



Report on
Round Table Discussion
on
Effective Traffic Management in Bangladesh: A Catalyst for Inclusive Growth
of the Country

Introduction:

As a private Higher Education Institute (HEI), Daffodil International University (DIU), in addition to its teaching practices, has been trying to develop its research agenda. As a Middle Income Country (MIC), Bangladesh has many areas where collection of research data would help the cause of development. Research would open the way to design research based solutions. DIU is taking initiatives to involve both its teachers and students in research on development issues – issues that would help the Government of Bangladesh (GoB) and institutes involved in development issues and projects. It would also give DIU students exposure to real-life research data, a research mind-set and an awareness of development issues.

Traffic of Dhaka city today is one of the biggest challenges of living in Dhaka. Rapid urbanization and influx of people to the city is creating many uncontrollable transportation problems. In fact, it may be said that traffic management challenges, in the country, leads to a loss of service time, business losses, wastage of idling fuel and often loss of life. This time, DIU feels to work on this area to produce some extensive research focusing the pragmatic solution. To launch the research outcome and further discuss on the issue, Daffodil International University (DIU) organized a Round Table Discussion (RTD) on '**Effective Traffic Management in Bangladesh: A Catalyst for Inclusive Growth of the Country**' on 21 October, 2018 at 71 Milanayatan, DIU premises.

Mr. Obaidul Quader, MP, Honorable Minister, Ministry of Road Transport and Bridges, GoB graced the program as the Chief Guest while Mr. Khandakar Rakibur Rahman, Executive Director (Additional Secretary), DTCA and Brigadier General Ali Ahmed Khan, Psc, Director General, Bangladesh Fire Service and Civil Defence were present as Special Guest and Guest of Honor respectively. Mr. Md. Sabur Khan, Chairman, Board of Trustees, DIU delivered the keynote presentation at the RTD. Transportation Consultant & Road Safety Expert and Professor of Department of Civil Engineering, BUET, Professor Md. Shamsul Hoque, Ph.D, chaired the entire discussion. Vice Chancellor of DIU, Professor Dr. Yousuf Mahbubul Islam along with Professor Dr. S.M. Mahbubul Haque Majumder, Pro-Vice Chancellor of the university were present among others.

Inaugural Session:

Address of welcome by Prof. Dr. Yousuf M Islam, Vice Chancellor, Daffodil International University (DIU):

One of the important jobs of a university is research and the topic effective traffic management is a burning issue which affects people of every stages daily. The program has been organized to launch the research thoughts and ideas. Research has been done by the Chairman, Board of Trustees, DIU Dr. Md. Sabur Khan. He urged the guests and participants to seriously think on the issue and brainstorm effectively to find out a better solution to this problem.



Address by the Guest of Honor Brigadier General Ali Ahmed Khan, Psc, Director General Bangladesh Fire Service and Civil Defence:



- Traffic congestion is an old and serious issue in relation to ease of movement by citizens as well as to the national economy of the country. This problem has been worsened through amassing a number of problems from time to time.
- Unplanned urbanization is one of the root causes of traffic congestion in Dhaka city in particular and whole country in general.
- Managing the roles of stakeholders

should be ensured

- Separate regulatory body to look after and ensure every aspects of effective traffic management needs to be formed
- The petrol pumps can be updated in mobile-refueling pump.
- There may be an emergency response point like as help line for traffic management in area of fire service.

Address by the Special Guest, Mr. Khandakar Rakibur Rahman, Executive Director (Additional Secretary), DTCA:

- There is a strong need to establish institutional linkage between university and government agencies for better knowledge sharing and to have better solution to a certain national problem.

- Proper coordination among the stakeholders (Government agencies) working in Dhaka city must be ensured (sewerage, drainage, utility etc. services)
- Government has already formulated RSTP and as per this RSTP Dhaka will be a city with all required citizen services by the year 2035.



- The railway and waterway should be incorporated along with the RSTP to have a comprehensive and collective solution to the excessive traffic congestion in the roads.
- The proper implementation of MRT and BRT lines in several points of Dhaka will be helpful in reducing the traffic congestion

Keynote Presentation by Dr. Md. Sabur Khan, Chairman, Board of Trustees, Daffodil International University (DIU):



The keynote presenter informed the gathering that representatives of the relevant 39 sectors of Bangladesh participated at the RTD. The initiative of the Government of Bangladesh to develop big projects based on public-private partnership (PPP) can be utilized for the development of some projects to ensure free flow of traffic and reduce traffic congestion to an acceptable range.

