

Improvement of public transportation for developing strategies in Ho Chi Minh city

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Abstract: According to the plan to organize the implementation of the program of reducing traffic congestion, reducing traffic accidents in the 2016-2020 period of Ho Chi Minh City, the target to meet the travel needs of urban public transport in 2018 is 9.6%, 2019 is 11.2% and 2020 is 15%. The city's transportation industry has been making efforts for this goal, but it must be recognized that regaining people's trust in buses and using buses more quickly is not an overnight event. And the transport sector also needs the sharing and companionship of the people so that the public passenger transport system by bus will be more effective. Ho Chi Minh City inner-city bus is the only public transport system in Ho Chi Minh City, managed by the Public Transport Management Center under the Department of Transport. The city's current bus network has been restructured since 2002 with 8 experimental bus routes, and gradually spread to surrounding districts and provinces to form a widespread network. After more than 14 years of establishment and development, up to now, the city is maintaining about 136 bus routes, of which 105 are subsidized and 2,786 are in use. In order to encourage people to take buses and reduce private vehicles on the road, most bus routes are entitled to price concessions (subsidies), and the city has a policy of exempting tickets for the elderly and people with disabilities, disabilities and students. However, the number of people taking buses is still quite low compared to expectations; Especially from 2013 to the present, the number of passengers traveling has tended to decrease. In 2015, the number of passengers on buses only reached 334.5 million, lower than in 2013 was 411.2 million.

Keywords: urban planning, population, public transport

1. Introduction

According to the Ho Chi Minh City Department of Transport's plan for 2018, the number of passengers using public transport is 635 million, but actually only reaches 571 million (90% of the plan). According to the report of the Center of Public Transport Management, the number of passengers using common buses subsidized 199 million (down 7% over the same period) and only reached 82% of the plan (242 million). Meanwhile, the number of passengers taking buses to support students and workers is estimated at 12.7 million (up 1% compared to 2017) and only 91% of the plan in 2018 (14 million). Ho Chi Minh City was formerly known as the Pearl of the Far East and only 2.5 million people, but now has more than 10 million people, so urban planning and population clusters, the new traffic like? Why do people still focus mainly in the inner city? Therefore, to "relax" the people must have synchronous investment infrastructure, connecting traffic to limit traffic jams. In fact, in the last time, HCM City has done some urban repairs, reducing traffic jams but there are 2 big problems that have not been solved yet. Participants in the discussion all said that this is a very difficult problem and should do a "big revolution" to change urban space, solve the current bottlenecks. If there is a correct solution, people will agree, contribute to build the city of good quality, civilized, modern, literate; regain position Pearl Far East. Due to the impacts of climate change and sea level rise, floods have become more serious in HCM City, especially in the South. Therefore, in the process of revising the general construction planning as well as the component planning, the Department of Planning - Architecture and experts are aiming to organize the space according to the model of public transportation orientation. plus (TOD), ie vertical compression of traffic corridors, limited rampant growth. This idea was supported by Chairman Ho Chi Minh City People's Committee and accompanied by compressed urban, definitely have to develop public transport system to connect the city. Ho Chi Minh City has closed the ring road 2 and 3, concentrating on developing public transport to remove jams in some areas such as Tan Son Nhat airport, Cat Lai port ... The city also promotes the construction Metro lines (ODA, PPP ...) are mainly funded because budget is not enough. However, recently, the ODA capital has been difficult, so it has to advance budget for contractors to continue construction. This shows the determination of the city to build and promote public transport. At present, HCM City is implementing metro 1 (Ben Thanh - Long Binh depot) with a total capital of 47.325 billion. In addition, there are 7 other routes: Route 3a (Ben Thanh - Tan Kien), Line 3b (Cong Hoa - Hiep Binh Phuoc junction), Line 4 (Thanh Xuan - Hiep Phuoc), Line 4b Gia Dinh - Lau Cha Ca), line 6 (Ba Quoi - Phu Lam roundabout) and line 5 (Can Giuoc, Long An - Saigon bridge). Besides the 8 subway lines, according to the "Master Plan for the development of HCM City's mass passenger transport system until 2025" there will be six BRT routes along the Vo Van Kiet - Mai Chi Tho, Nguyen Van Linh, Ring 2, Tan Son Nhat - Binh Loi, Thoai Ngoc Hau - Ring in -

Nguyen Van Linh, Quang Trung. In addition, there are bridges linking HCMC with Bien Hoa City, Long Thanh Airport, Long An Province and Binh Duong Province. In addition, after many years of preparation, the river bus has also been formed and it is urgently preparing to put into operation the first two routes from Linh Dong (Thu Duc district) to Bach Dang wharf (district 1) and from Bach Dang wharf to Lo Gom (District 6). These are new public transport vehicles and have great transport capacity.

