EcoMobility

ICLEI Local Governments for Sustainability

PRIORITY FOR ECOMOBILITY IN OUR CITIES. A SERIES OF LOCAL STORIES

Seoul, Republic of Korea

An efficient bus rapid transit integrated with the subway system

Summary: Public transportation accounts for nearly 65% of all trips in Seoul. Bus trips account for nearly 30%, and the subway for 35%. The frequent use of public transportation is due to the major transformations that the system has undergone in the past decade, namely the profound improvement of the bus system and its integration with the city's subway system.

A bus system that needed a tune up

Prior to the system's reform in 2004, Seoul's bus service was managed solely by private bus companies. The Seoul Metropolitan Government (SMG) was only responsible for creating uniform fares. The private companies made their own routes and schedules. In order to maximize profits, bus companies created routes that they considered commercially sustainable. Since profits were dependent on the number of passengers, these routes were often indirect and overlapping. The service frequency was unnecessarily high in some locations and too low in others. The system was inefficient and chaotic. The speed and reliability of the bus system needed to be improved and the integration with other bus routes and the metro system needed to be created.

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Buses in traffic in Seoul

Post-reform service

Seoul's bus system is now operated by the Seoul Metropolitan Government. A bus rapid transit system, which provides faster, more efficient service than the original bus system, was created, with four primary sets of routes servicing the city. One line connects suburban areas to downtown. Another connects major subway stations or bus terminals outside the city. A third line is an express bus connecting downtown and the metropolitan area. A fourth line circles downtown, stopping at railway stations, tourist areas, and shopping centers. To make the routes easy to understand, the route numbering was also restructured. Areas in Seoul were given specific numbers zero through seven. Route numbers now indicate first the origin, then the destination of the route.

To make the new system more efficient, buses now receive traffic signal priority at intersections. Previously, the bus system only consisted of curbside lanes. Median bus lanes were created to allow for smoother traffic flow for buses. The bus system now includes 74 km of median lanes and 294 km of curbside lanes. To make this new network more environmentally sustainable, the SMG plans to convert over 7,000 of the diesel buses to natural gas to significantly reduce pollution and emissions in the city.

Integration of bus and subway systems

Seoul has one of the busiest subway systems in the world. Fourteen routes service more than 8 million passengers per day. In order for public transport to be a viable option for most of Seoul's population, the bus system and subway systems needed to be interconnected. Intelligent transport technologies were introduced to create seamless transitions between transport modes. The SMG hired mathematicians to coordinate the subway and bus schedules into one timetable while taking into account car traffic patterns and schedules. GPS units were installed on each bus, allowing a centralized command center to receive real-time information to display on screens at stations, over the internet, or on mobile phone applications. This allows passengers with transfers to accommodate for delays and change their route if necessary. A contact-less smart card was also introduced. The card can be used for the bus system and the metro and allows for free transfers within 30 minutes. The smart card minimizes dwell time at stops due to reduced cash payments. Also, the fare charged with a smart card is always lower than the cash fare.

Measurable Success

From 2004 to 2008, ridership of the bus system increased by more than 15%. In 2008, the bus system transported nearly 5 million people on 400 routes each weekday. Average bus speeds have increased with the introduction of median bus lanes and the average daily revenues increased from 248€ in 2004 to 353€ in 2008. This new transportation network led to a decrease in CO_2 emissions, NO_2 emissions, and particulate matter of 35%, 20%, and 40%, respectively.

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A blue bus connecting suburban areas to downtown Seoul.

"Our greatest technical challenges involve integrating systems with those of other provinces and changing legacy systems according to the standards."

Soojin Lee, City Transportation Headquarters, Seoul

Seoul, Republic of Korea

The City of Seoul is the capital and largest city of the Republic of Korea. The city has a population of nearly 10.5 million people and a density of over 17,000 people/km². The Metropolitan area of Seoul has 29.5 million residents. Seoul's main economic activities are commercial, manufacturing, and administration. Seoul is an ICLEI member since April 1999.

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