西港島綫
MTR West Island Line

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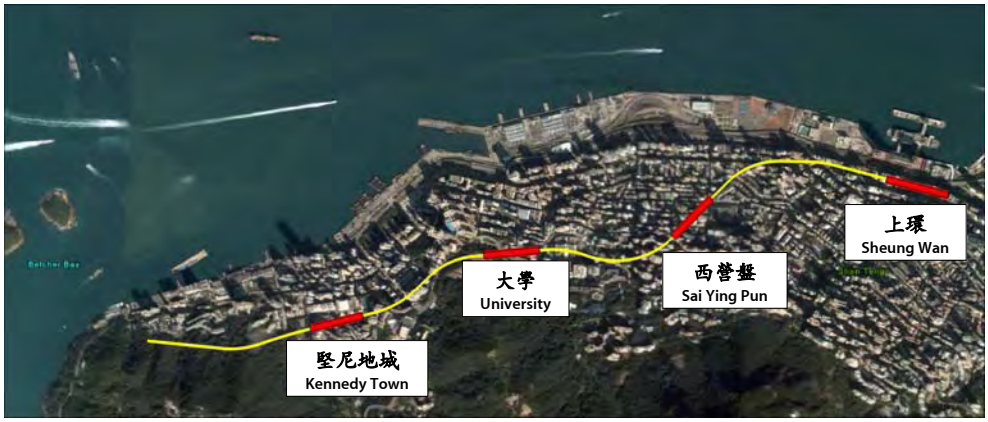
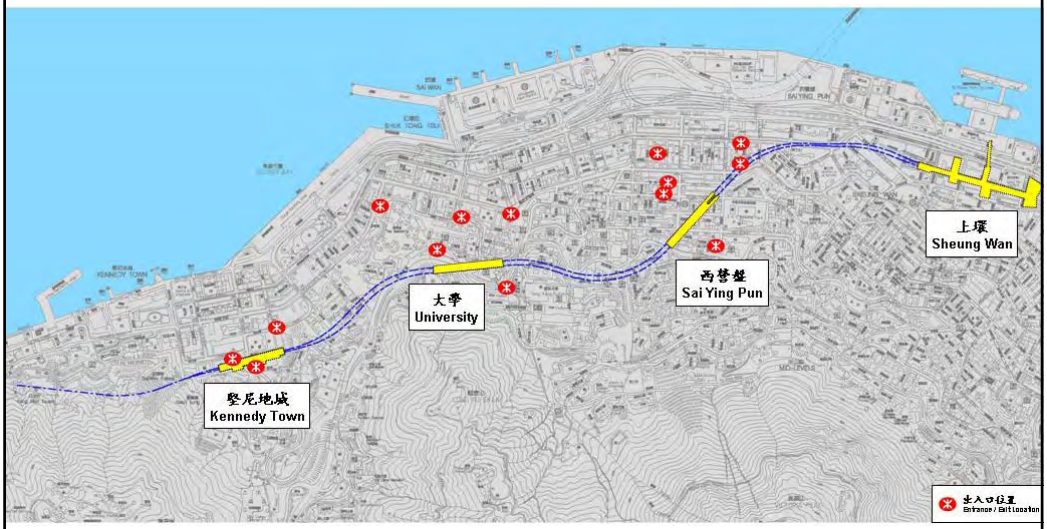
MTR West Island Line



批准方案
Authorized Scheme

批准方案
Authorized Scheme

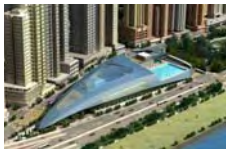


項目資料-鐵路部分
Project Information - Railway

走綫 Alignment	由上環向西伸延至堅尼地城 Extension from Sheung Wan to Kennedy Town
車站 Stations	在西營盤、香港大學、堅尼地城設地下車站 3 underground stations at Sai Ying Pun, University, Kennedy Town
全程長度 Route Length	約 3 公里 Approximately 3 km
行車班次 Train Frequency	與現時港島綫一致 In line with existing MTR Island Line
票價 Fare	與現時市區綫一致 In line with existing fares

