October 2025

Using data to expand safe active travel:

DUBLIN CITY, IRELAND

Introduction

On a typical day in Dublin – Ireland's largest city with approximately 600,000 inhabitants[1] – residents make an estimated 220,000 return walking and cycling trips that might otherwise be taken by car. These journeys contribute to 530,000 such trips in the wider Dublin Metropolitan region, saving the health system €64.5 million annually, equivalent to more than 1.1 million doctors' appointments.[2]

Although these figures are promising, private car is still the main mode of transport. The Irish Government has set ambitious targets to promote health and safety, reduce emissions, and make cities more liveable by investing in active travel.[a] Between 2020 and 2024, Ireland's National Transport Authority (NTA) allocated over €1 billion through its Active Travel Investment Programme, with over 600km of safe walking paths and cycling lanes delivered to date.[3] This €1 billion investment is Ireland's biggest ever push for walking and cycling as part of Ireland's National Sustainable Mobility Policy for Project Ireland 2040.[b][4][5][6] Through this national framework, Dublin City Council (DCC)'s Active Travel Programme Office (AcTPrO) aims to deliver 314km of active travel infrastructure in the capital.[7] The goal is to put 95% of Dubliners within a 5-minute walk of a safe route.[8] Public investment of this scale has afforded an opportunity for local authorities to implement significant shifts in the transport system across cities and towns in Ireland.

However, measuring the impact of these investments thus far has been a challenge. Until now, data has been patchy and scattered, making it nearly impossible to track if investments were really changing lives. The use of technology and other methodologies for data collection has often been an afterthought, which means that cities find it challenging to assess and communicate the effect of these projects in their communities.

To address this challenge, in March 2024 Dublin City Council launched its *'Data Insights for Active Travel'* project, with support from the Partnership for Healthy Cities. It is co-led by DCC's AcTPrO and the Dublin Smart Cities team[9], and aims to pilot new technologies and community engagement for evaluating the impact of the city's active travel investments. Two active travel routes were selected for the pilots: Kilmainham to Thomas Street (K2TS) and Clontarf to City Centre (C2CC). Over 1,300 Dubliners have already shared feedback on what helps or hinders their daily journeys, insights that are now driving design changes on the ground.

The project connects a range of public sector partners, and its objective is to replace an ad-hoc approach to data collection with a systematic and integrated process. It also aligns local and national sustainable mobility strategies with WHO-recommended interventions to increase physical activity, strengthening policies and practice connected to safe walking and cycling.[10][11][12][13]

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[a] Walking, wheeling, cycling and scooting

[b] Project Ireland 2040 is the government's long-term overarching strategy to build a more resilient and sustainable future. The National Planning Framework and the National Development Plan 2021-2030 combine to form Project Ireland 2040.

The project has already won international recognition, taking home the prestigious Mobility Award at the Smart City Expo World Congress in Barcelona.

Process: Building the data ecosystem

The project began by adopting a 'challenge-based' approach — it identified the data and evaluation needs before exploring solutions. The first step was for the Data Insights team to form a Steering Group with stakeholders from the NTA, two national research centres and relevant DCC departments. Two early-stage workshops identified and prioritised twenty-one baseline indicators (e.g. surface quality, age/gender accessibility) and six outcomes (e.g. improved perceived safety, increase in active travel over time). As a result of these workshops, a Regional Data Network was also established to support wider project dissemination and information exchange.

The next step was to find the right solutions to inform the selected indicators. Extensive research resulted in the selection of innovative technology and community engagement solutions that were considered appropriate for use in the two selected pilot routes. For the first time, Dublin is using AI sensors, smart bike lights and community surveys to capture how people actually move:

- AI sensors alongside the road that capture data on modal split and close passes;
- An AI-based safety assessment tool using international cycle route risk evaluation protocols;
- Smart bike lights that gather anonymous journey data.

These efforts led to the creation of the Dublin Active Travel Dashboard[14], which brings together live and historical data to correlate active travel patterns with infrastructure use, public health projections, climate impacts and estimated financial savings (in terms of fuel). It also integrates wider platform data from other applications such as Strava and Google Environmental Insights, alongside validation exercises conducted to ensure data accuracy.

