

CiViTAS | 2MOVE2

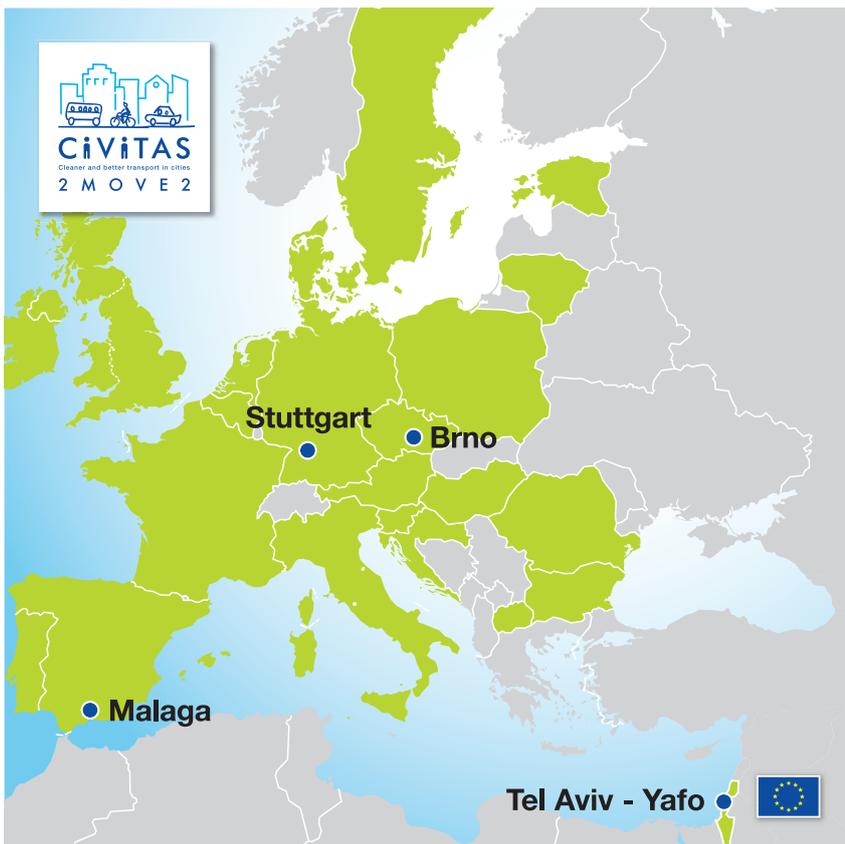
Corporate Mobility Management in Stuttgart



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Source: CIVITAS Initiative

Corporate Mobility Management for Companies, Local Authorities and Building Ventures

1 CIVITAS 2MOVE2 project and activities in the City of Stuttgart in Corporate Mobility Management (CMM)

The EU CIVITAS Initiative supports various measures of the City of Stuttgart's 'Sustainable Mobility in Stuttgart' action plan through its 2MOVE2 project (CIVITAS Plus II programme). Stuttgart is taking concrete steps to improve urban mobility as part of its 2MOVE2 project together with the cities of Brno (Czech Republic), Malaga (Spain) and Tel Aviv-Yafo (Israel).

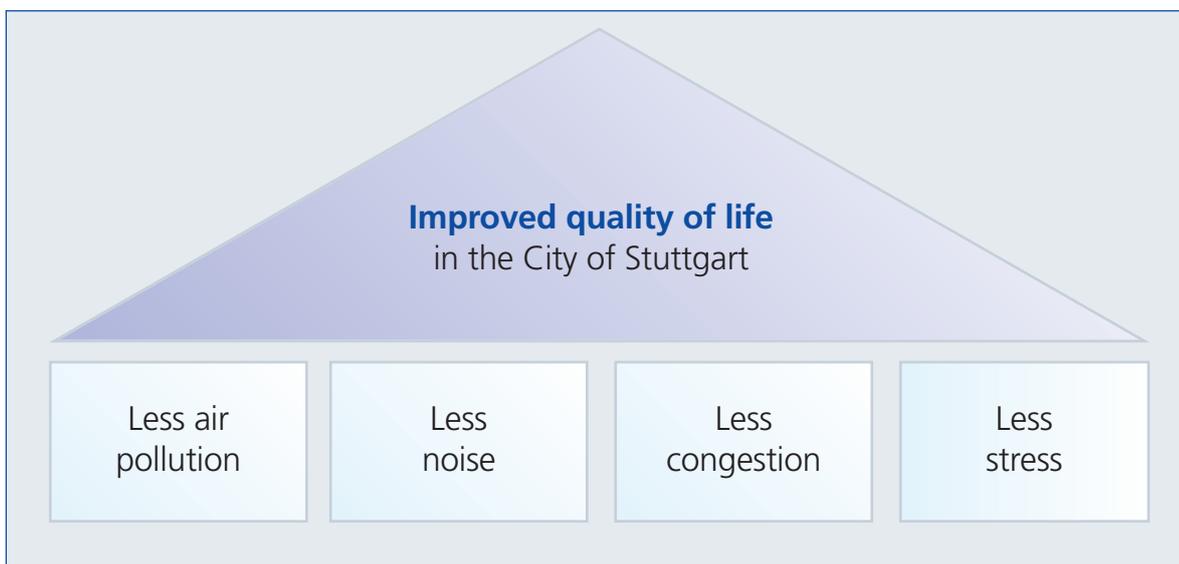


Fig. 1: Routes to improved quality of life
Source: Action plan "Sustainable Mobility in Stuttgart"

The project components dealt with by the city focus on the issues of emission-dependent traffic management, electro-mobility and corporate mobility management. New concepts for freight traffic are also being tested and implemented up until 2016.

Concrete measures are being planned and implemented at the specialist departments of the city administration as part of the 2MOVE2 project. The aim is to make urban traffic more environmentally-friendly and to create a higher quality of life. Approx. 2.5 million euros of EU funding will be granted to the City of Stuttgart, the University of Stuttgart and SSP Consult consultant engineers over the four year period. Four measures are being implemented in Stuttgart.

Emission based traffic management

As part of the 2MOVE2 project, various measures already implemented in the city have been extended. An environmentally-sensitive dynamic speed restriction has been introduced on the route from Neckartor to the Österreichischer Platz, for example. This should reduce the stop-and-go traffic and lead to a stabilisation of traffic. The project will also identify and assess the effects on crossing cyclists and pedestrians and on public transport.

Priority network for heavy good vehicles (HGV)

Stuttgart is one of Germany's most significant economic centres with a high proportion of manufacturing companies. In March 2010, a ban on heavy through traffic was introduced as a measure of the Air Pollution Control / Action Plan. Although levels of heavy freight traffic in the city area are continuing to fall, heavy freight still comprises approx. 6% of the overall motor vehicle traffic. The priority network for heavy good vehicles concentrates heavy traffic on less sensitive roads within the main road network so as to protect sensitive areas (residential, green and recreation areas). A 'freight switch' is being tested as part of the traffic management approach. This will divert freight traffic from the main access corridor onto alternative routes.

Electro-mobility

The people of Stuttgart should be informed about electro-mobility in general and the possibilities on offer in their direct residential environment. The City of Stuttgart runs events in the city's districts and for

special target groups such as pensioners, residents with a migration background and school pupils. Participants are introduced to the basics of electro-mobility as well as acquiring information on electric vehicles in general, vehicle charging facilities and car sharing offers in their district. Vehicles and in particular pedelecs (electric bikes) can be tested as part of these events.

Another aspect of this measure is the connection between electro-mobility and living. Models should be developed in collaboration with residential developers to incorporate electro-mobility and its requirements into the planning of residential construction projects from the outset.

CMM as a core element of activities in Stuttgart

The aim of Corporate Mobility Management (CMM) is to ensure the efficient, environmentally-friendly and socially responsible organisation of all traffic generated by a company (employees, customers / visitors, delivery traffic, commercial traffic for the company). All forms of transport are accorded the same level of consideration and they are optimally adapted to one another. In particular, the aim is to open up under-used mobility options and to organise commercial traffic efficiently. A company-specific mobility concept is devised for this purpose. The current situation is initially identified using a standardised survey. Specific measures can then be adapted and implemented on this basis.

This measure also involves developing concepts for pooling vehicles and car sharing.