- It is very much possible to develop state of the earth and modern parking facility (underground with two-three parking layers) at Sydabad, Gabtoli and Mohakhali bus terminals like the model of Pudu Sentral of Malaysia. There will be hygienic restaurant, lounge, wash rooms etc. in those underground terminals.
- Random parking and street parking should be banned
- The traffic congestion is radically reducing the vehicle speed in Dhaka city.
- The political parties should include the traffic management issue in their election manifesto as it is now the most serious problems of people of all walks of life.
- The existing parking place of the Hazrat Shah Jalal International Airport can be extended vertically through steel structure which will be cost and time effective initiative. The passengers will not face any difficulty as their in and out slot and floor

will be informed them previously and they will be able to inform their private cars/vehicles to wait in those specified tunnel/point.

- More BRT lanes should be introduced in more routes.
- Three/Four layers loop system in the busy roads may be replicated as done in Thailand.
- Circular ring roads around the Dhaka city should be developed, modified and activated which can reduce at least 50 percent of the traffic congestion of Dhaka city
- The Government can use PPP project and international consortium as a tool for ensuring fund management for the traffic related infrastructure development.
- To modernize the SADARGHAT Terminal, we can build steel structure for vehicles for parking like this model. If we can install such steel structure, unsystematic movement of vehicles will automatically be managed as parking is the major problem here. The investment amount can be pay backed within 2 years.
- Bangladesh government can install modern device system like 'Touch n Go (automated booth) where car users would be able to park their car/vehicles for 1, 2, or 3 hours and Government can earn a lump-sum revenue from this earning. In Bangladesh, Government may initiate introducing such system at barren/disputed land and earn revenue (from fees)
- Dhaka South City Corporation and DMP have selected 42 points on the city streets that are less busy than the rest, for on-street parking. Our proposal is not to use on-street car parking rather we may go for multi-layer vertical car parking system so that maximum number of cars can be accommodated or parked in a minimum space without distorting the movement of vehicles in the streets. If we can arrange multi storied or underground parking system and Automated Parking System (APS), the issue of illegal parking can be solved easily.
- There should have proper arrangements for the pedestrian mobility. We may develop Land Use Based Universal Overpass; Shaded Walkway; Table-top Pedestrian, two layer pedestrian path etc. The prominent business persons may be encouraged to sponsor such initiative in their respective areas. The clean, beautiful, wide and free pedestrian will encourage the passengers to walk for short distance which will be good for their health as well.
- Multi-layer vertical car parking system must be introduced banning on-street car parking. The vertical car parking system at Motosyo Bhaban should be replicated in different public and disputed private properties of the city.
- With the application of GIS based software and web GIS, we need to develop and design the full picture of the underground facilities like electrical underground cables, pipes of different related agencies like WASA, TITAS, DESCO, DPDC etc. If we can once finalize the digital picture of Underground Facilities, the responsible agencies can integrate their tasks as they would be able to know then, where and

which areas, facilities are there. The Government of Bangladesh may have an agreement with Google

- The U-LOOP SYSTEM will significantly contribute to the reduction of *Traffic Congestion* in Dhaka city
- Without destructing/demolishing the existing high-rise building during the extension of roads, we may replicate the process called Highways/Flyovers through the Buildings as like Hanshin expressway, Osaka, Japan
- Automatic Traffic Signaling system should be integrated with Central CCTV Network and should be automatically changed based on Artificial Intelligence and loads of traffic in each lane of roads
- The 10/14 seated microbus system can be introduced at Dhaka city like in Indonesia, Thailand etc. Proper guidance/ training should be given to the rickshaw pullers and CNG drivers for adopting driving microbus which will also ensure their rehabilitation program.
- Traffic unit of the government can conduct a well-defined Training and start monitoring on their tasks.
- The Government may also like to publish circular mentioning that each petrol pump/gas station must need to have neat and clean restrooms for public, restaurant/canteen with standard tea stall, car wash facility etc. (alike petrol pumps in developed countries). There should also have adequate car parking facility (vertical) with a minimum charge. The Ministry of Health and other relevant Ministries may be given responsibility to inspect the cleanliness of the restrooms of every petrol pump/gas station and if any pump/station fails to comply with the cleanliness issue, there license may be cancelled.
- We need to equip and train our drivers in such a way so that we can ensure that our vehicles are in safe hands. To materialize this concept, we need to come up with dedicated project, both from public and private sector and train them with technical and societal moral values. Skilled drivers have huge demand in international employment market.
- Huge traffic jam occurs at Dhaka-Tongi Road while a lot of vehicles move in at Airport road. To get a better solution, we can use the diversion road at Dhaka Custom House, which is linked with Uttara to get accessed into Dhaka city
- The Government may utilize the idle surplus money held with the Insurance Companies of Bangladesh for the investment in big projects like Padma Bridge. So, the idle money of those insurance companies may be utilized for the infrastructure and process development of traffic related infrastructure.
- BLOCKCHAIN based Vehicle Registration System should be introduced
- IoT based vehicles tracking system should be introduced

