

MOBILITY TRANSITION ROADMAP

Overcoming barriers that prevent a change of modal split

In driving their mobility transition, cities and districts in the Urban Transitions Alliance have recognized that less car-centric transport systems lead to better air quality, reduced congestion, and more community space. Building on legacy assets like railway lines and spacious streets, many local governments in the Alliance have implemented policies to support cycling and walking infrastructure and expand public transport. In the German Ruhr area, industrial railway tracks have been repurposed into a network of well-connected and comfortable bike lanes. By removing minimum parking requirements for buildings, the US City of Buffalo has freed up road space for public use. In China, Shijiazhuang's Yuhua District has invested in bike share to serve for the "last mile" from bus stops or train stations.

However, such efforts have not yet achieved to accelerate a change of modal split. The Ruhr area, still one of the most densely populated regions in Germany, struggles to overcome high car-dependency and traffic congestion. In the City of Essen, the number of citizens relying on cars for inner-city travel has decreased only slightly from 55% to 54% between 1989 and 2011.³ Likewise, individual motorized transport accounts for almost half of all trips within the City of Dortmund.⁴ Other Urban Transitions Alliance focus regions show a similar picture: In the City of Pittsburgh, single occupancy car commuting has even increased between 2010 and 2014 at the expense of walking and public transport use.⁵ And although cycling rates in Shijiazhuang are strong, motorized travel contributes significantly to the city's issue of poor air quality.⁶

What can cities do to leverage infrastructure investments to their full potential? Clearly a missing piece is citizen buy-in. Without support of local residents, sufficient progress is frequently stalled. In many German cities, EU air pollution limits are constantly being exceeded. Still, pending policy responses such as diesel car bans and lower speed limits are facing firm opposition from the public and political sphere. Cycling lane installations in the US Cities of Baltimore and Pittsburgh have triggered heated "bikelash" controversies, with residents criticizing lost parking spaces and reduced driving space for cars. In China, private car ownership has exploded over the past years. These examples illustrate that policies aiming to achieve a mobility transition need to be developed in consultation with local communities and acknowledge individual habits and preferences. The following pathways reflect diverse approaches from the Urban Transitions Alliance to increase public support and instigate wider behavioral change across the population.

3. Stuhm, J.-M. et al. (2018). Masterplan Verkehr Essen 2018. Auftraggeber: Stadt Essen. Retrieved from: https://media.essen.de/media/wwwessende/aemter/61/dokumente_7/verkehrsthemen/Masterplan_Verkehr_Essen_2018.pdf

4. Stadt Dortmund (2017). Zielkonzept zum Masterplan Mobilität 2030. Retrieved from: https://www.dortmund.de/media/p/masterplan_mobilitaet/downloads_24/veranstaltungen_im_rueckblick/2_Dialogveranstaltung_Zielkonzept.pdf

5. City of Pittsburgh (2017). Climate Action Plan Version 3.0. Retrieved from: http://apps.pittsburghpa.gov/redtail/images/606_PCAP_3_0_Draft-_9-26-17.pdf

6. Pan, W.-Y. & Shen, H.-Y. (2018). Correlation Analysis between Motor Vehicle Types and Air Pollution in Shijiazhuang City. IOP Conference Series: Earth and Environmental Science, 153, 062005. Retrieved from: <https://iopscience.iop.org/article/10.1088/1755-1315/153/6/062005/pdf>

PATHWAYS



RAISING AWARENESS

Sparking sustainability conversations and fostering real-life visions of green urban mobility



INCREASING CONVENIENCE

Improving connectivity and providing well-accessible transport alternatives across the city



CHANGING HABITS

Promoting active lifestyles and collaboratively shaping sustainable and healthy urban mobility cultures



RAISING AWARENESS



A first approach to improve citizen support for green urban mobility is creating awareness for the needs and benefits of environmentally friendly transport systems. This can be achieved by sharing information and recommendations via different communication channels available to the city, including community meetings, events and campaigns. Links to individual behavior are more tangible if facts and figures – for example on health risks linked to traffic generated air pollution – are applied to the local context and voices from relevant stakeholders are included. Cincinnati’s “A Year of Living Sustainably” campaign featured below shows that social media is a valuable tool for this purpose that can be used to spark conversations, encourage participation and invite views and examples from across the community. However, as seen in Cincinnati’s case, digital tools work best when linked with other means of outreach that create personal engagements and include citizens who have limited access to new media.

