

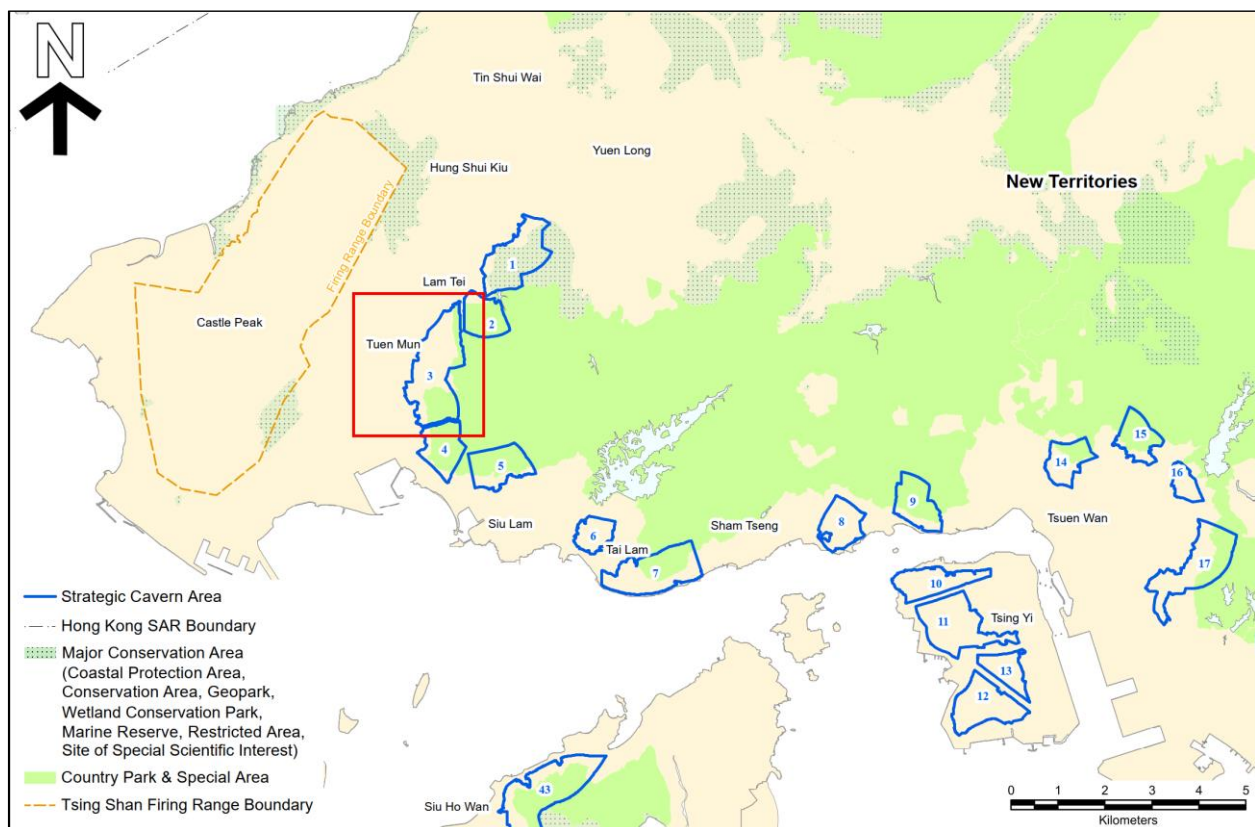
CAVERN MASTER PLAN – INFORMATION NOTE

STRATEGIC CAVERN AREA NO. 03 – TUEN MUN

This Information Note describes the characteristics and development constraints of Strategic Cavern Area No. 03 - Tuen Mun (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) ¹ :	Tuen Mun OZP Lam Tei and Yick Yuen OZP
Area:	196.3 ha
Maximum elevation in the SCVA:	+395 mPD
Minimum elevation in the SCVA:	+4 mPD

3. District Context

Location

The SCVA is located in the western part of the New Territories. Tin Shui Wai and Hung Shui Kiu/Ha Tsuen New Development Area (HSK/HT NDA²) is to the north of the SCVA, Yuen Long and Yuen Long South Development Area (YLS DA³) is to its northeast, Tuen Mun New Town is to its west and Tai Lam Country Park is to its east and south.

