



# ECCENTRIC



## Replication Package

Deliverable No.:	4.4
Project Acronym:	CIVITAS ECCENTRIC
Full Title:	
Replication package: Measures to increase the share of walking and cycling	
Grant Agreement No.:	690699
Work package/Measure No.:	WP4
Work package/ Measure Title:	
Enabling safe walking and cycling	
Responsible Author(s):	
Paul Fenton	
Responsible Co-Author(s):	
Ana Rosa Llorente, Marisol Santos, Jukka Jokela, Annette Korkiankangas, Helena Kalland, Helber López.	
Date:	June 2020
Status:	Final
Dissemination level:	Public



## Abstract

CIVITAS ECCENTRIC work package 4 comprised nine measures aiming to increase the safety and the share of walking and cycling in Madrid, Munich, Ruse, Stockholm and Turku.

This report focuses on presenting lessons and recommendations for upscaling and replication from the cluster of four measures that aimed to increase the share of walking and cycling. The report contains short descriptions of each measure; an overview of general, shared conclusions from the cluster of four measures; and specific experiences, lessons and recommendations for three themes – developing attractive infrastructure for active mobility in peripheral districts; maintaining service quality throughout the seasons; and encouraging adoption of e-bikes.

Parts of this report were first published in the conference paper “More feet on pavements and more feet on pedals: Enabling safe walking and cycling in CIVITAS Eccentric” by Paul Fenton presented at Transport Research Arena in Helsinki on 29 April 2020. DOI: [10.13140/RG.2.2.28337.74084](https://doi.org/10.13140/RG.2.2.28337.74084)

## Project Partners

Organisation	Country	Abbreviation
Ayuntamiento de Madrid	Spain	AYTOMADRID
Grupo de Estudios y Alternativas 21 SL	Spain	GEA21
Consortio Regional de Transportes de Madrid	Spain	CRTM
Empresa Municipal de Transportes de Madrid SA	Spain	EMT
Universidad Politécnica de Madrid	Spain	UPM
Avia Ingeniería y Diseño SL	Spain	AVIA
FM Logistic Corporate	Spain	FM LOGISTIC
Stockholms Stad	Sweden	STO
Kungliga Tekniska Högskolan	Sweden	KTH
Flexidrive Sverige AB	Sweden	FLEXI
Carshare Ventures BV	Sweden	CARSHARE
Ubigo Innovation AB	Sweden	UBIGO
Mobility Motors Sweden AB	Sweden	MM
Cykelconsulterna Sverige AB	Sweden	CYKEL
Gomore APS	Sweden	GOMORE
Landeshauptstadt Muenchen	Germany	LHM
Münchner Verkehrsgesellschaft mbH	Germany	MVG
Domagkpark Genossenschaft EF	Germany	DOMAGK
Green City EV	Germany	GC
Green City Projekt GMBH	Germany	GCP
Technische Universität München	Germany	TUM
City of Turku	Finland	TUR
Varsinais-Suomen Liito	Finland	VSL
Turun Kaupunkiliikenne OY	Finland	TUKL
Western Systems OY	Finland	WS

Turun Ammattikorekeakoulu OY	Finland	TUAS
Gasum Biovakka OY	Finland	GASUM
Obshtina Ruse	Bulgaria	RUSEMUN
Club Sustainable Development of Civil Society Association	Bulgaria	CSDCS
ICLEI European Secretariat GMBH	Germany	ICLEI
FM Logistic Iberica SL	Spain	FMLOG

### Document History

Date	Person	Action	Status	Diss. Level
Mar2020	Paul Fenton (WPL)	Draft one – compilation of all existing info	Draft	MLs
Apr 2020	MLs, WPL	Draft two – inc. ML comments	Draft	WP8
May 2020	Helber López	Policy recommendations	Draft	WP4L
June 2020	WPL	Proposed final version	Draft	Coordination, Site Managers, WPs8-10
June 2020	TC	Final version		SYGMA

Status: Draft, Final, Approved, and Submitted (to European Commission).

Dissemination Level: PC = Project Coordinator, SM=Site Manager, TC=Technical Coordinator, EM=Evaluation Manager.

*Disclaimer: The views expressed in this publication are the sole responsibility of the CIVITAS ECCENTRIC consortium and do not necessarily reflect the views of the European Commission.*

