

LEGISLATIVE COUNCIL BRIEF

RAILWAY DEVELOPMENT STRATEGY

INTRODUCTION

At the meeting of the Executive Council on 16 May 2000, the Council took note of the findings of the Second Railway Development Study (RDS-2). The Council ADVISED and the Chief Executive ORDERED that the new railway development strategy entitled "Railway Development Strategy 2000" at **Annex A** should be adopted for the HKSAR up to the year 2016.

Annex A

BACKGROUND AND ARGUMENT

The 1994 Railway Development Strategy

2. The Government formulated the first Railway Development Strategy for Hong Kong in 1994. It accorded priority to the implementation of three railway projects, namely, the KCR West Rail, the MTR Tseung Kwan O Extension, and the Ma On Shan to Tai Wai Rail Link which is to couple with an extension of the KCR East Rail from Hung Hom to Tsim Sha Tsui.

3. These three rail projects are now at different stages of implementation. In 1999, Executive Council advised and the Chief Executive ordered that we should proceed with the implementation of the Sheung Shui to Lok Ma Chau Spur Line for an additional rail passenger boundary crossing to provide relief to Lo Wu. The Council also decided in late 1999 that as part and parcel of the Disney Theme Park development, the Penny's Bay Rail Link should be built and completed in time for the opening of the Theme Park. Thus a total of six new railway lines are scheduled for completion between 2002 and 2005.

The Second Railway Development Study

4. The Government commissioned RDS-2 in March 1998 to examine how best to further expand the rail network of the HKSAR in order to meet the rail transport needs arising from population growth and increase in cross-boundary activities for the next two decades. The RDS-2 is now completed.

The RDS-2 Findings

5. RDS-2 predicts bottlenecks to occur in the railway network as travel demand develops. These bottlenecks will appear along the Tsuen Wan Line at the Nathan Road section, the Island Line at Causeway Bay and the East Rail at the Beacon Hill Tunnel. RDS-2 has shortlisted six new component schemes which can meet the objectives of relieving these bottlenecks and facilitating economic and housing development of the SAR. The six component schemes are :-

- (a) North Hong Kong Island Line;
- (b) Fourth Rail Harbour Crossing;
- (c) East Kowloon Line;
- (d) Tai Wai to Diamond Hill Link;
- (e) Northern Link; and
- (f) Kowloon Southern Link.

6. In addition, three stand-alone schemes, which would not affect the formation of the basic network options, have also been identified to serve transport needs in particular corridors. They are the West Hong Kong Island Line, the Regional Express Line and the Port Rail Line.

7. RDS-2 concludes that the component schemes can be combined in two different ways to meet all the objectives of the railway network expansion needs. Two basic network options comprising the component schemes are suggested, the first option is based on extending East Rail across the harbour as the Fourth Rail Harbour Crossing (FHC), and the second combines the Tai Wai to Diamond Hill Link and the East Kowloon Line with the FHC to form a continuous corridor. RDS-2 has recommended that we follow the second option.

8. Apart from the network, RDS-2 recommends that Hung Hom should remain as the Mass Transportation Centre, which will be the inter-city train terminal with immigration and custom facilities and be a major transport interchange.

9. RDS-2 also concludes that the existing railway project planning process, typically taking eight to nine years from conception to opening, offers little scope for compaction. It therefore suggests that an early start should be made so that the completion of railway projects can be timed to meet the development needs.

10. RDS-2 respects the fare autonomy enjoyed by the two railway Corporations. Subject to this, it suggests that the Corporations should examine interchange fares and the rationalisation of rail fare as the network develops.

11. RDS-2 asserts that it has put forward railway schemes which are financially viable but also notes that financial viability for some of the rail projects may require additional support. It suggests that Government can consider paying for part of the costs for these projects as public works expenditure.

12. RDS-2 recommends that the North Hong Kong Island Line is the most urgently required, to be completed by 2008. This should be followed by the Tai Wai to Diamond Hill Link, the East Kowloon Line, and the Fourth Rail Harbour Crossing, to be completed in 2011. The Northern Link, Kowloon Southern Link and West Hong Kong Island Line should be completed by 2016. The implementation of the Regional Express Line and the Port Rail Line is largely dependent on the pace at which the passenger and freight traffic demand will build up.

13. We feel the RDS-2 findings are broadly acceptable.

14. In noting the RDS-2's findings, the Executive Council also observed that the two Railway Corporations would be invited to bid for any new project, which was not a natural extension of an existing line. In considering such bids, the Administration would take into account all relevant factors and ensure that the two Corporations were competing on a level playing field.

The Second Railway Development Strategy for the HKSAR

15. Based on the findings of RDS-2, government formulated Railway Development Strategy 2000 (the 2000 Strategy) at **Annex A**. The 2000 Strategy underlines Government's policy on railway development and indicates which rail schemes should be included in the next phase of railway network development for Hong Kong. Although we will need some flexibility in the implementation of individual projects, the 2000 Strategy will lay down the broad framework for the implementation of the next batch of railways.

Key Features of Railway Development Strategy 2000

16. The 2000 Strategy envisages six new passenger rail corridors and a potential Port Rail Line (PRL). The six new rail corridors are as follows :-

- (a) an east-west corridor from Chai Wan to Tung Chung formed by the MTR Island Line (ISL), the North Hong Kong Island Line (NIL) and the Tung Chung Line;
- (b) a second east-west corridor from the Tseung Kwan O to Kennedy Town formed by the MTR Tseung Kwan O Extension, ISL and the West Hong Kong Island Line (WIL);
- (c) a north-south corridor which, depending on the operator, could either run direct from Tai Wai or Ma On Shan to Hong Kong Island via Southeast Kowloon;
- (d) a Kowloon Southern Link (KSL) that will provide convenient connection between the KCR East Rail and West Rail via the Kowloon peninsula;
- (e) a Northern Link (NOL) that will connect the KCR East Rail and West Rail at the northern part of the New Territories; and
- (f) the Regional Express Line (REL) that will provide rapid rail transport between the Boundary and the Metro areas.

The potential PRL will be from Lo Wu to the Kwai Chung Port via either East Rail or West Rail.

17. To achieve these six corridors, we need to build on and interconnect the 2006 railway network by the development of the following projects. These projects are chosen from the RDS-2 recommended schemes, grouped to form suitable packages to serve the perceived development needs of the community.

Island Line Extensions

18. We intend to group the North Hong Kong Island Line and the West Hong Kong Island Line into one project. The North Hong Kong Island Line is required to relieve overcrowding of the Island Line. The West Hong Kong Island Line will serve the development needs of the Western District in Hong Kong Island and its development depends on the additional capacity provided by the North Hong Kong Island Line. The development of the North Hong Kong Island Line relies on the availability of the Central and Wanchai Reclamation. The project is naturally an MTR project which should possibly be completed in two phases between 2008 and 2012.

Shatin to Central Link

19. This project will provide relief to the projected congestion at the East Rail at Beacon Hill Tunnel, and connect Shatin with Hong Kong Island by combining Tai Wai to Diamond Hill Link, the East Kowloon Line, and the Fourth Rail Harbour Crossing into one project. This project will provide an important north-south rail corridor. The development of the Fourth Rail Harbour Crossing depends on the availability of the Wanchai reclamation, scheduled for 2008. The East Kowloon Line should be developed to provide early support to the traffic needs of the South East Kowloon Development. The Tai Wai to Diamond Hill Link should be completed in time to relieve congestion at the Beacon Hill Tunnel projected to occur by 2011. Again, the Sha Tin to Central Link project can be completed in phases between 2008 and 2011. Both railway Corporations should be invited to submit proposals to develop this project.

Kowloon Southern Link

20. The Kowloon Southern Link extends West Rail into the heart of Kowloon to interchange with East Rail at Hung Hom and is naturally a KCR

project. It will enhance the development of West Kowloon and serve the integrated arts and culture and entertainment district planned there. The Kowloon Southern Link project can be completed between 2008 to 2013.

Northern Link

21. The Northern Link will provide convenient rail access for the Strategic Growth Areas in the north-west New Territories by connecting West Rail to East Rail. It also links up the West Rail Kam Sheung Road Station with the boundary crossing at Lok Ma Chau. It is naturally a KCRC project, and can be timed for completion in conjunction with the Strategic Growth Area development in the window of 2011-2016.

Regional Express Line

22. The Regional Express Line will connect the Boundary through express service to Hung Hom, with a possible further extension across the harbour to Hong Kong Island. The demand for this line will depend on how quickly the additional capacity provided by the Spur Line will be taken up. We will therefore wish to start early the preliminary planning process for this project so as to be able to implement this line quickly if the demand so justifies. Depending on the terminal points, this line can be built by either Corporation.

Port Rail Line

23. We should encourage the KCRC, which is the natural contender for this line joining Lo Wu with the container port via East Rail or West Rail, to investigate into the viability of the Port Rail Line. If viable, the availability of the Line will enhance the economic development of the SAR and reinforce the status of our port. The decision to implement this project will hinge mainly on a commercial decision on the viability of the project, but Government should render every support for the project in the planning and implementation process in view of the economic and environmental benefits of putting container freight on rail.

