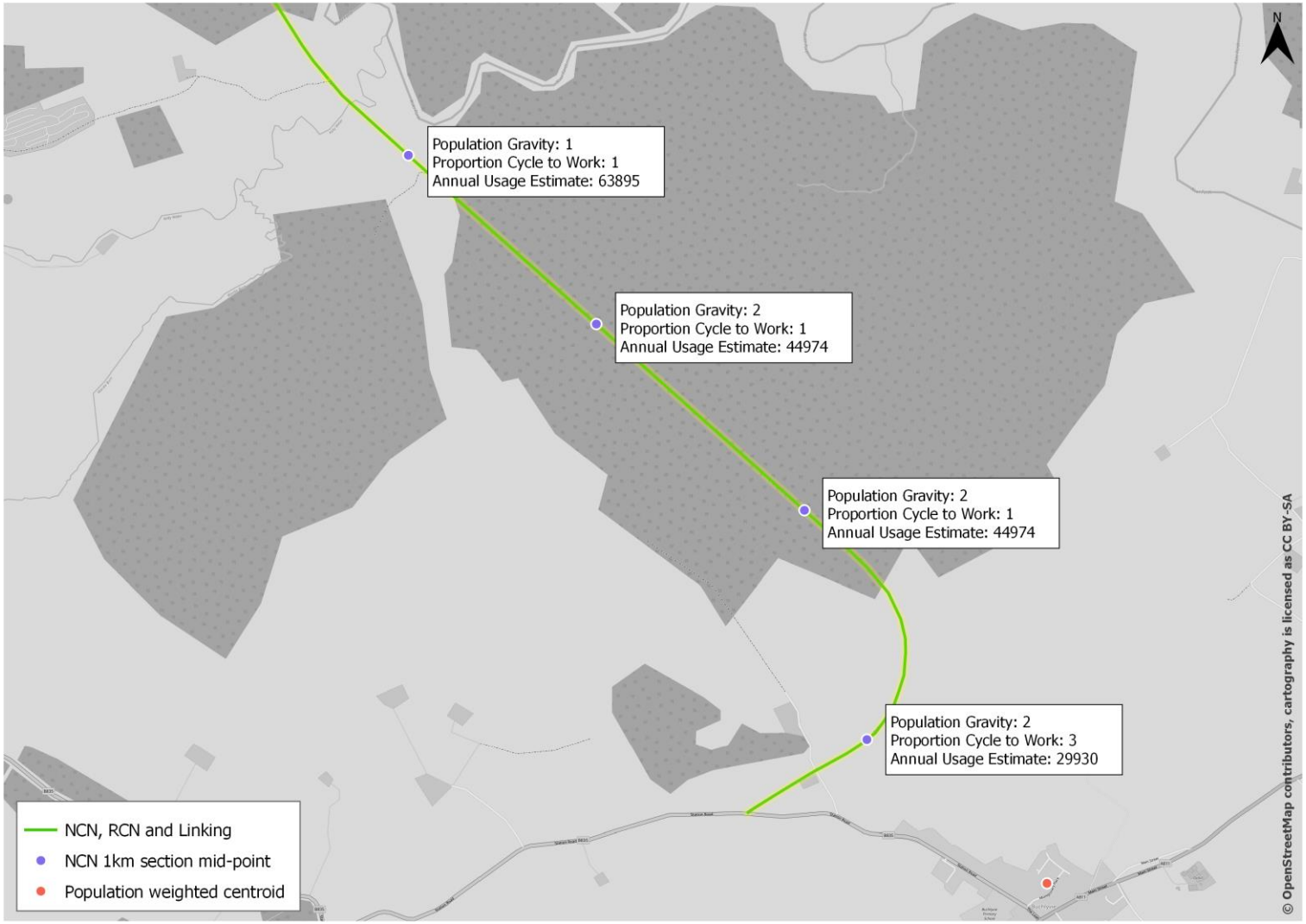
1.2.6 Calculating cycling usage across the entire NCN

Given that each route section is a maximum of 1km in length, and average cycling trips on the NCN are known to be longer than this, it is very likely than any cyclist trip counted in one route section also extends into adjacent route section(s) too. To account for this, the total 'cycling usage kilometres' for each tercile score combination was calculated by multiplying the median AUE of that group by the total kilometres of network in that group. The total 'cycling usage kilometres' for each group could then be divided by the median distance cycled on the NCN (2.42km)[3] to give an estimate for the total number of *individual* cycle trips made in each group .

