

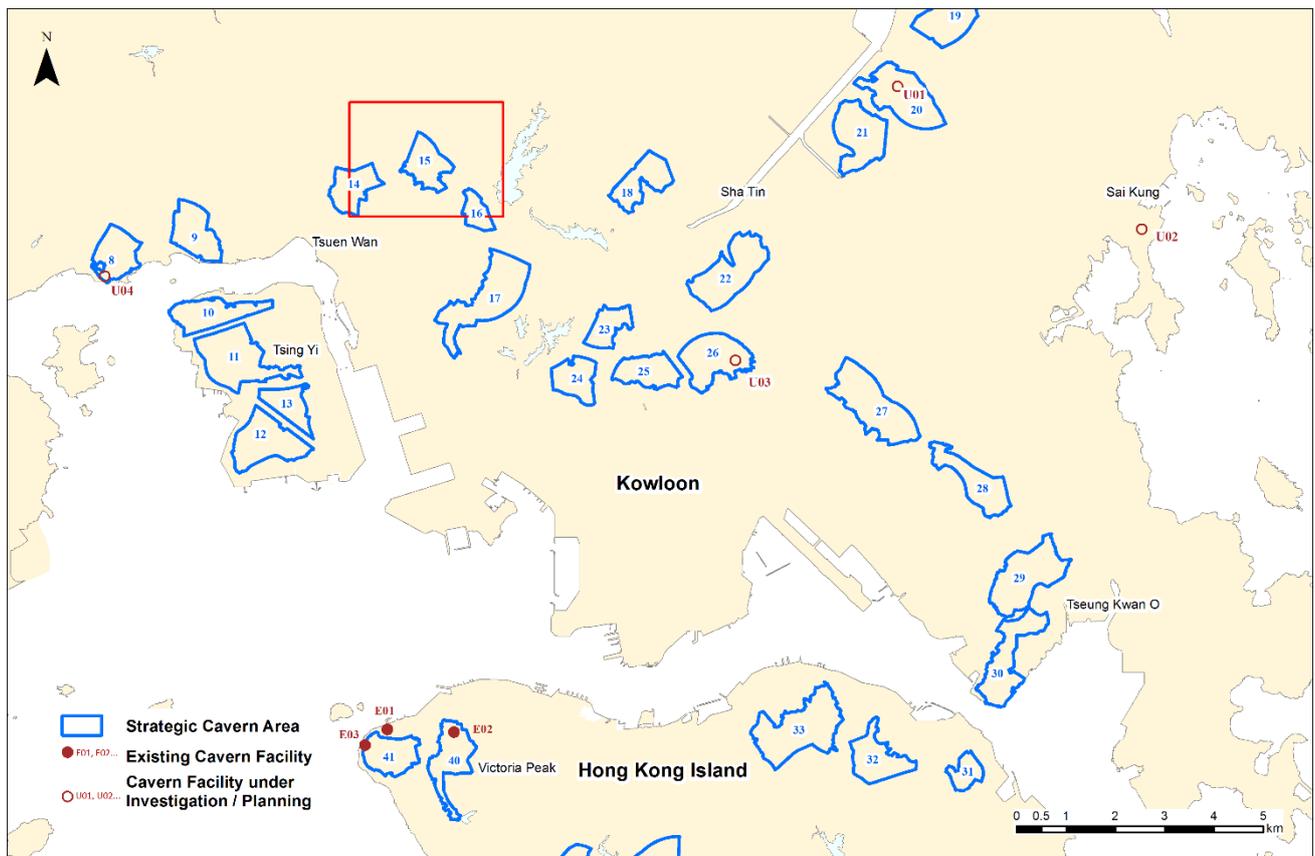
CAVERN MASTER PLAN – INFORMATION NOTE

STRATEGIC CAVERN AREA NO. 15 – TSUEN WAN EAST

This Information Note describes the characteristics, key development opportunities and constraints of Strategic Cavern Area No. 15 - Tsuen Wan East (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 Tsuen Wan OZP No. S/TW/33
Area:	67.7 ha
Maximum elevation in the SCVA:	+440 mPD
Minimum elevation in the SCVA:	+103 mPD

