



INTEGRATION BEATS ISOLATION: PLANNING DELIVERS DIVIDENDS



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CHAPTER 3. INTEGRATION BEATS ISOLATION: PLANNING DELIVERS DIVIDENDS

Provided that investments are materially available, the fate of cycling is tied to its consistent integration into all relevant territorial plans. Land use and transport planning at metropolitan areas cannot overlook or regard cycling as a subordinate or trivial aspect, without seriously straining the effectiveness of this mode. Also, considerable inflated costs would be incurred to eventually retrofit interventions that neglected cycling provisions. A shared vision of cycling and its vital role in urban mobility is thus required of the planners who help shape the future of a city. Experiences from the UK and the Netherlands support the lessons expressed in this chapter.

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3.1 Including cycling in a planning vision

Exemplary bicycle friendly cities and towns have incorporated cycling into their visions for land-use planning, transport planning, spatial networks, and future developments for the city. Including cycling improvements into pre-existing plans or funded projects can be a good first step. This integration allows the bicycle to influence the spatial structure, traffic networks, and development of a city over time. An approach that includes a shared vision of cycling is more balanced and effective than one which bases its cycling programme on concrete on-street projects, as visualised in Figure 3.1.



Planning from a vision perspective

Strategic
level, 'city hall'



Policy, vision



Spatial
structures and
networks,
accessibility

Local level,
street



Projects,
problems

Planning from a project perspective

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When plans for cycling planning originate with a vision, the on-street projects are strategic interventions that fit into a bigger picture of what the city is and wants to achieve. The strategic interventions can be cycle paths and cycle tracks that make a cycling network more complete or the densification of the urban areas surrounding stations to facilitate more people living and working near a transit hub. While plans originating from projects themselves can provide local solutions, they often do not scale to higher levels. An example is the implementation of a 2km cycle track that does not link to a cycling network, or the realisation of bicycle parking facilities that are not well connected with the cycling network and locations that (potential) cyclists visit.

Stating specific cycling objectives in urban planning has shown to be effective in both the Netherlands and the UK. One approach adopted by the Netherlands in the 1970's was to require a cycling checkbox on all development applications. The checkbox continues to influence planners by asking whether or not the needs of cyclists are considered.

Even when cycling is stated as part of a nation's vision, it can be left to each local authority to interpret this guidance in their own development efforts. One of the aims of the UK's national Planning Policy Guidance on Transport for example is 'to encourage sustainable means of travel such as walking and cycling' (PPG13, DfT 1994). However, since walking and cycling are linked together, subsequent measures can fail to address the individual needs of each mode. Without specific objectives developers have little incentive to improve conditions for cyclists.

For example, in the central London Borough of Camden, objectives for cycling were clearly referenced in their local development framework (LDF). These included the provision of new cycle parking, cycle stations (hub areas with secure covered cycle parking and changing facilities), new or upgraded routes for cyclists, and the continuation of the London Cycle Hire Scheme (LDF, Camden Core Strategy, 2010). In contrast, in the outer London Borough of Bexley, no specific cycling objectives are mentioned, and where cycling is mentioned, it is referenced with walking (LDF, Bexley Core Strategy, 2010). Not surprisingly, Bexley has one of the lowest modal shares for cycling in London whereas Camden has one of the highest.

It is also important that language or legal status is considered in the planning vision to further motivate local authorities. The Welsh Assembly consulted on an Active Travel Bill (Welsh Assembly, 2012) in Summer 2012. If enacted, the Bill will legally require local authorities to identify and map an existing network of safe walking and cycling routes and develop enhancements through a prioritised list. Authorities will then be required, subject to budget, to deliver the proposed networks and also consider walking and cycling in any new road schemes. Although walking and cycling were grouped together, they will be treated separately in the Assembly's response to the consultation.