Implementation

24. To summarise, the indicative implementation timeframe for the six new railway projects is as follows :-

<u>Project</u>	<u>Operator</u>	<u>Likely Completion Window</u>
Island Line Extensions	MTRC	2008-2012
Shatin to Central Link	MTRC/KCRC	2008-2011 By competitive bidding.
Kowloon Southern Link	KCRC	2008-2013
Northern Link	KCRC	2011-2016
Regional Express Line	MTRC/KCRC	Depends on cross-boundary rail passenger growth; by competitive bidding depending on alignment.
Port Rail Line	KCRC	Depends on cross-boundary rail container freight growth.

Annex B A map showing the alignment of these projects is at **Annex B**.

Project Costs

25. The rough order of cost of implementing the six railway projects outlined in paragraphs 18 - 23 above is \$80 – 100 Billion in 1998 prices. We believe that the greater part of these projects are financially viable, given the continued commitment by Government to pay for ancillary public works items required to support the railway, such as pedestrian facilities connecting to the stations, access roads to the stations, and public transport interchanges serving the stations, and to allow the railway Corporations to develop property on appropriate sites on top of railway stations and depots. In allowing property development, we should charge the railway Corporations full market value land premium on a bare site basis. This charging arrangement should apply to all railway projects.

Mass Transportation Centre

26. The RDS-2 recommendation for Hung Hom to remain as the Mass Transportation Centre in paragraph 8 above is acceptable and should be endorsed.

FINANCIAL AND STAFFING IMPLICATIONS

27. Six supernumerary directorate posts have been provided in Transport Bureau and Highways Department until 2005 (some of which will lapse in 2001) for the implementation of the 1994 Strategy projects. These will need to be retained to take forward the 2000 Strategy projects. To the extent that these posts cannot be funded through redeployment, we will seek the necessary financial resources in the usual way.

28. Some transport infrastructure, such as access roads and public transport interchanges will be required for some stations to facilitate the full use of the rail network. We estimate that such infrastructure work will cost \$6 – 8 Billion roughly, basing on past experience. We will bid for any of these resources in the usual way. We may also need to consider additional form of support to assist the railway projects to become viable.

29. Both Corporations will be invited to put forward competitive bids for new projects, not being a natural extension of an existing line, such as the Shatin to Central Link. Whether a particular corporation will eventually succeed in the bid is a normal business risk it will have to face.

30. We will further assess the detailed financial and staffing implications for the specific projects when making individual implementation proposals for the new railway lines.

ECONOMIC IMPLICATIONS

31. The Strategy will be vital in supporting the economic, social and population growth of the HKSAR in the next 15 years. In addition, the Strategy will facilitate even closer economic and social linkage between the HKSAR and the Mainland, particularly Guangdong and the Pearl River Delta. Investments in the Strategy will bring about an economic internal rate of return of more than 15%. When working out the implementation

programme of the railway projects, we will spread out the construction activities as far as possible, so as to contain the pressure on the construction industry.

ENVIROMENTAL IMPLICATIONS

32. A strategic environmental assessment (SEA) has been carried out as a key component of the RDS-2. None of the component or stand-alone schemes in the Strategy present insurmountable environmental problems, though all have some potential environmental impacts. These have been identified and will be addressed during the design and development process.

33. The majority of the component schemes in the Strategy are to be built and operated underground, which greatly reduces their potential environmental impact. The Strategy has clear advantages over an 'alternative' road-based approach to meeting the growth in transport demand. Railways will reduce land take, noise impact, air pollution and material and energy consumption.

34. The SEA noted that greater emission avoidance would be achieved under the Strategy if combined with the introduction of complementary measures such as restraint on private transport use and development of a more integrated public transport system in which bus and minibus services complement the rail network.

PUBLIC CONSULTATION

35. We will brief the two Corporations, Legislative Council, major advisory bodies and the District Councils on the Strategy. Their views will be welcome as part of the on-going effort by Government to refine the railway development policy and implementation plans for the individual projects. Moreover, the strategy booklet will also be made available to the public.

PUBLICITY

36. We will announce the Strategy according to the following action plan:

Brief the two Corporations, issue LegCo brief and hold press conference	16.5.2000
Brief LegCo, TAC, ACE	Second half of May
Issue the Strategy booklet to the public	Mid-June
Brief Town Planning Board and District Councils	June/July

SUBJECT OFFICER

37. The subject officer is Mr. WAN Man-lung, Principal Assistant Secretary for Transport (Tel. 2189 2187).

Transport Bureau
16 MAY 2000
(TBCR 16/1016/97)

**Government of the Hong Kong
Special Administrative Region
Transport Bureau**

Railway Development Strategy 2000

May 2000

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1 INTRODUCTION

- 1.1 This is the second Railway Development Strategy to be prepared for Hong Kong. The Strategy provides the planning framework for further expansion of Hong Kong's railway network up to 2016.
- 1.2 The Strategy is based on the findings of the Second Railway Development Study which was completed in early 2000. The further decision to build individual railway projects will follow on detailed engineering, environmental and financial studies relating to these projects. Public consultation will be undertaken prior to the implementation of any railway projects.

Policy on railway development

- 1.3 Railways are environmentally friendly and efficient mass carriers. Hong Kong's railways now account for more than 30% of daily domestic passenger travel, over 80% of cross-boundary passenger trips and a limited amount of freight movement between Hong Kong and the Mainland. The new transport strategy entitled "Hong Kong Moving Ahead" promulgated in October 1999 has reaffirmed the need to rely on railways as the backbone of Hong Kong's transport system. Railways are essential to Hong Kong's continued economic, social and land development, and will be given priority in Government's plans for infrastructure development.
- 1.4 The two Railway Corporations have to operate on a prudent commercial basis. Government acknowledges that any new railway project will have to provide a commercial return to the Corporation, or any other operator, chosen to implement the project. The present practice to allow, where appropriate, the Railway Corporations to develop property on the stations and depots has worked well and should be retained. Government will also continue to pay for ancillary public works item required to support railway development. Other support for marginally viable projects will be considered on the basis of the need for the individual projects.

The 1994 Railway Development Strategy

- 1.5 The Government formulated the first Railway Development Strategy for Hong Kong in 1994. It set out a railway development programme, according priority to the implementation of three new railway projects, namely, the KCR West Rail, the MTR Tseung Kwan O Extension, and the Ma On Shan to Tai Wai Rail Link which is to couple with an extension of the KCR East Rail from Hung Hom to Tsim Sha Tsui.
- 1.6 The three rail projects are now at different stages of implementation. In addition, the decision was taken in 1999 for the implementation of the Sheung Shui to Lok Ma Chau Spur Line to provide additional rail passenger crossing facilities between Hong Kong and Shenzhen to relieve the congestion at Lo Wu. In late 1999, we decided to build the Penny's Bay Rail Link to open in time for the Disney Theme Park. Thus a total of six new railway lines are scheduled for completion between 2002 and 2005. These six railway lines cost over HK\$100 billion. Their completion signifies the expansion of the existing railway network by about 40% to more than 200 kilometres. The completed railway network by the year 2006 is shown in **Figure 1**.

