

Creation of a master plan on sustainable and emission-free mobility

“
2nd Presentation at the City Council of
Hagen

12. Juli 2018



Gefördert durch:



aufgrund eines Beschlusses
des Deutschen Bundestages



Foto: Stadt Hagen

Agenda 12th Juli 2018

Presentation at the City Council of Hagen

- 1. Words of Welcome**
- 2. Presentation of the Masterplan „Sustainable and Emission Free Mobility“**
- 3. Objectives and change of mobility in the City of Hagen**
- 4. Introduction to new mobility strategy for the City of Hagen**
- 5. Measures for Implementation**
- 6. Conclusion and Outlook**

Berichtsentwurf

Stadt Hagen
-Stadt der FernUniversität-
Masterplan "Nachhaltige und emissionsfreie Mobilität"

Erstellt durch
PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft
unter Mitarbeit von
Müller BBM GmbH
DTV-Verkehrsmittel GmbH

Auftrag: 0.0063272.001



Context

The Diesel-ban, as in many other cities, has also strongly impacted on the City of Hagen

EU Commission sues Germany for air pollution

Quelle: Tagesschau

German Umwelthilfe to sue the City of Hagen after Diesel-ban

28.02.2018 - 07:00 Uhr



Quelle: Westfalenpost

Pressemitteilung

Nr. 9/2018 vom 27.02.2018

Luftreinhaltepläne Düsseldorf und Stuttgart: Diesel-Verkehrsverbote ausnahmsweise möglich

Quelle: Bundesverwaltungsgericht

Städte drängen auf die Blaue Plakette



Quelle: General-Anzeiger

Aufstellung von Fahrverbotsschildern in Hamburg

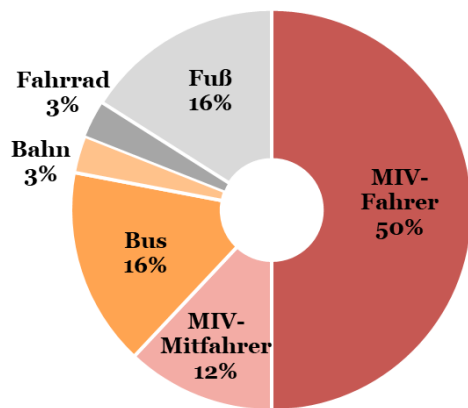


Quelle: Handelsblatt

Context

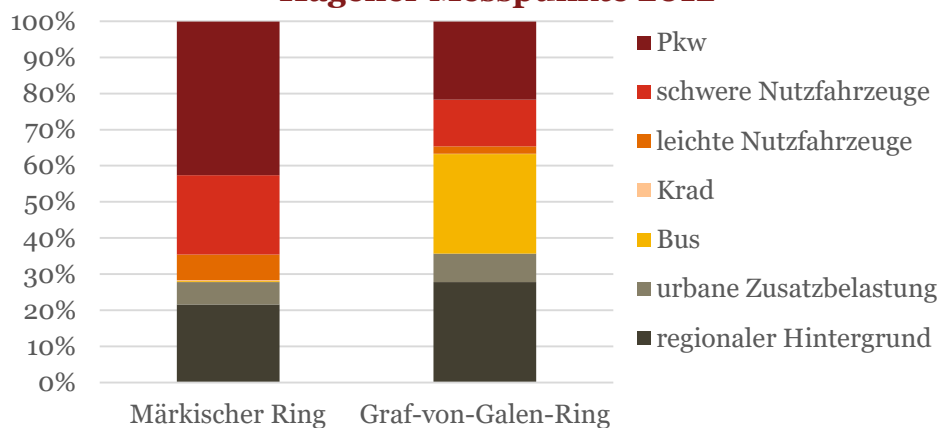
Despite several actions and newly integrated concepts, the NO₂ limit value is constantly exceeded in Hagen. New forms of mobility shall help to change the general pattern of mobility.-

Modal Split in Hagen 2015



- With 62%, the MIV has the largest share of
- The bicycle traffic has a very low value with 3%

NO_x-Verursacheranalyse für Hagener Messpunkte 2012



NO₂- Pollution in Hagen

The annual average for nitrogen dioxide (NO₂) was 2017 at the two critical measuring points by approx. 20% above the permissible limit.