3.2 Land-use planning and accessibility

A central theme in land-use planning is 'accessibility'. It is a concept that is not only mutually linked with spatial structures and traffic networks, but also with aspects of time, individual constraints and opportunities. Figure 3.2 shows these mutual relationships.



The bicycle is generally seen as a suitable means of transportation for short distances (<5 or 7.5 km). The optimum cycling distance is about 2.5 km, as shown in Figure 3.3. It is important to consider these short distances and the impact on travel demand. Land use planning focuses on houses, offices, shops and schools in each other's vicinity, and can easily enable the combination of activities such as residing, working, going to school and shopping without having to bridge too many kilometres.

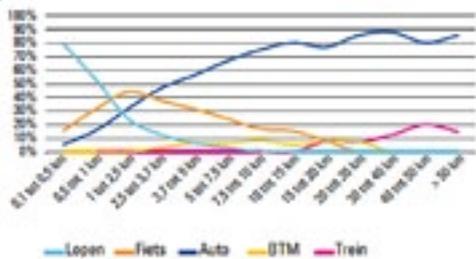


Figure 3.3

The importance of proximity of residential areas to work or further transit results can be witnessed by two cities in the Netherlands with different shares of cycling. Groningen has about 200,000 inhabitants and is very bicycle friendly. About 30% of all trips and 46% of trips up to 7.5km are taken by bicycle. One of the keys to Groningen's success is the fact that a lot of the residential areas are within 2.5km from important destinations including work and a strong transit hub. On the contrary, Parkstad Limburg, in the very south of the Netherlands, is a comparable region with a low level of cycling. The Parkstad Limburg region includes roughly 220,000 inhabitants, similar to Groningen, yet less than 10% of trips up to 7.5km are taken by bicycle. Most residential areas are not within 2.5km from working areas, and its transit hub, Heerlen station, is also outside this distance.

Stedenbaan, a cooperation of stakeholders in the agglomeration of Rotterdam - The Hague, also recognizes that a dense urban area combined with an important transit node is one of the keys to achieve high levels of cycling. The cooperation represents transport companies, local and regional governments, real estate owners and project developers and focuses on urban development strategies that make cycling and public transport more attractive. A priority for the region is that at least 80% of all new buildings should be constructed within existing urban areas and at least 40% of all new buildings should be concentrated in the direct vicinity of important public transport nodes.



3.3 Integrating cycling infrastructure into land-use planning before development

Any development is an opportunity to improve cycling infrastructure and safety. When a new residential development is being planned, local authorities should ensure that cycling is integrated well before permissions are granted as it can be difficult to delay progress once begun. Furthermore, in densely populated environments, every scheme affects cycling and it is important that engineers, planners and politicians are aware of this and that advocates have a voice.

One consideration to be made is parking. It is important that bicycle parking is being provided, and it is that bicycle parking is placed on both the origins and the destinations in the network. This approach is also most cost-effective.

Development boundary walls should also be checked to not block existing cycle routes or rights of way. A new bus, rail or tram system must not block an existing cycle route and once operational should provide access to cyclists.

An example of development overriding the needs of cyclists in London would be National Cycle Network Route 1, which runs through London along the side of the Thames. This route also forms part of the London Cycle Network, the Olympic Cycle Network and the EuroVelo project as part of a proposed route that runs between Moscow and Dublin. Despite its strategic importance, the route on the Greenwich Peninsula was closed in summer 2008 for development works. The once public path was converted to private only access to the new high quality residential development. In order to make the route usable for the Olympics, a new inland route had to be developed and the continuity of riding along the side of the Thames was lost.¹

Bus lane width is another opportunity for cycling. If bus lanes are 3m wide then cyclists have to take a primary road position and cannot pass or be passed. If lanes are 4.5m then buses and cyclists can pass each other within the lane with ease. Lane widths in between will cause a grey area where buses or cyclists will risk potential conflict, as they may be unsure as to whether passing manoeuvres are possible. Designing out this type of risk is a vital task. It should be noted however that the UK is one of the few countries where buses and cyclists are allowed to mix in specifically designed lanes. In most countries with a high modal share for cyclists, segregated facilities are provided. For climber cities however, bus lanes can work well for cyclists despite the risk of mixing large vehicles with vulnerable road users.

