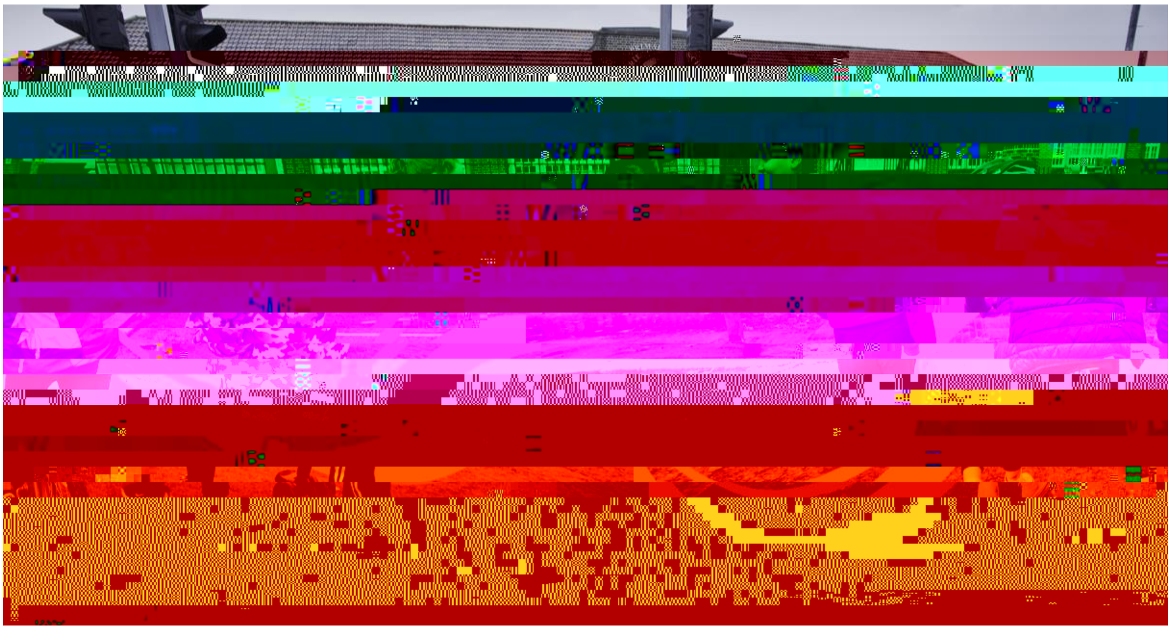
Modelling the impact of active travel school interventions in Scotland



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To find out more, please contact: monitoring@sustrans.org.uk

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Introduction

Active travel delivery partners in Scotland deliver a number of interventions in schools with the aim of promoting cycling, walking and other forms of active and sustainable travel among the pupils.

This report looks to answer the questions:

> What would travel to school rates be, had no school interventions been delivered in the five academic years between 2016-17 and 2020-21? What could we expect in the next five years?

Through this, the analysis aims to demonstrate the impact of active travel interventions on school travel and show the scale of potential impact when interventions are withheld or increased at a national level. This is against a backdrop of increasing car travel across the UK[1].

The analysis covers primary schools in Scotland. It includes data on typical mode of travel sourced from the Hands Up Scotland Survey (HUSS)[2] between 2016 and 2021. HUSS, delivered by Sustrans in September each year, is an Official Statistic in Scotland, designed to provide reliable and up to date information on mode of travel to school. HUSS covers about 80% of primary schools in Scotland, collecting data from around 285,000 pupils each year[3], making it the largest survey of its kind in the UK.

The analysis also includes data on the delivery of the following interventions in primary schools: I Bike, Bikeability, Big Pedal (now called Big Walk and Wheel), WOW – the walking to school challenge, and the installation of scooter parking and cycle parking. This data has been made available by Sustrans, Cycling Scotland and Living Streets.

For this analysis, we calculated the actual observed changes, year by year, in the way pupils travelled to school in schools that had active travel interventions and those that did not. We then used these change values to estimate the intervention rates in three **hypothetical** scenarios:

[1] Source: Departnment for Transport Traffic Statistics: https://roadtraffic.dft.gov.uk/summary

[2] https://www.sustrans.org.uk/our-blog/projects/uk-wide/scotland/hands-up-scotland-survey

[3] Source: Hands Up Scotland Survey ‘2022 National Results’ document. Accessible from: https://www.sustrans.org.uk/our-blog/projects/uk-wide/scotland/hands-up-scotland-survey

around 6.8 million additional car journeys[7] **or 17.5 million additional car kilometres** each academic year[8], resulting in an additional **2.9 thousand tonnes of CO_{2e} emissions**[9].

If no active travel interventions were delivered over the previous 10-year period, then by 2025-26 this could result in

15,800 fewer primary pupils travelling actively on a typical day

up to **17.5 million** additional car kilometres over a school year
(6.8 million additional car journeys)

2,900 tonnes additional CO_{2e} emissions per year

Scenario B: All schools had at least one intervention delivered

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Scenario C: All schools had at least two interventions

Furthermore, if intervention delivery had been increased, so that all primary schools in the country received two active travel interventions starting from 2016, then by 2026 the proportion of primary school children travelling actively would be **4.6 percentage points** higher than in the case of business-as-usual at the current delivery levels. This would mean an additional **18,000 pupils travelling actively** on a typical day, resulting in over **6.4 million additional active travel trips** in a year.