3. District Context

Location

The SCVA is located at the northeastern part of Tsuen Wan, which is geographically at the south of the New Territories. The SCVA covers the foothill area of Tai Mo Shan in Tsuen Wan. Fu Yung Shan is to the west of the SCVA, Tsuen Wan is to the southwest, Kwai Chung is to the southeast, and Tai Mo Shan Country Park and Shing Mun Country Park are to the north.

The SCVA is generally hilly with a maximum elevation of about +440 mPD. A majority of the SCVA, including its central and northern portions, encroaches onto Tai Mo Shan Country Park and Shing Mun Country Park. To the west of the SCVA, there are clusters of religious institutions scattered at the foothills of Fu Yung Shan and Tai Mo Shan, including Chuk Lam Sim Yuen (about 1,000 m to the southwest of the SCVA) and Yuen Yuen Institute (about 150 m to the west of the SCVA). To the southwest and southeast, Tsuen Wan and Kwai Chung respectively are both mainly residential communities with medium- to high-rise developments, as well as some local villages, including Lo Wai Village (about 250 m to the southwest of the SCVA), Luk Yeung Sun Chuen (about 1,100 m to the southwest of the SCVA), Cheung Shan Estate (about 150 m to the south of the SCVA) and Lei Muk Shue Estate (about 200 m to the southeast of the SCVA). These areas are supported by some commercial and industrial developments, as well as a number of key Government, Institution and Community (GIC) facilities, including Tsuen Wan Water Treatment Works (about 800 m to the south of the SCVA), Tsuen Wan Fresh Water Service Reservoir (about 850 m to the south of the SCVA), Tsuen Wan No. 2 Fresh Water Service Reservoir (about 300 m to the south of the SCVA), Lo Wai Fresh Water Tank and Lo Wai No. 2 Fresh Water Tank (both about 300 m to the west of the SCVA).

Access

The SCVA is accessed at its southern and western edges via Sam Tung Uk Road, Hilltop Road and Sheung Kok Shan Road. Regional connection could be routed through the nearby Cheung Pei Shan Road.

Although both Tsuen Wan and Kwai Chung are served by the MTR Tsuen Wan Line, the SCVA is not in the close proximity to the railway stations. The nearest MTR stations are Tsuen Wan Station (about 1,350 m to the southwest of the SCVA) and Tai Wo Hau Station (about 1,200 m to the south of the SCVA).

Land Use Zoning

Under the Approved Tsuen Wan OZP No. S/TW/33, the southern and western part of the SCVA falls within an area zoned “Green Belt”. The remainder of the SCVA is not covered by any Statutory Plan and is designated as country park. The surrounding areas of the SCVA are mainly zoned “Green Belt” to the southeast and southwest, “Village Type Development” and “Other Specified Uses” annotated “Sports and Recreation Club” to the south and “Government, Institution or Community” to the west, with the rest being Tai Mo Shan Country Park and Shing Mun Country Park.

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 currently 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 an extent at 800 m from the potential portal locations. The eastern and western boundaries of the SCVA are defined by private lots. The southwestern boundary of the SCVA is defined by private lots, including Yuen Yuen Institute, Hilltop Country Club and Sam Tung Uk Resite Village. The southeastern boundary of the SCVA is defined by private lots and a slip road off Cheung Pei Shan Road.

4.2. Geology

The solid geology of the SCVA is primarily coarse ash crystal tuff within the southern portion, which belongs to Yim Tin Tsai Formation; and coarse ash crystal tuff with tuff breccia, tuffaceous siltstone and sandstone within the northern portion, which all belong to Shing Mun Formation. The SCVA is with the rock types that are suitable for cavern development. A number of geological features, such as faults, photolineaments and isolated dykes, are identified within and in the areas surrounding the SCVA. The excavated rocks within the SCVA are suitable for use as road base materials and for asphalt production etc., but not for reuse as construction aggregate.