These revised AUEs could then be summed across each group to give the total number of cycle trips made on the NCN in 2018.

[3] Figure taken from a previous Sustrans study which mapped anonymous origin-destination data collected from route user intercept surveys conducted on the NCN in 2012. This origin-destination data was put through an external route planning website which calculated a 'balanced' route between destinations, taking into consideration length, duration and safety of the journey. The total distance travelled on the NCN for that trip was then calculated, and a median NCN trip distance calculated from an aggregation of the RUIS dataset.

Figure 2 A map illustrating how population in proximity and proportion of the population who cycle to work tercile values are calculated for 1km NCN section mid-points, and the AUEs assigned to them.



1.2.7 Calculating pedestrian usage across the entire NCN

Given the unreliability and lack of automatic counters which also count pedestrians, estimates for usage on the NCN have, up until this point, centred on cycling trips only. Yet pedestrian usage on off-road sections of the NCN is likely to make up a considerable proportion of all active travel on the NCN (pedestrian usage on on-road sections of the NCN is assumed to be 0).

To estimate the number of walking trips made on traffic-free sections of the NCN in 2018, a ratio of three walking trips to every one cycling trip is used. This figure was taken from a previous Sustrans study which showed there to be a significant positive linear correlation between cycle and pedestrian counts. Using data collected from NCN RUIS, Connect2 RUIS and automatic counters, the study showed the weighted average of the median pedestrian to cyclist trip ratio from each data source to be 3.0:1.

The total number of cycle trips that took place on traffic-free sections of the NCN was first calculated. Here the methodology described above was replicated, but the total kilometres of off-road network in each group used to calculate the total 'cycling usage kilometres' for each group instead. The total number of traffic-free cycling trips for each group could then be calculated, and the ratio of three pedestrian trips to every one cycling trip calculated for each group. This traffic-free pedestrian trip estimate could then be summed with the cycling trip estimate (for all route types), to give a figure for the total number of walking and cycling trips made on the NCN in 2018 (WNUE).

1.3 Estimating the impact of walking and cycling levels on the NCN

Sustrans' Research and Monitoring Unit have also produced a number of figures describing the impact of the estimated levels of walking and cycling on the NCN. Such figures come from the aggregation and analysis of route user intercept surveys (RUIS) conducted on the NCN between 2017 and 2018, and their input into a number of impact evaluation tools.

1.3.1 Route User Intercept Surveys (RUIS)

Key figures:

2. 90% of National Cycle Network users agreed that using the Network improves their wellbeing

Route User Intercept Surveys (RUIS) are a core monitoring tool for Sustrans and have regularly been commissioned on the NCN UK-wide to keep track of user travel behaviour, attitudes and demographic makeup. RUIS are surveys delivered at a particular traffic-free location on a route and involve stopping as many route users as

possible, collecting information such as trip purpose, frequency, motivations for route use, physical activity levels, wellbeing and demographics.

Where sample sizes allow, weighting can also be applied to the survey results at each location, adjusting them to better represent the views of the actual route user population at the survey location. The characteristics of the survey sample (demographics and mode of travel) are compared to those that have been observed in the concurrent manual count. Under or overrepresentation of different user types within the survey sample compared to the population (manual count) is compensated for by applying a weighting factor to the survey results.

These RUIS can be aggregated and analysed as one dataset to develop insights into the behaviour, attitudes and demographic make-up of the wider NCN user population. However, given that there is no sampling methodology to determine the location of RUIS conducted UK-wide, this aggregated dataset should not be considered wholly representative of the entire NCN. Nonetheless, it represents the best dataset available from which assumptions about NCN user behaviour can be made. No weighting can be applied to this aggregated dataset as a whole, as relevant demographic data for the full NCN user population does not exist.