The SCVA is generally hilly with a maximum elevation of about +395 mPD. It partially encroaches onto Tai Lam Country Park at its northeastern and southeastern sides. Within the SCVA, there are local village settlements of Fu Tei Sheung Tsuen, Tseng Tau Ha Tsuen and Chung Wong Toi as well as the Tuen Mun Fresh Water Primary Service Reservoir found to its north. The western part of the SCVA covers Tseng Tau Chung Tsuen, Castle Peak Christian Cemetery and RTC Gaia School. Tseng Tau Sheung Tsuen, Tuen Mun East Fresh Water Service Reservoir and Tuen Mun East No. 2 Fresh Water Service Reservoir are located to its southwest. The village settlements and RTC Gaia School scatter near the toes of hillsides along the north-western and south-western edges of the SCVA, which they all rest on Government land.

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

² Source: Explanatory Statement, Hung Shui Kiu and Ha Tsuen Outline Development Plan No. D/HSK/1, Planning Department, April 2017.

³ Source: Executive Summary, Planning and Engineering Study for Housing Sites in Yuen Long South – Investigation, May 2020 (Rev.).

To the west of the SCVA, Tuen Mun New Town is a local hub of high-density residential developments as well as local villages. These include Tuen Mun Town Plaza (about 60 m to the southwest of the SCVA), Prime View Garden (about 120 m to the northwest of the SCVA), San Hui Village (about 100 m to the west of the SCVA), the proposed public housing developments at Hin Fat Lane and Tuen Hing Road (within the boundary of the SCVA). In the proximity of the SCVA, there are a number of key Government, Institution or Community (GIC) facilities supporting the development of Tuen Mun New Town and the territory, including Tuen Mun Water Treatment Works (about 50 m to the northwest of the SCVA), Lingnan University (about 200 m to the northwest of the SCVA) and Tuen Mun Hospital (about 200 m to the northwest of the SCVA).

To the north of the SCVA, Tin Shui Wai and Yuen Long are another two new towns with high-density residential developments in the Northwest New Territories. Their population is expected to grow further with the HSK/HT NDA⁴ and the YLS DA⁵. To the northeast of the SCVA, Lam Tei Quarry is under operation but will cease operation in future. The future land use is subject to further study.

Access

The SCVA is accessible from its north-western, western and southwestern edges via Fu Tei Road, King San Path and Castle Peak Road (Castle Peak Bay) respectively. Regional connections could be routed through the nearby Tuen Mun Road, Yuen Long Highway and Castle Peak Road.

The MTR Light Rail Transit (LRT) serves the northwest New Territories in general and several stations are close to the SCVA. These include On Ting Station (about 400 m to the southwest of the SCVA), Town Centre Station (about 300 m to the southwest of the SCVA), Pui To Station (about 150 m to the west of the SCVA), Hoh Fuk Tong Station (about 200 m to the west of the SCVA), Prime View Station (about 150 m to the west of the SCVA) and Fung Tei Station (about 300 m to the northwest of the SCVA). Tuen Mun Station and Siu Hong Station of the MTR Tuen Ma Line are located about 400 m to the west and about 500 m to the northwest of the SCVA respectively, providing connection to Kowloon.

⁴ Source: Explanatory Statement, Hung Shui Kiu and Ha Tsuen Outline Development Plan No. D/HSK/1, Planning Department, April 2017.

⁵ Source: Executive Summary, Planning and Engineering Study for Housing Sites in Yuen Long South – Investigation, May 2020 (Rev.).

Existing / Planned Facility in SCVA

There is no existing cavern facility within the SCVA. The SCVA has been identified as one of the potential sites for relocation of Tuen Mun Water Treatment Works, of which the feasibility study under Agreement No. CE 12/2021 (WS) commenced in October 2021 and is in progress. Project proponents should take due consideration of the study results.

