



Rivers in Hong Kong

Friday April 27, 2018
Dr. Ng Cho-nam



Programme

Time	
4:00 pm	Rivers in Hong Kong (Dr Cho-Nam Ng, JC-WISE)
5:00 pm	Break
5:15 pm	How to conduct field-work along Sheung Yue River (Mr Anthony Yueng & Mr Tony Leung, HKGA)
6:15 pm	Water Footprint (Dr Frederick Lee)
6:45 pm	Arrangements for field trip and farming activities
7:00 pm	Workshop ends

The JC-WISE Project

- Jockey Club Water Initiative on Sustainability and Engagement (JC-WISE)
- Funded by the Hong Kong Jockey Club Charities Trust
- Hosted by the Faculty of Social Sciences, HKU
- Aims to raise the public's awareness, and appreciation, of the importance of attaining long-term water sustainability for Hong Kong

The JC-WISE Project

1. Re-connecting the public with our **rivers** – enhance the understanding of the multiple values of water
2. **Water Footprint** concept – recognising the impacts of consumption behavior on freshwater resources



My River, My Community

- Rivers@HK Database – The first interactive and open-access database about rivers in Hong Kong, with the application of Geographical information system (GIS).
- Train-the-trainer programme – This programme is comprised of a series of professionally designed and guided field-trips.
- Documentary and drone videos



“My River, My Community” Scheme



Shan Pui River
(山貝河)



Kam Tin River
(錦田河)



Lam Tsuen River
(林村河)



Tung Chung River
(東涌河)



Lai Chi Wo River
(荔枝窩河)



Ng Tung River
(梧桐河)



Sheung Yue River
(雙魚河)

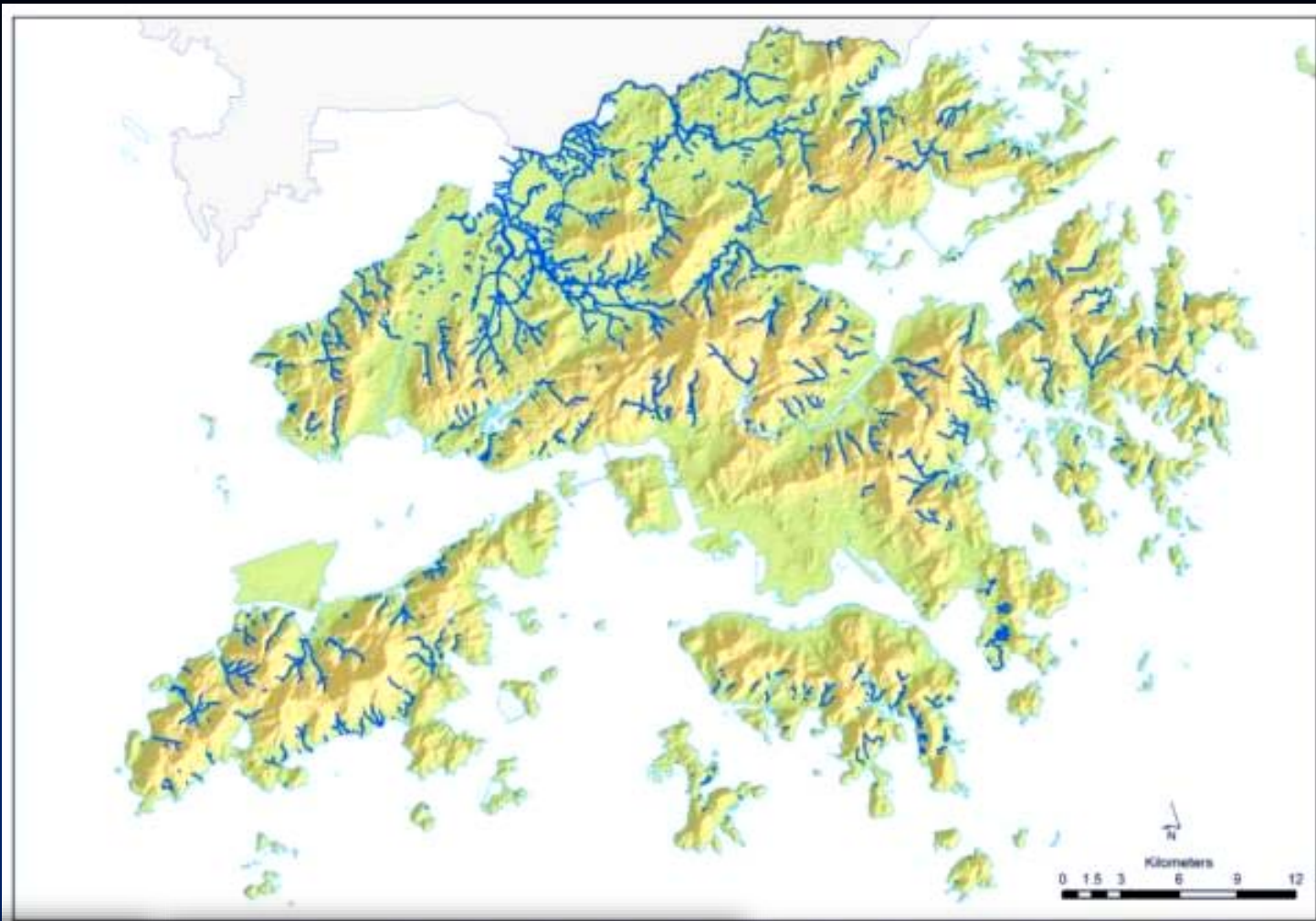
Rivers in Hong Kong





Rivers in Hong Kong

- HK has **over 200 rivers** and streams while the majority of them are **short and unnamed**.
- Many of them are “**Intermittent streams**” (flows in wet season only 季節性河流) and “**Ephemeral streams**” (flows in response to rainfall 間歇性河流、時令河)



