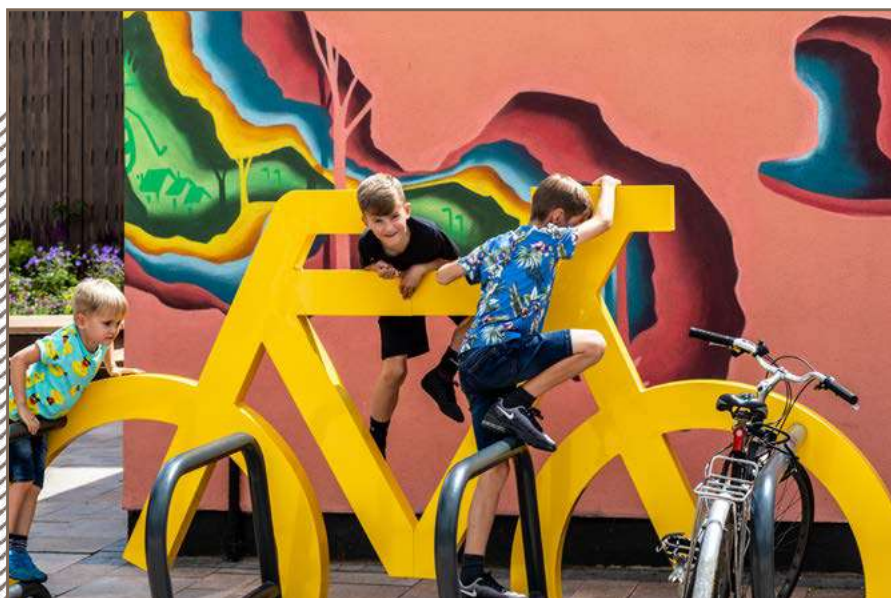


**STRENGTHENING THE
HUMAN INFRASTRUCTURE
OF CYCLING:**

**SOFT STRATEGIES FOR
INCLUSIVE UPTAKE**



BYCS

**provincie
Gelderland**

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ABOUT BYCS:

BYCS is a global not-for-profit organisation, guided by the belief that bicycles transform cities and cities transform the world. They work internationally with businesses, governments, nonprofits and civil society to initiate and support community-led urban change through cycling.

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I. EXECUTIVE SUMMARY

Urban policies to encourage cycling have traditionally focused on urban planning and design measures, in a logic of “bicycle oriented development” or “build it and they will come”. Such strategies however often do not respond to specific barriers such as perceptions, access, ability, or awareness. Failure to account for such barriers will continue to exclude those who would benefit the most from cycling as daily transportation.

This report highlights the benefits of cycling promotion measures and presents key learnings from successful initiatives in order for them to be further considered and prioritised by cities and regions as they implement cycling strategies. It uses the framework of “human infrastructure” to advocate for greater attention to the emotional and social aspects of cycling cultures. The report also aims to guide cities and organisations by providing a framework to ensure all populations can identify with and access cycling.

The report's findings are the result of semi structured interviews with over 20 experts from the fields of planning, academia, policy and advocacy in 9 countries, as well as an overview of existing academic literature and research, 4 city and regional case studies, and illustrative “soft measure” interventions around the world.

The following 6 recommendations, including detailed action points, are intended for an international audience of city officials, decision makers, cycling advocacy and community groups, as well as educational institutions and industry.

1.

Remove skill and cost barriers to ensure all people can start cycling

2.

Initiate targeted, and continuous promotional campaigns

3.

Emphasise storytelling with a focus on diversity

4.

Engage with communities in meaningful partnerships

5.

Connect cycling to urban wellbeing

6.

Expand knowledge sharing and research around soft measures



“One of the most important steps in soft measures and behaviour change is not targeted at the general public, but at the professionals in the field who are expected to develop the plans, in order for them to understand the everyday experience and the barriers to cycling”

Lucy Saunders, Healthy Streets

II. BUILD IT AND WHO WILL COME?

Around 75% of school-aged children in the Netherlands cycle to school. Infrastructure contributes significantly to a child's ability to cycle independently, yet factors such as widespread access to cycles, trainings and education; or a supportive family and community¹ tend to be discounted when extracting good practices.

Leading cycling nations such as the Netherlands and Denmark have indeed built extensive networks of cycling infrastructure to ensure safety and comfort for all cyclists. This has created a culture of "casual cycling" within a national *habitus*² of cycling, leading to inclusive, widespread adoption that provides a myriad of health, economic, social, and environmental benefits³.

In less mature cycling countries however, perceived safety, associated with a lack of adequate infrastructure, is still the principal barrier to cycling. Car-centric street environments hinder the perception of cycling as a viable transportation option for many. Numerous studies have demonstrated the importance of connected, protected cycling infrastructure networks to address this issue, especially for underrepresented and more vulnerable groups^{4,5,6}. As a result of such success stories and studies, urban policies to encourage cycling around the world have focused on urban planning and design measures, especially around the provision of dedicated cycling infrastructure, in a logic of "bicycle oriented development" or "build it and they will come"⁷.

While these "hard" infrastructure strategies have a proven effect on modal shifts towards cycling, solely relying on them has several shortfalls. By ignoring varying norms, perceptions, habits, and attitudes towards cycling that vary among people of different backgrounds, ethnicities, ages, abilities and genders, the current paradigm too often fails to consider "who" will come once infrastructure is built, and what barriers remain to make cycling truly inclusive⁸. Furthermore, many practices that seek to address these shortcomings through community engagement, stimulation, temporary urban activations, access or education are seen as secondary priorities, or "nice to haves".

This report highlights the benefits of these cycling promotion measures and presents some key learnings from successful initiatives, in order for them to be further considered and prioritised by cities as they implement cycling strategies. **There exists considerable evidence pointing to a need for an integrated package of many complementary interventions alongside infrastructure to achieve substantial, inclusive increases in cycling**, such as bicycle promotion, pro-cycling programs and restrictions on car use. Studies have also demonstrated that behaviour change programs have high cost-benefit ratios⁹, and that taking a more multifaceted, coordinated approach can hold promise for cities even with very low current cycling levels¹⁰.

III. TAKING A COMPREHENSIVE APPROACH TO CYCLING

For a more comprehensive approach to the promotion of sustainable and active forms of travel, growing voices are calling for greater attention to behavioural change measures¹¹. There exists an increasing understanding that street, network and spatial-planning changes must be accompanied by behaviour change measures to facilitate a substantial and sustainable mode shift¹², yet the development of good practices are still relatively latent. Behavioural change is also often misunderstood and an underrepresented skillset in transport departments¹³.

Programs to shift behaviours can largely be grouped under "soft measures", defined as strategies to increase cycling through the use of community engagement, stimulation, awareness building, urban activations, training and education. It is important to recognise that "soft measures" is far from a perfect term. Grouping under one umbrella category all strategies that fall outside of "hard" infrastructure measures may even contribute to diminishing their valuation.

These practices, by encouraging the development of social networks and cultural practices around human-powered transportation rather than relying solely on changes in the built environment, can instead be understood as programs to strengthen the human infrastructure¹⁴ of cycling.

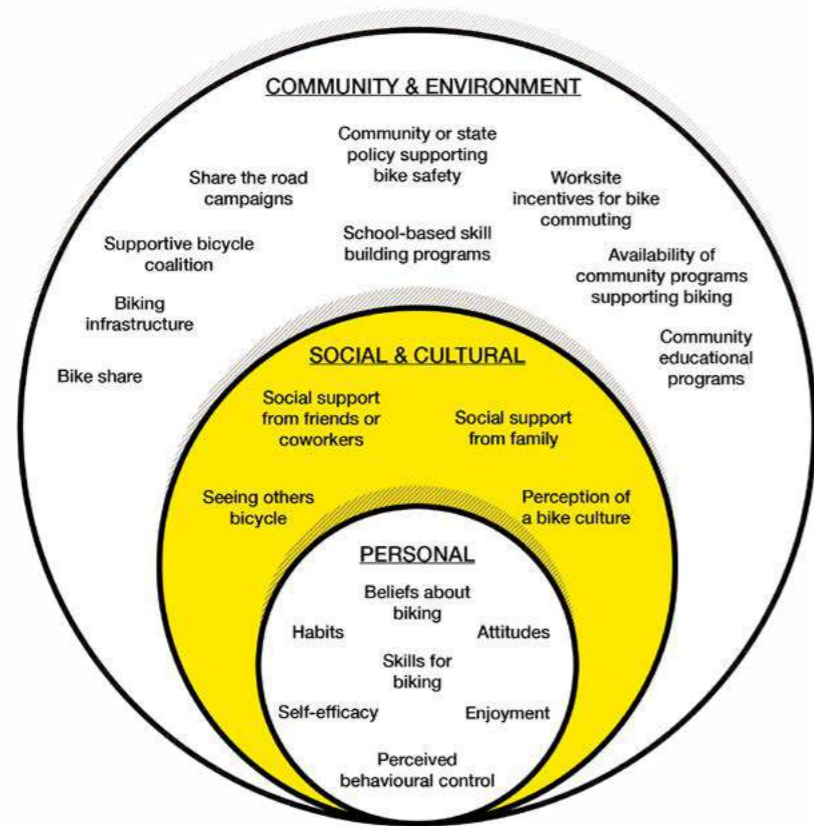
Human infrastructure is a relatively new concept when applied to cycling and was first used by Adonia Lugo during ethnographic research on Los Angeles' open street event, CicLAvia, which began in 2010¹⁵. Lugo proposes looking beyond the built environment, and paying closer attention to the social attitudes and knowledge networks that shape mobility. If human infrastructure is further considered, mobility cultures can begin to shift towards a more inclusive cycling paradigm.

