The world’s cycling experts

Contributions from the Dutch Cycling Embassy and partners to the expert meeting on Realizing the Rio+20 Momentum on Sustainable Transportation

The Hague, 21 May 2013
The Dutch Cycling Embassy

A public private partnership established to make the Dutch cycling expertise internationally available

The Dutch Cycling Embassy is a comprehensive network of private companies (consultants and manufacturers), national and local governments and NGO’s, universities and research institutions. We facilitate cycling worldwide as a modern, efficient and sustainable means of transportation by sharing our expertise and technology as the world’s number one cycling country. The Dutch Cycling Embassy offers her services to upscale mobility planning and to contribute to International exchanges, capacity building, assistance to local and national policies, and to deliver inputs for Terms of References.

For the Dutch government the Embassy is the gateway to put you in touch with the Dutch on cycling and its relevance for urban planning and sustainable development. Abroad the Embassy works closely together with the Netherlands Embassies and Consulates and she is partner in international networks, such as the partnership on Sustainable Low Carbon Transport SLoCaT. The Dutch Cycling Embassy contributes to the Technical Working Group set up by UN DESA to deliver recommendations for the contribution of sustainable transport to the post 2015 Framework on Sustainable development, to regional conferences by UNCRD on sustainable transport and to mobility programs by UN Habitat and UNEP.

In this brochure we present an overview of Dutch planning for urban mobility that resulted in a safe, inclusive, clean and cost-efficient urban transport system, that Dutch public and private organisations want to share with the world.

Transition in process

A fundamental transition in transport policies towards sustainable development is taken up worldwide, in the North and the South of the globe.

• Mayors of metropolitan cities search for liveable cities. They acknowledge that a city needs people and public space and less dominance by vehicles and asphalt.
• The MDB’s change their focus, from loans to construct connections over long distances, towards technical assistance for programs that create safe and affordable accessibility for all.
• People change their preferences regarding travel behaviour from car ownership to vehicle sharing and active transport. Cycling becomes a pleasure, even sexy.
**Cycling a catalyst**

Cycling has become both a symbol and a catalyst for this transition. Cycling pays a significant contribution to sustainable mobility, serving the mobility needs of all people. Cycling inclusive planning makes transport interventions more effective, in social and economic terms, with less negative impact on health, the environment and the climate. Cycling evokes creative thinking on the urban fabric and health. Although situations around the world are quite diverse and there is a wide variety between local contexts, this trend is global and cannot be mistaken.

**The Dutch practice of planning**

The Dutch do have some remarkable records on sustainable urban transport, in particular an outstanding cycling culture. The Dutch are well known for their budget saving, but they use a bicycle primarily because they like it. Research shows that the success of Dutch cycling is mainly a matter of planning, of setting targets and learning from interventions. Gradually we could scale up mobility, road safety and traffic management, bringing a better balance between the different modes of transport and optimising the role each can play. The Dutch use opportunities for transport over land, water and by rail, combine all opportunities to bring people and goods seamless to their final destination, including the delivery of beer to cafés by boats.

**Applicability**

In other words the Dutch have a strong belief in opportunities to create and control. Analyses in road user requirements and behaviour modification, traffic modelling and road categorisation make Dutch experiences applicable in another context. Applicability is less a matter of replication than a matter of guiding principles and instruments and methodologies to develop plans and policies which are local and national based. In these times of globalisation, the power of national planning is declining, and social and economic innovation is more and more locally based. Policies are being decentralised. The next step is that urbanisation becomes a serious issue in international programs for development cooperation.

The Dutch have an outstanding track record on urban planning. The value of the applicability of Dutch concepts and methodologies regarding local mobility planning is confirmed again and again.
Boris Johnson, mayor of London, in his 1 billion cycling plan, took over ownership of the slogan by the London Cycling Campaign: “Love London Go Dutch” which means that the Dutch quality standards for cycling facilities should not be compromised. According to Johnson, cycling will create better places for everyone. “It means less traffic, more trees, more places to sit and eat a sandwich. It means new life, new vitality and lower crime on underused streets. It means more seats on the tube, less competition for a parking place and fewer cars in front of yours at the lights”.

