

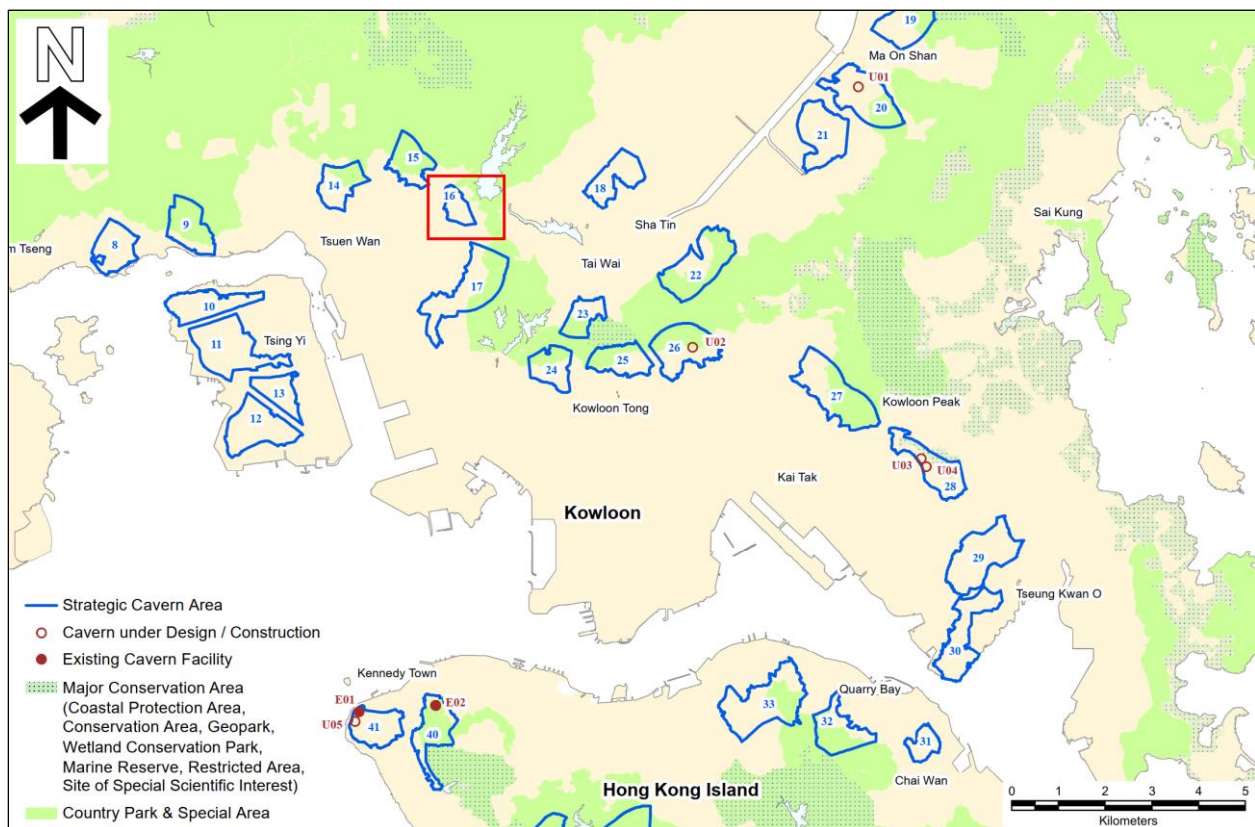
## **CAVERN MASTER PLAN – INFORMATION NOTE**

### **STRATEGIC CAVERN AREA NO. 16 – SMUGGLER’S RIDGE**

*This Information Note describes the characteristics, and development constraints of Strategic Cavern Area No. 16 - Smuggler’s Ridge (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 Plan (OZP) <sup>1</sup> :	Kwai Chung OZP
Area:	33.2 ha
Maximum elevation in the SCVA:	+187 mPD
Minimum elevation in the SCVA:	+49 mPD

## 3. District Context

### Location

The SCVA is located at the northeastern part of Kwai Chung, which is geographically at the south of the New Territories. The SCVA covers the foothill area of Smuggler's Ridge in Kwai Chung. Shing Mun Country Park is to the north of the SCVA, Kam Shan Country Park is to the east, and Kwai Chung is the south and west.