“The marketing and engagement side of cycling promotion has largely been ignored by cities. There exists this mantra that if the right infrastructure is simply built people will have a hallelujah moment where they realise they can live their lives with fewer car trips, but we are now realising that is not enough.”

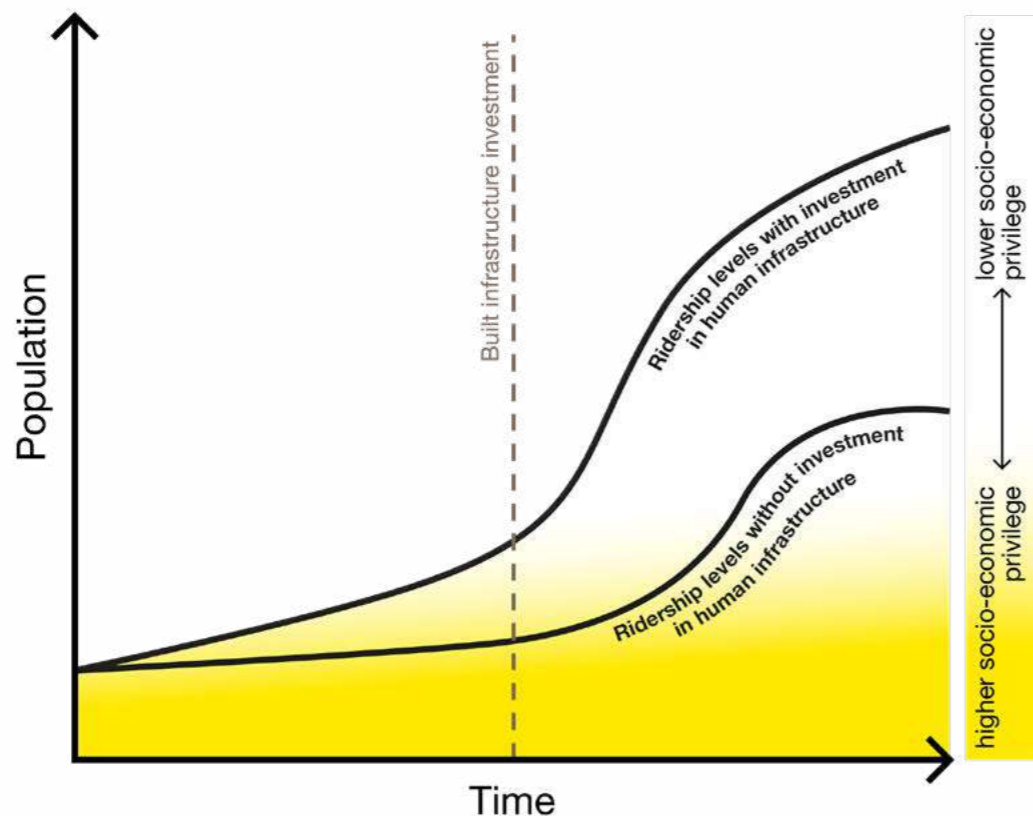
Chris Bruntlett, Dutch Cycling Embassy

1 Van der Kloof, "The Five Pillars."
 2 Kuipers. "Habitus".
 3 Dutch Cycling Embassy, "Dutch Cycling Vision."
 4 Sustrans, "Inclusive City Cycling."
 5 Aldred et al., "Cycling provision," 29-55.
 6 Gulsah et al., "Bicycling Choice," 347-365.
 7 Nello-Deakin and Nikolaeva, "The human infrastructure," 289-311.
 8 Burns et al., "Cycling for Everyone."
 9 Health et al., "Soft measures."
 10 Pucher, Dill and Handy, "Infrastructure," 106-125.

11 Sustrans, "It takes."
 12 Healthy Streets, "Healthy Streets Explained."
 13 Jennings, interview.
 14 Lugo, "CicLAvia," 202-207.
 15 Lugo, "CicLAvia," 202-207.



Targetable Influences on Biking Behaviour
Melissa Bopp, Dangaia Sims and Daniel Piatkowski



A Visualisation of the Intended Impact of Increased Investment in Human Infrastructure
BYCS

Understanding how to facilitate the strengthening of human infrastructure from both a policy perspective, and through greater support of existing movements working to engage with communities, is important to make cycling accessible to all and place more emphasis on barriers to access. **Greater attention to human infrastructure can help shape a new framework to ensure all populations feel that cycling is a strong modal choice for them. Failure to account for such barriers will continue to exclude those who would benefit the most from cycling as daily transportation.** [see visualisation]

By responding to the important role of socio-cultural and psychological factors in affecting travel behavior and mode choice, different initiatives can positively affect perceptions, attitudes, habits and social environments¹⁶ and make them favourable to cycling. Researchers Melissa Bopp, Dangaia Sims and Daniel Piatkowski have offered a comprehensive categorisation of influences on cycling uptake that can be a useful lens when approaching cycling strategies in a multifaceted way¹⁷. These targetable influences are reflected in a number of highlighted initiatives throughout this report.

Developing programs that seek to strengthen the human infrastructure of cycling contribute broad benefits to society. The benefits of cycling for individuals are well known, and facilitating the development of cycling cultures can proactively create healthy, cohesive and economically empowered communities. These programs also are important measures to speed up cycling uptake, or at least maintain cycling levels, as infrastructure is developed, which is a relatively slow and costly process¹⁸.

Human infrastructure and physical infrastructure development should thus go hand in hand, mutually reinforcing each other and providing opportunities for all urban residents to benefit from cycling in their daily lives. Taking a closer look at successful initiatives and city case studies in the following sections can offer transferable insights and good practices for cities and organisations to adopt.

16 Willis et al., "Cycling Under Influence," 565-579.

17 Bopp, Sims and Piatkowski, Bicycling for Transportation.

18 Robison, Interview

IV. BEHAVIOURAL BARRIERS TO CYCLING

There exist a number of barriers that must be recognised and addressed when developing new infrastructure, cycling promotion initiatives or policies. Failure to account for such barriers only allows for a privileged few to benefit from new cycling plans, and excludes those who would benefit the most from cycling as daily transportation.

Identification with cycling

Cycling has a number of negative associations depending on the context. In contexts where many individuals still aspire to automobile ownership as a status symbol, cycling is associated with poverty¹⁹. Conversely, the dominant image of a “cyclist” in certain contexts is associated with that of an able-bodied, wealthy, white man. Cycling is also often perceived as solely for recreation or sport. This excludes certain groups from identifying with this mode as transportation²⁰.

Access to cycles

While cycling is a relatively affordable mode of transportation, the purchase of a bicycle, as well as perceived maintenance costs and fear of theft, can create a barrier for low-income demographics²¹. The high cost of specialised cycles such as e-bikes or adapted cycles also creates a barrier for people with disabilities or elderly populations²². Cycling markets have also focused on leisure or sports cycling, creating barriers to access commuting bicycles and associated equipment such as panniers, rain gear, or child-carrying equipment.

Ability, self-efficacy, & confidence

Not everyone knows how to cycle, has the confidence to cycle on busy streets or knows cycling traffic rules or what equipment to get, which can hinder their ability to begin cycling. Parental perceptions of children’s bike skills, neighbourhood safety or cycle routes are also important²³. Additionally, if a parent lacks the confidence or the knowledge to cycle, this is also likely to have an influence on their children’s ability and freedom to cycle²⁴.

Fear of harassment

Many women experience sexual and verbal harassment when cycling. This can be an important barrier in travel choices. Cycle lanes often lack proper lighting or feel isolated, and are thus seen as unsafe at night for example²⁵. In the USA and other contexts, racist police harassment and traffic stops are also widespread, deterring minority communities from cycling due to safety concerns²⁶.

19 Sankaran, interview.
 20 Arup and Sustrans, “Inclusive Cycling.”
 21 Scott, interview.
 22 Arup and Sustrans, “Inclusive Cycling.”
 23 Willis et al., “Cycling Under Influence,” 565-579.
 24 Robison, interview.
 25 Copenhagenize Design Co., “Les Femmes.”
 26 Corona, interview.

Lack of awareness & information

Individuals can be unaware of the advantages and practicalities cycling could provide in their daily transportation. “Network blindness”, the lack of awareness of existing routes or new infrastructure that could connect them to key destinations due to lack of engagement and information campaigns, can hinder the changing of mobility habits and prevent people from seeing the bicycle as a viable option²⁷.

Community relevance

Without connecting with community needs or residents’ specific barriers to cycle, infrastructure projects may be perceived as serving a privileged few, becoming associated with gentrification²⁸, or creating “bikelash”²⁹. If the rationale for change is not understood or does not gain buy-in, it may not be accepted as a change that could benefit the population³⁰.



27 Bruntlett, interview.
 28 Corona, interview.
 29 Field et al., “Encountering bikelash,” 130-140.
 30 McCullough, Lugo and van Stokkum, “Making Bicycling Equitable.”

