Vietnam's Transport Sector Outlook and Engineering Opportunities

Transport is the determining factor in the connectivity of people and goods. Effective transport systems leverage the ease of doing business and trade, increasing investments and boosting the economy. An efficient transport system is critical to Vietnam's development, both in boosting urban area prosperity and reducing rural inequalities. Transport is a government priority as it determines how effectively goods and people can be moved, particularly critical for Vietnam's 2 biggest sectors: Services & Tourism and Industry & Manufacturing which represented 45.5% and 36.4%, respectively, of value-added as a percentage of GDP in 2016 (World Bank).

Vietnam ranked #67 out of 138 countries in the competitive index of transport infrastructures (2015-2016), an improvement from 76th the previous year

The current 2013 (adjusted) transportation master plan for HCMC has a total of 469 projects totaling US$121 billion

Hanoi Transport Masterplan from 2016 to 2030, needs total capital of US$55.4 billion

In 2016-20, the government will invest US$4.1 billion in transport infrastructure in the delta (39 road, 23 sea and 12 river transport projects)

MoNRE and MoT have proposed specific targets to be achieved by 2020:

a) Public mass rapid transit systems in Ha Noi and HCMC to reach a market share of 35-45%;
b) Ensure 16-26% of land is reserved for urban transport;
c) Restrain the growth of private motorized vehicles, ensuring that by 2020 there are no more than 4 million automobiles and 40 million motorcycles in the whole country.

Vietnam will meet 83% of its infrastructure investments by 2040, according to current trends (Global Infrastructure Outlook 2017)

The country will require US$605 billion for all infrastructure projects across all sectors, leaving an investment gap of US$102 billion

Transport Modes

In 2016, **roads represented 94% of transport usage**, followed by inland waterways at 4.78%, aviation at 1.07% and railways at 0.27% (General Statistics Office Vietnam).

ROAD

Vietnam's urbanisation rate is 34.5%, growing at a high rate of 3.4% per year, resulting in rapidly increasing traffic demands, traffic congestion and vehicle ownership

Motorcycles account for 60-65% of journeys in Hanoi and HCMC (World Bank, 2014)

8,000 new bikes and 750 cars hit Vietnamese streets every day
(Vietnam Association of Motorcycle Manufacturers)

In 2016, the average PM2.5 reading in Hanoi was 50.5 µg/m^3, 5 times higher than the annually average level recommended by the World Health Organization (WHO) and 2 times the national standard of 25µg/m^3. It reached a peak of 234 µg/m^3 on the 15th Feb

Increasing car ownership

Vietnam's car market is growing at an annual growth rate of 36%, the fastest rate in Southeast Asia (Solidiance). This surging demand can be attributed to the rapid growth of middle-income earners yearning for a status symbol. It is set to increase as the government has agreed to eliminate all import duties by 2018 on cars originating from the 10 nations within the Asean Economic Community.

Deficient road system

The road network in Viet Nam is 210,000km, of which 17,300 km are national, 17,450 km are provincial, 36,400 km are district, 7,000 km are urban and 131,500 km are rural. The percentage of paved national roads is 84% (World Bank, 2014). **16% of the population still live more than 2km from an all-weather road** (World Bank 2013). Investments are concentrated in building new roads rather than maintaining existing. Narrow roads further congest traffic and force motorbikes to spill over to the pavement.

Deficient Urban Public Transport System

The Bus Rapid Transport (BRT) is currently the only urban public transport system in place, servicing Hanoi and HCMC. **Public transport meets only 7.4% of travel demands in Hanoi, and only 5% in Ho Chi Minh City** (MoNRE 2009). The services are untimely, low capacity, offer limited routes and far more inconvenient in comparison to a motorbike, deterring citizens from changing habits. Lack of designated bus lanes, and lack of regulation of those that exist, severely slow down bus travel time. Saigon recently (September 2017) scrapped the $155 million plan to build a 6-line bus rapid transit (BRT) system. It was considered non-worthy of investment due to predicted low ridership.

AIR

135 airports/airstrips in Viet Nam (World Bank, 2014). There are three major airlines operating in Viet Nam.

- State-owned Viet Nam Airlines has the largest market share of 62%
- VietJet, a privately-owned airline with 30% FDI investment holds 20% market share
- Jetstar Pacific, owned by Viet Nam Airlines and Jetstar, holds 17-19% of the market share.