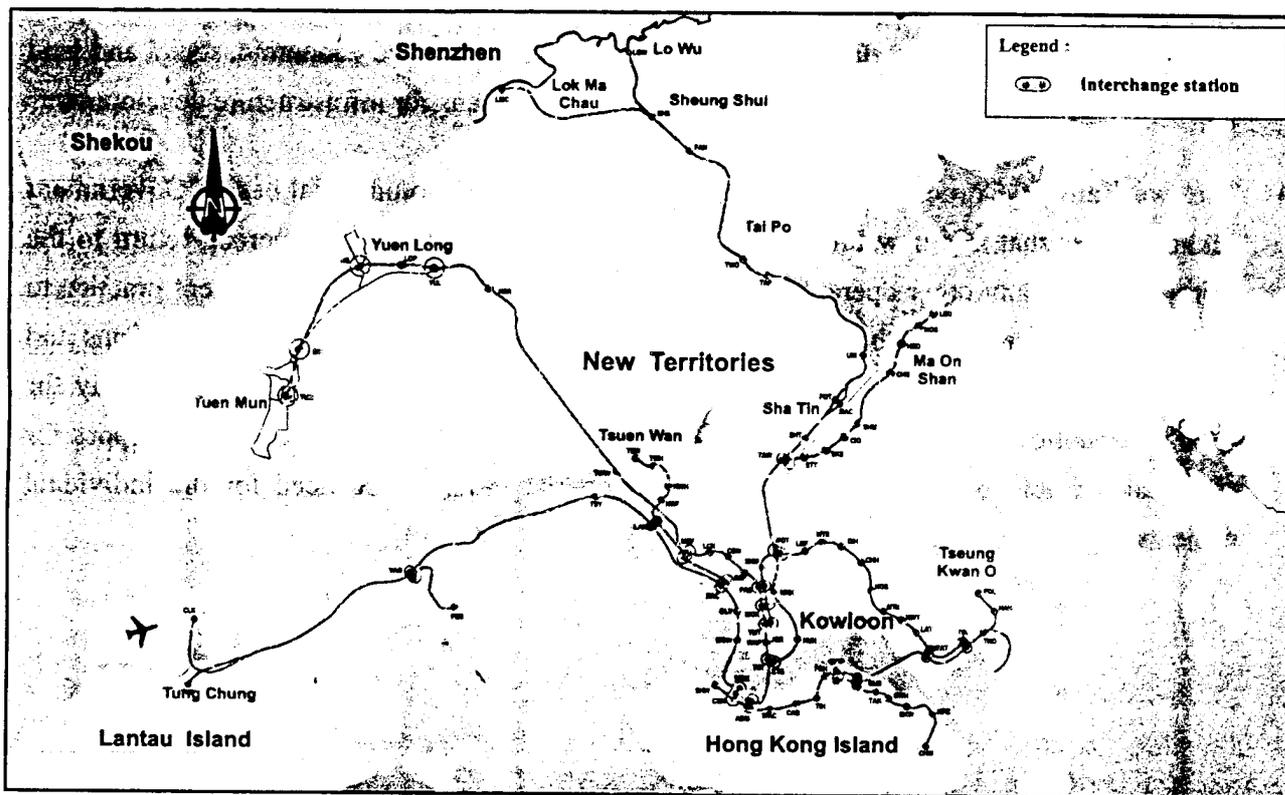


FIGURE 1: 2006 RAILWAY NETWORK

2. THE SECOND RAILWAY DEVELOPMENT STUDY

2.1 In order to cater for Hong Kong's continued population growth (which is projected to reach 8.9 million by 2016) and the increasing cross boundary social and economic activities, Government commissioned the Second Railway Development Study (RDS-2) in March 1998 to examine how best to further expand the rail network to the year 2016.

The study objectives

2.2 The RDS-2 examined the needs of the future railway network to fulfill the following objectives:

- (a) to relieve bottlenecks in the existing railway systems;
- (b) to provide rail service to strategic growth areas for housing and economic development;
- (c) to meet cross-boundary passenger and freight demands; and
- (d) to increase the share of rail in the overall transport system to reduce reliance on road-based transport.

New railway schemes

2.3 In order to achieve the intended objectives, RDS-2 has studied a number of new railway schemes which can be combined in different ways with the existing railway lines to form expanded railway networks. RDS-2 has shortlisted six component railway schemes for the formation of the basic network options. The six component schemes are:-

- (a) North Hong Kong Island Line;
- (b) East Kowloon Line;
- (c) Fourth Rail Harbour Crossing;
- (d) Tai Wai to Diamond Hill Link;
- (e) Kowloon Southern Link; and
- (f) Northern Link

2.4 In addition, three stand-alone schemes, which would not affect the formation of the basic network options, have also been identified to serve transport needs in particular corridors. They are the West Hong Kong Island Line, the Regional Express Line and the Port Rail Line.

2.5 RDS-2 recommends that network expansion should be based on the East Kowloon Line connecting with the Fourth Rail Harbour Crossing.

3. RAILWAY DEVELOPMENT STRATEGY 2000

3.1 Based on the key findings of RDS-2, Government has formulated Railway Development Strategy 2000. The Strategy maps out the preferred railway network expansion plan for the HKSAR up to the year 2016. The recommended Railway Network is shown in **Figure 2**.

Key features of the preferred network

3.2 On completion, the Network will feature six new rail corridors and a potential Port Rail Line (PRL). The six new rail corridors are as follows:

(a) an east-west corridor from Chai Wan to Tung Chung formed by the MTR Island Line (ISL), the North Hong Kong Island Line (NIL) and the Tung Chung Line (TCL);

(b) a second east-west corridor from Tseung Kwan O to Kennedy Town formed by the MTR Tseung Kwan O Extension, ISL and the West Hong Kong Island Line (WIL);

(c) a north-south corridor which, depending on the operator, could either run direct from Tai Wai or Ma On Shan to Hong Kong Island via South East Kowloon;

(d) a Kowloon Southern Link (KSL) that will provide convenient connection between the KCR East Rail and West Rail via the Kowloon peninsula;

(e) a Northern Link (NOL) that will connect the KCR East Rail and West Rail at the northern part of the New Territories; and

(f) a Regional Express Line (REL) that will provide rapid rail transport between the Boundary and the Metro areas.

The potential PRL will be from Lo Wu to the Kwai Chung terminals, via either East Rail or West Rail.

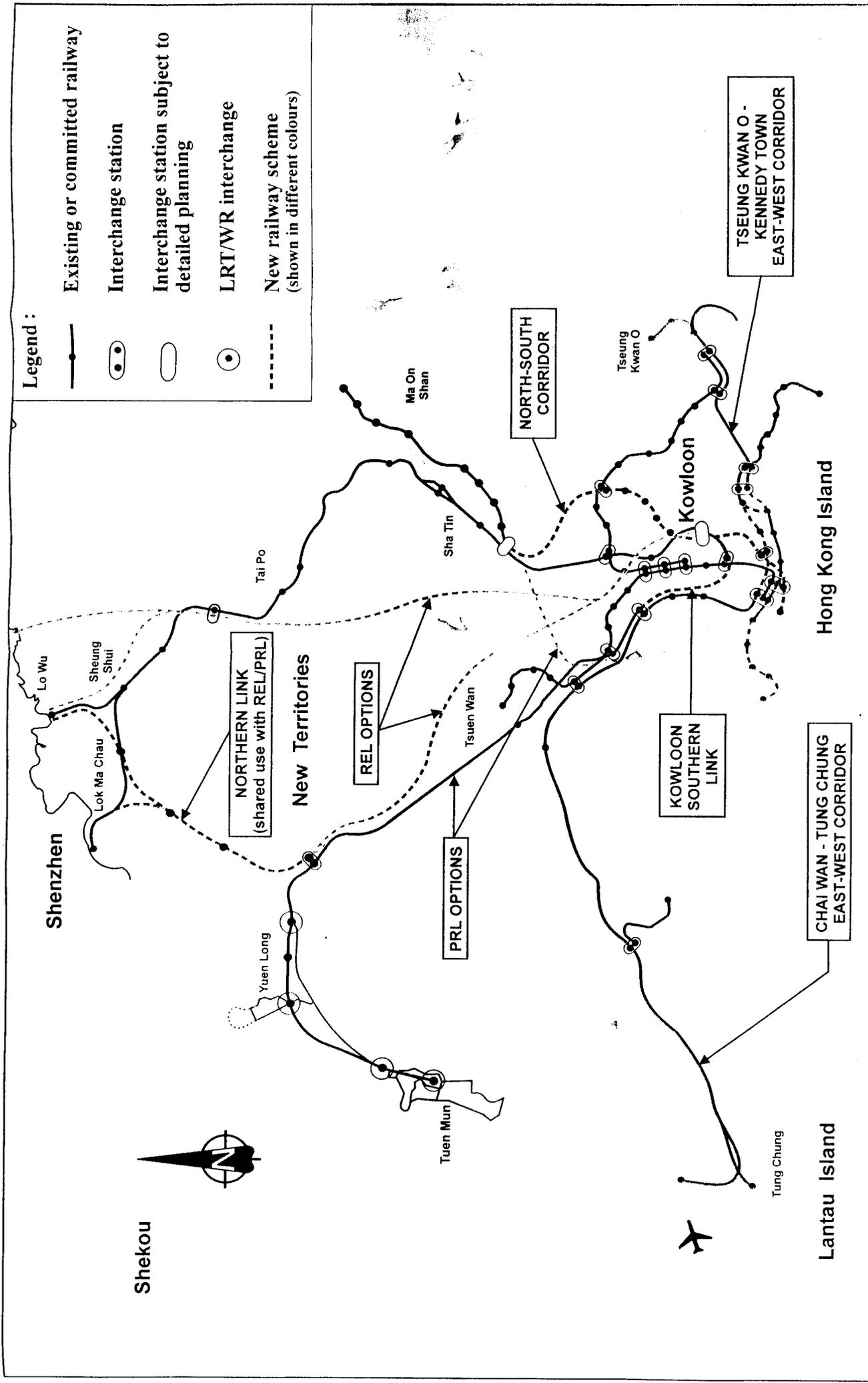


FIGURE 2: RAILWAY NETWORK FOR THE YEAR 2016

The new railway projects

3.3 In order to achieve the Network desired, we intend to group the new railway schemes identified in RDS-2 into the following projects for implementation:

Island Line Extensions

3.4 The Island Line Extensions comprise a new North Hong Kong Island Line (NIL) and a West Hong Kong Island Line (WIL). The NIL is an extension of the existing MTR TCL along the north shore of Hong Kong Island to run through onto the eastern half of the existing MTR ISL at the Fortress Hill Station. Concurrently, the new MTR Tseung Kwan O Extension (TKE) will join and run through onto the western half of the ISL at the Tin Hau Station. NIL can relieve the Causeway Bay section of the ISL and the Nathan Road section of the Tsuen Wan Line (TWL) by redistributing the cross-harbour trips to the TCL and TKE. The WIL is an extension of the MTR ISL from Sheung Wan to Kennedy Town.