In many cases, individuals refrain from using certain transport options because of reservations resulting from a lack of experience. In order to change the perspective and inspire new ideas, Alliance members have organized public events that engage citizens in alternative means of transport. Examples are plenty across the Alliance and include carfree days in Essen and Dortmund, bike tours in Buffalo and Baltimore, and green lifestyle plays in Yuhua District. Such initiatives create real-life visions of sustainable urban mobility and demonstrate how a change of modal split can lead to accessible streets, free-up community spaces and improve quality of life.


City of Cincinnati: Declaring a year of living sustainably



Commuting by bike is one option to pledge for living sustainably.

© Cincinnati Red Bike

The 2018 Green Cincinnati Plan outlines 80 strategies to reduce Cincinnati’s carbon emissions by 80% by 2050. Built on themes of sustainability, equity, and resilience, the plan emphasizes engagement of the city’s diverse residents. Although the city is implementing large-scale projects in relevant fields like energy, natural systems, and transportation, this ambitious goal will not be achievable without buy-in from local residents. To build community support, the plan’s strategies include the expansion of environmental education efforts and the development of a brand and communication strategy.



To increase awareness and spark eco-friendly behavior change, the “Year of Living Sustainably” campaign invites individuals to consider their individual role in creating a more sustainable city. The campaign keeps participants engaged by focusing on a different theme from the Green Cincinnati Plan each month. The program taps into residents’ collective knowledge and capacity for social support through in-person community conversations, and connects individuals with local resources and events via social media. Apart from receiving information and inspiration on sustainable lifestyle choices, participating citizens are called to take action – by engaging in community activities and pledging to adopt one sustainable behavior for 30 days, with the hope that it will generate positive experiences. The month of September 2019 will focus on transportation, directly relating to the city’s Green Plan goals to reduce fossil fuel use and increase passenger miles traveled by public transport. An example commitment could be commuting to work by bus or bike, and encouraging co-workers to do the same.

The campaign is led by the municipal Office of Environment and Sustainability. Key partners are the Civic Garden Center, a local educational hub for community gardens, and the Environmental Studies department at the University of Cincinnati, conducting associated research on pro-environmental behavior change. Local nonprofit organizations and transport providers offer additional support in the form of cross-promotion or in-kind donations: Every month, theme-related prizes like Cincy Redbike memberships or Metro bus passes are raffled among participants. Additionally, a community-nominated “Leader in Sustainability” award is issued to individuals who inspire others to live more sustainably. Including social media recognition and a “Mayoral Declaration” that declares a day in their honor, these awards have sparked positive responses and generated attention for the initiative.

Yuhua District, City of Shijiazhuang: Sparking behavioral changes through green mobility campaigns

Air pollution resulted from industrial development is among the most pressing transition challenges of Shijiazhuang’s Yuhua District. The district’s annually updated “Emergency Plan for Heavy Pollution” identifies the transport system as a key sector to reduce emissions and improve air quality. A tangible target towards green mobility is the “Mobility Mode 1-3-5”. The 1-3-5 approach encourages citizens to walk short distances (1 km), cycle or use electric scooters for medium distances (3 km), and take public transport for longer journeys (5 km and more). In line with central government’s “Three Year Action Plan for Cleaner Air” and World Car Free Day, Yuhua has identified three key strategies to drive their mobility transition: 1) Strengthening the collaboration among different district departments for efficient organization and implementation; 2) Exchanging experiences and good practice examples with peer cities and districts, and applying learnings to long-term public transportation planning; 3) Implementing a variety of promotion and advocacy programs to generate buy-in from citizens.

To increase public awareness for sustainable transport choices, Yuhua has rolled-out large campaigns that focus on information and experience. For public information purposes, the district is reaching out to citizens via digital screens and billboards in public spaces, and also through theatre plays that showcase eco-friendly lifestyles. In addition, targeted content including short videos is posted on websites, social media platforms and mobile applications to create a

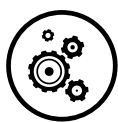
comprehensive public understanding about the benefits of green mobility. The second pillar of public campaigns is creating positive experiences. The district organizes recurrent activities including walking tours, bicycle races, and charity rides. Participation is steadily increasing as a growing number of citizens realize the importance of low-carbon and active lifestyles.

In order to expand the impact of awareness campaigns, the district government is seeking to collaborate with local stakeholders and media organizations. For example, through the cooperation with a clinic and a local newspaper on the “Green Mobility – Bring Beauty to Your City” campaign, Yuhua was able to raise funds for 10,000 sharing bicycles free for citizens to use. In line with the district’s transition strategy, the campaign emphasized people’s individual role in environmental protection, and encouraged the citizens to make their own contributions to a greener city. By creating tangible models of sustainable lifestyles, Yuhua inspires more and more residents to integrate green mobility into their daily lives.