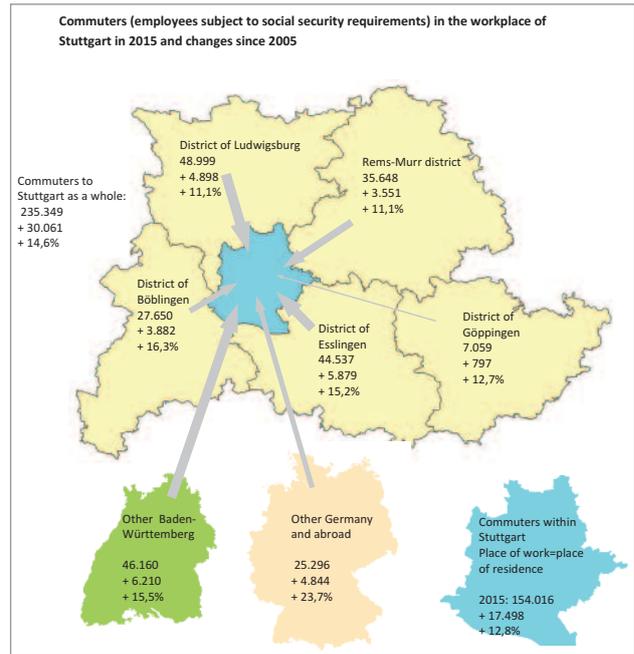
An extensive media campaign based on the motto of 'Travelling together' is aimed at the Stuttgart citizens and commuters in the region. Company activities will be subsidised so as to persuade employees to join car sharing schemes. From September 2016, megalights on access roads as well as videos and radio advertisements will explain that car sharing portals are easy to use and that it is fun to travel with others. All of the materials are available to companies for their internal communications.

The current commuter traffic situation in Stuttgart and CMM – What can CMM do to improve the situation?

Stuttgart commutes

Each day, a substantial number of commuters head into the city of Stuttgart. In addition to school pupils and students, 235,350 commuters also travel to their workplace in the city area each day. This figure has risen by 14.6% on 2005. At the same time, 81,900 commuters also head out of the city to jobs in the surrounding area, an increase of 42.7% which the Statistical Office puts down to Stuttgart's increasing appeal as a residential location.¹

Fig. 2: Commuter relations, Source: Stuttgarter Zeitung, p. 19, 3.8.2016, zap



The traffic situation during Stuttgart's rush hour

Stuttgart's city basin is characterised by an excess of traffic jams, stress, noise, fine dust particles and nitrogen oxide. One cause of the traffic jams, in addition to the numerous building sites, is the high number of vehicles driving into the city and in particular the valley basin each day. Statistics from the city show that some 827,000 vehicles cross over the city border each day, of which some 430,000 cross over the border of the valley basin.² An excessive number of conventionally-driven vehicles drive into Stuttgart's

basin each day, despite the fact that the city has an excellent public transport system and improvements have been made in its cycling infrastructure.

Add to this the fact that the number of vehicles in the city is constantly on the increase. 297,128 cars were registered in the city on 30.06.2016. At the same time, 614,080 people were registered as having their primary or secondary residence in the city. This means a car density of 484 cars per 1,000 inhabitants.

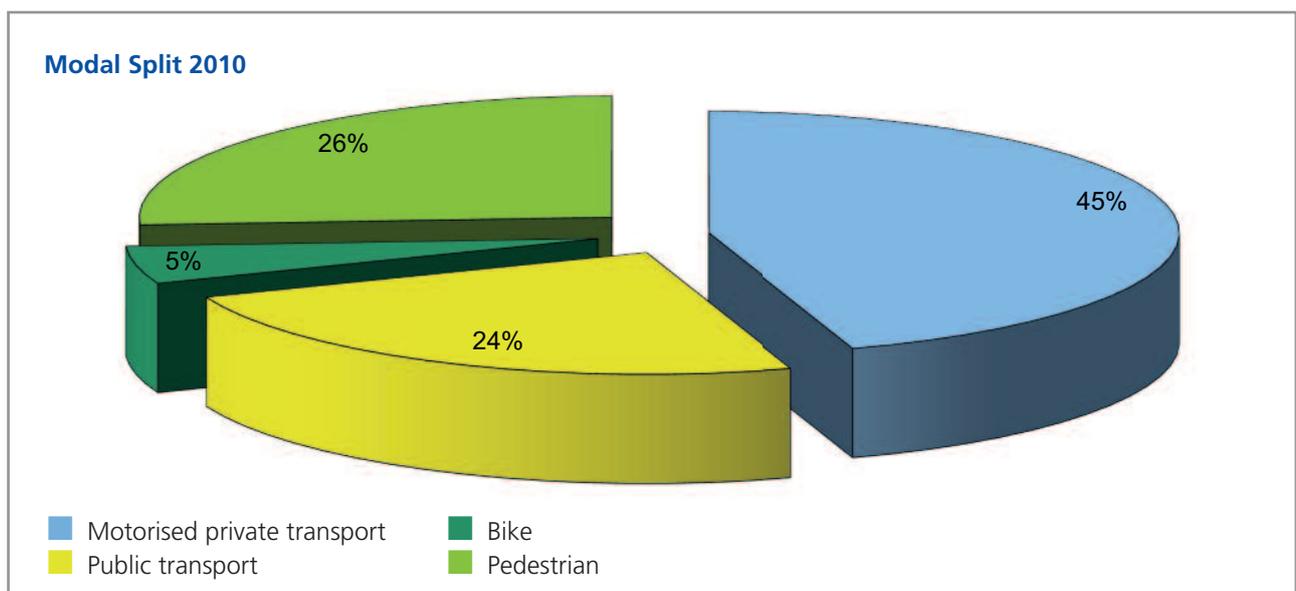


Fig. 3: Modal split 2010 Source: VEK 2030, approved in March 2014

¹ Stuttgarter Zeitung, 03.08.2016 'Immer mehr Berufspendler in der Region' (More and more commuters in the region)
² VEK 2030, p. 15

Numerous measures, such as an expansion of the suburban railway and underground system, attempts to redirect delivery traffic and the diversion of through traffic to motorways in the surrounding area, have not resulted in a significant decline in car and freight traffic in the city centre area.

The high vehicle density is the cause of the high level of environmental pollution in the city basin (NO₂, PM₁₀, ozone) and the substantial noise levels to which the population is exposed.

The starting point for CMM in Stuttgart

The Stuttgart Traffic Development Concept 2030 (VEK) dedicates an entire chapter to mobility management. Mobility management should be applied to switch a significant proportion of everyday mobility to eco-mobility (see fig. 4, source: VEK2030, p. 43). The various forms of transport coexist alongside one another and are combined. One important element of mobility management is Corporate Mobility Management (CMM) which seeks to change job-related mobility and implement the efficient, environmentally-friendly and socially responsible organisation of all traffic originating from the company. All forms of transport

are accorded the same level of consideration and they are optimally adapted to one another. In particular, the aim is to make employees, visitors and customers of the company aware of under-used mobility options and to organise commercial traffic efficiently. A company-specific mobility concept is devised for this purpose. The current situation is initially identified using a standardised survey. Specific measures can then be adapted and implemented on this basis. The possibilities are very wide-ranging: the portfolio ranges from reserving parking spaces for car sharing schemes to introducing company tickets for public transport, making use of car sharing offers and providing changing rooms and shower facilities for cyclists.

What can CMM do to improve the traffic situation?

Experience from the many CMM projects shows that targeted measures can be applied to reduce the proportion of single person car journeys by 10 to 20%.³ By combining various measures, the Darmstadt Chamber of Industry and Commerce estimates that car traffic could be reduced by up to 25%.⁴ There has still not been any comprehensive evaluation of all the projects to demonstrate the reliable long-term effects of these individual measures. Various research projects are currently underway (FGSV among others).

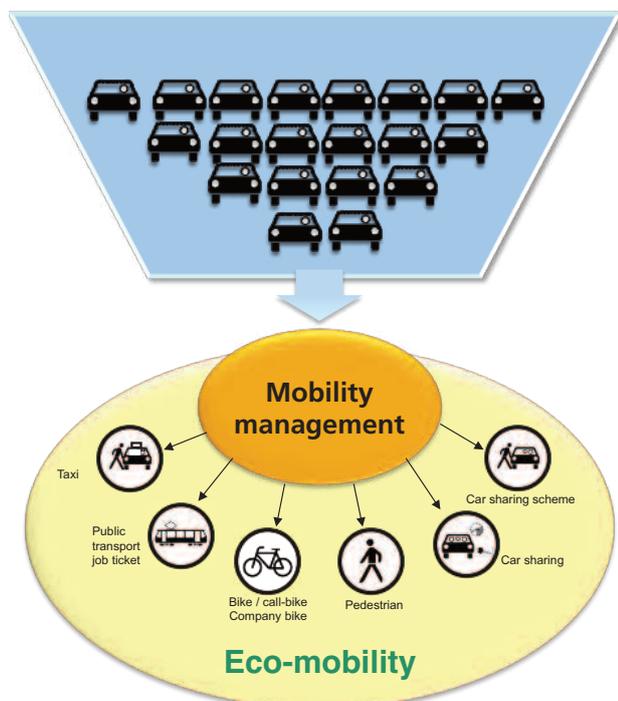


Fig. 4, Source: VEK2030, (p. 43)

Activities in the field of Corporate Mobility management (CMM)

Gaining companies as partners

Transport planners at the City of Stuttgart consider commuter traffic to be a key factor which is responsible for the daily traffic jams and poor air quality, presenting a health risk. This aspect of Corporate Mobility Management (CMM) to reduce traffic jams and environmental pollution is of key significance in this project. Employees of companies in Stuttgart should be motivated by CMM measures to change their mobility behaviours.