Graf-von-Galen-Ring 48 µg/m³
Märkischer Ring 48 µg/m³

Grenzwert 40 (µg)

20 (µg)

2017



Content and Objectives of Masterplan

The masterplan aims to introduce a change of mobility in Hagen, showing potential action for sustainable mobility and creating a basis for funding applications

Ziele des Masterplans

- Identify opportunities **for sustainable mobility** (□ the Transitional Mobility Process)
- Prerequisite for applying for funding from the "**digitisation of municipal transport systems**" directive
- basis for applying for further funding to **implement emission abatement measures**
- Note: Individual funding applications are required

01 / 02

Project Management /
Networking and Participation

03
Analysis

Pre-selection of
possible actions

04
Actions

List of priorities of
measures and
actions

05
Traffic
Strategy

Strategies for
implementation of
masterplan into
urban development

06
Master-
plan

Action catalogue

07
Controlling

Concept for impact
control of actions



Parallel: Aktualisierung der
Maßnahmenbetrachtung des
Luftreinhalteplans nach
HBEFA 3.3

Gefördert durch das **BMVI** –
Förderrichtlinie
Digitalisierung kommunaler
Verkehrssysteme



Project partner:



MÜLLER-BBM

Methodological approach for creation of masterplan

An analysis for prioritisation of several actions has been undertaken

1 Survey of measures

Maßnahmen-Steckbrief für den Masterplan „Nachhaltige und emissionsfreie Mobilität“ in Hagen			
Allgemeine Daten			
Maßnahmen-Nr.			
Maßnahmentitel			
Themenfeld			
Institution/Träger der Maßnahme			
Federführender Ansprechpartner (inkl. Kontaktdaten)	Name:	Institution:	Position:
	E-Mail:	Telefon:	
Weitere Projektbeteiligte (Institution und Ansprechpartner)			
Maßnahmenbeschreibung			
Beschreibung der Maßnahme (Inhalte)			
Umsetzungsschritte			
Bewertung/Auswirkungen			
Zeithorizont der Umsetzung und Wirkung (kurz-/mittel-/langfristig)	<input type="checkbox"/> Kurzfristig (< 1 Jahr) <input type="checkbox"/> Mittelfristig (1-5 Jahre) <input type="checkbox"/> Langfristig (> 5 Jahre)		
Benötigte personelle und technische Ressourcen			
Umsetzbarkeit bzw. zu behebbende Hemmnisse			
Synergien & Zielkonflikte mit anderen Maßnahmen			
Umsetzungs- und Folgekostenschätzung			
Erwartete NO ₂ -Minderung			
Erwartete PM10-Minderung			
Erwartete Veränderung der CO ₂ -Emissionen			
Erwartete verkehrliche Auswirkungen (Verkehrsvermeidung/-verlagerung)			
Weitere Auswirkungen (z. B. soziale Nachhaltigkeitsaspekte)			

2 Criteria for the evaluation of measures

Bewertungskriterien/ Maßnahmen	Nutzen				Kosten		Gesamt- bewertung
	erwartete NO ₂ -Minderung	erwartete CO ₂ -Minderung	verkehrliche Auswirkung (Verkehrs- vermeidung,- verlagerung)	Realisierungs- und Wirkungs- zeitraum	Umsetzungs- und Folgekosten	Umsetzbarkeit bzw. zu behebende Hemmnisse	
Maßnahme 1	●	●	○	●	●	●	1,25
Maßnahme 2	●	●	○	●	○	●	0,75
Maßnahme 3	○	○	○	●	●	●	1
...							
○ (0 Punkte)	keine nennenswerten oder negative Auswirkungen			langfristig (> 5 Jahre)	Kosten > 1.000 T€	wesentliche Hemmnisse	aggregierter Wert
● (1 Punkt)	geringe Auswirkungen (keine ablesbaren Effekte)			mittelfristig (1-5 Jahre)	Kosten ≤ 1.000 T€	geringere Hemmnisse	
● (2 Punkte)	größere Auswirkungen (mit ablesbaren Effekten)			kurzfristig (< 1 Jahr)	Kosten ≤ 100 T€	keine Hemmnisse	