WATER

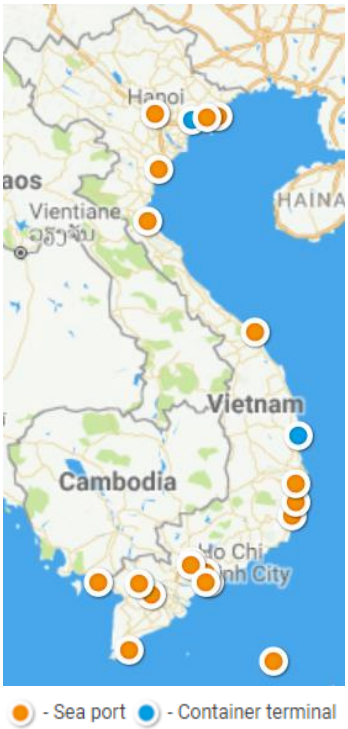
Inland waterways

Viet Nam has 41,000km of inland waterways, of which only 8,000km are used commercially despite huge potential for freight transport. Despite limited investments, waterway transport capacity and used has increased recently for high-weight low-value goods (e.g. coal, rice, sand, stone, gravel), and personal transport (World Bank, 2014).

Transport in the Mekong Delta benefits from an extensive waterway network including rivers and channels, many of which can cater to large vessels. However **investment in the development of waterways accounts for only 1.7% of transport infrastructure spending in the Mekong**.

Maritime

Vietnam's **3,400km long coastline hosts over 80 seaports** along one of the world's busiest sea cargo lanes. The larger ones have traditionally been developed by government, and handed over to the country's state-owned port and shipping company operator, Vinalines, for operation (World Bank, 2014). There has been some international investment in the port sector – for example in the Viet Nam International Container Terminal in HCMC, which is owned by a Vietnamese JSC in which Singapore and Japanese private companies own a 63% share. Vietnamese port capacity has increased and costs have come down in recent years; tariffs in Saigon port are competitive with other feeder ports in Association of South East Asian Nations (ASEAN) countries and China (World Bank, 2014). Yet sea port congestion continues to increase, threatening to reach maximum capacity with increased trade volume. Between 2020-2030, 11 ports and piers handling ships up to 30,000 tonnes on the Saigon River will be relocated. New road layouts will be constructed for the piers.



Vietnam Port Map (Source: SeaRates 2017)

RAIL

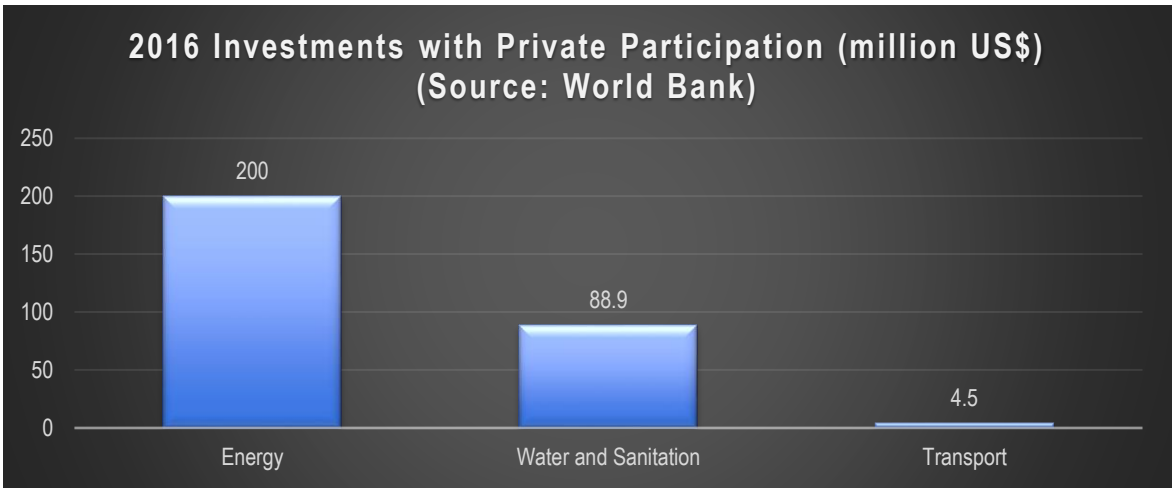
The Vietnamese rail network consists of **eight lines and just over 2,500km of track**. For rail use, average passenger train loads are relatively high but freight loads are low. The Ministry plans to increase the average speed of passenger and cargo trains to 80-90 km/h and 50-60 km/h, respectively, on the North-South rail line.