## Table of Contents

<b>EXECUTIVE SUMMARY</b> .....	<b>6</b>
<b>1. INTRODUCTION</b> .....	<b>6</b>
<b>1.1. Purpose of this document and target group</b> .....	<b>6</b>
Purpose of the document.....	6
Target group.....	7
<b>2. SUMMARY OF THE CLUSTER: INCREASING THE SHARE OF WALKING AND CYCLING</b> .....	<b>7</b>
<b>2.1. CIVITAS ECCENTRIC and the importance of safe walking and cycling for sustainable urban mobility</b> .....	<b>7</b>
<b>2.2. ECCENTRIC measures to foster the increase of walking and cycling levels</b> .....	<b>8</b>
Developing attractive infrastructure for active mobility in peripheral district of Madrid .....	8
Maintaining service quality throughout the seasons in Turku .....	8
Encouraging adoption of e-bikes in Stockholm.....	9
Demonstration, evaluation, validation, exchange, upscaling and replication: collective actions in CIVITAS ECCENTRIC .....	9
<b>3. FROM ECCENTRIC CITIES TO REPLICATION IN OTHER PLACES</b> .....	<b>10</b>
<b>3.1. Evaluating the replication potential of measures</b> .....	<b>10</b>
Drivers and barriers to be expected .....	10
Foreseeable Impacts .....	11
Policy Recommendations .....	12
<b>4. MEASURES</b> .....	<b>14</b>
<b>4.1. Developing attractive infrastructure to enable walking and cycling outside of the city centre</b> .....	<b>14</b>
Introduction.....	14
Implementation.....	15
Business model and contractual partnerships .....	15
Lessons learned and recommendations .....	16
<b>4.2. Maintaining high-quality infrastructure to enable walking and cycling</b> .....	<b>16</b>
Introduction.....	17
Implementation.....	17
Business model and contractual partnerships .....	18
Critical challenges and success factors .....	18
Lessons learned and recommendations .....	18
<b>4.3. Providing test fleets to encourage modal shift</b> .....	<b>19</b>
Introduction.....	19
Implementation.....	19
Business model and contractual partnerships .....	20
Critical challenges and success factors .....	20
Lessons learned and recommendations .....	20
<b>5. CONCLUSIONS</b> .....	<b>22</b>
<b>SOURCES /REFERENCES</b> .....	<b>23</b>

## List of Figures

<b>Figure 1</b> WP_MAD 4.6 Brochure New Municipal Ordinance .....	14
<b>Figure 2</b> WP4_TUR 4.8_Testroute_Anette.Korkiakangas.....	17
<b>Figure 4</b> Offering test fleets of e-bikes and e-freight bikes (STO 4.9).....	19

## List of Tables

Table 1 Overview of measures in WP4 cluster “Increase levels of walking and cycling” .....	8
--	---

## List of Acronyms

ACM	Adaptive City Mobility
ca	<i>circa</i> (around)
CO <sub>2</sub>	Carbon Dioxide
D	Deliverable
EC	European Commission
EU	European Union
EFV	Electric Freight Vehicle
EV	Electric Vehicle
FCEV	Fuell Cell Electric Vehicle
e.g.	<i>exempli gratia</i> (for example)
H2020	Horizon 2020
i.e.	<i>id est</i> (that is to say)
LEV	Light Electric Vehicle
MIT	Motorised Individual Transport
ML	Measure Leader
NGO	Non-Governmental Organization
NOx	Nitrogen Oxides
TCO	Total Cost of Ownership
SM	Site Manager
WP	Work Package
WPL	Work Package Leader

## Executive Summary

CIVITAS ECCENTRIC work package 4 comprised nine measures aiming to increase the safety and the share of walking and cycling in Madrid, Munich, Ruse, Stockholm and Turku.

This report focuses on presenting lessons and recommendations for upscaling and replication from the cluster of four measures that aimed to increase the share of walking and cycling. The report contains short descriptions of each measure; an overview of general, shared conclusions from the cluster of four measures; and specific experiences, lessons and recommendations for three themes – developing attractive infrastructure for active mobility in peripheral districts; maintaining service quality throughout the seasons; and encouraging adoption of e-bikes.

Findings from the cluster include:

- The need for active and continuous engagement of local stakeholders, using mixed methods and a wide range of tools.
- The importance of a strategic approach in the management of acceptance and congestion of actions in cycling and walking.
- The need to motivate and frame projects in a realistic and manageable way; and to ensure strategic objectives and project budgets are aligned.
- The importance of baseline data to develop projects and enable monitoring and evaluation that may justify a project's longevity.
- The importance of systematic long-term approaches that both address critical challenges and avoid trade-offs that compromise the availability and quality of good infrastructure for walking and cycling.

## 1. Introduction

### 1.1. Purpose of this document and target group

#### Purpose of the document

In CIVITAS ECCENTRIC, five cities (Madrid, Munich, Ruse, Stockholm, Turku) have implemented 50 innovative sustainable urban mobility measures. The measures addressed a variety on urban mobility challenges, organised in different thematic work packages and clusters. This document is intended to equip practitioners and decision makers with the information needed if they want to replicate measures of the thematic cluster “Measures to make walking and cycling safer”.

Replicability refers to the possibility of transferring results from a pilot case to other geographical areas, whilst taking into account different local contexts and conditions. When a specific measure is proven to be successful in one European city, it should be

possible to transfer it (in whole or in part) to another city (or upscale it within the original city).

### **Target group**

This document is aimed at providing practical support to project developers and planners / technical staff from cities to develop innovative measures, to consider potential barriers, and to be able to select the appropriate solutions to match their contexts. This document provides evidence that particular measures have been successfully implemented in a city and have a good replicability potential.

## **2. Summary of the Cluster: Increasing the Share of Walking and Cycling**

### **2.1. CIVITAS ECCENTRIC and the importance of safe walking and cycling for sustainable urban mobility**

In the last decade European cities have made significant steps forward in the delivery of sustainable urban mobility policies, proving that major impacts in terms of congestion and reduced emissions can be achieved through ambitious measures. At the same time, peripheral districts remain largely unaddressed, with the effects of flagship projects being rarely transferred to these areas. Urban growth processes are posing additional pressure to peri-central areas.