At the same time, we estimate that car travel rates would **be 7.3 percentage points lower**. This could mean around **28,600 fewer pupils travelling by car** on a typical day, around **12 million car trips or close to 31 million car kilometres avoided** over the course of a school year, and more than **5.1 thousand tonnes of CO_{2e} saved** each year.

If two active travel interventions were delivered in each primary school in Scotland over the previous 10-year period, then by 2025-26 this could result in

18,000 more primary pupils travelling actively on a typical day

up to **31 million** car kilometres avoided over a school year
(12 million fewer car journeys)

5,100 tonnes lower CO_{2e} emissions per year

Figure 2: Car travel rates (%) modelled for business-as-usual and hypothetical scenarios of intervention delivery, including future forecasts

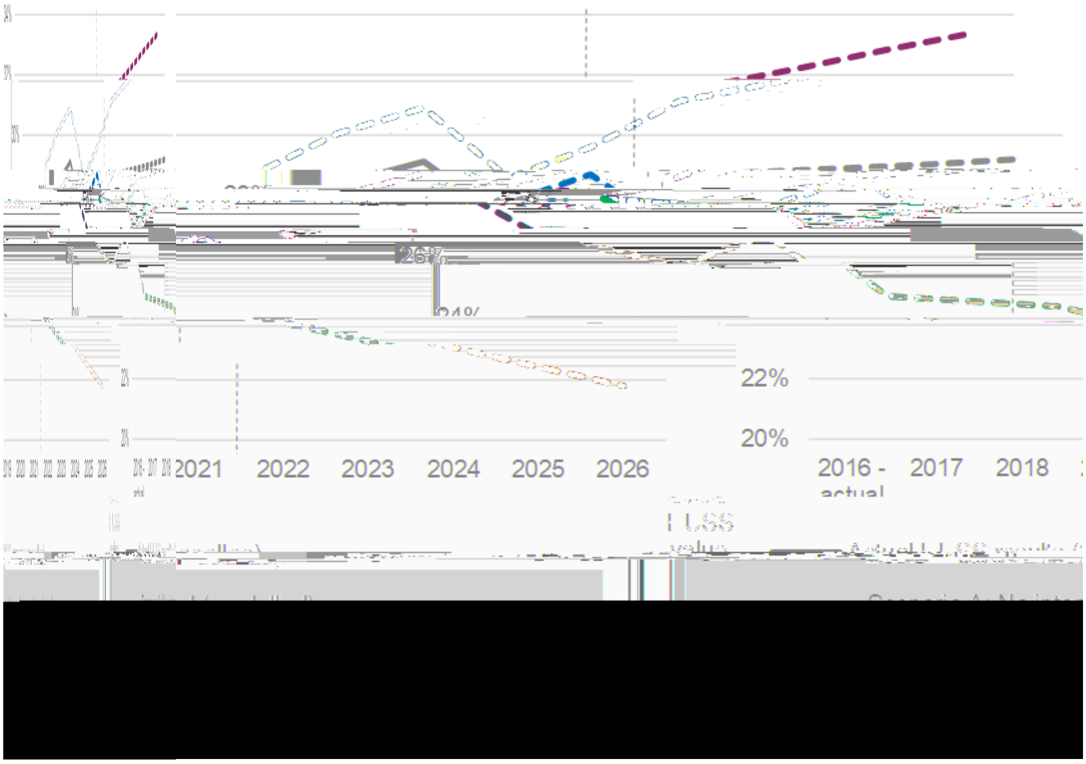

Table 1: **Active travel rates modelled for business-as-**

Methodology

First, we calculated the actual observed yearly changes in travel to primary school between the 2016-17 academic year and the 2020-21 academic year in three groups of schools:

- schools that had no interventions in a particular school year
- schools that had at least one intervention
- schools that had two or more interventions

Schools with interventions included primary schools that delivered any one or more of the five interventions considered in a particular school year. Similarly, schools with two or more interventions would have had two or more of these in a particular year. (Note that this group overlaps with the previous one.)

In the next steps, we modelled three hypothetical scenarios by applying the change rates calculated above to all the primary schools in Scotland:

- **Scenario A**: no schools had interventions between 2016 and 2021
- **Scenario B**: all schools had at least one intervention, some had more
- **Scenario C:** all schools had at least two interventions, some had more.

We used the actual national mode share values from 2016, as per the HUSS published findings, as the starting value for these calculations.

Finally, we have estimated what the mode share would look like over the following five years in each of these three scenarios using a linear regression model.

We have excluded the school data collected in 2020 from the forecast model used to estimate these future values, on account of the atypical travel patterns observed during the Covid-19.

Further details on the methodology, the limitations of the analysis, breakdown of findings by mode and alternative findings with the 2020 data *included* in the model are available in the separate *Technical report*.