As such, besides the bus is the main public transport, the city will have more choices and new experiences. And overall, the city's public transportation system is basically connected across the region. Not only solving the needs of the inner city, public transportation system also help to connect peripheral, promote socio-economic development. Of the 10 strategic programs on infrastructure, promoting economic development in Ho Chi Minh City, drafted by the Ministry of Construction, there are 8 programs on public transport, namely the development of belt roads 1 - 2 and 3, to develop the central public transport system, to develop the urban railway system and to connect the region, to develop the seaport system, to develop the expressways, to develop the expressways, Inter-regional, Long Thanh international airport, strengthening the international navigation system and the Mekong Delta.

In fact, as fuel prices, tax levies ... are escalating, public transportation has been thought by many people, but they are afraid of using them effectively. high. Therefore, when the public transport system is developed synchronously, good connection will attract the participation of people. The transportation planning map of Ho Chi Minh city is shown in Figure 1.

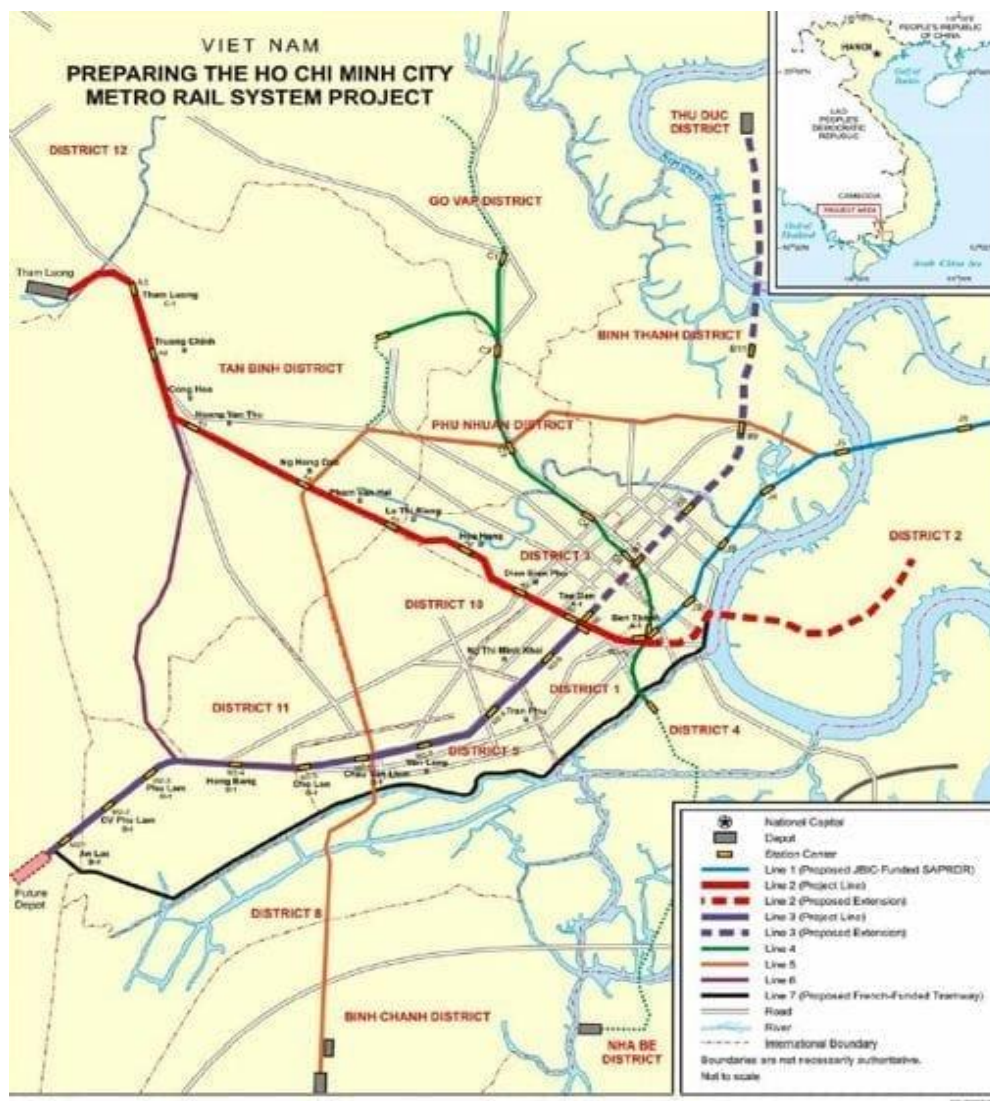


Figure 1. The transportation map of Ho Chi Minh city to 2020 [1]