A key challenge is to increase the attractiveness and sustainable mobility of peripheral districts, as well as to relieve central areas through clean and efficient urban logistics. To tackle these challenges and demonstrate the potential and replicability of measures aiming to enable sustainable urban mobility and transportation, the cities of Madrid, Stockholm, Munich, Turku and Ruse formed the CIVITAS ECCENTRIC consortium. Six thematic work packages are included in the project, one of which focuses on a major strategic challenge for communities across Europe – how to achieve conditions that enable safe walking and cycling and increase levels of walking and cycling.

Increasing levels of active mobility is essential for sustainable urban mobility. CIVITAS ECCENTRIC worked to enable active mobility through demonstration of multiple approaches in two clusters, one focusing on making walking and cycling safer, and the other on increasing modal share for walking and cycling by increasing availability and quality of infrastructure and cycles. This report presents results from the thematic cluster that worked to increase levels of walking and cycling.

## 2.2.ECCENTRIC measures to foster the increase of walking and cycling levels

Active forms of mobility such as walking and cycling are vital components of sustainable urban mobility, and cities around the world are keen to identify creative ways to increase levels of walking and cycling. This cluster demonstrated four measures in three cities that included improvements to the design and maintenance of infrastructure, along with a fleet enabling citizens to test e-bikes (see Table 1).

**Table 1 Overview of measures in WP4 cluster “Increase levels of walking and cycling”**

Measure	City	Partner(s)
Pedestrian friendly public space outside the city centre (MAD 4.6.)	Madrid	City of Madrid; Grupo de Estudios y Alternativas 21SL (GEA21)
Enabling cycling outside the city centre (MAD 4.7.)	Madrid	City of Madrid; GEA21
Easy, safe and comfortable cycling and walking round the year (TUR 4.8.)	Turku	City of Turku; Turun University of Applied Sciences (TUAS)
Offering test fleets of e-bikes and e-freight bikes (STO 4.9.)	Stockholm	Cykelkonsulterna; City of Stockholm

### Developing attractive infrastructure for active mobility in peripheral district of Madrid

Two of the measures (MAD 4.6. and MAD 4.7.) are demonstrated in Vallecas, a large urban centre on the periphery of Madrid, and involve interventions to improve infrastructure for walking and cycling. These measures extend Madrid’s Pedestrian Strategy to a peripheral district and, in addition to the aim to increase the modal share of walking and cycling and reduce use of private cars, have a wide range of related objectives concerning e.g. socio-economic integration (both within the district and between the district and city), environmental pollution, and perceptions of safety.

The measures enable, for example, green spaces across the district to be linked by a pedestrian corridor (the “Viewpoints Itinerary”, an action requested by citizens in a participatory budget process); an extension of the network of bike lanes to include secondary roads; improved links between the urban centre and University campus, along with other general improvements to the urban space and communication actions.

### Maintaining service quality throughout the seasons in Turku

The provision of safe and reliable infrastructure across the seasons is an issue relevant to many European cities, with winter cycling a topic of particular interest to communities across Scandinavia. The City of Turku has adopted sweep-salting methods for maintenance of pedestrian and cycle paths in winter that were pioneered in Sweden to enable all-year cycling (measure TUR 4.8).

The demonstration involved consultation with the public about winter cycling, gathering of best practices, tendering and the launch of the new maintenance scheme in October

2017. The measure generated high levels of user satisfaction and has also supported the launch of a year-round bike-sharing system in Turku (an action also co-financed by CIVITAS ECCENTRIC).

### **Encouraging adoption of e-bikes in Stockholm**

In Stockholm (measure STO 4.9.), over two hundred individuals have tested e-bikes and e-cargo bikes for one-month periods as part of a campaign run by the company Cykelkonsulterna. This trial, which coincided with the launch of a national incentive scheme offering consumers a 25% discount of purchases of electric cycles, aims to increase the number of e-bike and e-cargo bike users in Årsta and other districts of Stockholm and introduce such cycles to new user groups.

### **Demonstration, evaluation, validation, exchange, upscaling and replication: collective actions in CIVITAS ECCENTRIC**

CIVITAS ECCENTRIC has not only enabled the demonstration, evaluation and validation of the five measures, but has also included a range of activities enabling exchange between the project partners and with other interested cities and stakeholders. These activities have focused on dissemination of project results to enable capacity-building, upscaling within CIVITAS ECCENTRIC cities and replication in other locations.

These actions included two CIVITAS ECCENTRIC cross-fertilisation workshops in Munich and Madrid, an international workshop prior to the 3rd Global Ministerial Conference on Road Safety in Stockholm during February 2020, conference presentations at e.g. CIVITAS Forum 2018 and 2019 and Transport Research Arena 2020, hosting of study visits by CIVITAS ECCENTRIC cities, internal peer review of measures by other CIVITAS ECCENTRIC cities, public webinars and local events, publications, as well as intra-project activities such as telephone conferences.