Transport Infrastructure Market Issues

- FDI/ODA dependency: the current 2013 (adjusted) Transport Master Plan for HCMC totals US$121 billion of which the Department of Planning and Investment estimates that the city's budget accounts for only 5%.

- Government currently relies on BOTs to incentivise infrastructure in which the city exchanges land for transport investments. For example, Korea's GS Engineering and Construction (formerly part of LG) obtained land for its Nha Be new town development by exchanging investments into Saigon's ring road infrastructure, a US $340 million project.

- Despite the government's promotion of PPPs (Public-Private Partnership), the transport sector remains dominated by state owned enterprises. Private investments in transport are comparatively very low to other sectors.



- The market is non-transparent, offering an unequal tender process. In September 2017, the Government Inspectorate's investigations proved that the contractors for more than 70 BOT and BT transport projects were appointed by the Ministry of Transport without bidding. They also determined investment decisions were inconsistent with the investment master plan, an unregulated value-determination process was in use, and completed projects had been collecting toll fees longer than planned.

- State control in the transport sector restricts ability to raise capital and decreases flexibility to create private capital flows.

- Vietnam's decentralised urban planning apparatus, FDI dependency and legal pluralism produces conflicting transport agendas and insufficient sector coordination (e.g. Construction Master Plan, Architecture Master Plan and Transport Master Plan are not synonymous).

- There is a lack of clarity regarding fees that can be charged for transport services and tariffs that can be recouped.

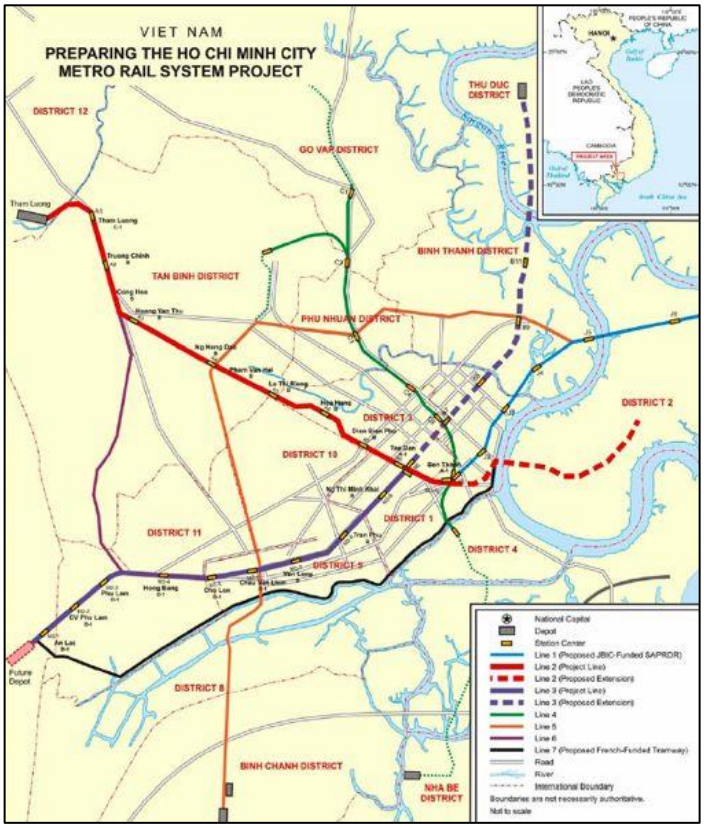
Recent Transport Infrastructure Investments