3.5 Implementation of the NIL depends on the forecast timing of occurrence of the bottlenecks on the ISL and TWL and on the availability of the Central and Wanchai Reclamation. The viability of WIL would be affected by the progress of the Western District Development and success of the urban renewal process. As both NIL and WIL are natural extensions of the Island Line, they should be considered to be implemented as a package. The layout of the two railway lines is shown in **Figure 3**.

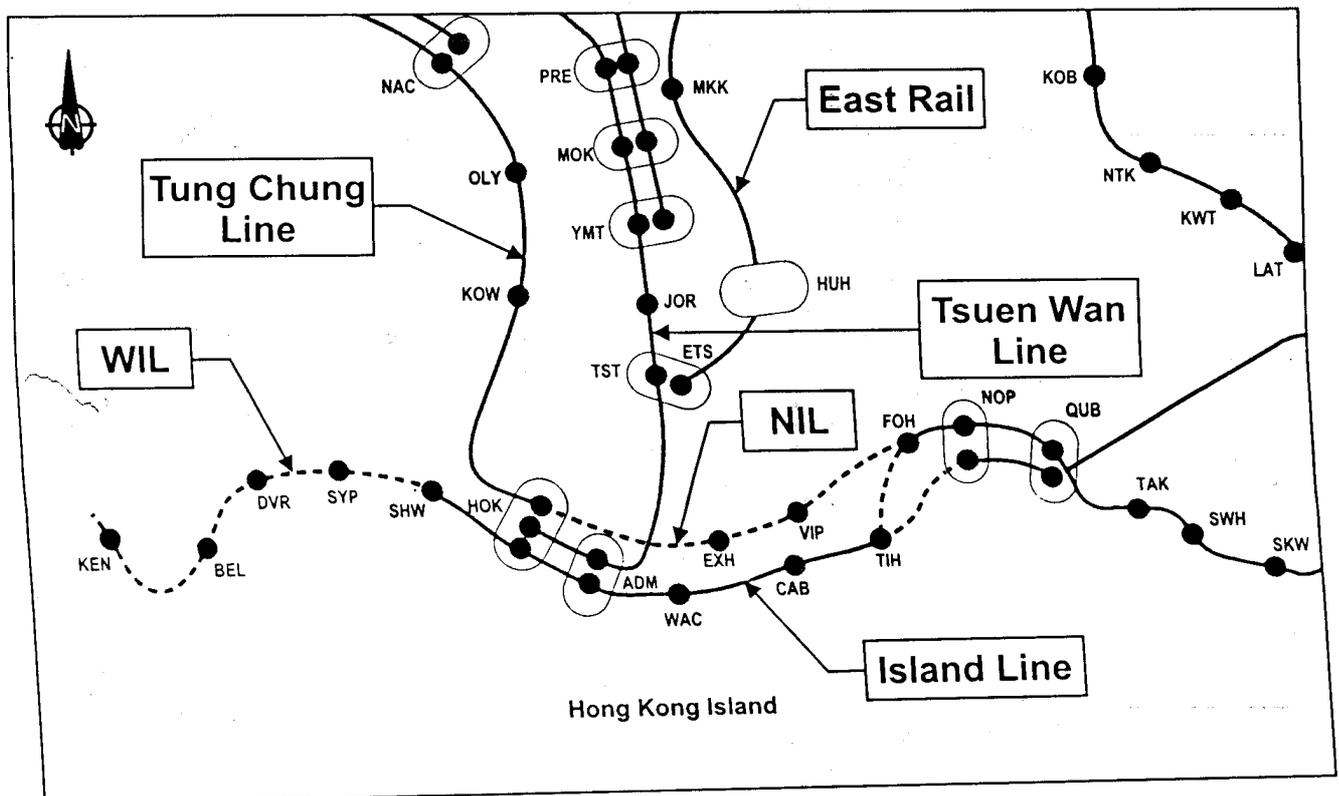


FIGURE 3: ISLAND LINE EXTENSIONS

Sha Tin to Central Link

3.6 The Sha Tin to Central Link will be a new strategic rail corridor in the rail network formed by EKL, FHC and TDL (see **Figure 4**). Not only will it increase significantly the cross-harbour and Shatin-Kowloon rail capacities, it will also help to redistribute the flows and relieve the other railway lines in Hong Kong and Metro Kowloon.

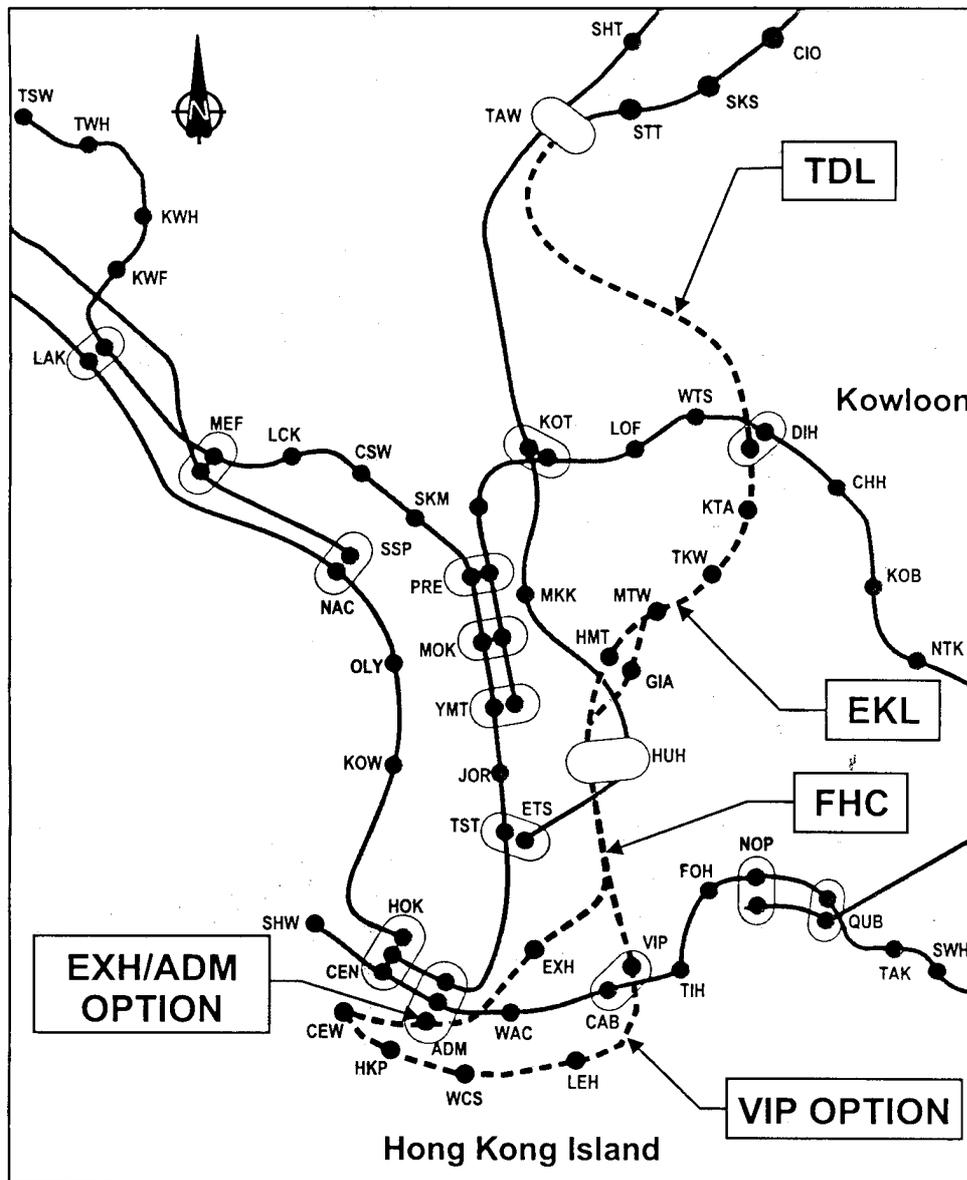


FIGURE 4: SHA TIN TO CENTRAL LINK

3.7 The East Kowloon Line (EKL) section of the Link connects the MTR Diamond Hill Station and the KCR Hung Hom Station. RDS-2 has found that on its own, the EKL is not an efficient, nor a viable project. It should be connected with other railway schemes to form a strategic rail corridor. To the south, the EKL would be extended from Hung Hom across the harbour to Hong Kong Island, forming the Fourth Rail Harbour Crossing (FHC). To the north, the EKL would be extended from Diamond Hill to Tai Wai, forming the Tai Wai to Diamond Hill Link (TDL).