To further assist other cities and stakeholders in learning from and replicating the CIVITAS ECCENTRIC measures increasing the share of walking and cycling, this report proceeds by outlining drivers and barriers, the results and impact, general conclusions and lessons learned from the implementation of the cluster of four measures, followed by key lessons and recommendations for three themes – developing attractive infrastructure for active mobility in peripheral districts; maintaining service quality throughout the seasons; and encouraging adoption of e-bikes.

### 3. From ECCENTRIC cities to replication in other places

The following chapter identifies the kinds of barriers and drivers that influence demonstration of measures to increase the share of walking and cycling and indicates ways in which these have influenced implementation in the ECCENTRIC cities. The assessment reflects both the qualitative experience of the Work Package Leader and Measure Leaders, as well as qualitative and quantitative analysis from the Project Evaluation Manager.

#### 3.1. Evaluating the replication potential of measures

##### Drivers and barriers to be expected

In order to make implementation possible, an in-depth analysis is required to understand the existing barriers that obstruct effective and successful implementation. Finance and governance aspects are addressed within Chapter 4, as these are closely connected to the particular types of actions demonstrated.

##### ◆ Barriers

- *Political/Strategic-Problem related:* The barriers include a general concern that key institutional stakeholders and decision-makers do not focus on the implementation of the measures, since they have other priorities in the municipalities or because they lack mandate or are dependent on other stakeholders for implementation. It was sometimes perceived that there was a mismatch between high-profile political statements advocating walking and cycling and actual prioritisation of efforts to increase the share of walking and cycling. In some cases, this creates uncertainty about the continuity of measures after the ECCENTRIC funds run out, since some measures require political decisions about investments. This is quite related to the next barrier.
- *Financial:* Experiences included limited budget or restrictions on the use of other funds to enable infrastructure improvements or bureaucracy to use funds for the implementation phase, and unclear justification for funding of other investments (e.g. those favouring cars). It was also pointed out that the funding scheme is sometimes inconvenient; planning and implementation should be flexible and/or separated to match political discussion and agenda.
- *Planning:* In general, this was perceived as lack of a clarity about how to proceed after identifying necessary actions. Some examples include a lack of guideline-process on how conduct part of the pilot projects (road closure), difficulty to find convenient places to implement the measure or to test the pilot project. In some cases, not all potential problems were identified during the planning stage.
- *Institutional:* The complexity of administrative structures slowdown a fast implementation of projects related to infrastructure, due to the long decision-making processes of institutions.

- *Positional*: Some measures struggle to position their product in the market due to insufficient partner arrangements, or lack of involvement of stakeholders in the living lab and changes in measure leaders over the project.

Other barriers included high segmentation of users, needs, preferences, and capacities. To overcome such barriers, on the political/strategic side, suggested actions included to approach key decision-makers and stakeholders at all stages of the measure, as well as to identify other potential partners that could support the measures.

To increase financial security for the implementation, measures should be embedded in the city's SUMP. Moreover, there should be good communication with stakeholders. To overcome positional barriers, it was suggested to increase visibility by partnering with measures or similar projects, as well as to implement marketing strategies to promote the measure.

### ◆ Drivers

- *Organizational/Involvement*: This driver was described as the good cohesion and high commitment within the teams of the organizations that coordinate the measures, as well as their leadership, and a clear segmentation of users.
- *Political & strategic/Institutional*: The measures are aligned with current policies and city strategies. They are meant to ease some cities' problems that pose political pressure, since they depend on the public opinion. This translates in a favourable regulatory framework and environment towards the WP.
- *Positional*: The measures support the goals of some SUMP in some cities and provide additional benefits to walking and cycling users. This creates a favourable attitude towards them and makes them more visible. In some cases, it has speeded up their progress (MAD 4.7).
- *Planning*: Good ex-ante analysis, technical planning, and involvement of users in the planning process.

Other drivers include financial drives, acknowledging the funding provided by CIVITAS and in some cases a good involvement and communication with stakeholders.

### Foreseeable Impacts

It is fair to expect an increase in cyclist and pedestrians where measures represent a moderate increase in the quality of the current infrastructure and use of infrastructure is perceived as safe by the user (particularly for cycling).

An improvement on the mobility conditions is to be expected, particularly for regular users of public transport or those dependent on public transport as their sole means of transportation. Multimodality is enabled, and door-to-door accessibility is nothing but better. For car users though, there is little prove that these measures alone can do much to have an impact on car dependency or change their mobility behaviour. Only in combination with other (most likely car-restrictive) actions this could be expected.

An increase in the acceptance of actions providing more and better space for cycling and walking is not necessarily to be expected, particularly if these actions endanger the status quo of the private vehicle. Depending on the local context, reactions from citizens and decision makers can vary widely for reasons that have probably nothing to do with the actual impact of the actions but rather reflect other political or social concerns.

Measures for increasing cycling and walking require to have safety as one of its central elements. Failing to do so will not only fail to support non-motorized mobility, but even worst, result in more injuries and deaths, and a backlash in the acceptance of such investments.

It is fair to assess the impact of these measures using indicators linked to the number of users and activities in the street. Also, qualitative, and quantitative indicators measuring the visibility, perception of the measure and its users are appropriate. Safety indicators are relevant, and are particularly useful if these can be associated to a spatial variable.

