

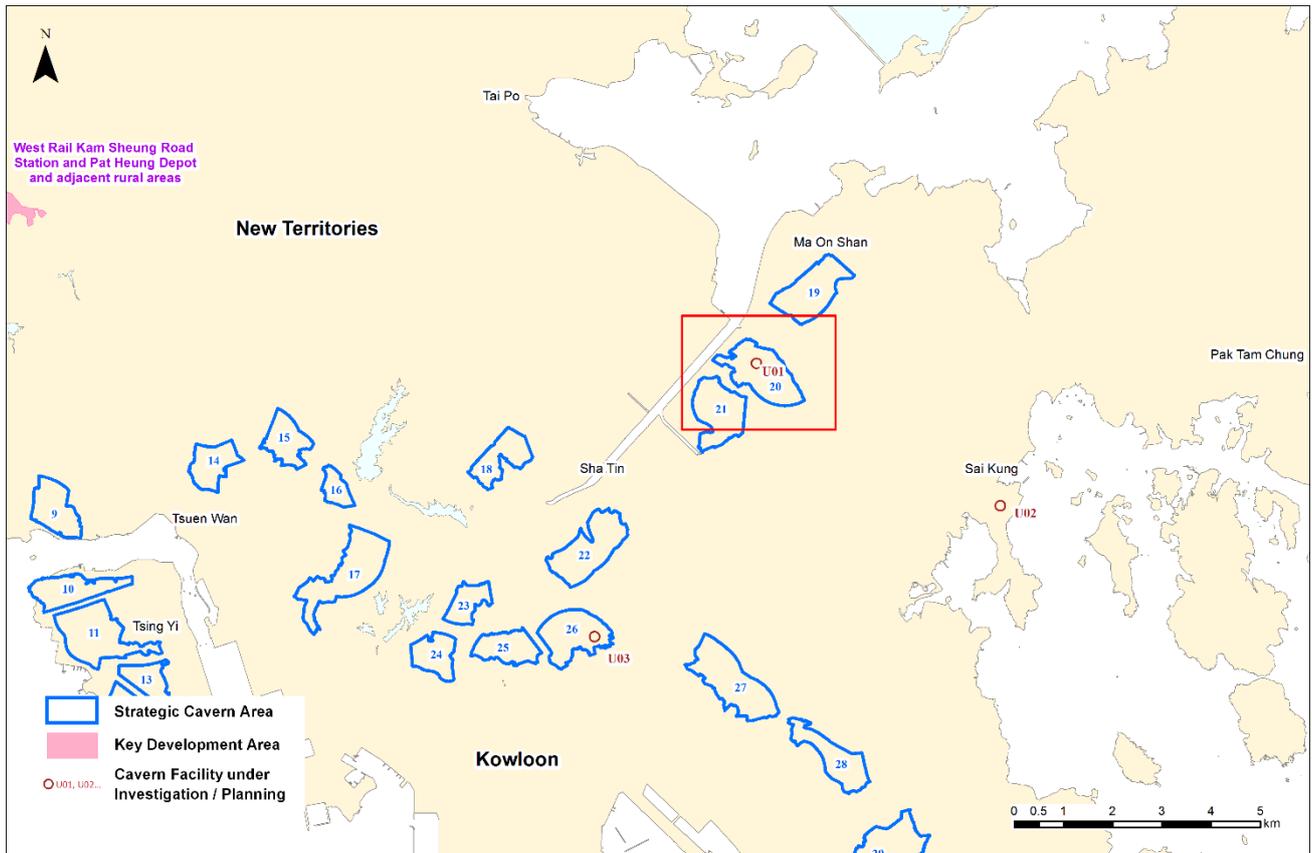
CAVERN MASTER PLAN – INFORMATION NOTE

STRATEGIC CAVERN AREA NO. 20 – A KUNG KOK

This Information Note describes the characteristics, key development opportunities and constraints of Strategic Cavern Area No. 20 - A Kung Kok (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):	Draft Sha Tin OZP No. S/ST/33 Approved Ma On Shan OZP No. S/MOS/22
Area:	125.6 ha
Maximum elevation in the SCVA:	+374 mPD
Minimum elevation in the SCVA:	+4 mPD

3. District Context

Location

The SCVA is located to the northeast of the Shek Mun Industrial/Business Area in Sha Tin, which is to the northeast of Kowloon. It covers the areas of A Kung Kok and part of Nui Po Shan (Turrent Hill). Ma On Shan is to the northeast of the SCVA, Ma On Shan Country Park is to the east, Nui Po Shan (Turret Hill) is to the south, and Shing Mun River Channel is to the west.