4. Summary of Characteristics of Strategic Cavern Area

4.1. Boundary

The northern and northwestern boundaries of the SCVA are defined by a traditional burial ground, the Lingnan University, Tuen Mun Water Treatment Works and some residential developments including Elegance Garden. The southern boundary of the SCVA is defined by the valley topography. The eastern boundary of the SCVA is defined by Lam Tei Irrigation Reservoir and the valley topography. The western boundary of the SCVA is defined by local villages including San Hui Village, Castle Peak Road (Castle Peak Bay), residential developments including Villa Tiara and Tuen Mun Substation.

4.2. Geology

The solid geology of the SCVA is primarily fine-grained granite with local fine- to medium-grained granite at the southeastern portion, which belongs to Tai Lam Granite; and medium-grained and coarse-grained granite within the southwestern portion, which belongs to Lantau Granite. The SCVA is with the rock types that are suitable for the uses of rock caverns. A number of geological features, such as faults, photolineaments and isolated dykes, are identified within and 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. Other excavated rocks can be used as road base materials, asphalt production, etc.

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 existing urban developments (e.g. Tuen Mun New Town), two new development areas (i.e. HSK/HT NDA and YLS DA) and Lam Tei Quarry and the adjoining area. Located to the west of the SCVA, Tuen Mun New Town is a local hub of residential developments (e.g. Tai Hing Estate) which is supported by various GIC facilities (e.g. hospital, service reservoir, school, sports hall, etc.).

The SCVA has been identified as one of the potential sites for relocation of Tuen Mun Water Treatment Works, of which the feasibility study under Agreement No. CE 12/2021 (WS) commenced in October 2021 and is in progress. Project proponents should take due consideration of the study results. The SCVA is adjacent to Lam Tei Quarry, which is under operation but will cease operation in future. The future land use is subject to further study. Project proponents should take into account the further land use study for Lam Tei Quarry and the adjoining areas for opportunities of development.

4.4. Environmental

Environmental sensitive receivers to the potential caverns in the SCVA include the nearby existing schools (e.g. S K H Mung Yan Primary School, RTC Gaia School, Hoh Fuk Tong College) and residential developments (e.g. Prime View Garden, Fu Tei Sheung Tsuen, Tseng Tau Ha Tsuen, Tseng Tau Chung Tsuen, Tseng Tau Sheung Tsuen, San Hui Village, Villa Tiara, Handsome Court) and proposed public housing developments at Hin Fat Lane and Tuen Hing Road. The Tuen Mun Water Treatment Works is located to the northwestern portion of the SCVA. The northeastern and southeastern portions of the SCVA are within Tai Lam Country Park and both portions encroach onto the streams and water courses located within the Water Gathering Grounds. Species of conservation importance including Lesser Spiny Frog and Hong Kong Cascade Frog, are recorded at the natural streams within the Tai Lam Country Park. Wooded areas are located within Tai Lam Country Park and are close to the extent of potential portal locations. In addition, a Declared Monument (the Morrison Building in Hoh Fuk Tong Centre), a traditional permitted burial ground, a Grade 3 historic building (the Ceramic Kiln in Hin Fat Lane), the Castle Peak Pottery Kiln Site of Archaeological Interest and the Fu Tei Ha Site of Archaeological Interest, are located in close proximity to 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 and ecological sensitive receivers when planning each 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 north-western, western and southwestern edges via Fu Tei Road, King San Path and Castle Peak Road (Castle Peak Bay) respectively. The SCVA is also connected to the nearby Tuen Mun Road, Yuen Long Highway and Castle Peak Road, which allows for road network connection to different parts of Hong Kong. Connection to Shenzhen can be made through Kong Sham Western Highway, and to Lantau via the Tuen Mun – Chek Lap Kok Link.

Study areas of Agreement No. CE 65/2021 (HY) “Tuen Mun Bypass – Investigation” commenced in March 2022 and Agreement No. CE 13/2021 (HY) “Route 11 (Section between Yuen Long and North Lantau) – Investigation” commenced in September 2021 are near to the SCVA. Project Proponents should take due consideration on the result of studies.