Additional possibilities include designing junction curb radii to accommodate vehicles moving at 30kph rather than 40kph, resulting in slower moving vehicles and safer manoeuvres for cyclists, adjusting signal timings on a wide uphill junction to enable cyclists to cross comfortably, or designing a new road so that cycle lanes can be installed without reducing motor vehicle lanes are also options in some cases. All of these measures may not seem like prime examples of cycling infrastructure but the principals of safe city cycling permeate them. Arresting the negative impacts of other transport schemes at the source is vitally important if cycling is to flourish. If cycling specific funding is spent constantly retrofitting then this should be seen as a failure to integrate and a waste of public funds.

In the UK several attempts have been made to come up with bicycle friendly highway engineering design standards. These include The London Cycling Design Standards (Transport for London, 2006) and Cycle Friendly Infrastructure Design (Department for Transport, 2008). The CROW manual from the Netherlands remains an outstanding document for cycle infrastructure design in Europe but it is important for countries to develop their own standards that reflect their existing situations and legal frameworks. The references at the end of this publication show links to where the British and London versions of the CROW standards can be found. Care must be taken to not dilute the Dutch standards to the detriment of cycling safety and the Dutch Vision of designing routes for the speed of commuter cyclists, crossings for the speed of elderly cyclists and visibility for child cyclists, is one that all designers in Europe should keep in mind. Another example of guidelines is the Irish National Cycling Manual, also available online (<http://www.cyclemanual.ie/manual/thebasics/>).

¹It should be noted that the London Borough of Greenwich in which the route severance described above occurred has been chosen by the Mayor of London as the site of a major cycling scheme, which will hopefully address the problems caused to cyclist.



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"According to me, a good cycling policy cannot be achieved without a reconciliation of all of those who are in charge of roads, public transport policies and parking (intermodality with bus, boats, P+R, trains, etc.), business travel plans, school, youth, etc."

"Cycling is the transport mode that is privileged for the trips between 1 and 3 kms (at least)."