- PPP companies or PRIVATE organizations can be invited to take initiatives of Beautification through gardening, establishing modern sitting arrangements for pedestrian etc.
- Traffic Jam affects Higher Education Institutions (HEIs) a lot. So, proper initiative needs to be taken to solve this.
- The following statistics depicts the status of the of transport sector during Eid vacation of Bangladesh:
 - Total 1 CRORE 15 LAC people travel during eid vacation in Bangladesh
 - Of them, 7.1 million people travel to various regions of the country through various road transports
 - 2 million people use Sadarghat waterways terminal to reach their destination
 - 1.5 million people pass their eid vacation in various tourism spots of the country
 - About 5-6 lacs people enjoy their eid vacation at abroad

During Eid festival, the fare of the buses are Illegally Charged Very Much Higher (Two-Three Times Higher) Than the Rate of Normal Days. The Government may like to make a planning to ensure the normal bus fare and may charge extra in exchange of some extra services for passengers. If the 71 lac people who travel within the country during eid period pay extra charge, i.e. BDT 200, THE TOTAL AMOUNT WILL BE BDT 1,42,0000000 (BDT 2,84,0000000 IN TWO EIDS). The Government may also form a fund with this amount and may implement the infrastructure planning/proposal.

- Beautification of all public transports should be done through a simple Government notice and strong monitoring
- In some places, DMP has built modern Police Box which may serve as the hub of using all state of the art equipment, traffic management related devices like Speedometer, Speed gun, IoT based device, Blockchain Technology etc. as they can easily maintain the equipment at tailor-made police box.
- The Passengers/Passersby need to be made aware
- In Dhaka City, we may replace non-mechanized vehicles like Rickshaw with newly transformed Motorcycle in Rickshaw Forms as these slow vehicle also creates traffic congestion in many cases. The banks/financial institutions need to give loan to these rickshaw puller to implement this transformation
- Green Plantation or Urban Forestry must be implemented which will reduce the impact of ever increasing noise pollution and provide much needed shade on glaring hot roads during summer.
- In Kolkata City, the Government of India, builds many pedestrian Underpasses in the city, which helps the ceaseless movement of pedestrian. To tackle the traffic congestion at Dhaka City, we can also establish many subways/underpasses by

taking such initiatives in busy areas of Dhaka city. In this initiatives Government of Bangladesh can also offer these projects under PPP initiatives. We may also think of taking endeavor for underground railway system

- Introducing Transport and traffic related Degrees at Higher Education Institutes (HEIs) is very essential.
- Online traffic forum needs to be utilized and updated by all.
- One district should be made model where there will be no traffic congestion.

Address by the Chief Guest, Mr. Obaidul Quader, MP, Honorable Minister, Ministry of Road Transport and Bridges, GoB:

- Coordination among relevant government agencies must be ensured. The Government is working to ensure this issue.
- MRT lane six is being implemented in Dhaka city. MRT lane one (16.40 KM) agreement and feasibility study have already been done where there will be underway rail. The work to be started soon.



- The initiative of subway by Bridges division is under process
- Flyovers have also given some immediate benefits to the passengers
- Awareness of passengers and drivers needs to be ensured to reduce accidents and traffic congestions.
- There is a need to have a coordination among all the relevant parties (transport owners association, passengers association and Transport workers association)
- There is a mismatch between number of lanes in highways and bridges. Normally the bridges have two lane but the highways have four to eight lane which is also a reason of traffic congestion in those areas.
- Extensive and intensive awareness building campaign should be undertaken regarding effective traffic management and abiding by the rule of the law
- The plying of vehicles in opposite lanes have been one of the key reasons of traffic congestion and road accidents which the Government with assistance of traffic police has reduced. This should be totally monitored so that no vehicle (irrespective of power and position of the car owners) can move in opposite direction.