4.6. Other Key Issues / Constraints on Cavern Development

There are pylons and overhead power lines running above the northeastern and southern portions of the SCVA. A Water Supplies Department’s tunnel and the Tai Lam Chung Supply Tunnel to Tuen Mun Water Treatment Works pass through the northeastern portion of the SCVA. Due to the difference in elevations, the pylons and overhead lines and the water tunnel would unlikely pose any insurmountable constraints to potential uses of rock caverns within the SCVA.

There are village settlements including Fu Tei Sheung Tsuen, Tseng Tau Chung Tsuen, Tseng Tau Sheung Tsuen, etc. and RTC Gaia School scattered on the hillsides of the northern, western and southwestern parts of the SCVA. They are not excluded from the SCVA boundary as they are all located on Government land on hillsides, and unlikely affect or be affected by potential uses of rock caverns given their scattered nature. Project proponents should take due account on these villages and the school in the SCVA in order to avoid/minimise potential impacts on them.

Some potential portal locations are close to the existing nearby village houses, private lots, etc. Meanwhile, Fu Tei Au Country Trail, Tuen Mun Fitness Trail and MacLehose Trail Section 10 are located in the SCVA. Project proponent shall take it into account when considering cavern options in order to minimise potential interface issues and adverse impacts arising from the construction and operation of cavern facilities.

Given the proximity of the SCVA and Lam Tei Quarry, the future potential uses of the SCVA should be compatible with the future land uses of Lam Tei Quarry, and any potential interface issues should be minimised. Project proponents should take into account the latest available information on the future development and proposed land uses of Lam Tei Quarry.

5. Extent of Potential Portal Locations

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

Accessing the potential portal location behind the Tuen Mun Substation would likely require the construction of a new access road from either Tuen Hing Road or Hin Fat Lane. The extent of potential portal locations on Castle Peak Road (Castle Peak Bay) and King San Path are located at the toe of the slopes alongside the carriageways. There is potential to extend the King San Path to the southwest to reach an open area which may be suitable to form a potential portal. These accesses can support low to medium traffic-generating land uses. Road widening may be required for high traffic-generating land use. The extent of potential portal location on King San Path is in close proximity to existing residential developments. Project proponents should take this into account to minimise potential impacts arising from the potential uses of rock caverns. The access to the SCVA from potential portal locations located off Fu Tei Road, which is a single-lane carriageway, would require widening and upgrading in order to facilitate potential uses of rock caverns.