They will initially be asked about their current mobility behaviour and their requirements to determine how each individual employee could make a better and more environmentally-friendly journey to work. The city and employers want to work together to develop measures based on these results and these will then be adopted by employees to change their everyday mobility behaviours.

³ Germany Energy Agency (dena), 'efficient mobile' campaign, final report, Berlin

⁴ Daniel Theobald, We make employees mobile, Dadina Mobility Forum on 09.11.2012



Fig. 5: View of the council hall at the Mobility Conference, source: City of Stuttgart

In advance of the campaign, Stuttgart companies with over 1,000 employees were contacted to offer them a chance to participate in the CMM project for free. On 23 October 2013, Mayor Fritz Kuhn invited interested companies to an information event.

The aim was to motivate them to adopt Corporate Mobility Management, to inspire companies to get active themselves and to bring about an improvement in quality of life in Stuttgart.

The motto was ‘Be part of the solution, not just part of the problem’.

The project should also give new impetus to the cooperation between industry and the city. Keynote speeches from transport experts followed by a discussion made the company representatives aware of the need for these CMM measures. People, traffic and infrastructure should be better interlinked. Suitable tools for achieving this include mobility management, traffic management and transport planning.

Porsche AG, Daimler Financial Services AG, the Marienhospital, vhs stuttgart and the Stuttgart Staatstheater all agreed to take part in the CMM programme. vhs Stuttgart held a Mobility Day as part of the project but did not take part in the survey.

Additional companies also expressed an interest in the project but were not signed up in time for the start phase. The employee survey at Robert Bosch GmbH is planned to be carried out in the second half of 2016, for example.

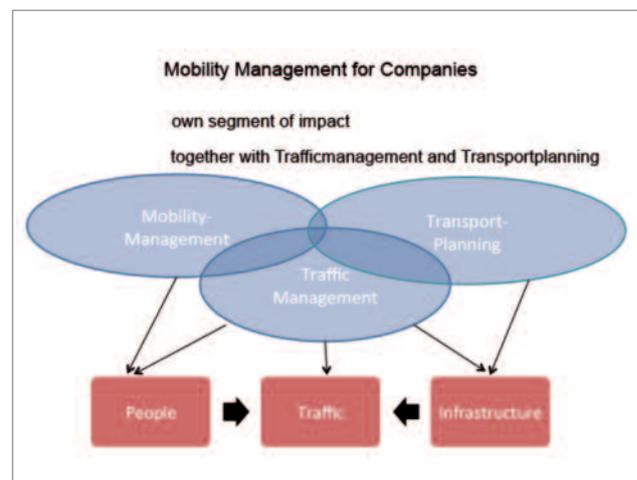


Fig. 6: Fields of work and participants in mobility management, source: Regina Lüdert, head of mobility consulting, City of Stuttgart

Methodological development of a suitable survey

In order to identify the fundamental aspects of specific CMM measures for each company, the Statistical Office for the City of Stuttgart (LHS) carried out a survey of mobility behaviour and employee requirements at the participating companies. The aim was to better identify their mobility behaviours on their journeys from home to work so as to develop suggested personal solutions and supply the companies with starting points for specific tailor-made measures. The surveys were devised by experts at the Statistical Office together with the Office for Environmental Protection, the Department of Mobility and the participating companies. The results were anonymised by the Statistical Office to ensure that employers had no way of drawing conclusions about any specific individuals.

The survey determines the transport use of employees and the conditions which lead to this usage behaviour. This may include environmental and psychological components or personal and structural conditions. Any motivations or obstacles in the use of forms of transport were also identified. The mobility details obtained offer insight into the intensity and frequency of use of the various forms of transport.

The journey to work is a relatively clearly defined route. The forms of transport used depend on the accessibility of the nearest public transport stop, access to vehicles (own bike, motorbike, scooter, car etc.), linking of the workplace to the mobility infrastructure (parking spaces, stops etc.) and individual attitudes, preferences and personal living situations. People generally organise their journey to keep the time and costs to a minimum, without knowing or estimating the actual costs. Personal situations often stand in contrast to the goal in question.

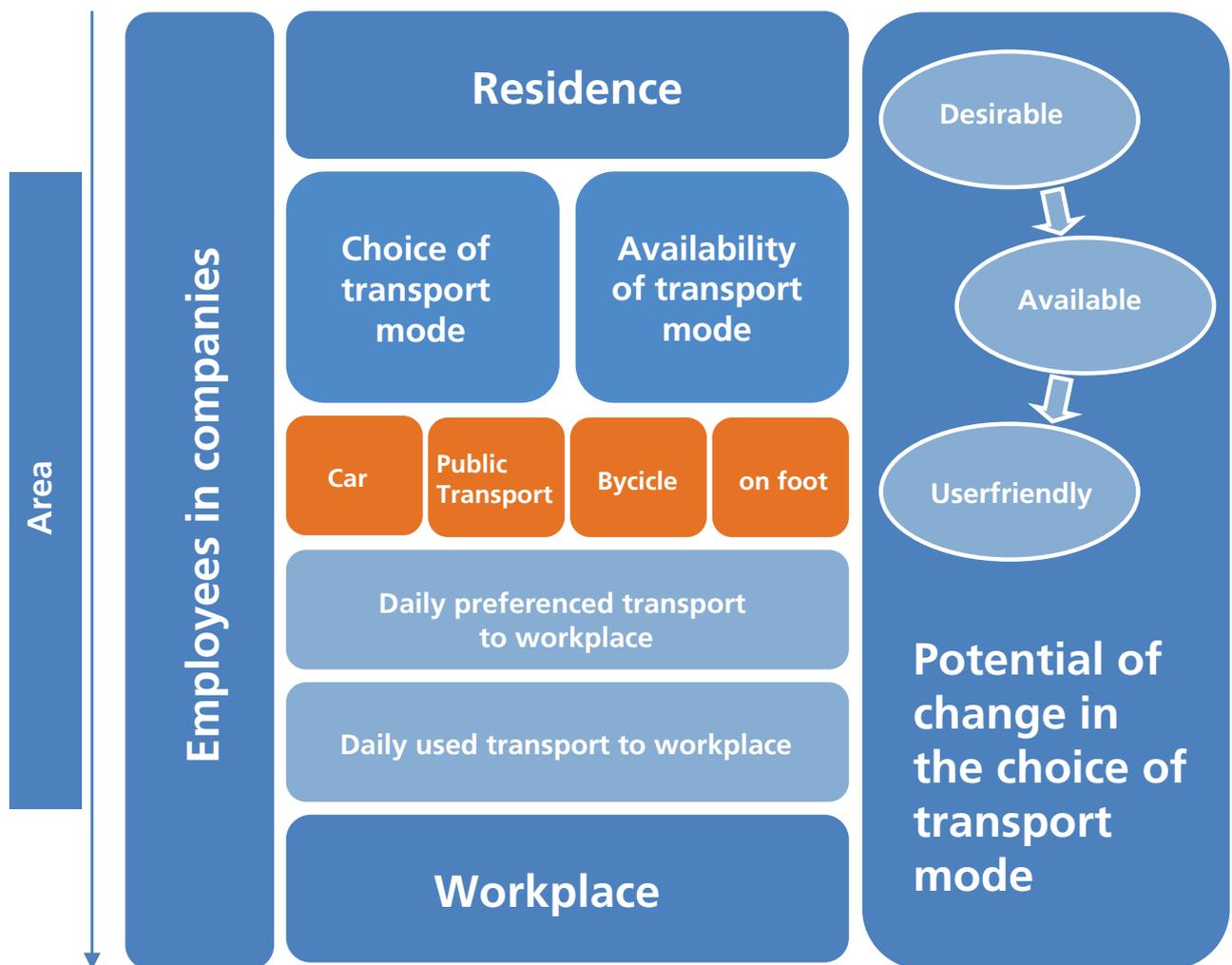


Fig. 7: Basic survey design
Source: Statistical Office Stuttgart

The forms of transport selected often correlate with the actual distance to the workplace. The routes were divided into 11 categories, each of 5km longer distance. Employees then stated their journey time in hours and minutes for their usual form of transport on a normal working day.

The special thing about this survey was that respondents could answer in German or English and on paper or online. There were general questions as well as company-specific questions for each company. These will not be discussed here for data protection reasons.