**Cycling inclusive planning**

The success of Dutch cycling is a consequence of careful planning and design. The space for cycling is not taken away from pedestrians but from cars. Cyclists have more opportunities to criss-cross a city than cars. People lose less time to park a bike to catch a train than by car and they can take a public bike at train stations to their final destination and leave them there as long as they want to stay. Traffic management makes that cyclists have to wait less when it rains. Our facilities bring cyclists safe, direct and comfortable from door-to-door and we make routes, bridges and tunnels attractive. We take the requirements for pedestrians and cyclists as serious as the requirements for passengers of public transport and car drivers. All road users are better off since cycling creates space and saves money.

**Mobility concepts**

Cycling inclusive planning is linked with concepts to

- prevent the risk of serious accidents and make mistakes ‘forgivable’,
- road categorisation that enforces proper road behaviour according to its function in a technical way,
- traffic planning and management
- seamless connections between cycling and public transport.

The success story is an integrated approach that positions the Netherlands in the top 5 of most road safe countries in the world and the number 1 in cycling. A fine meshed main network of cycling routes goes along with a concentration of flowing cars on a limited number of roads. Cyclists do not have to follow the routes for cars to find their shortest connection; better not. Cities are accessible for cars but more easily for cyclists. We made a good balance between modes, instrumental.
Deliverables on sustainable development

The result of the integrated approach is a broad contribution to sustainable development.

- First of all, to road safety. The Dutch are in the top-5 of most road safe countries in the world, due to a strategy to prevent the chance that high risk of serious injuries occurs. Consideration of cycling requirements give directions for road design that are in favour of the safety for all road users. Cycling is safe, the least for elderly people but their vulnerability is compensated by the fact that active transport might give people 5 years more life in a good condition.

- Cycling makes mobility inclusive: across all ages, gender and income, the share of cycling is about the same. School children go by bike, the first years accompanied, than independent from their parents. The Dutch make accessibility for all feasible without the need of a car.

- Cyclists are good costumers. The dominance of pedestrians and cyclists make our cities economic more vital. It means dominance by people over vehicles.

- A share of 35% trips on a bike in a city avoids that 70% more emissions by motorized vehicles would be produced.

Cost benefit analyses of transport interventions confirm that interventions for cycling have the highest return of investment. Moreover, cycling takes away needs for much more expensive interventions for private and public motorized transport. We might say that every trip on a bike instead of in another vehicle, is beneficial for the person and for other road users and society as well.

So the Dutch developed concepts and instruments to plan for safe inclusive mobility. Our traffic models, road safety concepts, cost benefit analyses are cycling inclusive.

Moreover we applied the Dutch ‘polder model’ principles to involve citizens and all kind of stakeholders in policy development to mobility policy development.

More information

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ITC, University of Twente
The Department of Urban and Regional Planning and Geo-Information

The Department of Urban and Regional Planning and Geo-Information of ITC is involved in education, capacity development, scientific research and consultancy worldwide. The mission of the department is to provide stakeholders (public and private institutions as well as citizens) with appropriate information, participatory tools and land and urban information systems to manage and develop urban systems and natural resources sustainably. Spatial, environmental, economic, and social sustainability, as well as participation are central concepts when studying the interdependent interactions between people, land and urban systems. At ITC we cover many aspects with respect to the development of urban regions. We aim to produce disaggregated data for better targeting of poverty alleviation interventions; a better understanding of the nature of urban development and its relationship with infrastructures and services; tools for better understanding of transport-induced urban space and vice versa; collaborative approaches and participatory methods for environment planning and urban disaster risk management.

In this brochure we present three examples of recently completed transport projects.

Urban Accessibility Planning Support Systems, a case study in Wuhan

In recent years powerful spatial analysis tools (GIS) have become more prevalent and common place, allowing for more practical and fine grained analysis of the interactions between land use functions and transport systems in a city using accessibility metrics. A consultation team led by ITC, University of Twente in coordination with the Research Institute for Knowledge Systems (RIKS) and local Chinese partners was involved in a case study financed by the World Bank to test a variety of new techniques and tools to understand urban development and its dynamic relationship to transport in a rapidly growing Chinese city.