The SCVA is generally hilly with a maximum elevation of about +374 mPD. It partially overlaps with Ma On Shan Country Park in the southeastern side. To the southwest of the SCVA, it is the Sha Tin New Town area which mainly consists of medium- to high-rise residential developments including Pictorial Garden (about 800 m to the southwest of the SCVA), and to the west there is some local villages such as Ah Kung Kok Fishermen Village (adjoining the northwestern boundary of the SCVA). To the north of the SCVA, there is the residential area of Ma On Shan which also contains medium- to high-rise residential developments including Chevalier Garden (about 100m to the north of the SCVA) and local villages including Tai Shui Hang (about 300 m to the north of the SCVA).

Within and in the proximity of the SCVA, there are a number of key Government, Institution and Community (GIC) facilities supporting the development of Sha Tin New Town and A Kung Kok, including A Kung Kok Fresh Water Service Reservoir (in the northwestern corner of the SCVA), Shatin Hospital (about 300 m to the southwest of the SCVA), Customs and Excise Department Shatin Vehicle Detention Centre (about 100 m to the northwest of the SCVA) and Sha Tin Sewage Treatment Works (about 500 m to the northwest of the SCVA). Under the “Relocation of Sha Tin Sewage Treatment Works to Caverns – Investigation” study, the facility has been proposed for relocation to caverns at Nui Po Shan of A Kung Kok in the SCVA. Nui Po Shan is a steep and vegetated hill serving as a natural backdrop to the surrounding communities.

Access

This SCVA is accessed from its northeastern, northern and northwestern edges via Mui Tsz Lam Road, a restricted access road to Drainage Services Department's A Kung Kok Shaft and A Kung Kok Street respectively. Regional connections could be routed through the nearby Tate's Cairn Highway, Tolo Highway, etc.

The MTR Ma On Shan Line and East Rail Line run by the western side of the SCVA. The nearest station is Tai Shui Hang Station of the Ma On Shan Line located about 400 m to the north of the SCVA boundary.

Land Use Zoning

While the majority of the SCVA is zoned "Green Belt" ("GB") and "Green Belt (1)" under the Draft Sha Tin OZP No. S/ST/33, there are scattered parts in the northern, western and southern fringes of the SCVA zoned "Village Type Development" ("V"), "Government, Institution or Community" ("G/IC") and "Other Specified Uses" annotated "Sewage Treatment Works". A small portion of the SCVA in the northeastern boundary is in the "GB" zone of the Approved Ma On Shan OZP No. S/MOS/22. The remainder of the SCVA is not covered by any Statutory Plan and is designated as Country Park. The zoning of the surrounding areas includes "GB" and isolated "G/IC", "V" and "Open Space" to the southeast, northeast and northwest, with the rest being the Ma On Shan Country Park.

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

There is currently no existing cavern facility in the SCVA. The relocation of Sha Tin Sewage Treatment Works to caverns in the SCVA is currently under investigation study.

4. Summary of Characteristics of Strategic Cavern Area

4.1. Boundary

The northern and eastern boundaries of the SCVA are defined by Mui Tsz Lam Road and private lots. The western boundary of the SCVA is defined by A Kung Kok Street, Ah Kung Kok Fishermen Village and burial grounds. The southern boundary of the SCVA is defined by A Kung Kok Shan Road, Breakthrough Youth Village, The Neighbourhood Advice-Action Council Harmony Manor and also by an extent at 800 m from the potential portal locations. Individual private lots located 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 medium-grained granite, which belongs to Shui Chuen O Granite. The SCVA is with the rock type that is 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 medium-grained granite within the SCVA will be suitable for reuse as construction aggregate.