V. FRAMING SOFT MEASURES IN HUMAN INFRASTRUCTURE

“Soft” measures that strengthen the human infrastructure of cycling can be grouped under the following broad categories: awareness & education, stimulation & access, and ephemeral interventions. Within each category, specific programs can offer insights on how to make cycling attractive to groups who may not currently see cycling as a viable mode of transportation. The following section offers examples of initiatives that have been successful in broadening access to cycling.

A. Awareness & Education

Awareness and education is the first step to increase participation in cycling. Awareness building entails presenting the bicycle as a viable option for daily transport, informing people about its broader benefits, as well as providing information and spaces for dialogue on new schemes through community engagement that allows a degree of identification with new projects. Educational initiatives are necessary to support people in acquiring the skills to cycle, utilise infrastructure properly and safely navigate traffic. Bicycle maintenance, proper equipment selection, as well as guidance on how to start cycling, are also common needs.

Campaigns

Informational campaigns to bring about shifts in attitudes and perceptions have been used to varying degrees by cities and organisations. While their impacts can be hard to measure, they increase the visibility of cycling in cities as well as the awareness of its benefits from physical health, mental wellbeing, time efficiency and economic perspectives³¹. When targeted and appropriately carried out according to lifecycles moments, such as starting a new job or moving houses³², as well as representing the diversity of cycling^{33,34}, they can be effective in changing behaviours and reaching non-cyclists³⁵. These campaigns can take many forms, from national citywide efforts to increase bicycle visibility, industry marketing or localised, community-based campaigns.

Community engagement

Continuous community engagement is a key step to create buy-in, identification with new cycling plans and local cycling cultures. Community-based cycling promotion has proven to be effective in increasing cycling rates in intervention areas³⁶. Temporary events such as car-free days, festivals and sporting events can be an important place to bring awareness to communities³⁷. Additionally, innovative engagement strategies such as digital engagement tools and in-person mobile workshops to meet people where they live, across the city, have proven to be important for more inclusive participation³⁸.

31 Bopp, Sims and Piatkowski, *Bicycling for Transportation*.
 32 Walker, interview.
 33 Tranter, interview.
 34 League of American Bicyclists, *The New Majority*
 35 Kamler, interview.
 36 Rissel et al., “The effectiveness.”
 37 Burczak and Barrett, interview.
 38 Knowles, “Let’s Bike.”



Image: Bikeability Trust

Youth cycle trainings

Teaching children to cycle at a young age is essential in order for the next generations to choose active transportation. Schools are increasingly offering training for children. Cycling to school can positively impact physical and mental health as well as academic performance³⁹. **Evaluations have found positive, and statistically significant impacts associated with participating in cycle trainings in the UK⁴⁰, yet have also shown that cycle education on youth should go beyond skills and road safety to tackle biases, perceptions of cycling and broader awareness of cycling benefits⁴¹.**

Adult cycle trainings

Many adults are unable to ride or are nervous about trying for fear of getting hurt. Evidence shows that many people, especially more vulnerable groups, have experienced cycling in the past, but now lack the confidence to cycle⁴². In the USA for example, 39% of people of colour surveyed in 2013 by the National Bike League said learning safe riding skills would increase their use of cycling⁴³. Training people to have the skills and confidence to ride have

39 Joubert et al., “In-Class Cycling.”
 40 Morris et al., “Bikeability.”
 41 Teyhan et al., “The impact.”
 42 Arup and Sustrans, “Inclusive Cycling.”
 43 The League of American Bicycles, “The New Majority.”
 44 Christiaens, interview.
 45 Bengston et al., “Driver Education.”
 46 ROSPA, “The Dutch Reach.”

high associations with increased confidence and cycling rates. During cycling education led by the organisation Mobiel21 in Belgium, **62% of people who followed 15 cycling lessons became regular daily cyclists. Of those 38% who stopped cycling, the main reason cited was lack of access to a good bike⁴⁴.**

Driver education programs

Driver education often is insufficient in regards to people biking, leading to road conflicts and road violence. Educational improvements for drivers can save lives and improve empathy between road users, enabling them to interact safely, responsibly, and courteously⁴⁵. The “Dutch Reach” for example, instructs drivers and passengers to use their far hand to open the door closest to them in order to see the rear-view mirror, out to the side, and over the shoulder to see any oncoming traffic⁴⁶. These programs can also help reduce car usage for short trips.

Case Studies

Bikeability (UK)

Bikeability, the UK government's national cycle training scheme, is offered at 3 levels of difficulty from off road to high traffic scenarios, and is designed to give people the skills and confidence to cycle safely. Funded by the Department for Transportation, £12 million a year is currently being allocated for this program, and will increase to £18 million allowing it to be offered to every child⁴⁷.

Economic appraisals have been made for the short term (three years, to reflect the initial response to the programme) and then medium (up to 10 years) and longer term (up to 30) to assess the impact of behaviour change persisting through the remainder of childhood and into adulthood respectively. **The results show that the economic performance of the scheme, based on the assumptions employed, would deliver a benefit cost ratio (BCR) of just over 3:1, 5:1 and 7:1 over these time periods⁴⁸.**

Evaluations have found positive, and statistically significant impacts associated with participating in at least Level 2 Bikeability training. Bikeability has also shown to increase the propensity for parents to allow their children to ride on roads, which implies that Bikeability positively impacts parents' confidence in their children's cycling skills and road safety⁴⁹.

Further reading:

- [Children Cycling Education Programmes UCI Toolkit \(2019\)](#)
- [Bikeability Impact Study: A study commissioned by the Department for Transport \(2019\)](#)

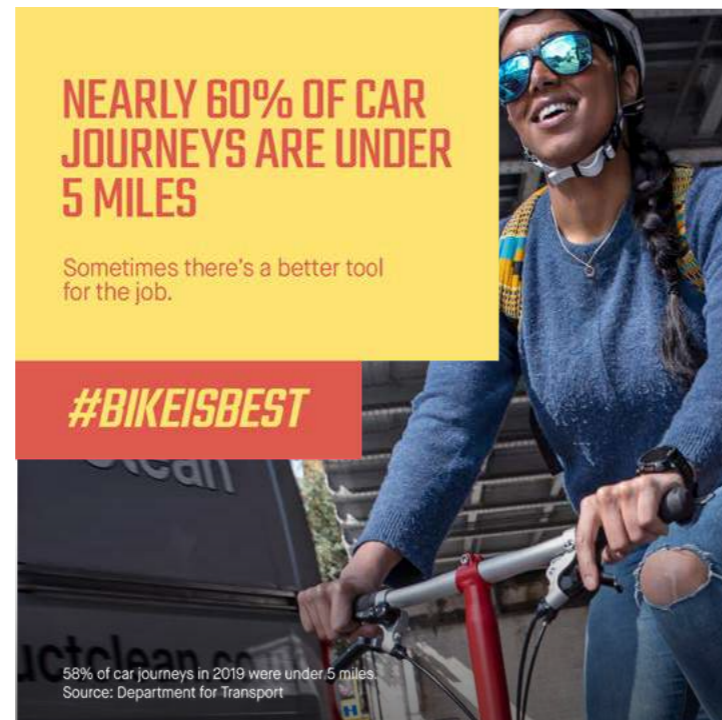


Image: BikelsBest

Traffic Snake Game (EU)

The Traffic Snake Game is a campaign developed by Mobiel 21 to encourage walking and cycling to school, with primary school children, parents and teachers as the main target groups.

Once a school has decided to take part, children are provided with a sustainable mobility sticker to place on a banner each time they walk, cycle, use public transport or share a car journey to school over a period of two weeks, coupled with other activities and lessons concerning traffic and mobility, environmental and health issues.

From 2014-2017, the Traffic Snake Game took place in 19 European countries. 177,587 pupils and 1,192 schools played the game in a total of 507 cities. **The EU-wide savings in this period reached 2,458,853 kilometres of cartrips and 397 tonnes of CO2.** The amount of sustainable trips went from 63% before the campaign to 78% during the campaign. Three weeks after the end of the campaign the share of sustainable trips slightly dropped to 76%, which is still a significant improvement compared to the baseline share⁵⁰.

Further reading:

- [The Traffic Snake Game Network Final Report](#)
- [Mobiel 21 Projects](#)

Bike is Best (UK)

#BikelsBest is an industry campaign in the UK coordinated by PR Company Fusion Media, that highlights the benefits of more people cycling, and encourages people to start cycling especially for short trips. The campaign intends to reshape the perception of cycling by showing it is a viable and attractive transport option that people of all ages, abilities and backgrounds can identify with.

Its strategy is to diversify the image of cycling and through key messaging in advertising campaigns, such as the benefits of cycling for short trips, as well as a knowledge hub that provides guidance and information for the general public⁵¹.

In May 2020, the campaign launched a hero film, explaining a problem and solution, in an aspirational and humorous way: The Best Tool For The Job. **In under a month, the clip accrued 2.5 million views on YouTube, with nearly 50% of viewers watching the full 40 seconds, high above average.**

Further reading:

- [Bike is Best website](#)
- [#BikelsBest - The Best Tool for the Job](#)

47 Robison, interview.
48 UCI, "UCI Toolkit."
49 Morris et al., "Bikeability."

50 Canters, Frederix and Köfle, "Making Home-School Trips."
51 Tranter, interview.

B. Stimulation & Access

Incentives and cycling programs that increase access are important tools to allow the most diverse pool of non-cyclists to begin cycling or rediscover the benefits of cycling. Simultaneously, initiatives that deter or limit the use of cars in the city are key to promote active travel and improve urban health.