- 3.8 The Fourth Rail Harbour Crossing (FHC) starts from Hung Hom on Kowloon side. On Hong Kong Island, the FHC could route directly to Central via Exhibition/Admiralty (the EXH/ADM Option) or via Victoria Park, Leighton Hill and Wanchai South (the VIP Option). The EXH/ADM Option is cheaper to build and provides a direct route from Hung Hom to Central. It caters well for the daily commuter traffic. On the other hand, the VIP Option would be able to accommodate a more diversified nature of trips as it connects to the busy commercial and retail Causeway Bay district. In longer term, the VIP Option may help facilitate a shift of the development focus from Central towards Causeway Bay.
- 3.9 The Tai Wai to Diamond Hill Link (TDL) will provide an additional rail corridor from North East New Territories to Kowloon so as to relieve the East Rail bottleneck at Beacon Hill Tunnel.
- 3.10 The implementation of the Sha Tin to Central Link will depend on the overall transport requirement of the network expansion, the pace of the planned developments in North East New Territories and Ma On Shan as well as the programme of the South East Kowloon Development and the Central and Wanchai Reclamation.

Kowloon Southern Link

- 3.11 The KSL is an extension of West Rail from its Nam Cheong Station to connect with the KCR Tsim Sha Tsui Extension. The layout of the KSL is shown in Figure 5.

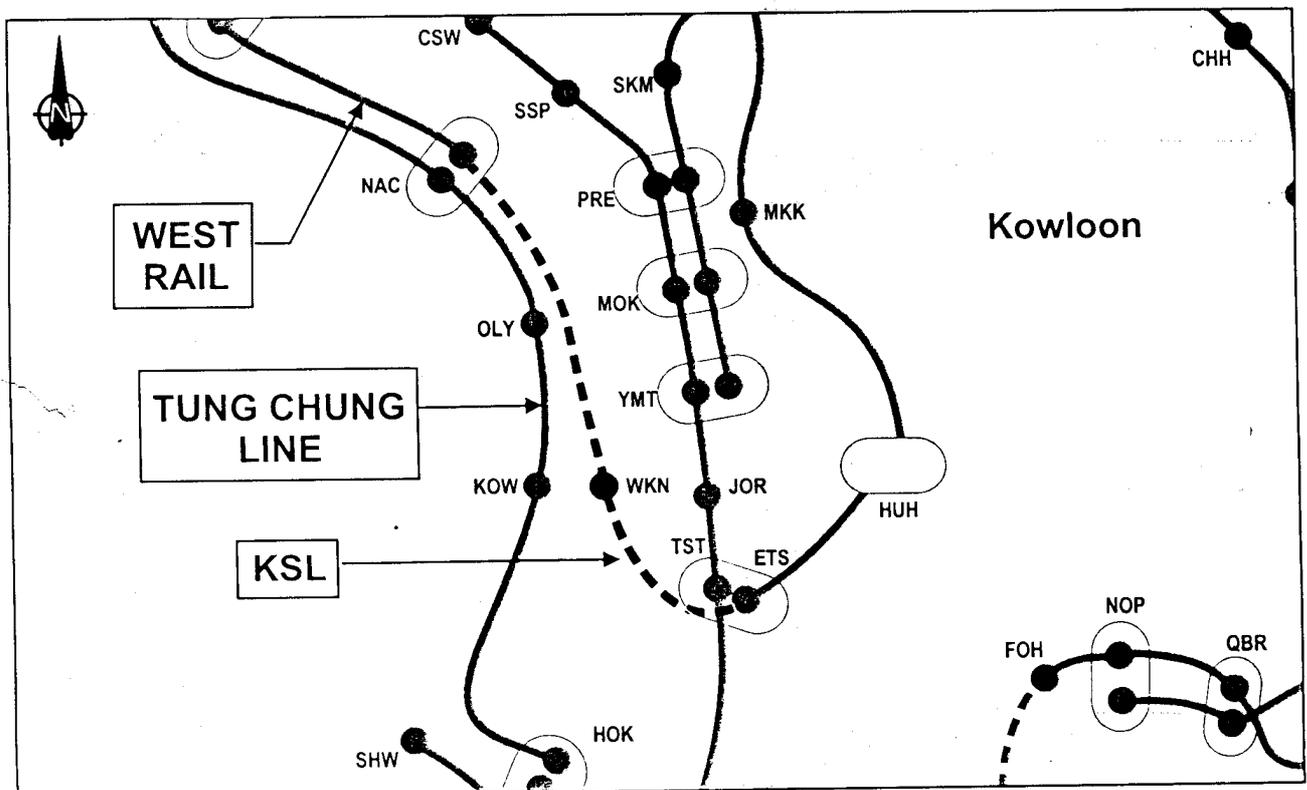


FIGURE 5: KOWLOON SOUTHERN LINK

3.12 The KSL will provide an efficient east-west link round the southern part of the Kowloon peninsula and will help support development in Lantau Island, North West New Territories, West and East Kowloon. In addition, it can help relieve the cross harbour section of the TCL by attracting some of the cross-harbour trips originated from North West New Territories to the FHC. Implementation of the KSL is dependent on the growth in travel demands, in particular that on the TCL arising from further development of Lantau Island and the strategic growth areas in North West New Territories.

Northern Link

3.13 The Northern Link (NOL) would connect West Rail at Kam Sheung Road to East Rail at Kwu Tung and to the boundary crossing point at Lok Ma Chau. It will provide domestic passenger service for the strategic growth areas in North New Territories and cross-boundary passenger service for the western part of the HKSAR. Implementation timing of the line will depend on the development programme of the strategic growth areas in North East New Territories and North West New Territories and the growth of the cross-boundary traffic. The layout of NOL is shown in Figure 6.

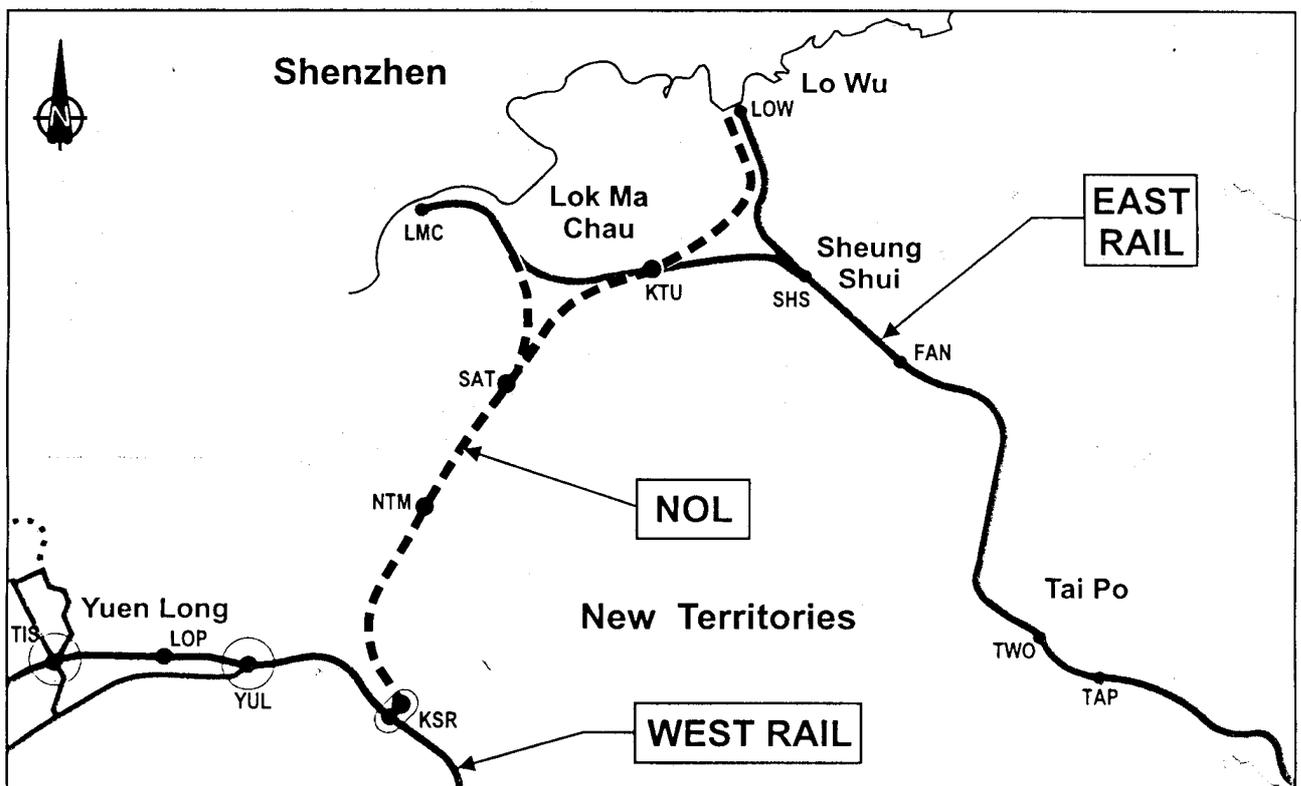


FIGURE 6: NORTHERN LINK

Regional Express Line

- 3.14 The Regional Express Line (REL) is an express rail service which will link the urban area with the Boundary. In addition to providing fast domestic service with limited stops, through train may also run on the REL.
- 3.15 The preliminary alignment of the REL will link Hung Hom to the Boundary via Shek Kip Mei. It has two route options in the New Territories, an eastern one via Fanling South and a western one via Kam Sheung Road. The eastern option may incorporate a third Rail Boundary Crossing, but this would depend on co-ordinating with the planning intentions of the Shenzhen side. A possible extension of the REL from Hung Hom to the Central on Hong Kong Island would further enhance the attractiveness of the corridor given the increasing integration of the economic activities between the HKSAR and the Pearl River Delta. The layout of the REL is shown in **Figure 7**.
- 3.16 The annual cross-boundary passenger traffic has been growing at 18-20% since mid 1996. The daily average number of cross-boundary passengers at Lo Wu now reaches 220,000. Should the present growth rate continue, it may be necessary to start planning the REL early in order that this new rail corridor could be provided in a timely manner.

