CONCEPT OF SUSTAINABLE TRUCKPORTS AND DETERMINATION OF THEIR LOCATIONS IN LAHORE

By

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Abstract

The paper presents the work on development of a new concept of "Truckports" and determination criteria for their locations in general, and specific to Lahore. The concept is conceived on account of the arising need by the trucking sector of Pakistan and many serious transportation issues being faced by large cities and are neglected. It was intended to bring-up awareness to the concerned organizations, departments and authorities especially freight forwarding entities, by proposing a concept of Truckports in order to tackle the existing and future traffic and freight problems. The concept also serves the motto of approved Trucking Policy to modernize the trucking sector of Pakistan under the requirement of National Trade Corridor Program. The basic concept behind the "Truckport" is that it will include all freight operation activities / facilities at one place. The feature that makes it distinguishable from other ideas is the easy access of almost all facilities without disturbing the city and its traffic. A Truckport will consist of more than fifty need based departments and units associated together to make a complete system and ultimately contribute to generate revenues. The Truckport with Full Capacity location is proposed in Lahore on or near G. T. Road - Ring Road crossing on Battapur side, for Indo-Pak cross-border trade. The Ordinary Truckports excluding some components are proposed at four locations i.e. one on or near Gujranwala Road – M-2 Link crossing after Shahdra, one on or near Sheikhupura-Faisalabad Road – M-2 Crossing, one on or near Multan Road – M-2 crossing for freight coming from Karachi side, and one on or near Ferozepur Road at Gajjumatta. These will be administratively connected to Full Capacity Truckport and form a network of freight transportation.

Keywords: *Freight Planning, Transportation Planning, Truckport, Truck Terminal, Multimodel Integration, Multimodel Terminal, Freight Terminal, Sustainable Freight Transportation, Urban Freight, Sustainable Urban Freight.*

Introduction

The Geo-Strategic importance of Pakistan cannot be denied. The transportation network of Pakistan including roads, railways, airports, and seaports, if wisely used, can make Pakistan a place of high importance and can act as a regional hub for freight transportation around Asia. But, if we look at the condition of existing infrastructure available for freight movement through roads, we find that there is no proper infrastructure provided for this sector. The necessity of Trans Freight in view of the economic development of Pakistan is irrefutable. It is now a key concern to improve the trade and logistics competitiveness as the quality, cost and efficiency of logistics is becoming growingly demanded to attract investment, exploit the potential of regional supply hub and to save high wastages on account of cross-sectional deficiencies. According to an estimate, losses on account of inefficiencies in trucking sector are costing the economy Rs. 150 billion per annum of which Rs. 25 Billion per year loss is consisting of contribution to the infrastructure deficit [1]. In order for Pakistan to compete regionally as well as internationally, modernization of the entire Road Freight Sector with particular emphasis on Trucking Sector is required as our dependence on Trans freight through roads is almost 96% of the total ton / km and is growing very fast [1].

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The domestic demand of cargo is more than 300 million tones. This is much higher than the international demand of about 45-50 million tons. With increase in traffic, the present trucking fleets as well as the logistic systems will not be in a position to handle the increasing domestic and international demand.

This action and research was intended to explore the existing freight forwarding system in Lahore city, point out the deficiencies and weaknesses in the system and propose a solution which can avoid future chaos and is potentially sustainable and could look after the interest of every stakeholder including government, goods transporters, truck drivers, fleet operators, and the city traffic controllers.

Methodology Adopted

As a first step, review of existing freight activities and the involvement of government was done. Some previous data was collected to know the past related studies conducted and the amount of work done in connection to those studies to resolve the existing problems. After that, different field visits were conducted to know the prevailing practices and to find out the causes of the problems. Different surveys were conducted like Trucking Cluster Survey, Existing Terminals Survey, On-Site Facility Survey and Spatial Survey. Also, meetings with concerned officials and in-depth interviews were conducted with terminal owners / goods transporters, truck drivers and presidents of goods transporters local associations, to know their problems and to gather other information like Cargo Volume and Category through Dry ports.

Then, an analysis of the problems and existing situation based on the gathered data was made and real issues and future needs were highlighted. After this, the concept of Truckport was developed and international practices were reviewed. Need for a combined facility was assessed and a solution was proposed. Then stakeholder's consultation was done through meetings with different terminal owners/goods transporters, truck drivers and Presidents of Goods Transporters Associations to get the feedback on the concept of Truckports. After that, results and conclusions were prepared and recommendations were suggested. Figure-1 shows the flow chart of detailed methodology adopted.

Freight Development and Concepts

It was found that Total 4-Dry Ports, 4-Truck Stands, 2-Trucking Stations, 1-Truckport, 1-Multi-Model Transit Hub and more than 11-Container Terminals are located at different locations in Lahore (refer to Figure-2).

It was found that many concepts were floated in the past for the development of road freight sector which include provision of Trans-Freight Stations, Multi-Model Terminals, Model Truck Stands, Trucking Stations, and Multi-Model Hubs etc. etc., but, none was found to be implemented due to some reasons or other. The summary is presented in Figure-3.

It was found that total 10,489 trucks have been registered in Lahore. Obviously the operating vehicles will be more than this figure including vehicles registered before year 2007.

Trucking Cluster Survey was conducted in the vicinity of Lahore City. Different clusters were found in the city. Some of them are located in the congested areas of the city like "Sabzi Mandi" near "Bakar Mandi" and some of them are located along the main roads like G. T. Road, Multan Road and Raiwind Road.

There are more than 285 number of registered goods transporters operating in Lahore [2]. Numbers of goods transporters from other cities operating in Lahore are in addition to it.

If a rough estimation that 20,000 trucks enter or exit Lahore as stated by representatives of good transporters association, taking average capacity for an average truck size as 20-tons, the total cargo being transferred becomes 0.4 million tons per day.

