

Information relating to traffic congestion and traffic jam in some big cities in Vietnam

Dao Nam Cao, Le Hung Duong, Cong Tri Tran

Ho Chi Minhcity University of Transport, Ho Chi Minh city, Vietnam

Abstract: Switching the road plus the cramped, dusty, smoke-filled space, especially in the hot summer days makes people feel annoyed. Still know urban traffic congestion is a social phenomenon reflecting traffic overload not only in Vietnam but in most major cities in the world. This overload is due to the development of the urban transport system, which is unable to keep up with the population growth rate, unable to meet the traffic demand of the people. Traffic congestion with frequent, continuous and prolonged frequency has caused many consequences such as: Waste of time; adversely affect human health; reduce labor productivity; traffic accidents; loss of urban landscape and many other social evils. These influences are generally causing great damage to the economy and seriously affecting the lives of urban people. Still knowing that life is to be mobilized and such traffic is somewhat in accordance with the law, but if you keep this situation forever, the pressing will have a significant impact on social order and safety, affecting social beliefs.

Keywords: urban traffic, traffic jam, traffic congestion

1. Introduction

Traffic jams in Vietnam only frequently take place in Hanoi capital and Ho Chi Minh City. Vietnamese people seem be accustomed to traffic congestion, even miss it whenever they go to other places. There is no fixed rule for the time the traffic jams to happen but it is worst during the rush hour when everyone is in a hurry to get to work or come back home. Apart from peak hours, the time between 9 am to 10 am and between 3 pm to 4 pm also witnesses long lines of vehicles, mainly motorbikes, struggling to get out of narrow streets. Whenever it rains, the traffic jam gets more terrible with the joining hand of flooding. Taxis are extremely hard to catch or wave during the downpour. However, it only takes about 30 minutes on average for a standstill and 2 hours to get through the worst, not really bad compared to that of other countries. While the rapid increase in car use coupled with the deterioration of roads caused by disordered planning make the matter worse, the most annoying thing about the traffic jam is the way people react when being stuck at the congestion. Most road users ride their motorbikes on the pavement rather than waiting calmly, or they constantly use their horns to hasten riders in the front, even shouting at them from time to time. More luckily, bicyclists can leisurely carry their “war- horses” on their backs and thread their way through messy matrixes. The congestion is not anathema to all people and in all cases. One of the redeeming features of the traffic jams is that it is often regarded as a last resort for Vietnamese when all explanations for being late seem unreasonable. It is also used as a familiar topic to strike up a conversation, like weather-related matters. So take advantage of it! And the truth is that winters would be cooler and sadder without traffic jams. The economic and social harm of traffic jams is enormous, perhaps no one can quantify it with specific figures (estimated damage in 2007 in Ho Chi Minh City is about 14,000 billion copper). Under current economic conditions, the living standard of the people is increasing, the proportion of cars is increasing, if not quickly implement reasonable solutions for transport infrastructure development, the state of congestion. It will become increasingly serious, which will upset daily routines and severely affect the health of the community, particularly as a national problem, constraining capital inflows and obstructing them. It is the development process of the country.

There are many reasons for traffic jams. In Ho Chi Minh City, the majority of cases are due to sudden increase in traffic volume while poor transport infrastructure (narrow roads and pavements, inadequate traffic, etc.). In addition, in recent years, the warming of the Earth has caused torrential rains and tides to soar, flooding in many areas, crippling traffic and causing many rounds of traffic jams. very serious. For the Vietnamese society today, no one is unfamiliar with the current state of traffic jams. It gradually becomes a familiar image, which every day is a matter of course, inevitably and no one has come up with solutions to thoroughly solve this problem. During peak hours of 4-5pm, when you are out on the street, you will be horrified by the horns of thousands of motorcycles, hundreds of cars and many other vehicles. The wide road seems to be overloaded, not enough to accommodate people and vehicles in the traffic, so people and cars are so unequivocally straight to the sidewalk, then tied together without landing. At every intersection, traffic lights, such as disabled, even when there is a policeman in the direction of the road, the vehicle drivers to solve the congestion still have the motor batter from one side to the other, what is uncultured and unconscious? Vehicles passing by, cars going

along, cars going down, cars going backwards, cars also emit loud horn, feeling out of the way at that time is a battlefield of animals. In spite of all the rules of traffic safety regulations that justify their purpose.

