Northern Ireland Assembly

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Integrated Transport in the Netherlands

1 Overview

This is the third thematic paper in support of the Regional Development Committee's inquiry into '*the better use of public and community sector funds for the delivery of bus transport in Northern Ireland'*. This paper examines integrated public transport provision in the Netherlands. The first two papers looked at integrated transport planning in the Republic of Ireland and Great Britain respectively.

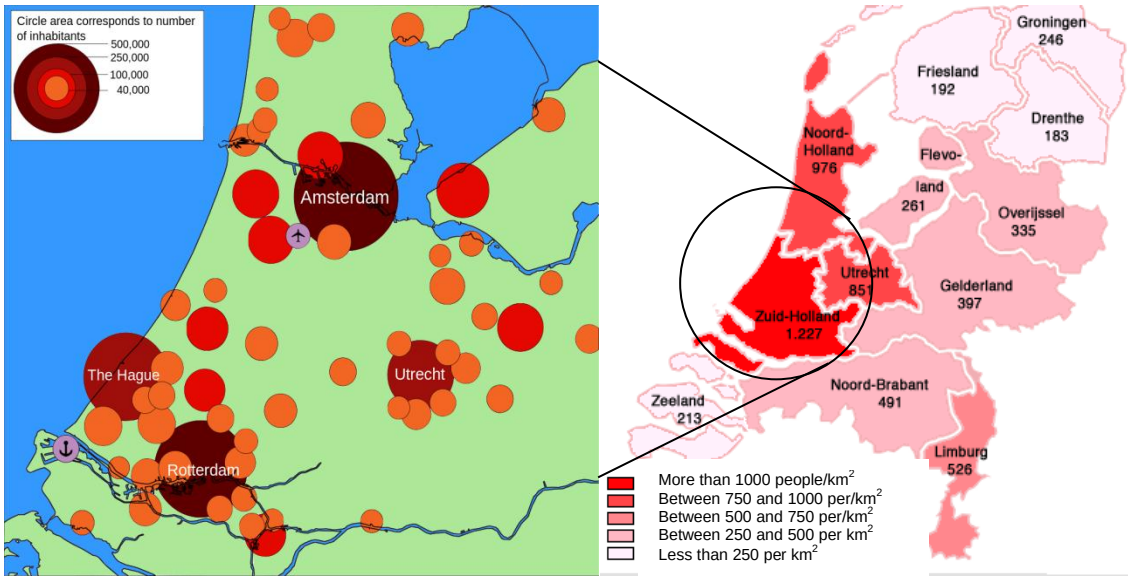
Transport governance in the Netherlands is devolved to 12 provinces and seven of the largest conurbations. The country is quite diverse, with the west characterised by large densely populated urban areas, while the North and East are more rural. The case of the Netherlands is of particular interest as a number of the regions have successfully integrated community and demand responsive services with mainstream services.

2 The Netherlands

The most populous parts of the Netherlands are confined to the West of the country. The four largest cities in the Netherlands (Amsterdam, Rotterdam, The Hague and Utrecht) all lie within the conurbation known as the Randstad. This area has a population of approximately 7 million; almost half of the 16.6 million inhabitants of the Netherlands, and has an average population density of approximately 1000 people per km^2. The Netherlands as a whole has an average population density of 487 people per

km^2 however there are a number of distinctly rural provinces outside of Randstad which allow for meaningful comparisons to be made with Northern Ireland.

Figure 1: Urban centres in Randstad (left) and population densities (people per km2) across the 12 provinces of the Netherlands (right).



Source: Wiki Commons

2.1 Governance

There are three levels of government in the Netherlands:

- The National Government is responsible for national policy and law. The Ministry of Infrastructure and the Environment is responsible for transport and mobility policy and it provides funding to regional authorities.
- The 12 Provinces and some major city regions make up regional government. They are responsible for land-use planning, public transport, infrastructure (roads, bus stops), health policy and recreation (within policy boundaries prescribed by national government);
- There are 58 (local government) municipalities which have various responsibilities such as education, spatial planning, and local infrastructure (roads, bus stops), this within policy limits prescribed by national and provincial governments.