In comparison of the increasing number of trucking activities against the existing infrastructures available to handle them, it is badly needed to create awareness in general people and the government departments about the traffic problems and the developing needs of the local people and the stakeholders. There is a need to develop a Freight Transport Master Plan and develop technical standards for terminal design.

It is now obvious to say after analyzing the whole scenario that the growth in the road freight sector is haphazard. This haphazard growth will be a danger to the transportation network of the city spoiling the overall efficiency of the freight forwarders and should be stopped.

If the existing situation goes on, it will create many potential problems which will rise with the passage of time and the sustainable development will become more difficult to implement.

Many representatives of the container/truck terminals and goods transporters associations confirm that there is a requirement of huge support from the Government to implement the programs on ground. They are facing problems and they are facing more and more. It is now a major need to avoid the haphazard growth and to provide a combined facility to the truck drivers, truck owners, container terminal owners, and goods transporters.

Government should take a notice of every major handicapped trucking activity before it flourished. As we saw that different goods transport owners are developing their own schemes, providing bad quality of terminal designs. A non-scientific approach is being adopted to handle the problems.

Government should regulate criteria to own and operate a terminal. It should be under the control of the Government. Suitable bye-laws should be drafted and implemented in accordance with the trucking needs and sustainable development.

After examining the development works initiated uptill now by the Government and their poor implementation status and after examining the local freight problems, their impact on city traffic, and the extent of dissatisfaction of the goods transporters and the drivers, knowing the haphazard unplanned and un-designed terminal growth, a need for the development of such a facility rose that may solve all the problems, satisfy the present needs and contribute towards sustainable development of the Lahore city.

As we saw previously that many concepts of freight forwarding are being used in the prevailing market which includes Trans Freight Stations [1], Truck Stands, Container Terminals, Multi-Model Transit Hub, Trucking Stations etc., none of them are well planned and designed according to the present needs and are not sustainable in the future rather creating fudge in the market. This need gives birth to a new concept of “Truckports”.

Truckports Concept

1.3 The Concept

“Truckport” is a one stop facility where all the freight forwarding activities performed in a systematic, planned and efficient way, fulfilling the needs of trucks and truck drivers, providing less or zero hindrance to city traffic and produces reasonable revenue to the Government in return.

1.4 Characteristics of a Truckport

Truck means an automotive vehicle used for the hauling of the goods. It includes trucks and truck-trailers. A port is a place where people and merchandize leave or enter a country or a city. Therefore "Truckport" implies to a port designated for the trucks carrying goods which enter into the city for distribution of goods or leave to other cities for transport. It is intended to use the word "Truckports" just like airports and seaports. However, the functional elements of these are different to some extent. The main characteristics to be considered for a Truckport concept are, i) It is a one stop facility. All the trucks and truck-trailers will come to the port and use the facilities depending upon the need of the vehicle and the driver, ii) It will be linked to Central Business Districts (CBDs) if possible, iii) It will be as far as possible from the central parts of the city to reduce impact on the city traffic, iv) It will be connected properly with the other ways of transport like railway lines, existing road network and if possible with airports and seaports. Type of ways connected with the Truckport varies from city to city, land use pattern, v) It will be complete in all respect. No activity related to trucking will be performed outside of the Truckport, vi) It will operate 24/7. No delay in time will occur and sensitive goods are to be reached to their destinations well in time, vii) It will be an independent revenue generating entity, viii) It will be totally monitored through latest means so as to avoid any illegal, ethical and crime activity, ix) All internal maneuvering of the Truckport will be designed to reduce time delay, to avoid any bottleneck and congestion, x) It will be aesthetically attractive and will portray a planned, healthy and happy impression to the drivers and to the city itself, xi) It will be controlled and operated by highly skilled persons and under a hierarchal organogram.

1.5 Proposed components of a Truckport

The real conception behind a Truckport is that it will include all the freight operations facilities and concerned departments at one place. Truckport will include different offices and facilities like Information Cell, Administrative Building, Department of Transportation, Safety Department, Safety Training Institute, Transport Education / Awareness Cell, Vehicle Registration Authority, Licensing Department, Environmental Protection Agency, Vehicle Examination Center, Workshops and Repairing Center, Rescue 1122, Custom Office, Passport and Immigration, Revenue Department, City Traffic Police, Hospital and Health Clinics, Insurance Department, Utility Department, Vehicle Tracking Facility, CCTV / Surveillance Center, Container Terminal having facility for Reefer Containers, Truck Stands, Stand for Pick-up Trucks, Multi-Model Platforms, Warehouses, Cross Docks, Parking Areas, Loading and Unloading Areas, Distribution Yards, Booking Offices, Weigh bridges, Cold Storages, Petrol Pumps, Service Stations, Tyre Shops, Body Making Shops, Vehicle Decoration Shops, Spare Parts Shops, Lodging Facilities, Recreational Facilities, Restaurants, Shopping Centers, Pan Shops, Show Rooms, Banks, Bathrooms / Toilets, Weighting Areas, Mosque, Taxi Stand / Park and Ride Facility, Telephone Booths, Drinkable Water Dispensers, Tuck Shops etc. A conceptual layout of a Truckport is presented in Figure-4.

1.6 Ultimate Benefits of a Truckport

Idea of locating all the relating facilities at one place will stop the haphazard growth of the trucking sector. It will reduce the traffic problems arising in the city. In addition, a lot of revenue could be generated from different departments. A large number of employment opportunities will flourish. It will promote a sensible approach and professionalism in drivers and goods transporters/ shipping lines. It will contribute a lot towards the economy of the country. Finally it will be the key step towards sustainable development. Figure-5 summarizes the benefits at user and Government levels.

1.7 Proposed Capacity of a Truckport

Rough estimation of the capacity of proposed Truckport layout is calculated to be 6-Square Km including area of road network within the Truckport.

1.8 Ordinary Truckports

The Truckport with Full Capacity (i.e. with all components proposed above), should be established at one of the best site near Pakistan-India border on Battapur road or on or near Ring road – G. T. road crossing, in Lahore. On other potential sites without cross country borders, Truckports with Ordinary or Normal Capacity should be established.

