

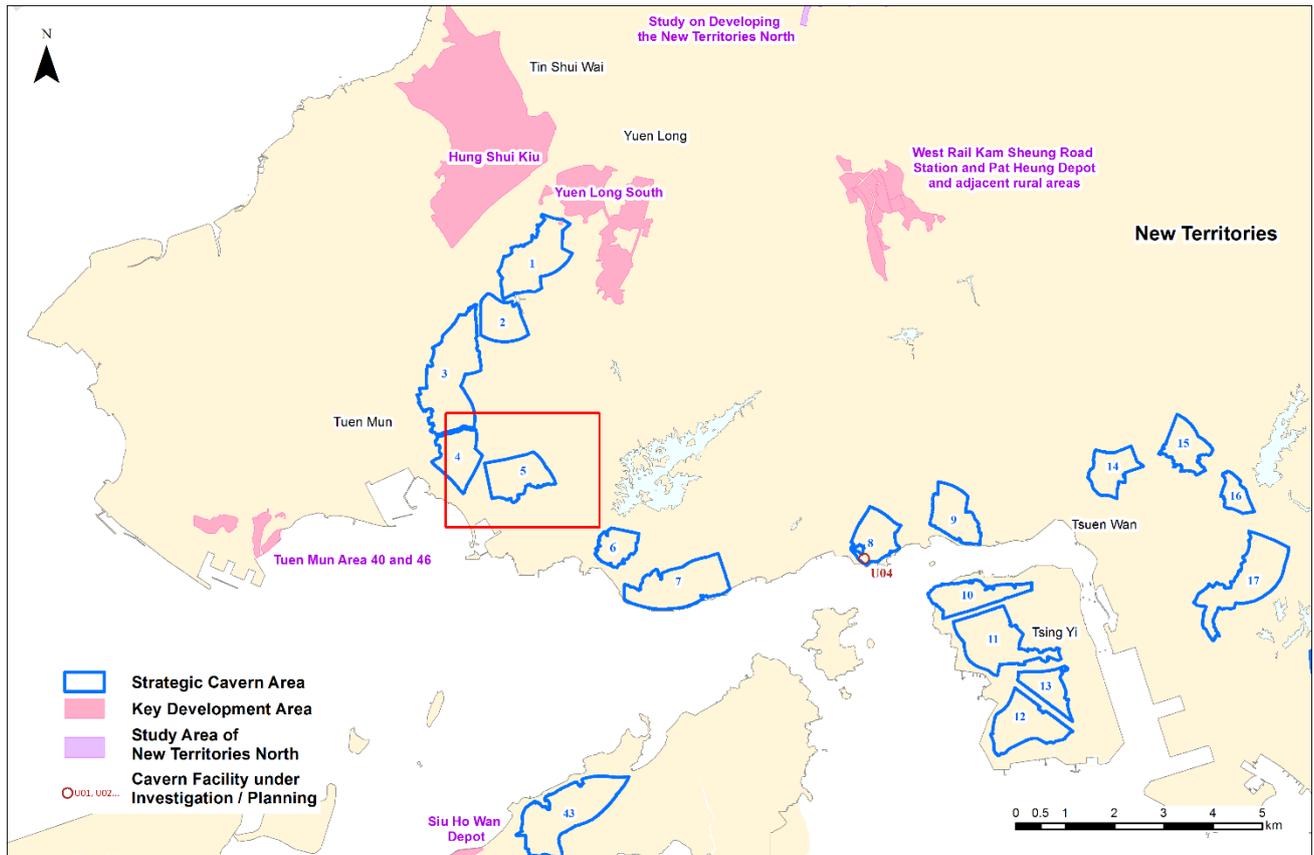
CAVERN MASTER PLAN – INFORMATION NOTE

STRATEGIC CAVERN AREA NO. 05 – PAK SHEK HANG

This Information Note describes the characteristics, key development opportunities and constraints of Strategic Cavern Area No. 05 - Pak Shek Hang (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 Plans (OZPs):	Approved So Kwun Wat OZP No. S/TM-SKW/13 Draft Tuen Mun OZP No. S/TM/34
Area:	89.5 ha
Maximum elevation in the SCVA:	+353 mPD
Minimum elevation in the SCVA:	+5 mPD

3. District Context

Location

The SCVA is located in the western part of the New Territories. Tuen Mun New Town is to the west of the SCVA, So Kwun Wat is to the south, Tai Lam Chung is to the east, and Tai Lam Country Park is to the north.