Further geological information of the SCVA can be found on 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 development in Sha Tin New Town and Ma On Shan. It is also the proposed relocation site of the Sha Tin Sewage Treatment Works across the Shing Mun River Channel. The released surface land after relocation could accommodate other beneficial uses, such as residential developments to meet the housing demand. Given that the SCVA is well connected to the rest of the territory by several highways and railways, there is potential for the SCVA to support the development of these areas.

To the southwest and north of the SCVA, there are the major residential developments in Sha Tin New Town and Ma On Shan respectively. These areas consist of various high- to medium-rise residential developments (e.g. Pictorial Garden and Chevalier Garden) and local villages (e.g. Ah Kung Kok Fishermen Village and Tai Shui Hang) supported by a number of GIC facilities (e.g. Shatin Hospital, Cheshire Home, Breakthrough Youth Village, Bradbury Hospice, KCBC Hay Nien Primary School, Ma On Shan Tsung Tsin Secondary School, A Kung Kok Fresh Water Service Reservoir, Sha Tin Sewage Treatment Works, C&ED Shatin Vehicle Detention Centre, 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 Sha Tin New Town and Ma On Shan while preserving the natural landscape in A Kung Kok as a natural backdrop to the urban developments in the locality.

The SCVA is also considered to have the potential for housing ‘Not-In-My-Backyard’ (‘NIMBY’) type of facilities, such as sewage treatment works and/or refuse transfer station, to minimise the nuisance to the community. The housing of the Sha Tin Sewage Treatment Works is one of the examples, which is being investigated under the aforementioned study.

The preliminary proposal on developing the released site of the existing Sha Tin Sewage Treatment Works for housing and other beneficial uses could bring about improvement to the community in the locality. There is potential for the SCVA to be planned holistically with this future development to bring about greater synergy and development opportunity, for example, by providing community facilities such as leisure centre/sports centre in caverns to serve the new population. Project proponents should take into account the latest progress of the Sha Tin Sewage Treatment Works relocation project, which will be completed in stages by the end of 2027.

4.4. Environmental

Environmental sensitive receivers to cavern development in the SCVA are the nearby residential developments (e.g. Chevalier Garden, A Kung Kok Government Staff Quarter and Ah Kung Kok Fishermen Village), institutions and schools (e.g. Cheshire Home, Breakthrough Youth Village, Bradbury Hospice, KCBC Hay Nien Primary School and Ma On Shan Tsung Tsin Secondary School), and hospital (i.e. Shatin Hospital). The SCVA comprises wooded area and shrubby hillside. The southeastern part of the SCVA encroaches onto Ma On Shan Country Park and Water Gather Grounds whilst the northern part of the SCVA encroaches onto a wooded area. To the immediate northwest of the SCVA is a traditional burial ground. Two built heritages at Tai Shui Hang namely Cheung Village House No. 6 (Grade 3 historic building) and Cheung Village Houses Nos. 16-18 (Grade 3 historic building) are located about 350m to the north of the SCVA. A site of archaeological interest, namely Pak Kong - Mui Tsz Lam Trackway, is located about 450 m to the southeast of the SCVA. There are natural or modified surface water courses 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

This SCVA can be accessed from its northeastern, northern and northwestern portions via Mui Tsz Lam Road, a restricted access road to Drainage Services Department A Kung Kok Shaft and A Kung Kok Street respectively. Mui Tsz Lam Road and the restricted access road are both single-lane roads, which may pose constraint to the portal formation for cavern development. Project proponents should take account of the constraint in the cavern development, and carry out necessary detailed assessment and design, and also minimise the possible impacts on the existing land uses.

The access from the potential portal locations to the primary road network is via A Kung Kok Street, which connects to Shek Mun Interchange, and further to Tai Chung Kiu Road. The connection to the expressway network in Sha Tin area allows for easy connections to different parts of the territory via Tate's Cairn Highway, Tolo Highway, Tai Po Road, Shing Mun Tunnel Road, Tsing Sha Highway, and Lion Rock Tunnel Road.