Components of an Ordinary Truckport will almost be the same in general but at a comparatively small scale. Capacities of Container Terminals, Truck stands, Warehouses, Cross docks, Distribution yards and Truck parking will be reduced. Components like Safety Training Institute, Vehicle Registration Authority, Licensing Department, Customs Office, Insurance Department, Passport and Immigration and other big departments will be excluded.

The Ordinary Truckports will be administratively connected to Full Capacity Truckport and form a network of freight transportation.

1.9 Response of Different Stakeholders

1. The Truckports system is acknowledged by majority of the goods transporters

2. Comparatively to other type of terminals and stands, Truckport is preferred by the representatives of goods transporter's associations.

3. The facilities proposed in the Truckport are demanded by 100% of the drivers interviewed.

Possible Locations of Truckports in Lahore

1.10 Proposed locations

For Lahore, the potential Truckport locations may be proposed as: 1) One on or near GT Road-Ring Road crossing on Battapur side, for Indo-Pak trade, 2) One on or near Gujranwala Road-M-2 Link crossing after Shahdra, 3) One on or near Sheikhupura-Faisalabad Road-M-2 Crossing, 4) One on or near Multan Road-M-2 crossing for freight coming from Karachi side, 5) One on or near Ferozepur Road at Gajjumatta. A map showing potential locations of these Truckports is presented at Figure-6.

1.11 Criteria for Deciding Locations

Following criteria are kept in mind while deciding the location of the Truckports in Lahore,

a. Compatibility with existing and proposed transportation infrastructure

b. Linkage with other ways of transport

c. Shortest Possible route lengths

d. Minimum disturbance to the city traffic

e. Space available for future expansion

f. Linkage with cross border networks for trading

1.12 Significance of each of the five (5) locations was studied and taken into account along with other locations. These locations show much appropriateness and compatibility and fulfill the criteria kept in mind and hence proposed.

1.13 Compatibility with Lahore Urban Transport Master Plan (LUTMP) – 2012

Compatibility of the proposed locations with LUTMP is very necessary as this plan is newly prepared and going to be implemented in the near future.

Urban growth as per Scenario-II given in LUTMP report [3] is considered. According to this scenario, compacted urban growth is expected in Lahore in future. The proposed locations are compatible with the LUTMP as all the locations are near or outside the city expansion. Map showing compatibility with LUTMP is shown at Figure-7.

1.14 *Compatibility with National Trade Corridor Improvement Program (NTCIP)*

NTCIP is a very needful program which is going to be implemented by National Highway Authority (NHA) in the following years. A number of road improvement projects have been initiated along the main corridor which spreads across the country. It was very important to consider this program while deciding locations of the Truckports as the corridors in this program will cater major road freight activities in the future.

Map showing compatibility with NTCIP is shown in Figure-8. It is shown that the proposed locations are compatible with the routes proposed in NTCIP.

Conclusions and Recommendations

1.15 Conclusions

1. The road freight sector is being ignored from a long time and a suitable innovative solution is required to tackle the effect of freight on city traffic and to boost-up the economy.

2. There is a communication gap between the Government and the goods transporters and shipping lines.

3. Truckport is highly demanded by the drivers and goods transporters.

4. The concept could be applied to any metropolitan city in lines with the Urban Transportation Master Plan for sustainable solution.

1.16 Recommendations

1. Proper study should be conducted to know the feasibility of Truckports.

2. Full Capacity Truckport should be established at Site No. 1 i.e. on or near GT Road-Ring Road crossing on Battapur side, for Indo-Pak trade. Significance of the proposed Site is that It is connected with the Railway line and the most important road of Lahore i.e. GT road and Lahore Ring Road. This site is the only site which is also connected with the Indian border and is capable of enhancing Indo-Pak cross-border trade. The site is away from city and the vast land is available for establishing a Full Capacity Truckport.

3. Ordinary Truckports are to be established at other proposed locations which should be administratively linked with the Full Capacity Truckport.

4. Railway links where possible should be developed to the Truckports.

5. Proper planning should be carried-out and suitable designing be done keeping in view the local conditions and characteristics.