The SCVA is generally hilly with a maximum elevation of about +353 mPD. More than a half of its extent encroaches into Tai Lam Country Park in the northern side. At the southern portion of the SCVA, some low-rise buildings and structures are scattered near the toe of the hillside, and all are on Government land. To the west of the SCVA, Tuen Mun New Town is a local hub of high-density residential developments, including Seaview Garden (about 800 m to the west of the SCVA). To the south of the SCVA, So Kwun Wat is also mainly a residential area with low- to medium-rise residential developments (e.g. Avignon which is about 150 m to the south of the SCVA) and some local villages (e.g. So Kwun Wat Tsuen which is about 100 m to the south of the SCVA). Given this, there are various proposed residential developments in this area (e.g. along Kwun Chui Road and So Kwun Wat Road) and the overall development in Tuen Mun is expected to grow further.

In the proximity of the SCVA, there are a number of key Government, Institution and Community (GIC) facilities supporting the development of So Kwun Wat and the territory, including Harrow International School Hong Kong (adjoined the southwestern boundary of the SCVA), A.D. and F.D. of Pok Oi Hospital Mrs Cheng Yam On Millennium School (about 700 m to the south of the SCVA), Siu Lam Fresh Water Service Reservoir and Siu Lam No. 2 Fresh Water Service Reservoir (both at about 700 m to the southeast of the SCVA). There are major residential and commercial developments in Hong Kong Gold Coast (e.g. Hong Kong Gold Coast Hotel which is at about 500 m to the southwest of the SCVA).

Access

The SCVA is accessed from its southern and southwestern edges via access roads off So Kwun Wat Road and Tsing Ying Road respectively. Regional connections could be routed through the nearby Tuen Mun Road and Castle Peak Road (So Kwun Wat). 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 and the Draft Tuen Mun OZP No. S/TM/34, the southern part of the SCVA is zoned “Green Belt”. The remaining northern part is not covered by any Statutory Plan and is designated as country park. The zonings of the surrounding areas include “Government, Institution or Community”, “Residential (Group B)”, “Green Belt”, “Comprehensive Development Area” and “Village Type Development” to the south of the SCVA, with the rest being Tai Lam Country Park.

For details of the latest land use zonings on OZPs, 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 and western boundaries of the SCVA are defined by geological features (e.g. inferred geological fault). The southern boundary of the SCVA is defined by Tuen Mun Road, local villages along So Kwun Wat Road and So Kwun Wat Tsuen Road, and a burial ground. The eastern boundary of the SCVA is defined by an extent at 800 m from the potential portal locations. Individual private lots located midway on the hillside within the SCVA have been excised from the SCVA. Project proponents shall check the latest land status with the Lands Department. Reference should be made to the Explanatory Statement of the Cavern Master Plan for the delineation criteria of SCVAs.

4.2. Geology

The solid geology of the SCVA is primarily fine-grained granite and fine- to medium-grained granite, which belong to Tai Lam Granite; and medium-grained granite within the southwestern portion, which belongs to Lantau Granite. The SCVA is with the rock types that are suitable for cavern development. A number of geological features, such as inferred faults and isolated dykes, are in the areas surrounding the SCVA. The excavated fine-grained granite, fine- to medium-grained granite and medium-grained granite within the SCVA are 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

The SCVA is close to the existing developments in So Kwun Wat. Given that 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, and hence there is potential for the SCVA to support the development of the area.

Located to the south of the SCVA, So Kwun Wat is a local hub of low- to medium-rise residential developments and local villages (e.g. Avignon and So Kwun Wat Tsuen) which is supported by various GIC facilities (e.g. service reservoir and school). Given that the SCVA is in close proximity to both existing/proposed residential developments, there is potential for the SCVA to support these residential communities by providing additional community facilities (e.g. leisure centre/sports centre).