The SCVA is generally hilly with a maximum elevation of about +187 mPD. Within the SCVA, Ha Lo Wai Salt Water Service Reservoir, Kwai Chung North Salt Water Service Reservoir and Kwai Chung North Fresh Water Service Reservoir are located in the northwestern and middle portions. A minor portion of the SCVA at its north encroaches onto Shing Mun Country Park.

To the south and west of the SCVA, Kwai Chung is mainly comprised of residential communities with high-rise developments and local villages, including Lei Muk Shue Estate (about 100 m to the west of the SCVA), On Yam Estate (about 50 m to the south of the SCVA), and Sheung Kwai Chung Village (about 450 m to the west of the SCVA). These areas are supported by some commercial and industrial developments, as well as a number of key Government, Institution or Community (GIC) facilities, including Tsuen Wan Fresh Water Service Reservoir (about 1,050 m to the west of the SCVA), Tsuen Wan No. 2 Fresh Water Service Reservoir (about 400 m to the west of the SCVA) and Tsuen Wan Water Treatment Works (about 850 m to the west of the SCVA).

### Access

The SCVA is accessible at its western and southwestern edges via Wo Yi Hop Road and Tai Pak Tin Path respectively. Regional connections could be routed through the nearby Cheung Pei Shan Road.

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<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 (<https://www.ozp.tpb.gov.hk/>).

Although Kwai Chung is served by the MTR Tsuen Wan Line, the SCVA is not in the close proximity to the railway stations. The nearest MTR stations are Tai Wo Hau Station (about 1,250 m to the southwest of the SCVA) and Kwai Hing Station (about 1,350 m to the south of the SCVA).

#### Existing / Planned Facility in SCVA

There is no existing cavern facility within the SCVA. The SCVA is identified as the cavern site for potential relocation of Tsuen Wan No. 2 Fresh Water Service Reservoir under Agreement No. CE 24/2017 (WS). Detailed investigation and design study was commenced in mid 2022.

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

#### **4.1. Boundary**

The northern boundary of the SCVA is defined by Cheung Pei Shan Road and the portal of Shing Mun Tunnel. The eastern boundary of the SCVA is defined by a Water Supplies Department tunnel. The western boundary of the SCVA is defined by Wo Yi Hop Road and private lots. The southern boundary of the SCVA is defined by Tai Pak Tin Path and residential developments, i.e. Shek Yam East Estate and On Yam Estate.

#### **4.2. Geology**

The solid geology of the SCVA is primarily fine-grained granite within the southern portion, which belongs to Needle Hill Granite; and granodiorite within the northern portion, which belongs to Tai Po Granodiorite. The SCVA is with the rock types that are suitable for the uses of rock caverns. A number of geological features, such as faults and photolineaments, identified within and in the areas surrounding the SCVA. The excavated fine-grained granite and granodiorite 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 7 (Sha Tin) published by the Geotechnical Engineering Office, Civil Engineering and Development Department.

#### **4.3. Planning**

The SCVA is close to the existing urban developments in Kwai Chung. The southern and western sides of the SCVA is the major developed areas of Kwai Chung with residential communities as well as commercial and industrial related developments. These areas consist of various high-rise residential developments (e.g. Lei Muk Shue Estate and On Yam Estate) and local villages (e.g. Sheung Kwai Chung Village) supported by a number of GIC facilities (e.g. sports ground, school, service reservoir, etc.).

