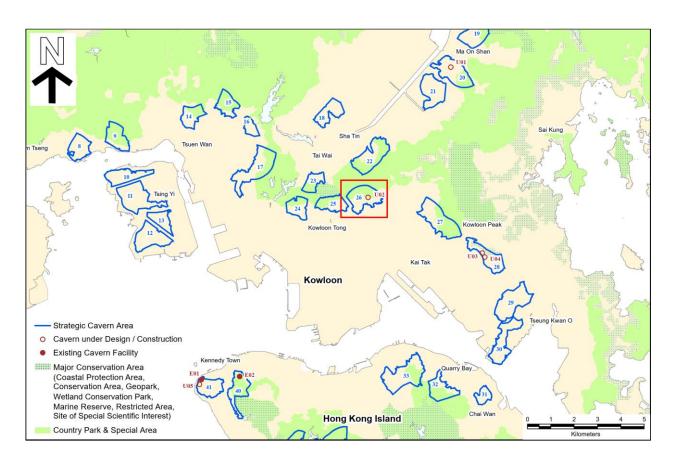
# **CAVERN MASTER PLAN – INFORMATION NOTE**

# STRATEGIC CAVERN AREA NO. 26 – LION ROCK WEST

This Information Note describes the characteristics and development constraints of Strategic Cavern Area No. 26 - Lion Rock West (the SCVA). It also denotes the extent of potential portal locations. The spatial context of the SCVA is illustrated in the Reference Drawing appended to this Information Note.

Reference should be made to the Explanatory Statement of the Cavern Master Plan for its background and purposes, as well as the definition and delineation criteria of SCVAs.

## 1. Location Plan



## 2. Strategic Cavern Area Details

Outline Zoning Plans (OZPs)<sup>1</sup>: Wang Tau Hom and Tung Tau OZP

Tsz Wan Shan, Diamond Hill & San Po Kong OZP

Area: 110.0 ha

Maximum elevation in the SCVA: +494 mPD

Minimum elevation in the SCVA: +66 mPD

#### 3. District Context

# Location

The SCVA is located at the south of Lion Rock, which is situated in East Kowloon. Lion Rock Country Park is to the north of the SCVA, Beacon Hill to the west, Kowloon Tong to the southwest, Wong Tai Sin to the southeast and Tsz Wan Shan to the east.

The SCVA is generally hilly with a maximum elevation of about +494 mPD. About half of the SCVA encroaches onto Lion Rock Country Park. Lion Rock Park is located in the southwestern portion of the SCVA. Within the park there are Lion Rock High Level No. 1 Fresh Water Primary Service Reservoir, Lion Rock Low Level Fresh Water Primary Service Reservoir and the Ma Chai Hang Pumping Station is located nearby.

To the southwest of the SCVA, Kowloon Tong is mainly comprised of residential communities with low- to medium-rise developments including Yau Yat Tsuen (about 1.4 km to the southwest of the SCVA) and One Beacon Hill (about 700 m to the southwest of the SCVA). While to the south and east of the SCVA, Wong Tai Sin and Tsz Wan Shan are also major residential communities with high-rise residential developments, including Wang Tau Hom Estate (about 400 m to the south of the SCVA), Chuk Yuen (North) Estate (near the southeastern boundary of the SCVA), clusters of private residential buildings along Sheung Fung Street (e.g. Fung Wong Chuen Buildings about 500m to the southeast of the SCVA), and Fung Tak Estate (about 650 m to the southeast of the SCVA).

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<sup>&</sup>lt;sup>1</sup> For details of the latest land use zonings on the OZPs, please refer to the Town Planning Board Statutory Planning Portal 3 (<a href="https://www.ozp.tpb.gov.hk/">https://www.ozp.tpb.gov.hk/</a>).