2.1 Public Transport

Public transport governance in the Netherlands was reformed through the '*Wet Personenvervoer'* (The Passenger Transport Act (PTA)) in 2001. The PTA had the dual aim of increasing public transport use and increasing the cost recovery ratio (50%

subsidy/50% fare box).[1] [2] The two most significant regulatory changes made by the PTA were the introduction of controlled competition and decentralisation of transport authority powers.[3]

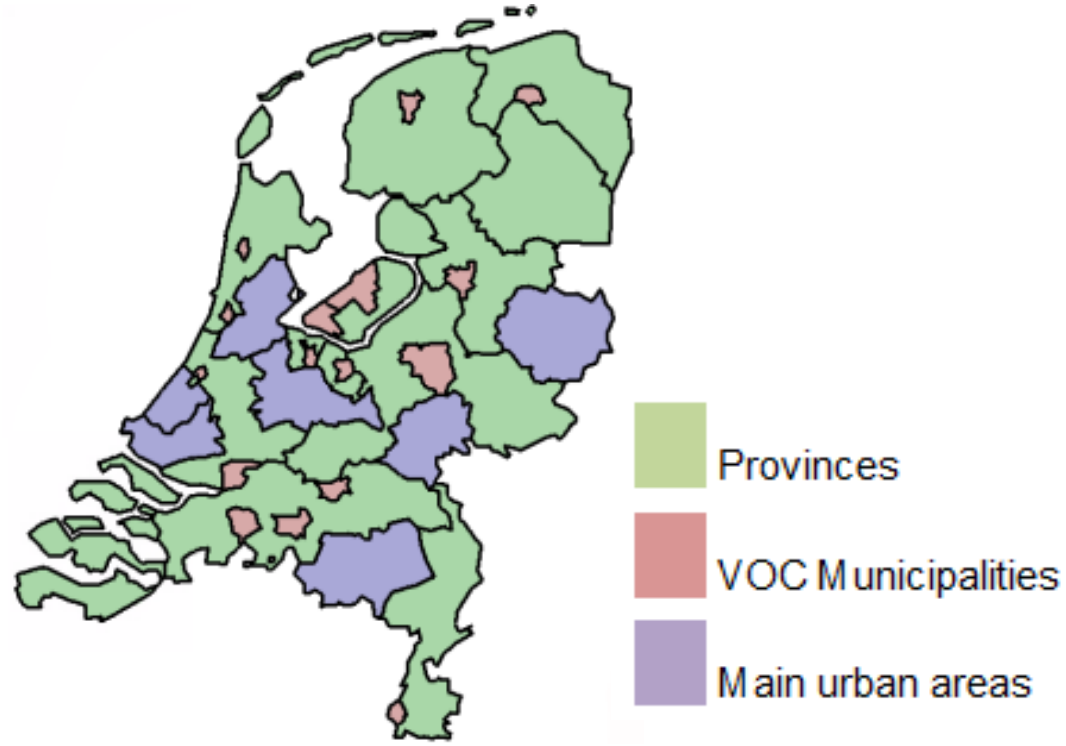
3.1 Decentralisation

The PTA decentralised public transport to 35 territorial authorities (see figure one):

- all 12 provinces;
- seven groupings of municipalities covering the biggest urban areas; and
- sixteen individual cities (VOC Municipalities).

The state provides approximately €1.8 billion annually to the authorities for regional mobility; the majority is spent on the operation and maintenance of regional public transport.[4] They are then responsible for governing and financing all of the public transport in their region (bus, tram, metro and on the regional railways in their territory. The national government kept the control over the national railway network.

Figure 1: Transport Authorities in the Netherlands



[1] Van de Velde, D. and Pruijmboom, E. (2003) 'First experiences with tendering at the tactical level (service design) in Dutch Public Transport'. *8th Conference on Competition and Ownership in Land Passenger Transport. Rio de Janeiro (Brazil), 14-18 September 2003* [online] available from: http://nia1.me/17y

[2] Baanders, A., Rienstra, S. and Lebouille, R. (2003)' Emerging competition and market power in public transport in the Netherlands'. *European Transport Conference 2003* [online] available from: http://nia1.me/17z

[3] CfIT (2001) Study of European best practice in the delivery of integrated transport: report on stage 1 – benchmarking [online] available from: http://nia1.me/18h

[4] Government of the Netherlands (2012) *Concessions and tenders* [online] available form: http://nia1.me/18g

2.2 Competitive Tendering

Public transport is delivered by concessions. A concession is an exclusive contract awarded through a competitive tendering process to a private contractor, allowing them to provide a transport services in that region. Urban and regional transport has been contracted out everywhere except in Amsterdam, Rotterdam and The Hague. However, the Dutch Government is currently negotiating with these regions to implement the tendering process, or they may have to cut services.[5]

The Dutch provinces have always placed strong emphasis on providing a comprehensive public transport network for all urban and rural areas. Before concessions were introduced this meant service frequencies were typically low: 20 or 30 minutes in (sub) urban areas and every 30 to 60 minutes in rural areas. However, now typical service levels are:

- Urban: every 10 - 15 min
- Suburban: every 15 - 30 min
- Rural: every 30 - 60 min[6]

3.3 Integrated ticketing

Despite being governed regionally the entire public transport ticketing system in the Netherlands is fully integrated. The strippenkaart was the first fully integrated national travel card which could be used to pay for trips on buses, trams and local trains anywhere in the Netherlands. This has now been phased out (not valid since 2011), with the ov-chipkaart providing a similar facility but using up-to-date, contactless smart card technology, as opposed to a paper ticket.