- Coordinated efforts must be ensured to transform Dhaka as a selected livable city of the world. Each and every service to citizens should be made as per world standard to positively compare Dhaka city with other cities of the world.
- The most awaited Road Transport Act-2018 has been passed which is considered to be one of the achievements of the Ministry of Road Transport and Bridges. The act must be abide by all concerns and the law enforcing agencies should strictly follow this.
- Roads should not be kept blocked after any sudden road accidents as it hamper thousands of other innocent people and vehicles. The affected vehicles should be immediately put a side and actions against the liable drivers/persons should be taken by the law enforcing agencies so that the road remains congestion free.
- Short book-let type publication covering the major finding and recommendations of the RTD may be done so that the concerned authority may carefully go through all bulleted points and get a clear guidelines for possible implementation.

Summary of Round Table Discussion Session:

Chair of the Session, Professor Md. Shamsul Hoque, Ph.D, Transportation Consultant & Road Safety Expert and Professor, Department of Civil Engineering, BUET:

The percentage of roads is very low in comparison with the number of transports and passengers of Dhaka city. It is one of the root causes of traffic congestions. Lack of coordinated transportation system is also responsible for the worst situation of Dhaka city traffic. In its entire lifetime, a private car remains idle for about 95 percent time. Rest of the time, these private cars are mostly parked in illegal parking places like in front of the shopping mall, office, on road etc. He underscored the need for discouraging the small cars/private cars and a well-managed, cost effective and hassle-free public transportation system should be introduced as an alternative to private cars. He also emphasized that the approval for constructions of shopping malls and tall buildings should not be given unless they allocate and implement enough parking facilities inside the building. If the illegal car parking can be reduced, the overall traffic congestion scenario will also be changed positively, he added. However, he emphasized on introducing vertical and multi-layer automated car parking system which will ensure maximum number of car parking within a minimum place.



Mr. Syed Afsor H. Uddin, Chief Executive Officer, Public Private Partnership Authority:



Effective Traffic Management issue is related to the SDG clause number 11.2. The regulatory framework for public private partnership project is now complete. The PPP Act-2015 was formulated and later on PPP Policy was also formulated. Any kind of project can now be undertaken under PPP as there is no regulatory barriers to do that. At present, about fifty PPP projects under

PPP authority amounting 14 billion US dollar are ongoing. The PPP authority has been signing about 8-10 projects under PPP each year now. All the proposals made by the keynote speaker can be implemented under PPP project. He pointed out the following issues to identify the prospective projects under PPP:

- If it is related to Infrastructure/Asset
- Is the Performance measurable?
- Is there any Commercial scope/ ways of revenue?
- Other enough private sector entrepreneurs interested?

Before involvement in the PPP, the following three key areas should be taken into consideration for giving priority:

1. What are the issues that are going to be solved and what are the interventions required along with time period for the intervention?
2. Impact of intervention in short, medium and long term
3. Cost impact

Effective traffic management is a corporate and social responsibility.

Professor Md. Khairul Enam, Head, Department of Architecture, DIU:

There are two types of traffic, i.e. vehicular traffic and Pedestrian Traffic. There are a lot of talks and suggestions regarding vehicular traffic but the pedestrian traffic should be more emphasized to encourage and motivate people to walk which will reduce the vehicular traffic demand in the road as well as reduce the health hazards of people living in the city. For smooth pedestrian movement, there is a need to introduce moving escalator under the BRT line that will be constructed from Dhanmondi 27 to New Market which will encourage the pedestrian to use the moving escalator leaving the transports and that will help reducing the traffic congestion in this area.



After opening of the BRT, there will be toll plaza at Polashi where about 20000 passengers will get down per hour from the transports which will create heavy human congestion. To solve this, there should be sky walk linked to the nearby markets and the under way moving escalator which will ease the movement of passengers without making congestion in the roads. There is a need to modify the plan of BRT and MRT to accommodate this strategy. He also stressed the importance of vertical car parking system.