項目資料-社區設施部分
Project Information – Community Facilities

新堅尼地城游泳池
New Kennedy Town Swimming Pool



新戴麟趾康復中心
New David Trench Rehabilitation Centre

新地下行人網絡
New Underground Pedestrian Network

優質公共休憩用地
Quality Public Open Space

配合香港大學百周年校園
Integrated Entrance to HKU Centennial Campus

效益
Benefits

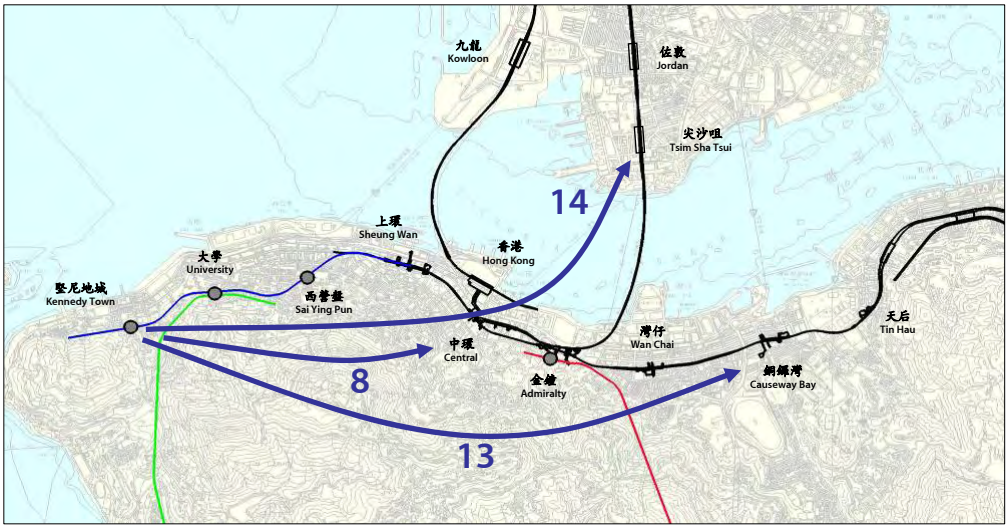
- 為超過20萬在西區工作及居住的市民提供方便、快捷、可靠的交通服務節省交通時間
  Provide convenient, efficient and reliable MTR service to over 200,000 people living and working in Western District.

- 令路面車輛數目減少，進一步減少空氣污染和噪音，改善道路安全及提高生活質素
  Reduced road traffic will lead to improvements in air quality, noise pollution, on-road safety and living quality generally.

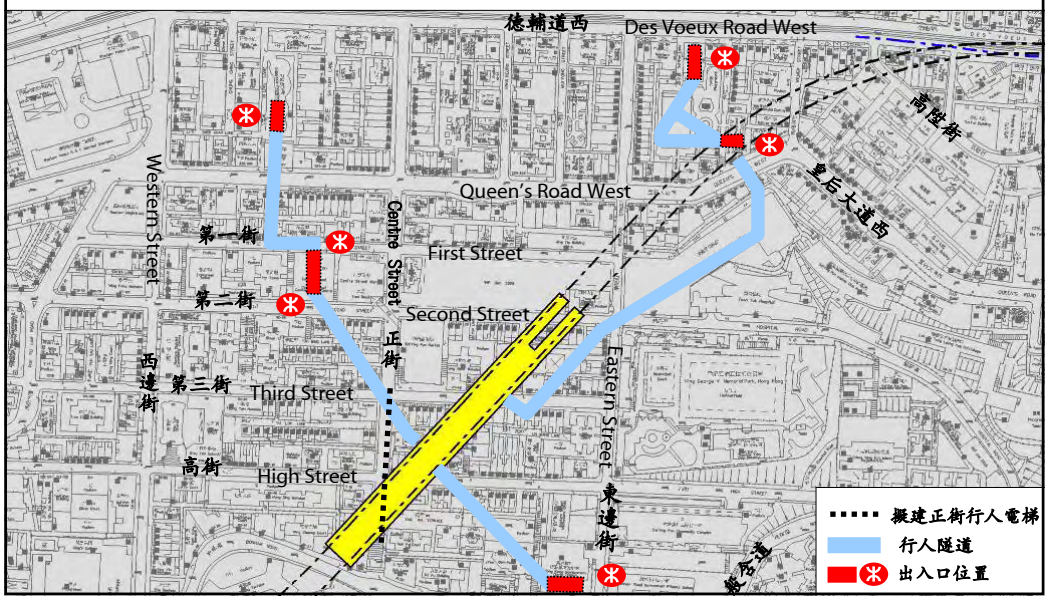
- 創造就業機會：建造期間3000個，營運期間2500個
  Job opportunities: 3000 during construction, 2500 during operation.

- 促進西區繁榮及更新，推動各行各業，為香港帶來超過620億元的經濟效益
  Allow district to prosper and rejuvenate, over $62 billion in economic benefits created.

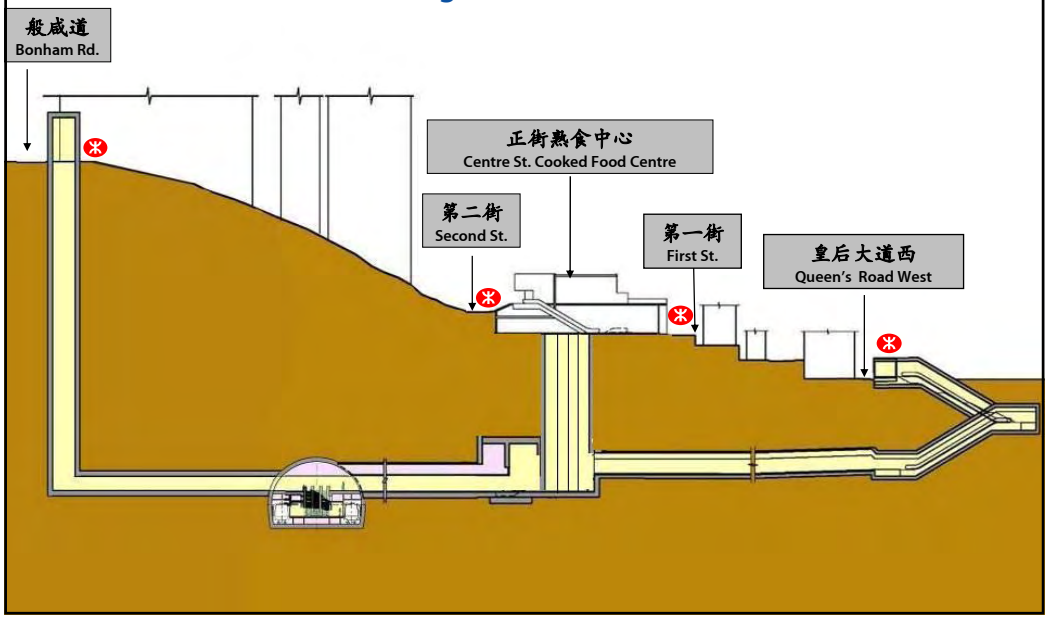
行車時間(分鐘)
Journey Time (minutes)