Public walking and cycling tours are part of the green mobility campaign in Shijiazhuang’s Yuhua District.

© Yuhua District



INCREASING CONVENIENCE

Even if awareness for sustainable lifestyles is growing, questions of convenience constitute a second type of hurdles that may still prevent a larger shift towards eco-friendly mobility options. Many cities in the Alliance struggle to overcome a high car-dependency because their transport systems were built with private vehicles as the primary means of transport. Even though cities have increasingly invested in public transport and bicycle infrastructure, it has proven challenging to address the advantage in convenience attributed to cars. Weather conditions might cause a choice against cycling or walking, while the distance to the next bus or tram station might be far and public transport services might not be frequent or reliable. Acknowledging this issue, Alliance cities have started to holistically re-think their mobility systems and identify strategic investments that improve the overall network of transport alternatives. Pittsburgh’s Downtown-Uptown-Oakland electric bus project combines the revitalization of a former industrial worker’s district with the improvement of transit speed and reliability in a heavily congested transport corridor. Shijiazhuang’s Yuhua District has established electric bus lines and bike share in urban areas that are not sufficiently served by the local subway network. As illustrated below, the City of Essen is taking this integrated approach one step further to a citywide program mutually aimed to provide better connectivity between different

transport options and improve accessibility across all parts of the city. Essen's efforts are increasingly embedded in regional approaches: in Germany's Ruhr area, where commuting puts a strong pressure on public transport systems, traffic planning is increasingly addressed on the regional level. Current priorities include capacity increases for on-board carriage of bicycles and the construction of the inter-city cycling highway RS1.

City of Essen: Providing well-connected transport options through integrated mobility stations



Integrated mobility station at the "Landgericht" stop in Essen.

© City of Essen, photo: Joachen Tack



To increase convenience through connectivity, Essen's transport network is being expanded by integrated mobility stations that bundle different transport alternatives in strategic locations, easily recognizable by a distinct design. Two completed transport hubs already combine access to train/tram and bus services, bike share, car share, and taxi. The concept also includes covered bicycle parking as well as leasable bike and ride boxes, making it easy and convenient to switch between different modes of transport. A second pillar of the program is integrated ticketing: Monthly public transport passes contain free bike share and car share contingencies. "Zäpp", a mobile application providing door-to-door trip planning, ensures easy access to different fares as well as integrated, multi-modal navigation.

The concept was developed by the local transport association Ruhrbahn in cooperation with the municipal traffic authority and planning department and is highlighted as a key component of Essen's 2018 mobility plan. The physical construction of the mobility stations is substantially funded by the Federal Environment Ministry's National Climate Initiative (NKI) – 50% in case of the first two stations and 40% for upcoming sites. One requirement for NKI funding is that associated car sharing providers are certified with the "Blue Angel" ecolabel. This made car share company stadtmobil an ideal implementation partner along with bike share provider nextbike.

By creating a well-connected and comprehensive network of sustainable transport alternatives designed to meet travelers' individual demands, the authorities hope to decrease the number of cars on Essen's streets. Initial observations show positive acceptance from residents, although it takes time to establish substantial car and bike sharing participation in new locations. While the program envisions a total of twelve transport hubs with a special

focus on currently underserved neighborhoods, concrete planning for two additional stations has already started. Depending on available space and electricity supply, potential expansions of the concept include sheltered seating for waiting passengers and charging points for electric cars and bikes. Additionally, the city is looking into the integration of delivery services into the inter-modal transport concept: Central collection points at the mobility stations could reduce cargo trips and mileage, further increase convenience for customers and provide additional incentives for public transport use.



CHANGING HABITS

As a third pathway towards a change of modal split, cities in the Alliance are supporting sustainable and active mobility cultures, especially focusing on daily routes like journeys to work and school. By pursuing the interconnected environmental and health-related benefits of alternative transport choices hand in hand, political support can be strengthened and the range of partnerships expanded. More specifically, cities across the Alliance are exploring three key fields of action to shift the local climate: As a first step, local governments are setting a good example by encouraging their employees to cycle to work and by including bikes in the municipal fleet as regular choice for short business trips. Secondly, city-led programs focus on creating conditions that enable active, self-determined and sustainable transport choices early-on, including the improvement of perceived and actual traffic safety. Thirdly, local governments often take on a strong coordinating role between different transport providers and additional stakeholders. Partnerships with advocacy organizations and health care providers, stakeholder consultations and institutionalized engagements through transport advisory boards have supported inclusive policy-making, strengthened local support and increased outreach. Both cases below show how these fields of action can work together to enable healthy and eco-friendly transport habits.