6. Research and Development (P & D) Department should be made to know the governing parameters.

7. The facilities at Truckport could be provided at some minimal charges to the goods transporters.

8. Rules and Guidelines for establishing a Truckport should be formulated.

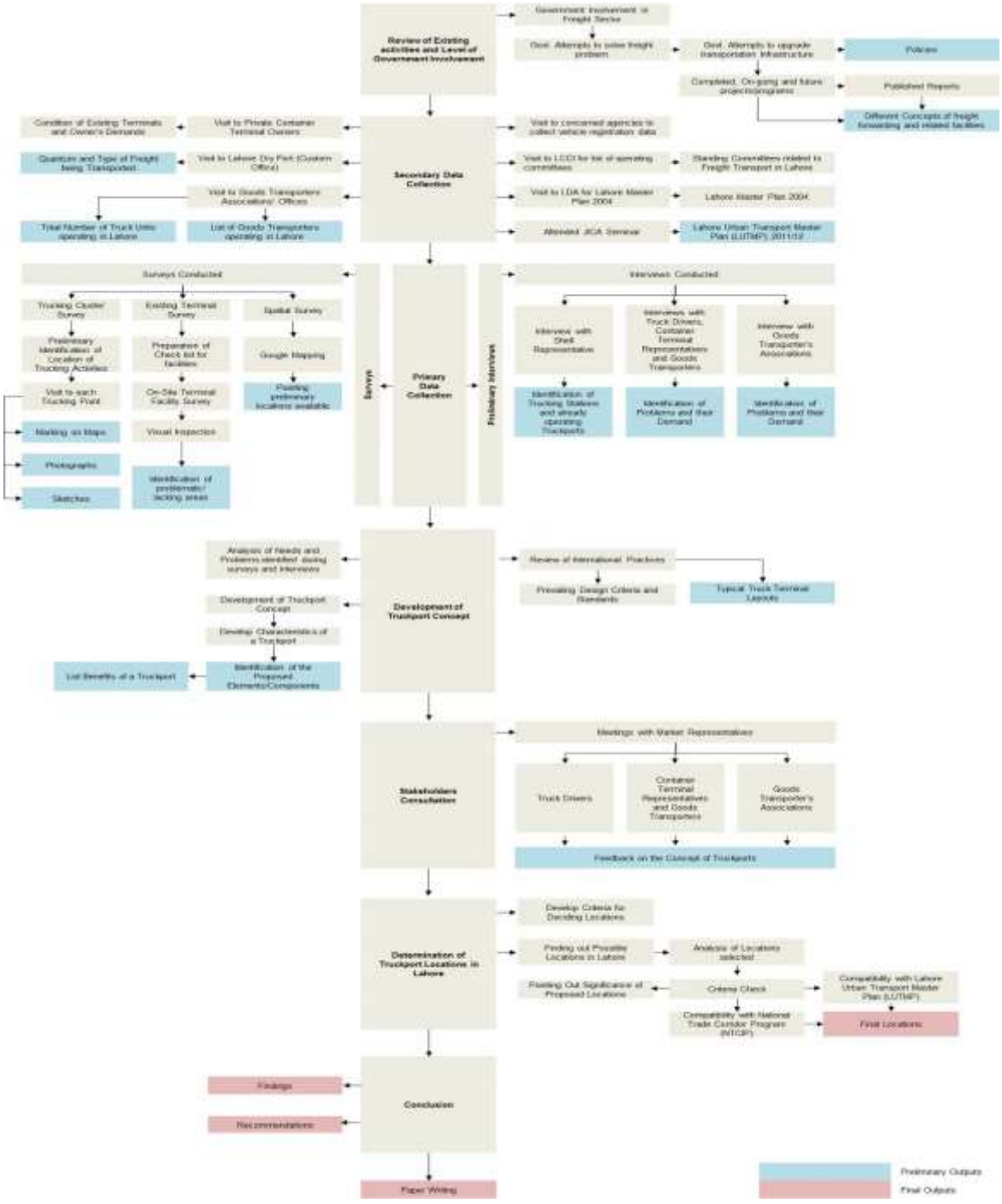


Figure-1. Flow chart of Methodology Adopted

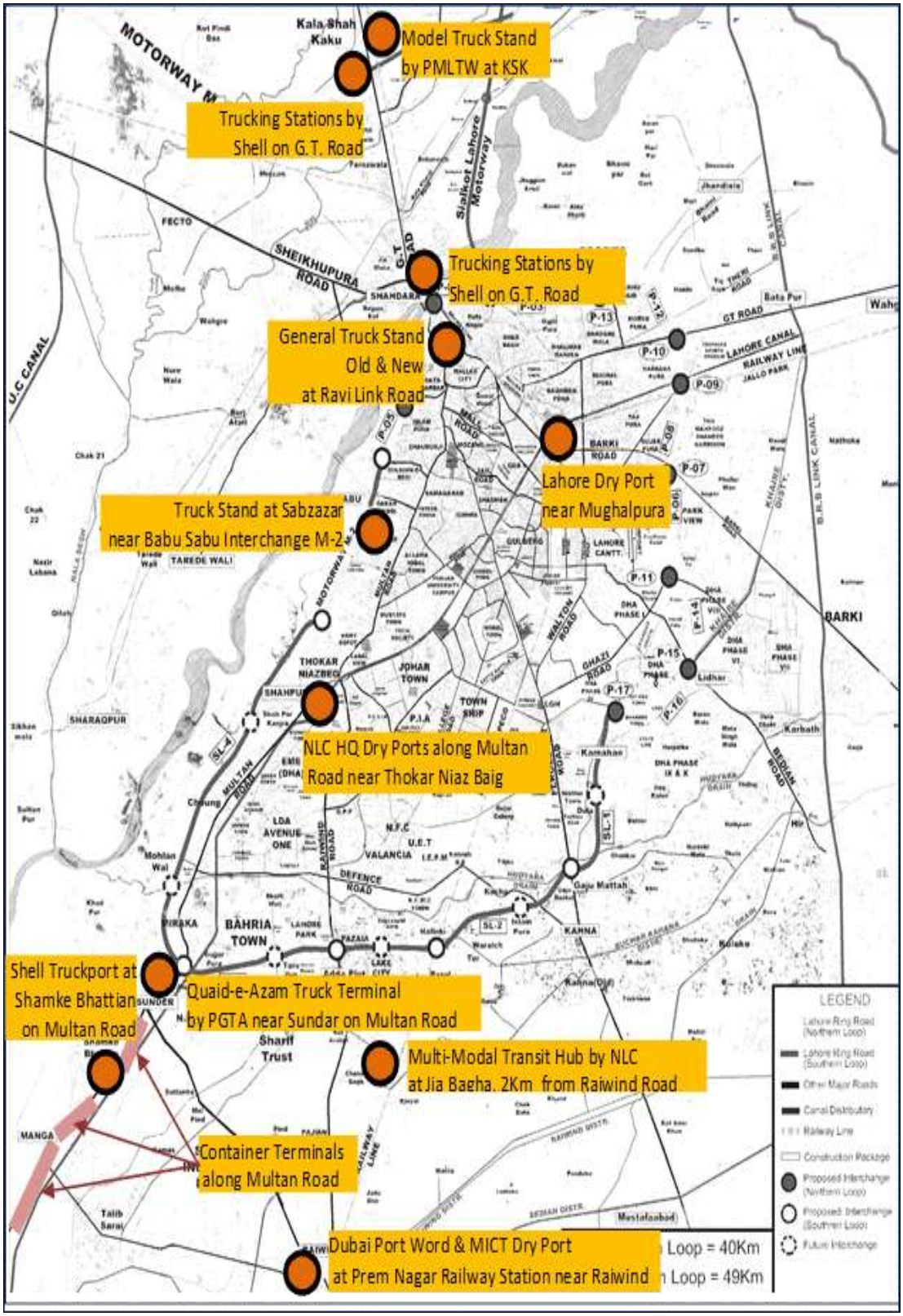


Figure-2. Location of Existing Freight Terminals *(Source: Field Surveys, Map taken from Google)*