#### **4.4. Environmental**

Environmental sensitive receivers to the potential caverns in the SCVA are the nearby existing residential developments (e.g. Shek Yam East Estate, Prosperity Villa, Lei Muk Shue Estate and On Yam Estate), and occupied GIC facilities including Mrs. Wu York Yu Health Centre and the North Kwai Chung Tang Shiu Kin Sports Centre. The SCVA encroaches onto Shing Mun Country Park in its northern portion. There are graded historic buildings located to the east of the SCVA, including the group of buildings of Shing Mun Redoubt (Grade 2 historic building), Bellmouth Overflow (Grade 1 historic building), Gorge Dam (Grade 1 historic building), Valve Tower (Grade 1 historic building) and Steel Bridge (Grade 2 historic building) of Shing Mun Reservoir, and a declared monument, namely the Memorial Stone of Shing Mun Reservoir. In addition, an identified old footpath, namely “Tai Po Route (Kowloon City to Sham Chun: Kowloon City to Shing Mun Sub-Section)”, is located to the east of the SCVA. Also, some natural water courses and streams are within the SCVA. There are wooded areas 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 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 is accessible at its western and southwestern edges via Wo Yi Hop Road and Tai Pak Tin Path respectively. Regional connections could be routed through the nearby Cheung Pei Shan Road.

The extent of potential portal locations on the western portion of the SCVA is located on Wo Yi Hop Road, which is an Urban District Distributor Road. The possible direct road connection to Wo Yi Hop Road could allow for good connectivity to the primary road network and easy connections to the expressway network at Cheung Pei Shan Road to the north and Kwai Chung Road to the south.

Tai Pak Tin Path is an existing pedestrian access. Subject to detailed traffic assessment and engineering design, construction of vehicular access from Lei Muk Road is required for project adopting the potential portal location on it.

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

A Water Supplies Department's tunnel, namely Tai Po-Butterfly Valley Fresh Water Tunnel, is about 50 m to the eastern boundary of the SCVA. A Drainage Services Department's tunnel is about 150 m to the northwestern boundary of the SCVA. A road tunnel, the Shing Mun Tunnel, is about 50 m to the northeastern boundary of the SCVA. A railway tunnel, the Express Rail Link, including the associated Shek Yam Construction Adit, is about 400 m to the western boundary of the SCVA. A cable tunnel, namely the CLP Kwai Chung Cable Tunnel, is about 20 m to the southwestern boundary of the SCVA. Some air raid tunnels (which are abandoned tunnels) are approximately 250 m to the eastern boundary of the SCVA. There are also pylons and overhead power lines running above the SCVA. Due to the differences in locations and elevations, the pylons and overhead power lines and the tunnels would not pose any insurmountable constraint to the potential uses of rock caverns within the SCVA.

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

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

The potential portal location at Wo Yi Hop Road is located at the slope alongside the carriageway. The access arrangement could be integrated with one of the existing signalised intersections on Wo Yi Hop Road to facilitate the development of uses with different traffic requirements.

The potential portal location at Tai Pak Tin Path would require an access road to be constructed from Lei Muk Road. The area in front of the slope of Tai Pak Tin Path may be suitable for forming the portal and part of the vehicular access road.