Modal split, mode shift, vehicle-kilometre travelled, energy consumption/savings and other indicators commonly associated to urban mobility and transportation patterns are adequate only if they make part of a complete study that considers other modes and changes in the medium-to-long terms (5+ years). Car ownership, location preferences, impact on sales and other indicators measuring economic, long-term mobility and location impacts require large datasets (in time range and sample size) and fall beyond the isolated scope of transportation planning.

### Policy Recommendations

Managing the impact of cycling and walking measures in road congestion<sup>1</sup> and other forms of resistance to the free flow of motorized individual transport, and its further impact in public opinion and acceptance is vital to ensure the raise of active mobility. At the same time though, both opinion and acceptance are influenced by forces which might have little or no relationship with the actual effect of walking and cycling infrastructure. Not because congestion is tackled successfully (e.g. by shifting users from private vehicles) means acceptance will always go on the rise, and not because congestion increases (e.g. due to a reallocation of space) means that acceptance has to decline.

Acceptance is to be managed strategically, considering a wide spectrum of variables falling beyond the field of transportation and mobility planning (Social, economic, politic, etc). Similarly, impact in capacity constraints is rather the result of a strategy anchored in different aspects of the urban realm, than the result of measures in cycling and walking (or even transportation alone). Solving capacity constraints in different forms (e.g. congestion) should not be one of the objectives of investments in cycling

---

<sup>1</sup>The concept of congestion in this context extends beyond its common connection to traffic flow. It also involves other forms of resistance to the use of private vehicles e.g. for parking manoeuvres.

and walking. Capacity constraints are rather a tool to regulate the use of space in cities.

Cities should aim to achieve a balance of walking, cycling and public transport as these modes complement each other and improvements in connectivity, accessibility and safety provided by actions in this field will improve the overall quality and sustainability of the transport system. Nevertheless, achieving modal shifts from private cars to sustainable modes seems to require additional actions (e.g. through push-pull strategies) addressing needs of private vehicle users.

Safety should be at the centre of any action focused in active mobility. With an increase in the number of pedestrians and cyclists, there is the need to provide safe solutions to keep accidents at bay, if not to eliminate them completely. In the long term, and as part of joint strategies, the potential reduction in road traffic can bring an even more positive perspective into accident figures.

Visibility of the infrastructure and its users, together with effective communication are key elements to address acceptance, safety, and ensure a raising number of non-motorized users of the street. The infrastructure alone can provide a safer environment, but its benefits must be visible and communicated to attract more users. Once there, users can only attract more users, which again require to be visible for safety and strategic reasons.

Actions supporting active mobility are currently lacking the tools and support for project delivery. From weak cases for financing, to lack of guidelines for planning and approval, CIVITAS ECCENTRIC demonstrated the need to improve governance and robust risk management around this type of measures.

SUMPs are one of the tools to increase the significance of cycling and walking projects and support its delivery. SUMPs were identified in CIVITAS ECCENTRIC as a positive driving force, but they still need to find their way into a more permanent form in the formal planning procedures of each city. This is true particularly for non-central locations where the benefits of active mobility almost always yield to car-centric planning philosophies. CIVITAS ECCENTRIC itself was found as a driving force supporting the acceptance and delivery of related projects.

## 4. Measures

### 4.1. Developing attractive infrastructure to enable walking and cycling outside of the city centre

These two ECCENTRIC measures are considered together in this chapter:

- Pedestrian-friendly space outside the city centre (MAD 4.6)
- Enabling cycling outside of the city centre (MAD 4.7)

#### Introduction

Suburban and peripheral city districts have often been neglected in urban planning, particularly regarding sustainable urban mobility. In many such districts, the quality of urban space is poor and provision of infrastructure for walking and cycling is inadequate. This may be reflected in actual or perceived levels of safety (see ECCENTRIC measures MAD 4.3. and STO 4.5. in report D.4.5 “Replication package: Measures to make walking and cycling safer”); however, other factors – such as the quality of urban space and the accessibility of infrastructure and attractive routes or destinations – may influence levels of walking and cycling. By introducing new pedestrian-friendly spaces and enabling cycling in the district of Vallecas, Madrid aimed to respond to local challenges and develop an approach to improve urban quality and increase levels of walking and cycling that can be scaled-up in other parts of Madrid or replicated in other cities in Europe.