rainfall and runoff

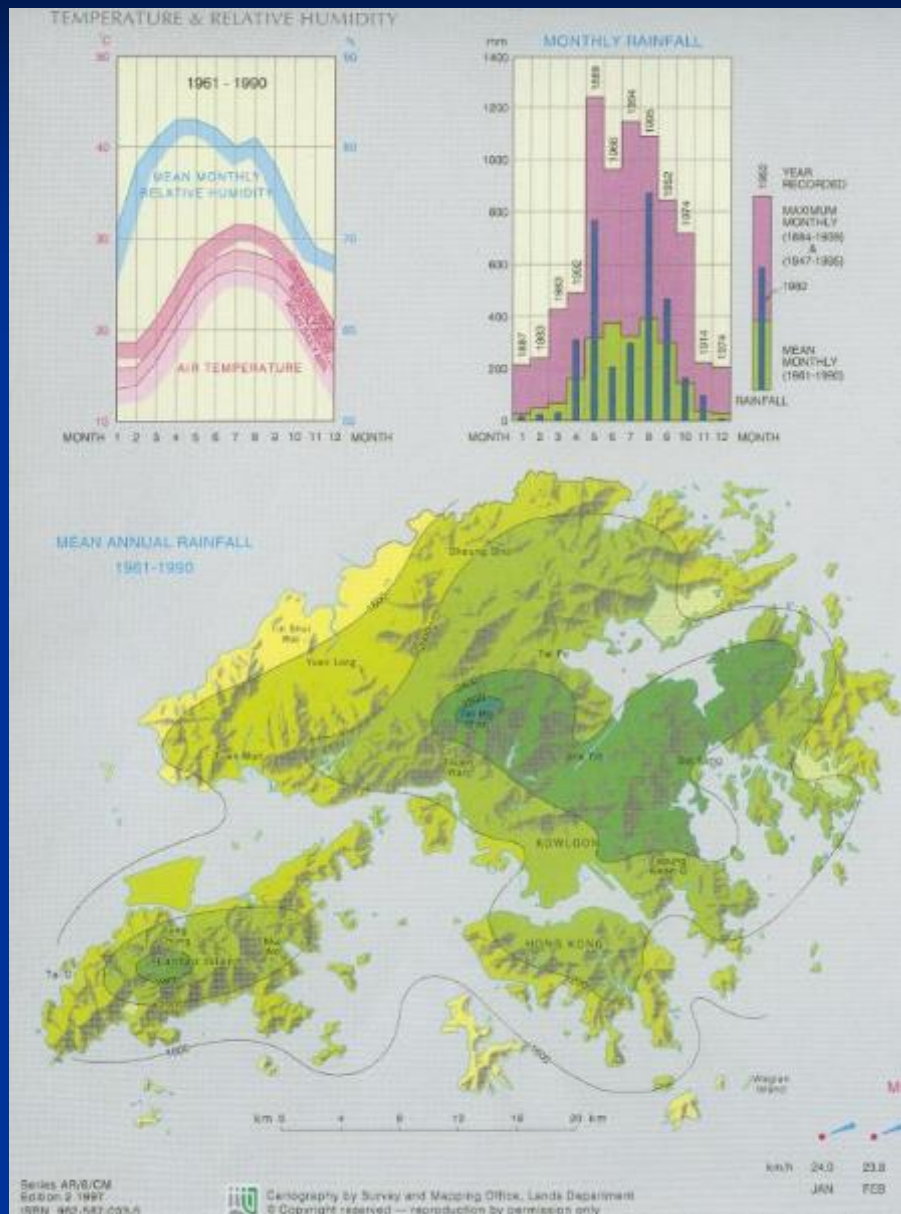


圖2： 鶴藪河盆的年降雨量和徑流

Figure 2: Annual rainfall and runoff for the drainage basin at Hok Tau

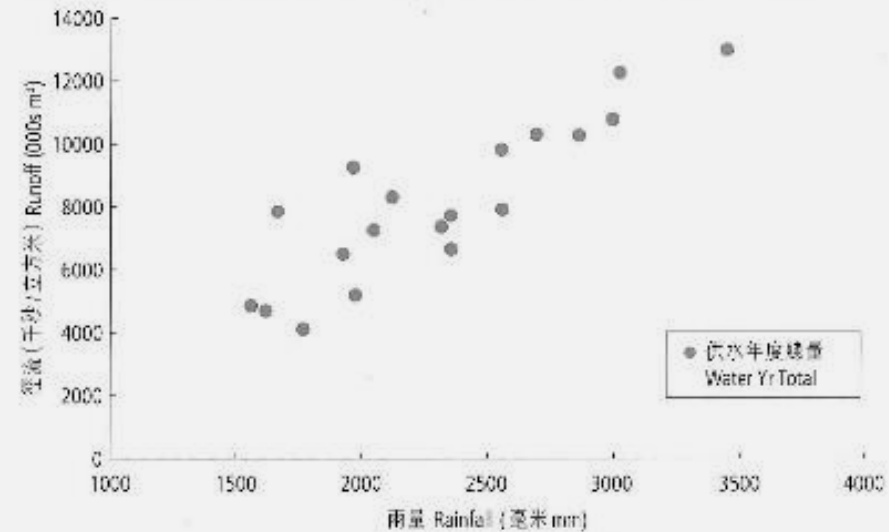
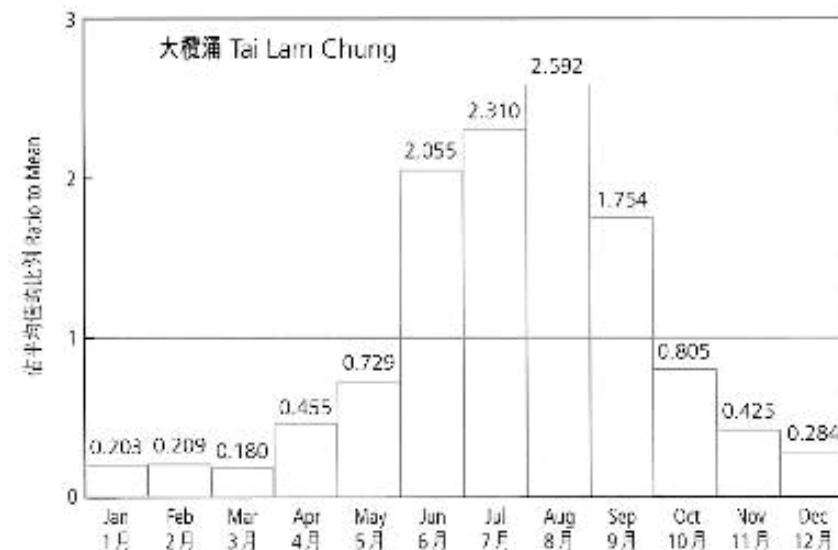


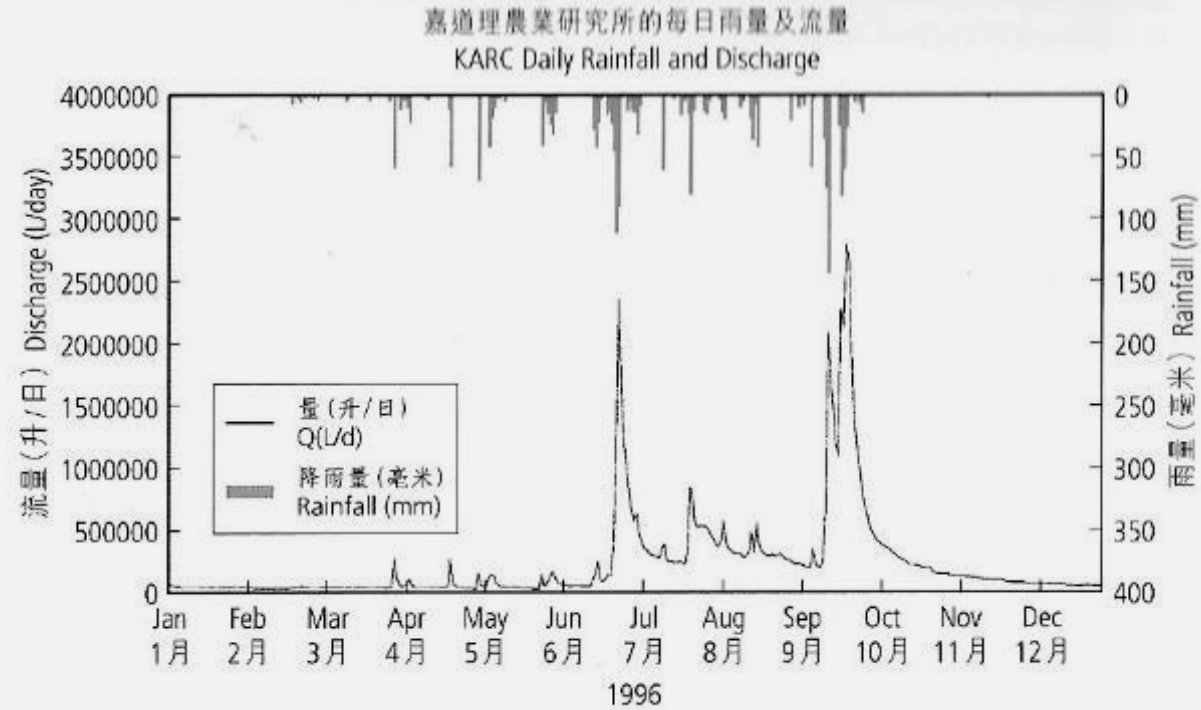
圖3(b)： 大磧涌河盆的徑流水流狀況

Figure 3(b): Runoff regime for the Tai Lam Chung basin



daily rainfall
and runoff

圖4： 實驗河盆K的日降雨量和徑流
Figure 4: Daily rainfall and runoff for the KARC drainage basin