E-bike subsidies & tryouts

E-bikes have a huge potential to overcome barriers to cycling such as distance, weather and topography; perceived inconvenience for commuters, physical limitations for elderly populations, or the difficulty of transporting goods. **Cost is often cited as the biggest barrier to the further uptake of e-bikes by a wider range of income groups**⁵². The European Cycling Federation recommends subsidy and funding schemes⁵³, proven to be highly effective in several European countries. In Sweden for example, the national grants program led to sales of e-bikes increasing from 12% to 19% of all bike sales in a single year (from 2016/17 to 2017/18)⁵⁴. E-bikes hold promise as an alternative to cars especially for medium distance trips, yet people need to experience their convenience to even start considering breaking their habits. Studies have found that e-bike trials have the potential to shift those habits and motivate car owners to use more sustainable means of transport⁵⁵.

Bicycle repair vouchers

During the COVID-19 pandemic, France and the UK offered vouchers of about 50€ in order to encourage people to repair old bikes. More than 1 million people benefitted from the program in France, with 52% of those surveyed now cycling more often⁵⁶, and 36% using their car less often. In the UK, Big Bike Revival events enabled communities to get old bicycles fixed for free since 2014, reaching more than 250 000 people⁵⁷. These programs serve as motivation for people to start cycling again by providing a quick impetus that allows them to rediscover its convenience as a transport mode.

Earn-a-bike programs

Many children do not have access to cycles, which are an important tool for independence and social participation. Bike education programs that result in children earning a bike appear promising for increasing the currently low rates of cycling and active transportation in youth⁵⁸. There exists a wide range of programs mostly led by nonprofit or community organizations around the world that collect, refurbish and/or distribute bicycles to children and adolescents⁵⁹.

Bicycle libraries & bicycle banks

Through donations and refurbishing used bicycles, bicycle libraries or bicycle banks can provide cycles to those who need them temporarily or who may not be able to afford one. These can be fixed locations or mobile, city-run or community driven, and the cycles can be offered for short, medium, and long term leasing.

Cycle to work initiatives

A number of incentive programs exist to encourage commuters to switch to cycling, such as tax rebates, lease-to-own or informational campaigns about the benefits of cycling⁶⁰. Campaigns such as bike to work days and bike weeks are also highly popular, often accompanied by events, bike maintenance and community engagement.

Image: BYCS



Cycle to school programs

Schools are key places to educate youth about sustainable transportation in creative ways and teach bicycle skills. Cycle to school programs can take many forms, from “cycle buses”, educational programs, stimulation and gamification campaigns or bicycle leasing programs. When carried out correctly, these programs can have a positive influence on travel behaviour in the long run⁶¹.

Restricting car usage and speed

Measures such as reducing speed limits or banning cars create a safer cycling environment while also improving safety for all other street users without the need for additional cycling specific infrastructure. In just 5 months of implementing a city wide 30km speed limit, Brussels recorded a sharp decline in injuries and traffic casualties⁶². **Cities that have banned cars in their center such as Oslo are projected to record reductions in greenhouse gases, air pollution, noise, and temperature, as well as increased green space and social interactions, higher levels of active transport, and physical activity**⁶³.

52 Swarttouw, interview.
 53 ECF, “Electromobility.”
 54 Carey and Lynn, “The Case.”
 55 Moser, Blumer and Hille, “E-bike.”
 56 FUB le velo au quotidien, “Bilan.”
 57 Stewart, “Interview with: James Scott”
 58 Carlson et al., “Impacts.”
 59 van der Kloof and Kurz, “International.”
 60 Fleming, “The Netherlands.”

61 Hidalgo et al., “Al Colegio,” 66-70.
 62 Thiry, “Bruxelles Ville 30.”
 63 Nieuwenhuijsen and Haneen, “Car free,” 25-262

Case Studies

Coup de Pouce Vélo (France)

Coup de Pouce Vélo was launched as a Covid-19 measure on May 11, 2020 and extended until March 31, 2021 with the aim of encouraging cycling in France by enabling anyone to use a 50€ voucher to repair a bicycle. The program was accompanied with training to build confidence for people that were starting to cycle again, as well as a support package for bicycle parking facilities. It was made possible by the French government through the implementation of three financial aid measures in a plan of €80 million.

More than 1.3 million people benefitted from the program, the majority in cities with more than 100,000 inhabitants (57%). 52% of those surveyed now cycle more often, and especially 53% of them use another mode of transport less. 36% use their car less often⁶⁴.

More than 50% of people surveyed in the evaluation expressed a desire for more secure cycle paths, 16% of them expect more bicycle parking spaces and 10% of those surveyed hope for additional financial support for better equipment.

Further Reading:

- [Opération Coup de Pouce Vélo Evaluation \(French\)](#)
- [Coup de Pouce Velo website](#)

Al Colegio en Bici (Colombia)

Started in 2013, Al Colegio en Bici is a bicycle stimulation program led by the Secretary of Education and Secretary of Transportation in Bogota. Children between 6 and 14 years of age that live less than 5km from their school can benefit from it. They receive a loaned bicycle, a prevention and protection kit, and are accompanied in groups by guides during their commute from home to school and from school to home. Workshops that promote cycling and road safety skills also accompany the program⁶⁵. Students also go out to parks, museums and other recreational-pedagogical activities in cycle expeditions.

The project benefited more than 4,000 students, taking 1,700,000 trips through the 97 identified neighbourhood routes⁶⁶. From 2016 to 2019, the number of localities that applied to the program increased from 6 to 13.

Children participating in the program gained important road safety skills and health benefits and were able to better concentrate in class, leading to higher results.

Further Reading:

- [Al Colegio en Bici: Journal of the Transportation Research Board](#)
- [Good practice Fact Sheet: Al Colegio en Bici \(Spanish\)](#)
- [Learn about Al Colegio en Bici video](#)

Bike4Car (Switzerland)

The Bike4Car programme in Switzerland seeks to change car drivers' habitual behaviour. During the campaign in 2015, car owners in 32 cities could try out an e-bike for free over a two-week period in exchange for their car keys. The campaign was organised by an environmental NGO and supported by the Swiss Federal Office of Energy, several cities, as well as bike retailers all over the country. In total, 1,854 people participated in the Bike4Car campaign.

Researchers from the Zurich University of Applied Sciences have studied the campaign, concluding that there exists strong evidence that exchanging one's car keys for an e-bike for just a few weeks influences long-term habitual associations with car usage, and that this change persists even a year after the end of the intervention⁶⁷.

64 FUB le velo au quotidien, "Bilan."
65 Secretaría de Educación del Distrito, "Al Colegio en Bici."
66 Concejo de Bogotá, "Qué pasó."
67 Moser, Blumer and Hille, "E-bike."

The findings of the study also led to the recommendations that policymakers should consider supporting programmes that enable people to experience the benefits of novel means of transport directly as such experiences hold the potential for promoting sustainable mobility behaviour⁶⁸.

Further reading:

- [E-bike trials' potential to promote sustained changes in car owners mobility habits](#)

Earn-A-Bike (USA)

Earn-A-Bike in San Antonio is a nonprofit with a mission of preventing obesity-related diseases and inspiring healthy life habits. Using the bicycle as a tool for transformation, they facilitate programs in the San Antonio area that equip youth with life skills, physical health, mentoring, and asset-building experience.

With a physical location in a lower income area of the city, they provide a space for children to stay out of trouble by learning bicycle mechanics, gaining empowerment through cycling and a sense of community belonging⁶⁹. They also conduct bicycle donations and educational programs in the area. Between 2018-2020, 1,248 people earned their bike through Earn-A-Bike, 700 bikes were sold at prices under \$40 to people in need, and 2,567 bikes were donated by local groups and individuals⁷⁰.

Further reading:

- [Earn a Bike Principles and Annual Report \(2020\)](#)
- [A Bicycle for Every Child booklet](#)

Numerous similar earn-a-bike initiatives exist around the world, and academic studies have found that cycling education programs that result in the child earning a bike were associated with significant increases in time spent cycling⁷¹.



Image: Earn a Bike



Image: Earn a Bike

68 Moser, Blumer and Hille, "E-bike."
69 Sandoval, interview
70 Earn-A-Bike, "Earn-A-Bike."
71 Carlson et al., "Impacts."

C. Ephemeral Interventions

Temporarily activating streets by restricting or preventing vehicular traffic can be an important way to allow people to experience them in a whole new way, encouraging civic participation, building a movement around active mobility and enabling people to start cycling in a safer environment. Ephemeral interventions strengthen human infrastructure⁷² by temporarily demonstrating how the city might function and feel with a radically redesigned transportation infrastructure. **These interventions have taken place around the world, promoting street safety, physical activity and social integration, decreasing air and noise pollution, contributing to local economic development and recentering joy and wellbeing in the experience of using streets**^{73,74}.