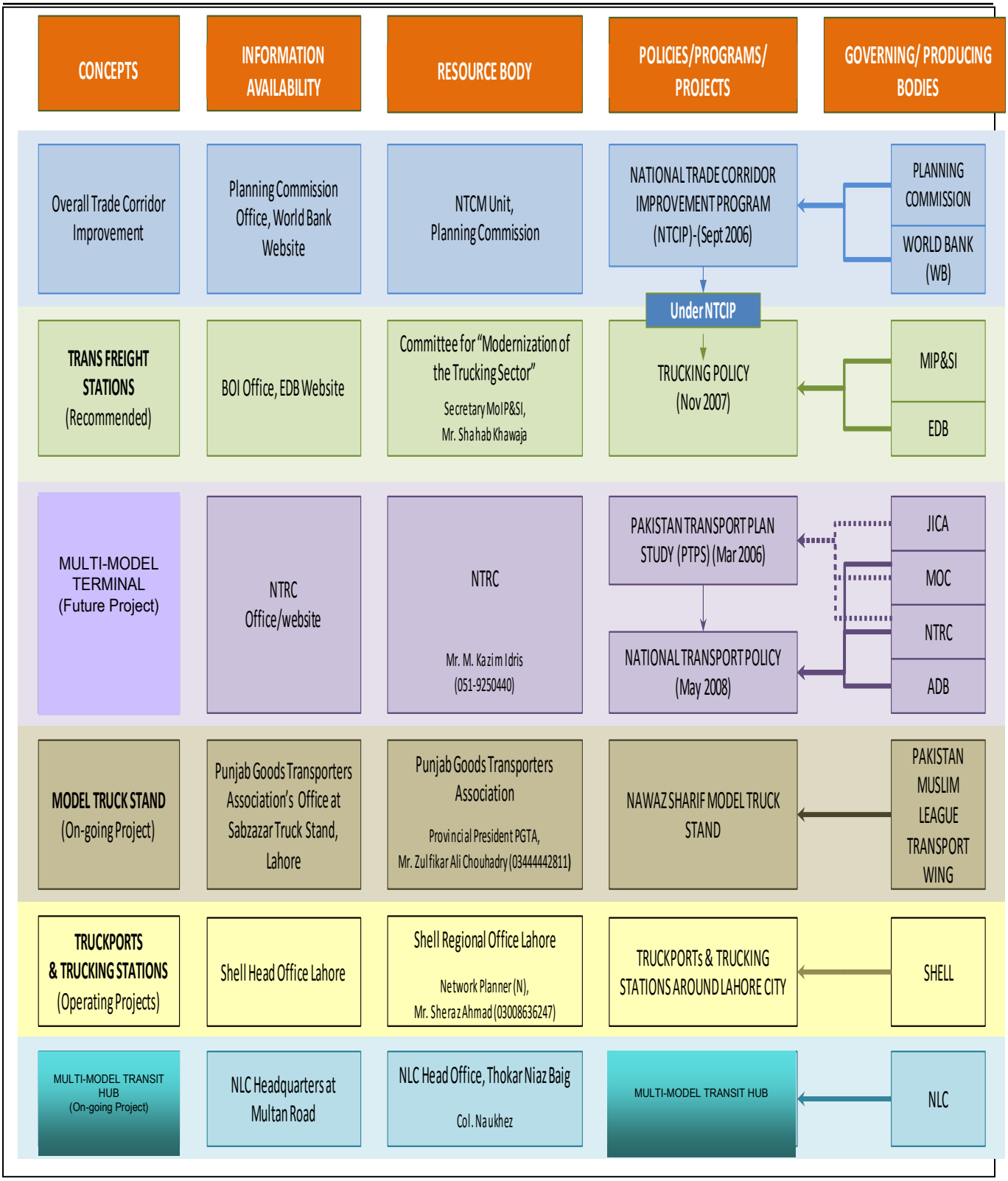
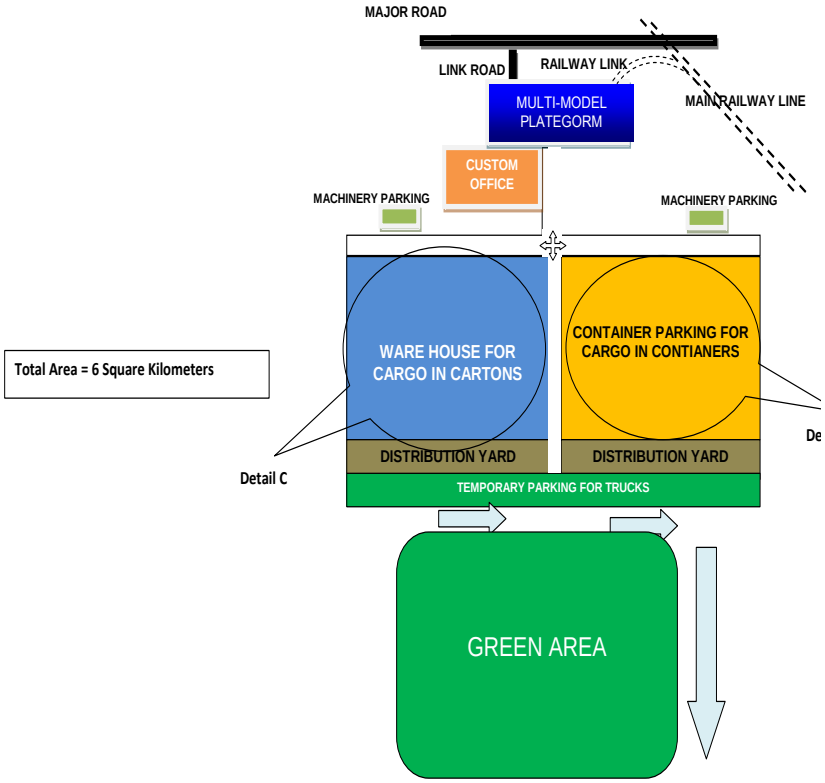
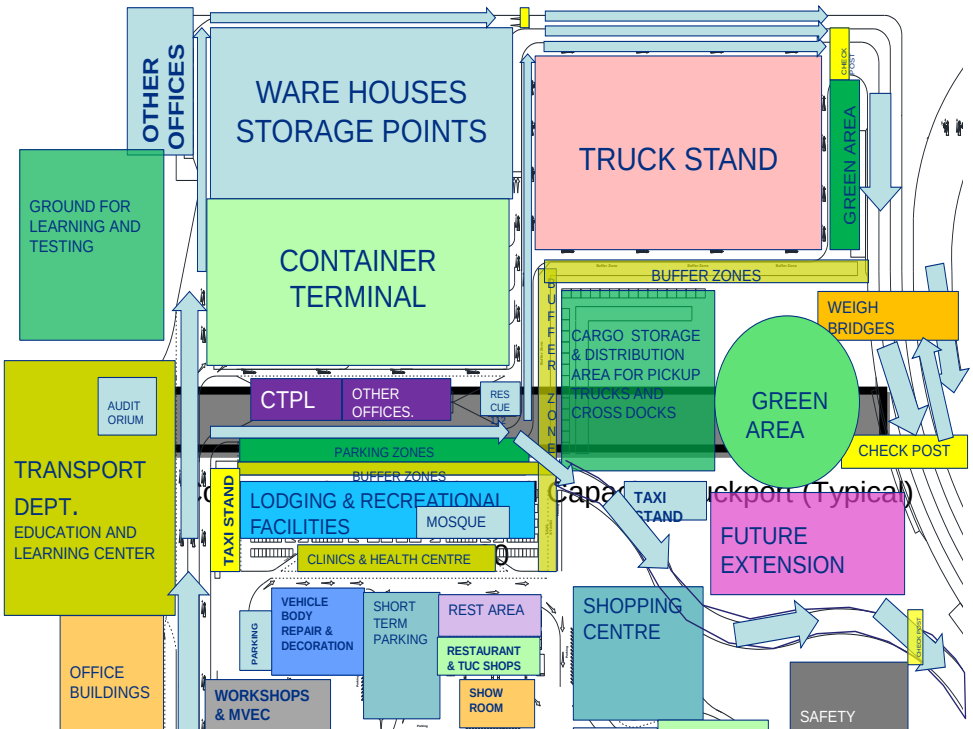