Beas River at Long Valley (before 1990s)



a flood plain

重要新聞版 一九九六年六月二十五日 星期二 天天日報 Tin Tin Daily News 丙子年五月初十日

今年最大豪雨五小時雨量百五毫米 新界北區大水浸成澤國



上水天平山村
三十八人被困

●可見新界北區洪水氾濫，各處道路變成澤國。



一九九八年五月二十五日 星期一 焦點新聞 A10

雨勢洶洶 話浸就浸 居民倉皇逃生



●在區區的小區，居民上安年村多，地處偏僻，交通不便，居民在雨中逃生，情況十分危急。

全身盡濕無衣褲

●在區區的小區，居民上安年村多，地處偏僻，交通不便，居民在雨中逃生，情況十分危急。

清渠水位高及大瀾

●在區區的小區，居民上安年村多，地處偏僻，交通不便，居民在雨中逃生，情況十分危急。

逢雨必浸 北區叫苦

深圳又洩洪 救逾百鄉民



●在區區的小區，居民上安年村多，地處偏僻，交通不便，居民在雨中逃生，情況十分危急。

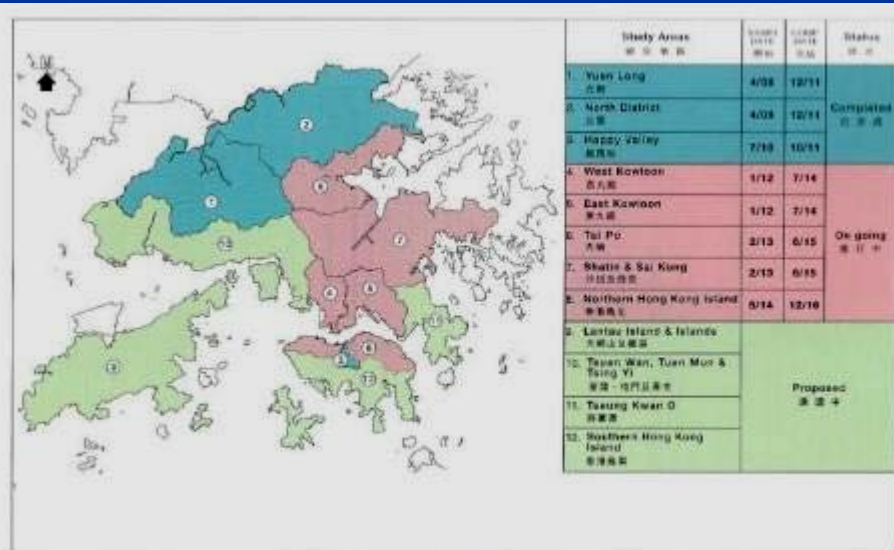
石湖新村逢雨必浸

●在區區的小區，居民上安年村多，地處偏僻，交通不便，居民在雨中逃生，情況十分危急。

天平山村農作物盡毀 數月後才可種植蔬菜

●在區區的小區，居民上安年村多，地處偏僻，交通不便，居民在雨中逃生，情況十分危急。

Flood prevention measures



各區「雨水排放整體計劃檢討研究」進度表

表4：香港的防洪標準

Table 4: Flood protection standards for Hong Kong

排水設施類型 Types of Drainage	再現時段 (年) Recurrence Interval (Years)
市區主幹排水系統 Urban drainage trunk systems	200
市區分支排水系統 Urban drainage branch systems	50
主要鄉郊集水區排水渠 Main rural catchment drainage channels	50
鄉村排水設施 Village drainage	10
密集使用的農地 Intensively used agricultural land	2-5

Kam Tim River: then (1963) and now



What have been done to our major rivers in recent time:

For flood control and drainage purposes, rivers have been

- straightened
- level
- deepened
- over-widened
- lined with foreign materials
- diverted
- altered in a manner to decrease their natural function and stability



梧桐河 => ‘唔同’河

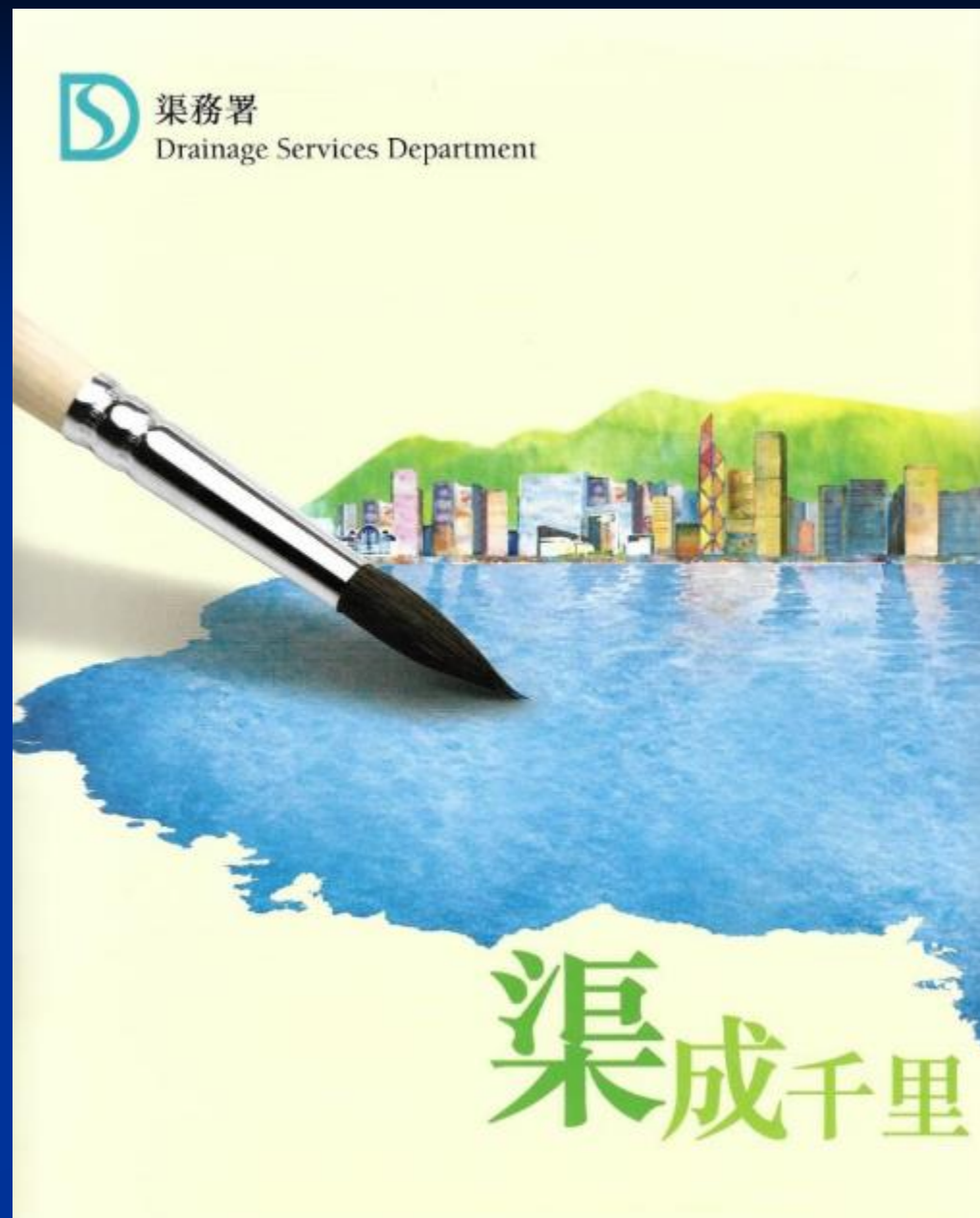


old channel



new channel

Who manage our rivers?



渠成千里

very few original lowland river channels left – the ‘River Heritage’

the remaining Kam Tin River channels



Bin Mo Bridge (便母橋)
- a recognized heritage site



near West Rail rail ducts

* management issues - the hydrology, water quality etc.