1. Urban Public Transport

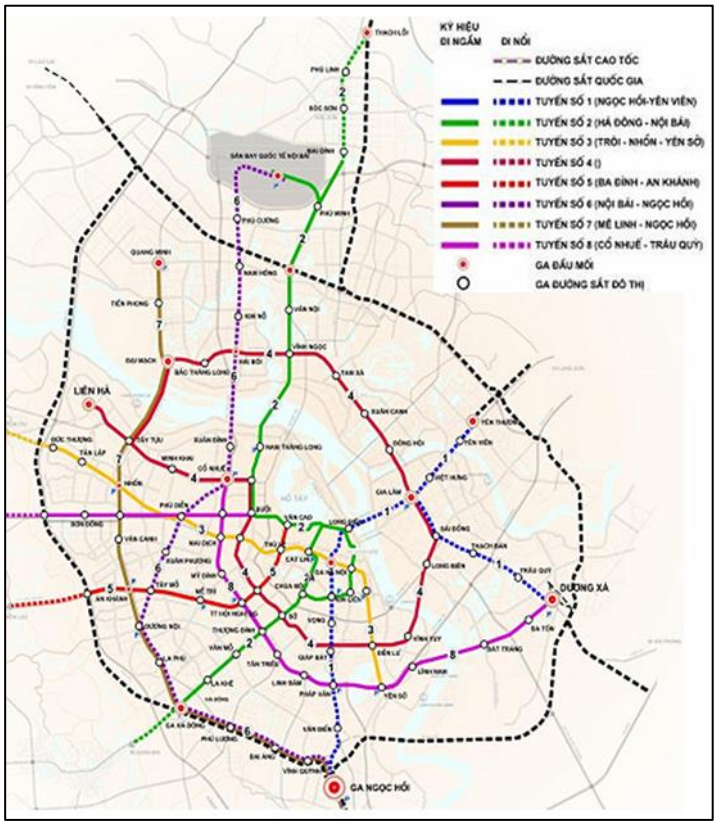
HCMC Metro

The metro project in HCMC consists of 10 lines, with the first line currently under construction. The first line is funded by Japan International Cooperation Agency (JICA) as well as Sumitomo Corporation and Shimizu-Maeda, two Japanese conglomerates. Though the initial budget was US$1.4 billion for Line 1, this figure increased to US$2.49. ODA from the Japanese government will cover US$2.2 billion. Despite this significant ODA the government has not been able to be provide necessary capital, causing huge delays. Partly completed construction sites line the city as the metro's development is temporarily paused. Consequent time delays mean the original completion date of 2017 has been pushed back to 2020 earliest. In November 2016, Japanese contractors requested government compensation of US$90 million for delays. ADB lent Vietnam $540 million for the metro line 2.

One of HCMC's many partially completed metro sites (Source: Internal)



HCMC's metro map featuring line 1 (blue line) and line 2 (red line)



Hanoi's metro map featuring line 1 (blue line)

Hanoi Metro

Hanoi will build nine metro lines with a total length of 372.5 kilometres and an estimated total investment capital of US$31.8 billion. Hanoi's first metro lines are supported by a consortium of Chinese companies headed by the China Railways Sixth Group. Private investments are minimal however Vingroup signed an MoU to provide US$4.55 billion into Hanoi's metro line projects. Like HCMC's metro, delays continue as debt grows, attributed to a lack of capital. The 1st line was approved in 2008 to be completed by 2017, however minimal progress on the 12.5km line has occurred. Although the 1st metro line's initial capital of US$553 million was approved by the MoT, the costs climbed to US$868 million in 2016 (a 156% increase). According to the project management board, the project's debt to the subcontractor is US$26.4 million.

Saigon Water Bus

First trialled in October 2017, the first water bus route spans 10.8 kilometres from Bach Dang Wharf along the Saigon River in District 1 to Thu Duc District, passing through District 2 and Binh Thanh Districts. The route will use five 80-seat boats, and public tickets will be 15,000 VND. A second river bus route will be piloted in 2018, spanning 10.3 kilometres between Bach Dang Port and Lo Gom Terminal in District 6. The two routes are expected to cost an estimated US $5.28 million. Two more river bus routes have been approved to link Bach Dang Wharf in District 1 with Phu Thuan Ward and Phu My Hung area in District 7.