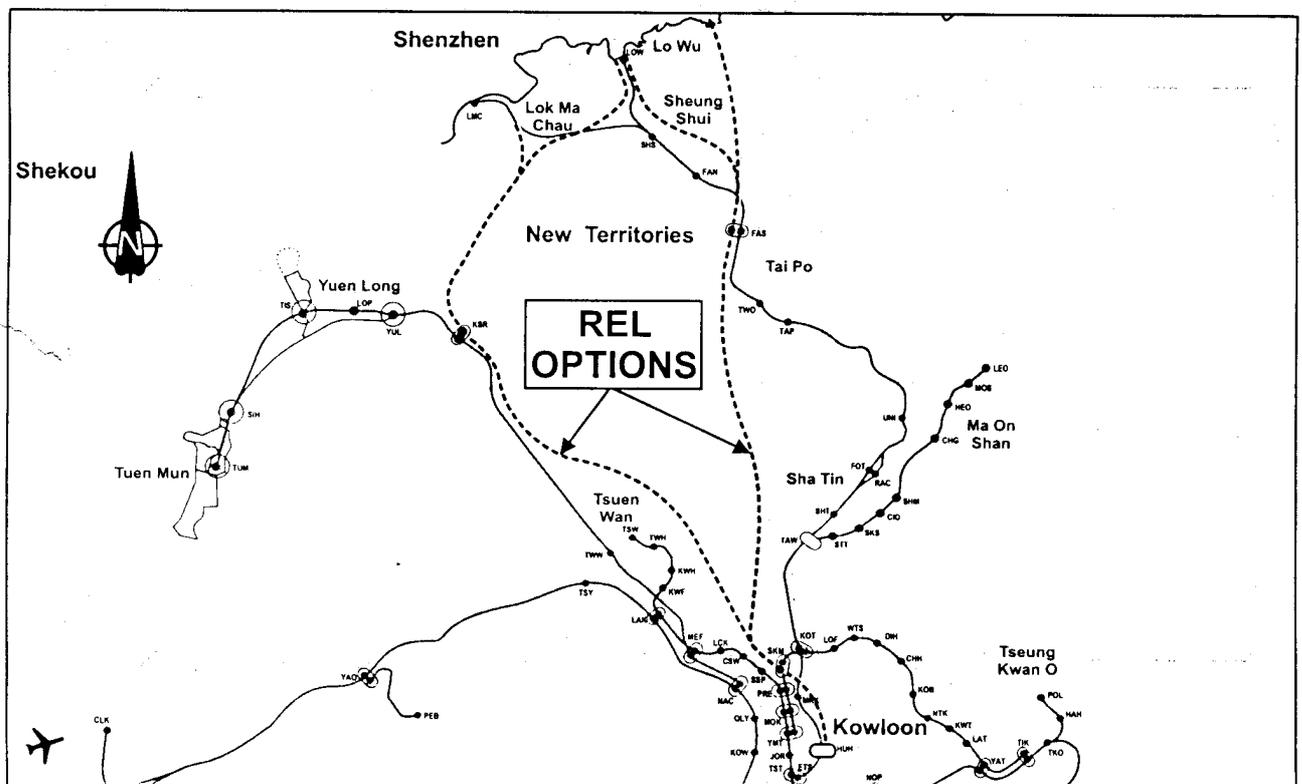


FIGURE 7: REGIONAL EXPRESS LINE

Port Rail Line

3.17 The Port Rail Line (PRL) is a new freight rail connection from Lo Wu to a new port rail terminal at Kwai Chung. The line has two route options, one as part of West Rail via Kam Sheung Road to Kwai Chung and the other via East Rail and then a new tunnel from Tai Wai to Kwai Chung. The two route options are shown in **Figure 8**.

3.18 Allowing direct cross-boundary freight service through Lo Wu to the Kwai Chung ports, the PRL would support the growth of the port cargo by tapping freight from the deep hinterland of the Mainland and could benefit the SAR's economy. The implementation of the PRL hinges on growth of the rail-borne freight to the Kwai Chung ports.

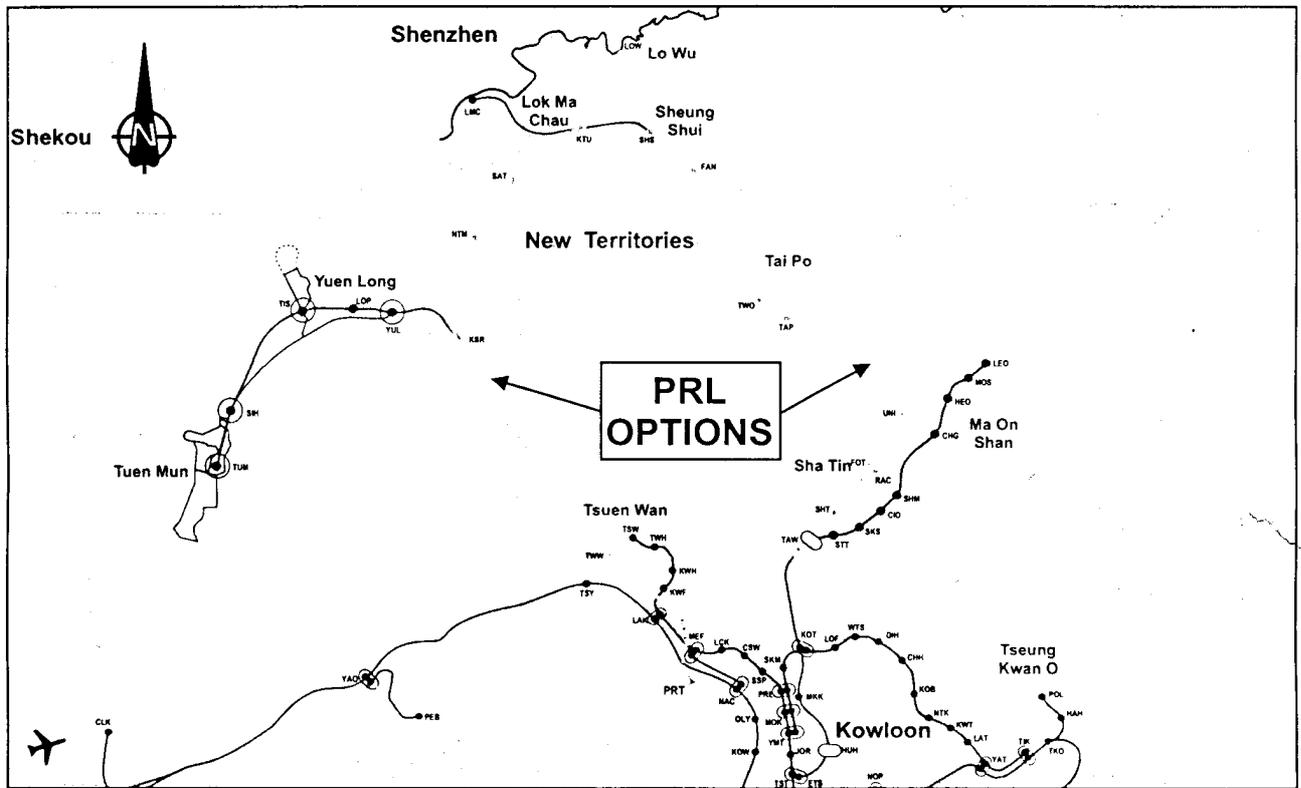


FIGURE 8: PORT RAIL LINE

Hung Hom as the Mass Transportation Centre

- 3.19 In addition to the new railway schemes, RDS-2 also investigated the role and function of a Mass Transportation Centre (MTC). The MTC differs from other public transport interchanges. It provides for terminal facilities for cross boundary inter-city services with the necessary customs and immigration facilities. The existing Hung Hom Terminal, which is centrally located in the HKSAR is already functioning as an MTC with good capability for expansion.
- 3.20 Hung Hom will be the preferred landing point of the FHC on Kowloon side. Other rail lines including the East Rail, West Rail and EKL will also be connected to Hung Hom, where many cross-harbour tunnel bus routes are providing convenient interchange between the rail and the road mode of transport. Hung Hom should remain as the MTC for the HKSAR.

Benefits of the expanded railway network

- 3.21 Railways will be vital in supporting the economic, social and population growth of the HKSAR in the next 15 years. Implementing the network expansion will facilitate closer economic and social linkages between the HKSAR and the Mainland, particularly Guangdong and the Pearl River Delta. Investing in the Network will yield the following benefits to the community:

(a) Improving accessibility

Implementing the Network would place about 70% of the population and about 80% of job opportunities within one kilometre of a railway station. The Network would facilitate the development of the strategic growth areas in the New Territories and development and redevelopment in the Metro area.

