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2007-05-17

Urban and Regional Rapid Transit in Hanoi/VN - Some Considerations

1. Preliminary Remarks

Funded by the Konrad-Adenauer-Foundation I stayed in Hanoi from 2007-04-23 to 2007-04-30. Referring to the subject of Urban Development and Public Transportation in Hanoi I reported and took part in the ECOTRANS seminar and workshop, learned about the written reports and presentations of the existing studies, and had the pleasure of numerous discussions with experts and official representatives of the Hanoi administration and government.

Several times I was asked to add some written comments to my contributions, so I may write down some considerations as follows. I emphasise, that due to limited resources I can give nothing but a few very provisional ideas on a very low information level, which therefore should be used only for confidential expert purposes and which should not be published.

2. Existing Studies: Lack of Integration of Transportation and Urban Development

The existing motorbike based mobility in Hanoi is efficient on a very high level (maybe except of traffic safety), and hardly to be improved by any other mode of persons transportation. So there is no need for immediate action. But the mobility will be threatened hard, if the use of private motor cars may rise essentially, which will make Hanoi stick in congestion within short time causing severe environmental impact and loss of mobility and choice of options. As there is no other way out of this trap, gradual improvement of Public Transport and restrictions for PMC immediately have to be prepared to continue the cities social, economic, ecological and cultural progress .

The existing studies focus on optimising single technical systems and solutions as offered by financial partners. The compromise suggested by the wider integrated HAIDEP just gives every system discussed a share for a certain part of Hanoi, thus not really giving a transportation advice how to integrate transportation modes with each other and with spatial development. Also the spatial development itself as one objective of transportation development seems to need some additional discussions, e.g. it might aim more at urban networks and less at center hierarchies. Finally, most concepts might run into severe troubles with gradual implementation and interim phases. These integrations including solving some remaining contradictions, gaps and redundancies might lead to different conclusions. Thus, to me the existing concepts seem to be not yet mature for final decisions.

3. Conclusion 1: Use Existing Rail, Long Term NS-Line Underground

Long and Medium Distance Urban Networks require a train System in Hanoi City. We suggest to install a two track conventional passenger railway line: along the existing N-S rail corridor, because of the important urban destinations situated there, and underground for integration into urban environment from Tran Phu to far South on Duong Giai Phong. For most efficient use of this expensive infrastructure on highest capacity level, this rail line simultaneously should serve urban, regional and long distance traffic. This concept would perform the following qualities:

- The project promises chances for immediate and long term integrated urban and transportation development. Severe traffic problems along and for the existing rail will be solved.
- Crucial point is the gradient between Long Bien Bridge and Dien Bien Phu Boulevard. Evidence shows that technical and urban design situation can be solved and even improved.
- From the very beginning mobility can be enhanced by using existing infrastructure, rolling stock, as well as domestic technical and organisational know how and capacities, e.g. by immediate starting of the project Bac Ninh/Ga Long Bien.
- Starting from existing standards, long term features are possible and should be provided for electric drive, standard gauge and even High Speed Trains.
- Long distance trains should cross through Hanoi and stop at more than one station. Regional stops could be Ga Van Dien, Ga Giap Bat, Ga Hanoi, Ga Long Bien, and Ga Gia Lam and more. Many more MRT stations and number of tracks at stations should be planned deliberately.
- Combination of short and long distance infrastructure allows flexible answers to changing demand according to traffic behaviour of people and regional land use planning.
- Conventional rail technology is not monopolised, and also in future will be offered worldwide and domestic at competitive market prices.
- There is no need for different rail systems in Hanoi, which would cause higher cost, less flexibility in operation and future development, and more dependency of foreign technology.
- Urban Environment and number of passengers around all new stations could be improved by densification, mix of urban functions, redesign of public space and pedestrian access using the advantage of underground rail.

4. Conclusion 2: Area wide Flexible Rapid Bus Transit Networks

Hanoi has a polycentric urban structure connected by a well developed, dense, mostly grid shaped network of more equivalent bus lines. It is highly recommended to improve this structural model for sustainable transportation and spatial development. Quasi endless networks of urban units is a more modern objective for urban and transportation structure than hierarchy of centers. Dense networks of more or less equivalent bus lines suit to this objective better than trunk/feeder PT systems.

To change this to a different structural model including highest frequency dedicated trunk lines with secondary feeder systems and central bus stations would be contradictory to the existing and recommended future structure. It also would destroy urban space at points of highest density, lose time at junctions, and interfere with objectives of urban design and pedestrian qualities.

We therefore suggest to install an Hanoi wide high performance BRT – Bus Rapid Transit Network by gradually improving, extending and complementing the existing situation according to needs of urban development. All lines will receive continuous electronic priority at traffic lights including PMC congestion management. Some short dedicated bus lanes could alternate with busses leading queues of private motor cars on mixed lanes at stops and succeeding courses. Right door standard busses mostly can stop at normal curbs. Travel speed and local capacities/frequencies flexibly might be adapted to urban environment This would perform the following qualities:

- All parts of the City gradually can take part in the mobility progress of a gradually faster and growing bus network according to financial and organisational capacities. As the cheap parts are improved first, efficiency is higher from the very beginning of investment.
- Busses should be given electronic priority at signalled junctions up to 2 busses every 5-6 min frequency for all directions. This allows dense networks for shortest pedestrian access to bus stops. Less than average 3 min waiting time does not improve line for passengers. For efficient use of urban space, space behind busses can be used by other vehicles.
- Urban Streets and boulevards have more chances for urban design and room for pedestrians, trees and many other purposes. This is especially useful in historical situations, but also fosters more density and saving space for people around bus stops, who might be passengers too.
- Universal right door busses mutually can be utilised for all lines and also e.g. for the use for special mass events like feasts, sports, or emergency cases. They are from the domestic or world market, cheap, and subject of improvement in efficiency, e.g. economy, low floor, articulated, and environmental standards. This keeps investment low, flexible and domestic.

5. Instant Urban Networks: Starting Rail Bac Ninh/Long Bien, Improving Bus System

For a very long time one Underground Rail line (maybe extended on the very long run) and an area wide dense and fast high performance bus network will fulfil Hanois public transportation needs. Flexibility for adapting new techniques, objectives or developments is high.

Immediate success for mobility and politics is possible by implementing first steps to both projects within very short periods and with a very low budget. These first steps are able gradually to be extended to complete systems. We would suggest the following first steps:

- Between Bac Ninh and Ga Long Bien a regional rail service should be started immediately on the existing infrastructure with used rolling stock. This could bring remarkable effect at a very low price. Bus interchange direction west and south should be provided. Extensions to several directions and destinations as well as to a final system as described are possible.
- A conventional bus line of about 2-4 km immediately should be chosen and improved by electronic priority. At most, about one third of its length should provide a dedicated bus track. It should use the first low floor articulated busses in Hanoi, with levelled curb stops. Bus stops and maybe the whole street as public space should be carefully redesigned to allow comfortable bus flow and to foster private investment in building and restoration.