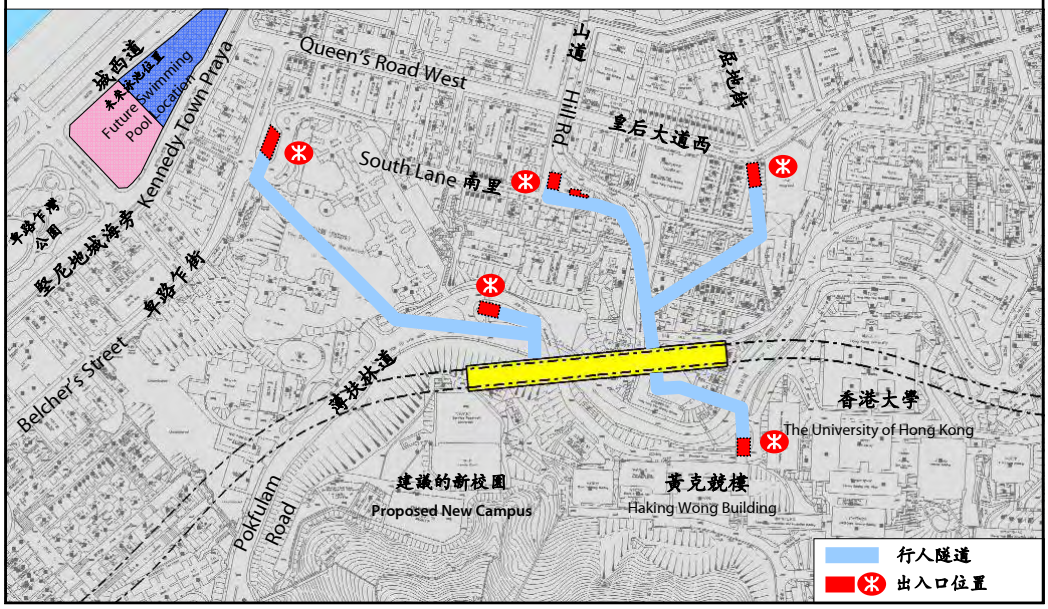
西營盤站
Sai Ying Pun Station



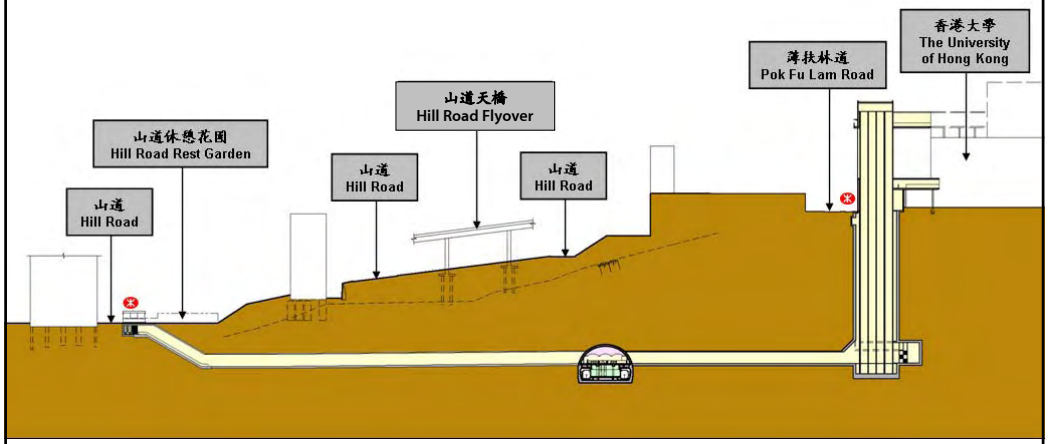
西營盤站之切面圖
Cross Section of Sai Yung Pun Station