Figure 1. Wuhan: Urban Accessibility Planning Support System
The work has shown that urban simulation of land use change in integration with spatial temporal analysis of accessibility provides useful insights into the complex interactions between land development and transport. A scenario analysis including both land use and transport scenarios demonstrated the value of these modeling techniques and planning tools for decision makers and assisted in the achievement of designing integrated land use and transport policies supporting social and economic objectives of the city.

The Value of Cycling, Acknowledging Sustainability in Rio de Janeiro
Rio de Janeiro is very active in promoting the use of the bicycle and aspires to become the cycling capital of Brasil. In a demonstration project ITC, together with the Dutch Cycling Embassy (DCE), Goudappel Groep and Rio Prefeitura Meio Ambiente, studied the impacts of cycling interventions on the basis of the outcome of a workshop with local partners held in Rio de Janeiro: expanding the bicycle network, introduction of a public bike system, and a job relocation policy. In the study two metrics have been developed: (1) the levels of accessibility of the different social-economic groups in the city as an indicator of social inclusion; and (2) the climate value of cycling as an indicator of carbon mitigation potential of cycling projects.

The demonstration project showed that the best results are achieved within the concept of cycling inclusive planning, in which the key interventions are combined. A key strategy for Rio de Janeiro to push forward their cycling agenda is to concentrate on the integration of cycling and public transport through a combination of interventions, both physical and non-physical.

Measuring Accessibility to Jobs for the Urban Poor, Ahmedabad, India
In recent years, Ahmedabad, like many other cities in India, has embarked on an urban renewal program with the explicit intention of providing more sustainable and equitable transport and housing solutions to the population at large, and the urban poor in particular. Initiatives sponsored under this urban renewal program across India include the development of Bus Rapid Transit systems, investing in non-motorized...
transport infrastructure, and the provision of new affordable housing. All these programs share the objective: how to provide a high impact, cost effective program that supports the overall objective of reducing social exclusion of the urban poor.

The objective of the study was to measure the effect of public transport (sustainable transport initiatives BRTS and MRT in particular) on the level of job accessibility for the urban poor in Ahmedabad. The work was carried out by ITC together with CEPT University under the India Sustainable Urban Transport Project with support of the World Bank.

Findings of the project indicate that there is variation between accessibility for jobs for the different urban poor groups. Compared to walking, public transport does improve job accessibility, particularly through the extensive AMTS network, that can be accessed relatively easily from all locations in the city. The analysis showed that the current and planned investments in the BRT system would produce incremental accessibility gains compared to the current Ahmedabad local bus system. Introduction of the metro resulted in a relatively modest gain. Impacts could be made much larger by improving the reach of the respective systems by non-motorized transport improvements such as bicycle lanes and bicycle parking, better fare, physical and service integration with the background local bus network.

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Mobycon

Your partner in international research and consulting.

Mobycon consultants are traffic planners and engineers, urban and rural planners, economists and human geographers, marketing professionals, sociologists and teachers. Our multi-disciplinary team brings a unique perspective to traffic, transport and mobility and allows our company to deliver a range of services. Consultants speak many languages and are well-suited to working in different countries because of the way we work at Mobycon. Our offices are spread across The Netherlands and many employees work from home, which means we employ technology to keep in touch everyday. This facility with communication tools naturally also allows us to work effectively with clients in foreign countries.

Our Experience
For more than 25 years, Mobycon has provided consulting services in the form of research, design, programming and policy dealing creatively with traffic, transport and mobility challenges. Beyond our own borders, it is our ambition to share Dutch expertise by collaborating with local partners in the rapidly growing area of sustainable mobility. We know successful projects require local knowledge from our experience abroad in Europe and North America. For more than 20 years, we have been working on European Commission projects, allowing us to develop a network that extends across the continent. Mobycon’s services in the areas of cycling, public transport and freight transport are summarized below along with examples of recent projects. Visit the Mobycon website to learn more about our full range of services, http://mobycon.com.

