

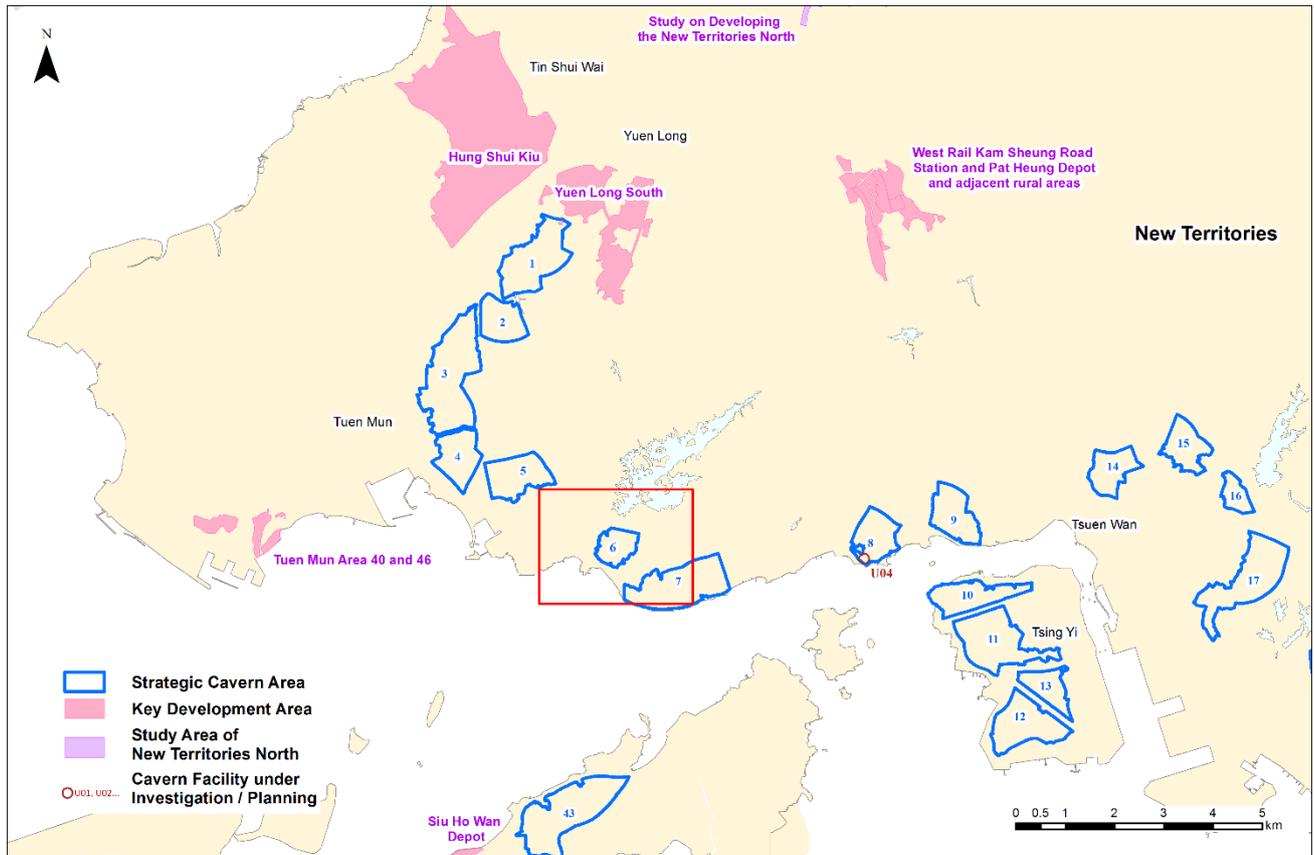
## CAVERN MASTER PLAN – INFORMATION NOTE