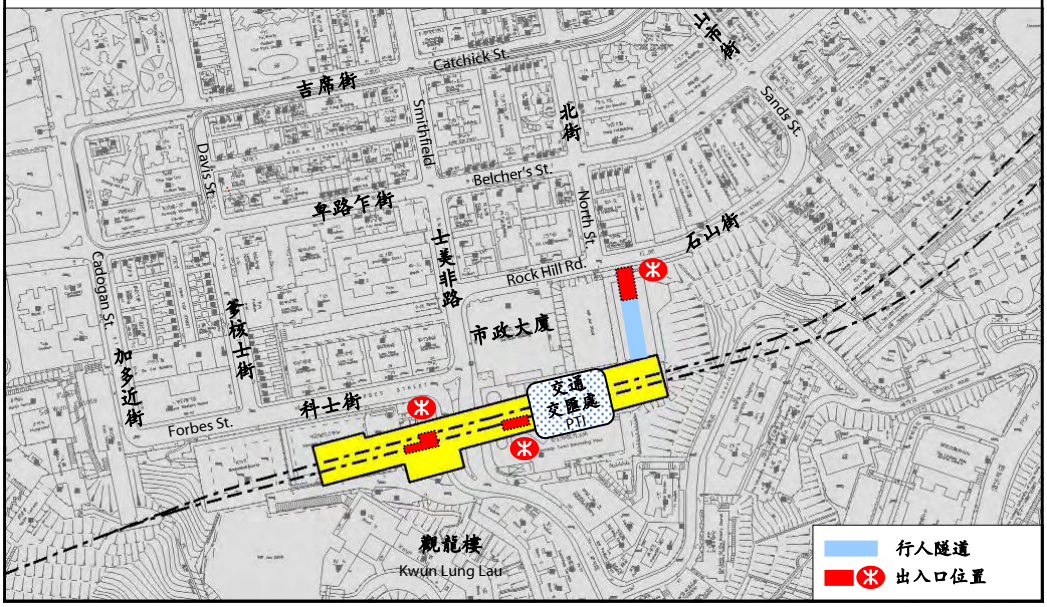
大學站
University Station



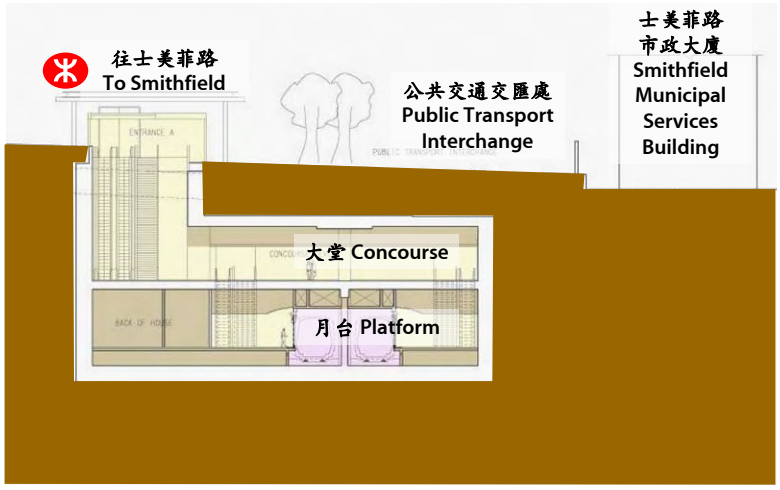
大學站之切面圖
Cross Section of University Station