(b) Realization of integrated transport planning

The comprehensive Network coverage will facilitate co-ordination with other public transport services at key interchange stations. This will enable the realization of integrated transport planning in which railways will form the backbone of Hong Kong's transport system, while other public transport services will operate in a co-ordinated manner to maximise efficiency of service to passengers in terms of time and cost and to meet forecast demand.

(c) High level of transport service

The comprehensive Network will offer fast and reliable travel throughout the SAR. Typical journey times are as follows:

Tin Shui Wai to Central	41 minutes
Lo Wu to Admiralty	50 minutes
Tsuen Wan to Kai Tak	32 minutes
Tseung Kwan O to Central	21 minutes

(d) Meeting cross-boundary demand

The Network will be able to meet the growing cross-boundary demand, which is forecast to increase by over 3 times by 2016.

(e) Economic Return

The investments in the Railway Network will yield an economic internal rate of return of more than 15%.

(f) Environmental benefits

The Strategic Environmental Assessment carried out as part of the RDS-2 has concluded none of the new railway schemes will present insurmountable environmental problems, though all have some potential environmental impacts. These will be addressed during the design and development process of individual railway scheme.

On completion, the Network would increase the rail share in the public transport system from 31% at present to 43% by 2016, or in terms of the distance travelled by passengers, from 34% to almost 60%. This would reduce the reliance on road-based transport and translate to environmental benefits amounting to a reduction of air pollutants by some 600 tonnes of NO_x and respirable suspended particulates per year and 160,000 tonnes of CO₂ per year.

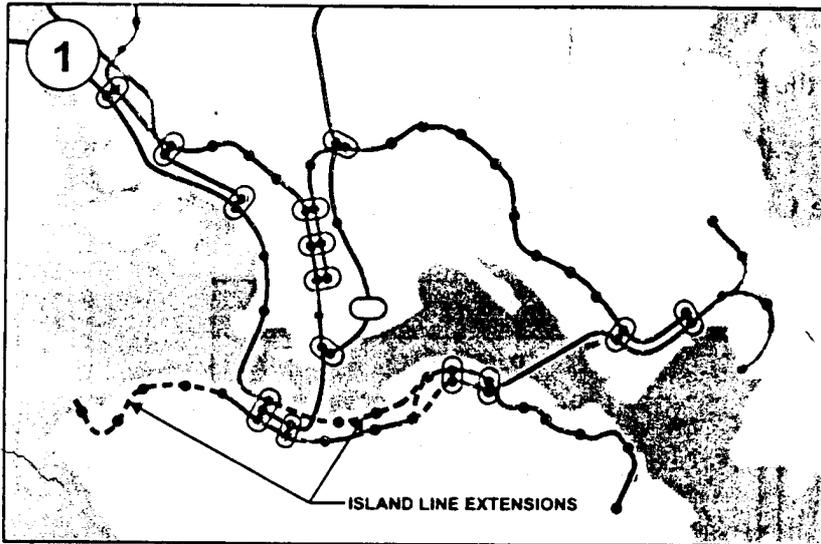
Implementation

- 3.22 In terms of implementation, the actual sequence and timing of the six new rail projects would be subject to more detailed engineering feasibility studies, having regard to the building up of transport demand, the pace of development of the strategic growth areas, project interfaces and consultation with the two Corporations. The implementation of some of the projects could be phased to meet demand.
- 3.23 As regards the implementation arrangement, the Island Line Extensions, being formed from extensions of the MTR system, have to be built and operated by MTRC. On the other hand, the KSL and NOL have to be undertaken by KCRC in order to facilitate their proper integration with the East Rail and the West Rail.
- 3.24 In awarding other new railway projects which are not natural extensions of any existing line, the Government shall adopt an open and fair approach by inviting the two Railway Corporations to bid for the projects. The Government shall specify the terms with which the two Corporations can bid on a level playing field basis. In considering the proposals, the Government would take into account all relevant factors including technical, financial and other alternative suggestions by the Corporations which would enhance the cost-effectiveness of the projects.
- 3.25 As the Shatin to Central Link is not a natural extension of an existing line and connects to both the MTR and the KCR networks, it may be undertaken by either Corporation. The two Corporations will be invited to put forward competitive proposals on its implementation. The REL is also a potential candidate for bidding by the two Corporations, if it is planned on the basis of a third rail passenger crossing, in addition to Lo Wu and Lok Ma Chau. The decision on how best to take forward this project would be subject to more detailed feasibility study on the alignment of the REL.
- 3.26 As regards the potential PRL, it is a natural KCRC project. KCRC will be invited to explore in more detail how the project can be implemented and Government will render full support in its planning and implementation.

3.27 Subject to future developments, the implementation of the new schemes in Railway Development Strategy 2000 could be grouped into six packages as follows:-

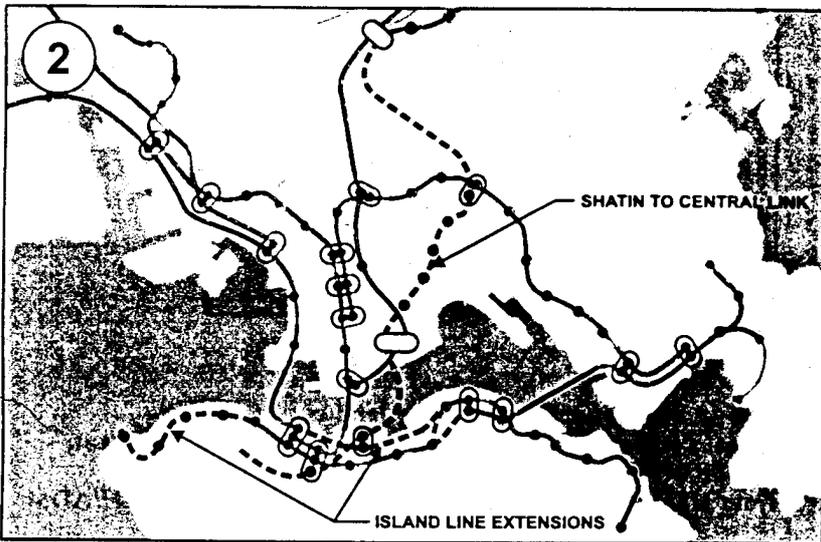
Package	Operator	Remarks
Shatin to Central Link (TDL/EKL /FHC)	MTRC/KCRC	Needed to provide a strategic rail corridor for relieving ER, supporting South East Kowloon Development and enhancing cross-harbour rail capacity. Operator selection through competitive bidding. Likely completion window: 2008-2011
Island Line Extensions (NIL and WIL)	MTRC	NIL needed to relieve TWL and ISL but subject to the availability of the Central and Wanchai Reclamation. WIL needed to support development and urban renewal in Western District Likely completion window: 2008-2012
KSL	KCRC	Improves east-west connectivity across Kowloon and helps relieve TCL. Dependent on development of Lantau Island and the strategic growth areas in North West New Territories Likely completion window: 2008-2013
NOL	KCRC	Needed to improve accessibility of Western New Territories to the Boundary. Serves planned strategic growth areas at Ngau Tam Mei, San Tin and Au Tau Likely completion window: 2011-2016
REL	MTRC/KCRC	Preliminary planning to proceed early. Subject to alignment, operator selection by competitive bidding. Implementation depends on cross-boundary traffic build-up.
PRL	KCRC	KCRC to investigate into implementation opportunities. Implementation depends on cross-boundary freight build-up.

A possible development sequence of the first three packages is shown in Figure 9.



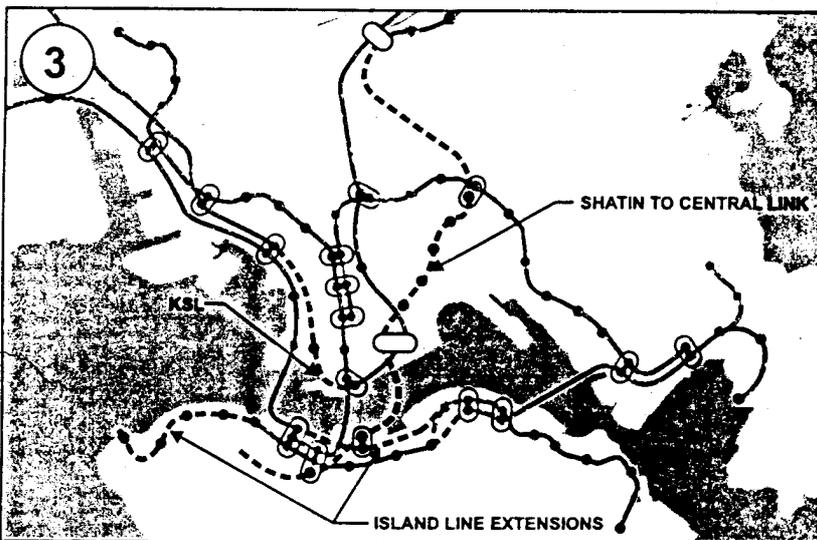
Stage 1 :

Implementation of the Island Line Extensions. Completion of the NIL should precede the WIL in order not to overload the ISL.



