

# Integrating Water Management Facilities into the Built Environment – A Smart Green Resilient Approach for the Yuen Long South Development

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ARUP



Organisers:



International Co-owners:



# Yuen Long South Development



Organisers:



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# Project Background

## Existing Conditions at Yuen Long South



# Project Background

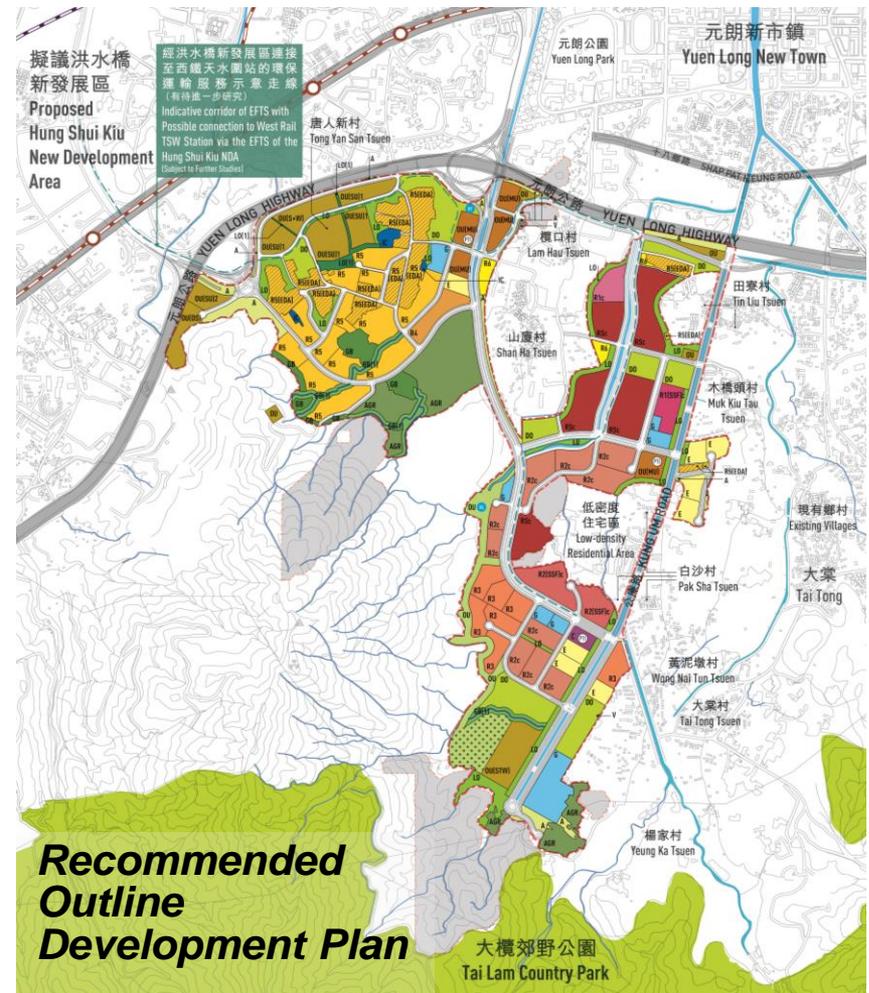


## Planning & Urban Design Principles:

- Creating an Urban to Rural Experience
- View Corridors and breezeways
- Creating open space and green network
- Providing major focal points and key activities spine
- Revitalization of nullahs

# Development Proposals

<b>General</b>	
<b>Potential Development Area</b>	about <b>223 ha</b>
<b>Development Area</b>	about <b>183 ha</b>
<b>Providing Housing Supply</b>	
<b>Total Population</b>	about <b>85,000</b>
<b>No. of New Flats</b>	about <b>27,700</b>
<b>Supporting Local Economy</b>	
<b>Job Opportunities</b>	about <b>10,800</b>



# Key Challenges on Water Management

- Conflicting traffic and flood protection requirements
- Potential drainage impacts from development
- Inadequate existing sewerage infrastructure
- Requirement of sewage effluent discharge to the downstream Deep Bay