### STRATEGIC CAVERN AREA NO. 06 – SIU LAM

*This Information Note describes the characteristics, key development opportunities and constraints of Strategic Cavern Area No. 06 - Siu Lam (the SCVA). It indicates the potential land uses suitable for cavern development within the area, but would not pre-empt other possible land uses put forward by the project proponents with justifications. 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 Plan (OZP):     | Approved So Kwun Wat OZP No. S/TM-SKW/13 |
| Area:                          | 48.2 ha                                  |
| Maximum elevation in the SCVA: | +141 mPD                                 |
| Minimum elevation in the SCVA: | 0 mPD                                    |

## 3. District Context

### Location

The SCVA is located at Siu Lam in the western part of the New Territories. So Kwun Wat is to the west of the SCVA, Tai Lam Chung is to the east and Tai Lam Country Park is to the north. Tuen Mun Road and Castle Peak Road running by the shore is to the south of the SCVA.

The SCVA is generally hilly with a maximum elevation of about +141 mPD. Within the SCVA, there is a local village namely Luen On San Tsuen located at its southeastern portion. Several Government, Institution and Community (GIC) facilities are located in the SCVA, including Tai Lam Chung Fresh Water Service Reservoir in its centre, Ex Siu Lam Hospital in its southwestern portion and Siu Lam Psychiatric Centre in its southern portion.

Surrounding the SCVA, Siu Lam and So Kwun Wat located to the west of the SCVA are mainly residential areas with low- to medium-rise residential developments and local villages. These include Palatial Coast (adjoining the western boundary of the SCVA), Grandview Terrace (about 750 m to the west of the SCVA), So Kwun Wat Tsuen (about 1,100 m to the northwest of the SCVA) and So Kwun Wat San Tsuen (about 800 m to the northwest of the SCVA). Various sites in So Kwun Wat have been rezoned for residential use (e.g. along Kwun Chui Road and So Kwun Wat Road) and thus the development of this area is expected to grow further. There are also key GIC facilities supporting the development of Siu Lam, including the Siu Lam Fresh Water Service Reservoir (about 750 m to the northwest of the SCVA) and Siu Lam No. 2 Fresh Water Service Reservoir (about 700 m to the northwest of the SCVA). Located to the east of the SCVA, across the Tai Lam Chung River, Tai Lam Chung comprises mainly local villages and GIC facilities, including Tai Lam Chung Tsuen (about 100 m to the east of the SCVA), Tai Lam Correctional Institution (about 300 m to the northeast of the SCVA) and Maritime Services Training Institute (about 300 m to the south of the SCVA). Tai Lam Country Park and Tai Lam Chung Reservoir are located to the north of the SCVA.

### Access

The SCVA is accessed from its western boundary via Siu Lam Road, southern boundary via Hong Fai Road and Castle Peak Road (Tai Lam), and eastern boundary via a rural road connected to Castle Peak Road (Tai Lam). Regional connections could be routed through the nearby Tuen Mun Road and Castle Peak Road (Tai Lam). There is no railway serving the locality of the SCVA.

### Land Use Zoning

Under the Approved So Kwun Wat OZP No. S/TM-SKW/13, the SCVA is zoned “Green Belt” and “Government, Institution or Community”. The zonings of the surrounding areas include “Residential (Group B)” to the west, “Village Type Development” to the east, “G/IC” and “Green Belt” to the north and south.

For details of the latest land use zonings on the OZP, please refer to the Town Planning Board website (<http://www.tpb.gov.hk>).

There is no existing or planned cavern facility within the SCVA.

## **4. Summary of Characteristics of Strategic Cavern Area**

### **4.1. Boundary**

The northern boundary of the SCVA is defined by a Water Supplies Department tunnel, the Tai Lam Chung Supply Tunnel to Desalter. The southern boundary of the SCVA is defined by Castle Peak Road and Hong Fai Road. The eastern boundary of the SCVA is defined by Tai Lam Chung River, private lots and an access road to the Luen On San Tsuen area. The western boundary of the SCVA is defined by Siu Lam Road and private lots.