The introduction of the OV-chipkaart means that public transport costs are now calculated per distance (km) travelled, rather than the 'zone' travel systems. The 'zone' travel system was unfavourable for some travellers, though favourable for others. The cost per km is now completely equitable although costs vary across the country, as local fares are set by the relevant public transport company.[7]

3.4 School (education) Transport

Dutch higher education students are entitled to free public transport. This system was introduced in 1991 as a commercial contract between the Ministry of Education and the transport operators, replacing former travel allowances to the students. This contract amounted to approximately €300 million in 2009.[8]

[5] Government of the Netherlands (2012) *Concessions and tenders* [online] available form: http://nia1.me/18q
[6] PTEG (2010) *Public Transport Tendering in the Netherlands*
[7] Ov-Chipkaart [online] available from: http://nia1.me/18s
[8] PTEG (2010) *Public Transport Tendering in the Netherlands*

The free travel scheme does not include high school students. However, all persons under the age of 14 are entitled to a 34% reduction in fares.[9] Similarly to the policy here in Northern Ireland, eligibility for free school travel is based on proximity to the school (more than 6 km). These bus services are not usually integrated with regular public transport and the funding source is also separate, however in some regions students do make use of mainstream transport services.[10]

3.5 Health and social service transport

The right to live independently and have access to transport is enshrined in Dutch legislation. Under the Social Support Act (Wet Maatschappelijke Ondersteuning), known as the WMO, the Dutch government provides funding to municipalities out of which they provide for the needs of eligible citizens; this includes provision of door-to-door transport.

The solutions adopted by the various transport authorities vary quite a bit, all according to local circumstances and priorities. For example, the Province of South Holland abolished some regular public transport services in favour of a larger integration with WMO transport, resulting in a balance of about 50% regular public transport users in its WMO services.

Another example is the rural province of Fryslân (Friesland) where regular bus services to the smallest villages were replaced with demand-responsive services. The operator has subcontracted these services to local taxi companies which also operate the local WMO-services, resulting in a higher efficiency (same vehicles can be used for both services).[11]

3.5.1 Regional taxi

The regional taxi (RegioTaxi) is a national brand that offers a demand responsive transport (DRT) service. This service can be used by both WMO and mainstream passengers as all vehicles are fully accessible shared taxi-buses. The idea is that these buses can go to destinations where regular public transport does not. The price of regional taxis lies somewhere in between public transport and regular taxi fares, although in most areas disabled people pay the standard public transport fare, while non–disabled people pay a higher rate. The services are run by groups of local bus companies and taxi firms.

Reservations for the Regiotaxi are made by telephoning the Travel Dispatch Centre (RVC), an organisation of regional taxi companies. They use software that automatically creates clusters of individual bookings and allocates these to vehicles. The system is flexible but known regular rides are booked and clustered in advance.

[9] Ov-Chipkaart [online] available from: http://nia1.me/18s
[10] PTEG (2010) *Public Transport Tendering in the Netherlands*[online] available from: http://nia1.me/18y
[11] Ibid.

Connections with mainstream transport services are guaranteed when reservations are made at least two hours in advance.[12]

Technical specifications

- PlanVision software is used to assist the scheduling process and calculation of fares. On-board computers then communicate with the PlanVision software;
- All vehicles are equipped with a navigational system, Carin (a speaking computer), which calculates the shortest or fastest route and relays this to the driver.

Users

- The service is available to all members of the public. However, 93% have some degree of disability. The service is used almost exclusively for social activities

Costs

- The scheme costs €3m per year. Fares make up 9% of this while the government and each municipality make up the shortfall.[13]

3.5.2 Valys Connexxion Taxi Service

Valys (a bus company) is commissioned by the Netherlands Ministry of health, Welfare and Sport (MHWS) to run a Connexxion Taxi Service. This is similar to door-to-door Regiotaxi however, this service is only for WMO eligible persons, and is designed to provide opportunities for social and recreational trips outside of the area where they live; this is defined as more than five transport zones (30km) from their home address, which would have otherwise not been possible (by train etc.).