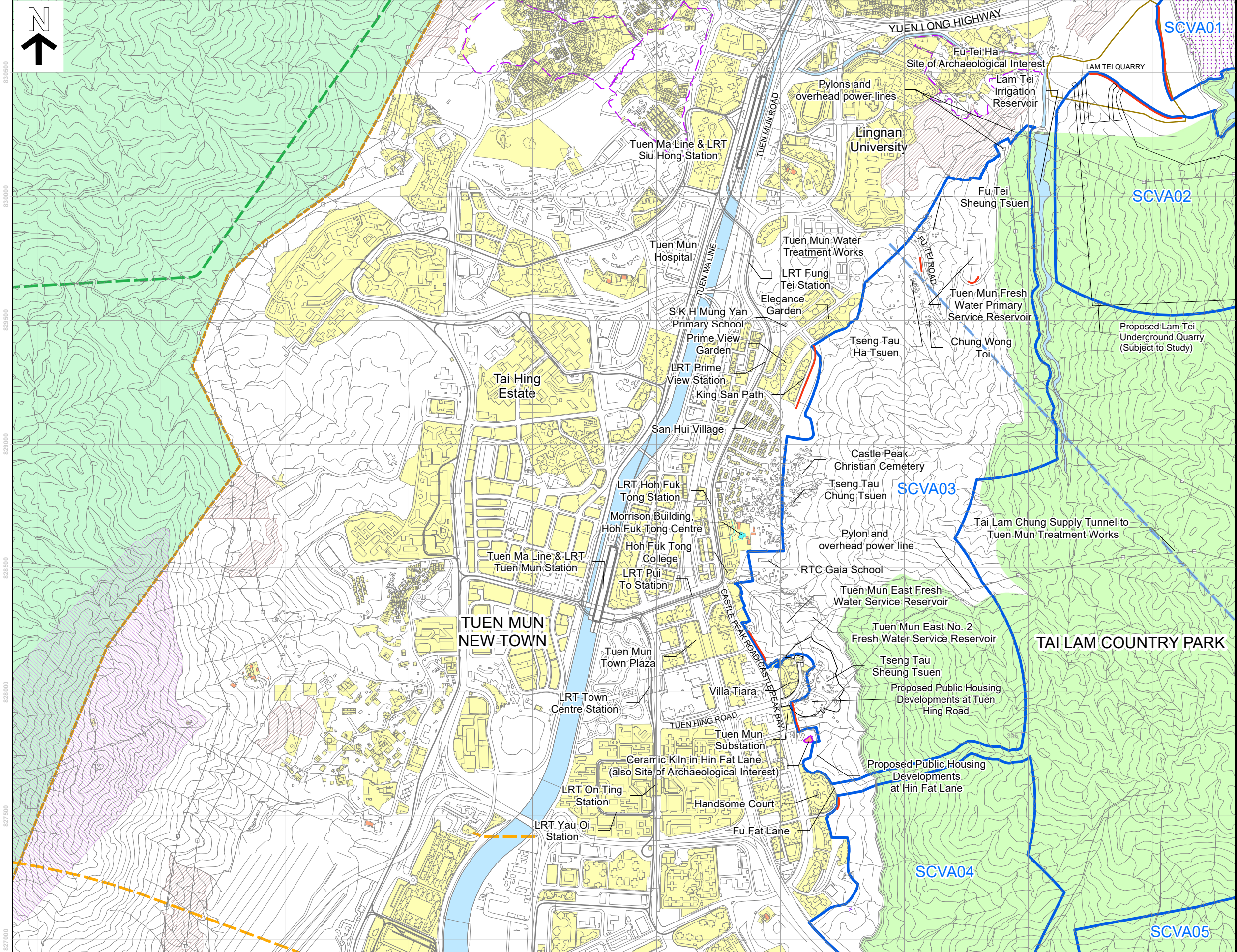
The potential portal locations are at the toe of cut slopes with natural terrain above. There may be potential natural terrain hazards in the vicinity of the potential portal locations, which may require further study by project proponents. Any proposed slope works associated with the provision of the portal and any other above-ground structures should avoid encroaching onto Tai Lam Country Park as far as practicable.

The potential portal locations are close to the proposed public housing development at Tuen Hing Road and Hin Fat Lane. Any proposed works close to the public housing sites should not affect the proposed public housing developments. Project proponents should minimise potential impacts to the public housing sites arising from the potential uses of rock caverns.

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

6. Remarks to Information Note

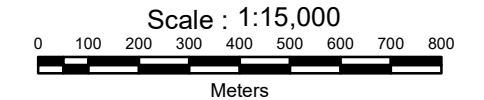
The Cavern Master Plan and all supporting documents do not exempt project proponents for cavern projects from following the relevant statutory procedures. Information including the extent of potential portal locations indicated in this Information Note should serve as reference materials only. In formulation 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.



Legend

- Strategic Cavern Area
- Extent of Potential Portal Locations
- Quarry
- Existing Railway Line / Light Rail / Tram
- Cable Tunnel / Gas Tunnel
- Drainage Services Department Tunnel
- Water Supplies Department Tunnel
- Reservoir / River / Nullah
- Site of Archaeological Interest
- Graded Historic Building
- Declared Monument (Historic Building)
- Private Lot
- Burial Ground
- Conservation Area
- Country Park
- Site of Special Scientific Interest
- Military Installation Closed Area
- Firing Range Area under the Control of Garrison

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. 03 - TUEN MUN

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
PLANNING DEPARTMENT



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