3 Prioritisation of actions

Nutzen				
		hoch	mittel	niedrig
	hoch	• Maßnahme ... • ...	• Maßnahme • ...	• Maßnahme ... • ...
	mittel	• Maßnahme ... • ...	• Maßnahme ... • ...	• Maßnahme ... • ...
	niedrig	• Maßnahme .. • ...	• Maßnahme ... • ...	• Maßnahme ... • ...
		hoch	mittel	niedrig
		Kosten		

Participation of Hagen's citizens and other actors

During the creation of the masterplan, local actors have been integrated into that process through a successful stakeholder workshop on the 24th of May.



Fazit Stakeholder-Workshop

- Intensive discussion and concretisation of the different measures
- Development of new measures-ideas by actors evaluation of measures and ideas
- Networking between the actors (!)
- Great willingness to help shape the change of mobility (!)
- desire to continue the dialogue and participation process (!)
- High identification with the city of Hagen and the topic of Mobility change (!)

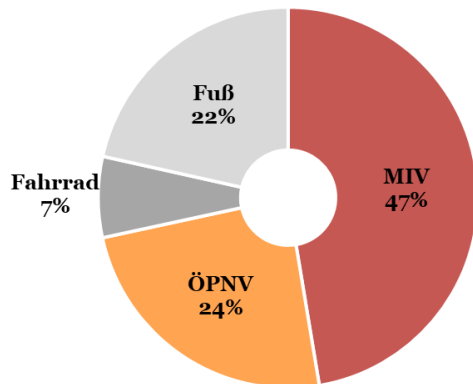


Objective for a change of mobility in the City of Hagen

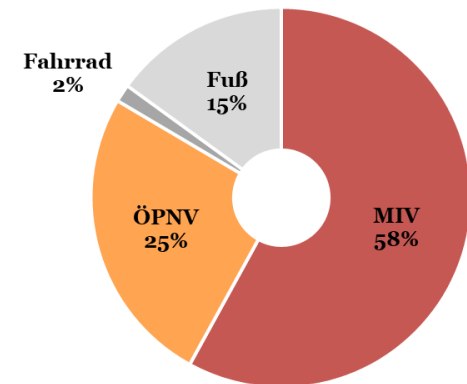
The comparison of the modal split with other cities shows that there is great potential for a change of mobility in Hagen.