To make use of this service, passengers must have a valid Valyspas, which is funded by the MHWS. Each Valyspashouder is issued with a personal mileage allowance, which ranges from a standard mileage budget of 450 km, to the higher mileage budget of 2,250 km, based on need. While on trips the Valyspashouder is entitled to have one person accompany them for free and up to three companions can come at the same rate paid by the Valyspashouder.

4 Case study - Friesland

The province of Friesland is a largely rural region in the north of the Netherlands. It has a population of 638,000 living across 3,350 km^2 (population density = 192 people/km^2). The provincial capital is Leeuwarden (population = 90,700). Drachten (53,000) and Heerenveen (41,250) are the next largest urban centres in the province. Agriculture and tourism are the two main industries in Friesland.

4.1 Concessions

Within the mainland of Freisland, there are three public transport concessions, with North and West Friesland the first area to apply this structure in its 2006 tendering

[12] ELTIS [online] *MOBIMAX, Achterhoek, The Netherlands*. Available from: http://nia1.me/18x
[13] ELTIS [online] *MOBIMAX, Achterhoek, The Netherlands*. Available from: http://nia1.me/18x

process. The tendering process allows the province to set certain requiremnsts, such as service frequency and vehicle standards (including emissions) although a key part of the process is that providers are allowed room to be innovative in how they deliver their services, so long as it complies with the Provinces local transport plan.

Source: Wiki Commons

4.1 Local Transport Plan

All provinces are required by legislation to produce Provincial Traffic and Transport Plans (referred to as PVVP). The first PVVP for Friesland was published in 2006 and runs to 2020 although it is currently being reviewed. The main objective of the PVVP (2006) is to achieve a sustainable traffic and transport system in Friesland:

- that meets the needs of residents and visitors;
- which satisfies the need to transport goods;
- that contributes to strengthening the economy;
- that is safe; and
- that limits damage to wildlife, the landscape and environment.

4.2 Integration

One of the main focuses of the PVVP was transport integration or as it is referred to; *'Chain Mobility'.* The strategy led to works being carried out to ensure the provision of quality interchanges in the transport chain, at stations, bus stops, transfer points and park and ride/share facilities.[14]

4.4 Demand Responsive Transport (DRT)

DRT was a key feature of the 2006 PVVP in Friesland. At its core is the idea that the transport system should be based on actual demand rather than potential demand. Since the publication of the PVVP Transport supply has therefore been divided into three sub-systems which are all designed to complement and integrate with each other:[15]

Attractive Collective Public Transportation (ACOV) is a bus priority system, similar to those operated in Belfast and Dublin. In Friesland these services operate in the towns with populations in excess of 10,000. Buses are faster, more frequent and more comfortable than normal services in order to make them a realistic alternative to the private car.

- ACOV is only deployed on routes where demand is high and so only operates from 06.30 and 18.30;
- There is a minimum of two services per/hour and in the evenings at least one per hour – there is a much higher frequency during peak hours;
- ACOV stops in urban and regional centres, often along main roads, and has good reliability.
- The network of the ACOV is designed so that it is accessible to around 60% of the inhabitants of Friesland, this equates to 75% of travellers;

Collective Public Transport (COV) is also scheduled, but with less frequency and stops, delivered on standard buses. These are offered in areas with a population between 5,000 and 10,000. According to the PVVP, these services fulfil a social function and many people, particularly those without access to a car rely on them.

- Service frequency is a minimum of one per hour;
- COV operates on municipal roads;
- COV has a limited number of stops between centres;
- The network is designed to be accessible to 35% of the population and it accounts for 22% of total passengers;

[14] EVALUATIE PVVP 2006 Deel Beoordeling van het PVVP (Transalation: Assessment of local transport pland) [online] available from: http://nia1.me/18t

[15] Haeften, M.V., Volker, G., Kemper, R., Teffelen, P.V. and Ubbel, B. (2009) Effects of the provincial public transport policy in Friesland (Original Document in Dutch) [online] available from: http://nia1.me/18u

Individual Public Transport (IOV) is an on-demand transport services that has fixed stops (variable route); it can also provide a door-to-door service. This service guarantees that even people in the most isolated areas have access to public transport:

- IOV operates in settlements with a population between 250 and 5000 inhabitants.
- IOV services go from rural to more urban areas where the regular public transport stop is more than 400m from the centre of the village;
- If nobody calls, the service doesn't operate – all users must pre book;
- The IOV provides at least one connection per hour to the scheduled service, and waits for a scheduled service, if one is not there;
- The first trip is available from 07:00 to 22:00.
- If there is an identified demand i.e. where and IOV service carries a large number of passengers on a given route, then this can be replaced by COV
- In total the IOV service was anticipated to cater for 3% of all travellers.