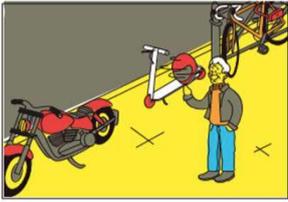
<p><b>Cuando aparcas bien, disfrutas más como peatón</b></p>  <ul style="list-style-type: none"><li>→ Más espacio para los peatones. Estaciona en las zonas reservadas y si no es posible, hazlo junto al bordillo.</li><li>→ También podrás estacionar en paralelo al bordillo en aceras de menos de 6 metros de ancho, y en semi batería o ángulo si son más anchas.</li><li>→ Siempre deja tres metros libres para el tránsito.</li><li>→ Está prohibido el estacionamiento a menos de dos metros de los pavimentos tacto-visuales para garantizar la movilidad de las personas con discapacidad visual.</li></ul>	<p><b>¿Qué puedes hacer como peatón?</b></p> <ul style="list-style-type: none"><li>→ Recuerda: todas las personas son peatones, y la movilidad a pie supone alrededor de un tercio de los desplazamientos en la ciudad.</li><li>→ Además, se consideran peatones las personas con movilidad reducida con una silla de ruedas a motor o sin él y quienes transiten a pie arrastrando una bicicleta, patinete o cualquier vehículo de movilidad urbana.</li><li>→ Puedes solicitar aparca-bicis e informar al Ayuntamiento cuando encuentres algún obstáculo en la acera que dificulte el paso.</li></ul> <p><b>010</b> @lineamadrid Oficinas de Línea Madrid</p> <p>2020 CIVITAS ECCENTRIC</p> <p>madrid.es/apie</p>	 <p><b>SOMOS PEATONES, LA ACERA ES NUESTRA</b></p> <p>Conoce la normativa para que sea más fácil y seguro moverte por Vallecas</p> <p>Camina Madrid</p> <p>MADRID</p>
--	---	---

Figure 1 Brochure New Municipal Ordinance campaign in Madrid

## Implementation

The approach used by Madrid to implement these measures is described in the report “D4.2. Measures to increase the share of walking and cycling”. Below is a summary of important steps which can inform other cities about how to replicate the approaches used.

- Cities should always try to include peripheral districts in their strategies from the beginning. The SUMP Guidelines indicate that planning should extend across Functional Urban Areas, including peripheral neighbourhoods. In cases where the city has an existing Pedestrian Strategy or Cycling Masterplan for the inner city, consider which parts of the strategy can be extended to peripheral districts and what kinds of additional actions may be required.
- Involve local stakeholders in development of a local strategy that addresses their specific needs (e.g. in Vallecas this has included local residents and businesses, as well as the University and Hospital located in the district) and enables tactical interventions.
- Conduct thorough analysis of the district. Try to identify creative ways to address multiple policy objectives in low-cost ways; for example, perceptions of personal safety may be influenced by multiple factors (e.g. physical barriers, lighting, parked cars, etc.) rather than traffic conditions per se.
- Find ways to integrate sustainable forms of mobility (e.g. mobility stations) into placemaking, so that improvements to urban form reinforce the need for, and possibility for, modal shift.
- Make an action plan that addresses priorities and generates goodwill – launch a communications campaign that encourages behavioural change whilst emphasizing the real improvements being made (e.g. in Vallecas this includes a green corridor with viewpoints looking out over Madrid).

CIVITAS ECCENTRIC funds used in this measure development have been € 250,000 used in the project development and technical planning, as well as evaluation and dissemination tasks. The construction works can be estimated to cost €5 million.

## Business model and contractual partnerships

The investments made in Vallecas were done by the City of Madrid, with additional support from CIVITAS ECCENTRIC. In most cases, investments would be publicly funded, and perhaps on occasions funded in partnership with private property owners or other large stakeholders in a district. There may be possibilities to e.g. gain support from charitable foundations to support investments. Contractual partnerships may be required with mobility service providers or other stakeholders seeking to lease or operate parts of a route (e.g. restaurants or similar).

## Critical challenges and success factors

These measures were time-consuming and complex, as they attempted to introduce various types of intervention across at multiple locations along and close to a long

corridor for walking and cycling. Administrative delays and limited investment budgets created challenges for implementation of the measures, partly because political focus shifted away from addressing mobility challenges in peripheral districts. This meant it was difficult to align project timelines and budget with other initiatives and to secure necessary funding to implement all aspects of the strategy as desired. Market barriers also exist in most European cities, and service providers are often reluctant to launch new mobility services in peripheral districts. Such problems have been partly overcome through the active participation of relevant stakeholders, such as the local bus company and Technical University of Madrid, whose participation and input have helped ensure implementation.

### **Lessons learned and recommendations**

Important lessons from the demonstration of these measures include the need to ensure strategies and budgets are well-defined and aligned to ensure that investments are (a) viable in the sense of being realistic and achievable, and (b) synergetic with other strategic objectives (e.g. employment, social issues). The measures were complex, including many different actions across a large geographic zone; their inclusion in a European project with strict timelines made them difficult to fully achieve.

In hindsight (for the purposes of the project), the measures could have been implemented as single actions, and the implementation area could have been smaller. However, for the city and its daily work, the bold and transformative character of the measures – and the challenge of achieving them – suggests a need to align strategic objectives and budgets to achieve its wider objectives. Having said this, the demonstration of the measure has led to substantial improvements in the quality of infrastructure for walking and cycling in Vallecas and laid the foundations for continued actions to increase levels of active mobility in Madrid. Innovative concepts, such as e-mobility stations and wayfinding signage, have been introduced, and the City has been successful in engaging a diverse range of local stakeholders in planning and in communicating the importance of modal shift with citizens.