Denis Leroy,
Vice-President of La Rochelle Urban Community, France



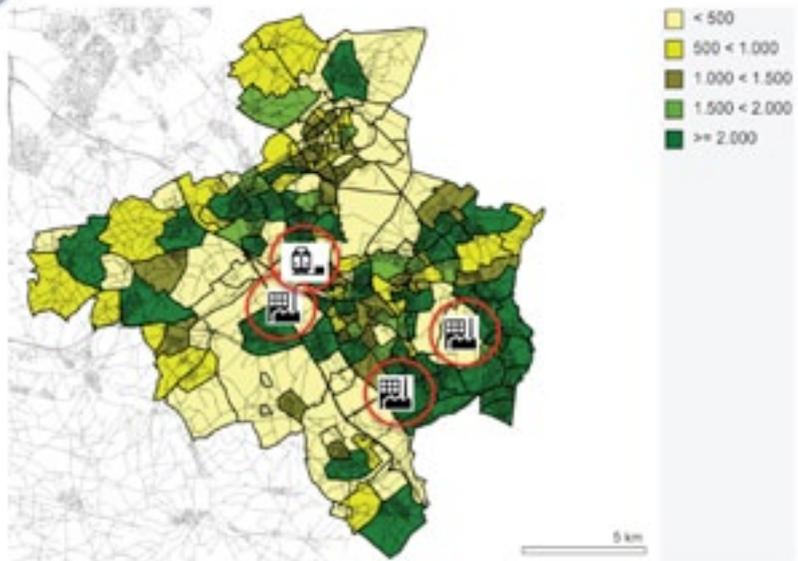
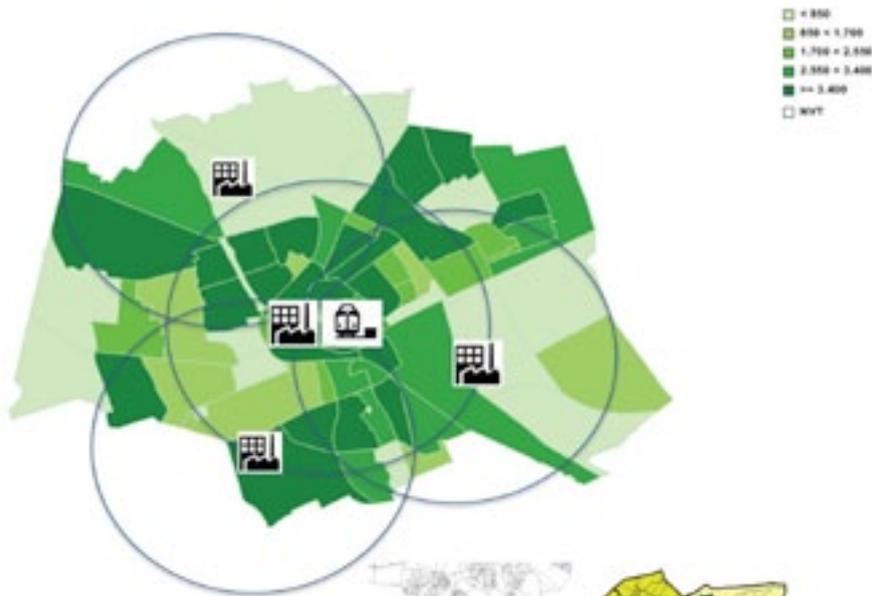
3.4 Well-planned cycling networks

The combination of compact land-use planning and a well-planned bicycle network is a crucial characteristic of bicycle friendly cities. The quality of a bicycle network is not only strengthened by directness of routes and good quality road surfaces but also by the bicycle facilities and services that are well connected to the network. Facilities and services that improve the experience of the user include cycle parking, waiting time predictors at traffic lights, green waves and useful signage.

If we look at the Netherlands with a high level of cycle use (about 900 km per person per year in 2008) compared to the level of several other European countries (mostly around 200 or 300 km per person per year in 2008) - we see that an intensification of investments in the cycling infrastructure took place from the 1970's and onwards, with a focus on local cycling networks.

"Cycling without dismounting" is the title of the bicycle plan of the city of Lelystad in the Netherlands. A good choice for this plan in which the bicycle network is an important instrument to facilitate and promote cycling. A bicycle network is a complete system of connections that provide access to cyclists' points of departure and destination. Five factors determine whether a network is proper and is likely to attract (new) cyclists. Firstly there is the factor of cohesion; all relevant attraction points should be included. Secondly the degree of directness plays a role. The more direct, the better. Safety is the third factor involving issues such as avoiding conflicts with crossing traffic, the separation of vehicle types and speed reduction. Attractiveness is the next factor, including the scenery, public safety and lighting. And lastly comfort has to be in place; preventing cyclists from heavy fumes and using the 'natural' routes that people follow.

As a result a bicycle network does not only consist of bicycle lanes and separated bicycle tracks. Cycle streets and 30km roads with low speed and mixed use as well as completely separated tracks that do not follow the arterial routes may also be part of the network. Figure 3.4 shows us the cycling network of Groningen. It links important origins and destinations and consists of separated cycle tracks along the corridors, combined with separated tracks. Within the residential area these tracks offer cyclists an advantage in directness (and time) compared to the network for the car. They form a direct connection with areas and activities nearby, whereas the car drivers have to take a detour to reach their destination.