Only the general overall results will be presented in this report to ensure that individual results are anonymised. The survey period ran from September 2014 to November 2015. The companies carried out their surveys over 2 to 4 weeks.

Survey results

The company initiative met with great interest from employees. The high participation rate shows that many employees are interested in optimising their journey to work.

» The number of employees contacted was 19,638 people. Of these, 8,338 employees (42.5%) completed the surveys in writing or online and in German or English.

This high participation rate makes it possible to ascertain representative findings. 32% of surveys were answered in writing and 68% online. Only 1% of respondents used the English version of the survey. Participants reflect the typical distribution of ages in the workplace. Due to data protection regulations, only employees aged over 18 could take part. There were significantly more male respondents. It was initially interesting to note the journeys people take to work each day. 40% of employees complete a journey of max. 15 km. 9% of study participants (i.e. 732 people) travel in excess of 50 km to work each day. Close to a third of all respondents travel over 30 km to get to work.

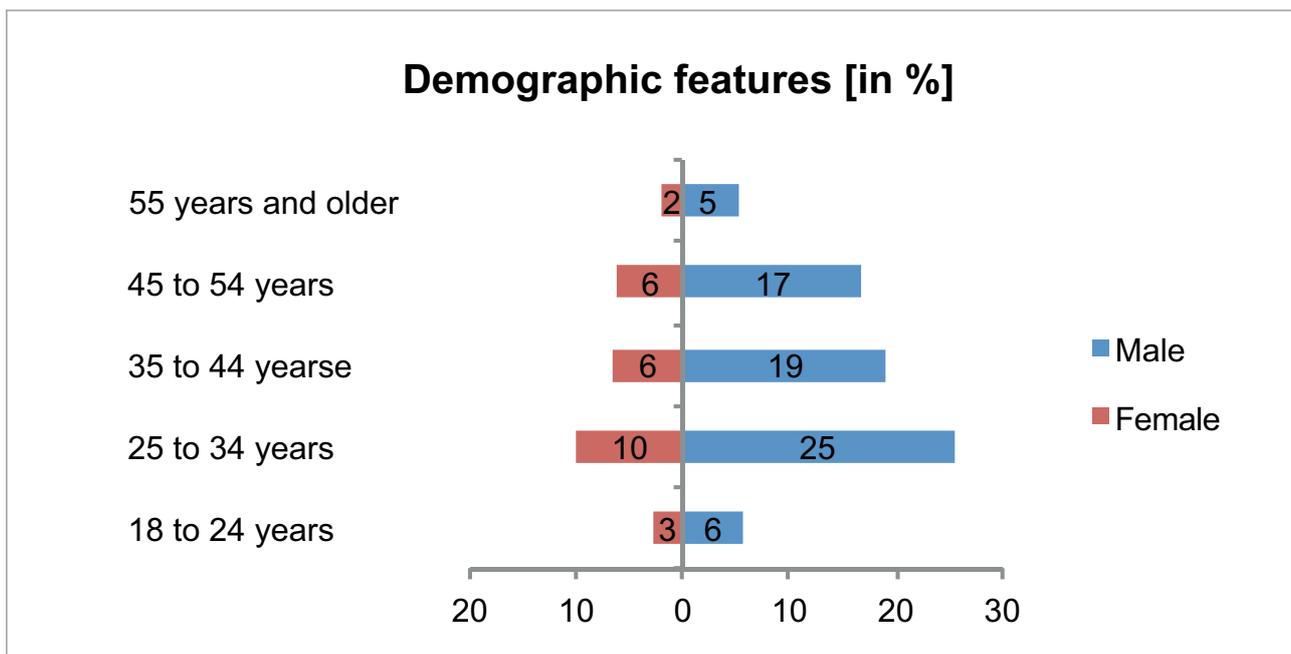


Fig. 8: Demographic distribution of respondents; details as a percentage
Source: Statistical Office Stuttgart, Mobility Survey 2014/2015 (n=8338)

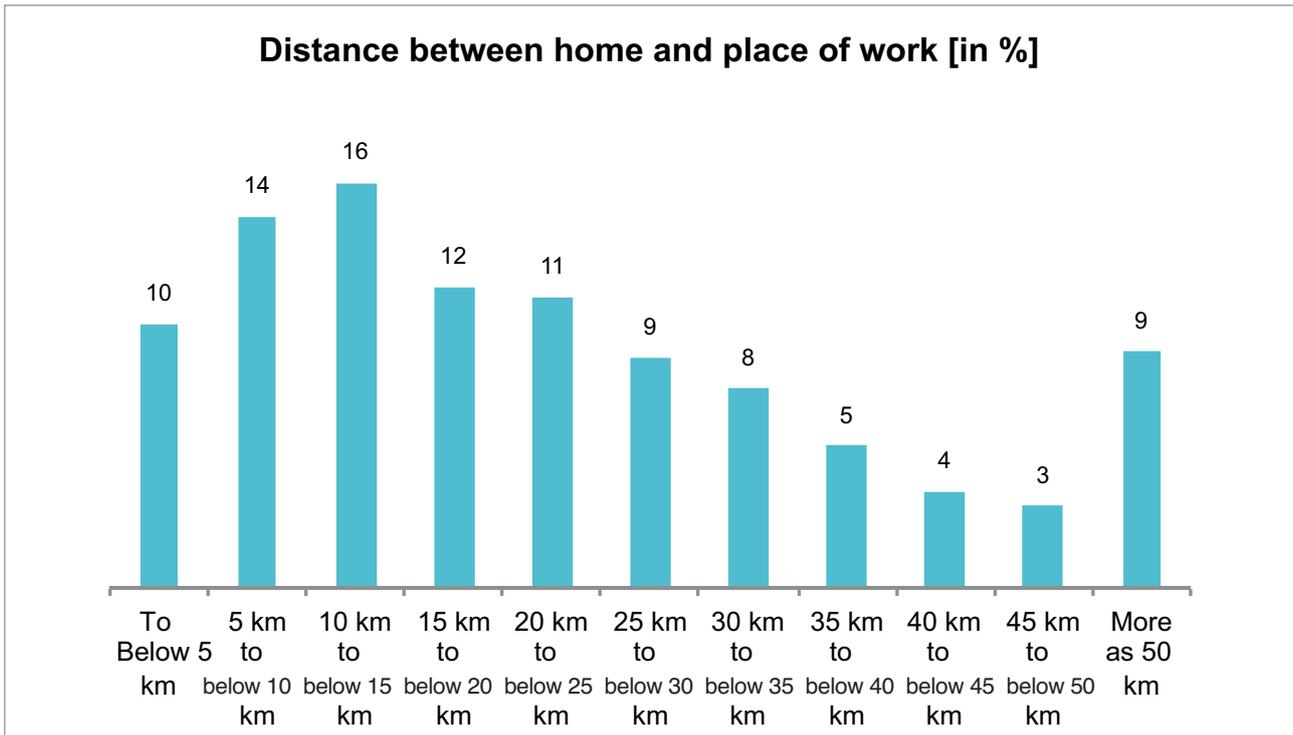


Fig. 9: Distance between home and place of work, details as a percentage. Missing values making up 100: employees with a changing workplace, don't know, no answer given
 Source: Statistical Office at the City of Stuttgart, Mobility Survey 2014/2015 (n=8338)

The employees at the surveyed companies spend a lot of time travelling to work. The details provided in the survey range from a 1 minute to a 4:30 h journey to work.

During the course of the survey, the respondents listed all forms of mobility which they use on a daily or almost daily basis to get to work. Of all of the forms of transport used, the car accounted for a significant 68%, whether used as the sole form of transport or in combination with other options.

» On average, people live approx. 24 km from their place of work and take 35 mins to travel there.

Full-time employees		91 %
Most frequent working hours	Start	08:00 - 08:30
	End	17:00 - 17:30
Average distance		24 km
Average journey time		0:35 h
Daily users of motorised private transport		68 %
Distance from home to public transport stop <500 m		58 %
Journey to work without changing form of transport		19 %
Availability of car		90 %
Availability of bike		57 %

Fig. 10: Time taken to travel between home and workplace, source: Statistical Office at the City of Stuttgart

The forms of transport used in Stuttgart often do not just relate to distance; they also involve geographical obstacles, such as the mountains which need to be crossed in order to access the city centre and, of course, long-term habits.

A significant majority of 68% of respondents prefer to use their own car to make the journey, despite the traffic jams. They consider the car to be the most important or the primary form of transport for getting to work. These behavioural habits often develop over long periods of time, for example, before traffic jams reached their current levels.