Ho Chi Minh City's urban space has an unusual structure. Districts 1, 3, 5 and 10 have adequate transportation infrastructure. But most of the area of the district and suburbs remain spontaneous development, with the structure mainly the alley and the tube house. The houses in the residential areas are spread out, the density of construction is dense but the coefficient of land use is low, lack of urban main roads, lack of trees, drainage system and public works. meet the needs of the population. This characteristic urban structure is suitable only for motorized traffic and it is difficult to develop public buses. As the economy evolved, many people switched from motorbikes to cars, resulting in traffic jams. Participants in the discussion said that mechanics should not be understood mechanically as "vun" and "relax". This can only be done when developing multi-center urban areas. Each center is a complete whole of technical and social infrastructure, linked by convenient transportation system.

2. Trend development

In order to reduce urban traffic congestion, a number of solutions should be implemented. Including the approved construction planning to redistribute the population in the area; Reduce the number of people who come to the center by implementing the multi-polar multipolar model. The central area is the inner city with a radius of 15 km and the four poles developed. They need to be invested in a new way, from the urban areas to the types of houses, to the social infrastructure and infrastructure. urban techniques. After a period of quite spectacular development, GDP growth rate has always reached 2 digits. The city is leveling off due to many problems, including traffic jams, floods, environmental pollution and problems, affordable housing for employees. TP is aggressively implementing seven breakthrough programs with many specific solutions, but HCM City is facing these challenges. Ho Chi Minh City can only escape these problems if the Government, central ministries, Ho Chi Minh City and other provinces in the region have a new way of looking, such as focusing on the organic relationship between urban development of Ho Chi Minh city with other cities in the region in the direction of jointly developing together. The planning in the near future in Ho Chi Minh city is shown in Figure 2.