Cities in North-Rhine Westfalia

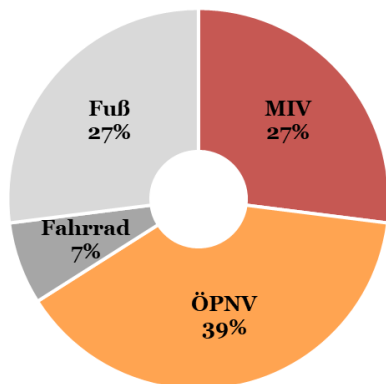
Modal Split: Dortmund 2013



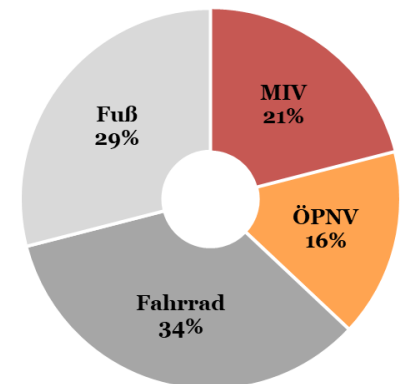
Modal Split: Wuppertal 2011



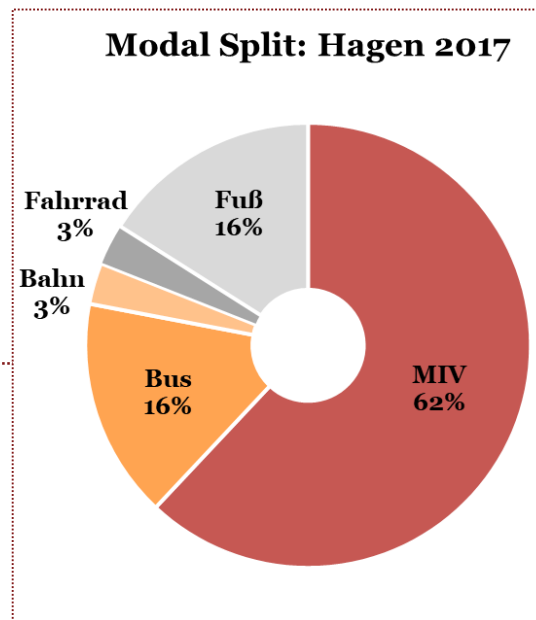
Modal Split: Wien 2015



Modal Split: Freiburg 2016



Modal Split: Hagen 2017

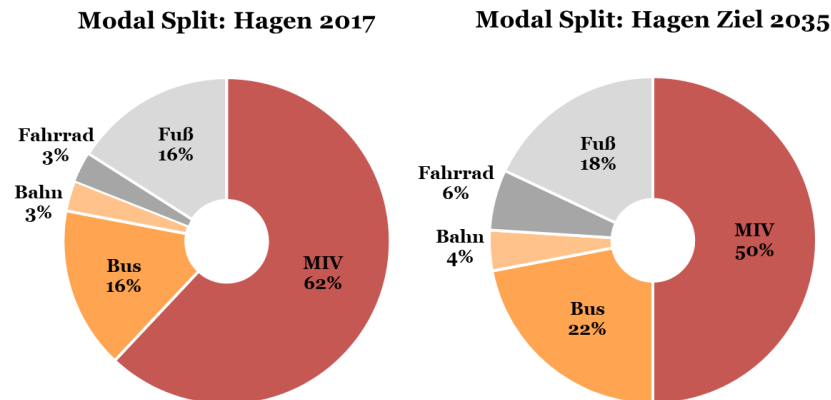


Erfolgsbeispiele

Goals for a change of mobility in the city of Hagen

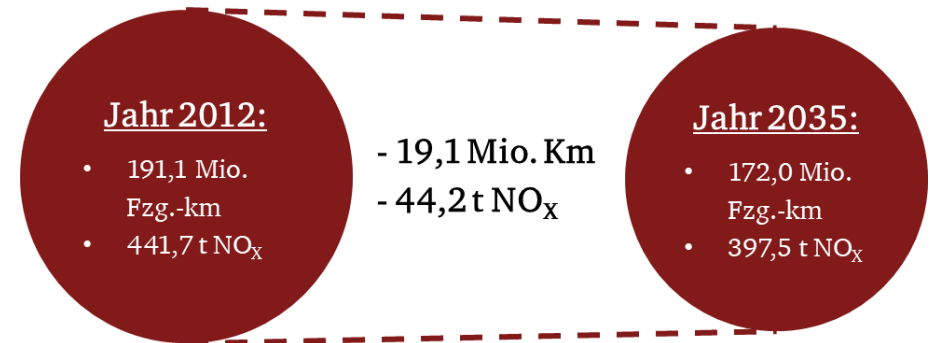
Based on the current situation in Hagen, mobility targets were developed for both passenger and freight traffic.