Further geological information of the SCVA can be found in the 1:20,000-scale Geological Map Sheet 7 (Shatin) published by the Geotechnical Engineering Office, Civil Engineering and Development Department.

4.3. Planning

The SCVA is close to the existing urban development in Tsuen Wan and Kwai Chung. The SCVA is also close to the clusters of religious institutions in the locality. There is thus potential for the SCVA to support the development of these areas.

The southwestern and southeastern sides of the SCVA are major developed areas in Tsuen Wan and Kwai Chung with residential communities as well as commercial and industrial related developments. These areas consist of various medium- to high-rise residential developments (e.g. Luk Yeung Sun Chuen and Lei Muk Shue Estate) and local villages (e.g. Lo Wai Village) supported by a number of GIC facilities (e.g. sports centre, service reservoir, etc.). Should there be any need for providing additional land for residential and/or community uses, the SCVA may provide the solution space by, for example, relocating some of the suitable infrastructure facilities (e.g. service reservoirs) to caverns. 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 Tsuen Wan and Kwai Chung while preserving the natural landscape in Tai Mo Shan Country Park and Shing Mun Country Park as a natural backdrop of the urban developments in the locality.

The western side of the SCVA is home to the clusters of religious institutions at the foothills of Fu Yung Shan and Tai Mo Shan, e.g. Chuk Lam Sim Yuen and Yuen Yuen Institute, which include columbarium and related uses. Should there be any need for additional land for such uses, there is potential for the SCVA to support the need by providing columbarium and related uses in caverns.

There are data centres developed in Tsuen Wan and Kwai Chung, such as those in the Tsuen Wan East Industrial Area which is located further south to the MTR Tsuen Wan Station, and those near MTR Kwai Hing Stations and Kwai Fong Station. Given that there are commercial and industrial related uses in Tsuen Wan and Kwai Chung (e.g. Nina Tower and Tsuen Wan East Industrial Area), there is potential for the SCVA to provide additional space to support any future expansion of the industry by housing data centres and related facilities in caverns, which is in line with the policy objective of promoting Hong Kong as a data centre hub.

4.4. Environmental

Environmental sensitive receivers to cavern development in the SCVA are the nearby residential developments (e.g. Hermita Villa, Sam Tung Uk Resite Village and Lavender Garden), religious institutions (e.g. Po Kwong Yuen) and recreational facilities (e.g. Hilltop Country Club). The majority of the SCVA encroaches onto Shing Mun Country Park and Water Gathering Grounds, with the northern tip of the SCVA within Tai Mo Shan Country Park. Also, there are built heritages, including Lau Ancestral Hall (Tsuen Wan) (Grade 3 historic building), Cheung Ancestral Hall (Tsuen Wan Lo Wai) (Grade 3 historic building), Yuen Tung Po Din of Tung Po Tor Monastery (Grade 2 historic building) and Tin Wong Din & Wai Tor Din (Grade 2 historic building) located in the vicinity of the SCVA. Natural water courses and streams are located within the SCVA.

All potential environmental constraints, which may impose restrictions on 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 via its southern and western edges via Sam Tung Uk Road, Hilltop Road and Sheung Kok Shan Road. Regional connection could be routed through the nearby Cheung Pei Shan Road.

The potential portal locations on or near the Urban District Distributor corridor constituting Sam Tung Uk Road and Yi Pei Chun Road could allow for easy connection to major roads such as Tuen Mun Road via Tsuen Kam Interchange to the west or via Sam Tung Uk Road and Wo Yi Hop Road to the east. Sam Tung Uk Road is considered to have sufficient traffic capacity in the future to accommodate various land uses (subject to further study).

Sheung Kok Shan Road is a single-lane road which is steep and winding in parts. Further traffic assessment have to be carried out and mitigation measures may be required in order to meet the traffic demand for the proposed land use.