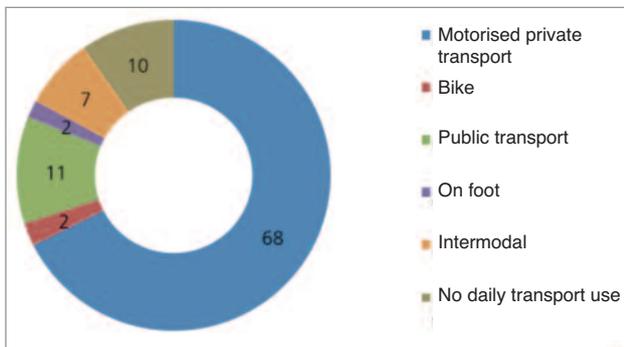


Fig. 11: How often do you use the following forms of transport to travel from your home to your primary place of work? Answer: (Virtually) daily. Details as a percentage. Not including people with no or more than one form of transport listed.

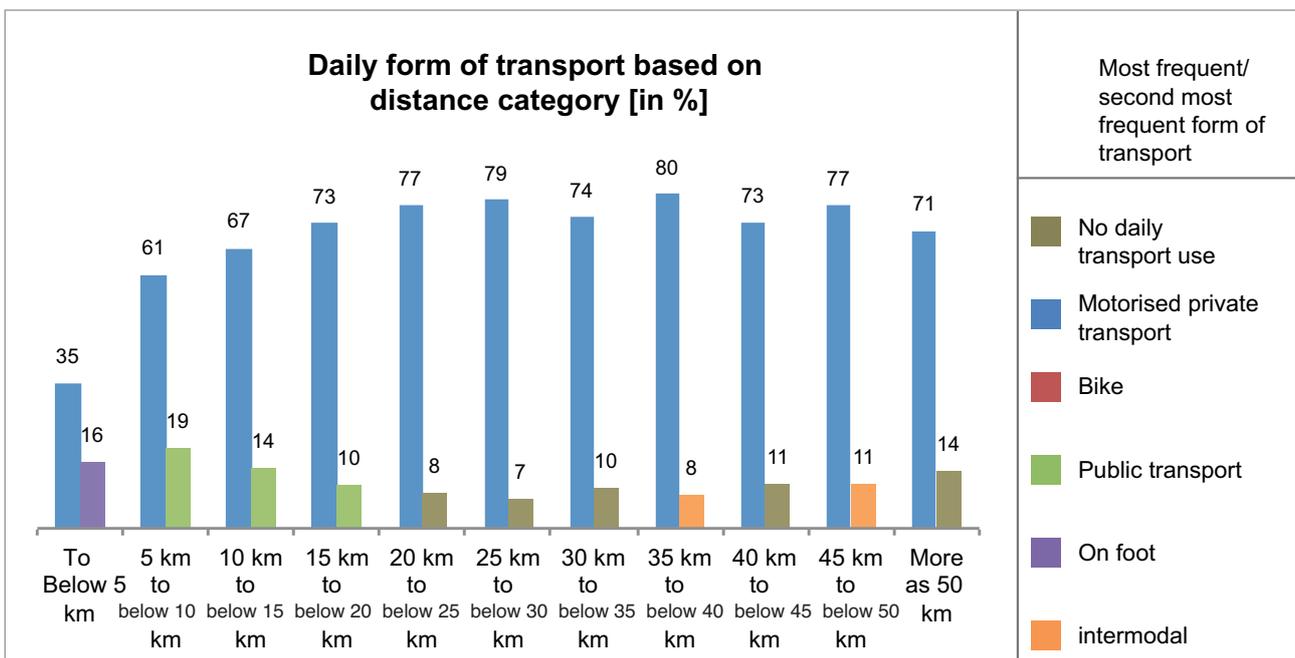
Source: Statistical Office at the City of Stuttgart, Mobility Surveys 2014/2015 (n=8338)

The high level of car usage is also reflected in the breakdown of journey times according to distance. The car is the most used form of transport for every distance category.

With distances of up to 5 km, 16% of employees travel to work on foot. Between 5 and 20 km, 14% of respondents on average use public transport in each distance category. Between 20 and 35 km, there is no explicit regularly used form of transport. In this case, employees switch between different forms of transport and in summer might use a scooter or motorbike. The same also applies to distances of 40 to 45 km and distances in excess of 50 km. In the case of employees who travel 35 - 40 km or 45 - 50 km each day, 8% and 11% respectively use intermodal transport. They change forms of transport during the course of the journey.

This combined intermodal mobility clearly indicates the three fundamental possibilities for travelling to work. It comes as no surprise that the car is used for long journeys to work with employees walking from the car park to their place of work. Combining the journey with public transport is also relatively common.

Fig. 12: The car is the main form of transport used, source: Statistical Office at the City of Stuttgart, Mobility Surveys 2014/2015 (n=8338)



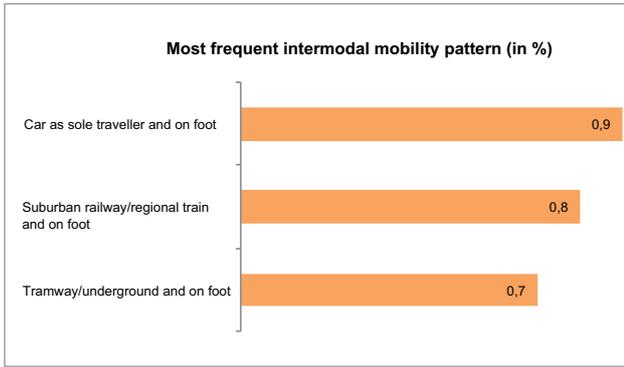


Fig. 13: Classic intermodal journeys to work, source: Statistical Office at the City of Stuttgart, Mobility Surveys 2014/2015 (n=8338)

Following the quantitative survey, the qualitative results are useful for working out the next steps. Aside from the cost and time arguments, there are also many other reasons behind the journeys made. The most important argument is the duration of the journey. On average, 70% of users of all mobility options stated it as the reason for their choice of transport. Only bus passengers and pedestrians rated the journey time as less important at 32% and 23% respectively. Flexibility is also classed as being almost as important. Some

57% of respondents stated this as a reason for their travel choices. Planning simplicity came in third place with an average mention of 50.6%. Respondents felt that the simplicity of the process and reliability were almost as important at 47%.

Arguments such as accessibility, comfort, weather dependence, cost, privacy, fun, safety, atmosphere, environmental friendliness and health only play a more minor role when it comes to the reasons for choosing various transport options.

The arguments given against the second choice of transport emphasise these choices. 42.3% of respondents argue against the car, for example, because the journey time is too long. 70.2% use this reason to explain why they do not travel by the suburban railway and close to 81% use this as justification of their rejection of the train as a means of transport. Cost is the second most common reason given against the second choice public transport with an average 42% of mentions. Flexibility of use and reliability come next with 23% and 21% respectively. The remaining reasons given ranked between 12% and 2%. Health was least relevant with at just 2%.

Reasons for transport use									
Most important form of transport									Σ
Duration (of journey)	■	■	■	■	■	■	■	■	■
Flexibility of use	■	■	■	■	■	■	■	■	■
Simplicity of planning	■	■	■	■	■	■	■	■	■
Simplicity of process	■	■	■	■	■	■	■	■	■
<i>Key: Stated by % of respondents</i>	■ < 25%			■ ≥ 25% - < 50%			■ ≥ 50%		

Fig. 14: Reasons for use of current form of transport Source: Statistical Office at the City of Stuttgart, Mobility Surveys 2014/2015 (n=8338)

Reasons against using alternative forms of transport									
Possible alternative form of transport									Σ
Duration (of journey)									
Cost									
Flexibility of use									
Reliability									
<i>Key: Stated by % of respondents</i>	 < 25%			 ≥ 25% - < 50%			 ≥ 50%		

Fig. 15: Reasons against using the second best form of transport

Source: Statistical Office at the City of Stuttgart, Mobility Surveys 2014/2015 (n=8338)

The results above show clear potential for shifting to public transport, car sharing or cycling. When assessing the potential for switching to a different form of transport, the survey calculated which alternatives to motorised private transport were available to respondents.

» Over half of the car drivers could switch to public transport (at least partially) by their own reckoning and an additional 35% could switch to car sharing schemes while close to one in four could use a bike for at least part of the journey.

A substantial switchover to these alternative forms of transport could lead to a significant reduction in traffic jams and emissions in the city. At the same time, this switchover would offer each individual employee the opportunity to improve their health through increased social contact and exercise.

38.2 % of car users could switch to public transport. 30.1% could imagine forming a car sharing scheme and 15.5% would consider making their daily journey to work by bike. Pedelecs are an important form of transport here in the hilly landscapes around Stuttgart.

Finally, the question of which measures employees would like to see introduced in order to change their mobility behaviours was important for the constructive implementation of the survey results.

And it is here that the potential for CMM measures comes into play. The companies and institutions took the data and suggestions very seriously and devised an initial list of measures. Many companies consider the well-being and motivation of their employees to be very important. The fact that potential savings can be made for the companies and employees may also accelerate the implementation of these measures.