# Smart Green Resilient Approach to Water Management



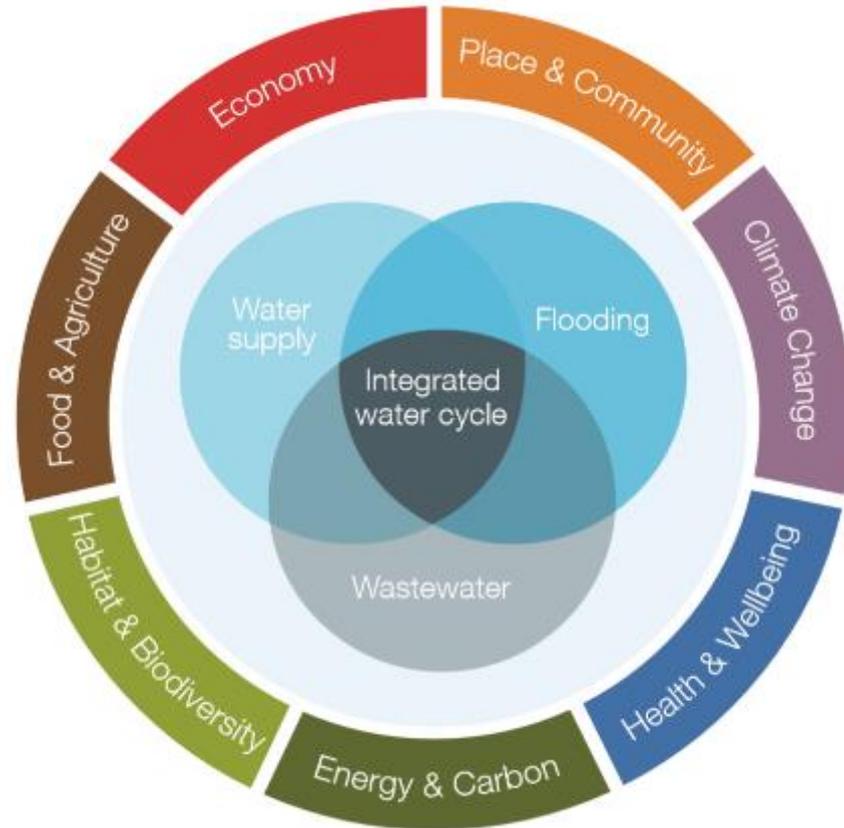
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# General Approach



- **Smart Green Resilient concept**
- Holistic water cycle management
- Application of “**Blue-Green** infrastructure”
- Revitalization of water bodies

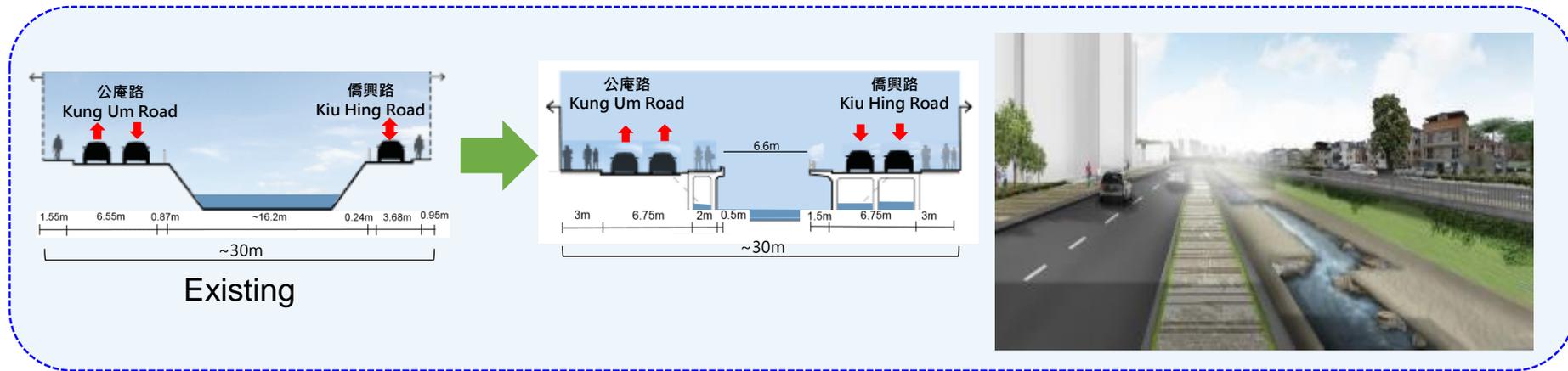
# Smart Use of Existing Concrete-Lined Nullah

- Partial decking and revitalization of existing nullah
  - Address road safety, meet future traffic needs and enhance pedestrian connectivity
  - Form an aesthetically pleasant viewing corridor
  - Compensate hydraulic capacity by new box culverts
  - Key Activity Nodes next to the re-vitalized nullah