Saigon Water Bus (Source: Tiger Tour News)

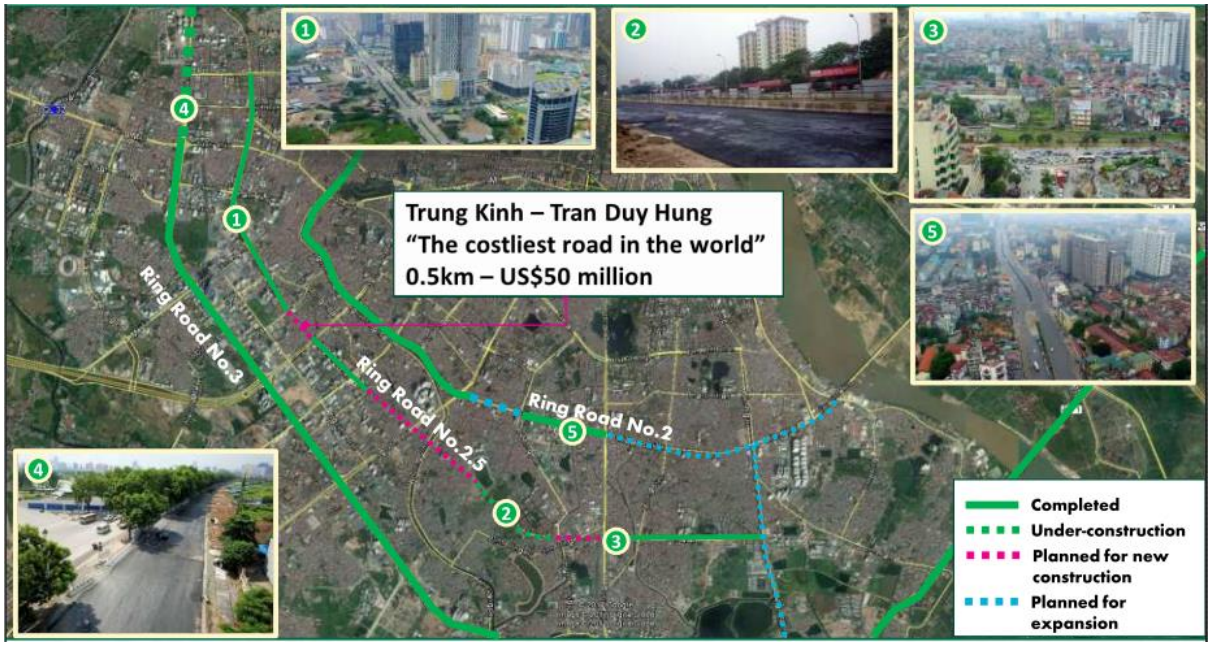
2. Highways and Roads

A $14 billion project is planned to construct a **highway** connecting HCMC and Hanoi. The two cities are 1,137km apart but on the present roads, the distance between them is 1,757km. The new highway will reduce the distance to 1,372km. The Can Tho highway worth US$1.2 billion is planned to connect the Mekong Delta, however has been delayed 8 years. The Mekong Delta remains relatively unconnected - whilst the country has 740km of expressway, the delta accounts for only 60km. Industrial zones have benefitted, and are likely to continue to benefit, from better roads connecting operations to ports and large cities.

Elevated roads may present greatest potential to solve traffic issues as a culturally appropriate solution that caters for cars and motorbikes.

- The central province of Quang Nam plans to build a railway flyover at one of the busiest crossroads on National Highway No 1A, in Nui Thanh District worth US$26.5 million.
- Two flyovers towards Tan Son Nhat Airport were opened to traffic in July 2017, worth US$10.64 million. The remaining two branches are scheduled for opening by the end of 2017, with the flyover project reaching a total investment of US$22.17 million.

Ring roads are utilised by both HCMC and Hanoi to improve urban and rural connectivity. Hanoi has now completed 3 ring roads with 2 more in construction. The 5th ring road is worth US$4 billion and is to be completed by 2020. HCMC has recently planned its 3rd ring road through ADB assistance.



Hanoi's ring road map (Source: CBRE 2017)

3. Airports

A new airport in HCMC (Long Thanh) has been proposed, worth US$162.8 million and covering 5,000 hectares with 2 terminals. In comparison, HCMC's current Tan Son Nhat Airport is 800 hectares with 2 terminals. It has yet started construction due to land acquisition challenges. The Government anticipates serving 100 million customers in this new airport per annum and five million tonnes of freight. The current maximum capacity of Tan Son Nhat International Airport is 25 million annual passengers, which can only be increased to a maximum of 40 million (Airport Corporation of Vietnam).