Stage 2 :

Implementation of the Shatin to Central Link. The link can be completed in phases.



Stage 3 :

Implementation of the Kowloon Southern Link. This links the KCR West Rail round the Kowloon peninsula to Hung Hom and provides convenient interchange for passengers.

FIGURE 9: A POSSIBLE DEVELOPMENT SEQUENCE OF THE RAILWAY NETWORK

Order of costs

3.29 The order of costs estimated for the component and stand-alone schemes are listed in Table 1.

Table 1 Order of Cost Estimates

Scheme	Cost Estimate (\$ billion)
NIL	9-10
FHC	10-16
EKL	12-14
TDL	3-5
CEW Extension	2
KSL	7-8
NOL	9
WIL	10
REL	13-17
PRL/PRT	5-9
TOTAL	80-100

- Notes:
- (1) Order of cost estimates are in 1998 prices and include land costs.
 - (2) A range is given for the cost estimates for schemes with alternative arrangement.
 - (3) The higher NIL costs include a VIP station for interchange with FHC.
 - (4) CEW Extension starts from HKP or ADM respectively under the VIP and EXH/ADM options.
 - (5) Costs for REL exclude rolling stock.

3.30 The costings will need to be refined following detailed financial, engineering and environmental studies, to be carried out in conjunction with the implementation of any railway projects.

Long term railway development possibilities

3.31 There are other rail schemes which have been investigated in RDS-2. These include South Hong Kong Island Line, the Fifth Rail Harbour Crossing, the Outer Western Corridor, the Deep Bay Link, Chek Lap Kok Link and the East-west Kowloon Link (see **Figure 10**). These projects do not command priority at this stage as the traffic demand has yet to warrant a mass carrier. They should be further investigated if planning parameters change significantly.

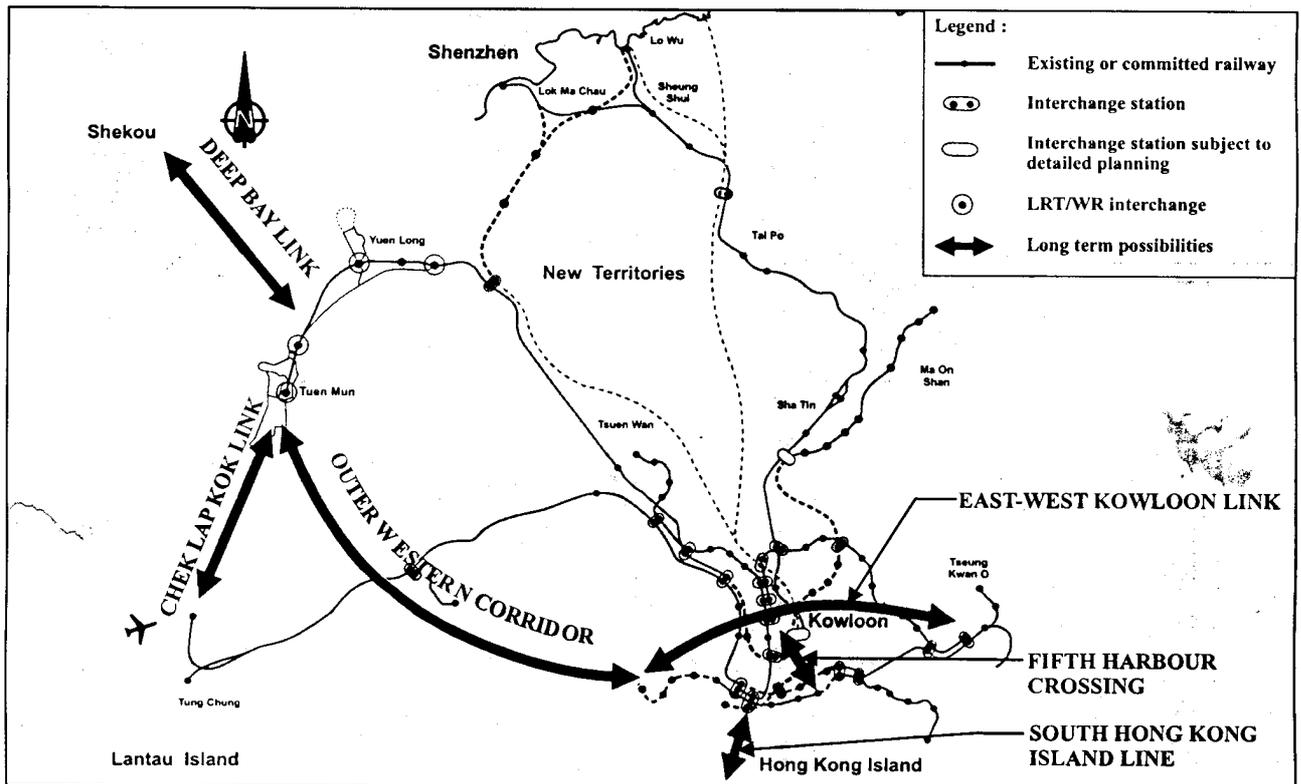


FIGURE 10: LONG TERM RAILWAY DEVELOPMENT POSSIBILITIES

STATION ABBREVIATIONS

ADM	Admiralty	MTW	Ma Tau Wai
BEL	Belcher Garden	NAC	Nam Cheong
CAB	Causeway Bay	NOP	North Point
CEN	Central	NTK	Ngau Tau Kok
CEW	Central West	NTM	Ngau Tam Mei
CHG	Chevalier Garden	OLY	Olympic
CHH	Choi Hung	PEB	Penny's Bay
CHW	Chai Wan	POL	Po Lam
CIO	City One	PRE	Prince Edward
CLK	Chek Lap Kok	PRT	Port Rail Terminal
CSW	Cheung Sha Wan	QUB	Quarry Bay
DIH	Diamond Hill	SAT	San Tin
DVR	Des Voeux Road	SHT	Shatin
ETS	East Tsim Sha Shui	SHM	Shek Mun
EXH	Exhibition	SHS	Sheung Shui
FAN	Fanling	SHW	Sheung Wan
FAS	Fanling South	SIH	Siu Hong
FOH	Fortress Hill	SKM	Shek Kip Mei
FOT	Fo Tan	SKS	Sha Kok Street
GIA	Gillies Avenue	SKW	Shau Kei Wan
HAH	Hang Hau	SSP	Sham Shui Po
HEO	Heng On	STT	Sha Tin Tau
HFC	Heng Fa Chuen	SWH	Sai Wan Ho
HKP	Hong Kong Park	SYP	Sai Ying Pun
HMT	Ho Man Tin	TAK	Tai Koo
HOK	Hong Kong	TAM	Tamar
HUH	Hung Hom	TAP	Tai Po
JOR	Jordan	TAW	Tai Wai
KEN	Kennedy Town	TIH	Tin Hau
KOB	Kowloon Bay	TIK	Tiu Keng Leng
KOT	Kowloon Tong	TIS	Tin Shui Wai
KOW	Kowloon	TKO	Tseung Kwan O
KSR	Kam Sheung Road	TKW	To Kwa Wan
KTA	Kai Tak	TST	Tsim Sha Tsui
KTU	Kwu Tung	TSW	Tsuen Wan
KWF	Kwai Fong	TSY	Tsing Yi
KWH	Kwai Hing	TUC	Tung Chung
KWT	Kwun Tong	TUM	Tuen Mun
LAK	Lai King	TWH	Tai Wo Hau
LAT	Lam Tin	TWO	Tai Wo
LCK	Lai Chi Kok	TWW	Tsuen Wan West
LEH	Leighton Hill	UNI	University
LEO	Lee On	VIP	Victoria Park
LMC	Lok Ma Chau	WAC	Wan Chai
LOF	Lok Fu	WCS	Wan Chai South
LOP	Long Ping	WKN	West Kowloon
LOW	Lo Wu	WTS	Wong Tai Sin
MEF	Mei Foo	YAO	Yam O
MKK	Mong Kok (KCR)	YAT	Yau Tong
MOK	Mong Kok (MTR)	YMT	Yau Ma Tei
MOS	Ma On Shan	YUL	Yuen Long

RAILWAY LINES ABBREVIATIONS

EKL	East Kowloon Line
ER	East Rail
FHC	Fourth Rail Harbour Crossing
ISL	Island Line
KSL	Kowloon Southern Link
LRT	Light Rail Transit
NIL	North Hong Kong Island Line
NOL	Northern Link
PRL	Port Rail Line
REL	Regional Express Line
SIL	South Hong Kong Island Line
TCL	Tung Chung Line
TDL	Tai Wai to Diamond Hill Link
TKE	Tseung Kwan O Extension
TWL	Tsuen Wan Line
WIL	West Hong Kong Island Line
WR	West Rail

NEW RAILWAY PROJECTS IN RAILWAY DEVELOPMENT STRATEGY 2000

Annex B