堅尼地城站
Kennedy Town Station



堅尼地城站之切面圖
Cross Section of Kennedy Town Station



車站大堂
Concourse Layout

車站月台
Platform Layout

社區建設
Community Building

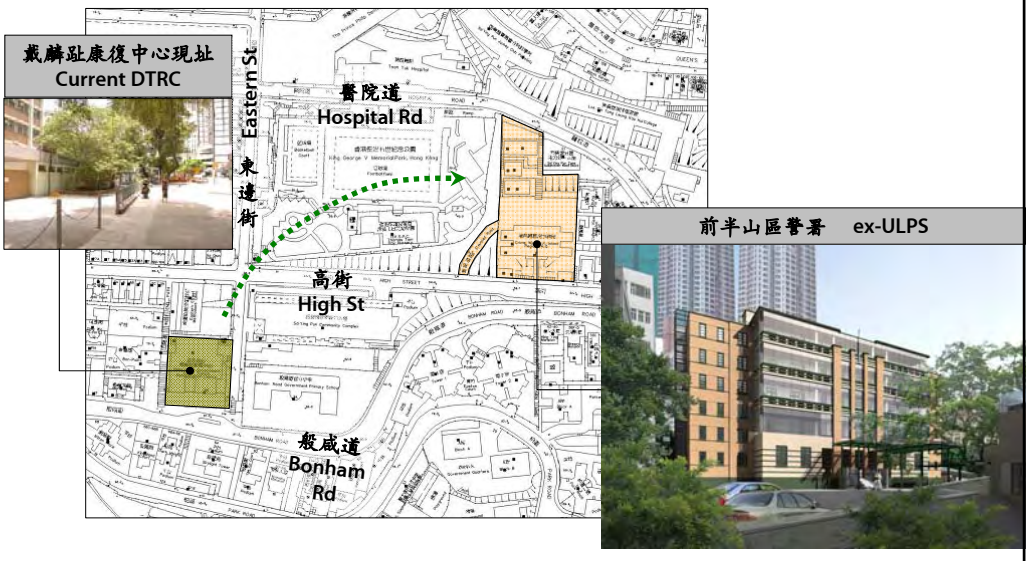
保育樹牆
Preservation of tree walls

原建議
Original Proposal

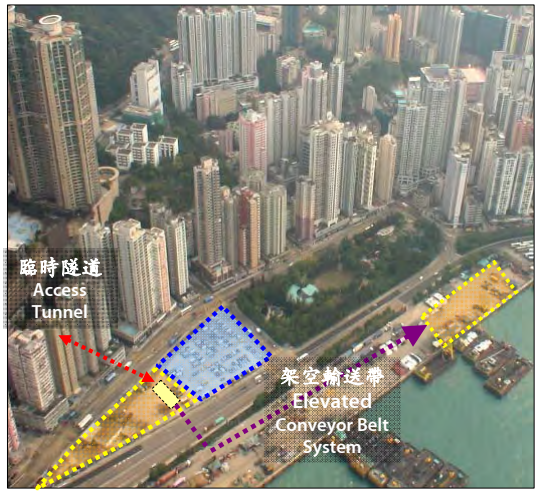
現時建議
Current Proposal

新堅尼地城游泳池
New Kennedy Town Swimming Pool

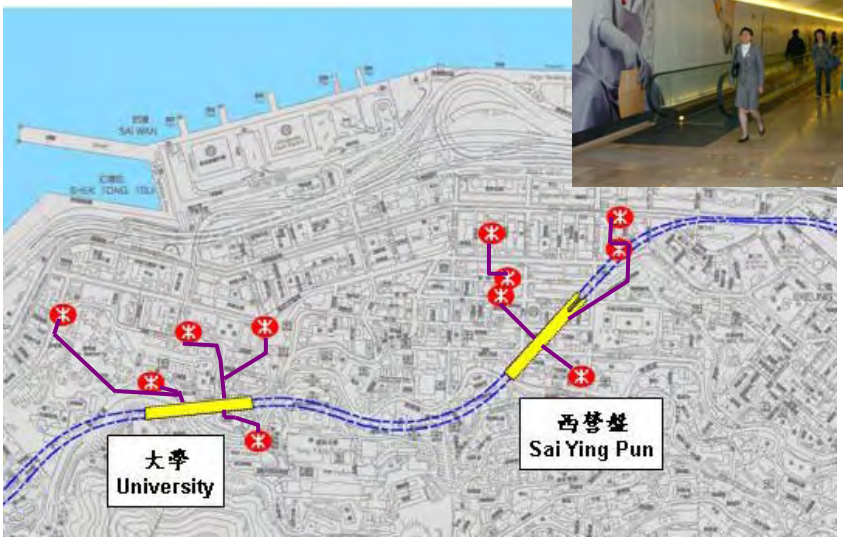
新戴麟趾康復中心
New David Trench Rehabilitation Centre



建造方法顧及社群
Community Friendly Construction



新地下行人網絡
New Underground Pedestrian Network



優質公共休憩用地
Quality Public Open Space

Approx. 12,000 m^2

配合香港大學百周年校園
Integrated Entrance to HKU Centennial Campus

工程進展
Progress

- 方案獲行政長官會同行政會議批准進行
  Scheme has been authorized under the Railways Ordinance
- 土質勘察完成
  Ground investigation works completed
- 詳細設計進行中
  Detailed design in progress
- 7份前期工程合約已經招標
  Tenders invited for 7 initial work packages
- 預計可於2009年7月批出
  Ready to award in July 2009

工程開支預算
Estimated Capital Cost

現時預算 Current Estimate	$154億 (08年12月價格) $15.4B (at Dec 08 Price)
2007年預算 2007 Estimate	$89億 (06年1月價格) $8.9B (at Jan 06 Price)
增幅 Increase	$65億 $6.5B

新舊估算比較
Comparison of Estimated Capital Cost

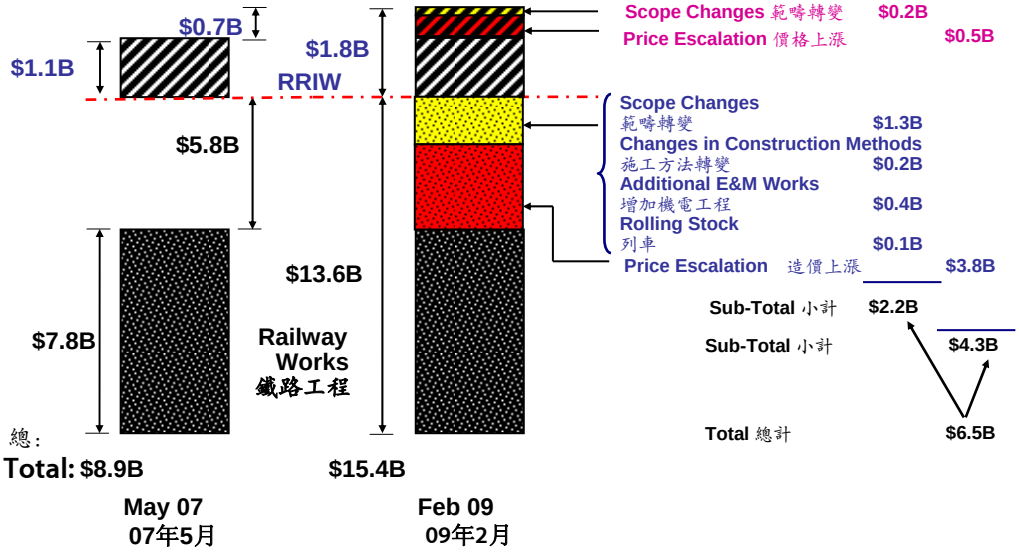
日期 Date	07 年5月	09 年2月
估計造價 Estimate	$89億 (06年1月價格) $8.9B (at Jan 06 Price)	$154億 (08年12月價格) $15.4B (at Dec 08 Price)
政府補助金額 Funding Support	$60億 (07年1月淨現值) $6.0B (at Jan 07 NPV)	$127億 (09年6月淨現值) $12.7B (at Jun 09 NPV)