50/50-target concept for passenger transport in Hagen until the year 2035



- **Extension of the environmental network to 50%** (public transport and cycling and foot traffic) in the course of the Hagen citizens '
- Decline of around 50 million passenger car kilometres per year (**approx. 16 tonnes of NOx emissions per year**)
- Shifts within the environmental network possible, depending on the concrete implementation of the measures

10%-target concept for freight transport in Hagen until the year 2035



- **Reduction of driving power by 10%** in freight transport by trucks and light commercial vehicles (**approx. 44 tonnes of NOx emissions per year**)
- To expect even greater reduction in emissions in the achievement of the driving performance-related objective by the continuous **modernisation of the fleets**
- Implementation in particular through intelligent logistics concepts and steering measures

Presentation of new mobility strategy for the City of Hagen

Changing the mind for an emission-free, well-connected and sustainable mobility which leads to a new quality of life in urban areas of Hagen



Measures to implement a change of mobility at a glance

A large number of measures have been developed in the core modules, which generally have their optimal effect only to unfold together (1/2)

Hagen digitalises, e.g.

Multi-modal network – „Hagen-mobile-App“

Building a comprehensive mobility data model

Creation of mobility station in all city districts

Parking area management System (parking search-app)



Quellen: klima-log bzw. parkandjoy

Hagen lenkt um, e.g.

Avoidance of truck shortcuts in Hagen

Environmentally-friendly parking space management

Expansion of the Park + ride offer

Development of a comprehensive concept for pedestrians

Hagen radelt, e.g.

Neighbourhood Connection

Reduction of lanes for cycle paths

Municipal bicycle sharing

Use of the main valley axes Ennepe/Volme/Lenne/Ruhr as cycle paths



Quelle: ADFC

Measures to implement a change of mobility at a glance

A large number of measures have been developed in the core modules, which generally have their optimal effect only to unfold together (2/2)

Hagen electrifies, e.g.

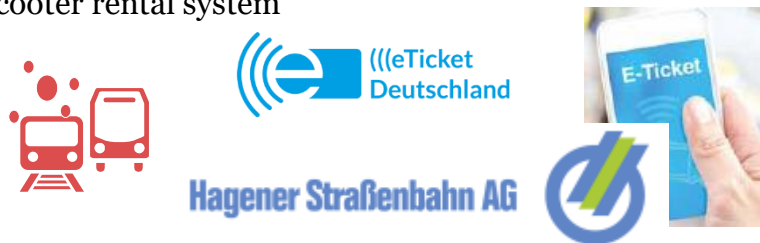
E-buses used by Hagerer Straßenbahn AG

E-Emergency vehicles for public authorities

26 public electric vehicle charging stations

Electrification KEP services

E-Scooter rental system



Quelle: Deutsche Post DHL Group



Quelle: mark B

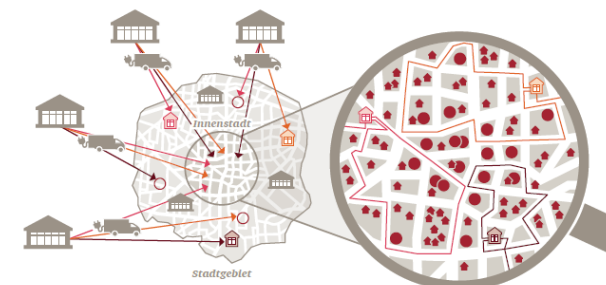
Hagen is moving, e.g.

Expansion of public transport services: offer + attractiveness increase

Creating an attractive access to public transport

(Small) Busses on Demand

Promotion of public transport services by companies/authorities/public service



Hagen transports differently

Micro Depots KEP Services

Use of low-pollutant cleaning and disposal vehicles

Rental (e-) freight bicycle

Digitalisation of Depot containers

Measures to implement a change of mobility at a glance

Further cross-sectional building blocks are important in order to implement the measures in a targeted manner, to coordinate them and to involve the actors, citizens and citizens.