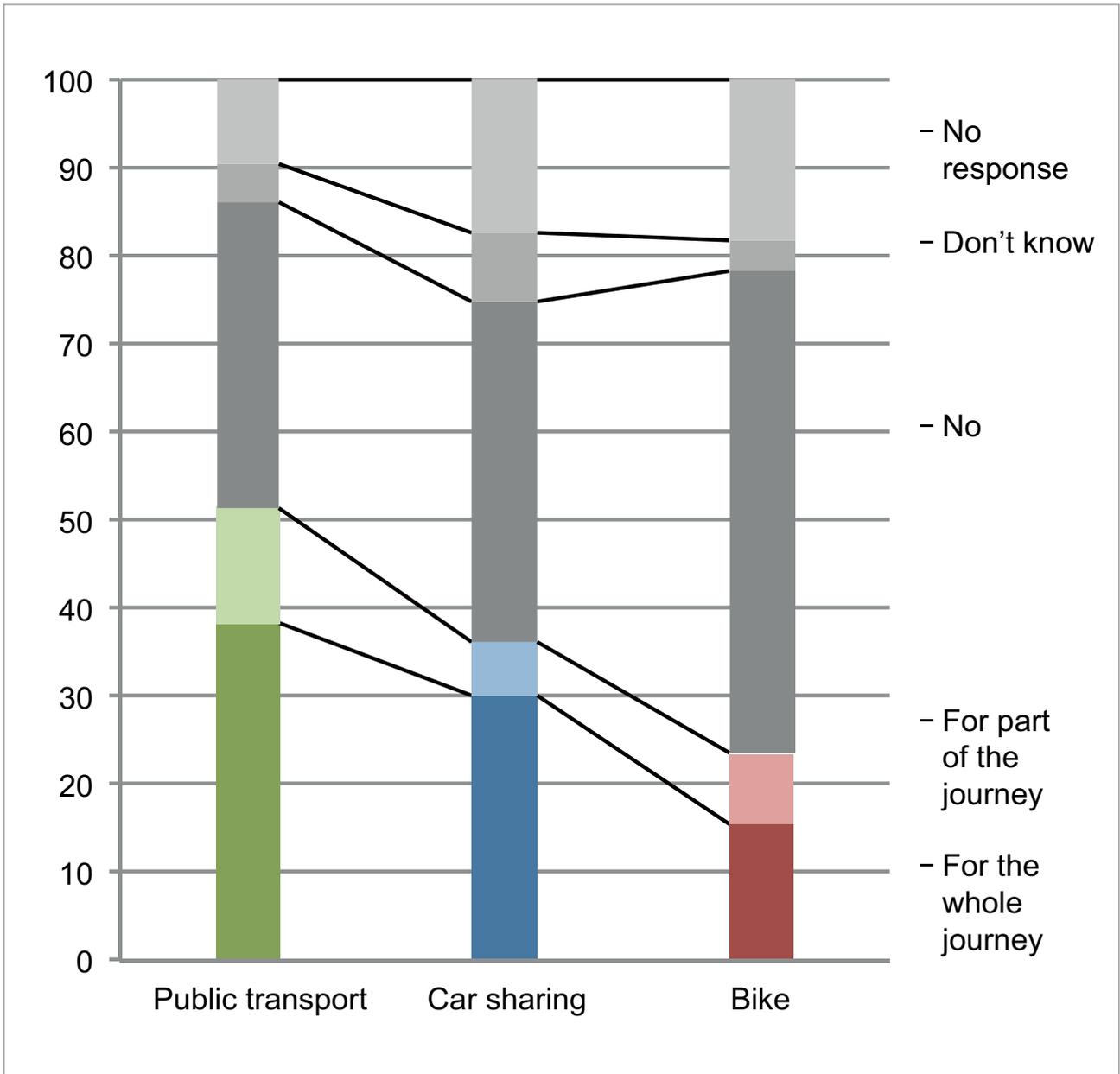


Fig. 16: Potential for shifting from motorised private transport to other forms of transport
 Source: Statistical Office at the City of Stuttgart, Mobility Surveys 2014/2015 (n=8338)

2 Activities at the companies and institutions

2MOVE2 motivated many companies and institutions in the city and achieved a level of renown as a result. Not all of the partners have announced the activities they introduced following the survey. However a few of the implementation measures are publicly visible. The job tickets in particular achieved high sales, for example. Employee car sharing portals were quickly and easily set up, showers for cyclists installed, adapted timetables for public transport introduced, institutions named on public transport stops and lots of other plans quickly implemented.

Interlinking is the key

Many of the survey results were implemented thanks to collaboration between the City of Stuttgart (Department for Strategic Planning and Sustainable Mobility, Office for Environmental Protection, Districts and District Representatives, Statistical Office, Central and HR Office, Office for Town Planning and Urban Redevelopment, Civil Engineering Office and Office for Public Order), the Stuttgarter Straßenbahnen (SSB) transport company and the Verkehrsverbund Stuttgart (VVS) transport association. Regular meetings between all of the protagonists ensured quick decision-making and implementation.

Interlinking was also introduced at a cross-regional level as part of the project. There were regular exchanges with the corporate client consultants at SSB and VVS. Specialist discussion forums were held about various approaches with the Wirtschaftsförderung Verband Region Stuttgart (VRS) economic development association and the Baden-Württemberg Ministry for Transport and Infrastructure. Expert presentations were also held at DECOMM (German Conference on Mobility Management) in Stuttgart and at ECOMM (European Conference on Mobility Management) in Athens.

Mobility management at the city administration

Mobility conferences

Mayor Fritz Kuhn made the reduction of fine dust and CO₂ a top priority in the city from the outset. He personally invited the most important companies in the city to attend. High-ranking representatives from the

worlds of research, industry, the public authorities, banks and insurance companies accepted the invitation to attend the first mobility conference. The mayor made the conference participants aware of their joint responsibility in making the city a place worth living in and ensuring people-friendly living and working conditions. As already mentioned, the mobility conference on 23 October 2013 also marked the start of the CMM project in Stuttgart. All of the key facts were mentioned. Participants were given some initial solutions during the discussion forums and talks. Mayor Kuhn's desire for action, not just talk, was fulfilled because many of the participants subsequently went on to instigate some initial measures.

Job ticket

Using public transport is one of the fastest and cheapest means of travel in Stuttgart. The dense underground and suburban railway network, along with the many bus routes, is used by hundreds of thousands of people each day and is highly valued by employees of companies and institutions. The great value job ticket plays a significant part in this. For a contribution of approx. 30 euros each month, employees can travel to work and back within the city. Travelling by car would cost many times more. Of the 19,500 city administration employees, some 11,200 make use of this ticket and the trend is increasing by the day. The job ticket has proven to be an environmental tool which reduces journeys made by private transport.

Car sharing schemes

Car sharing is also a great value means of travelling to work. On the city administration website, employees have access to a car sharing portal. Various car sharing arrangements have already been made via this platform. Unfortunately, no exact figures are available for data protection reasons.

In September 2016, a large-scale media campaign entitled 'Travelling together' is taking place to encourage commuters to join car sharing schemes. Ten mega-light posters on Stuttgart's arterial roads as well as radio adverts linked to traffic congestion news during the morning commute and a video on Stuttgart's busiest intersection, the Pragsattel, will make people aware of the car sharing schemes. Communication will also reach people in the greater Stuttgart area via live interviews, editorial reports on the radio and



Fig. 17: Mega-light poster 'Travelling together'
 Source: City of Stuttgart, Office for Environmental Protection

printed media, Facebook posts and newsletter campaigns. The video and information on 'Travelling together' will be published on the website www.stuttgart.de. All materials will be available for companies in the region to use for free so as to encourage the joining of car sharing schemes in the workplace.

Gradual changeover of the city's vehicle fleet to e-vehicles

The city administration is gradually replacing its vehicle fleet with e-cars and other electric vehicles so as to help reduce emissions. The mayor is already setting a good example and uses an e-car for his business travel around the city.



Fig. 18: Mayor Fritz Kuhn is setting an example with his electric car
 Source: City of Stuttgart
 Photographer: Kraufmann/Kern

Marienhospital

Based on the results of the survey and the desperate need for parking space, concepts have already been devised and measures implemented here. The hospital presented the results to patients, relatives, employees and interested parties during an Info Day on 22 March 2016 on the topic of 'Sustainable Mobility'. The programme featured information stands on the topics of bike hire, e-vehicles, car sharing, car sharing schemes, VVS company tickets, route planning, health aspects, sustainable mobility and 'Biking to work'. Numerous employees signed up for car2go at the Mobility Day. car2go cars can almost always be found for us within a max. 400m radius in the south and city centre areas of Stuttgart.