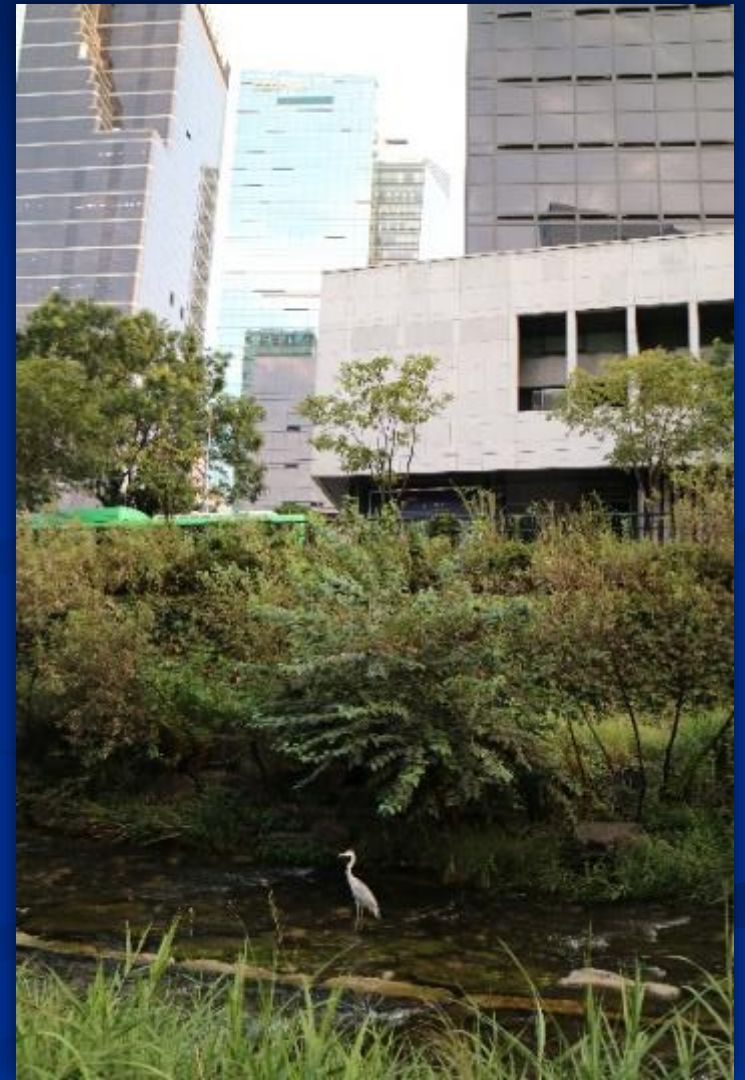
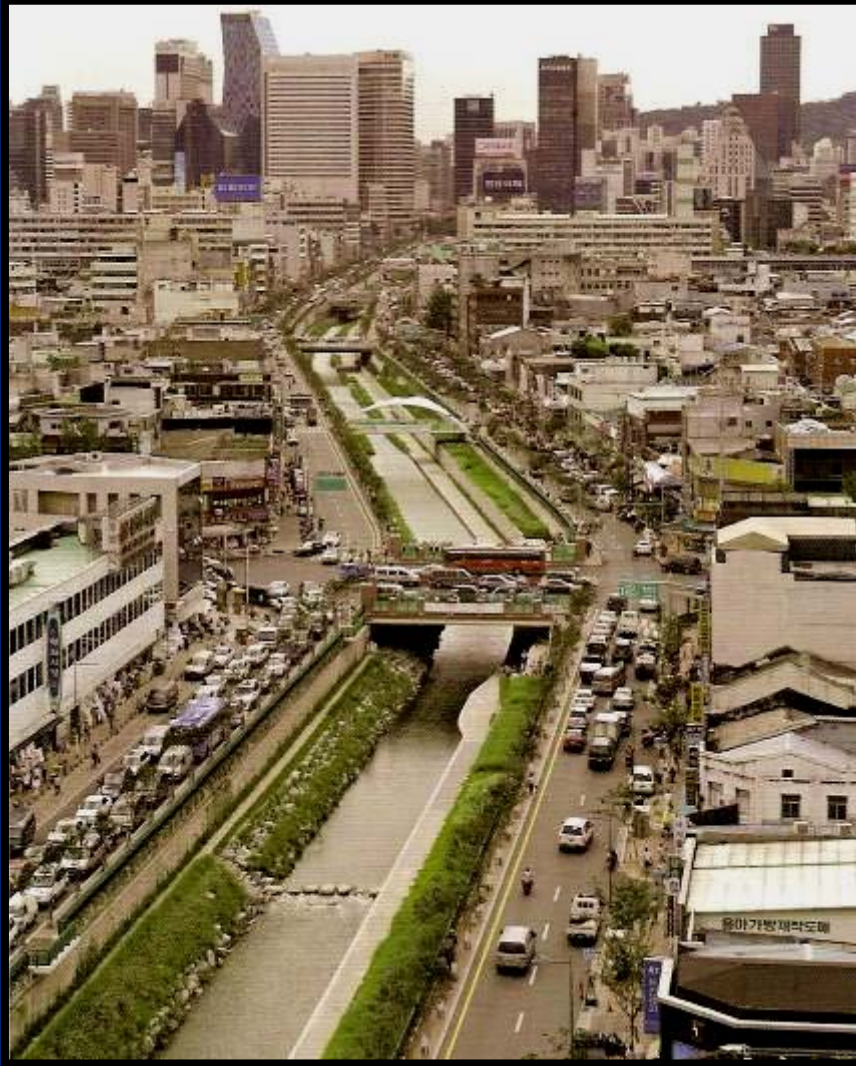
the original Shenzhen River channel at Lok Ma Chau



The global trend ...



Cheong Gye Cheon (Seoul)



Futian River (Shenzhen)



Bishan-Ang Mo Kio Park, Singapore



Policy Address 2015

181. Water-friendly Culture and Activities

We will adopt the concept of revitalising water bodies in large-scale drainage improvement works and planning drainage networks for NDAs so as to build a better environment for the public. In the completed widening works of Ho Chung River in Sai Kung, ecological features were also included to beautify the river and enhance river biodiversity.

2015 Policy Address

**Uphold the Rule of Law
Seize the Opportunities
Make the Right Choices**

**Pursue Democracy
Boost the Economy
Improve People's Livelihood**



A paradigm shift in HK ...



‘Stay Away from Rivers Culture’

=> ‘River Friendly Culture’

To achieve a River Friendly Culture, we need to ..

... re-affirming the value of our rivers



Rivers have multiple functions



source of irrigation water



Lai Chi Wo (1963)

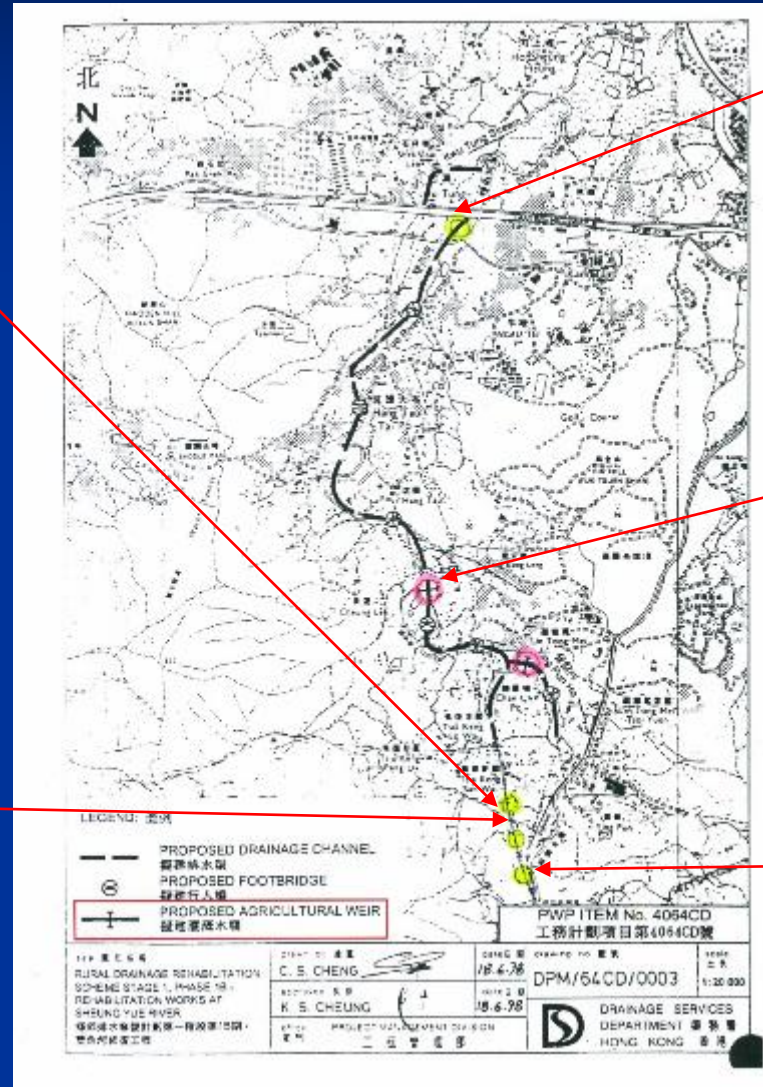
Irrigation system at Sheung Yue River - agricultural weirs