Mr. Monjurul Kabir, Additional DIG, RAB-4:

He stressed on abiding by rules rather than enforcing the rules as most of the traffic rules violators are educated. About four lac people suffer everyday in Dhaka city and about 32 lacs working hours are wasted due to this traffic congestion which also hmpers the national development of the country. This problem cannot be solved only by solving the engineering problem. There should also be taken some initiatives like:



- Awareness program should be strengthened regarding traffic rules and traffic signs

- Hydraulic horn should be banned
- Traffic rules related study chapter should be included in the early school to intermediate level curriculum
- Public sector transports should be managed centrally under local government or any other single agency of the government so that the impact of transport strike do not paralyze the movement of the people.
- Approval of starting construction of any building must be subject to allocating enough car parking space inside the building plan.
- To establish car parking facility as an industry, there may be provision for bank loan with easy terms
- Minimum educational requirement to issue driving license should be at least SSC or HSC
- There should be a rule of having enough parking slot (vertical) in every fuel station of Dhaka city. No transport should be kept in road while in queue for fueling.

Mr. Mofiz Uddin Ahmed, Joint Commissioner, DMP Traffic:



He mentioned that the Dhaka Metroplitan Police is working relentlessly with Dhaka Transport Coordination Authority, Roads and Highway Division to ensure effective traffic management & reducing road accidents in the city and the intellectual exercises through this event would be helpful more in this regard. Talking to the issue on modernizing Sadarghat, he recommended to shift Badamtali fruit market to elsewhere as it is the major barrier to ensure the easy movement of

traffic in that area. He also emphasized the importance of waterways as this is a way of enjoyable and relax journey.

He also highlighted the importance of multilayer car parking system as well as multistoried petrol pump system as no car will be allowed to park at any road. Rickshaw should be managed in a disciplined way. DMP has a planning to manage and operate rickshaws in 56 blocks within Dhaka city so that they do not come in main roads.

People should be encouraged and proper system should be developed so that people will automatically choose public transport rather than rickshaw. Traffic Park for child students as like Japanese model can be implemented. Efficient drivers should be trained and developed to meet the demand of quality drivers.

Dr. Md. Kamrul Ahsan, Joint Secretary, Road Transport and Highways Division:

The suggestions should be classified in short, mid and long term solutions. He pointed out some suggestions as following:

- Route permit should be rationalized
- Dhaka City Corporation should take initiative to reduce and manage a huge number of rickshaws (8 lacs) in the city.



- The shopping mall should ensure and establish multilayer parking/underway parking within their existing infrastructure
- Fitness certificate of transports should be issued carefully
- Private sector entrepreneurs should come forward with possible solution package
- Bus stoppage should be managed systematically and Bus Bay should be developed so that any bus cannot stop in the main road interrupting the movement of other buses.
- To ensure uninterrupted traffic flow, a number of underpasses, overpasses, U-Loops should be constructed in different important intersections of Dhaka
- A separate parking policy should be formulated in consultation with transportation experts
- There is a need to ensure east-west development rather than north-south
- The adjacent areas of Dhaka like Savar and Purbachal should be developed with proper planning where there should be standard quality hospitals, educational institutions, shopping malls, amusement parks etc. so that they do not need to come to Dhaka to avail those facilities

Mr. Mosabbir Ahmed, Managing Director, Nitol Niloy:

He informed that Nitol Niloy has the capacity to transform two-wheeler motorcycle to three-wheeler passenger carrier adding one extra wheel if it is allowed and encouraged by relevant government agency. He suggested to reduce the number of transports in the roads of Dhaka city as this is one of the root causes of traffic congestion. One of the effective ways of reducing the number of private cars in city roads is to introduce and ensure enough cost-efficient and standard quality public transports in the roads. The best and successful practices of other countries can be implemented in a customized way as each city has its own tradition and way.



Lieutenant Colonel Mosharof Hossain, Convenor, Entrepreneurship Development Forum, RAOWA:



The situation can be changed positively within the limited resources if the mindset is changed. There is an extreme need to conduct training programs in each district with the participation of both bus owners and drivers along with rickshaw pullers on a regular basis. The training may be held for five days. The government administration and Police of those areas should be included in the training program. The training must focus on making them aware of the total damages of traffic congestion and road accidents and encouraging them to carry out their duties in a professional manner as like other

professions. The local business chamber and association should be involved with this initiative.

He also opined that each bus company must have its own yard for parking their buses. From that yard, the specific bus will reach desired bus stand 20-30 minutes prior to its departure time and they need to leave the bus stand in time. It is also essential to ensure line-wise route franchising. There should be standard and clean restaurant and restroom for drivers in each bus stand.