For the purposes of this exercise, all weighted RUIS delivered on the NCN between 2017 and 2018[4] have been aggregated together and analysed. In total 54 surveys have been analysed together.

90% of users agreed or strongly agreed to the following question:

To what extent have the following factors influenced your decision to use this route today? [Option] It improves my wellbeing.

1.3.2 MOVES

Key figures:

3. Approximately 8,000 serious long-term health conditions averted by walking and cycling on the National Cycle Network

MOVES was developed by the University of East Anglia's Medical School in the first instance for Sport England to help demonstrate the economic benefits of participating in sport and wider physical activity. It is based on evidence that increased physical activity reduces the risk of a number of diseases including cardiovascular disease and diabetes.

The tool works by comparing groups of participants engaging in a programme with the same group if they had not taken part in this programme. MOVES then calculates

[4] It was decided that all RUIS delivered on the NCN in 2017 should be used alongside the RUIS delivered in 2018, to increase the sample size available for evaluation.

the NHS savings (and the associated number of treatments averted) that arise from the levels of physical activity undertaken by the programme participants. In its application to NCN usage data, MOVES calculates the NHS savings that result from the physical activity obtained through walking and cycling on the NCN, above and beyond that which users would achieve otherwise.

The MOVES tool is run independently for pedestrians and cyclists and for users aged 16-30, 31-45, 46-60, and 61 and above. The following inputs are required in the model:

Table 4 Inputs required by the MOVES tool

Input	Description
Gender	From an aggregation of the RUIS dataset, 56% of pedestrian users and 75% of cyclist users on the NCN are male. This gender breakdown is applied to all iterations of MOVES for each age group, as the gender split by each age group was not available.
Age group	MOVES is run separately for the following age groups: 16-30; 31-45; 46-60 and 61+ All aggregated RUIS responses required in the MOVES tool are therefore filtered according to each of these age groups.
Starting activity level	In-order to provide a more conservative estimate of the physical activity benefits from NCN use, the activity levels of participants before their activity on the NCN is marked as 'vigorous[5]'.
Activity type	From a drop down of activity types, walking is selected as the activity type for pedestrian users of the NCN, and cycling (leisure) the activity for cyclists. This is opposed to cycling (competitive), which assumes a much higher cycling speed than average.
Intensity	The walking speed of NCN users is selected as 'slow', rather than 'brisk' or 'cross-country/hills' to again provide a more conservative estimate of benefits. Cycling intensity is also selected as 'moderate', rather than 'low' or 'vigorous', as this is closer in line with the average speed of cyclists.
Duration	Here the overall adult hours of physical activity per day is required for walkers and cyclists.

[5] Reported 150 minutes per week of moderate physical activity, 75 minutes per week of vigorous physical activity or an equivalent combination of the two

Input	Description
(total hours travelled per person per day)	The total adult kilometres walked and cycled on the NCN (as obtained from the BCR tool) is divided by the average travel speed of both modes (km/h) (as indicated in WHO's HEAT guidance) to give a value for the total hours travelled on the NCN in a year. These values are then divided by 365, to calculate the total hours travelled by all NCN users in a day. The total number of individuals estimated to be making these trips (as calculated in the BCR tool) is then used to estimate the total hours travelled per person per day on the NCN by each mode.
Frequency	The number of days per week each participant takes part in this physical activity is taken to be 7, in line with the assumptions used to estimate the duration each user travels on the NCN each day.
Time horizon	The time period over which the model calculates costs and outcomes was set to 1 year, to account for our reporting requiring us to estimate the benefits from the levels of walking and cycling observed in just one year (2018).
Participant numbers	The number of individuals undertaking the physical activity (as estimated in the BCR tool) is multiplied by the proportion of users in each age group (from the aggregated RUIS dataset).
Median years of ongoing participation	This has been marked as '100% ongoing' and assumes that all users of the NCN maintain this level of physical activity over the whole year.