Cycling programs pursue the interconnected environmental and health-related benefits of active mobility cultures hand in hand.

© City of Essen, photo: R. Oberhäuser

City of Buffalo: Supporting sustainable and active lifestyles from an early age

Kids participating in a
Recycle-A-Bicycle workshop.
© GoBike Buffalo



In line with municipal targets to support sustainable and healthy modes of transport, the City of Buffalo convenes key stakeholders, including strong community partners. In 2005, the Bicycle and Pedestrian Advisory Board was established to help the city find collaborative solutions for various problems experienced by cyclists, pedestrians and persons with disabilities. The city regularly engages the Advisory Board and local bicycle advocacy organization GoBike Buffalo on numerous projects that research, promote, implement, and evaluate initiatives, including bicycle facility installation and cycling education projects. A shared priority is to enable green and healthy mobility for children by increasing traffic safety, teaching cycling skills and introducing bicycles as a regular transport option from an early age. Projects on this include:

Safe Routes to School is a federal, state and local effort to enable and encourage children, including those with disabilities, to walk and cycle to school. By making routes to school safer and more appealing as well as reducing traffic and air pollution around schools, the program seeks to improve quality of life for students. The framework for Safe Routes to School in Buffalo encompasses five key steps: engineering, education, encouragement, enforcement and evaluation. At the local level, the program is led by public schools in cooperation with the City of Buffalo and local neighborhood organizations. The Buffalo Public School District Superintendent and Buffalo's Mayor have demonstrated their support and emphasized the program's value as a community revitalization tool.

GoBuffalo's Recycle-A-Bicycle program takes a holistic approach by combining cycling and traffic training with the development of problem-solving, teamwork and technical skills. Participating children are taught to take apart and fix a bicycle, so they understand its mechanics and are able to run quick safety checks. After learning how to ride confidently and safely across the city, the students receive the self-assembled bike as a gift, together with safety gear including lights, a lock, and a helmet. Recycle-A-Bicycle programs have been realized at city-led events and also through partnerships with charities and youth organizations, local refugee resettlement agencies, and at least 10 schools in the Buffalo Public School system. Since the start of the project, 2,844 bikes have found new enthusiastic owners.

Such programs support cycling as a habitual choice early-on, inducing health benefits and increasing mobility for low-income groups. In recognition of these efforts, Buffalo has been certified as a bronze-level bicycle friendly community by the League of American Bicyclists, and is striving for silver status.



Thanks to Recycle-A-Bicycle programs,
so far 2,844 bikes have found new
enthusiastic owners.

© GoBike Buffalo

City of Dortmund: Tackling mental barriers and supporting bicycle culture

The City of Dortmund has defined the reduction of transition barriers as a main priority in the Mobility Master Plan 2030. A key strand of action is focused on creating a “cycling climate” by bundling initiatives and education programs to increase attractiveness and acceptance of cycling across the city.

In the hope that small habits lead to bigger change, several activities address everyday trips, including commutes to work or school. Setting a good example, the municipality has centralized and diversified its mobility management by pooling vehicles of all sizes, including bicycles, and providing recommendations for the most efficient vehicle and route for each trip. Cycling is not only established as the go-to option for shorter business trips, but also for the commute to work when feasible. City employees are encouraged to participate in the “cycling to work” program that is hosted every year throughout Dortmund with full support of the city councilor for the environment. The program invites commuters to pledge individually or in teams to ride their bike to work for at least 20 days within the summer months of May to August. Successful participants are rewarded with cycling-related prizes – in addition to obvious benefits for health and well-being. Other city-led activities include cycling days and events, the promotion of cargo bikes as well as a program to support self-determined, safe and sustainable mobility for school kids.

In order to scale up the impact, the City of Dortmund has teamed up with strong implementation partners. Supported by the German cycling association, national health insurance providers and the Chamber of Commerce, the municipality is working with local employers and organizations to strengthen corporate mobility management and foster active, healthy and sustainable mobility habits. To ensure that mobility transition plans and policies are informed by the habits and concerns of Dortmund’s citizens, the city is conducting a large-scale mobility behavior survey that will interview 37,600 households between April and May 2019. The survey will cover habitual transport choices, how often participants use which modes of transport and the motivations behind their decision making process. The survey results will help the city evaluate current programs and inform the implementation of the Mobility Master Plan 2030.



Bicycles and cargo bikes as part of the municipal fleet in the City of Dortmund.

© City of Dortmund