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 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 So Kwun Wat while preserving the natural landscape adjacent to Tai Lam Country Park.

4.4. Environmental

Environmental sensitive receivers to cavern development in the SCVA include the nearby schools (e.g. Harrow International School Hong Kong) and residential developments (e.g. Avignon). So Kwun Wat Perowne Barracks Site of Archaeological Interest, So Kwun Wat Site of Archaeological Interest, a burial ground and two Grade 3 historic buildings (i.e. Hum Ying Study Hall and Jun Ying Study Hall) in So Kwun Wat Tsuen are located in the vicinity of the SCVA. The majority of the SCVA falls within Tai Lam Country Park. Rivers and wooded areas are located 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 south and southwest via access roads off So Kwun Wat Road and Tsing Ying Road respectively.

Though the SCVA is located adjacent to Tuen Mun Road, direct access from Tuen Mun Road may be difficult to establish. Further detailed traffic and engineering assessments have to be carried out if it is pursued. The potential portal locations can be further connected to Castle Peak Road (which is a high-capacity road) through local road networks to connect to Tuen Mun in the west and to the other areas of Hong Kong to the east.

4.6. Other Key Issues / Constraints on Cavern Development

A Water Supplies Department tunnel, the Tai Lam Chung Supply Tunnel to Tuen Mun Water Treatment Works, is about 450 m to the northeast of the SCVA boundary. As it is far away from the SCVA boundary, it would not pose any insurmountable constraint to the cavern development in the SCVA.

Some potential portal locations are close to the existing nearby village houses, private lots, etc. Project proponent shall take into account when planning cavern development proposals in order to minimise potential interface issues and adverse impacts arising from the construction and operation of cavern facilities.

5. Potential Land Uses

The potential land uses for the SCVA are as follows:

Land use	Description
Leisure Centre/ Sports Centre	<p>The SCVA is located adjacent to various existing and proposed residential communities in So Kwun Wat (e.g. along Kwun Chui Road and So Kwun Wat Road). There is potential for the SCVA to support the future development and potential expansion of these areas by providing additional supporting community facilities, such as leisure centre/sports centre, in a scale appropriate for the then development context.</p> <p>The potential portal locations are in close proximity to the existing residential developments (e.g. Avignon and So Kwun Wat Tsuen). The close and easy access by the local residents enhances the potential for housing such facilities in the SCVA.</p>
Service Reservoir	<p>So Kwun Wat is home of various low- to middle-rise residential developments (e.g. Avignon and Hong Kong Gold Coast) and local villages (e.g. So Kwun Wat Tsuen) and has the potential for further growth given it is located in an urban setting equipped with well-established infrastructural systems. There is thus opportunity to develop suitable land uses to support the development of these residential areas, by relocating and/or expanding some of the suitable infrastructure facilities, such as service reservoir, to caverns.</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 the potential portals located at the access roads off So Kwun Wat Road and Tsing Ying Road. The access roads off So Kwun Wat Road, which are narrow, winding and running uphill, may only be suitable for accommodating low traffic-generating activities. Road widening and upgrading would be required in order to enhance the capacity of the roads. Given the traffic condition of Tsing Ying Road, the access to the potential portal may only be suitable for accommodating low traffic-generating activities. Widening or upgrading of Tsing Ying Road, subject to necessary detailed assessment, would be required for it to support moderate to high traffic-generating activities.

The potential portal locations are at the toe of hillslopes with natural terrain above. There may be potential natural terrain hazards in the vicinity of the potential portal locations, which may require further study by project proponents.