The Ministry of Transport plans enforced higher airport service charges from October 2017 to cover investment costs of the airport system and raise service quality. Multiple regional airport upgrades have occurred recently to improve air transport quality in Dalat, Danang, Nha Trang, Phu Quoc, Con Dao, Hue and Hai Phong. In September 2017, the Deputy chairman of the Ba Rịa – Vung Tau People's Committee proposed further expanding Con Dao Island's Airport and its terminals to boost tourism.

Current International and Domestic Airports (Source: Vietnam Airlines)

4. Ports

Da Nang Port complex (Tien Sa terminal) is Vietnam's third-largest port system, located in the central region and quickly reaching capacity. A US$1.48 billion port project is being planned at Lien Chieu as a solution to increase capacity. It's project capacity is 17.53 million tonnes by 2030 and 46 million tonnes by 2050. A $49 million project was launched in July 2017 to raise the capacity of Tien Sa to 12 million tonnes of cargo. A record 6.5 million tonnes of cargo passed through the port in 2015.

In September 2017, Phoenix Vung Ang Viet Nam Company Limited, a subsidiary of Singapore's Freight Links Capital Pte Ltd, commenced construction of its Phoenix port at the central province of Ha Tinh's Vung Ang Economic Zone, worth an investment of US$92.5 million.
the next 10 years.

In August 2017, a memorandum of understanding (MoU) was signed between Vietnam National Shipping Lines (Vinalines), Rent-A-Port N.V. and Deep C Industrial Zones (including the Belgian government's investment). This is aimed at promoting a transportation link between Vietnam and the EU, including a logistics facility in Lach Huyen and a 630-metre general cargo terminal in Dinh Vu.

5. Tunnels and Bridges

HCMC Tunnels

HCMC plans to build an overpass (in the direction of Belt Road No. 2) and tunnel (underneath the existing roundabout) to deal with the congestion at Cat Lai Port in District 2. Congestion has increased due to increased truck movements to/from the port which now exceeds 20,000 trucks per day. Investment is estimated at US$35.3 million. HCMC's metro line 1 also contains a 2.6 kilometre stretch of tunnel, within the city's downtown area. The 6.79m diameter tunnel will be constructed using the Japanese-made tunnel boring machine.

HCMC Bridges

HCMC People's Council has recently endorsed the construction of multiple bridges:

- HCMC approved the construction of the Nguyen Khoai Bridge over the Te Canal. The 346m long, 22.5m wide bridge from D1 Street in District 7 to Ben Van Don Street in District 4 will cost US$57 million. Construction is set to commence in 2018 and take 18 months.
- Phu My Bridge has plans for expansion to ease frequent congestion.
- Expected to be completed in April 2018, the 1,465m Thu Thiem 2 Bridge over the Saigon River will connect the District 1 with Thu Thiem New Urban Area in District 2. Thu Thiem 2 Bridge is worth US$132.16 billion.
- Thu Thiem 4 Bridge has been approved for construction, linking District 2's Thu Thiem New Urban Area with District 7. The nearly 2.2km-long, 6-lane bridge will cost more than US$230 million and be conducted under PPPs. Thu Thiem Bridge 1 and the Thu Thiem Tunnel, have been in operation since 2010 and 2011, respectively, yet this new urban area will eventually be connected to neighbouring districts via five bridges and a tunnel.
- HCMC proposes a new suspended bridge across the Dong Nai River to improve travel from District 2 to the industrial hub in Dong Nai. The 4km bridge will serve cargo transport from HCMC's Cat Lai Port and totals an investment of US$255.6 million.

Hanoi Bridges

The city currently proposes to build more than 6 bridges (Tu Lien, Thuong Cat, Vinh Tuy (phase 2), Tran Hung Dao, Duong 2 and Giang Bien) crossing Duong River and Red River. The aim is to connect the Ring Roads 3, 3.5 and 4 and improve accessibility to urban areas to the north of the Red River. Including the construction of link roads, the projects are worth a total of US$1.1 billion, to be constructed under build-operate-transfer and build-transfer models and completed by 2021.

HCMC's Thu Thiem new urban area featuring 5 bridges and 1 tunnel