Open streets & car-free days

Since its founding in Bogota in 1976 with the Ciclovía, the movement for open streets has been embraced in cities around the world. The temporary opening of streets for people to walk, cycle, run, or play by closing them to car traffic has taken many shapes and sizes, from long stretches crossing the city, or networks of localised streets forming an archipelago of new public spaces. Larger car-free events along thoroughfares are often coupled with complementary activities such as outdoor exercising classes, community engagement from city departments, outreach for social causes, campaigns, live music and more. **Economic analysis of open streets consistently reveal positive benefit-cost ratios**⁷⁵. Additionally, these events can be used as laboratories to pilot interventions for pedestrianisation or new cycle paths⁷⁶.

Slow streets

Slow streets seek to reduce traffic volume and speed to a minimum so that people could safely use streets for recreation and active mobility. This flexible urbanism strategy amounts to a few rapid steps such as identifying a network of streets that can be closed at key entry points, outreach to local stakeholders, and the temporary installment of traffic barriers and branded or written signs that indicate messages such as “Local Traffic Only”, “Slow” or “Shared”⁷⁷.

School streets

School streets create temporary restrictions on motorised traffic on streets during drop-off and pick-up times. Research has shown that these measures decrease traffic in surrounding areas, significantly improve air quality, decrease car usage for school commutes, promote active travel and promote physical activity while being widely accepted by parents and caregivers⁷⁸.

Tactical urbanism

Cities that have engaged in tactical urbanism to reclaim street space, from Low Traffic Neighbourhoods in London, Slow Streets in Oakland to the Superblocks in Barcelona, have demonstrated at a low cost how to make spaces more attractive, safe, and environmentally friendly for people to walk, and cycle. These rapid measures are important conversation starters in communities and can show how cities could look and feel like if projects that prioritise active mobility were given permanence⁷⁹.

Urban festivals and events:

Impermanent events such as festivals, pop-up fairs, markets, or sporting events are regular sightings in urban spaces. When positioned strategically in relation to cycling, these can create buy in from populations, generate demand for more cycling, and be used as a platform to promote everyday use of active transportation⁸⁰.

72 Paley and Berman “CicLAvia”
73 Pascual, interview.
74 Open Streets, “FAQS.”
75 Montes et al., “Do Health Benefits,” 153-170
76 Jennings, interview.
77 NACTO, “Slow Streets.”
78 Sustrans, “School Streets.”
79 Mahoney, interview.
80 Burczak and Benett, interview.

Case Studies

CicLAvia (USA)

Founded in 2010, CicLAvia is the largest open street event in the USA. Inspired by the Ciclovía in Bogota, it has since created over 360 miles of open streets in Los Angeles, engaging with 1.8 million people.

The event’s success has impacted local and regional transportation policy related to pedestrians and bikes⁸¹. Its effects on air quality have been studied by UCLA with findings of reductions of 21% and 49% in on-road ultrafine particle and PM2.5 respectively⁸². It has also increased consumption at local businesses by up to 57% during the event⁸³.

CicLAvia draws diverse attendees, and holds the potential to help thousands to meet the weekly recommended levels of physical activity, if its frequency is expanded⁸⁴. It has also served to create social cohesion and public joy in Los Angeles’ streets, allowing people to reimagine alternatives to a car centric environment.

School Streets (UK)

School Streets schemes offer a proactive solution for school communities in the UK to tackle air pollution, poor health and road danger by restricting motor traffic at the school gates for a short period of time, generally at drop-off and pick-up times.

Sometimes called ‘Healthy School Streets’, ‘School Exclusion Zones’ or ‘Car-Free School Streets’, they lead to more children walking and cycling to school⁸⁵. **Evidence has been found in regards to increased active travel, reduction of vehicle traffic on existing streets, perceived safety benefits and air quality improvements**⁸⁶.

Further reading:

- [School Streets UK Resources](#)

These programs are highly supported by children, schools and parents.

Superblocks (Spain)

The Superblocks program reorganises urban spaces and neighbourhoods in Barcelona by limiting the number of streets that allow through traffic and freeing up the remaining streets for other functions such as recreation, relaxation and active transportation.

The project does not involve major physical changes, but rather tactical urbanism; it is low cost and easily adaptable. It represents a new way of understanding and providing benefits to the city, allowing experimentation⁸⁷.

Further reading:

- [C40 Case Study: Barcelona](#)
- [Barcelona Institute for Global Health Study](#)

Studies conducted in 2019 projected that if the 503 planned superblocks in Barcelona were implemented, the modal share of private vehicles would decrease by 19.2%, translating into almost 230,000 car/motorcycle trips per weekday being shifted to public transport, cycling or walking. It was also estimated that 667 premature deaths could be prevented annually in Barcelona, translating into a substantial economic impact of €1.7 billion⁸⁸.

81 CicLAvia, “About.”
82 Shu et al., “Air quality,” 170-176.
83 CicLAvia, “Impact.”
84 Cohen et al., “CicLAvia,” 26-33.
85 Sustrans, “Sustrans School Streets.”
86 Edinburgh Napier University, “School street closures.”
87 C40 Cities, “Case Study.”
88 Mueller et al., “Changing the urban design.”



“Car free days or school streets are attractive and scalable globally, and these kinds of interventions can truly have an impact to change people’s behaviour for a very low cost. They are also opportunities for community engagement, increase safety and have environmental benefits”

Lucy Mahoney, C40

Image: Jonas Netzer

VI. CITIES & REGIONS

Implementing soft measures in isolation only leads to incremental changes in behaviour. To succeed in shifting mobility cultures at the city or regional level, multiple, diverse programs must be implemented simultaneously, alongside infrastructure development. Combinations of soft measures can vary widely by city. To illustrate these strategies, four cities and regions have been selected as case studies: Munich (Germany), Arnhem-Nijmegen (Netherlands), Greater Manchester (UK) and Oakland (USA). These cities have been selected for their diverse cycling cultures, cycling levels, and degrees of maturity in the implementation of soft measures in order to guide cities in similar scenarios more effectively.

Image: Lucas Snaije



A. Munich, Germany



Image: Ajmal MK via Unsplash

Population
1.472 Million (2019)

Budget Allocation for Soft Measures
As from 2014, €800,000 have been tendered annually by the City of Munich for marketing and public relations work, for a population of 1.5 million people (€0.53 per person).

Cycling Modal Share
18% of all trips (2017)

Maturity in Soft Measure Implementation
Developed/Confident

Soft measures have been used in Munich since 2010 as an important instrument to change attitudes and behaviours towards cycling⁸⁹, notably through the Radhauptstadt (Cycling Capital) campaign. **Alongside infrastructural development, the campaign successfully contributed to increasing the modal share by 4%**⁹⁰. Its three driving principles were citizen “Participation”, increasing bicycle “Visibility”, and “Identification” with a cycling lifestyle. The city also has developed a “Mobility Management” program that follows “mobility biographies” and key lifecycle changes for targeted behaviour change initiatives.

89 Handshake, “Munich.”
90 Kämmler, interview.

Programs & Activities

- **Bike night:** a 15km relaxed cycling course at sunset through Munich on central roads temporarily closed for motor vehicles to promote a fun and visible cycling culture.
- **Bike flea market:** an annual event at the start of the cycling season where used and lost bicycles from the municipal lost property office can be bought and sold. Supporting programmes and information booths also take place.
- **Cycling culture festival:** an event to display the diversity of cycling subcultures and bring together all the different trends, actors and initiatives.
- **Contests:** participatory photo and video competitions that invite residents to share personal experiences and views on bikes, creating a high level of identification and participation.
- **Fashion show:** an event to boost the attractiveness of cycling by connecting sustainable fashion with urban cycling lifestyles according to the motto “If you’re into fashion, you ride a bike”, conducted in cooperation with local fashion schools.
- **Mobility management:** specific programs for specific target groups, such as gamification initiatives for children around school trips, cargo bike tryouts for families, cycling lessons for the elderly, and guided bike tours of the city for new citizens and immigrants.



Image: Jonas Netfzger



Image: Geschwister Scholl

- **Bike safety checks:** pop-up bike safety checks across multiple locations in the city where free, minor repairs are conducted and saddle height and tire air pressure are checked. The intention was to increase the safety and visibility of cyclists and show support from the city.

Key Strategies & Learnings

- **Holistic marketing and diversity of initiatives:** a wide approach is taken to marketing, enabling a broad range of organisations and residents of different ages and backgrounds to be brought into the fold, making cycling culture inclusive and relatable to all. Different forms of messaging will influence different demographics differently and these all need to be considered in pro-bicycle program development.
- **Mobility biographies:** travel demand is managed through various age-appropriate projects from kindergarten to eighth grade, supporting children in their age-based development level. The projects are intended to motivate children to move actively and raise their awareness of sustainable mobility.
- **Life changing moments:** these moments are identified as the most effective periods to conduct targeted behavioural change measures. Moving to the city, starting university, having a child, moving to a new home, or starting a new job are all important periods when behaviour change is more likely to happen. The city has developed tailored information and incentive programs for different groups.
- **Sustained investment in soft measures:** the team that focuses on behavioural change has grown from two to ten staff members. Incremental, sustained increases in funding due to the popularity of events and programs has meant that funding has been available for them to become mainstays of daily life in the city.

