MADRID: CHANGING BEHAVIOUR TOWARDS SUSTAINABLE TRANSPORTATION

In order to reduce private car use, Madrid has improved the attractiveness of its public transportation by implementing a BUS/HOV system. Increasing public the capacity of infrastructure in this way has reduced travel times and changed commuters' behaviour towards public transport and carpooling. The subsequent improved traffic flow leads to a more fuel efficient economy and a better environment.

View fra Palacio de la Prensa, march 5, 2008, by cesarastudillo, Flickr Creative Commons.

The increasing population of Madrid's (Spain) metropolitan area has caused a large percentage of people to commute to the inner city. Although Madrid has an efficient metro system, it still manages to be flooded with people at peak hours as citizens taking public transport choose the metro over other options such as busses or carpools on congested highways. However, these congested highways could be much more efficient and can still carry thousands more people - simply by increasing the number of passengers in each vehicle.

Originally opened in North-West Madrid in 1995, the High Occupancy Vehicle (HOV) lane is one of the more significant sustainable initiatives in Europe and the U.S. (The Spanish term for HOV is VAO - vehículo con alta ocupación.) It is created specifically for use by carpools and buses and encourages more commuters to use sustainable transportation. It

also increases the capacity of the roads and infrastructure, hereby reducing congestion, travel time and transport emissions per person.

Madrid's main BUS/HOV system is located in the centre lanes of its A6 highway, which extends from the suburban village of Las Rozas to the Moncloa terminal in the heart of the city. At the Moncloa terminal, the bus and carpool lanes link to the metro, other bus routes, parking lots and other forms of city transportation. Specifically, the BUS/HOV system consists of a 12.3 km double lane and a 3.8 km BUS-ONLY lane. Private motorists are allowed to enter as long as cars are used by more than one person. The facility is physically separated from the all-purpose lane by concrete barriers and reversed in the direction of the main traffic flow to match peak flows. This means that in the morning it goes in one direction and in the afternoon the opposite way. However, even though the regional government are aiming to promote carpooling, it is actually a private incevntive to create a website where motorists can share their rides and find partners.

HOV lanes usually carry fewer vehicles but more people than regular lanes. This has greatly increased throughput of traffic in Madrid. Measurements conducted in 2008 show that the BUS/HOV moves more passengers than the two railways entering Madrid relatively along the HOV lane. The busses are able to compete with the railway because they have the advantage of being able to pick people up closer to their homes and leave them closer to their destination. Compared to the 'regular' highway, the HOV lane carry 59.3% of the morning peak hour travellers using 2 lanes, while the 3 lanes of the main roadway carry only 40.7%.

Prior to the implementation of the BUS/HOV facility, the situation in the A6 corridor was characterised by chronic congestion problems. The opening of the BUS/HOV lane has improved the situation greatly and is a key factor in increasing suburban bus patronage. Private cars using the HOV lane have also had a significant growth. The fact that the number of passengers is growing faster than the number of vehicles proves the efficiency of the system. Also, it is important to note that HOV facilities benefit transit and rideshare passengers including a proportionally large share of lower income and transportation disadvantaged people. Therefore BUS/HOV lanes are progressive with respect to income and need.

MADRID: FLERE PENDLERE VÆLGER BÆREDYGTIG TRANSPORT

For at nedbringe privatbilismen har Madrid gjort offentlig transport mere attraktiv ved at implementere et banesystem specielt beregnet til køretøjer med mere end én passager. Øget infrastrukturkapacitet og reducerede rejsetider ændrer pendlernes vaner i retning af offentlig transport og samkørsel. Den forbedrede trafikafvikling resulterer i en mere effektiv brændstoføkonomi og et bedre miljø.

View fra Palacio de la Prensa, march 5, 2008, by cesarastudillo, Flickr Creative Commons.

I Madrid, Spanien har den voksende befolkning i storbyområdet medført, at mange pendler til den indre by. Selvom Madrid har en effektiv metro, fører dette til trafikpropper i myldretiden. Men overbelastede motorveje kan stadig rumme tusindvis af flere mennesker - ganske enkelt ved at øge antallet af passagerer i hvert enkelt køretøj. I 1995 åbnede én af Europas første og mest væsentlige baner for køretøjer med mere end én passager nordvest for Madrid - en BUS/HOV bane (HOV: High Occupancy Vehicle; køretøj med god udnyttelse). Banen er specifikt beregnet til samkørsel og busser og motiverer flere pendlere i retning af bæredygtig transport. BUS/HOV'en øger infrastrukturens kapacitet og nedbringer både antallet af trafikpropper og rejsetiden.

BUS/HOV faciliteten begynder i forstaden Las Rozas og strækker sig ind mod byen midt i A6 motorvejen. Den ender i Moncloa Terminalen i centrum af Madrid, hvor man kan skifte til metro og andre buslinjer. Anlægget er en kombination af en 12,3 km dobbeltbane og en 3,8 km enkeltbane kun for busser. Private bilister har adgang, så længe der er mere end én person i bilen. Selvom Madrid Kommune ønsker at fremme og motivere samkørsel, så er

oprettelsen af en hjemmeside, hvor bilister kan annoncere deres ture og finde kørepartnere, rent faktisk et privat initiativ. Banen er fysisk adskilt fra de almindelige baner med betonbarrierer og trafikken føres i retning af den primære trafikstrøm for at modsvare myldretiden. Det betyder, at trafikken på HOV'en om morgenen går i en retning og om eftermiddagen den modsatte vej.

HOVbaner transporterer færre køretøjer, men flere mennesker end de almindelige baner. Dette har resulteret i en kraftig forøgelse af trafikgennemstrømningen i Madrid. Målinger foretaget i 2008 viser, at BUS/HOV flytter flere passagerer end de to jernbaner, som løber ind til Madrid næsten parallelt med banen. Busserne kan konkurrere med jernbanen, fordi de kan hente folk tættere på deres hjem og sætte dem af tættere på deres destination. Sammenlignet med den øvrige motorvej flytter de 2 vejbaner på BUS/HOV 59,3% af de rejsende i formiddagsmyldretiden, mens de 3 almindelige vejbaner kun flytter 40,7%.

Forud for implementeringen af BUS/HOV banen var situationen i A6 korridoren kendetegnet ved konstant overbelastning. Åbningen af banen har forbedret situationen betydeligt og er en væsentlig faktor i forbindelse med det øgede antal buspendlere fra forstæderne. Der har også været en betragtelig vækst af privatbiler, som bruger BUS/HOV banen. Den kendsgerning, at antallet af passagerer er vokset hurtigere end antallet af køretøjer beviser systemets effektivitet. Samtidig er det vigtigt, at HOV baner er til fordel for rejsende, hvoraf en forholdsvis stor andel har lavere indkomst og dårlige transportmuligheder. HOV baner er af samme grund progressive med hensyn til indkomst og behov.