According to the report of the Committee on Traffic Safety and Congestion in big cities, it is happening regularly and difficult to control. This problem tends to expand in space and prolong in time. Especially in bad weather days. This agency admitted that there was no effective solution to overcome local congestion due to traffic accidents and damaged vehicles, construction works occupied the road. In 2017, there were 87 big and prolonged congestion cases nationwide. Meanwhile, local stasis occurs much in Hanoi and Ho Chi Minh City. For Hanoi, the city has approved a scheme to strengthen personal vehicle management, manage electric bicycles, handle unsecured motorbikes, prohibit hourly taxis. According to statistics, the number of congestion points has decreased every year in Hanoi. From 44 points (2015) to 41 points (2016) and at the end of 2017, there are only 35 "black spots" congested. In Ho Chi Minh City, districts and districts have instructed and deployed troops to clean sidewalks and strengthen public facilities. Currently, Ho Chi Minh City still has 37 points with the risk of traffic congestion. According to the National Traffic Safety Committee, congestion is complicated, often at rush hours on many roads, mainly in the city center, gateway routes, radial routes, port access road. The traffic jam and congestion is shown in Figure 1.



Figure 1. The traffic jam and congestion in big city [1]

2. The causes resulting in traffic jam

One of the important causes of traffic congestion is the awareness of traffic participants. Images of vehicles jostling, congestion at intersections, intersections still occur in big cities. Dust and car horns make people become irritable and tired. Although roads, intersections pushed enough traffic lights, many people ignored their lives and surpassed 30 seconds of red lights. Even encroaching, going in the opposite direction is not strange. Everyone says others are "unconscious" and everyone leaves them alone. Many times, this lack of awareness leads to congested traffic from one way to a two-way traffic jam, and finally to unbending.

Bad weather such as big storms, heavy rain delaying flights is no longer strange. However, this factor also significantly affected road traffic. Especially in big cities, the early morning rain at peak hours always makes the participants of the traffic late and late to study. Heavy rain is one of the causes of traffic congestion in Hanoi. This is also the view that Senior Lieutenant Colonel Nguyen Van Tong, deputy head of Hanoi Traffic Police Department shared in a recent talk with the press. This is understandable when heavy rains lead to flooding in many key areas.

Traffic on many roads is always high. During peak hours, all types of transport (from the modern to the rudimentary, from small to large) are jammed on the road as "mortar wedge", especially on the roads and junctions. main. If traffic jams occur, traffic jams and traffic jams can occur. Thanks to high economic growth,

the proportion of cars in the car is increasing. With the current economic growth rate, in the coming years, traffic volumes will continue to rise and the risk of traffic jams will be even more severe

Composition of the car is very complex. Depending on the regulations on organization of traffic, on the streets, the composition of the line is very diverse. For normal streets (without specific traffic regulations), motorcycles often account for a very high proportion (50-80%), the proportion of bicycles and rudimentary vehicles is also very high (3- ten%). Many vehicles with different sizes and speeds running on one lane (4 lanes) cause many dangerous situations and often interfere with one another's mobility. During peak hours, only negligence, traffic jams and accidents can occur immediately and cause traffic jams. With the development process, the composition of the vehicle is increasingly uniform, gradually reducing the two-wheel vehicle, rudimentary vehicles and gradually increase the automobile (Resolution 32 of the Government will make this trend change faster). Due to the large size of the cars compared to two-wheelers and rudimentary vehicles, in the coming years, the risk of traffic jams will be worse.