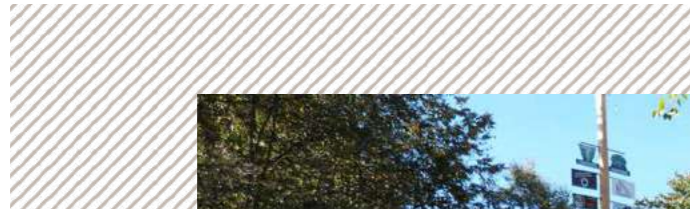


Image: Anna Tokarski



Image: Richard Brunsveld via Unsplash

B. Arnhem-Nijmegen Region, Netherlands



Population
736,500 (2019)

Budget Allocation for Soft Measures
€1 million maximum annually at the provincial level for a population of 2 million people (€0.50 per inhabitant).

Cycling Modal Share
30% of all trips (2019)

Maturity in Soft Measure Implementation
Developed/Learning

The Gelderland Province has ambitious plans to reach a 35% cycling modal share by 2030. For the past 5 years, **the Gelderland Province has been increasingly concerned about addressing transportation poverty through strengthening cycling cultures in the face of public transportation budget cuts and stagnating modal share.** To achieve this, they are seeking to further normalise the use of the bicycle from the earliest age.

Programs & Activities

- **Youth cycle education:** educational initiatives that focus on child safety and skills. Children are trained on pump track circuits and through other cycle challenges in a fun way during the “Gelderse Roadshow” so they get very comfortable using bicycles and can react well on cycle tracks and at intersections. These programs also aim to gain the trust of parents in letting their children cycle to school .
- **Elderly cycle education:** cycle training for the elderly is conducted as a way to stay fit and adjust to new types of cycles such as e-bikes.
- **Bicycle film festival:** the Gelders Bicycle Film Festival, held over 3 days in 2019 to show how cycling can transform cities around the world. Each day focused on a different theme, and was coupled with talks, a social ride and a bicycle party for children.
- **Bicycle Mayor:** former pro-cyclist Maarten Tjallingii, appointed in 2020 as Bicycle Mayor for Arnhem-Nijmegen, with the aim of bringing together different stakeholders and aligning on cycling for climate change and healthy lifestyles, as well as providing inspiration for children.
- **Bicycle Heroes:** a campaign that challenges children to think about the bicycle as a means of transport, to cycle more often and to come up with solutions for problems that children encounter while cycling. Its intentions are to enable more children to cycle safely and independently, while integrating their perspective in planning and policy.
- **Commuter programs:** yearly programs to nudge employees to cycle to work. These are linked to meeting sustainability goals, reducing the carbon footprint, and improving physical and mental health. Companies can receive consulting, awareness programs, and budgets to invest in a cycling scheme, as well as shower facilities.



Image: BYCS

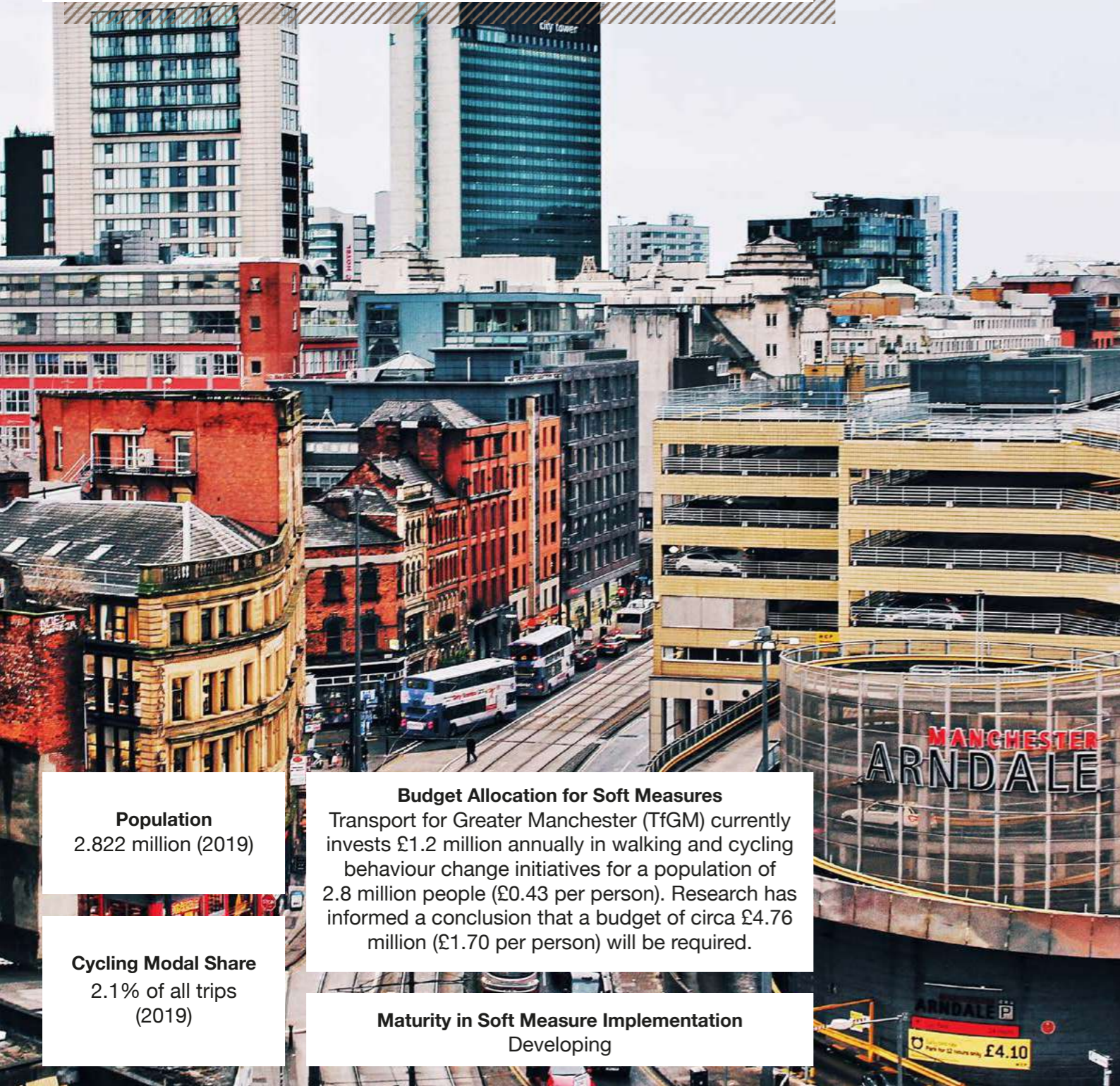
Key Strategies & Learnings

- **Segmenting target groups:** The province has established specific programs around 5 key target groups: young children (8-12 years old), children (12-16 years old), older children (16+ years old), elderly (60+ years old) and commuters. This allows programs and campaigns to be most effective and increase cycling rates among specific demographics.
- **Government as an enabler:** In order to have scale and impact, the Province is embracing its role as an enabler that sets regulations and guidelines, and provides specific funding and budgets around programs. They take on a facilitating role for collaboration and program delivery with local partners in cities and communities such as local sports clubs, NGOs, real estate developers or schools.
- **Invest in the unexpected:** Strengthening cycling cultures requires constantly adapting the approach. This means increasing agility in types of programs tested and boldness in areas of investment to highlight the benefits of cycling in innovative and surprising ways, such as film festivals, markets or creative campaigns.
- **Secure the commitment of decision makers:** Skepticism about soft measure approaches is high in governments that are used to a certain way of working and often choose to stick to status quo frameworks. There is a need to better highlight the value and impact of behavioural change programs on quality of life and identification with cycling cultures.



Image: BYCS

C. Greater Manchester Region, United Kingdom



Population
2.822 million (2019)

Cycling Modal Share
2.1% of all trips (2019)

Budget Allocation for Soft Measures
Transport for Greater Manchester (TfGM) currently invests £1.2 million annually in walking and cycling behaviour change initiatives for a population of 2.8 million people (£0.43 per person). Research has informed a conclusion that a budget of circa £4.76 million (£1.70 per person) will be required.

Maturity in Soft Measure Implementation
Developing

Greater Manchester is currently developing the Bee Network⁹¹, which will be the largest cycling and walking network in the UK once finished. Alongside its ambitious infrastructural plan, **the city recognises that without compelling reasons to try a new way of travelling and the means to do so, it is unlikely that investment in infrastructure will be fully realised, calling for a need to embed a culture of walking and cycling.**

91 Transport for Greater Manchester, "The Bee Network."

Image: William McCue via Unsplash

Programs & Activities

- **Cycle training programs:** group cycle training, maintenance and awareness programs for various levels are offered such as free beginners sessions with bicycles provided, sessions to getting familiar on quiet roads; family confidence training to learn how to ride safely as a group, bike maintenance courses, as well as safe urban driving courses for professional drivers.
- **Bike back to work:** an initiative that provides access to recycled bikes, lights, helmets and training to help new workers manage travel costs when starting a new job.
- **Bike leasing:** bicycles loaned to key workers at the NHS during the COVID-19 pandemic, with plans to now redistribute bicycles to those in need. The Bike Library project, in development, will work with existing groups who have existing community links and administrative processes to offer bikes and associated equipment to deprived communities for medium-long term leasing.
- **Cycling & Walking Commissioner:** Olympic gold medalist, entrepreneur and active travel advocate, Chris Boardman, appointed as Cycling and Walking Commissioner in 2017⁹². A highly visible public figure, he lobbies for greater support to projects and acts as an ambassador for active travel to the public.
- **Cycling marketing campaigns:** a series of short video campaigns (I'm not a cyclist, Just ride, Why I Cycle⁹³), show residents talking about their day to day life in order to shift attitudes and perceptions. The intention is to create a more positive and relatable vision of cycling, linking it to freedom, independence, happiness, access to opportunities, etc.