Ms. Syeda Shahnewaz Latika, DGM, ICCB:

The chambers and associations can be involved with the initiatives to reduce traffic congestion and road accidents. There is no alternative to expand the Dhaka city.



Mr. Md. Sarwar Uddin Khan, Project Manager, Dhaka Mass Transit Company Ltd. (Metro Rail):



The infrastructure facilities should be developed based on the guidelines set in the STP and RSTP. Footpath should be wider and there should have enough facility for sitting for pedestrians so that after walking for sometime, they can take slight rest there. There should also be separate lane for cycling. Rickshaw should be managed more disciplined way through a circular network limit. He also suggested that Daffodil International University and Metro Rail can work together to reduce the traffic congestion and other problems being arisen due to the metro rail.

Mr. Mohammad Ashrafuddin Mukul, Editor, Shopnoghuri

He suggested that there is a need to have proper study as how many transports both public and private are required for the movement of at least one million people daily. The idea of developing ring road for inter-district buses. A separate tax/toll system may be imposed for those transports which will enter into the main roads of Dhaka city.



Mr. Abdul Mannan Bhuiyan, Superintending Engineer, WASA:

Dhaka city is a double mega city.

- Educational institution may introduce booklet and training for traffic awareness.
- School children should be educated with traffic rules.
- Private cars should be reduced drastically by enforcing extra tax on a person if there is more than one private car.
- Fitness less cars and buses should not be in the roads
- RAJUK should strictly follow the compliance regarding the approval of any building and infrastructure and monitor the same after establishment of the infrastructure.



- Each residential apartments and commercial building must have enough car parking space within their infrastructure
- There should be a system for central CC TV monitoring of the traffic of entire Dhaka city

Mr. Farhad Mahmud, Senior Assistant Editor, The Daily Kaler Kantho:



The rules and regulations related to traffic congestion and road accidents are enough but the main problem is implementation of those rules and regulations.

- The BRTA should be more careful before issuing fitness certificate of any transport and providing driving license for drivers
- Separate lane for each category of transport should be maintained

Dr. Mohammad Hannan Mahmud Khan, Assistant Professor and Associate Head, Department of Civil Engineering, DIU:

- If the recommendations can be categorized on the basis of short, mid and long term, it will be easier to go for implementation.
- Computer generated intelligent transportation system should be developed
- Traffic education related chapter should be included in the school level curriculum
- The concept of bus bay can be implemented to avoid congestion in main roads
- Trainers should be developed to train the traffic stakeholders



Concluding Remarks by Professor Dr. S.M. Mahbub Ul Haque Majumder, Pro-Vice Chancellor, DIU



The Pro- Vice Chancellor of the university officially thanked all the guests and participants of the round table discussion for their valuable recommendations and expressed his hope that the recommendations came out of the brainstorming and discussion, will be helpful for developing a strong document to solve or reduce the traffic congestion of Dhaka city.

Summary of Recommendations

The recommendations have been classified into three categories as following:

- i) Short-term (1 year - less than 5 years)
- ii) Mid-term (5 years - less than 10 years)
- iii) Long-term (Above 10 years)

Short Term:

- The existing parking place of the Hazrat Shah Jalal International Airport can be extended vertically through steel structure which will be cost and time effective initiative. The passengers will not face any difficulty as their in and out slot and floor will be informed them previously and they will be able to inform their private cars/vehicles to wait in those specified tunnel/point.
- The petrol pumps can be updated in mobile-refueling pump.
- There may be an emergency response point like as help line for traffic management in area of fire service.
- Random parking and street parking should be banned
- To modernize the SADARGHAT Terminal, we can build steel structure for vehicles for parking like this model. If we can install such steel structure, unsystematic movement of vehicles will automatically be managed as parking is the major problem here. The investment amount can be pay backed within 2 years.
- There should have proper arrangements for the pedestrian mobility. We may develop Land Use Based Universal Overpass; Shaded Walkway; Table-top Pedestrian, two layer pedestrian path etc. The prominent business persons may be encouraged to sponsor such initiative in their respective areas. The clean, beautiful, wide and free pedestrian will encourage the passengers to walk for short distance which will be good for their health as well.
- The U-LOOP SYSTEM will significantly contribute to the reduction of Traffic Congestion in Dhaka city
- The 10/14 seated microbus system can be introduced at Dhaka city like in Indonesia, Thailand etc. Proper guidance/ training should be given to the rickshaw pullers and CNG drivers for adopting driving microbus which will also ensure their rehabilitation program.
- Traffic unit of the government can conduct a well-defined Training and start monitoring on their tasks.
- The Government may also like to publish circular mentioning that each petrol pump/gas station must need to have neat and clean restrooms for public, restaurant/canteen with standard tea stall, car wash facility etc. (alike petrol pumps