Outputs from the MOVEs tool cover the total number of cases of disease avoided in each age group, including:

- Type 2 diabetes
- Coronary heart disease
- Cerebrovascular disease (stroke)
- Breast cancer
- Colorectal cancer
- Dementia
- Depression
- Hip fracture

1.3.3 Benefit Cost Ratio (BCR) Tool

Key figures:

4. Approximately £1 billion saved through the prevention of 574 early deaths as a result of walking and cycling on the Network

The BCR tool is used in economic appraisals of capital investments in walking and cycling, and can be used to monetise a range of benefits known to be associated with a shift away from car use to active travel. The tool requires a number of different inputs relating to estimated levels of walking and cycling on the NCN (i.e. the whole network usage estimate), and the assumed behaviour of these users, as obtained through the aggregated RUIS dataset. These inputs are listed below.

Table 5 Inputs required for the Sustrans BCR tool

Input	Details
Total number of walking and cycling trips per year	For the purposes of this exercise, this was taken to be the whole network usage estimate for walking and cycling trips on the NCN in 2018.
Proportion of walking and cycling trips per year which are made by adults (%)	In line with the Department for Transport's WebTAG framework[6] for economic appraisal of transport interventions, economic benefits are only calculated for adult users. The proportion of adult users on the NCN was taken from an aggregation of all manual count data which was collected alongside RUIS delivered on the NCN in 2017 and 2018.
Adult walking and cycling trip frequency (%)	These inputs were available from the aggregation of all RUIS delivered on the NCN in 2017 and 2018.
Adult walking and cycling trip purpose (%)	
Proportion of adult walkers and cyclists who haven't used a car as part of their trip (%)	
Proportion of adult walkers and cyclists who could have used a car but chose not to (%)	

[6] https://www.gov.uk/government/publications/webtag-tag-unit-a5-1-active-mode-appraisal-may-2018

Outputs from the tool are calculated in line with TAG Unit A5.1 for Active Travel Appraisal contained in the Department for Transport's WebTAG framework for economic appraisal.

Health outputs from the BCR tool are calculated using the methodology developed for the World Health Organisations (WHO) Health Economic Assessment Tool (HEAT). This tool estimates the level of reduced mortality that results from specified amounts of walking or cycling. The value of reduced mortality is taken from the value of a prevented fatality given in the TAG Data Book. It is this value which has been presented in the 2018/19 Annual review.

The health benefits given a value in the BCR tool are different to the outputs from MOVES. The former relates to the monetary value of longer life expectancies attributable to levels of walking and cycling on the NCN, rather than the associated NHS savings that MOVES calculates as representative of the reduction in healthcare treatments as a result of physical activity on the NCN.

Other monetised benefits are also output from the BCR tool (but were not communicated in the Annual Review 2018/19). These include:

- Absenteeism
- Amenity
- Greenhouse gas emissions
- Accidents
- Decongestion
- Air quality
- Noise
- Infrastructure
- Indirect taxation

2 Schools

This chapter sets out the methodology that Sustrans' Research and Monitoring has used to estimate a number of key figures surrounding Sustrans' work with schools , as published in the 2018/19 Annual Review.

2.1 Background

Sustrans works with schools, local authorities and their surrounding communities to provide a programme of activities which encourage active travel[7] to school. These include raising awareness of cycling, organising bike training and planning safe routes to school. We do this by helping schools make the case for active travel in their school travel plans, supporting cycling champions in schools, and running activities and events that showcase active travel.

We work with schools in England, Northern Ireland, Scotland and Wales.

The common objectives of our schools projects are:

1. To increase cycling levels and to encourage more cycling to school and in leisure time through a series of specifically tailored and targeted cycling initiatives;
2. To educate children on the benefits of cycling and active travel compared to sedentary modes (especially car use);
3. To work closely with school staff to embed a culture of cycling, establishing a 'cycling champion' with a specific role to promote cycling as a positive travel choice (for that school);
4. To communicate the benefits of cycling beyond the project schools, through tools including press stories, local meetings and council newsletters; and
5. To ensure that the project is inclusive and that participation is maximised for as many pupils as possible.