4.6. Other Key Issues / Constraints on Cavern Development

A Drainage Services Department's tunnel, namely the Tsuen Wan Drainage Tunnel, passes through the southern portion of the SCVA. The railway tunnel of the Express Rail Link passes through the centre of the SCVA in a north-south direction. Due to the difference in elevations, these tunnels would not pose any insurmountable constraint to cavern development within the SCVA.

5. Potential Land Uses

The potential land uses for the SCVA are as follows:

Land use	Description
Columbarium	<p>The SCVA is located in urban fringe and is adjacent to the clusters of religious institutions at the foothills of Fu Yung Shan and Tai Mo Shan which include the columbarium use. There is potential for the SCVA to meet the future local and territorial demand by providing columbarium in caverns.</p> <p>Some potential portal locations of the SCVA are away from the existing residential areas, which make the SCVA compatible with such land use.</p> <p>Given that the SCVA is not in close proximity to the existing railway stations, the accessibility by the general public and any traffic impacts should be further investigated by future project proponents.</p>
Data Centre	<p>The SCVA is in Tsuen Wan and Kwai Chung areas which have developed with several data centres. There are also commercial and industrial related developments in the area. There is potential for the SCVA to provide solution space to support the industry by housing data centres and related facilities in caverns. This would be in line with the policy objective of promoting Hong Kong as a data centre hub.</p>

Land use	Description
Service Reservoir	<p>Tsuen Wan and Kwai Chung are homes of various residential developments (e.g. Luk Yeung Sun Chuen and Lei Muk Shue Estate) and have the potential for further growth given they are located in an urban setting equipped with well-established infrastructural systems. There is thus opportunity to develop suitable land use to support the potential expansion of these residential areas by relocating some of the suitable infrastructure facilities, such as service reservoir, to caverns.</p> <p>Existing service reservoirs are found in the vicinity of the SCVA. Relocation of the facilities to caverns may be considered, thereby releasing the surface land for other beneficial uses (e.g. residential developments and/or community facilities).</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 can be accessed from the extent of potential portion locations on Sam Tung Uk Road and Hilltop Road to the south and Sheung Kok Shan Road to the west.

The potential portal locations on Sam Tung Uk Road and Hilltop Road are located at the slopes alongside the carriageways. Providing accesses for cavern developments in these locations should take account of the limited sight lines that may be present due to the sharp bends of the roads. Sheung Kok Shan Road is a single-lane road. Further detailed traffic assessment and engineering design on widening or upgrading would be required for it to support the proposed use of cavern developments.