## **4.2. Maintaining high-quality infrastructure to enable walking and cycling**

This ECCENTRIC measure is considered this chapter:

- Easy, safe and comfortable cycling and walking round the year (TUR 4.8)



**Figure 2** Winter testroute in Turku

Source: Anette.Korkiakangas

## Introduction

In all cities and contexts, the provision of high-quality infrastructure is essential to enable walking and cycling. Installing infrastructure is not enough; infrastructure needs to be well-maintained to ensure it is accessible and attractive for users. In warm climates, this may mean designing pavements or bike lanes to ensure natural cooling through for example use of vegetation, water or construction of shades along routes. In cold climates, this may mean effective management of rainfall, snow, or ice to ensure pavements and bike lanes are free from obstacles. This measure demonstrated the sweep-salting method of ice and snow clearance for winter maintenance of pavements and bike lanes in Turku, to enable walking and cycling at all times of the year.

## Implementation

The approach used in Turku is described in the report “D4.2. Measures to increase the share of walking and cycling”. Key steps included:

- Gathering information about cycling behaviour and citizens’ attitudes to cycling. This information provided essential baseline data. For example, the City administration learnt that pedestrians and cyclists were frustrated about the speed and quality of ice and snow clearance;

- Learning about good practice from other cities in the same climate zone;
- Identifying and planning priorities and selecting pilot routes for the ECCENTRIC tests;
- Procuring services for the test and gathering baseline data;
- Winter campaigns in 2017-2018 and 2018-2019 including dissemination campaigns;
- Monitoring and evaluation.

In Turku, the normal winter maintenance of bicycle infrastructure is roughly 2000 €/km/year. The cost of sweep-salting of bicycle infrastructure is roughly 6200 €/km/year. Using more expensive maintenance needs careful planning how much and where it should be used.

### **Business model and contractual partnerships**

The service is procured, meaning there is a contractual partnership between the City and the tenderer.

### **Critical challenges and success factors**

The demonstration of sweep-salting has been successful, receiving a lot of positive feedback from pedestrians and cyclists in Turku. It is difficult to provide exact figures on modal split, but at one point along the route a 39% increase in the numbers cycling during January-February was noted following the introduction of sweep-salting. The success of the measure is attributed to good planning, integration of best practices, and efficient cooperation with the contractor. Thus, although sweep-salting is at 6200 €/km/winter at least two times more expensive than normal winter maintenance, the method has been adopted for future winter maintenance in Turku, and a masterplan for a prioritised winter cycling network has been developed.

### **Lessons learned and recommendations**

Investing in quality is a key lesson and a recommendation to other cities facing climatic challenges. Analyse the situation in your own city and make use of existing knowledge by (where possible) adapting and adopting good practice from other cities. Find out way citizens want to see addressed and communicate the objectives of your strategy with citizens. Consider how to use procurement processes most effectively to achieve your desired outcomes, in terms of e.g. requirements concerning speed and quality of ice and snow clearance, and link maintenance quality to wider social benefits, such as reductions in number of accidents or insurance claims, improved public health from active mobility, etc. CIVITAS ECCENTRIC strongly recommends cities with cold, winter climates to consider sweep-salting as an appropriate form of maintenance and has demonstrated that ice and snow is no impediment to winter cycling.

### 4.3. Providing test fleets to encourage modal shift

This ECCENTRIC measure is considered this chapter:

- Offering test fleets of e-bikes and e-freight bikes (STO 4.9)



**Figure 3** Offering test fleets of e-bikes and e-freight bikes (STO 4.9)

#### Introduction

Many people are willing to adopt new technologies following short trials, in which they get to test and become familiar with a product or service without having to commit to a purchase. This measure aimed to introduce e-bikes and e-cargo bikes to new users in Stockholm through one-month trials, after which participants had the opportunity to purchase the bikes for a discount. The objective was to, through provision of such test fleets, encourage increasing numbers of people to cycle and, as e-bikes and e-cargo bikes enable users to extend their range, facilitate new kinds of travel.

#### Implementation

The approach used by the company Cykelkonsulterna to implement the test fleet is described in the report “D4.2. Measures to increase the share of walking and cycling”. Briefly, around 125 individuals took part in the trials. These individuals were identified through a communications campaign aimed primarily at private housing associations located in and around the Årsta and Hammarby Sjöstad districts. Participants completed a survey to provide data on how they used the cycles.

Results indicated that participants were satisfied with the cycles and about 90% did shift mode, but from public transport to bike, rather than from cars. 12 users subsequently purchased their e-bikes. The approach was considered reasonably successful, and the City of Stockholm has subsequently adopted a similar approach

with test e-bikes and e-cargo bikes as part of its “Winter Cycling” and “Without Your Own Car” campaign (part of CIVITAS ECCENTRIC measure STO 3.5.). There were, however, significant challenges to implementation, which are outlined in the next section.

### **Business model and contractual partnerships**

The service was provided by Cykelkonsulterna with funding from CIVITAS ECCENTRIC. It should be noted that public and private e-bike and e-cargo bike sharing schemes have been established in many cities, with business models, contractual relationships and customer offerings varying depending on local contexts. For example, e-cargo bike sharing is increasingly common in The Netherlands and mobility “package” solutions, such as combined mobility/MaaS services are emerging, as well as private subscription-based services or cooperative solutions.