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A recent development in the Netherlands, and also around Copenhagen, is to develop separate 'highways' for cyclists. There is a growing interest in cycling longer distances when facilities are provided. These 'highways' are being planned in between important centres at the regional level and often consist of completely separate cycle tracks. Target groups are not only sporty commuters who want to stay fit or avoid traffic jams, but also a growing group of users of e-bikes, bicycles with the assistance of a battery with speeds up to 25 km/hour.

In the UK, the best existing example of a fully segregated network of cycle tracks is ironically in one of its most car-dominated towns. Milton Keynes has over 200km of 3m wide segregated cycle tracks. However, no effort was made to regulate motor vehicle speeds on the carriageway because of the segregation. While not be a problem in link sections, cyclists are forced to give way to vehicles travelling at 100kph in junctions and crossings. The town is also quite spread out with long distance cycling required to reach shops. There are many lessons to be learned from Milton Keynes for urban planners and more information can be found in John Franklyn's twenty-year review of the town's cycling infrastructure (Franklyn, 1999). The main lesson learned is that if you design a city around car use, then even with the best cycling facilities available people will choose the car. In Dutch and Danish cities where car routes are more circuitous and difficult to navigate, cycle routes offer the optimum route selection choice and so it is clear to all which mode the city promotes.



3.5 Involving urban designers or architects

In order to maximise the benefit to cyclists an audit needs to be taken of any organisation or individual role that affects the urban environment and then a concerted effort made to help them understand the specific needs of cyclists. It is suggested that as well as encouraging planners and engineers that efforts are made to engage with urban designers or architects. A middle ground must be found between architectural form and highway engineering function, and in order to affect change, cycling issues need to be part of this middle ground. In the UK urban designers successfully fought back the need to clutter streets with an abundance of road traffic signs stipulating who has priority and exactly how they are expected to behave as a result. Urban designers have a better idea of an area's sense of character and purpose than an engineer attempting to build to legal highway standards and it is vital that chosen infrastructure for cyclists is sympathetic to its environment. Cycling is one of the greatest tools we have to improve the quality of life; physically, mentally and environmentally and these benefits should be made apparent to urban designers.

The main guidance documents for urban designers in the UK are the Manual for Streets, (MFS1, CIHT 2007) and Manual for Streets 2, (MFS2, CIHT, 2010). MFS1 looks at mainly residential streets and was influential in establishing British standards for home-zones following the Woonerf example from the Netherlands. MFS2 extends the guidance to urban and rural situations. MFS is very clear that when designing vehicle restricted areas, cyclist access should be allowed. Still, urban designers in the UK, particularly in their many pedestrian only town centres, often ignore this. MFS2 also contains guidance on suitable carriageway widths that promote sustainable transport. Roads on new developments are still being built in the UK at a width of 7.2 m, which equates to two running lanes of traffic at 3.6 m wide. This width is particularly dangerous for cyclists as it invites vehicles to pass when there is not sufficient space to do so. Lane widths of 3 m means that motor vehicles cannot pass and so motor vehicles are forced to move at a cyclist's speed. Wider lane widths mean that vehicles can pass whilst still giving clearance to cyclists. It could even mean that a cycle lane can be introduced. Most cycling nations in the EU recommend that vehicles give cyclists 1.5 m clearance when passing them and so it is clear that standard British carriageway widths do not allow for this. MFS gives a challenge to urban designers to include the needs of cyclists in their scheme but also gives engineers a challenge to make sure cycling facilities fit in with the overall sense of place and character of the area they inhabit.



"Planning for bikes - and for all modes of transportation - is smart urban planning."

Janette Sadik-Khan, Transportation Commissioner, New York



"At least planning and architectural departments, civil engineering or even industrial engineering must collaborate and work together if the city wants to achieve a common objective."