In addition to these services, a community transport service called *Buurtbus* (neighbourhood bus) also operates in Friesland, and indeed across the Netherlands. *Buurtbus*, much like the community transport services here in Northern Ireland is a voluntary service run in rural areas where there is insufficient demand for regular public transport. Vehicles can carry up to eight passengers but are not normally accessible to wheelchair users; they have their own tariff system.

As part of the concession to provide mainstream transport, operators must maintain the *Buurtbus* vehicles. In some instances where a particular route has been successful it is put back on the mainstream route.

4.5 Other regions

There are a number of provinces with similar spatial characteristics to Friesland, such as Groningen, Drenthe, Zeeland, Gelderland, Flevoland and North Holland. All of these areas place a strong emphasis on demand driven supply which connects to the main transport routes.

4.5.1 Groningen and Drenthe

There is one agency responsible for public transport across the Northern provinces of Groningen and Drenthe. There were two separate concessions tendered for this region in 2009; one for regular bus services and one for WMO and demand responsive transport.

Unlike the Friesland concession companies here were asked to continue with the existing network, rather than to develop anything new. As in Friesland there are three subsystems:

- a quality system (HOV);

- the "basic network"; and
- Additional elements such as a Regiotaxi.

As described previously, the Regiotaxi is a combination of small-scale (provincial) public transport and the (municipal) WMO transport. They provide a combination of door-to-door, door-to-stop, and stop-to-stop services. Customers must phone to book passage and fares must be paid in cash.

4.6 Discussion and transferability

An evaluation of this demand driven approach returned some mixed views on its success. Interviews carried out with residents in four municipalities showed that awareness of the IOV (on demand) service was limited and as a result the service was rarely used (by respondents). There was a further suggestion that only a very small number of Friesan people depend on public transport and particularly IOV, most saying it is a nice safety net. However, quantitative data does not support these claims.

That being said, this type of response is understandable; the majority of people in rural areas do have access to a car, mainly out of need. In Northern Ireland this figure is over 75%. However, there are a significant number who do not and these are the people who could really benefit from this type of service.

Demand driven, stop-to-stop services are an interesting alternative to the door-to-door services which are more common in Northern Ireland, and one which may be particularly suited to those with no mobility issues, aside from where they live. Young people in rural areas are particularly susceptible to social exclusion, as they are often dependent on others to get access to their friends, youth clubs and other services, particularly after 6p.m when many mainstream public transport rural routes stop operating. A demand for door-to-door services will remain from the same demographic who currently make use of the current community transport provision.

It is striking that DRT it is a central component of the transport offering in the Netherlands and that it is used by such a broad cross-section of society. This is reflected in the nationally recognised and highly successful Bellbus brand, which provides 5% of all passenger km travelled in Friesland.[16] The voluntary Buurtbus contrasts with the UK community transport product in that it is designed to accommodate able bodied passengers whereas community transport in the UK is almost exclusively used by people with mobility problems.

There is little doubt that that the application of telematics technology has the potential to dramatically change the way public transport is delivered in rural areas. This type of system became more widespread across the EU following the European Commission's SAMPLUS demonstration projects. However, the Netherlands is the first example of telematics based DRT being integrated into the main public transport network.

[16] PTEG (2004) Rural Transport Futures, Case Study: Friesland [online] available from: http://nia1.me/18w

The demand driven policy in the Netherland has contributed to passenger growth on mainstream lines. Because capacity on little used lines has been replaced by IOV, ACOV and COV have increased their capacity by 60% and 20% respectively. This has led to a 40% increase on passengers using ACOV and 30% increase in passengers using COV. The fact that IOV acts as a feeder service to ACOV must also be a factor but this has not been quantified.

Currently the Department for Regional Development (DRD) provide financial support for economically unviable but socially necessary routes through the Rural Transport Fund (RTF) but timetable issues including a lack of late evening services and frequency make these unattractive and increasingly unviable, even with subsidy.

Northern Ireland has a large rural population who travel to the large regional centres for work, education and social interaction. As things stand a car is a virtual necessity if they are to play a full part in society and unfortunately for a growing number of people owning a car is simply unaffordable. On demand transport in this country is limited to community transport and taxi's while the Netherlands has shown that the real solution lies somewhere in the middle.

The primary objective of the RTF is to support transport services designed to give people in rural areas improved access to work, education, healthcare, shopping and recreational activities and by so doing assists in reducing their social isolation. However, there is little doubt that the current arrangements have to be looked at to ensure demand is being met in the most efficient manner. Across the Netherlands Demand Responsive Transport has been shown to be a very efficient and economical way of connecting people to main transport routes and reducing social exclusion.