### **Critical challenges and success factors**

A range of factors coincided to make implementation of this measure complex. One reason was a decision between local partners to move the equipment budget for the measure from the City of Stockholm to Cykelkonsulterna, a company providing various consulting and maintenance services to organisations in and around Stockholm. This complicated the role of Cykelkonsulterna, who had to provide bespoke services outside of their normal business areas. It was difficult to identify potential user groups and when this was done, difficult to identify appropriate routines that enabled, for example, delivery or collection of cycles to/from users. Cykelkonsulterna learnt to change their approach, but in hindsight would have preferred a focus on district hubs (in housing associations or equivalent locations) rather than being obliged to provide a mobile delivery and maintenance service.

Another factor complicating demonstration was the launch of a national incentive scheme which offered consumers purchasing e-bikes and e-cargo bikes a 25% discount. This scheme was much appreciated by consumers and led to rapid adoption of e-bikes and e-cargo bikes in Stockholm; in doing so, it also swallowed some potential clients of the test fleets. In total, e-bikes had a market share of 20% of new bike sales in 2018 and at least 6,875 new e-bikes were sold in Stockholm during 2018 (Source: Swedish Environmental Protection Agency).

Yet another complicating factor arose when the City of Stockholm announced (yet was unable to implement, due to repeated appeals of the procurement) plans for a city-wide e-bike and e-cargo bike sharing scheme, something that may have made some consumers postpone investment decisions. Finally, the micro-mobility boom meant that a range of service providers launched e-scooters, e-mopeds and similar services in Stockholm during 2018-2020, further transforming the dynamics of the local mobility market.

### **Lessons learned and recommendations**

Two important lessons are that consumers love to purchase e-bikes and e-cargo bikes, especially when offered a discount! Having said this, the idea of offering test fleets of e-bikes and e-cargo bikes to potential buyers needs refinement. In hindsight, rather than proceeding as described above, it may have been better if the City of Stockholm had purchased the bikes and established a test fleet service from publicly-owned garages or for public service users (such as home care providers), enabling Cykelkonsulterna to focus on maintenance and service quality.

Such an approach may have guaranteed regular use by new user groups whilst reducing the need to “recruit” users to a test, which proved logistically difficult to manage. Another lesson concerns business models - there are gaps in the market and potential to develop e-cargo bike sharing services, but it is hard to develop service offerings that are rapidly commercially viable. E-cargo bikes may need to be offered in combined mobility packages to subscribers (e.g. MaaS or through member associations).

Finally, the use of test fleets highlighted the difficulty of getting people to leave cars; modal shift from other modes to e-bikes was possible, but car drivers remain stubborn. This suggests other forms of policy interventions will be necessary to reduce levels of car use and to avoid the diverse range of other mobility solutions from cannibalising each other. Thus, CIVITAS ECCENTRIC recommends cities actively explore such alternatives to create disincentives to car use and to work harder to cultivate use of e-bikes and e-cargo bikes through e.g. introduction of dedicated infrastructure such as e-bike “highways”, e-cargo bike parking and secure storage facilities with charging.

## 5. Conclusions

The experiences of three cities in CIVITAS ECCENTRIC that implemented four measures to increase levels of walking and cycling highlight important factors that may be relevant to other cities. The examples from CIVITAS ECCENTRIC indicate the importance of:

- (1) actively and continually involving local stakeholders, using mixed methods and a wide range of tools;
- (2) clearly defining the reasons for a project, its scope, content and level of ambition. Try to be realistic, focusing on the number of users and leaving for overlying programs the targets on mobility patterns, Reduce complex strategies into manageable parts;
- (3) making sure the strategy and budget are aligned and understood. Anticipate financial risks and make use of tools such as public procurement to integrate relevant non-monetary requirements into tenders;
- (4) acquiring good baseline data and pursue active monitoring and follow-up. This will help inform better decisions when planning an action and when trying to learn from its implementation.
- (5) manage acceptance strategically by effectively communicating with citizens. Don't be shy to present good results!
- (6) use actions in walking and cycling as a tool to manage public space. It is frequently a tradeoff with congestion and other capacity constraints, which have to be addressed strategically but not be an objective on their own.
- (7) working systematically for long-term change. Increasing levels of walking and cycling is complex work, involving many small changes and difficult discussions. Avoid trade-offs that compromise the availability and quality of good infrastructure for walking and cycling, whilst questioning the need for infrastructure that facilitates use of private vehicles.

These are the main conclusions from demonstrations in Madrid, Stockholm and Turku in this cluster. Together, the CIVITAS ECCENTRIC partners have illustrated pathways to increase levels of walking and cycling in European cities; and where CIVITAS Eccentric has taken the lead, other cities should follow.

## Sources /References

D4.2. Measures to increase the share of walking and cycling

D4.5. Replication package: Measures to make walking and cycling safer

CIVITAS ECCENTRIC Factsheets

Discussions with Measure Leaders (interviews, workshops, etc).

P. Fenton, 2020. "More feet on pavements and more feet on pedals: Enabling safe walking and cycling in CIVITAS Eccentric". Conference paper presented at Transport Research Arena in Helsinki on 29 April 2020. DOI: [10.13140/RG.2.2.28337.74084](https://doi.org/10.13140/RG.2.2.28337.74084)