Image: Transport for Greater Manchester



Image: Transport for Greater Manchester

92 Transport for Greater Manchester, "About Chris Boardman."
93 Transport for Greater Manchester, "Why We Cycle."



Image: Transport for Greater Manchester

Key Strategies & Learnings

- **Recognise knowledge barriers and access:** Many people lack the skills and confidence to start cycling, even if they would like to. Additionally, for very deprived communities, even buying a second-hand bike can be too expensive. Programs should address these barriers in order to make cycling adoption and the use of new infrastructure inclusive and more widespread.
- **Asset-based approach:** This approach looks at the community groups and initiatives already existing and intentionally builds on their work, supporting people to lead the lives they want to lead, helping people help themselves, and mobilising the community. This involves small grants and technical expertise for groups that already have links with their community and know what local people’s needs are to deliver activities themselves.
- **Making “activation” a requirement:** Soft measures are becoming a requirement for funding from the onset. When districts submit business cases for new schemes, they now need to answer a specific question about “activation” - what is being done to ensure people know about the scheme, to incentivise use, and to break down barriers to access. Ensuring soft measures are considered proactively and not just seen as a secondary priority is increasingly woven into the new schemes.
- **Real stories from residents:** Local residents talking about their day-to-day life is the focus of campaigns to shift perceptions and attitudes towards cycling. The ability to measure the impact of campaigns is a growing concern, from the analysis of digital engagement, event attendance and community consultation. Improving impact measurement is necessary to build a comprehensive picture of the most effective messaging and communication methods.



Image: Transport for Greater Manchester

Image: Howie Mapson via Unsplash

D. Oakland, USA



Population
425,000 (2019)

Budget Allocation for Soft Measures
OakDOT acknowledges that funding and delivery of bicycle programs has largely been left to bicycle non-profits, often on a completely volunteer basis, and will seek funding and partnerships to support these ongoing community-generated programs and broaden their reach.

Cycling Modal Share
5% of commute trips, 5% of residents consider cycling as their main form of transportation (2019)

Maturity in Soft Measure Implementation
Developing/Learning

The City of Oakland developed a bicycle plan update that was adopted in 2019 called “Let’s Bike Oakland.”. A recipient of the 2020 APA Silver Award for Best Practice, the plan’s approach to public outreach, equity, inclusion and collaboration with community partners was key to its success⁹⁴. **The plan recognises that funding bicycle programs is equally as important as funding bicycle infrastructure to create a safe biking environment, to support and expand cultures of biking at the neighbourhood level and allow more people to participate⁹⁵.**

⁹⁴ American Planning Association, “National Planning Achievement Awards- Silver.”
⁹⁵ City of Oakland Department of Transportation, “Let’s Oakland.”

Programs & Activities

- **Oakland Public Library partnership:** a partnership with Oakland Public Libraries around bicycle resources such as bike locks, tire pumps, and tool lending, present in every neighbourhood. It also intends to have free bicycle maintenance training and make OPL branches neighbourhood bike shops by adding bike mechanics to the staff.
- **Bike lending & education:** funding allocated to provide 8 weeks of education for youth as well as indeterminate lending of bicycles, helmets, locks, and lights, as part of the Transformative Climate Communities grant. The program runs in partnership with local organisations, helping them build capacity.
- **E-bike library:** an e-bike Library to be developed, providing priority communities with access to affordable medium and long-term rentals with approximately 500 e-bikes, cargo bikes, adaptive bikes and scooters, as part of the Clean Mobility Options Voucher Program grant⁹⁶. It will also support community-run bike shops to perform maintenance and educate users.
- **Community partnerships:** partnerships with community-based organisations that already conduct bicycle programs to reach underrepresented Oaklanders, host community workshops, amplify their existing programs and help guide bike plan recommendations. Organisations were paid for their time in stipend form during a 1.5 year process. The city supports through technical expertise, while community-based organisations lead front facing facilitation and community engagement.
- **Paint the Town:** a program that allows community members to bring art and playfulness to their neighbourhoods by designing and painting on street asphalt, promoting a vision of place-keeping instead of placemaking. Murals reflect communities' cultures and values. The city intends to link this program with community bicycle programming.



Key Strategies & Learnings

- **Equity framework:** Before any planning and development, all consultants and partners working on the bicycle strategy received equity training, to come to an understanding and a common foundation around language, approach and goals of the plan. The Equity Framework⁹⁷ identifies vulnerable groups and their desired condition of wellbeing, and asks how the implementation of the Plan can work towards these conditions.
- **Focus on homegrown efforts:** The city chose to lean on local organisations as opposed to large advocacy bicycle communities. These local organisations represent the voices that need to be elevated and can help the city make the best decisions. The city intends to continue working with community-based partners in the implementation of soft programming, centred around bicycle culture, and culturally relevant and meaningful engagement with bicycling.
- **Listen, collaborate & refine:** The outreach process surrounding Oakland's bicycle plan included 60 community meetings and mobile workshops as well as digital engagement, in order to shape a common understanding of existing conditions and recommendations. This slower process and flexible planning process is better received by communities, and enables participatory, innovative approaches to issues.
- **Recognise the value of bicycle programs:** Money is being earmarked for bicycle programs (soft measures) in the future to address financing challenges for bicycle programs and community partners. The city is trying to include them as partners on further grant applications.

VII. OPPORTUNITIES & CHALLENGES FOR IMPLEMENTATION

Opportunities

Low cost, high returns

Evidence shows that combining infrastructure and soft measure interventions yields a higher return on investment and greater cycling uptake, with strong, positive benefit-cost ratios. For example, a report from the UK Department of Transport reveals that schools that received investment in cycle infrastructure saw an increase of 0.4% in cycling mode share, whereas schools that received investment in both infrastructure and cycle promotion saw an increase of 1.8%⁹⁸. Multiple interviewees expressed that low costs of bicycle programs, with proven returns, made them both favourable and a missed opportunity in bicycle strategies.

Rapid results

Changing mobility behaviours, habits and abilities towards cycling are important measures to consider while comprehensive infrastructural developments are made, which is a slow process⁹⁹. Within 6 months, an effective soft measure can yield successful results¹⁰⁰.

Strengthened communities

Supporting initiatives that promote active lifestyles for youth, activate street life, and involve different communities¹⁰¹ have benefits that go beyond just transportation. Many soft measure initiatives such as earn-a-bike programs or open streets create social cohesion and community wellbeing and cohesion¹⁰².

Equitable uptake

By directly addressing barriers of ability, access, and perception, soft measure initiatives can be leveraged to promote more inclusive cycling cultures, and support a wide range of residents in accessing the health, social, and economic benefits that cycling can offer.

Challenges

Infrastructure is paramount

It is important to underline that soft measures implemented in isolation will only have limited success. Perceived safety remains the largest barrier to cycling around the world. If cities do not commit to the rapid provision of cycling infrastructure, uptake will only be marginal. “Hard” and “soft” measures must be implemented in tandem, or will have reduced effectiveness.

A new mindset

Shifting the perception of soft measures from “nice to haves” to important complementary initiatives when building and maintaining infrastructure requires changes within city departments^{103,104}. Decision makers, planners and practitioners need to recognise the value of such programs. In practice, it will require trialing and testing new programs in an agile way, involving social researchers more in bicycle strategies, and the development of new funding mechanisms and frameworks to measure success.

Measuring impact

It is challenging to measure the impacts of soft interventions such as campaigns or programmes when calculating return on investment. Changing travel behaviour is a long-term process. Effects on modal-shift are hard to calculate, while assessments can be misleading and expensive¹⁰⁵. Initiatives that focus on long-term societal change and active mobility cultures provide value that is harder to measure when expecting a set of concrete outputs and indicators to measure success, making impact measurement difficult and contentious¹⁰⁶.

“Even with the best protected bicycle infrastructure outside your door, if you don’t know how to cycle or can’t access a bicycle, you won’t be able to benefit from it”

Rachel Scott, Transport for Greater Manchester

98 Sloman et al., “Finding the Optimum.”
99 Robison, interview.
100 Christiaens, interview.
101 Pascual, interview., Robison, interview.
102 Sandoval, interview., Pascual, interview.

103 Lopez, interview.
104 Eggen, interview.
105 Daffner et al., “Handbook.”
106 Kane, “Creativity and Change.”

VIII.
 RECOMMENDATIONS TO STRENGTHEN
 THE HUMAN INFRASTRUCTURE OF CYCLING



Image: Bikeability Trust

1.
 Remove skill and
 cost barriers to
 ensure all people
 can start cycling

1.1 Ensure local options exist for regular, free cycle training for different ages and abilities.

1.2 Involve parents further in youth cycle training to increase support and confidence around school commutes.

1.3 Increase funding and support for medium-long term leasing, bike libraries, and community bike share schemes.

1.4 Expand cycling subsidy schemes for e-bikes. Conduct targeted purchase subsidies for a variety of mechanical and specialised cycles. During the periods of subsidy campaigns, offer “try out” opportunities in parks and public spaces to boost effectiveness.

1.5 Provide low-cost, local renting schemes for different cargo bikes for specialised errands and for local businesses.

2.