### **4.2. Geology**

The solid geology of the SCVA is primarily fine-grained granite, which belongs to Tai Lam Granite. The SCVA is with the rock type that is suitable for cavern development. A number of geological features, such as faults and isolated dykes, are 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 in the 1:20,000-scale Geological Map Sheet 6 (Yuen Long) published by the Geotechnical Engineering Office, Civil Engineering and Development Department.

### **4.3. Planning**

Although the SCVA is not served by railway, the SCVA is close to the existing developments in Siu Lam and has good connectivity via major highways namely Tuen Mun Road and Castle Peak Road (Tai Lam). Given there are various proposed residential developments in the vicinity of the SCVA (e.g. along Kwun Chui Road and So Kwun Wat Road), there are opportunities for the SCVA to support the future development and potential growth of the area.

In the vicinity of the SCVA, Siu Lam and So Kwun Wat are mainly residential areas with low-to medium-rise residential developments and local villages (e.g. Palatial Coast and Luen On San Tsuen) which are supported by various GIC facilities (e.g. service reservoir and school). Should there be any need for providing additional land for residential use, the SCVA may provide the solution space (subject to assessment) by, for example, relocating some of the suitable infrastructural facilities to caverns (e.g. relocating service reservoir close to the existing residential developments). By doing so, surface land could be released for other beneficial uses (e.g. residential developments and/or community facilities), and it could also enable more effective utilisation of land resources in Siu Lam.

The SCVA could also be used to house those supporting infrastructure facilities that are required by the existing and proposed residential developments. In particular, it is considered suitable for housing ‘Not-In-My-Backyard’ (NIMBY) type of facilities, such as sewage treatment works, to minimise the nuisance to the community.

### **4.4. Environmental**

Environmental sensitive receivers to cavern development in the SCVA include the nearby residential areas (e.g. Palatial Coast and Luen On San Tsuen) and occupied facilities including Siu Lam Psychiatric Centre and Maritime Services Training Institute. In addition, the majority of the SCVA is within the Consultation Zone of a Potentially Hazardous Installation, i.e. the Water Supplies Department’s Tai Lam Chung No. 2 Chlorination Station. Quantitative Risk Assessment will be required to carry out during the planning stage of the cavern projects. Siu Lam Site of Archaeological Interest, Tai Lam Site of Archaeological Interest, and traditional burial grounds are also identified in the vicinity of the SCVA. Tai Lam Country Park is located to the north and east of the SCVA. Natural or modified rivers (e.g. Tai Lam Chung River) and wooded areas are close to the potential portal locations of the SCVA.

All potential environmental constraints, which may impose restrictions on the cavern development, 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 planning each cavern development project 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 western boundary via Siu Lam Road, southern boundary via Hong Fai Road and Castle Peak Road (Tai Lam), and eastern boundary via the rural road connected to Castle Peak Road (Tai Lam). Regional connections could be routed through the nearby Tuen Mun Road and Castle Peak Road (Tai Lam).

Siu Lam Road and the rural road connected to Castle Peak Road are single-lane roads. Widening/upgrading of these roads may be required to accommodate the future developments within the SCVA. To minimise the disruption to the existing road network, portal developments at Hong Fai Road and Castle Peak Road (Tai Lam) may require cutting back of existing roadside slopes.

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

Three Water Supplies Department tunnels are located in the vicinity of the SCVA, namely the Tai Lam Chung Supply Tunnel to Desalter (at about 50 m to the northern boundary of the SCVA), the water tunnel between So Kwun Wat Portal and Siu Lam No. 2 Portal (at about 100 m to the northwest of the SCVA) and the Western Aqueduct Supply Tunnel to Siu Ho Wan Treatment Works (at about 500 m to the northeast of the SCVA). Due to the differences in locations and elevations with respect to the potential portal locations, these tunnels would not pose any insurmountable constraint to the cavern development within the SCVA.