in developed countries). There should also have adequate car parking facility (vertical) with a minimum charge. The Ministry of Health and other relevant Ministries may be given responsibility to inspect the cleanliness of the restrooms of every petrol pump/gas station and if any pump/station fails to comply with the cleanliness issue, there license may be cancelled.

- Huge traffic jam occurs at Dhaka-Tongi Road while a lot of vehicles move in at Airport road. To get a better solution, we can use the diversion road at Dhaka Custom House, which is linked with Uttara to get accessed into Dhaka city
- PPP companies or PRIVATE organizations can be invited to take initiatives of Beautification through gardening, establishing modern sitting arrangements for pedestrian etc.
- During Eid festival, the fare of the buses are Illegally Charged Very Much Higher (Two-Three Times Higher) Than the Rate of Normal Days. The Government may like to make a planning to ensure the normal bus fare and may charge extra in exchange of some extra services for passengers. If the 71 lac people who travel within the country during eid period pay extra charge, i.e. BDT 200, THE TOTAL AMOUNT WILL BE BDT 1,42,0000000 (BDT 2,84,0000000 IN TWO EIDS). The Government may also form a fund with this amount and may implement the infrastructure planning/proposal.
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- In Dhaka City, we may replace non-mechanized vehicles like Rickshaw with newly transformed Motorcycle in Rickshaw Forms as these slow vehicle also creates traffic congestion in many cases. The banks/financial institutions need to give loan to these rickshaw puller to implement this transformation
- Green Plantation or Urban Forestry must be implemented which will reduce the impact of ever increasing noise pollution and provide much needed shade on glaring hot roads during summer.
- Online traffic forum needs to be utilized and updated by all.
- Awareness of passengers and drivers needs to be ensured to reduce accidents and traffic congestions.
- There is a need to have a coordination among all the relevant parties (transport owners association, passengers association and Transport workers association)
- Coordinated efforts must be ensured to transform Dhaka as a selected livable city of the world. Each and every service to citizens should be made as per world standard to positively compare Dhaka city with other cities of the world.
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 - Is the Performance measurable?
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- Traffic rules related study chapter should be included in the early school to intermediate level curriculum
- Public sector transports should be managed centrally under local government or any other single agency of the government so that the impact of transport strike do not paralyze the movement of the people.
- Approval of starting construction of any building must be subject to allocating enough car parking space inside the building plan.
- To establish car parking facility as an industry, there may be provision for bank loan with easy terms
- Minimum educational requirement to issue driving license should be at least SSC or HSC
- There should be a rule of having enough parking slot (vertical) in every fuel station of Dhaka city. No transport should be kept in road while in queue for fueling.
- There is a need to shift Badamtali fruit market to elsewhere as it is the major barrier to ensure the easy movement of traffic in Sadarghat area.
- Route permit should be rationalized
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- The shopping mall should ensure and establish multilayer parking/underway parking within their existing infrastructure
- Bus stoppage should be managed systematically and Bus Bay should be developed so that any bus cannot stop in the main road interrupting the movement of other buses.
- To ensure uninterrupted traffic flow, a number of underpasses, overpasses, U-Loops should be constructed in different important intersections of Dhaka