This Information Day also focused on efforts to reduce fine dust in the area and resolve the parking problems around the Marienhospital. The parking situation around a hospital is of critical importance because medical and healthcare staff often work during times when no public transport is available. The hospital is also based in a very densely populated area of the city. If the hospital wants to employ highly qualified individuals, they may request a parking space for their own car. But where? The hospital is finding it difficult

to recruit staff due to this disadvantage. Good staff can only be secured if workplace mobility is guaranteed. Workplace accessibility is an important factor in advertising for potential employees. There are currently approx. 300 employees on the waiting list for parking spaces and this number is increasing. The spaces should be allocated on a social and economic basis, prioritising distance from the hospital and personal circumstances. The Mobility working group at the Marienhospital has been able to create approx. 70 new parking spaces by optimising the location of parking spaces in the car parks. But this is just a drop in the ocean. The difficulty is that there is a lack of land for development and there is no additional parking capacity available in the south of Stuttgart. There is also increasing demand for parking from patients and visitors too.

The next challenge was the City of Stuttgart's decision to introduce the second phase of parking management in the area of Heslach around the hospital from June 2016. This now means that parking in the area around the Marienhospital is subject to charges during the daytime. Parking for employees and visitors has therefore become even more difficult. The hospital management has sought to curtail the impact of this measure.



Fig. 19: Screen in entrance hall
Source: Rainer Kruse, Marienhospital

In the entrance hall and on the first floor, in the ambulance waiting area, screens have been installed which show the departure times for the next buses and trains from the Marienhospital. Since the entrance hall is used as a waiting area, those waiting here now feel more relaxed. In bad weather in particular, employees, patients and visitors can wait in the dry for longer. Visitors to outpatient clinics can also plan their departures in a more relaxed way.

The data is also available in real-time via the intranet on the workplace computers and in the wards. Staff can therefore better plan their end of work without any unnecessary rush or waiting times.

To make it easier for shift staff to use public transport for their journey home, the bus timetable was extended and since May 2016, route 41 has been running until 21:21 from the Marienhospital stop to cater for the late shift. This connects with the key railway interchanges and the important 'Feuersee' suburban railway stop from where employees can commute back to the surrounding communes. The trains are still running regularly at this time, making it easy to make connections for the onward journey.

The traffic lights on the Böheimstrasse need to be speeded up. Until now, pedestrians wishing to cross the Böheimstrasse outside the hospital had to wait an average of 50 and max. 100 seconds, which was perceived as a long time. The street lighting en route to the bus and train also needs to be brighter so that employees feel safer.

Both of these factors could lead to a more visitors and employees using public transport to travel to the Marienhospital. Optimal pedestrianisation offers substantial potential for cutting down on CO2 emissions in the polluted city basin area. The hospital management is engaged in talks with the city, SSB (Stuttgarter Straßenbahnen) transport company and VVS (Verkehrsverbund Stuttgart) transport association.

An intermediate stage saw the traffic light times being optimised for pedestrians. New software for the traffic lights should lead to additional improvements along the Böheimstrasse to the Erwin-Schöttle-Platz this year.

The hospital management has also been active in improving journeys to work by bike. An additional two large bike rack facilities should be added to the current 130 spaces. Bikes left here will be covered and servicing stations will be available. These will include installed air pumps and basic bike tools. Pedelec charging stations at the bike racks is also planned for one of the bike stations. The hospital management has already confirmed that employees will be able to recharge their bikes here for free. The VVS bike route planner proposes the optimal journey for each individual. It is available via the hospital website and is free to use, along with the VVS public transport route planner.

» An important measure implemented by the hospital management was to introduce subsidised job tickets which should lead to greater public transport use by employees.



Fig. 20: The hospital has paid for its name to be added to the stop to make it easier for those from outside the area to identify the hospital in the SSB timetable. The Erwin-Schoettle-Platz stop now also features the word 'Marienhospital' (photo: City of Stuttgart).

The Marienhospital has always placed great importance on staff being able to freshen up before and after work and showers are available in the changing rooms. Checks are being carried out to determine whether cyclists could also use the showers in the hospital swimming pool, if their numbers increase significantly.

The Marienhospital has made all of its offers and options for the journey to work available via its intranet under the 'Journey to work' section. Here you can find information about company bikes, parking space allocation, company tickets, VVS timetables and

much more. The intranet also links to an external car sharing portal where employees can find one-off or regular car sharing opportunities and schemes or even offer their own car sharing services. The portal provides employees with the opportunity to submit praise, criticism and ideas to the Mobility working group.

The hospital has teamed up with the provider Leaserad to offer bike hire for conventional bikes and pedelecs, providing employees with a fleet of bikes at attractive prices. The cycle paths to the Marienhospital are well-developed, ensuring that all those wishing to make a CO₂-free journey to work by bike can do so.

Staatstheater Stuttgart

Corporate Mobility Management presents a particular challenge at theatres. Employees often work late shifts or split shifts. The journey home in the dark needs to be safe for everyone. And during the day, the problem of traffic congestion needs to be overcome. The Staatstheater provides its employees with the BW job ticket. There are also covered parking spaces available. The Staatstheater intranet includes a special area where car sharing offers can be browsed and exchanged.

An eye-catching form of transport has been introduced for transport within the site: the opera bike. Publications and advertising materials are transported with this cargo bike. It is faster than using a car as

The job tickets are also well-received by employees and the numbers issued are on the increase. Prior to the survey, 315 employees were using the job tickets whereas in July 2016, this number had increased to approx. 500. This represents an increase of 50%. The appeal of the job tickets has been increased further by the Marienhospital's subsidisation of the tickets.

well as having a positive effect on the urban landscape and providing daily advertising for the Stuttgart opera.

»» The opera bike is now so well established that it is also used to transport small props. All of the Staatstheater employees can use the bike to make journeys within the city.

For many years, customers of the Staatstheater have been able to take advantage of a combi ticket (admission and public transport ticket) which entitles the user to free travel by public transport to and from events in the entire VVS area. Up to 60% of the 500,000 visitors each year make use of this offer.



Fig. 21: The opera bike has become an attraction in itself in Stuttgart's cityscape, source: Oper Stuttgart

vhs stuttgart

The vhs Stuttgart Mobility Day on 1 October 2015 introduced visitors to the wide range of possibilities for organising their own sustainable mobility. The exhibitors presented bike sharing offers, car sharing, new e-vehicles and suggestions for inhabitants to avoid traffic jams, reduce CO2 emissions and enjoy more motivated journeys. Over 500 visitors came to experience the offers and analyse their own mobility behaviours. This was a good opportunity to introduce the population to sustainable forms of mobility. Mobility advisors from the Office for Environmental Protection and the Department of Mobility at the City of Stuttgart were also on hand to report back on projects and initiatives and chat with local citizens.

In the evening, speakers from the world of science and research presented various concepts for sustainable city development and the future culture of mobility. The subsequent discussion with experts gave the people of Stuttgart the chance to exchange ideas with leading representatives from the worlds of politics, science and the car industry.

The impact of this day lasted until the next programme and numerous enquiries about courses on the issue of mobility were received after the event. vhs

complied with these requests and fulfilled its mission of providing politically neutral education and helping people to form opinions and undertake critical analysis and then to implement these discoveries in everyday life. The programme now includes courses like 'Booking car2go', 'Getting on your bike', 'Environmentally-friendly families', 'Mobility at 60+' and much more. Over the coming semesters, additional courses will follow. There has also been great interest in the idea of a future workshop.

School classes also attended the mobility day to familiarise themselves with the wide range of mobility concepts and offers available. The school pupils were very interested, especially in trying out the vehicles presented. The discussions and offers were well-attended throughout the day.

» The feedback confirmed that local citizens require information on the topic of mobility so vhs Stuttgart will also hold a Mobility Day in 2017.

vhs maintains a good collaborative relationship with the City of Stuttgart and a Test and Information Day on electro-mobility is already offered as part of a German course.



Fig. 22: On 1 October 2015, the topic of mobility was hotly discussed at vhs Stuttgart.
Source: vhs Stuttgart



*Fig. 23: The test runs were well-received.
Source: vhs Stuttgart*

vhs has issued an additional 30 job tickets internally, increasing the number of participants to 80, without an employee survey. New bike racks have been installed and were immediately well-received. Involvement in the 2MOVE2 activities has brought lasting internal benefits for vhs Stuttgart's offering and mission.

Building Ventures

There is an increasing trend in the City of Stuttgart for building ventures to come together and implement residential projects together. These ventures require building regulation documents as well as a final mobility concept, as with all new building proposals.

During the course of the project, six building ventures received mobility advice because this target group was expected to be fairly open-minded as regards sustainable mobility.