Sustainable traffic, transport and mobility solutions
School children, workers, freight drivers, the elderly and all other people need to move everyday to work and to live. At Mobycon, we create sustainable traffic, transport and mobility solutions to suit the needs of society. We are working toward a future where all urban dwellers can rely on an integrated system to move through their daily lives passing from home to work to the store using smart modes like bikes and trains as we do here in The Netherlands. It is often said that our country is one big urban area connected by rail, cycle routes and highways. Therefore, we understand the challenges of accommodating the movement of many in a space that is limited.
**Cycling**

We have a vast amount of experiences in this field extending back to the 1980s when we helped pioneer a method for developing cycle networks. In addition to research and consultation on the design and planning of cycling infrastructure, our work also includes developing programs to support safe cycling, such as traffic education for children.

One of our most recent projects was undertaken in Canada where many cities are working toward greater integration of the bicycle. The Kickstand Sessions are planning master classes focused on optimizing bicycle use in order to create liveable cities. Traveling from Halifax, Nova Scotia to Victoria, British Colombia, we consulted with local partners in each locations so classes could be tailored to addressing each city’s most pressing needs. For detailed information about the Kickstand Sessions, visit the website http://copenhagenize.eu/kickstand.

We also work as contractors to the City of Ottawa providing advice as they work to build a complete bicycle network.

Services Mobycon offers related to cycling include those listed below.

- Planning for Cycling
- Bicycle Networks
- Safe Design Solutions
- Bicycle Parking Solutions and Planning
- Training and Promotion of Bicycling
- Lectures, Excursions, Workshops and Coaching

**Public Transport**

Working with public authorities and transport operators, we always keep the traveller in mind while focusing on finding realistic solutions that meet business goals. Our approach provides insight into every aspect of the system from content to process to finance to users in all project phases.

A recent success was a proposal Mobycon developed for a new public transport system in the Municipality of Smallingerland - an area consisting of the town of Drachten (45,000 inhabitants) and a dozen surrounding villages. Smallingerland is not connected to the Dutch Railway system and study showed it would not be feasible. Therefore, Mobycon found out how to upgrade the existing bus system to a higher level so that it could function as a high-quality rail connection using BRT between all the villages in the municipality. A central element in the network is a new bus station which will include park and ride and bicycle parking facilities.

Services Mobycon offers related to public transport include those listed below.

- Feasibility studies in public transport services (train, bus and taxi)
- Marketing plans for promoting public transport
- Implementation strategies for innovative services and products
- Evaluation studies of public transport projects
Freight Transport
As a Dutch company, we are at the heart of one of Europe’s most dynamic transport regions. We have a strong record of advising local, regional, national and European authorities on freight issues.

Recently, we created an urban distribution profile for the City of Gouda, where authorities wanted to increase liveability and the efficiency of goods delivery. Our solution included a policy to guide the type of vehicle allowed to enter the centre and a physical distribution system to guide the trip from warehouse to store. In partnership with the European Commission, we have undertaken a new project, PRO E-BIKE, which promotes the use of electric bicycles and scooters for the delivery of goods and passengers in urban areas across Europe. More details about the PRO E-BIKE project are available on the Intelligent Energy Europe website in the projects database, http://www.eaci-projects.eu/iee.

Services Mobycon offers related to freight transport are detailed below.

- Policy - Traffic and transport plans, freight transport forecasting, traffic safety, truck parking
- Technical - modal choice, analysis of bottlenecks, ICT applications (traffic management, mobile communications e-freight)
- Economics - feasibility studies, cost-benefit analysis, economic impact
- Monitoring and evaluation - regional trend watching, ex-ante and ex-post evaluation studies
- Pilot projects - setting up, guidance and evaluation of projects and programmes
- Communication - creation of support/acceptance, dissemination activities

More information
Royal HaskoningDHV

An leading independent, international project management and engineering consultancy service provider

Royal Haskoning/DHV is a leading independent, international project management and engineering consultancy service provider. Specialising in planning and transport, infrastructure, water, maritime, aviation, industry, energy, mining and buildings, each year we contribute to the delivery of some 30,000 projects around the world on behalf of our public and private sector clients.