Initiate targeted & continuous promotional campaigns

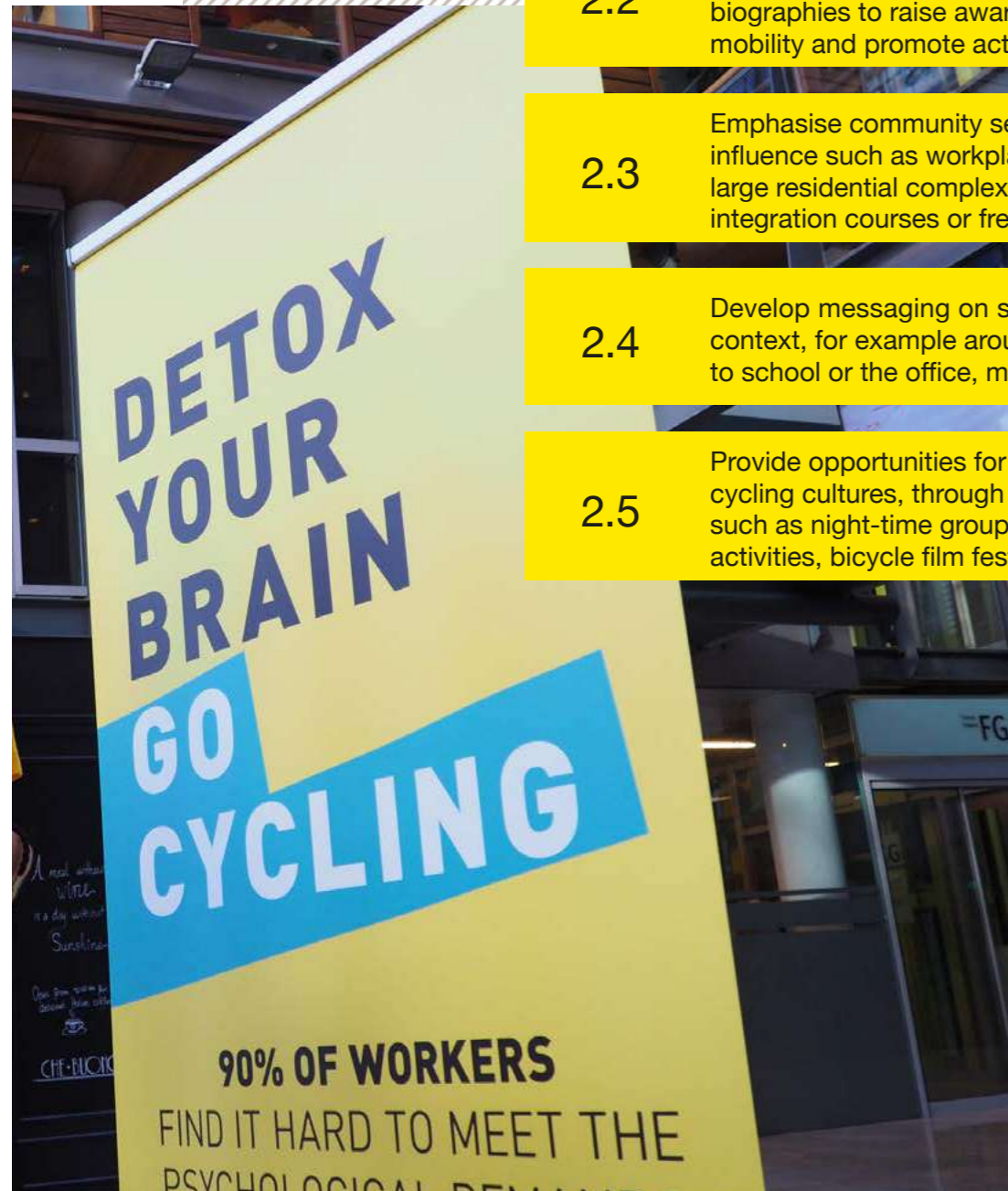


Image: BYCS

- 2.1 Focus targeted informational campaigns around life changing moments such as moving to a new city, starting university, starting a family, changing jobs, or moving houses.
- 2.2 Conceive various age-appropriate projects from early kindergarten to high school, following mobility biographies to raise awareness around sustainable mobility and promote active lifestyles among youth.
- 2.3 Emphasise community settings as key areas of influence such as workplaces, schools, universities, large residential complexes, public libraries, civic integration courses or free language courses.
- 2.4 Develop messaging on specific uses based on context, for example around short trips, commutes to school or the office, mobile work, or groceries.
- 2.5 Provide opportunities for all people to identify with cycling cultures, through a wide range of events such as night-time group rides, family-oriented activities, bicycle film festivals, and more.



Image: Transport for Greater Manchester

- 3.1 Recognise the power of emotional storytelling, using anecdotal narratives to connect with communities. Work with community leaders and residents to craft the messaging.
- 3.2 Actively work to change the public imagination around who a typical "cyclist" is through campaigns prioritising images of people of all ages, ethnicities, genders and abilities, who use everyday cycles in everyday clothes for a wide range of daily activities.
- 3.3 Craft simple messaging around key issues such as costs, environment or health, and develop short, relatable, and aspirational content that places everyday people and usage first.
- 3.4 Work with industry to craft more inclusive messaging around casual cycling and diversity in cycling.
- 3.5 Promote and support highly visible community leaders such as Cycling and Walking Commissioners and Bicycle Mayors. Prioritise people of underrepresented groups for these positions.

3.

Emphasise storytelling with a focus on diversity

4.1

Lean on and build existing capacity within communities, recognising and amplifying the work of local advocacy groups and NGOs.

4.2

Include community-based organisations as partners on grant applications. Seek funding and develop mechanisms to support and broaden the reach of ongoing community-generated programs.

4.3

Act as an enabler by supporting local organisations with technical expertise, allowing them to take a more center stage on community engagement, strategy, and program delivery.

4.4

Pay communities for their time and expertise during consultation and project delivery.

4.5

Expand community engagement strategies to reach groups that are not often represented through mobile workshops within local neighbourhoods.

4. Engage with communities in meaningful partnerships



Image: Marina Kyriakou



Image: Gehl Architects

5.

Connect cycling to urban wellbeing

5.1

Understand cycling as a means to an end by linking cycling advocacy to other forms of active transportation, public space, employment, housing, health, and broader questions of street safety, usage and comfort.

5.2

Integrate cycling behavioural change with initiatives targeting climate, air quality, road safety, physical activity, mental health, and economic opportunity.

5.3

Leverage the expansion of cycling programs as an employment opportunity, from short term program coordinators, bicycle mechanics, and support staff during community engagement and campaigns, to long-term, broader job creation.

5.4

Engage in pop-up, tactical urbanism and temporary street activations, focusing on small scale pilots, school streets and open street events. Use these moments for community engagement and awareness building around cycling for daily transportation.

5.5

Develop transversal partnerships with environmental and public health departments around transportation behaviour change programs.

6.1

Provide internal training and capacity building activities to sensitise policymakers, planners and decision makers in the cycling ecosystem to the value of soft measure initiatives.

6.2

Involve social researchers further in the development of bicycle strategies, behavioural change measures and active transportation policy.

6.3

Increase knowledge sharing and communication around bicycle programs with other cities, and facilitate knowledge sharing between local organisations, at the national and regional level.

6.4

Develop new tools and impact measurement frameworks to determine the effects of soft measures to promote cycling across a range of different population groups.

6.5

Unlock funding for further research on the effects of behavioural change initiatives on equitable cycling uptake, as well as their transferability across urban contexts.

6.6

Increase impact measurement capacity through attitude surveys and community engagement during events and temporary pilots to deepen the understanding of soft measures' effect.

6. Expand knowledge sharing and research around soft measures

“The soft and hard measures should all be seen as part of one package. The challenge is that hard measures are much more expensive than soft measures, and that is equated with soft measures being less important, a nice to have, and unnecessary to coordinate together”

Lucy Saunders, Healthy Streets



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INTERVIEWS

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Burczak, Isabella & Barrett, Benjamin	Advocacy Manager / Sustainability Consultant	Union Cycliste Internationale
Castañeda, Paola	PhD candidate	Oxford University Transport Studies Unit
Christiaens, Jan	General Director	Mobiel 21
Corona, Manuel	Transportation Planner	Oakland Department of Transport
Eggen, Frank	Program leader Traffic and Behaviour	Gelderland Province
Jennings, Gail	Research Consultant, Behavioural Change	Cape Town
Kamler, Sonja	Mobility Manager	City of Munich
Mahoney, Lucy	Walking & Cycling Manager	C40
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Pascual, Romel	Executive Director	CicLAvia
Robison, Paul	CEO/Founder	Bikeability Trust
Sandoval, Cristian	Founder	Earn-A-Bike
Sankaran, Sathya	Co-Founder	Urban Morph
Saunders, Lucy	Director	Healthy Streets
Scott, Rachel	Active Travel Manager	Transport for Greater Manchester
Swarttouw, Henk	President	ECF
Tranter, Adam	CEO	Fusion Media
Walker, Ian	Senior Lecturer, Department of Psychology	University of Bath, Institute for Policy Research

“If you can show the impact of soft measures, you will get support. If you don’t find novel ways to show it, the infrastructure will always be the only protagonist”

Lina Lopez Montoya, Medellin





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the bicycle
take us?

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