Data from the 2017/18 school academic year of the projects was reported in the 2018/19 Annual Review.

2.2 Our evidence collection tools

2.2.1 Hands up surveys

Hands up surveys are the main source of data used by RMU to report on uptake of active travel in schools. Children raise their hands in response to a range of questions, and responses are recorded. Data is analysed on the percentage of pupils reporting that they travel to/from school via different modes (both active and 'sedentary') as well as other contextual information on use of bikes at home and

[7] Active travel refers to travelling by active modes: cycling, walking, scooting and skating.

outside school. The surveys are conducted, where possible, before and after our engagement so we can measure change.

2.2.2 Activity logs

The Sustrans school officers keep an online activity log of all activities and events they deliver. This is regularly updated and records the type of activity delivered, where the activity took place, and the number of pupils, school staff, parents and siblings of participants who took part in the activity.

2.2.3 Teacher and partner/funder surveys

Teacher and partner/funder surveys are conducted at the end of each school year. The survey asks school staff whether they think more pupils are walking and cycling since our engagement, whether pupils' levels of physical activity has changed as a result of the project and other information. After the Big Pedal challenge we conduct a survey to get feedback from teachers on the challenge.

2.2.4 Focus groups with pupils

Focus group data from I Bike (the schools programme in Scotland) is used to provide more in-depth detail about pupils' engagement in the project. Pupils are asked for their views on the project including if they think their activity levels have increased as a result of the project and if any other external factors may have contributed to a change in activity levels. Most of the reported qualitative data is derived from these focus groups. Northern Ireland ask an open-ended question, known as the P6 survey, which provides additional qualitative data from year 6 pupils.

2.3 Sustrans' schools outputs

Measure: Number of schools with which Sustrans engaged during 2017-18	
United Kingdom	1,188
England (including London).	673
Wales	104
Scotland	224
Northern Ireland.	187

This is the number of schools who engaged with Sustrans on at least one activity during the 2017/18 academic year. This does not include activities that take place outside of schools, such as those run by or with local councils.

Measure: Number of pupils engaged during 2017-18
At least 209,363 pupils

We cannot determine the exact number of pupils that Sustrans has engaged. We conduct a head count of those attending activities but we do not record individual names. Therefore, we cannot identify the number of individuals who take part in multiple activities over the course of an engagement in each school. This approach is dictated by the need to keep data collection proportionate to the needs of the project. We do not want data collection to impede efficient delivery and we do not want to collect personal data where it is not necessary.

We are able to estimate a minimum and maximum range of participants. The minimum number of pupils engaged is calculated using the highest attendance recorded on a single day at an activity at each school. Activities conducted outside of schools, for example by local councils, are not included. Additional, uncounted pupils may have attended these events. This is then summed for all schools we work with. The maximum range is based on the total school roll for the project. While the whole school may be targeted by the project, not every individual pupil will actively engage with the project. We therefore report the minimum engagement figures as a key output.

Measure: Number of pupils taking part in the Big Pedal Challenge during 2017-18
513,443

During the Big Pedal, each school participating in the challenge records the number of pupils, staff and parents cycling, walking, scooting or using a wheelchair to school. This is completed on the Big Pedal website daily and at the end of the challenge the data is analysed to provide a breakdown for each school, region and national level. For the 2018/19 Annual Review we have limited the data to the national level.

Measure: Percentage of schools reporting continued cycling or scooting of pupils to school after the Big Pedal during 2017-18
82%[8]

Following the Big Pedal challenge, participants (schools) were surveyed for feedback on the event and also to assess uptake of active travel by pupils after the challenge. This helps to assess adoption of cycling culture by pupils after the event.

Measure: Percentage of girls cycling to school during 2017-18
7.8%

In 2008, 2.8% of girls surveyed were cycling to school. This increased to 7.8% in 2018, meaning the number of girls cycling to school over the past 10 years has almost tripled in those schools participating in the I Bike project. This data was obtained from Hands Up Surveys, with children asked to raise their hands in response to how they travel to school. The data is then disaggregated by gender.