Figure-3. Road Freight Sector Developments and Different Concepts
(Source: Meetings with Government Officials, Review of Published Reports and Field Surveys)


MAJOR ROAD
LINK ROAD
RAILWAY LINK
MAIN RAILWAY LINE
MULTI-MODEL PLATEGORM
CUSTOM OFFICE
MACHINERY PARKING
MACHINERY PARKING
Total Area = 6 Square Kilometers
WARE HOUSE FOR CARGO IN CARTONS
CONTAINER PARKING FOR CARGO IN CONTIANERS
Detail C
DISTRIBUTION YARD
DISTRIBUTION YARD
TEMPORARY PARKING FOR TRUCKS
GREEN AREA


OTHER OFFICES
WARE HOUSES STORAGE POINTS
TRUCK STAND
GREEN AREA
CHECK POST
GROUND FOR LEARNING AND TESTING
CONTAINER TERMINAL
BUFFER ZONES
WEIGH BRIDGES
CARGO STORAGE & DISTRIBUTION AREA FOR PICKUP TRUCKS AND CROSS DOCKS
GREEN AREA
AUDIT ORIUM
CTPL
OTHER OFFICES.
RES CUE
CHECK POST
TRANSPORT DEPT.
EDUCATION AND LEARNING CENTER
PARKING ZONES
BUFFER ZONES
TAXI STAND
LODGING & RECREATIONAL FACILITIES
MOSQUE
TAXI STAND
FUTURE EXTENSION
CLINICS & HEALTH CENTRE
OFFICE BUILDINGS
PARKING
VEHICLE BODY REPAIR & DECORATION
SHORT TERM PARKING
REST AREA
RESTAURANT & TUC SHOPS
SHOW ROOM
SHOPPING CENTRE
WORKSHOPS & MVEC
SAFETY