造價增加主要原因：
Major reasons for cost estimate increases:

- 工程造價因物料價錢(如鋼材，英泥，石油等)大幅上漲而增加
  Increase in construction prices due to worldwide changes in the prices of raw materials, fuel, labour, transport and other factors.
- 08年初經立法會撥款四億元後，開展詳細設計，探土及環評等工序，而更新整項工程設計
  Scope changes due to the detailed design, ground investigation and EIA after $0.4B funding approval by Legislative Council in early 2008
- 公眾諮詢後的各項更改
  Changes after the public consultation

造價增加
Cost Estimate Increases

RRIW – 重建,補救及改善工程
註：$1B = $10億



造價上漲
Price Escalation

- 造價上漲是由於原材料、石油、工資、運輸等環球價格上升所引致
  Price escalation is the increase in construction prices due to worldwide changes in the prices of raw materials, fuel, labour, transport and other factors.

- 根據近期鐵路及地下工程的標價，在工程總額上升65億當中，其中43億由造價上漲引致。在2006年1月至2008年12月期間，鐵路工程的造價上漲38億，而重置、修葺及改善工程則上漲5億。較原先估價上升了約50%
  Taking account of recent tenders for relevant railway or other underground works, the price escalation is estimated to be $4.3B out of the total increase of $6.5B. This comprises $3.8B for railway work, plus $0.5B for RRIW, for the period from Jan 2006 to Dec 2008, i.e. 3 years. This is an increase of approximately 50% on the original estimated price.

- 2006年1月至2008年第3季之建築署建築工程投標價格指數上升96%
  The ASD Building Works Tender Price Index shows that construction prices in HK increased by 96% over the period from Jan 2006 to 3Q 2008 (for general building work)

工程範疇之變更
Scope Changes

重建、補救及改善工程 RRIW	$0.2B
鐵路工程 Railway works	$1.3B
建造方法 Construction methods	$0.2B
鐵路機電工程 Railway electrical and mechanical works	$0.4B
新增列車 Rolling stock	$0.1B
Total 共：	$2.2B (at Dec 2008 prices)

註：$1B = $10億

工程範疇之變更
Scope Changes

重建、補救及改善工程 RRIW	$0.2B
鐵路工程 Railway civil engineering works	$1.3B
建造方法 Construction methods	$0.2B
鐵路機電工程 Railway electrical and mechanical works	$0.4B
新增列車 Rolling stock	$0.1B
Total 共：	$2.2B (at Dec 2008 prices)

註：$1B = $10億

重建、補救及改善工程範疇之變更
Scope Changes - RRIW

- 重建新戴麟趾康復中心之通道
  Reconstruction of access road to ex-ULPS (new DTRC)
- 改善新戴麟趾康復中心之結構及裝修
  Increased refurbishment and structure improvements to ex-ULPS (new DTRC)
- 新堅尼地城游泳池之修訂地基設計
  Revised piling design for the KTSP
- 新堅尼地城游泳池之客務修訂要求
  Revised customer requirements for the KTSP
- 新堅尼地城游泳池之池水過濾修訂要求
  Changes to filtration standards for the KTSP
- 增幅$2億
  Total changes $200M

工程範疇之變更
Scope Changes

重建、補救及改善工程 RRIW	$0.2B
鐵路工程 Railway civil engineering works	$1.3B
建造方法 Construction methods	$0.2B
鐵路機電工程 Railway electrical and mechanical works	$0.4B
新增列車 Rolling stock	$0.1B
Total 共：	$2.2B (at Dec 2008 prices)

註：$1B = $10億

鐵路工程範疇之變更 (1)
Scope Changes – Railway Civil Engineering Works (1)

- 西營盤站及大學站連接隧道
  UNI & SYP stations & associated tunnels
  - 因應設置自動行道之需要擴大及延伸地下通道工程
    Lengthened and enlarged adits for moving walkway
  - 車站大堂挖掘之額外臨時支撐
    Additional temporary support in cavern
  - 額外之樹木移植工作
    Additional tree transplanting
  - 應付工程困難
    Provision for more difficult access
- 上環至西營盤隧道
  SHW to SYP tunnels
  - 越位隧道改動工程
    Modification to existing overrun structure
  - 新增預算以符合環評、屋宇署及消防處要求
    Allowance to meet EIA, BD and FSD requirements
- 新增之斜坡穩定工程
  Additional slope stabilization works