Ying Pun



Ta Shek Wu (2) partly deflated



Kwu Tung



Cheung Lek, deflated



Ta Shek Wu (1), deflated

navigation-cum-cultural function - Kam Tin River at Nam San Wai



wild life habitats

- A total of **166 species** of wild bird in HK, including resident and migratory species, using river and associated wetlands habitats
 - Ardeids 鷺
 - Plovers 鵲
 - Sandpipers 鶺鴒
 - Snipes
 - Kingfishers 翠鳥
 - Jacanas 水雉
 - Rails 田雞
 - Coots 水雞
- Amongst them ~54 species are freshwater dependent



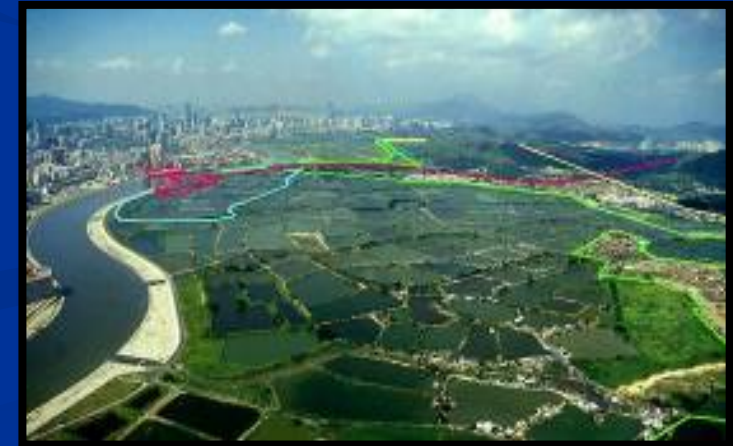
Important ecological sites are linked by the Shenzhen River

Futian National Nature Reserve

Bird Life International's
Important Bird Area
(Lok Ma Chau and Long Valley)



Mai Po &
Inner Deep Bay
RAMSAR Site
– a wetland of
international
importance



Revitalizing river – eco-design channel



past



present

Lam Tsuen River



trained

Eco-design channel – fish ladders





Artificial channels => Eco-design channels

東涌明渠擬還原天然河道

將發展河岸公園 環團：須做紓緩措施

14/9/2014



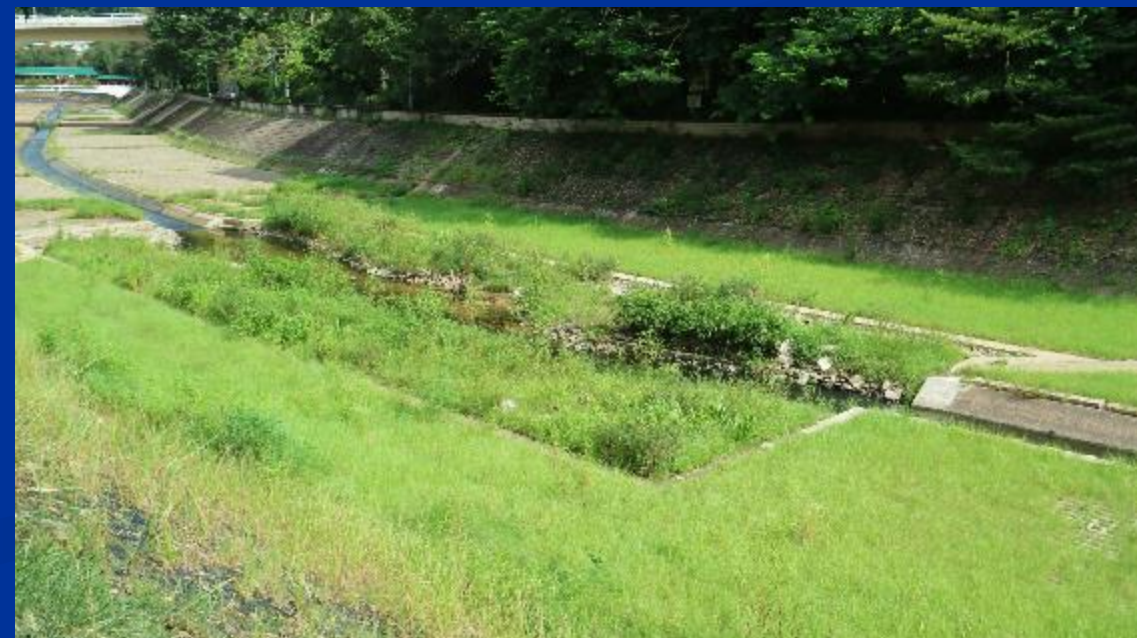
▲土木工程拓展署長鍾錦華展示兩項活化水體工程構思圖，包括東涌河道還原天然河道（左）及安達徑道人工湖（右）。（馬耀森攝）

▲土木工程拓展署計劃將東涌河下游一段數百米的明渠，還原為天然河道，連同周邊土地一併劃為河岸公園，加強保育東涌河。（馬耀森攝）

【明報專訊】特首於2015/16年《施政報告》提及，將在大型排水改善工程及新發展區的排水規劃中，加入活化水體概念；今年5月上任的土木工程拓展署長鍾錦華接受本報專訪，透露為配合東涌新市鎮擴展計劃，將加強活化東涌河，初步構思將下游一段約數百米的明渠，還原為天然河道。由於該河道同時具排洪功能，暴雨期間水位可能迅速暴漲，政府參考外國經驗，將在河道兩旁設立全港首個警報系統，並在河道上方興建行人設施，讓市民在安全情況下近距離接觸天然河道。

最快6年後建成 須立會撥款

東涌河是本港碩果僅存的天然河流，孕育逾30種本地淡水魚品種，包括罕有的北江光唇魚及米魚，東涌河以生態保育為目的，河道兩旁將興建





The more natural substrate the better

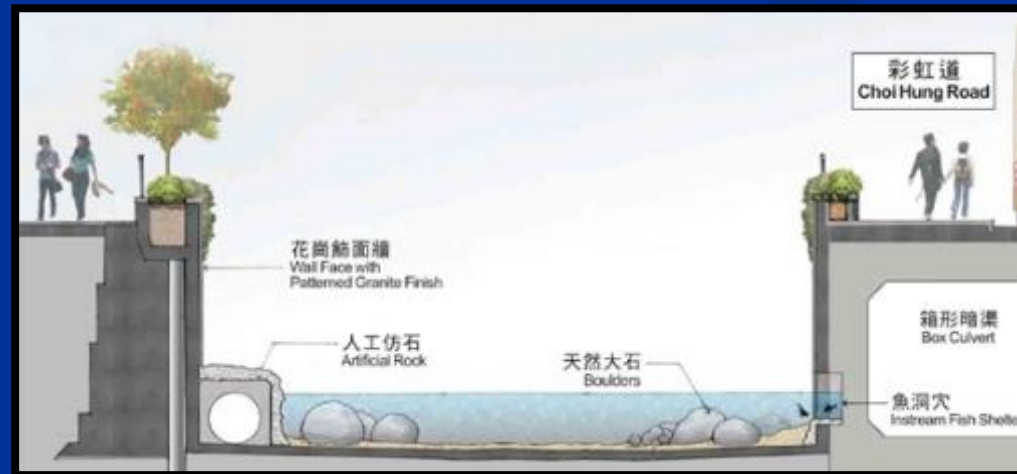
©H Lui



In-stream vegetation
provide roosting
opportunities for
wetland-dependent
species

Natural bottom
substrate provide
foraging opportunities
for wetland-dependent
species

Kai Tak Nullah => Kai Tak River



洪水橋新發展區 規劃及工程研究

Hung Shui Kiu New Development Area
Planning and Engineering Study

規劃署
Planning Department

土木及工程發展部
Civil Engineering and
Development Department

AECOM

第三階段 社區參與摘要
Stage 3 Community Engagement Digest

二零一五年六月
June 2015

DCA1

河畔和鄉村區 Riverine and Village Neighbourhood

「河畔和鄉村區」位於流經天水圍及被活化後的河渠旁，該發展特色分區提供優質的住宅區及河畔公共空間。河渠活化後，河道的生態系統得以改善，而河畔亦會加設河畔長廊。

The "Riverine and Village Neighbourhood" is located alongside the regenerated river channel which flows towards and along TSW. This DCA provides quality residential neighbourhood and riverine public spaces. With the river regeneration, the river ecology system will be enhanced and riverside promenade will be provided.