4.6. Other Key Issues / Constraints on Cavern Development

A Drainage Services Department's tunnel, namely the Tolo Harbour Effluent Export Scheme Tunnel, passes through the SCVA from north to south. Owing to the difference in elevation, this tunnel will 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
Leisure Centre / Sports Centre	<p>The SCVA is located close to a large population catchment as it is adjacent to various existing/planned residential communities such as Chevalier Garden, Pictorial Garden, local villages, and the released site of the Sha Tin Sewage Treatment Works which is preliminarily proposed for housing development and other beneficial uses. There is potential for the SCVA to be planned holistically with the existing and proposed developments by providing supporting community facilities, such as leisure centre/sports centre to meet the demand from the existing and future population.</p> <p>The potential portal locations are in close proximity to MTR Tai Shui Hang Station, which is about 400 m to the north of the SCVA. The easy access to the SCVA for the local residents could further enhance the potential for housing such uses in the SCVA.</p>
Refuse Transfer Station	<p>The SCVA has the potential to serve a wider catchment in a regional context given its strategic location and convenient road network connection. There is potential for the SCVA to support the potential expansion of the adjacent existing developments and the proposed residential communities, by housing suitable 'NIMBY' type of facilities, such as refuse transfer station. This can also minimise the nuisance to the existing/future communities.</p> <p>Some of the potential portal locations of the SCVA are away from the existing and/or proposed residential areas, which make the SCVA compatible with such land use.</p>

Land use	Description
Service Reservoir	<p>Sha Tin New Town and Ma On Shan are homes of various residential developments (e.g. Pictorial Garden and Chevalier Garden) and have the potential for further growth (e.g. the potential housing development and other beneficial uses in the released site of the Sha Tin Sewage Treatment Works). 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>An existing service reservoir, namely A Kung Kok Fresh Water Service Reservoir, is located within 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) or for integration with the potential future development.</p>
Sewage Treatment Plant	<p>The SCVA has already been identified as the relocation site of the Sha Tin Sewage Treatment Works.</p> <p>By relocating ‘NIMBY’ type of facilities into cavern, nuisance to the existing/future communities can be minimised and the land use compatibility can be improved. Some of the potential portal locations of the SCVA are away from existing/proposed residential areas, which make the SCVA compatible with 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 the existing roads at A Kung Kok Street to the west, and Mui Tsz Lam Road and the restricted access road to Drainage Services Department A Kung Kok Shaft to the north and northeast.

The potential portal locations are located at the slopes alongside the carriageways. Mui Tsz Lam Road and the restricted access road are both single-lane roads, which may constrain the portal formation for cavern development. Road widening/upgrading may be required to meet the requirement of the proposed land use in the SCVA. The project proponent should liaise with the Drainage Services Department on the use of the restricted road. A Kung Kok Street is a two-lane road and may be able to accommodate a range of traffic generating activities.

There are natural slopes above the potential portal locations. There may be potential natural terrain hazards in the vicinity which may require further study by the project proponents. Moreover, the presence of thick superficial deposit (colluvium) at the potential portal location at the northeastern portion of the SCVA may affect the design and construction of the portal.

The portal formation and the associated works (e.g. road connection and slope works) at Mui Tsz Lam Road should be away from Ma On Shan Country Park as far as practicable to reduce any possible ecological, visual and recreational impacts to the country park and disturbance to its users.