In the proximity of the SCVA, there are a number of key Government, Institution or Community (GIC) facilities supporting the development of Kowloon Tong, Wong Tai Sin and Tsz Wan Shan, as well as the territory. These include Hong Kong Baptist Hospital and Hong Kong Baptist University (both about 450 m to the southwest of the SCVA), City University of Hong Kong (about 1.2 km to the southwest of the SCVA), Wong Tai Sin Hospital and Our Lady of Maryknoll Hospital (about 250 m to the southeast of the SCVA) and clusters of service reservoirs, such as Ma Chai Hang Fresh Water Service Reservoir (at the southern boundary of the SCVA), Lion Rock High Level No. 2 Fresh Water Primary Service Reservoir (about 150 m to the southwest of the SCVA), Fung Wong Fresh Water Service Reservoir & Fung Wong Salt Water Service Reservoir (about 150 m to the east of the SCVA) and Diamond Hill Fresh Water Service Reservoir & Diamond Hill Salt Water Service Reservoir (about 250 m to the east of the SCVA).

## Access

The SCVA is accessible from its eastern and southern edges via Shatin Pass Road, Chui Chuk Street and a restricted access road to Ma Chai Hang Fresh Water Service Reservoir. Regional connections could be routed through the nearby Lung Cheung Road and Lion Rock Tunnel.

The MTR Kwun Tong Line and Tuen Ma Line serve the locality of Kowloon Tong, Wong Tai Sin and Tsz Wan Shan. The nearest stations include Lok Fu Station (Kwun Tong Line; about 700 m to the south of the SCVA) and Wong Tai Sin Station (Kwun Tong Line; about 600 m to the southeast of the SCVA). Connecting minibus and bus services to the MTR stations are also established in the locality to serve the existing residential developments.

## Existing / Planned Facility in SCVA

There is currently no existing cavern facility within the SCVA. The Diamond Hill Fresh Water & Salt Water Service Reservoirs and the associated facilities (about 250 m to the east of the SCVA) are proposed to be relocated to caverns at the central part of the SCVA. The construction works commenced in December 2022.

# 4. Summary of Characteristics of Strategic Cavern Area

## 4.1. Boundary

The northern boundary of the SCVA is defined by valley topography. The eastern boundary of the SCVA is defined by Fat Chong Temple and Tsz Wan Shan 400 kV Substation. The western boundary of the SCVA is defined by Lion Rock Tunnel and Lion Rock Tunnel Road. The southern boundary of the SCVA is defined by Lung Cheung Road, Chui Chuk Street, access road

to Lion Rock Park, Ma Chai Hang Fresh Water Service Reservoir, and residential developments including Tsui Chuk Garden and Chuk Yuen (North) Estate.

# 4.2. Geology

The solid geology of the SCVA is primarily fine-grained granite, which belongs to Kowloon Granite within the southern portion and Shui Chuen O Granite within the northern portion. The SCVA is with the rock type that is suitable for the uses of rock caverns. A number of geological features, such as faults, photolineaments and quartz veins, are identified within and in the areas surrounding the SCVA. The excavated fine-grained granite within the SCVA is suitable for reuse as construction aggregate.

Further geological information of the SCVA can be found on the 1:20,000-scale Geological Map Sheet 11 (Hong Kong & Kowloon) published by the Geotechnical Engineering Office, Civil Engineering and Development Department.

## 4.3. Planning

The SCVA is close to the existing urban development in Kowloon Tong, Wong Tai Sin and Tsz Wan Shan and is well connected to the rest of the territory by highway and railway. The southwestern, southern and southeastern sides of the SCVA are the major residential development areas in Kowloon Tong, Wong Tai Sin and Tsz Wan Shan. These areas consists of various low- to high-rise residential developments (e.g. Yau Yat Tsuen, Wang Tau Hom Estate and Fung Tak Estate) supported by a number of GIC facilities (e.g. university, hospital, service reservoir, etc.).

#### 4.4. Environmental

Environmental sensitive receivers to the potential caverns in the SCVA are the nearby existing residential developments (e.g. Tsui Chuk Garden, Pang Ching Court, Tin Wang Court, Tin Ma Court, Shatin Pass Estate, Chuk Yuen (North) Estate and Fat Chong Temple) and some GIC facilities (e.g. Wong Tai Sin Hospital, Our Lady of Maryknoll Hospital, Diamond Hill Kwong Yum Home for the Aged and Evangel Children's Home). The SCVA comprises wooded areas and shrubby hillsides, and encroaches onto Lion Rock Country Park and Water Gathering Grounds. Beacon Hill Site of Special Scientific Interest is located about 300 m to the northwest of the SCVA. The Grade 1 historical building of Wong Tai Sin Temple is about 400 m to the southeast of the SCVA. In addition, an identified old footpath, namely "Kowloon Route (Kowloon City to Sham Chun: Kowloon City to Yuen Chau Kok Ferry Pier Sub-Section)", is located to the east of the SCVA. There are natural or modified surface water courses within the SCVA.