鐵路工程範疇之變更 (2)
Scope Changes – Railway Civil Engineering Works (2)

- 堅尼地城站及越位隧道
  - 加強隧道內層結構以應付較差的地層
  - 新增之機電房間
  - 額外的海傍保護措施

  KET Station and tunnels
  - strengthened tunnel lining to accommodate more adverse ground conditions
  - additional equipment rooms
  - more protection measures at harbourside works areas

- 爆炸品儲存倉庫及堅尼地城屠房舊址之新增工程
  Additional works at underground magazine

- 額外地質堪探工程
  Additional ground investigation works

- 增幅$13億
  Total change $1.3B

工程範疇之變更
Scope Changes

重建、補救及改善工程 RRIW	$0.2B
鐵路工程 Railway civil engineering works	$1.3B
建造方法 Construction methods	$0.2B
鐵路機電工程 Railway electrical and mechanical works	$0.4B
新增列車 Rolling stock	$0.1B
Total 共：	$2.2B (at Dec 2008 prices)

註：$1B = $10億

建造方法之變更
Scope Changes –Construction Methods

- 上環至西營盤段部分隧道由爆破改為鑽挖隧道
  Adoption of slurry tunnel boring machine for tunneling from Sheung Wan to Sai Ying Pun
- 應用凍土法鞏固土質以建造西營盤出入口
  Ground freezing method to be adopted for construction of SYP entrances
- 加強堅尼地城站近觀龍樓的樁柱式擋土牆設計
  Change from secant piles to bored piles at Kwun Lung Lau
- 相關灌漿工程以鞏固地層
  Associated ground treatment
- 爆炸品儲存倉庫的軟土隧道工程較預期長
  Extended soft ground tunneling at the magazine site
- 增幅$2億
  Total changes $200M

工程範疇之變更
Scope Changes

重建、補救及改善工程 RRIW	$0.2B
鐵路工程 Railway civil engineering works	$1.3B
建造方法 Construction methods	$0.2B
鐵路機電工程 Railway electrical and mechanical works	$0.4B
新增列車 Rolling stock	$0.1B
Total 共：	$2.2B (at Dec 2008 prices)

註：$1B = $10億

鐵路機電工程範疇之變更
Scope Changes – Railway Electrical and Mechanical Works

- 修改機電工程以配合相應的土木工程變更
  Modifications to match corresponding changes to the civil works
- 附加消防安全設備符合消防要求
  Additional fire safety provisions to accommodate FSD requirements
- 新增升降機及行人輸送帶，提升客戶服務
  Additional customer service features
  - lifts, travellators, etc.
- 增幅$4 億
  Total change $400M

工程範疇之變更
Scope Changes

重建、補救及改善工程 RRIW	$0.2B
鐵路工程 Railway civil engineering works	$1.3B
建造方法 Construction methods	$0.2B
鐵路機電工程 Railway electrical and mechanical works	$0.4B
新增列車 Rolling stock	$0.1B

Total 共： $2.2B (at Dec 2008 prices)

註：$1B = $10億

新增列車
Scope Changes – Rolling Stock

- 新增列車
  One additional train
  - 以配合其他綫路的最新乘客服務水平標準
    To match the latest service standard on other MTR lines
  - 以減低列車的擠迫情況
    To reduce crowding in the trains

- 增幅$1 億
  Total changes $100M

擁有權與服務經營權的比較
Ownership Vs Concession Approach

- 根據首次公開認購條款及合併協議，現有鐵路綫的延綫須交由港鐵負責執行
  According to the IPO conditions and Merger Agreement, natural extension of MTR railways should be implemented by the MTRCL

- 如當作獨立項目，將難以分開計算營運及電力的開支及票務收入
  As a separate project, difficult to split the expenditure like electricity and fare revenue

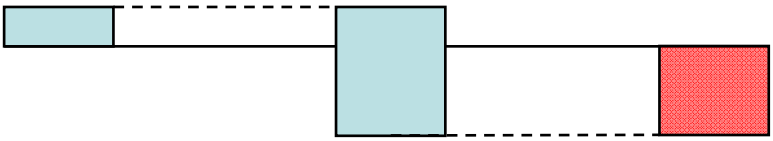
- 需增設轉車站，佔用更大空間，建造期間產生更多滋擾
  Rail interchange required, more station footprint, more disturbance during construction

- 更多銜接困難，如訊號系統、安全標準等
  More interface problem, like same signal system, same safety standard

財務資助
Funding Support

鐵路「項目資金差額」是以一個財政模式來計算（一般是以五十年為期）將項目的現金流，包括現金支出及收入，折算為現值淨額

The 'funding gap' is calculated by using a financial model (generally of 50 years) incorporating, on a net present value basis, the cash outflows and inflows



鐵路營運的淨收益
Net Operating Income (NOI)