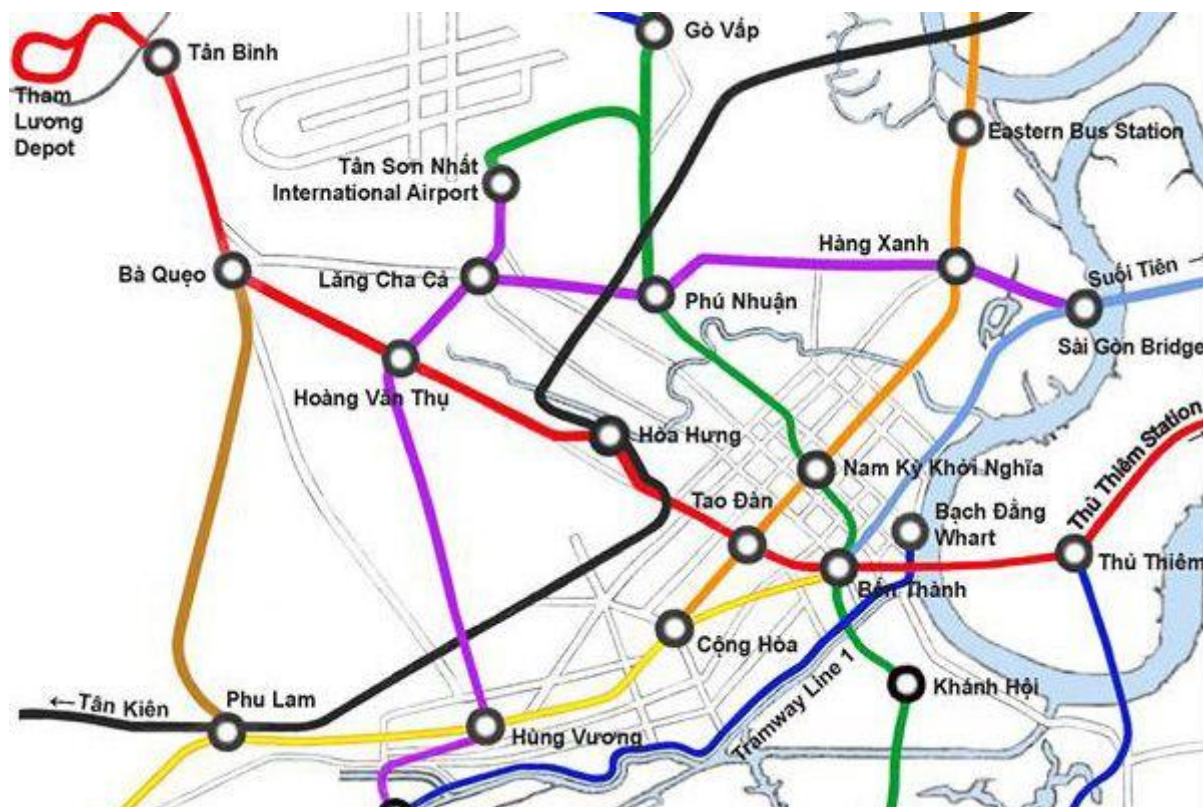


Figure 2. The planning in the near future in Ho Chi Minh city [2]

Zone 1 is the core area of trade - finance, development with the functions of business, commerce, hotels, tourism and administrative and public services. The entire subdivision is within the boundary of District 1.

Zone 2 is a cultural and historical center, developed with the function of culture, business, commerce, tourism, population and education. The entire subdivision is within the boundary of District 1.

District 3 is the western bank of the Saigon River, with multiple functions. This subdivision extends from SaiGonbridge to Tan Thuan bridge, part of BinhThanh district, District 1 and District 4.

Section 4 is a low-rise area, in which many villas from the French period will be preserved. This is a functional subdivision of residential, cultural, educational and commercial low-rise, part of District 1 and District 3.

Subdivision 5 is a core development center adjacent to the commercial center with the continuation of commercial operation from District 1. This sub-zone is part of District 1 and District 4.

Departments and districts only focus on the lack of cheap land so they can only be built in very remote places, while no agency proposes to invest in developing the transportation system and connect with Binh Duong, so that workers in HCMC can buy cheap houses in Binh Duong, instead of Cu Chi, to Nha Be. In many countries, large metropolitan areas, population problems, labor, employment, housing are all dealt with and solved through inter-city solutions in development of public passenger system. The model of "compressed urban" and "urban sprawl" has been mentioned and analyzed. The general trend of the world in recent years is to "cultivate" the people, ie to develop compressed urban areas with high buildings, mass transit, highways and walking. Arrangement the space to "cultivate" people has a higher economic efficiency than "widen" the people, but with the condition of infrastructure. When it is not guaranteed that the "cultivate" of the population will make the city hard. The "widen" of the population is the complete urban development of living conditions, work, education ... For the old urban areas do not meet the standards of urban infrastructure, there should be a plan Step by step to renovate, upgrade and follow the principle of advance infrastructure. When there are no conditions to renovate the infrastructure, absolutely do not "add" the population to these areas. Previously, the policy of the city was to "widen" people from the inner city to the suburbs. But now, it is necessary to have a strategic vision to "widen" people from unfavorable areas for urban development of Ho Chi Minh City to regional cities such as Binh Duong, Dong Nai and Long An. The study of the population problem must be accompanied by other factors such as employment, housing on a wider area. This will not only help TP solve urgent problems but also create conditions for provinces and cities in the potential exploitation areas.

Accordingly, if the city development in four directions, it needs to synchronize social infrastructure, technical infrastructure and program implementation. Do not do horizontal lines, each lead to the status of bridge lack of roads, construction of urban areas lack of schools, parks ... will be difficult to develop sustainably. Currently, businesses and economic sectors have been involved in real estate development in urban areas, but the investment resources for infrastructure are mainly from the budget. Therefore, it is necessary to prioritize which one to develop. TP is setting up the Eastern Development Task Force to rearrange and revise the general planning of districts 2, 9 and Thu Duc, as traffic jams appear in this gateway area. Facing high-rise buildings in the inner city, the Department of Planning and Investment is preparing to report to the city on some suggestions to solve the problem, such as having to plan the implementation of investment projects under planning, according to the roadmap, must identify resources and plan, invest synchronously above and underground works to create sustainable development. With regard to HCM City, Nguyen Van Tam, deputy director of Ho Chi Minh City's Department of Transportation, expressed his sympathy with the opinions of experts. This is not a new issue that has been researched and has been approved by the Prime Minister, such as transportation planning in the southern key economic region, the core of Ho Chi Minh City and neighboring provinces. The remaining issues are implemented. Particularly on the transport planning of HCMC orientation to 2020 and after 2020, in 2007, the Government has approved. However, the Department of Transport reviews this plan against the progress, showing that the implementation achieved compared to the plan is very modest due to great expectations but limited resources. Mr. Tam expressed his expectation that departments and agencies should join together to achieve the goal of reducing traffic congestion, environmental pollution, contributing to improve the quality of life of people.