Our 7,000 staff add value to our client’s projects by providing a local professional service in more than 35 countries, via our fully integrated international office network.

As leaders in sustainability and innovation, we are deeply committed to continuous improvement, business integrity and sustainable development, and work with our clients, stakeholders and communities to enhance society together.

Transport

Traffic is part of everyday life. We are involved in it whenever we take the kids to school, go to the shops or commute to work. Cars, bikes and public transport make it possible for us to do the things we have to do or that we enjoy. However, it can also mean getting stuck in traffic jams, parking problems, road accidents, nuisance from rat runs, and noise and odour issues. One of our characteristics is that we take an inventive approach to traffic and transport questions, with key aspects being that we help think things through, bring parties together and make knowledge available. Looking at mobility in a different way, based on smart organisation of mobility and the infrastructure in terms of both location and time let us provide sustainable answers to the most complex questions.
Urban Mobility
A large majority of European citizens live in an urban environment, with over 60% living in urban areas of over 10,000 inhabitants. Most of these urban areas are facing the challenge to be sufficient accessible while offering a good living environment. Citizens and visitors demand a sufficient road infrastructure but at the same time a safe environment.

Human behavior plays a key role in the mobility. Why do people move from one location to another, what mode of transport do they use, and how can that behavior be influenced? The answers to these questions help our efforts towards sustainable development of our urban areas. With our expertise in this field we find new ways to provide mobility and smart solutions on accessibility, connectivity and mobility and thus find a balance between accessibility and living environment.

We carry out studies and policy research and present policy proposals for social processes, urban traffic and transport, bicycles, parking, public transport and mobility management. We examine organizations, for instance, looking at mobility costs or sustainability as the basis for enabling staff to handle their commuting and business travel movements comfortably, cost-efficiently and with an eye on the environment too – for example with a mobility budget. We also offer strategic consultancy and process management to help organize new mobility services and the associated information needs.

Traffic Management
Developments in the technological and social/spatial contexts are the determining factors for aspects such as accessibility, sustainable mobility and safety (including transport safety). Traffic management improves the efficiency and effectiveness of existing infrastructure and transport network. During the planning phase we use network analyses based on state of the art traffic models, like Aimsun (macroscopic, mesoscopic and microscopic) and simulation models. Our Traffic Management solutions have proven their value in the daily practice in many situations including intermediate circumstances, for example during long-term construction works that negatively influence the road traffic situation.

Intelligent Transport Systems
It is becoming less and less obvious that mobility can be enhanced simply by providing the physical infrastructure. The way in which we organise and manage our mobility system is becoming of increasingly importance. With a focus on safety and traffic control and the support of intelligent transport systems, like FAST, we can optimise the use of the infrastructure during the operational phase of the infrastructure.

ITS solutions are based on information and communication technology and in essence enable infrastructure operators to provide real time information to infrastructure users. Key to this is the knowledge of the systems and control, operational concepts and flow management scenarios. We have extensive experience and expertise with control centres for road and waterway networks and Cities, traffic control systems and technical systems of tunnels, bridges and sluices. We provide the customer with solutions on how to improve the network performance and help to implement these solutions in real situations.
Development planning & design
The dynamic of the urban area shows a continuous change of land use. We recognize the importance of managing the risks inherent in land development process whether for government led schemes or private developers. We provide support for the customer at the strategic, tactical and operational levels in the development process.

Each step of the development process from initial concept through securing planning permission to site supervision we focus our highways and transport expertise on identifying, quantifying, managing, mitigating and reducing risks for the benefit of our clients.

Our approach sees us engaging collaboratively with planning, highway and other regulatory and delivery authorities as well as the public; identifying at an early stage where risks might arise. We explore with stakeholders the relative weight which they are likely to place on each risk and the range of solutions which they would find acceptable: managing and meeting their expectations for the benefit of our clients through the development and testing of innovative and sustainable transport solutions for development and infrastructure projects.