All potential environmental constraints, which may impose restrictions on the potential caverns, should be identified and taken into account under the Environmental Impact Assessment Ordinance (EIAO) and other relevant ordinances, such as the Country Parks Ordinance. Project proponents are required to take into account the potential environmental constraints when considering cavern options and undertaking the environmental impact assessment under the EIAO to determine its environmental acceptability, potential environmental impacts and environmental mitigation measures required.

#### 4.5. Traffic

The SCVA can be accessed from its eastern and southern edges via Shatin Pass Road, Chui Chuk Street and a restricted access road to Ma Chai Hang Fresh Water Service Reservoir.

The SCVA is easily accessible from the primary road network via Chuk Yuen Road, Shatin Pass Road and Lung Cheung Road. Chuk Yuen Road and Shatin Pass Road are expected to have capacity to accommodate additional traffic generated by future cavern projects. Lung Cheung Road, however, is expected to operate with marginal capacity in the future. From Lung Cheung Road, direct connections can be made with Lion Rock Tunnel Road, Waterloo Road and expressways in the Kwun Tong area. These connections allow for good accessibility to the other parts of Hong Kong.

## 4.6. Other Key Issues / Constraints on Cavern Development

The railway tunnel of MTR Tuen Ma Line passes through the western portion of the SCVA in a northwest-southeast direction. Owing to the difference in elevation, this tunnel would not pose any insurmountable constraint to the potential uses of rock caverns within the SCVA.

A vehicle tunnel, namely the Lion Rock Tunnel, is about 50 m to the west of the SCVA. A cable tunnel, namely the CLP Tsz Wan Shan cable tunnel, is about 50 m to the east of the SCVA. An abandoned tunnel Shelter is located approximately 50 m to the west of the SCVA. As these tunnels are distant from the SCVA, they would not pose any insurmountable constraint to the potential uses of rock caverns.

MacLehose Trail Section 5 and War Relics Trail (Lion Rock and Ma On Shan) are located within the SCVA. Project proponents shall take into account when considering cavern options.

#### 5. Extent of Potential Portal Locations

The extent of the potential portal locations is shown on the Reference Drawing.

The potential portal locations near Lion Rock Park, Chuk Yuen Road and Chui Chuk Street (on the southern edge of the SCVA) and that on Shatin Pass Road (on the eastern edge of the SCVA) are located along roadside slopes and access would be provided via a run-in/outs or priority controlled junctions, depending on the proposed use. These potential portal locations are with good accessibility and the adjacent road network should have adequate capacity to accommodate a range of traffic generating activities.

The potential portal location on the access road to the Ma Chai Hang Fresh Water Service Reservoir behind the Tsui Chuk Garden is less accessible, with vehicle access only possible via the narrow access roads of the Lion Rock Park and Ma Chai Hang Fresh Water Service Reservoir. The current access would only be suitable for low traffic-generating activities. Major road upgrading works may be required to support moderate to high traffic-generating activities that would require dual way vehicle access to the proposed cavern facilities.

There are natural slopes above the potential portal locations. There may be potential natural terrain hazards in the vicinity which may require further study by the project proponents.

Project proponents should carry out further studies on identifying specific locations of portals for projects considering cavern options.

#### 6. Remarks to Information Note

The Cavern Master Plan and all supporting documents do not exempt project proponents for cavern projects from following the relevant statutory procedures. Information including the extent of potential portal locations indicated in this Information Note should serve as reference materials only. In formulation of development proposals, project proponents should conduct the necessary studies and assessments relevant to each project stage. Reference should be made to the "Implementation" section of the Explanatory Statement of the Cavern Master Plan for further details.

