



# THE FUTURE OF PARKING POLICIES

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**F**OR A LONG TIME, PARKING HAS BEEN SEEN AS A RELATIVELY INDEPENDENT SUBJECT that's mainly connected to traffic and transport policies. Parking policy is largely developed against the background of expectations regarding the future developments of car use and ownership. Over time, the focus started shifting toward integrating parking in integral mobility strategies to achieve a more balanced modal split.

Traffic (and parking), however, does not originate spontaneously, but from the traffic demand that generates from the spatial distribution of socioeconomic land use functions. This traffic demand is, thus, influenced by developments in society.

More and more, it is understood that parking plays an important role as the connecting link between traffic and accessibility and being at a location and using the functions there (including residential). Parking constitutes the transformation from mobility to activities

and vice-versa. Parking is, therefore, related to both the traffic and transport sector and to spatial, social, and economic domains. Developments in society have direct effects on parking, necessary parking capacity, and how parking can best be organized. To be prepared for future challenges, the parking world will have to anticipate for these trends in society. This article is based upon a study that was conducted by the author for a Dutch semi-governmental organization<sup>1</sup>.



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## How parking is influenced by socioeconomic developments

### Societal Trends

In the 20th century, the population in the Netherlands increased enormously. Around 1900, the Netherlands counted 5 million inhabitants; by 2000, there were nearly 16 million. It is expected that in the coming decades, the growing rate will slow markedly and that from about 2035, the Dutch population will probably stabilize or even decrease. In some parts of the Netherlands, that population decline has already started. Also, the distribution of the population will change, with (generally) a still-increasing population in the west, and a declining population in the east. The expected decline in population is not unique for the Netherlands, but is universal. In Eastern Europe, we have seen a declining population since the end of the last century, and from 2075, population numbers may decline worldwide.

An additional consideration is that the spatial structures of cities are changing. Urbanization is no longer the expansion of monocentric cities, but is becoming a more complex sprawl of urban functions, old and new, over a multi-central conurbation (network of cities).

Upscaling is closely connected with this: many socioeconomic developments lead to growing the areas where these activities can be found. Living, working, shopping, and other activities happen more and more in different locations; this is also caused by concentration developments. Large-scale functions generally happen in car-accessible locations, while large shops, hospitals, and sport-facilities increasingly choose edge-of-town locations. Increasing car ownership is both an effect and stimulating factor of this process.

In parts of the country with a decreasing population, activities will concentrate in a few regional centers. There, parking pressure will increase. As a result of declining population and a thinning work and shopping structure, people will have to travel greater distances to accomplish daily goals. Already, the average commuter trip in the northeastern part of the country is 22.3 kilometers (compared with a national average of 14 km., and in the region around The Hague, 8 km.).

In smaller towns and villages, central activities (shopping, work, theater) will disappear; consequently, parking pressure will decrease.

The west part of the country enjoys a still-increasing population, so demographic effects on parking are less predictable. On one hand, there are behavioral components that would mitigate parking pressure (concentration of population and activities, availability of alternative modes of transport), but on the other hand, there are also adverse developments (chain trips combining different activities, network-cities) at play.

## Cultural Trends

Spatial, socioeconomic, and demographic trends are important determinants for the development of mobility and parking, but social and cultural trends must also be taken into account. These deal with (changing) preferences and needs in relation to family life, education, professional perspectives, and leisure activities but also with appreciation and use of different modes of transport.

Harms<sup>2</sup> identifies four social and cultural trends that can give an important additional explanation for growing mobility:

- Individualization.
- Intensifying of time use (more activities in less time).
- Increasing role of information in society.
- Internationalizing life patterns.

There are differences to be found between different population groups. Harms mentions for example:

- People in their 30s are the most mobile part of the Dutch population.
- The bicycle is the most used mode of transport for children and teenagers; public transport is most used by people in their 20s; and the car dominates for people age 25 and older.
- In the last decades, elderly people have become more independent in their travelling. They use the car more often and until older age than previous generations.
- People in rural areas travel more often and over longer distances than people in urban areas.

## The Car's Popularity

As a result of several of the before-mentioned developments, society has become more dependent on the car. A study concluded that 40 percent of all present car trips could not be made by alternative modes of transport, and that percentage is increasing<sup>3</sup>. A discussion on the use of alternative forms of transport should take these spatial and social aspects into account, especially because car ownership is still gradually increasing.

## The Future

Present characteristics of mobility of population groups cannot simply be extrapolated to future groups. For example, one of the future scenarios of the Dutch government predicts a total increase of mobility of 21.3 percent in 2030. About half of that increase is connected to people older than 65. This is not only because this group will form a greater percentage of the future population (that would account for about 4 percent increase of mobility) but also because the future elderly also have other characteristics than the present-day group: More of them will still work; on average, they will have a higher income; and car ownership will be higher. These

factors will account for nearly a quarter of the future increase in mobility. In addition, their travel behavior will differ as they participate in more activities away from home than previous generations at that stage of life. This will add another 2 percent mobility growth.<sup>4</sup>

There are indications that younger generations are less car-orientated than in the past. This development has been found in several Western European countries. Research shows that young people, especially males (until age 30) own fewer cars than those in previous generations, show lower car use, and more often use a variety of transport modes (multimodality). As a result, the difference in transport behavior between young males and females has decreased<sup>5</sup>. It is too early, though, to conclude that the attitude toward car use has structurally changed.