Whatever the size of the scheme, or however complex the problem, our clients know that they can rely on our in-depth, in-house knowledge of transport policy, planning, engineering techniques and transport legislation to deliver successful, intelligent transport strategies that are on time and on budget.

More information
http://www.royalhaskoningdhv.com/Home
Witteveen+Bos Consulting Engineers BV is an employee-owned, fully independent Dutch firm of engineering consultants. Established in 1946, the firm gradually expanded to a professional staff of more than 900, working in interdisciplinary teams in countries worldwide. We offer our clients value-added consultancy and high quality engineering solutions for our main areas of expertise: water, mobility and infrastructure, spatial development and the environment, ports and hydraulic engineering and urban development and construction. We deliver reliable solutions built on the knowledge, experience, social insight and intellect of our employees. Besides our seven offices in The Netherlands we have offices in Indonesia, Kazakhstan(3), Russia, Latvia, Belgium and Vietnam and together with our partners in the Strategic European Expertise Network (SEEN) we cover most of the world.

Urban mobility and cycling

Witteveen+Bos have a group of experts specialized in urban mobility planning and engineering. All our senior experts have international experience in sustainable urban mobility/integrated urban transport planning and more specific in cycling planning and policy, road safety and parking. Additionally to our own team of experts, we are part of an international network of experts in e.g. public transport and traffic modeling, which we can involve where necessary. In recent years our team has conducted various study projects or workshops.
A short selection of our international projects on sustainable mobility and cycling is found underneath:

- Capacity building workshops in cycling-inclusive traffic planning and design, most recently in cooperation with the Dutch Cycling Embassy, in amongst others, Peru, Portugal, Ecuador, Chile, Peru, Brazil, Thailand, Australia and Belgium.
- Technical assistance to cities in the development of cycling-inclusive traffic and transport plans, designs and policies in amongst others India, Kazakhstan, Turkey, The Philippines, Chile and Ecuador.
- Development of national cycling planning and design guidelines for Ireland and Mexico.
- Study on integration and selection of fast cycling routes in the city of Nijmegen (The Netherlands).
- Study on the optimization and development of missing links for non-motorized traffic in the Waasland region (Belgium).
- Mobility Plan and implementation program, including a cycling strategy, for the city of Riga and its surrounding region (Latvia).
- Urban Development Plan, including traffic and transport component, for the city of Beira (Mozambique).

Our cycling expert Mr. Jeroen Buis has 20 years of experience working on the integration of cycle traffic in urban areas for the World Bank, UNCRD, the EU and local and regional governments, mostly in South-America, Asia and Europe. Projects and workshops in Latin-America are conducted in the local languages (Spanish and Portuguese).

In all our traffic and transport projects and particular in our non-motorized transport projects, sustainable road safety is a starting point. Witteveen+Bos does, however, also do projects specifically aimed at increasing road safety and is accredited to do road safety audits.

**Witteveen+Bos interdisciplinary approach and services**

Witteveen+Bos delivers high-end consultancy. Most of our consultancy services have an interdisciplinary character. Our open culture and a very low employee turnover, guarantees a good cooperation between experts from different departments and sectors and a focus to deliver the best quality services for our clients. Areas relevant for sustainable mobility in which we have expertise are: air quality management, ecology, landscape architecture, spatial planning, road design and engineering, railway engineering, design of bridges and tunnels for motorized and non-motorized traffic, design of parking garages for motorized and non-motorized vehicles and social cost benefit analysis.

**Services we offer are by definition custom made and include:**

- Capacity building workshops in the area of sustainable urban traffic and transport planning and cycling-inclusive planning
- Technical assistance on cycling-inclusive traffic and transport planning
- Expert reviews on transport strategies
- Development of integrated sustainable urban mobility plans and policies
- Development of urban cycling plans and policies

Cycling infrastructure designs and engineering.
Berenschot

an international independent consultancy firm for high-level strategic management and local implementation

Berenschot, founded in 1938, is an international independent consultancy firm with 400 in-house consultants and direct access to 4,500 associates worldwide. Our client portfolio consists of private companies, public organizations and civil society organizations. Key in our approach is the combination of high-level strategic management experience and local implementation capacity. We work in over 70 countries and have offices in the Netherlands, Belgium, Brazil and the Caribbean.