In 2025, the work expanded to include safety assessments of new Active Travel routes, qualitative research, and community engagement. At the same time, a survey in collaboration with Trinity College Dublin (TCD) and ADAPT Research Centre via University College Dublin (UCD) was launched in May 2025 to capture community perceptions and experiences of walking and cycling. Focus groups were also conducted in the North-East Inner City Area of Dublin to find out about children's mobility.

Results: Shared data insights for shared outcomes

Overall, the project has successfully set up a new structure of local, regional and national partners and created a new data infrastructure to measure the impact of active travel investments and address data gaps. This collaborative approach mirrors WHO's emphasis on cross-government coordination mechanisms and accountability frameworks for walking and cycling. The methodology and data has already been used to inform councillors, towards informing future strategy and investment decisions as part of the Transport Strategy for the Greater Dublin Area 2022–2042.[7] To date, it has delivered achievements across several areas, including:

- **Integrated active travel data platform:** The Dublin Active Travel Dashboard was launched in February 2025 and represents the city's commitment to data transparency and accountability.[14] By combining open data sets with local project data, it offers a more detailed and dynamic view of active travel trends. The dashboard also applies the WHO's Health Economic Assessment Tool (HEAT)[13] to model projected health and environmental impacts for different parts of the city using data from the 2022 and 2016 censuses. The tool notes that walking or cycling to work/school/college reduces the risk of premature deaths by 41% and 16% respectively.

- **Automated pedestrian and cyclist counts:** Once fully installed, 12 AI sensors along the two pilot routes will provide continuous, anonymised counts of modal split activity for the first time in Dublin. The insights will inform infrastructure improvements and evidence-based policy decisions. Early data from the 5 sensors installed in Q3 2025 shows significant active travel use along the C2CC route. Recent data showed that Tuesdays are the busiest cycling days (average of 1,243 inbound cyclists recorded) while Sundays are the quietest day (average of just 824 inbound cyclists recorded). These insights on journey volumes pre- and post-intervention will help demonstrate the value of the investment for citizens, support operational decisions such as seasonal maintenance, and prioritise targeted interventions in longer-term network planning.

- **Infrastructure safety assessment:** With the AI-based safety assessment tool, the project will be able to systematically evaluate cycling and walking infrastructure against international safety benchmarks.[15][16] An ongoing study of an additional 18km of active travel routes enables identification of high-risk sections and ensures the delivery of safer routes. The safety rating will guide upgrades to share with the DCC active travel team, citizens and planners alike in Q4 2025.

- **Cyclist experience and route data:** The smart bike light data has already provided insights on cyclist behaviours, route choices and surface quality in the two pilot areas. The user-generated dataset reveals real-world experiences pre-intervention (Oct 2021-Mar 2022) and post-intervention (Oct 2024-Mar 2025), allowing before-and-after comparisons such as an increase in cyclists using the C2CC route, shifting from alternative routes into the city. Linked with a new dashboard, the insights collected will support responsive design and prioritisation of upgrades to road surfaces.

- **Community perceptions and experiences**: The 2025 community perceptions survey targeted the two pilot areas. Over 1,300 citizens across the two pilot routes shared their experiences and findings provided valuable insights into how citizens' perceptions shape travel choices. The results are helping to inform further engagement and a range of local and national strategies towards making active travel safer, more inclusive, and more widely adopted.[10][17]

Dublin's Data Insights for Active Travel project shows how collaborative data ecosystems are key to turning infrastructure investments into tangible health benefits and safer streets for all road users. The experience from the project implementation will provide the foundation for a Dublin toolkit on Active Travel collaborative projects and data-gathering solutions. The toolkit will include project activities and lessons learnt during the 2024–2025 pilot, to guide replication and scaling.

The project model of integrated data collection, challenge-based innovation, and community outreach has already attracted interest from other Irish municipalities. As Dublin's work progresses, it will continue to show how collective action to gather and share data insights can underpin more effective impact evaluation, contributing to healthier, more inclusive and more sustainable cities.

This project is led by Dublin City Council (DCC) Active Travel Programme Office (AcTPrO) and Smart Cities Team, in partnership with ADAPT Research Ireland Centre for AI Driven Digital Content Technology, the National Transport Authority (NTA), Trinity Centre for Transport Research and Innovation for People (TRIP) at Trinity College Dublin and Smart D8, and with technical and financial support from the Partnership for Healthy Cities. For more information on Dublin City's active travel work, please see the AcTPrO web page and its Development Plan 2022-2028 (Sustainable Movement and Transport).

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