Measure: Percentage of partners who would recommend I Bike to other local authorities
100%

[8] 120 schools responded to survey out of 1200 schools participating in the Big Pedal challenge.

This data is based on the answers provided by the 34 respondents to the question '"Would you recommend I Bike to other organisations/local authorities?" Between May and June each year, online partner surveys are conducted with key I Bike partners e.g. local authority funders, other cycling organisations and community groups that have worked with the I Bike programme. I Bike Officers provide a link to the survey to all organisations with which they have worked, and ask the partners questions about the impact the project has had on active travel, car use, physical activity and their organisation's partnership working. Data from these surveys feed into the longer term project evaluation and are used to validate the impact of the programme on participants. In 2017-18, 34 responses were received for the partner survey from 22 organisations, including nine of the twelve local authority areas with an I Bike officer.

3 Volunteers

Sustrans has always worked in close partnership with communities, encouraging volunteer input to help achieve our vision. Working with volunteers enables us to accomplish much more and gives local people a stake in our work, ensuring our projects are responsive to the needs of local communities.

As Sustrans has grown, the volunteers' role has increased and diversified. As our work has shifted from a focus on the NCN to a broader remit, the number of Sustrans volunteers and the range of tasks they carry out have expanded. We now have over 3,500 volunteers supporting our work in the UK.

For the 2018/19 Annual Review we are reporting on volunteer outputs. We will repeat our volunteer survey in 2020 and will report on volunteer outcomes as well next year.

3.1 Background

3.1.1 Sustrans' volunteers

Sustrans' registered volunteers act under our direction, follow our guidance and help us to achieve our organisational goals. Registration occurs if the volunteer receives training, requires a safeguarding check, needs to have their contact details logged (for use by others) or needs to use central volunteer activity reporting.

There are other volunteers who may carry out activities in conjunction with us who are not registered. These include workplace champions, volunteers of our partner organisations, or event attendees. The number of unregistered volunteers is unknown.

3.1.2 How we collected evidence

Volunteer activity and attendance logs are used to report on the volunteer outputs. This data is available from the Sustrans VolunteerNet and TravelActively databases.

3.2 Outputs Methodology

3.2.1 Use of databases to log volunteer activity

Our activity databases do not necessarily reflect all activity that volunteers have undertaken. We know anecdotally and from the results of our 2016 survey that some volunteers do not log all their activity, and some do not use the system at all. Some of the reported differences in activity levels between different regions and nations and between different projects reflect differences in logging activity, rather than differences in volunteering activity.

Volunteers can log their time using the following Sustrans databases:

1. **VolunteerNet**; a log of time and activities by volunteers. This is the primary database for logging volunteer activity.
2. **TravelActively** (TADB): a log of time and activities by volunteers. This is the main activity database for Sustrans behaviour change projects and is mostly used by staff.

3.2.1.1 VolunteerNet

This year we only used the 'Activity time logs' dataset from VolunteerNet which contains simplified evidence on time expended on activities. This information is entered for each volunteer.

3.2.1.2 TravelActively database (TADB)

We know from reporting last year that there are some activities held only in TADB, and some duplication between TADB and VolunteerNet.

We checked which projects were using TADB and whether they were also logged in VolunteerNet. If they were duplicated, we used VolunteerNet data because it recorded the hours per activity, instead of defaulting to one hour.

If the project was only logged in TADB, that data was added to the dataset from VolunteerNet.

In total there were three projects using TADB. Two were found to have data only in TADB, so that data was added to the VolunteerNet data for analysis. One project was using both systems.

3.2.2 Analysis

UK, national and regional data was analysed for:

1. Number of volunteers logging activities;
2. Total hours contributed.

A check on the data showed that the number of volunteers logging activity was slightly less than last year (1,270 this year, 1,338 last year). The number of hours logged this year was also less than last year, and was less by a similar ratio as the number of volunteers logging activity.