Additional parking spaces for car sharing (in addition to those required by law) were not provided for cost reasons (one parking space costs significantly in excess of 30,000 EUR). Since the City of Stuttgart does not wish to deviate from the requirements of the state building regulations when it comes to the number of parking spaces, there is no opportunity for 'compensatory' mobility concepts to be implemented (e.g. internal group or cross-group car sharing instead of a parking space for each household).

Some of the building ventures have offered in their proposed concepts to make unused parking spaces available for car sharing (primarily for external operators such as stadtmobil). This is still planned (recently there was talk of four parking spaces) subject to feasibility (allocation of parking spaces on the levels, escape routes and accessibility from outside). Discussions between the building ventures and stadtmobil are currently underway. The will for change is evident.

| 3 Best practice examples

Mobility Days

Mobility Days have the advantage of conveying the issue of mobility to a broad target group. They are also particularly cost-efficient. Examples include the Mobility Days at vhs and the Marienhospital.

Bicycle couriers

Osiander – Green Books

This company was founded in Tübingen in 1596 and is Germany's third oldest bookseller, advertising itself with the colour green. Customers in Stuttgart, Tübingen, Reutlingen, Speyer and Frankfurt who order publications from Osiander via the internet receive their orders by bicycle courier. This is a climate-neutral method. The bookseller quickly realised that car courier services were taking too long to deliver the books and media orders because the city centres were too congested and narrow. So the company entrepreneur Riethmüller decided to issue his couriers with good bikes and then customers were able to receive their items the next working day. Customer satisfaction and turnover increased as a result.

The Osiander example clearly shows that sustainable mobility concepts can significantly increase productivity and turnover.

Cargo bike at the Staatstheater Stuttgart

The Oper Stuttgart cargo bike has been a reliable 'employee' and form of advertising since autumn 2015. The cargo pedelec transports publications and advertising materials through the city, takes sheet music and documents to and from between the opera house and Liederhalle, transports props to and from the stage and advertises the Oper Stuttgart on its journeys thanks to the wording and unique appearance of the bike. Employees can also make use of the Staatstheater bike for journeys within the city centre.

Bikes at the City of Stuttgart

Bikes and pedelecs have proven to be a useful form of transport for courier services and business trips. There are four pedelecs and one electric scooter available to employees and council members in the inner courtyard of the town hall. The city also uses three cargo bikes for the management of park areas.



Job tickets

The job tickets introduced on the 1st of April 2014 for the Stuttgart city administration are a successful project encouraging employees to switch to public transport. For a contribution of 30 euros per month for the city area, this ticket offers employees an unbeatably cheap mobility offer. The key to the success of the project is the employer subsidy of 20 € which secures an additional VVS discount of 5% on the company ticket. Over 11,000 employees (over 60%) at the city administration, 482 employees at the Marienhospital and the majority of the administration employees at vhs Stuttgart take advantage of this offer.

» A total of 318 companies take part throughout the city area and 16,000 job tickets in total have been sold (updated: 1.8.2016)
These figures speak for themselves and reflect a real success.

4 Results

The employee surveys carried out as part of this project were an important trigger behind the discussions of new mobility concepts. The City of Stuttgart and private companies have served as role models and encouraged other companies to get involved with Corporate Mobility Management (CMM). The Südwestrundfunk broadcaster and other companies now also want to undertake surveys and compile and implement mobility concepts because they have seen the specific positive effects of the ongoing projects. These companies have experienced demand for up-to-date car sharing portals and mobility advice for new employees.

The most easily measurable result is the significant increase in job tickets issued. Some employees also switched to cycling after taking part in the survey and some are considering purchasing an e-vehicle such as a pedelec, e-bike or electric car.

The 2MOVE2 project has certainly fulfilled its purpose as a role model and is having a long-term impact on mobility behaviour in Stuttgart. The 19,000 employees who took part in this first round of surveys harbour great potential in terms of spreading the word. And it is already working.

The results can be summarised as follows: a few thousand additional job tickets, daily use of car sharing, increased changeover to public transport and in particular, employees who arrive at work happy – this is a good initial outcome.

Unfortunately, the impact of these changes and the many people who have modified their mobility behaviour is not yet visible on the streets. The city centre area continues to be plagued by traffic jams and many car drivers battle their way through the city each day. However, the 2MOVE2 project has made a start and this needs to be continued by the many public authorities, companies and in particular individuals who want to remain mobile.

5 Impacts

Staff councils, works committees and management boards have worked together constructively as part of the project to implement topics such as climate protection, mobility and employee motivation in everyday life, issues which most institutions now include in their corporate guidelines. Each day, companies use talks and internal training sessions to optimise employee mobility, assess their vehicle fleets, create offerings for

lower CO2 mobility and implement ideas to save on parking space. The potential offered by Corporate Mobility Management has been recognised and changes are already underway.

It is particularly positive to note that other companies are also now interested in implementing similar measures. Process is slow but unstoppable.

6 Future activities

The City of Stuttgart sees the results achieved as part of this project as proof that the CMM measures can be highly effective. The city hopes to encourage other companies to get involved too so that these effects are reflected in changing daily traffic levels. The cost of implementing such a measure is balanced out by the potential effects/savings in a company with thousands of employees. In particular the 'profit' for companies and employees must be made clear so as to encourage others to take part.

The potential future activities include additional mobility conferences with representatives from Stuttgart companies and an improvement in Corporate Mobility Management within the city administration.

Electric car sharing, pedelec sharing, mobility stations and public transport incentives for citizens and commuters are all points which are being investigated. Listening, implementing specific adjustments and making the city a bit better each day will bring long-term success.

7 Conclusions

Initially, a survey is simply a snapshot of current mobility behaviours and of employee wishes and requirements. How these results are perceived, prioritised and implemented is very individual. The wide range of activities instigated by companies and managers shows that every site and every workforce has different requirements. These have all been individually handled and dealt with constructively.

All of the measures have shown those involved that this is just the beginning and additional concepts and improvements must follow. The potential for action unveiled by the surveys has exceeded all expectations.

Examples such as better lighting the streets around the Marienhospital, new and improved cycle paths and optimised traffic lights for pedestrians have all demonstrated that there are obstacles involved and not all requirements are easily met. These obstacles require perseverance on the part of the employees interested in improving the mobility situation. A city with reduced CO₂ and noise levels requires the constructive cooperation of all transport planning bodies.

» It has also been shown that lots of time for discussions, coordination and projects must be planned to ensure successful collaboration. The City of Stuttgart sees itself as an instigator and mediator in this regard.

There are areas where the city administration can play an active role itself and provide concrete support for improved offers. But most important of all is the commitment of the companies. Successful Corporate Mobility Management requires clear goals and structures within the companies, associated with the drive to achieve a visible improvement in mobility offers for employees through various offers.

The main thing is to create supporting conditions for successful Corporate Mobility Management. This includes a good selection of alternative forms of mobility, the overriding goal of sustainable mobility and development of a 'mobility culture' which includes a positive attitude to the alternatives to driving. The City of Stuttgart is already well ahead in this with its 'Action Plan for Sustainable Mobility in Stuttgart'.



Fig. 24: Sustainable Mobility in Stuttgart
Source: City of Stuttgart

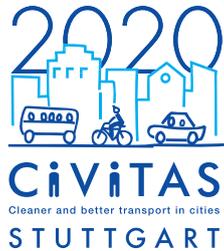
| 8 Summary

As part of the 2MOVE2 project (European Union CIVITAS Plus II programme), the City of Stuttgart has introduced a range of Corporate Mobility Measures to make its urban transport more environmentally-friendly and improve quality of life. The target of Corporate Mobility Management (CMM) is to ensure the efficient, environmentally-friendly and socially responsible organisation of all traffic generated by a company or local authority (employees, customers / visitors, delivery traffic, commercial traffic for the company).

To encourage companies to sign up and initiate measures, Mayor Fritz Kuhn invited Stuttgart's 30 largest employers to Mobility Conferences. Following on from this, the first companies (including a hospital and theatre) in Stuttgart carried out pilot mobility surveys, formed car sharing schemes, provided public transport information in the workplace, increased the frequency of public transport, optimised signalling

equipment, improved or built new bike parking facilities and offered and advertised job tickets. During Mobility Days, employees and visitors were informed about forms of sustainable mobility. Electric vehicles and cargo bikes were presented and test rides offered. The City of Stuttgart is gradually switching its fleet of vehicles over to electric vehicles, starting with the Mayor's own business trips. The greatest success has been the job tickets. 318 companies now offer this discounted tickets and by August 2016, some 16,000 job tickets had been sold.

The 2MOVE2 project has fulfilled its role model function and is making a long-term contribution to changing mobility behaviours in Stuttgart. Following on from the 2MOVE2 project, the City of Stuttgart will develop plans to anchor CMM in the city administration in the long-term and offer its advisory services to more companies in Stuttgart.



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CMM measures in Stuttgart

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