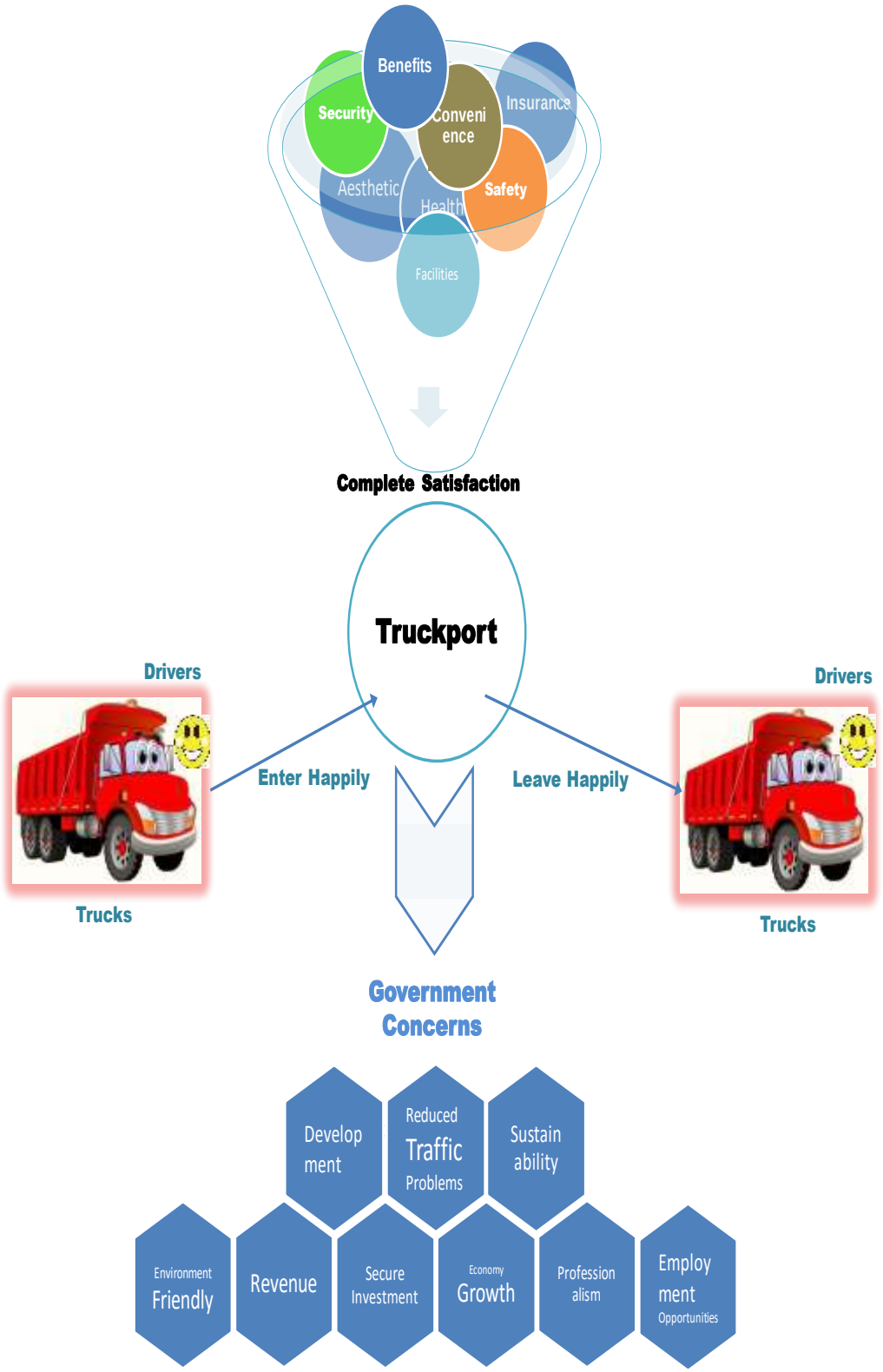


Figure-5. Graphical diagram showing Overall Envisaged Benefits of a Truckport

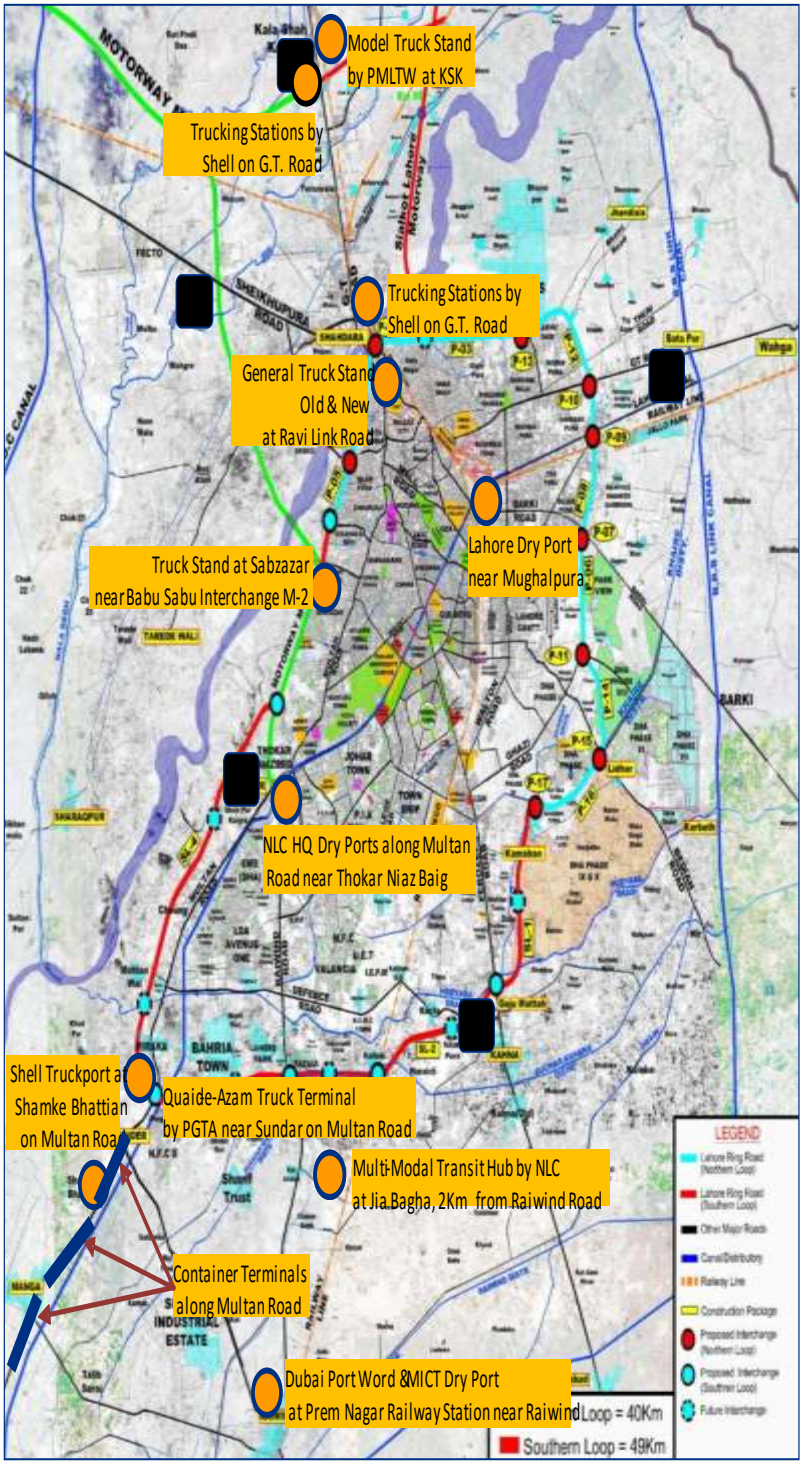


Figure-6. Locations of Proposed Truckports *(Map Source: Google)*

Proposed Sites

Existing Terminals

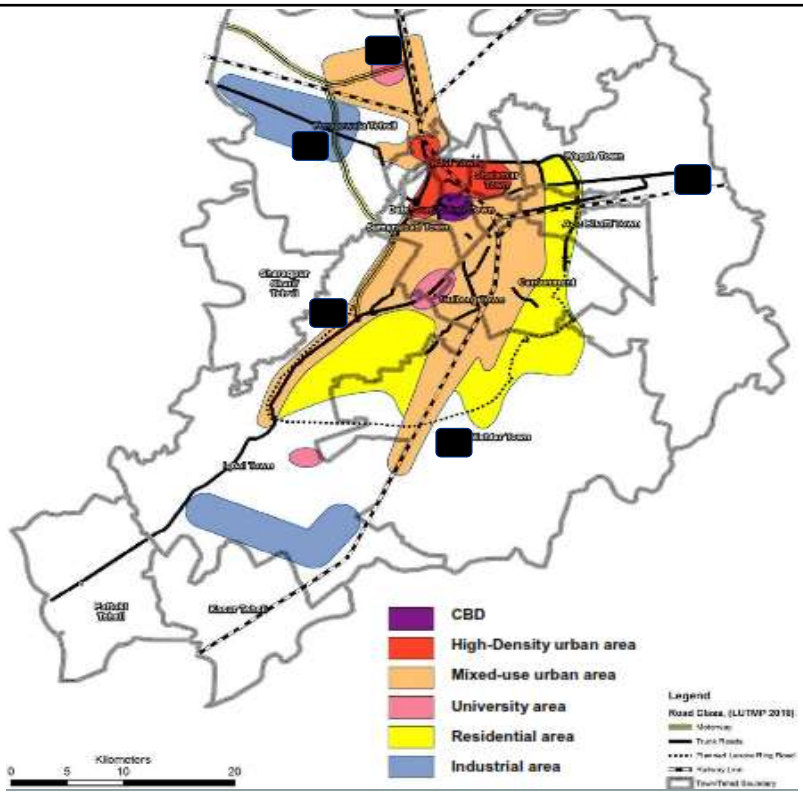


Figure-7. Compatibility with Recommended LUTMP Future Scenario-II of Lahore [3]
(Source: Lahore Urban Transport Master Plan 2012)

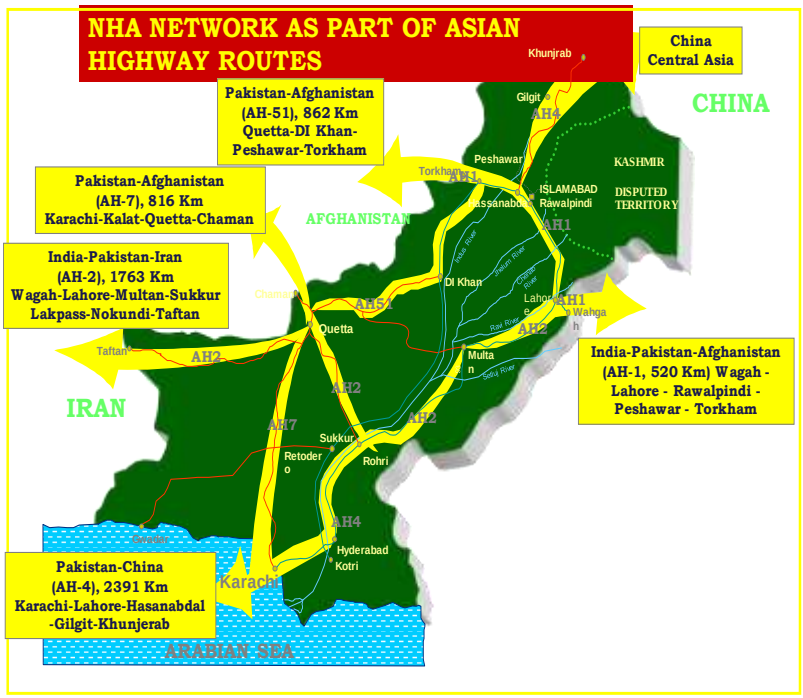


Figure-8. Compatibility with National Trade Corridor Improvement Program
(Source: Presentation by National Highway Authority (NHA) [4]

References

[1] Ministry of Industries, Production & Special Initiatives, Government of Pakistan, Executive Summary, In *Trucking Policy*, Ministry of Industries, Production & Special Initiatives, Pakistan, (2007).

[2] Punjab Goods Transporters Association, Page 136, In *All Punjab Goods Transport Telephone Directory*, Punjab Goods Transporters Association, Punjab, (2009).

[3] Transport Department, Government of Punjab, Pakistan, Chapter 3, In *Lahore Urban Transport Master Plan (LUTMP) 2012 Report,* Transport Department, Government of Punjab, Pakistan, (2012).

[4] National Highway Authority, Government of Pakistan, Presentation, In *Presentation on National Trade Corridor Program,* National Highway Authority, Pakistan, (2008).