- A separate parking policy should be formulated in consultation with transportation experts
- One of the effective way of reducing number of private cars in city roads is to introduce and ensure enough cost efficient and standard quality public transports in the roads.
- There is an extreme need to conduct training program in each district with the participation of both bus owners and drivers along with rickshaw pullers on a regular basis.
- The chambers and associations can be involved with the initiatives to reduce traffic congestion ad road accidents.
- Daffodil International University and Metro Rail can work together to reduce the traffic congestion and other problems being arisen due to the metro rail.
- RAJUK should strictly follow the compliance regarding the approval of any building and infrastructure and monitor the same after establishment of the infrastructure.
- Each residential apartments and commercial building must have enough car parking space within their infrastructure
- The railway and waterway should be incorporated along with the RSTP to have a comprehensive and collective solution to the excessive traffic congestion in the roads.
- The proper implementation of MRT and BRT lines in several points of Dhaka will be helpful in reducing the traffic congestion
- More BRT lanes should be introduced in more routes
- The Government can use PPP project and international consortium as a tool for ensuring fund management for the traffic related infrastructure development.
- Automatic Traffic Signaling system should be integrated with Central CCTV Network and should be automatically changed based on Artificial Intelligence and loads of traffic in each lane of roads
- We need to equip and train our drivers in such a way so that we can ensure that our vehicles are in safe hands. To materialize this concept, we need to come up with dedicated project, both from public and private sector and train them with technical and societal moral values. Skilled drivers have huge demand in international employment market.
- Proper coordination among the stakeholders (Government agencies) working in Dhaka city must be ensured (sewerage, drainage, utility etc. services)
- Managing the roles of stakeholders should be ensured
- Separate regulatory body to look after and ensure every aspects of effective traffic management needs to be formed

Mid-Term:

- There is a strong need to establish institutional linkage between university and government agencies for better knowledge sharing and to have better solution to a certain national problem.
- Three/Four layers loop system in the busy roads may be replicated as done in Thailand.
- Multi-layer vertical car parking system must be introduced banning on-street car parking. The vertical car parking system at Motsyo Bhaban should be replicated in different public and disputed private properties of the city.
- There is a need to ensure east-west development rather than north-south.
- The adjacent areas of Dhaka like Savar and Purbachal should be developed with proper planning where there should be standard quality hospitals, educational institutions, shopping malls, amusement parks etc. so that they do not need to come to Dhaka to avail those facilities.
- It is very much possible to develop state-of-the-art and modern parking facility (underground with two-three parking layers) at Sydabad, Gabtoli and Mohakhali bus terminals like the model of Pudu Sentral of Malaysia. There will be hygienic restaurant, lounge, wash rooms etc. in those underground terminals.
- Circular ring roads around the Dhaka city should be developed, modified and activated which can reduce at least 50 percent of the traffic congestion of Dhaka city.
- With the application of GIS based software and web GIS, we need to develop and design the full picture of the underground facilities like electrical underground cables, pipes of different related agencies like WASA, TITAS, DESCO, DPDC etc. If we can once finalize the digital picture of Underground Facilities, the responsible agencies can integrate their tasks as they would be able to know then, where and which areas, facilities are there. The Government of Bangladesh may have an agreement with Google.
- BLOCKCHAIN based Vehicle Registration System should be introduced.
- IoT based vehicles tracking system should be introduced.
- In Kolkata City, the Government of India, builds many pedestrian Underpasses in the city, which helps the ceaseless movement of pedestrian. To tackle the traffic congestion at Dhaka City, we can also establish many subways/underpasses by taking such initiatives in busy areas of Dhaka city. In this initiative, Government of Bangladesh can also offer these projects under PPP initiatives. We may also think of taking endeavor for underground railway system.
- Introducing Transport and traffic related Degrees at Higher Education Institutes (HEIs) is very essential.
- For smooth pedestrian movement, there is a need to introduce moving escalator under the BRT line that will be constructed from Dhanmondi 27 to New Market which

will encourage the pedestrian to use the moving escalator leaving the transports and that will help reducing the traffic congestion in this area. There should be sky walk linked to the nearby markets and the under way moving escalator which will ease the movement of passengers without making congestion in the roads.

- Traffic Park for child students as like Japanese model can be implemented.
- There should be a system for central CC TV monitoring of the traffic of entire Dhaka city

Long Term:

- Bangladesh government can install modern device system like 'Touch n Go (automated booth) where car users would be able to park their car/vehicles for 1, 2, or 3 hours and Government can earn a lump-sum revenue from this earning. In Bangladesh, Government may initiate introducing such system at barren/disputed land and earn revenue (from fees)
- Without destructing/demolishing the existing high-rise building during the extension of roads, we may replicate the process called Highways/Flyovers through the Buildings as like Hanshin expressway, Osaka, Japan
- The Government may utilize the idle surplus money held with the Insurance Companies of Bangladesh for the investment in big projects like Padma Bridge. So, the idle money of those insurance companies may be utilized for the infrastructure and process development of traffic related infrastructure.
- Computer generated intelligent transportation system should be developed