①

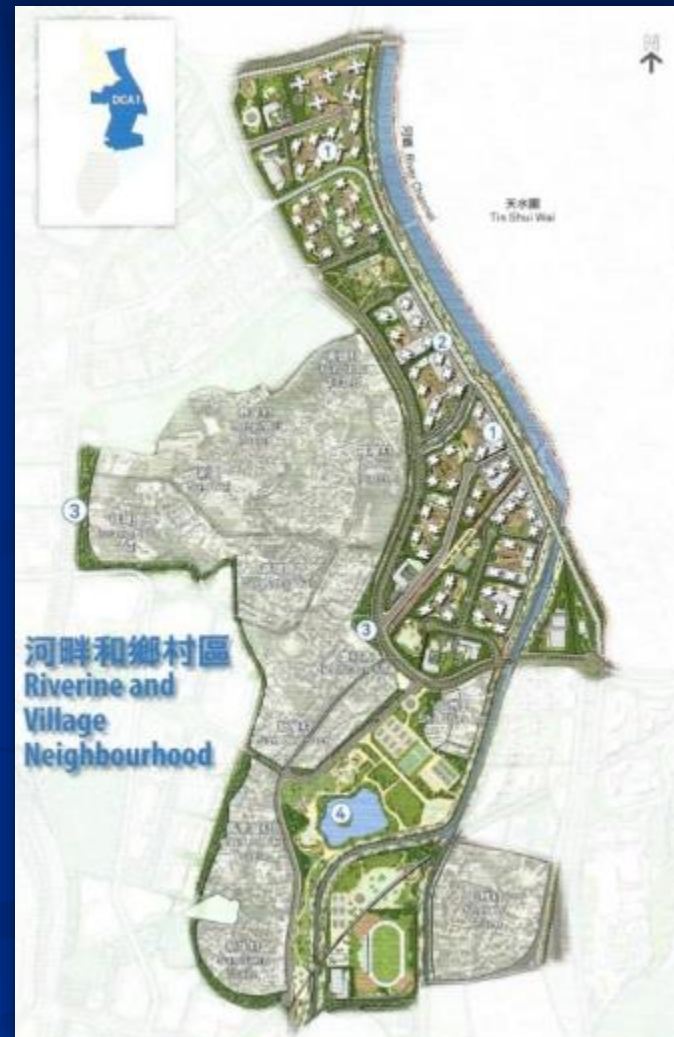
在河畔發展住宅大廈，坐落河畔長廊旁。

Residential buildings will be developed at the riverside, commanding scenic views of the riverside promenade.

②

取消原有天橋路，沿活化後的河渠加設河畔長廊，以改善河畔環境。河畔長廊將提供零售及餐飲設施，以增添河畔長廊的活力。河畔長廊亦會開設行人道及單車徑，讓市民在悠閒的環境中散步及騎單車。

With the removal of Tin Ying Road, a promenade along the regenerated river channel is planned to enhance the riverside environment. Retail and dining facilities will be provided to promote vibrancy of the promenade. Pedestrian walkways and cycle tracks are planned alongside the promenade to allow strolling and cycling in a relaxed environment.



A River Friendly Culture - re-affirming the values of rivers

Rivers have multi-functions

- water resource – drinking, farming
- drainage
- ecological
- aesthetic
- landscape
- cultural
- recreation
- micro-climate adjustment
- sustainability
- etc.



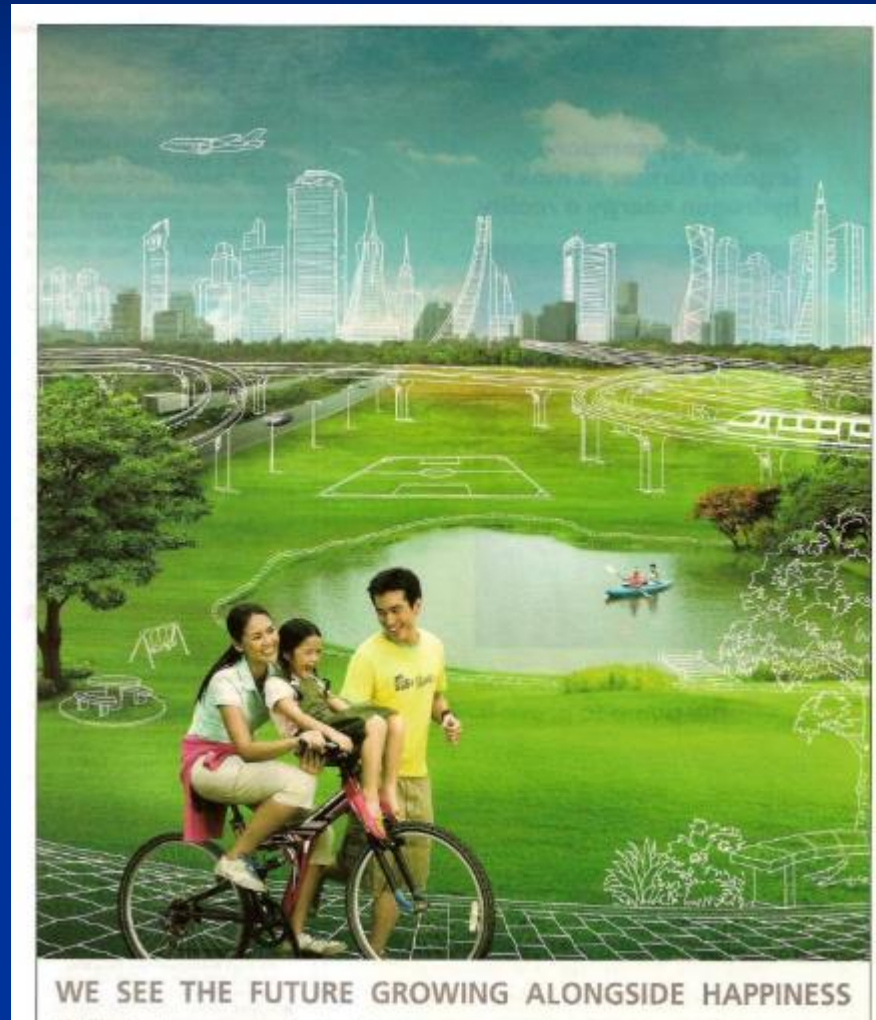
A Paradigm Shift - Stay Away From River Culture

⇒ River Friendly Culture

⇒ Water Friendly Culture



a Blue Green City
a Smart, Green, Resilient (SGR) City



WE SEE THE FUTURE GROWING ALONGSIDE HAPPINESS

Some remarks

Remark I filthy rivers => clean artificial channels



water quality issues



Ng Tung River 梧桐河

Yuen Long Creek in early 1980s



Plate 4.4 Agricultural, industrial and sewage wastes from Yuen Long Creek into an offensive and foul smelling open sewer