Hagen coordinates



- Master plan encompasses many **interrelated building blocks and measures**
- Involvement of **many different actors**
- Control of **the master plan** process required by a central coordination Unit ("care")
- **Personnel resources, budgets** and independent **decision-making skills** necessary

Hagen informs



- Information for the actors and citizens in Hagen is crucial to create **acceptance** for the change of mobility
- Generate **identification** with a change of mobility
- Identify opportunities and successes to achieve positive **momentum**
- Image of Hagen can be further improved as **a city with sustainable means of transport and new patterns of mobility**

Hagen cooperates



- For the success of the mobility turnaround, a **cooperative, goal-oriented cooperation** of all actors at eye level is required
- Hagen should become an attractive partner for **innovative start-up companies** in the mobility sector
- This requires **structures** that are attractive to cooperation partners:
 - Flat hierarchies
 - Quick decisions

Hagen experiments



- Mobility sector is very **complex** and not all consequences of measures are precisely predictable
- To achieve mobility goals, **risks** must be addressed
- It is necessary to tread new paths and try out **innovative concepts**

Evaluation and prioritisation of measures

The measures differ both in terms of their usefulness and in terms of their feasibility and costs

Measures with the highest overall rating/prioritization

VRR Radboxen Project – Collective storage systems
Marketing/Consulting E-mobility citizens and companies/action day mobility change
Priority of public transport via signals (acceleration)
Alliance for environmentally friendly mobility at eye level/round table actors
Rental (e-) freight bike & rental system for (e-)scooter
Avoidance of truck-abbreviation traffic (truck routing + signposting)
Environmentally-oriented parking space management
Promotion of public transport services by companies/authorities/public service
Municipal bicycle sharing system
Building a comprehensive data model on urban mobility

Measures with the greatest traffic and/or emission effect

Expansion of public transport services: increase in offer and attractiveness
Change of the HST vehicle fleet to electric buses
(Small) buses on demand
Creating an attractive access to public transport
Multi-modal network – „Hagen-mobile-App“
Establishment of mobility stations in urban areas
Well-connected urban quarters
Reduction of car lanes, more cycle paths
Building a comprehensive model for urban mobility
Loop tapping inner city ring – one-way street solution

Concept for Analysis of Actions

By examining traffic key figures, the success of the actions can be measured continuously

Traffic key figures for the controlling of measures and actions, e.g.



Modal Split

(MIV, Umweltverbund, to be differentiated by reasons for travel)

Admission figures for cars and trucks

(According to Euro standard, hybrid and electric drives)

Share of electric vehicles by city and urban enterprises, fleet composition in public transport

User numbers and periods of charging stations

User Numbers Car-/Bike-/freight bicycle-/Scooter sharing,

Bicycle rides per citizen and on the main axes

Number of truck journeys and operating performance

Proportion of passenger car journeys at hot spots differentiated by type of vehicle

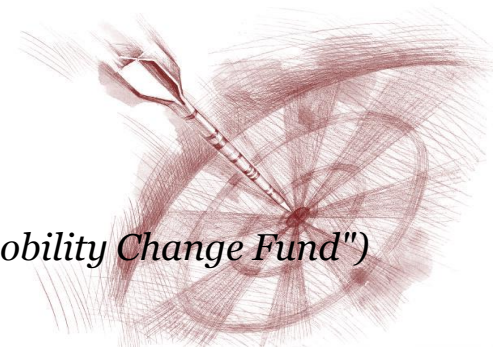
Travel times in private and public transport

- **Summary in an indicator system**
- **Continuous recording of data**
- **Assignment to singular components/measures**
- **If necessary, readjusting actions**



Conclusion & Outlook

- The development of the Master Plan "sustainable and emission-free mobility" will show a path towards **future-oriented, environmentally friendly mobility**
- By implementing the measures of the master plan a **change of mobility in Hagen** is achievable and the limit values for air pollution can be met
- Such a change requires all actors and citizens to "**pull together**", through which workshops have been laid the basis for this
- **Next steps:**
 - **Decision** of the master plan by the Council of the City of Hagen
 - Short-term start of **implementation of measures** (in particular Mobility data Model for optimal alignment of the master plan)
 - **Financing:** Procurement of funds and provision of own resources by the city of Hagen (e.g. municipal financing pot or "mobility Change Fund")
 - Continuation of the **participation process** and communication
 - **Support and coordination** of the Master plan implementation by the city of Hagen (creating organizational requirements)



Thank you for your attention!



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