-

資本開支、資產更新及商業回報
Initial Capital Expenditure, and Asset Replacement Costs

=

項目資金差額
Funding Gap

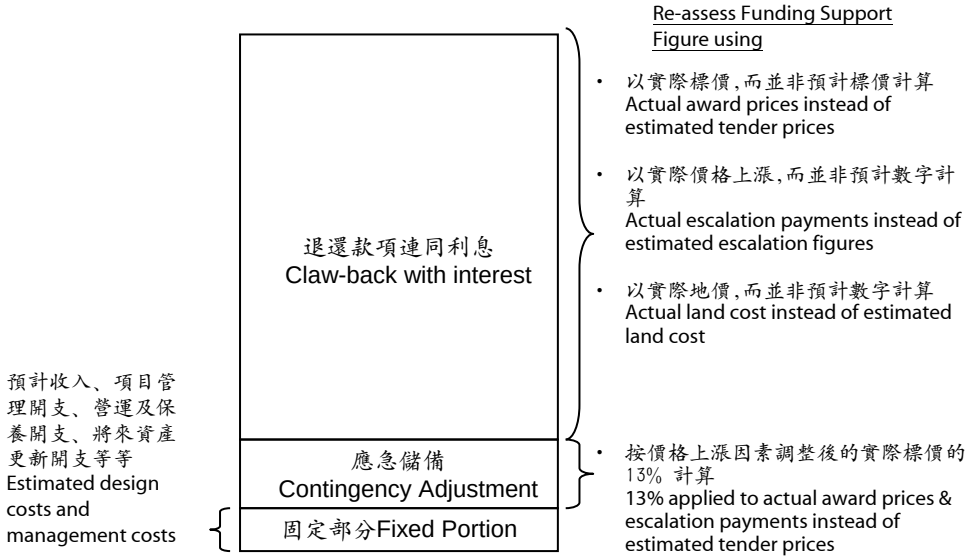
NOI = 票務與相關業務的收入 - 營運開支

= Fare & non-Fare Revenue - Operating Costs

資金差額
Funding Gap

現時預算 Current	$127億 $12.7B	(按2009年6月淨現值計算) (NPV at Jun 09)
2007年預算 2007 submission	$60億 $6.0B	(按2007年1月淨現值計算) (NPV at Jan 07)

餘額退還機制 (1)
Claw-Back Mechanism (1)



餘款退還機制(2)
Claw-Back Mechanism (2)

- 最遲於落成啟用後2年再作核實
  Re-assessment of Funding Support Figure no later than 2 years after commissioning of railway

- $127億封頂
  $12.7 Billion as ceiling figure
  - 如再計算金額增加：港鐵不會被補償
    MTRCL will not be reimbursed even if the re-assessed figure is higher
  - 如再計算金額減少：港鐵需將差額連利息交回政府
    MTRCL will reimburse Government the difference with interest if the re-assessed figure is lower

- 利息
  Interest
  - 利率：　參照財政儲備存放於外滙基金之回報率(2009年年率為6.8%)，上限為計算財務資助的折現率
    Rate: based on rate of return on fiscal reserves placed with Exchange Fund (6.8% p.a. for 2009) with cap at the discount rate in assessing the funding support
  - 利息計算期:從補助金付予港鐵至港鐵還給政府為止
    Period: from date of payment to date of reimbursement

新舊估算比較
Comparison of Estimated Capital Cost

日期 Date	07 年5月	09 年2月
估計造價 Estimate	$89億 (06年1月價格) $8.9B (at Jan 06 Price)	$154億 (08年12月價格) $15.4B (at Dec 08 Price)
政府補助金額 Funding Support	$60億 (07年1月淨現值) $6.0B (at Jan 07 NPV)	$127億 (09年6月淨現值) $12.7B (at Jun 09 NPV)

造價增加主要原因：
Major reasons for cost estimate increases:

- 工程造價因物料價錢(如鋼材，英泥，石油等)大幅上漲而增加
  Increase in construction prices due to worldwide changes in the prices of raw materials, fuel, labour, transport and other factors.
- 08年初經立法會撥款四億元後，開展詳細設計，探土及環評等工序，而更新整項工程設計
  Scope changes due to the detailed design, ground investigation and EIA after $0.4B funding approval by Legislative Council in early 2008
- 公眾諮詢後的各項更改
  Changes after the public consultation

港鐵投入資金
Funds contributed by MTRCL

- 29億元(2007年估算) 減至27億元(2009年估算)
  $2.9b (2007 estimate) reduced to $2.7b (2009 estimate)
- 居住人口和就業人數由207,000減至198,000，下降9,000人
  Residential and working population reduced by 9,000 from 207,000 to 198,000
- 兩鐵合併後票價下調
  Fare reduced after rail merger
- 在2009年的估算中，票務收入未有如2007年的估算中增加
  Fare revenue, in 2009 project estimate, not increased as predicted in the 2007 project estimate

時間表
Programme

鐵路事宜小組委員會 Railway Subcommittee Meeting	2009年6月 Jun 2009
工務小組委員會會議 PWSC Meeting	2009年6月 Jun 2009
財務委員會會議 FC Meeting	2009年7月 July 2009
正式動工 Commencement of Work	2009年7月 July 2009
落成啟用 Completion	2014年 2014

多謝
Thank You