in early 1980s



at 2017

Eutrophication at Sheung Yue River, April 2018



on April 9, 2018



on April 14, 2018

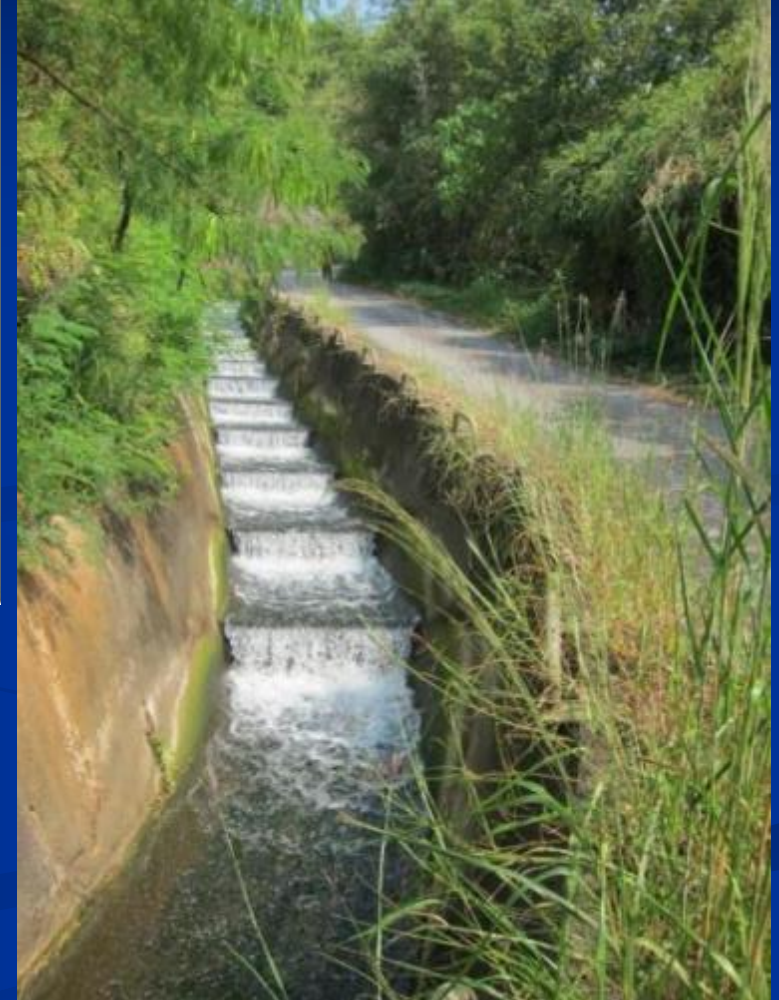
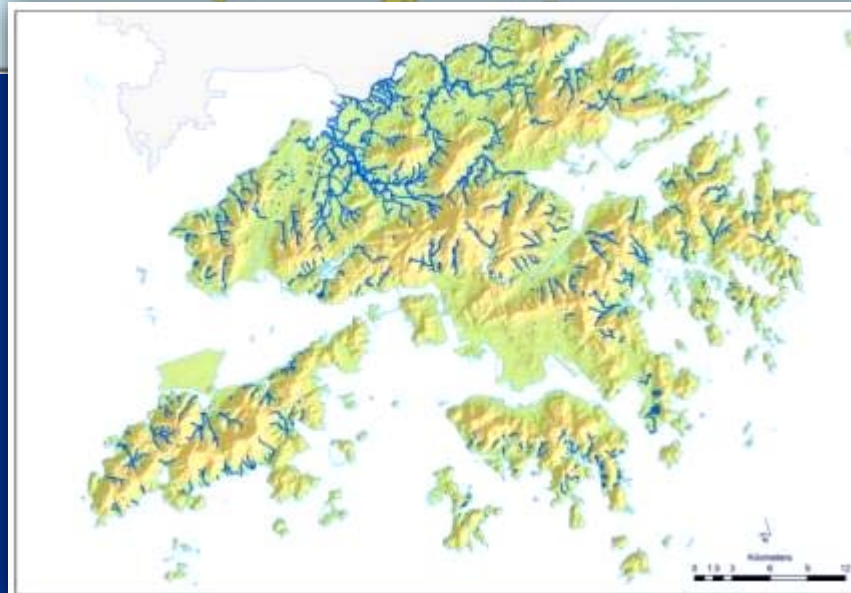
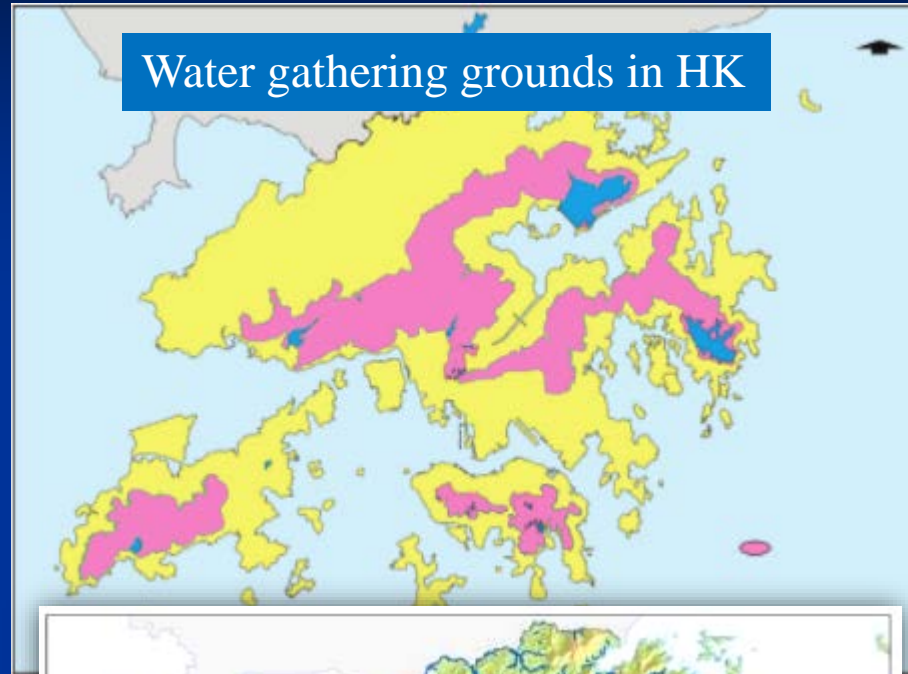
Remarks II 'One River, Two Systems' (一河兩制)



Lam Tsuen River:
down stream 林村
河下游



one river => two rivers
one catchment => two catchments



What is needed?

‘Environmental Flow’ for ecological sensitive/eco-design channels



Environmental Flow refers to the quality, quantity, and timing of water flows required to maintain the components, functions, processes, and resilience of aquatic ecosystems that provide goods and services to people.

The largest wetlands in HK are not functioning as wetland!

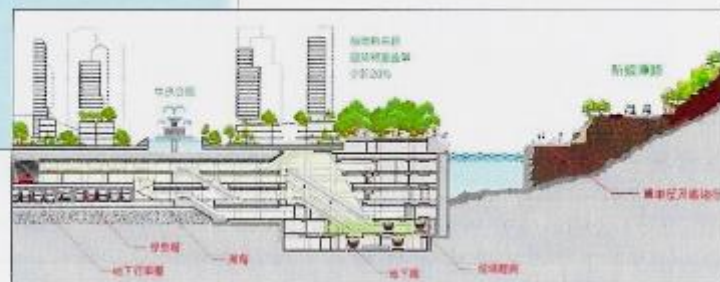


Reservoirs become vulnerable ...

Reclaiming Plover Cove Reservoir for Large-scale Housing Development 填平船灣淡水湖作大型房屋發展的建議



The Suggestion 有關建議



建議大規模填海增地
倡填船灣淡水湖
學者：可建30萬伙

【明報專訊】香港樓價高企房屋供應不足，香港大學學者望臨政府以立管盤決案施援，為置業土地供應作準備，又建議大規模填海作長遠土地供應，並提出可研究填平低地約1200公頃的龜洲淡水湖，估計可供屋30萬個單位。天文台曾台長表示其出賣填平低地淡水湖的建議，「完全不合時宜」。區國平不以為然，指「

Q1 27.720

組織者可免收相對應區域

據大馬路海濱研習中心昨發表的研習報告，指本港自回歸後幾十年來，大型填海工程計劃，緊扣政府填海計劃，本港填海面積由1990年僅有206公頃，增至現時約千公頃。為大發展提供地盤及建設新區和發展舊區，對於促進其經濟上、大型填海計劃在行政及財政方面，均能制衡土地及資源分配減低有礙，亦需要繼續維持原意，又不同意一填海在青洲附近。

中心並可由考慮因庫存江水水位暫時所承減額
項上予以調整所訂。本署曾調查顯示，僅因庫
未淤足者約二天半時，即能上船五萬噸。同業
據稱購買前需將水調來，來自於他處已在現庫
填裝時造成，故再發給給稅。對造成影響則
少。如又將船。則則則則則則則則則則則則則
少。如又將船。則則則則則則則則則則則則則

林祖舜：完全脫離現實

林鄭葉劉同遊維多利亞港水閣探視花籃,社聯是「完全參與現實」。林鄭稱這次來港用過在港生活。香港有那么多個地方都是「以外來」發生出來,所以也要來港用,「不能完全依賴香港水」。林鄭向內地化驗水現代方式。「化驗」是方法方法性。林鄭問吳非非出品「無糖」。指現階段區域鄰近內地華港人口增加很多及香港步國際化,所以香港水質方面仍與區域相連。

林德鋒曾提議要求開港

這批傳單在有人舉出其中虛假說來騙取信譽，與16



臺灣省水產局編印臺灣省第二次水產調查報告。〈水產調查報告〉

土地供應建議

中期調整

- 政府公布2047年收回新填海在開發後的地點
- 研究地地加計方式，製造認同予發展新填海區

長期持續推動

- 學海，此為讀書即清純門下古語。
 此語及此書分世傳。

其他考虑因素

- 賴幸雄、謝水光，
估計又得用30萬網
球拍。

資料來源

蘇大緯

张其成

9-8342-1

其取價率

00000000

史金波

● 〇

的研究。

漢語點數

58. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

五、年費性

立4.9.12

100



Abberton Reservoir Enhancement Project on completion

The visitor centre is open 9am - 5pm daily (closed Christmas and Boxing Day).