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

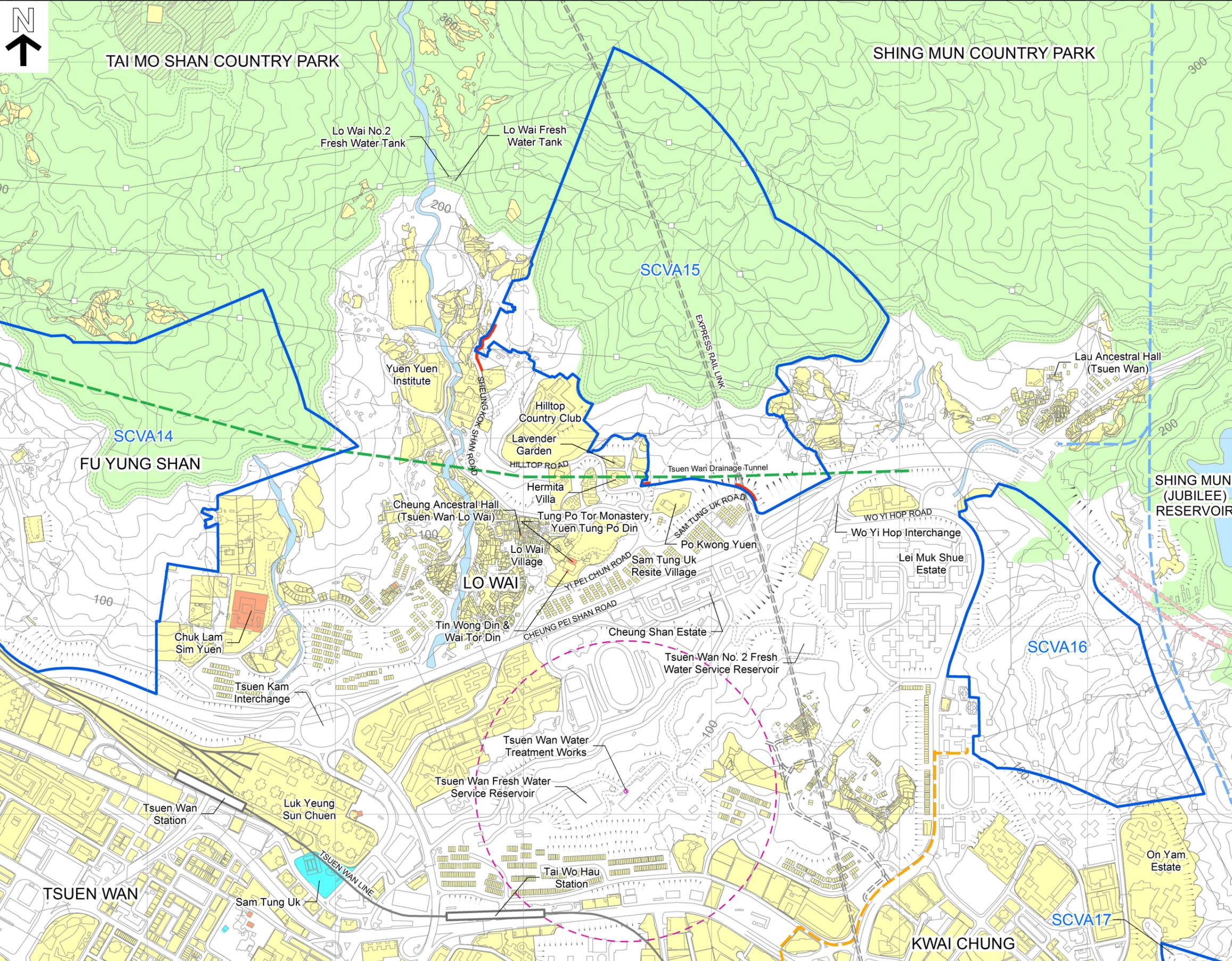
Project proponents should carry out further studies on identifying specific locations of portals for the proposed cavern development.

7. Concluding Remarks

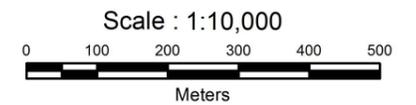
The SCVA presents an opportunity for placing suitable land uses in rock caverns to serve the neighbouring residential communities (e.g. by housing service reservoir). There is potential for the SCVA to provide columbarium and related uses in caverns to serve the future local and territorial demand. The SCVA could also facilitate the growth of data centres in the area by housing data centres and related facilities in caverns. Project proponents for cavern development should take due consideration of the existing and potential residential developments, accessibility for cavern development, as well as environmental sensitive receivers 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
 - Existing Railway Line
 - Committed Railway Line
 - Cable Tunnel / Gas Tunnel
 - Vehicle Tunnel
 - Drainage Services Department Tunnel
 - Water Supplies Department Tunnel
 - Abandoned Tunnel
 - Reservoir / River / Nullah
 - Graded Historic Building
 - Declared Monument (Historic Building)
 - Private Lot
 - Burial Ground
 - Potentially Hazardous Installation
 - Consultation Zone of Potentially Hazardous Installation
 - Country Park



REFERENCE DRAWING OF STRATEGIC CAVERN AREA NO. 15 - TSUEN WAN EAST