Berenschot:
- Working in Africa, Europe, Brazil, Asia
- With local partners and local networks
- Finding local solutions for local challenges

Berenschot has a strong track record in sustainable mobility and strategic spatial planning. We have a track record in (multi-stakeholder) cycling policies, integrating bicycle transport in urban transport and multi-stakeholder solutions for bicycle parking.

Berenschot:
- Multi-stakeholder cycling policies
- Integrating bicycle transport in urban transport
- Business cases and practical solutions for bicycle parking at train stations

Regional Implementation Agenda Sustainable transport for the city of Rotterdam
Berenschot developed, for the Rotterdam Metropolitan Region a Transport Regional Implementation Agenda for 2007 – 2011. Subsequently, Berenschot formulated a Sustainable Mobility policy plan. The purpose was to get policy in line with European legislation on air quality, national regulations on spatial planning and ambitions to fight climate change by reducing CO2 emissions.
Berenschot first set up a long term objectives for sustainable mobility: 1) sustainable growth of public transport, 2) sustainable use of traffic management and of clean government vehicles and (3) promotion of clean fuels. Second, Berenschot examined what the urban sustainable mobility policy would mean in terms of mutually reinforcing environmental and mobility goals. Third, Berenschot formulated concrete tasks and measures to reach the set goals. Berenschot focused on measures in public transport, chains of transport modes and mobility management (management of the demand for transport).

Berenschot: Sustainable transport strategies,
- in line with legislation on air quality, spatial planning
- to fight climate change by reducing CO2 emissions

**Chain Integration Plan for the city of Amsterdam**
Berenschot researched and wrote the Chain Integration Plan for the Amsterdam and the surrounding metropolitan region. The plan aims to improve the relationship between the transportation networks in the region. By investing in the weaknesses of chains, gains are achieved in time, comfort and quality. This contributes to making it attractive for travellers to use different transport modalities. The plan focuses on nodes in public transport networks, making multimodal traveling seamless. A smooth multimodal trip in terms of time, comfort and quality can be easier than commuting just by car.

Berenschot defined about 40 different short term improvement measures. They range from communication measures to Park+Ride locations to bike-dispensers. Apart from investments in hardware, Berenschot also defined actions focusing on ‘orgware’, the process and the role of the different actors. In several cases, simply by smarter cooperation and sharing information and best practices, better results could be achieved.

Berenschot:
- Chain Integration Plan for metropolitan region.
- Making it attractive for travellers to use different transport modalities
- Making seamless multimodal transport possible
Model approach cycle safety for the Ministry of Infrastructure and Environment

Berenschot developed a Model Approach for Cycle Safety for the Ministry of Infrastructure and the Environment and the National Bicycle Council, the national knowledge platform for cycling. The model approach helps municipalities to realize cycle security. Berenschot identified three main approaches: behavioural policies; simple physical interventions and complex physical interventions.

Berenschot first identified the cycle security policies of 188 municipalities. Subsequently, Berenschot researched and selected 34 best practises Berenschot advised two main strategies to improve cycle safety: smart internal organization and smart external organisation. Finally, Berenschot developed practical implementation approaches.

Berenschot: Cycle Safety models, enabling bicycling,
  • for urban transport
  • for leisure

Dutch Cycling Embassy

Berenschot is partner of the Dutch Cycling Embassy (DCE), a public private network operating in the field of urban planning and mobility. Fellow partners including e.g. the principle passenger railway operator in the Netherlands NS, Goudappel Coffeng, Royal Haskoning DHV, and the City of Amsterdam. Together, the DCE offers integrated solutions for sustainable mobility services to metropolises. In the framework of the Rio+20 process the Dutch Ministry of Infrastructure and Environment commissioned the Dutch Cycling Embassy to do a showcase project about the potential of cycling for sustainable urban transport in Rio de Janeiro.

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