Traffic system is overloaded. The original plan of Ho Chi Minh City was implemented on a scale of about 2 million people and in the process of development, the functional departments did not adjust the plan properly (currently about 9 million of which over 2 million people are staying), making transportation infrastructure become too weak. The street network, especially the central area, has narrow characteristics (main street ≤ 4 lanes and street ≤ 2 lanes), traffic density is quite high (about 10-20 nodes // km²), the average distance between the nodes is quite short (about 200-300m), so the travel of the vehicles is difficult because they have to constantly increase, reduce the gas continuously and speed the car is often very low. In the process of urbanization, the construction of many office buildings in the central districts (District 1, District 3) has increased the travel demand of businessmen and traders, the expansion of the city also Increasing the demand for travel between areas, but the transport system has not been expanded properly (especially the main roads) ...

The overload of the road system is the cause of traffic jams often occur at the intersections during peak hours.

In the past few years, the transportation system has grown very slowly compared to the growth rate of cars and population. Without proper attention, in the coming years, overloading will be exacerbated. In order to meet the development requirements, it is necessary to build boulevards of reasonable size in the central areas and offices, commercial centers, hospitals, schools and commercial ports. Roads in the neighborhood should also be upgraded to meet the increasing demand for automobiles.



Figure 2. One of the causes resulting in traffic jam in Vietnam

Along with the economic development of the country, people's lives have been improved, the number of vehicles participating in traffic has also increased in recent years. There are about 1.5 million cars and 40 million motorbikes in circulation in Vietnam. In Hanoi alone, there were 6 million motorbikes in circulation on a total of 7.2 million people officially registered in the Capital. That number speaks to the density of traffic vehicles, especially during peak hours when people are pouring into roads.

Due to the inadequacy of planning, the pavement system has shown many limitations. Most of the streets have sidewalks but the width is usually very narrow (mostly 3-6m), especially the street without sidewalks. On the sidewalk there are many green trees with many diverse sizes and countless electric poles, signs ... occupy most of the width of the sidewalk. Because of lack of investment, the sidewalks are often uneven (mosaic in each street), pavement material is also diverse (stone, gravel, concrete, brick ...). In places where there are no green trees and electricity pylons, people often encroach as places for sale, parking ... Most sidewalks do not have walking paths, if any, they are very narrow and discontinuous. Most pedestrians are required to use a part of the roadway to travel (which is for motorized vehicles) so it is very dangerous to have traffic accidents. Poor sidewalks are responsible for slowing down the development of the public transportation system and causing the demand for personal vehicles to rise sharply ... and inevitably causing the traffic jams complicated.

Without proper attention, pavement and pedestrian systems cannot meet development requirements and in the coming years, traffic jams will be more serious.

In order to meet the development requirements, pavements should be large enough to provide technical infrastructure (electricity, water, optical fiber, etc.), trees for trees (filtering out air pollution and reducing noise impacts), noise, pedestri

Due to the inadequacy of planning, the pedestrian crossing system has become very obsolete and does not guarantee traffic safety. The weakness of the traffic system is the lack of an over-the-counter (high or high) crossing. The use of pedestrian crossing the road, while the traffic is very high and the sense of obeying the traffic rules is very poor, so traffic accidents always stalking, especially for the elderly, children, people with cardiovascular disease ... In fact, for large roads (≥ 4 lanes) and high traffic, ordinary people walking across the road is very difficult. An unsafe pedestrian crossing is the reason for the slowdown in the development of public transportation, resulting in a sharp increase in the demand for private vehicles ... and therefore the traffic congestion has taken hold, complex variables.

Without proper attention, the pedestrian crossing system cannot meet development requirements and traffic congestion will become increasingly serious. To meet the development requirements, the pedestrian crossing system needs to ensure pedestrian safety. It is necessary to build crossing paths that are different from those at wide roads and large traffic volumes.

In order to meet the development requirements, the drainage system must ensure drainage in a timely manner and the dike system is capable of preventing flood tides from flooding low-lying areas. In general, the traffic has been increasing, the trend of automobileization is getting higher and the transport infrastructure has become too weak, traffic congestion is getting worse ... is a reality. The investment in upgrading will be very expensive but this is a must do, as soon as possible. With the huge workload, it can not be done quickly, so in order to prevent traffic jams effectively, it is necessary to carry out many solutions in which priority must be given to implementation of solutions.