*Juan Carlo Aparicio,
Lord Mayor of the City of Burgos, Spain*

3.6 Traffic policies

In the broader scope of traffic policies, measures can be taken to make cycling faster, cheaper and more convenient than other modes. In many cities in the Netherlands, cars are restricted in certain central or residential areas. In some cases cars are forbidden to go onto a street either all day or during shopping hours. There are also cases where streets are one way for cars and two ways for cyclists (see Figure 3.5). Another instrument to give cyclists an advantage is to allow them to ride through red when taking a right turn or waiting time predictors (see Figure 3.6). Apart from these juridical measures to restrict cars, financial measures can further discourage car use. Parking regime is the most well-known financial measure and it can be combined with Park and Ride facilities at the edges cities. Park and Bike facilities can enable car drivers to travel the last mile not only by public transport, but also by bicycle.



An example of a city that has had a bicycle friendly traffic policy for many decades is Freiburg, a city in the western part of Germany with about 230,000 inhabitants. Since 1971, the historic centre has been pedestrianized and at the same time the first cycle network has been planned. The transportation strategy of Freiburg rests on the pillars 'traffic restraint', 'channeling of motor traffic' and 'parking space management'. Within 30 years the cycling rates in Freiburg increased: 15% in 1988 and 26% in 1999.

Bicycle traffic has also been an integral part of traffic policies for a long time in Münster, where a number of politicians and staff members are dedicated to keeping up the levels of cycling. The city has 280,000 inhabitants in the Northern part of Germany and is considered one of the best cycling cities of the country. About 40% of trips are done by bicycle. Spatial policies in Münster have been aimed at locating important economic and social functions within, or in the realm of, the city centre or along the arterial routes. In 2004 71% of the inhabitants lived within 6 km's of the city centre resulting in many bike-friendly trips.



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3.7 Conclusion

Cycling advocates believe in the benefits of cycling and its overwhelming positive effect on society particularly in terms of quality of life, and so this belief must be utilised to enthuse others. When cyclists are considered in all projects in the urban realm then cities begin to operate in the way cycling champion cities like Amsterdam and Copenhagen do.

Cycling becomes omnipresent to the point where it seems to be hardly mentioned. Hard work and campaigning got these cities to this point and so it is hoped that this chapter has helped to distil the actions needed by cities working to reach this point. The shared vision for cycling must be to make each city's societal system transform and adapt to the needs of cycling at all levels and throughout all professions. This journey has key stages and they are all attainable with planning, focus and commitment.

Cities and towns that aim to become bicycle friendly can use instruments on different scales of planning. On a higher scale the aim for compact land use planning is a strong instrument, as well as the definition of an overall vision for the city that explicitly includes the bicycle as one of the tools to become a liveable, or CO2 neutral city. On a lower level the definition of a coherent, safe and attractive bicycle network is crucial. Also traffic policies that prioritize cyclists instead of car users and specific facilities and services for cyclists make it attractive to actually use the bicycle network. Ideally, policies and plans at different scales are coherent and consistent.

Advocates need to find a voice and change the planning cycle in order to move away from retrofitting and towards integration.



CHECKLIST

for Land Use Planning Applications:

- ▶ Can secure, accessible and covered cycle parking be provided?
- ▶ Can the development be Car Free or can the number of spaces per property be minimised?
- ▶ Can rights of way be improved or will any existing routes be severed?
- ▶ Can the impact of freight/deliveries be mitigated?
- ▶ Are cycle routes prioritised above car routes?

CHECKLIST

for Transport Planners:

- ▶ Does the scheme address the needs of young, elderly and commuter cyclists?
- ▶ Are cyclists disadvantaged or marginalised and have efforts been made to mitigate this?
- ▶ Have efforts been made to reduce the speed and volume of traffic?
- ▶ Are cycling facilities designed to current best practice standards?
- ▶ What level of service does the route provide for cyclists?

CHECKLIST

for Urban Designers or Architects:

- ▶ Does the project promote cycle use?
- ▶ Does the project make cycling the easiest and most convenient option?
- ▶ Has space been allocated for the sole use of cyclists?
- ▶ Are public places designed for cyclists?
- ▶ Have cycling design speeds and characteristics been considered?

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