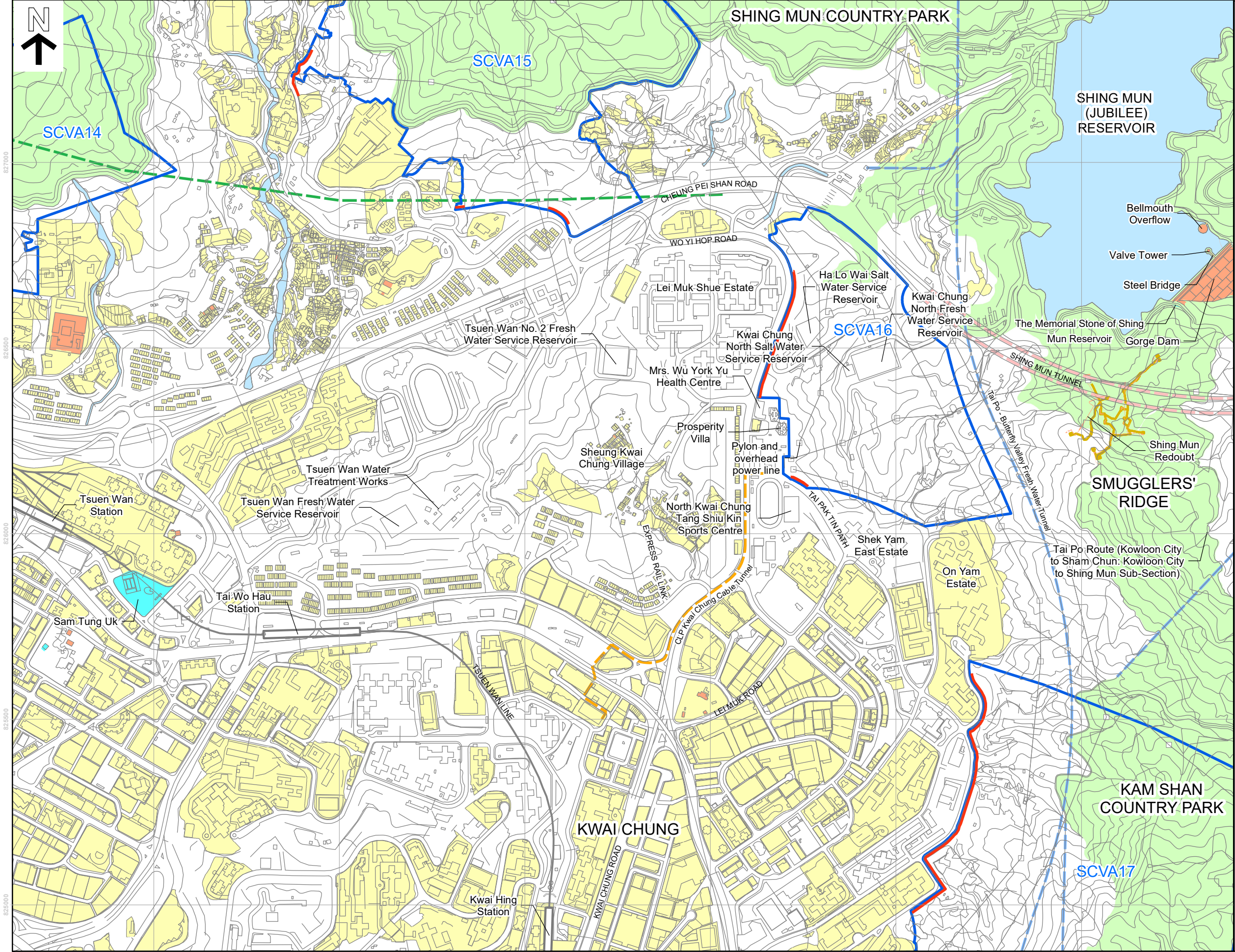
There are natural slopes above the potential portal locations. There may be potential natural terrain hazards in the vicinity of the potential portal locations which may require further study by the project proponents.

Project proponents should carry out further studies on identifying specific locations of portals for 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.

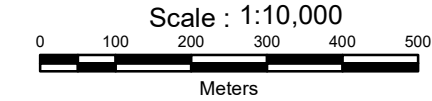




Legend

- Strategic Cavern Area
- Extent of Potential Portal Locations
- Existing Railway Line / Light Rail / Tram
- Cable Tunnel / Gas Tunnel
- Vehicle Tunnel
- Drainage Services Department Tunnel
- Water Supplies Department Tunnel
- Reservoir / River / Nullah
- Graded Historic Building
- Declared Monument (Historic Building)
- Private Lot
- Country Park
- Abandoned Tunnel

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. 16 - SMUGGLERS' RIDGE

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT  
PLANNING DEPARTMENT



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