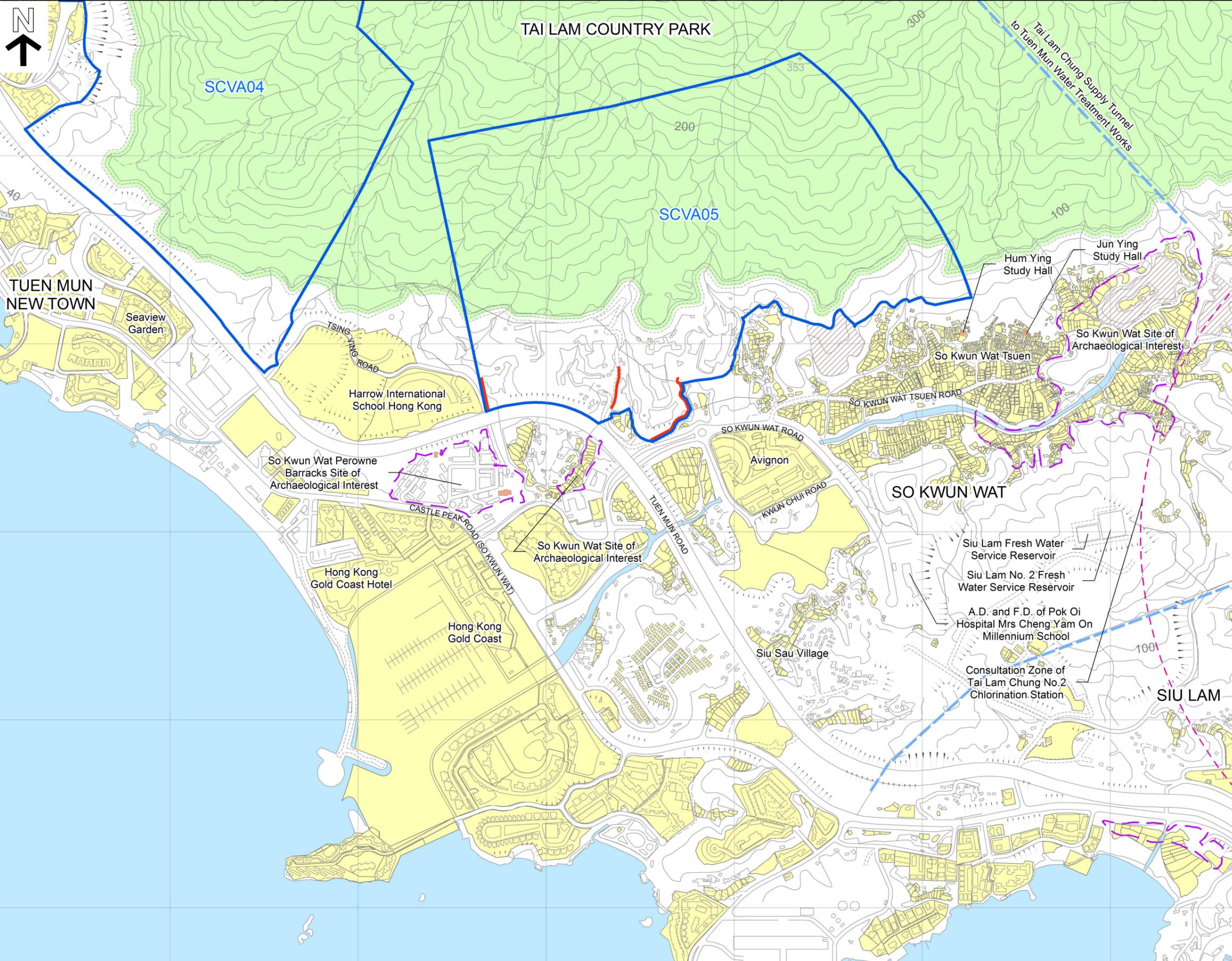
Project proponents should carry out further studies on identifying specific locations of portals for the proposed cavern development.

7. Concluding Remarks

This SCVA presents an opportunity for locating suitable land uses in rock caverns to serve the existing and future neighbouring communities in So Kwun Wat (e.g. by housing service reservoirs and leisure centre/sports centre). 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.

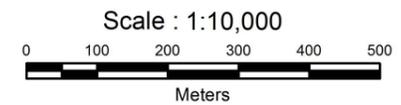
8. Notes

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 for further details.



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

Note: All private lots located inside the boundary of the Strategic Cavern Area have been excised. Project proponents shall check the latest land status with the Lands Department. Reference should be made to the Explanatory Statement of the Cavern Master Plan for the delineation criteria of Strategic Cavern Area.



REFERENCE DRAWING OF STRATEGIC CAVERN AREA NO. 05 - PAK SHEK HANG