## Urbanization

An ever-growing part of the population lives in urban areas. U.S. researchers calculated that as of mid-2007, most people live in urban areas. People in urban areas have more access to alternative modes of transport (bicycle, public transport). But cities are also changing. More and more cities are becoming multi-modal, with many concentration points of activity. So although car use per individual may be less in urban environments, car pressure on concentration points of activity will attract large amounts of cars and high parking pressure.

## Economy and Retail

Since 2000, the number of visitors in Dutch retail centers has declined. This trend cannot be caused solely by the economic recession (since 2008). On the contrary: In recent years, the decline seems to be less than before (in 2007 an average decline of 3 percent; in 2010, 1.6 percent). Many inner cities lost 10 to 20 percent of their visitors in a decade. This decline is attributed to changes in consumer demand and shopping behavior:

- An aging population that buys less than younger generations.
- The economy.
- An increase of other retail channels, particularly the Internet.
- Saturation (everybody already has everything).

These developments are partly temporary (economy), but seem to be structural for a greater part (fewer visitors, other retail channels, changed shopping behavior). This will have repercussions on the future structure of retail (possibly fewer shopping centers), but also on parking. Fewer parking operations, lower occupancy rates, and declining income from parking are imaginable. A first quick scan shows that many inner-city shopping areas experience lower parking pressure and less parking income.

## New Concepts

Changing patterns in society have their influence on parking capacity, parking organization, and parking location. A clear example can be found in the new working concepts promoted in the Netherlands, called "smart working."

Smart working was made possible by the introduction of portable devices, which allow professionals to access work files online from anywhere. This makes working location- and time-independent.



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Smart working allows employees to take responsibility for how they organize their work. It requires not only self-discipline of employees but also another attitude in management (management on output).

As a result, offices will change their internal organization (employees will not have their own desks, for example) and often can be downsized. This will influence parking.

In general there are two extremes in smart working:

- At the office, but flexible. Employees generally work at the office, but have freedom to choose the times they want to work. Office areas will be used more intensely, which might imply a higher parking ratio.
- Anywhere. Work can be done anywhere, anytime. Parking demand will show high peaks when meetings coincide.

When the introduction of smart working is combined with a traffic management program that promotes the use of alternative modes of travel, parking demand generally decreases. Because employees can plan their own working hours, they have more opportunities to adapt their schedules to plan multi-modal transport (carshare, public transport).

## Technical Developments

Technical developments will affect parking in many ways. To name just a few:

- Information technology already has changed parking enforcement a great deal: ticketless parking, license plate recognition, cashless parking at parking meters, parking by mobile phone. This development will surely continue.
- Information technology also changed travel patterns. We already mentioned the effects of the Internet on shopping and office trips, but Internet banking leads to fewer (and smaller) bank branches, video conferencing replaces travelling to meetings, and social media plays a great role in communicating with friends.

It is questionable if a further digitalization of society will lead to less mobility. Will physical trips and activities be replaced by virtual activities? Will technology generate new activities and mobility? Information will become available in in-car systems, making roadside parking and traffic information superfluous. Mobility will become more individual, which makes parking pressure less predictable.

## The Future

Many developments will influence future parking policies; some will lead to an increase in parking demand while others will cause a decrease. Reduced car use by the younger generation, decreasing numbers of visitors in inner cities, and growing urbanization may lead to reduced parking demand, while a shrinking population, upscaling of hospitals and shops, and a changing urban structure will cause increased parking pressure in central areas. Every location requires a thorough, location-specific analysis of the future developments of the different relevant factors.

Developments in society lead to more fluctuation in parking demand. Trends such as smart working and more unpredictable shopping behavior create the need for extra parking capacity during peak moments. Optimal use of space and flexibility are important elements for a parking policy that can deal with these developments. To optimize parking capacity and parking demand requires an area-wide approach to be able to exchange between areas with over- and under-demand. The usual approach—requiring every building to provide its own parking facilities—leads to too many underused parking spaces. An area-wide approach asks for a flexible use of parking requirements. This could well lead to other organization models for operating parking facilities.

Most of the examples here are from Dutch experience, but most of the trends we noticed are international. They will influence parking worldwide. We hope this article will stimulate a discussion on how national and international trends in any country will influence future development of parking policies. Parking, after all, is the connecting link between activities and their accessibility. P

## Literature

1. Parkeerbeleid op middellange termijn, maatschappelijke trends en de toekomst van parkeren; KpVV, april 2013
2. Overwegend onderweg, de leefsituatie en de mobiliteit van Nederlanders; Lucas Harms, Sociaal en Cultureel Planbureau, 2008
3. De auto-afhankelijke samenleving; Hans Jeekel, Eburon academic publishers, 2011
4. Grijs op reis, over de mobiliteit van ouderen; Kennisinstituut voor Mobiliteitsbeleid (Peter Jorritsma, Marie-José Olde Kalter), oktober 2008
5. A new generation: travel trends among young Germans and Britons; Tobias Kuhminhof (universiteit Karlsruhe), Ralph Bühler (Schoo, of Public and International Affairs, USA), Joyce Dargay (University of Leeds), Transportation Research Board Annual Meeting 2011



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