## 5. Potential Land Uses

The potential land uses for the SCVA are as follows:

| Land use               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Service Reservoir      | <p>Siu Lam, So Kwun Wat and Tai Lam Chung are home of various low- to middle-rise residential developments and local villages (e.g. Palatial Coast, Grandview Terrace and Tai Lam Chung Tsuen). There are also various GIC facilities serving the needs of the locality as well as the territory. Given that there are a number of proposed residential developments in the locality (e.g. along Kwun Chui Road and So Kwun Wat Road) and there is potential for further growth, the SCVA has the opportunity to develop suitable land uses to support the development of these residential areas, by relocating and/or expanding some of the suitable infrastructural facilities, such as service reservoir, to caverns.</p> <p>Existing service reservoirs are found within and in the vicinity of the SCVA. Relocation of the facilities to caverns may be considered, thereby releasing the surface land for other beneficial uses and/or for integration with the future development.</p> |
| Sewage Treatment Plant | <p>The SCVA is adjacent to various major existing residential communities in Siu Lam, So Kwun Wat and Tai Lam Chung. There is opportunity for the SCVA to support the potential expansion/future development of these areas by providing additional supporting infrastructure facilities, such as sewage treatment plant.</p> <p>Moreover, housing the NIMBY type of facility in caverns can help minimise the nuisance to the existing/future communities in respect of land use compatibility.</p> <p>The southwestern extent of potential portal locations of the SCVA is away from the existing/proposed residential areas, which makes it a suitable portal location for such land use.</p>                                                                                                                                                                                                                                                                                               |

Note: Zoning amendment/planning application may be required to facilitate the pursuit of the above potential land uses.

## **6. Extent of Potential Portal Locations**

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

The SCVA is accessed from its western boundary via Siu Lam Road, eastern boundary via the rural road connected to Castle Peak Road (Tai Lam) and southern boundary via Hong Fai Road and Castle Peak Road (Tai Lam). The potential portal locations on Siu Lam Road and on the rural road connected to Castle Peak Road (Tai Lam) are accessed via narrow single-track roads. These existing accesses may be suitable for low traffic-generating activities, but would require significant widening and upgrading if feasible in order to support moderate to high traffic-generating activities. The extent of potential portal locations on Castle Peak Road (Tai Lam) and Hong Fai Road are located at the slope toes alongside the two-lane carriageways. Formation of portals may require cutting back of existing roadside slopes. This extent of potential portal locations could support a wide range of traffic generating activities given the direct connections to high capacity roads.

The potential portal locations at the Siu Lam Road, Hong Fai Road and Castle Peak Road (Tai Lam) are located at the toe of cut slopes with natural terrain above. The potential portal location at the rural road connected to Castle Peak Road (Tai Lam) is located at the toe of natural slope. There may be potential natural terrain hazards in the vicinity of the potential portal locations, which may require further study by project proponents.