3. Public transportation development

Transit-Oriented Development (TOD) is the construction of urban complexes that use both vertical and horizontal mixes at walking distance terminal on mass transit routes. The lives and activities of a large number of people are associated with these complexes. Public transport combined with walking distance will be the most convenient and effective option for both individuals and the economy. In large vehicles, public transport is the most effective solution for densely populated areas with concentrated economic activities. In contrast, high-volume public transport can only be effective when enough users are available. Thus, along public transport routes can / should be built with very high density so that a very large number of residents can live and work. The development is based on a public transport framework similar to the compact city approach - the urban structure is concentrated in small areas with very high population density and construction based on the

delivery system and effective public communication. This is the key to the creation of efficient cities such as Hong Kong, Seoul, Singapore and Tokyo based on the metro system or Bogota (Colombia) based on the fast bus system.

Both Hanoi and Ho Chi Minh City are trying to speed up the construction of the metro system. Whether or not the entire system can be fully built is still a question. However, even when fully built, the next issue is whether there are enough users to break even or create additional budget burdens. The problem with these two megacities is the current structure of population density and inadequate activities to be as effective as the above cities. The distance to subway stations for most people is too far, the intermittent alleyway system does not encourage walking, using motorcycles much more convenient. According to the current design, even when the metro system is completed, it can only meet about 10% of traffic demand, while the rest of the target is nearing 50% of public transit. by bus undertake. If you look at the current urban structure, it can be said that this is an impossible task.

Motorcycles and pavement economics cannot be typical of the developed cities that Vietnam desires. The process of redevelopment will take place at a very rapid pace in the near future. The urban form of Vietnam will change and be determined by this process. With the development of a large-scale public transportation system and the process of reshaping Vietnam's urban form, perhaps now is the best time for the State to adopt appropriate policies and shaping as well as orienting the urban development of Vietnam towards public transport. First of all, building a large capacity public transport system in Hanoi and Ho Chi Minh City is a must. At the same time, cities should encourage the construction of large, high-density complexes along these lines.

4. Conclusion

Urban redevelopment and redevelopment will have an unavoidable consequence that low income people have to give way to high income people. This is a process that has not been thoroughly resolved, but with a reasonable structure and layout, moderately income households will choose housing along public transit corridors, households Low income families also benefit from social housing and support in different ways of the state. This is probably the most appropriate way to reduce future motorcycle dependency in urban Vietnam. Regarding the development of public vehicles, it is necessary to diversify public transport such as adding mini buses, cars to residential areas ... which are suitable with the current narrow road conditions in the inner city. However, it is important to focus on economic measures in combination with administrative measures to restrict two-wheelers and develop public transport.

5. References

- [1] <http://quanlidothi.com/xem/394/dieu-chinh-qui-hoach-phat-trien-gtvt-tp-hcm-bam-sat-thuc-tien-phat-trien-ktxh.html>
- [2] <http://thanhnien.vn/thoi-su/can-canhh-chi-tiet-quy-hoach-moi-trung-tam-tphcm-474623.html>
- [3] <https://www.baomoi.com/tam-nhin-moi-quy-hoach-khong-gian-do-thi/c/21776984.epi>
- [4] <http://tuoitre.vn/%E2%80%8Bphat-trien-do-thi-theo-giao-thong-cong-cong-729152.htm>
- [5] <http://nld.com.vn/thoi-su-trong-nuoc/giai-phap-truoc-mat-cho-giao-thong-tphcm-tang-cuong-xe-cong-cong-77945.htm>
- [6] Nankervis M: The effects of weather and climate on urban bicycle commuters' decision to ride: A pilot survey. *Road and Transport Research*. 1999, 8:85–97.
- [7] Lumsdon L, Mitchell J: Walking, transport, and health: Do we have the right prescription? *Health Promotion International*. 1999, 14:271–279.
- [8] Jackson RJ, Kochtitzky C: Creating a Healthy Environment: The Impact of the Built Environment on Public Health. Retrieved February 26, 2002, from <http://www.sprawlwatch.org/health.pdf> Chen DDT: The science of smart growth. *Scientific American*. 2000, 283:60–67.
- [9] Humpel N, Owen N, Leslie E: Environmental factors associated with adults' participation in physical activity: A review. *American Journal of Preventive Medicine*. 2002, 22:188–199.
- [10] Bowman JL, Ben-Akiva ME: Activity-based disaggregate travel demand model system with activity schedules. *Transportation Research-A*. 2000, 35:1–28.