3. The solutions for reducing traffic jam

The amount of traffic increases while traffic is not expanding, just like a small room in which the user has filled up his personal belongings and wants to keep adding them. When it comes to traffic jams, some people say it's because of poor road infrastructure that does not meet demand, because of the narrow streets. However, through many news reports, I noticed that not only was the 4-lane road jammed, but many 6-8 lanes were still jams. So, the inner city street planning how many lane roads are supposed to be wide enough to not be jams. Just as a person who buys a small house, they want a very comfortable home that they buy a lot of stuff and stuff. They are still satisfied with their property, although they are a little cramped, they will find ways to turn around to live with it. Traffic is no different than a room, it is small, you have to turn to live in harmony with it, not to throw the neighbors beat that small house that built a bigger house when they do not have financial secure. How big is it enough? The answer is answered depending on the point of view, depending on the purpose of each person. If only large enough to run out of congestion during peak hours, wasted at low hours leading to speeding cars, night storms, robberies ... should be pouring funds to clear the ground and expand paved road or not. What solution to help a small house, still full facilities but instead of living in a narrow space, now will have another space, more spacious but also only with that area. That is, we will have to rearrange old, unused, or obsolete objects, objects, and boxes and put them into another dimension. Similarly, we will also rearrange traffic facilities on regular routes that cause congestion. Traffic on roads is similar to the flow of water on a stream, which can be called traffic flow. When the flow is flowing, if there are obstructions on the road, the flow will shrink, the more obstructions, the more narrow the flow, leading to poor flow, if the obstructions are too much and too big will lead to block the line. Thus, our task is to clear the flow.

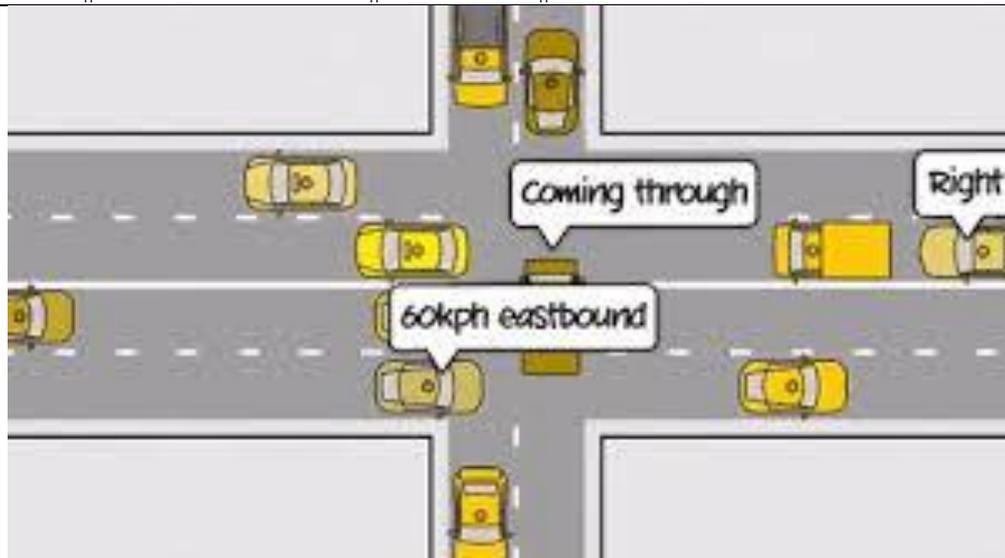


Figure 3. A solution for reduction of traffic jam

For car accidents: requiring the police to use the method of shooting cameras and taking pictures then car to the margins. When dealing with accidents, it is advisable to combine some functional police officers to disperse or punish those who are curious.

Signal loss - intersections without lights - junction.