# Smart Use of Existing Concrete-Lined Nullah (continued)

## Partial decking of nullah



## Nullah revitalization



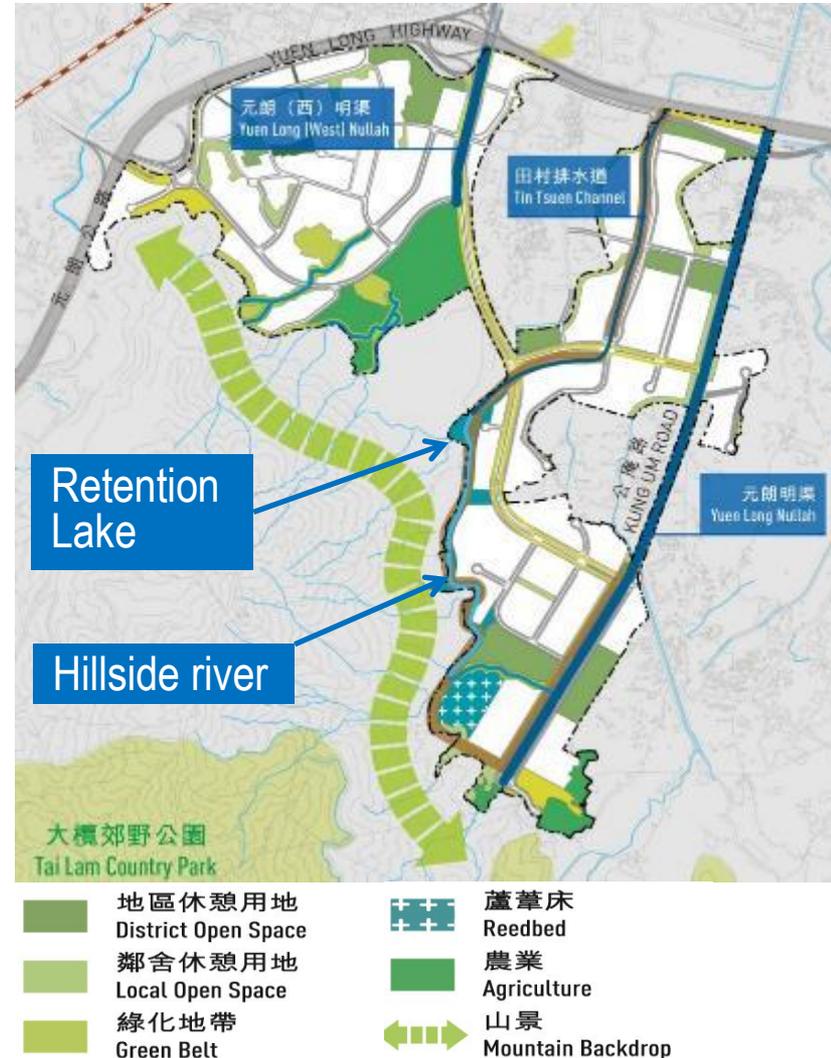
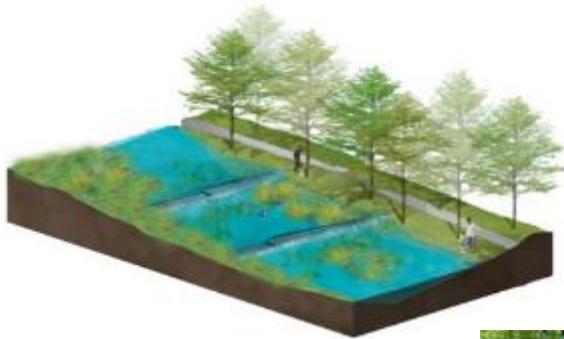
# Green and Sustainable Use of Treated Sewage Effluent

- Some 23,000 m<sup>3</sup>/day sewage will be generated
- New sewage conveyance & treatment facilities will be provided
- New Sewage Treatment Works (STW)
  - Tertiary treatment standard
  - Effluent reused for toilet flushing, landscaping irrigation and make-up for water features
  - A site next to STW may be developed into a reedbed wetland for effluent polishing



# Building Resilience with Stormwater Retention Facilities

- Multiple functional stormwater retention facilities, comprise of:
  - 1km long hillside river
  - 0.6 ha retention lake



# Conclusions

- Planning of Yuen long South Development aims to create a sustainable, green and livable community for accommodating about 85,000 population.
- Smart green resilient approach has been applied to the holistic planning and design of development water infrastructure.
- Adequate space has been planned for various water infrastructure.



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Sustainable Buildings and Climate Initiative  
Building National Policies for Sustainability



Global Alliance  
for Buildings and  
Construction

# Thank you



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