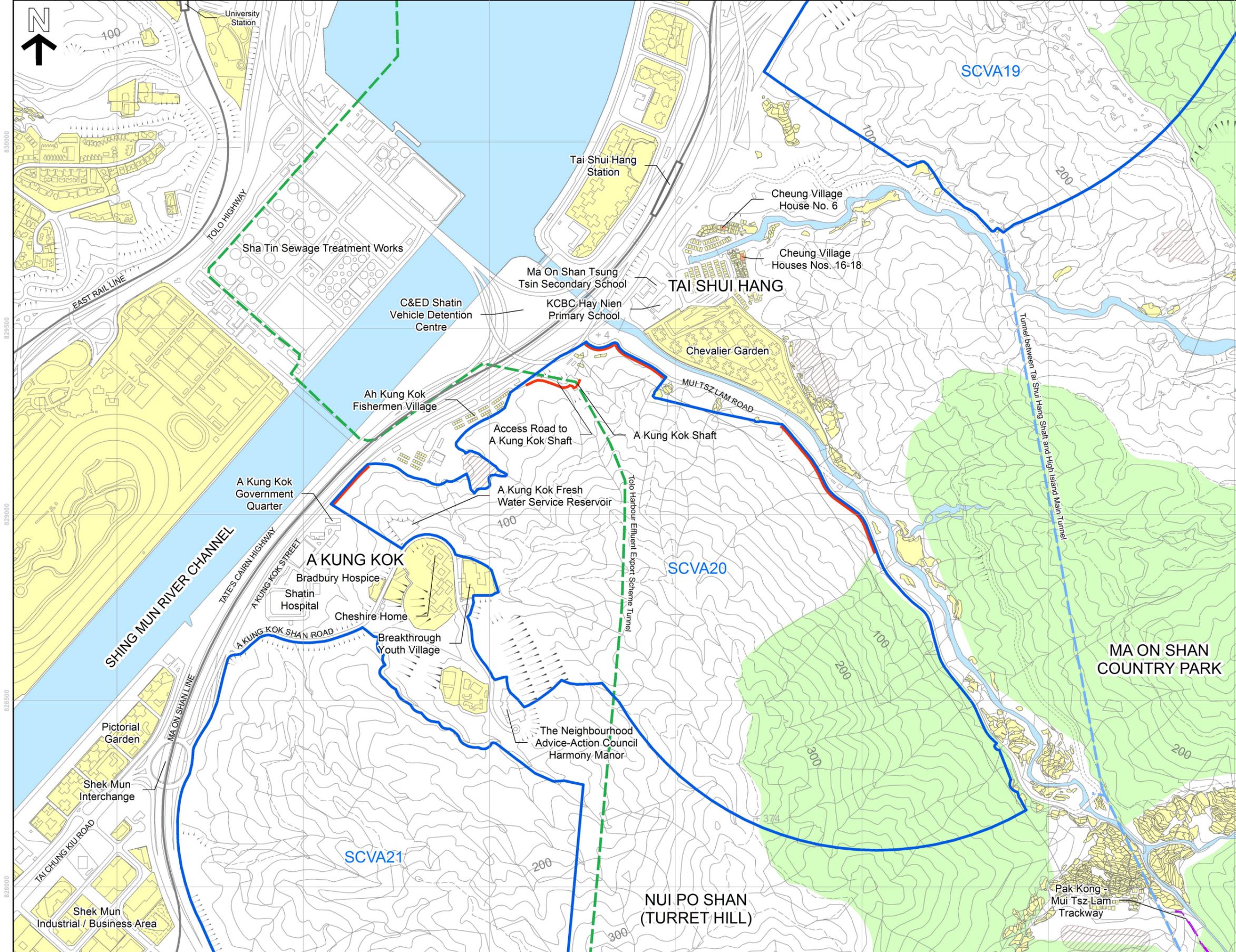
Project proponents should carry out further studies on identifying specific locations of portals for the proposed cavern development.

7. Concluding Remarks

The SCVA presents an opportunity for locating suitable land uses in rock caverns to serve the neighbouring residential communities (e.g. by housing service reservoirs). It also has the potential to house 'NIMBY' type of facilities (e.g. sewage treatment plants and/or refuse transfer station) to minimise the nuisance to the community. The Sha Tin Sewage Treatment Works is being investigated for relocating to caverns in the SCVA. In this regard, the SCVA could be integrated with the future development of the released site of the existing Sha Tin Sewage Treatment Works by providing community facilities (e.g. leisure centre/ sports centre) to meet the demand from the new population. Project proponents for cavern development should take due consideration of the existing and proposed residential developments, accessibility for cavern development, environmental sensitive receivers and latest status of the Sha Tin Sewage Treatment Works relocation project, to minimise the interfacing issues and bring about greater synergy and opportunities.

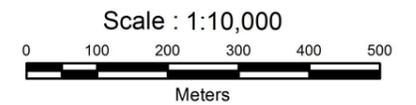
8. Notes

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
 - Drainage Services Department Tunnel
 - Water Supplies Department Tunnel
 - River / Nullah / Sea
 - Site of Archaeological Interest
 - Graded Historic Building
 - Private Lot
 - Burial Ground
 - 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. 20 - A KUNG KOK