In addition to the traffic rules, traffic jams or traffic jams must stop the vehicle from looking at the two sides and then go on to the next stop.

Compulsory driving from the alley must turn right and only allowed to turn at the intersection or at the permitted point. At small intersections, the lights turn left and blue only when the direction of traffic is the same from green to red - this means that when the green light turns left turn vehicles, only when the green light from the turn signal is present. It also means that the opposite vehicle to stop the red lights will improve the situation of congestion. Small two-way intersections should arrange young volunteers at peak hours, forcing people not to encroach on the fruit.

Taxi - bus

During peak hours, only 1 lanes are required and only 1 lanes are allowed. In addition to the law: do not stop at the intersection. This means that when the green light but in front of traffic jam, all cars still have to wait, not the tailgate at the intersection.

School - work - hospital

Forcing parents to park the car outward and park on the sidewalk in the meantime is necessary. The vehicles were forced out of the school and turned only at the intersection. For cars: compulsory parking 100m from school - hospital – office, pedestrians from the office - from school - the hospital is only crossing the road at the intersection during peak hours. The street vendor must be 200 meters away from school - office - factory at peak hours. It is mandatory that only 1 lanes of cars run during peak hours, which will force motorists to use more motorcycles and should double the fine of the offending vehicles - especially taxis, which will solve a lot. junction point.

4. Conclusion

Developing public passenger transport system is the most sustainable solution to reduce traffic congestion. In the past few years, the price of private cars (cars) has decreased, so the number of cars traveling on the road has increased significantly. Compared to traveling by public transport means, the occupation area of passengers traveling by cars and motorbikes is many times higher, which causes traffic congestion on the streets. When developing a public passenger transport system with convenient criteria for passengers, it is certain that passengers will use public transport vehicles to travel. However, the construction investment needs to be done scientifically to bring about efficiency, otherwise it will cause waste and traffic congestion still cannot be overcome. In the past, in TP. Hanoi and Ho Chi Minh City, although the public passenger transport

system has developed, but the convenience for passengers has not improved much, one of the limitations is to show the inconvenience.

References

- [1] <http://baochinhphu.vn/Doi-song/Tai-nan-giao-thong-giam-nhung-do-thi-van-nang-ganh-un-tac/243304.vgp>
- [2] <https://vnexpress.net/tin-tuc/cong-dong/cac-de-xuat-cua-bo-truong-giao-thong-da-giup-giam-un-tac-2225893.html>
- [3] <http://www.mt.gov.vn/matgt/tin-tuc/988/31640/mot-vai-suy-nghi-ve-chong-un-tac-giao-thong.aspx>
- [4] <https://vnexpress.net/tin-tuc/cong-dong/ap-dung-nguyen-ly-dong-chay-cua-nuoc-de-giam-un-tac-2218017.html>
- [5] Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation,” US Department of Transportation - Federal Highway Administration, Office of Operations, accessed August 2016. http://www.ops.fhwa.dot.gov/congestion_report/chapter2.htm
- [6] Wozniacka, Gozia. “Oregon preps program to swap mileage tax for gas tax,” USA Today, last modified May 20, 2016. <http://www.usatoday.com/story/money/2015/05/20/oregon-gas-tax-mileage/27676973/>
- [7] Dachis, Benjamin. “Tackling Traffic: The Economic Cost of Congestion in Metro Vancouver,” C.D. Howe Institute, last modified March 9 2015.
- [8] Kalinowski, Tess. “Toronto area commutes add to time crunch, study shows,” Toronto Star, last modified April 28, 2014. https://www.thestar.com/news/gta/2014/04/28/toronto_area_commutes_add_to_time_crunch_study_shows.html
- [9] Litman, Todd. “Smart Congestion Relief: Comprehensive Evaluation of Traffic Congestion Costs and Congestion Reduction Strategies,” Victoria Transport Policy Institute, last modified September/15/2016
- [10] <http://www.tapchigiaothong.vn/giai-phap-khac-phuc-tac-nghen-giao-thong-o-do-thi-d49268.html>