Donations welcome. Events and activities are priced individually. For information or bookings for any of our activities or events, please contact us directly:



Abberton Reservoir Visitor Centre
Church Road
Layer de la Haye
Colchester
Essex CO2 0EU

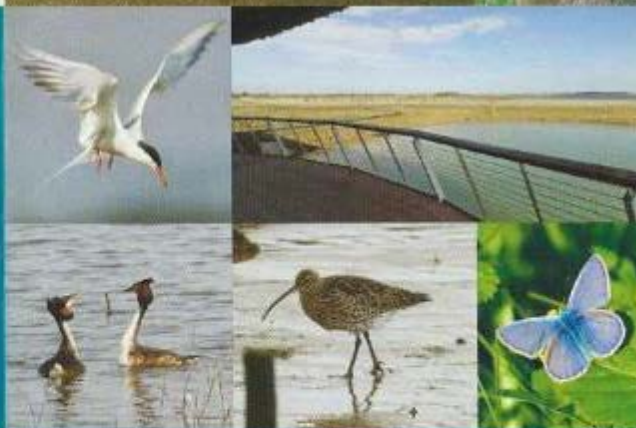
telephone: 01206 738172
email: abberton@essexwt.org.uk
website: www.essexwt.org.uk



working in partnership

Abberton Reservoir

Nature Reserve and
Visitor Centre



Reservoir
nature reserves in
Essex, England



What is needed?

Eco-design reservoir & catchwater 生態水塘

Reservoir Nature Reserves 水塘保護區



Hok Tau Reservoir 鶴藪水塘

One river, Two systems

Eco-design
Reservoir



Eco-design
River

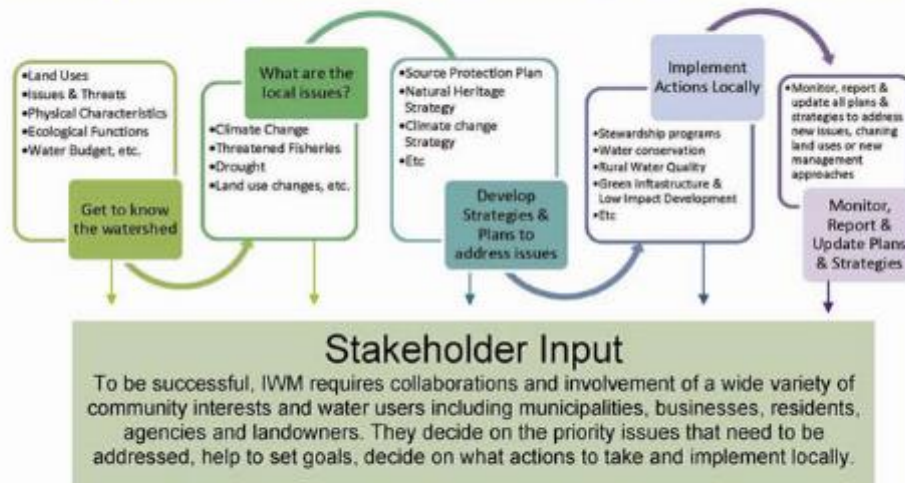


What is ultimately needed?

Integrated River Basin Management

Integrated river basin management aims to establishing a framework for coordination whereby all administrations and stakeholders involved in river basin planning and management can come together to develop an agreed set of policies and strategies such that a balanced and acceptable approach to land, water, and natural resource management can be achieved.

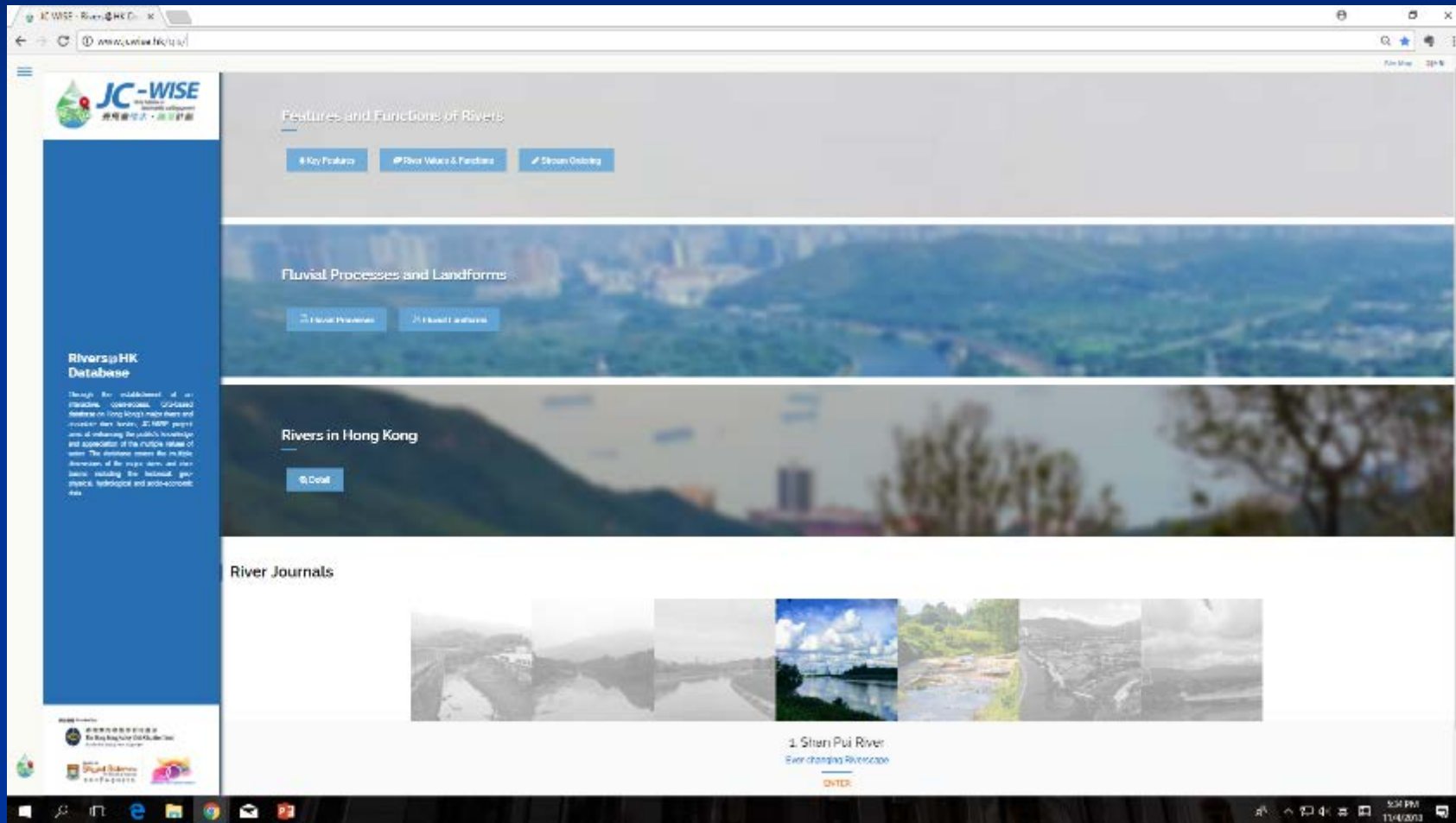
Integrated Watershed Management Process



Each Strategy & Plan is developed, implemented, monitored and updated through a cyclical process which keeps it up to date and responsive to local needs.



Rivers@HK Database



<http://www.jcwise.hk/gis/>