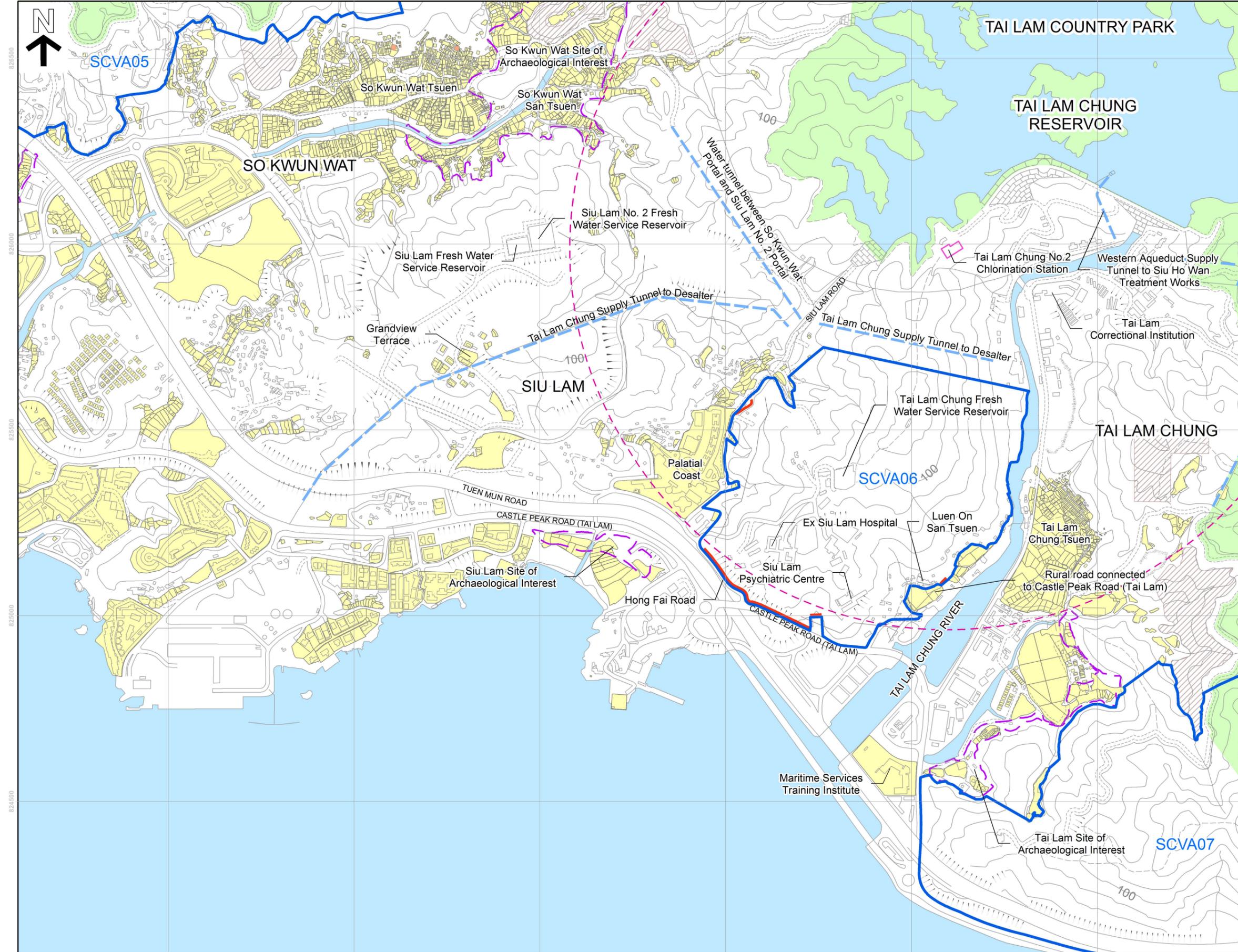
Project proponents should carry out further studies on identifying specific locations of portals for the proposed cavern development.

## **7. Concluding Remarks**

This SCVA presents an opportunity for locating suitable land uses in rock caverns to serve the existing neighbouring communities and support future growth in Siu Lam, So Kwun Wat and Tai Lam (e.g. by housing service reservoirs). It also has the potential to house 'NIMBY' type of facilities (e.g. sewage treatment plants) to minimise the nuisance to the community. Project proponents for cavern development should take due consideration of the existing and proposed residential developments, environmental sensitive receivers and accessibility for cavern development, to minimise the interfacing issues and bring about greater synergy and opportunities.

## **8. Notes**

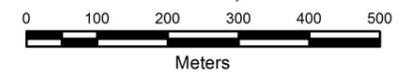
The Cavern Master Plan and all supporting documents do not exempt project proponents for cavern development from following the relevant statutory and planning procedures. Information including the potential land uses and the extent of potential portal locations indicated in this Information Note should 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.



### Legend

- Strategic Cavern Area
- Extent of Potential Portal Locations
- Water Supplies Department Tunnel
- Reservoir / River / Nullah / Sea
- Site of Archaeological Interest
- Graded Historic Building
- Private Lot
- Burial Ground
- Potentially Hazardous Installation
- Consultation Zone of Potentially Hazardous Installation
- Country Park

Scale : 1:10,000



## REFERENCE DRAWING OF STRATEGIC CAVERN AREA NO. 06 - SIU LAM