

1 Introduction

1.1 Project Background

- 1.1.1.1** As stipulated in the 2010-11 Policy Agenda, the Administration will identify suitable sites for columbarium development across the territory and conduct technical feasibility studies of shortlisted sites to increase supply of columbarium. The Administration will continue to review the provision of cemeteries, columbaria and crematoria facilities and strive to provide more facilities to meet future demand.
- 1.1.1.2** With a growing and aging population in Hong Kong, the number of deaths and the corresponding number of cremations have been rising gradually every year, resulting in an increasing public demand for columbarium facilities. Based on past data, the average annual numbers of deaths and cremations in the next 20 years (i.e. from 2014 to 2033) are estimated to be about 54,000 and 51,000 respectively. Upon completion of the latest re-provisioning projects of Wo Hop Shek and Cape Collinson Crematoria by late 2015, the total annual capacity of all public cremators will be increased from 38,000 sessions to 53,000 sessions. This will sufficiently meet the cremation demand up to around 2024. There is genuine need to construct new crematoria at Sandy Ridge Cemetery to address the demand beyond 2024. As for columbarium, the supply of public niches is uncertain after the completion of the Diamond Hill Columbarium extension, the new public columbarium at Kiu Tau Road in the Wo Hop Shek Cemetery and the Cheung Chau Cemetery extension in 2012 and 2013 providing about 1,500, 43,700 and 1,000 respectively of which allocation of niches would be largely completed in mid 2015. Hence, there is a need to construct new columbarium facilities.
- 1.1.1.3** The Sandy Ridge Cemetery is one of the 24 potential sites for columbarium development in 18 districts announced in three batches in July 2010, December 2010 and April 2011 respectively. Furthermore, it is planned to provide synergistic one-stop services at the Sandy Ridge Cemetery by including at least a funeral parlour and a visitor service centre so as to maximise the convenience to the public. It is hoped that this project will set a new benchmark for the public C&C facilities and services in terms of its functional one-stop services, state-of-the art design incorporating artistic elements of aesthetic appeal where appropriate, greening and landscaping, user-friendly access for visitors and serene surrounding environment. It will be a place where those lost loved ones can rest in eternal peace in a dignified manner, and where family members, relatives and friends can part with and mourn for their loved ones in reasonable

privacy, and where visitors will find it pleasant to stay to admire the landscape and the greenery.

- 1.1.1.4** The Sandy Ridge Cemetery is under the management of Food and Environmental Hygiene Department (FEHD) and is located between Lo Wu Boundary Control Point (BCP) and Man Kam To BCP. To the north across Shenzhen River are the residential and commercial areas of Shenzhen. To the east are Man Kam To BCP and San Uk Ling (Indigenous Village). To the south are rural settlements of Sha Ling and existing Government, Institution or Community facilities including the Border District Police Headquarters. To the west are MTR Lo Wu Station, Lo Wu BCP and the hilly terrain of Tai Shek Mo west of the Ng Tung River.
- 1.1.1.5** In March 2011, Food and Hygiene Bureau (FHB) engaged Civil Engineering and Development Department (CEDD) to conduct a feasibility study on the site formation and associated infrastructural works for the development of columbarium facilities providing at least 200,000 niches, a crematorium with 10 cremators, a funeral parlour with 30 service halls and a visitor service centre at Sandy Ridge Cemetery under Agreement No. CE 32/2010 (CE). The feasibility study was substantially completed in September 2012.
- 1.1.1.6** It has been identified in the feasibility study that some elements in the Project are designated projects under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) and require EPs prior to their construction and operation. The Project Profile (No. PP-482/2013) was submitted by CEDD to Environmental Protection Department (EPD) for an Environmental Impact Assessment (EIA) Study Brief under Section 5(1)(a) of the EIAO on 18 February 2013. The EIA Study Brief (EIA Study Brief No.: ESB-257/2013) was formally issued by EPD on 26 March 2013.
- 1.1.1.7** On 28 June 2013, CEDD commissioned Ove Arup & Partners Hong Kong Limited (Arup) under Agreement No. CE 1/2013 to provide consultancy services in respect of Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery – Design and Construction (The Assignment). This consultancy also includes the compilation of an EIA Report to fulfil the relevant legislative requirements.
- 1.1.1.8** Subsequent to the issue of the EIA Study Brief No. ESB-257/2013 dated March 2013, the traffic and transport arrangement has been reviewed. In addition to the road widening works at Choi Yuen Road, road widening works along Lin Ma Hang Road are also required within the adjacent areas at Sandy Ridge. Hence, given all these changes, a new Project Profile (PP-503/2014) was submitted to EPD on 13 March 2014. The EIA Study Brief No. 271/2014 was issued by EPD on 23 April 2014.

1.2 Site Location and History

- 1.2.1.1** Sandy Ridge Cemetery is located inside the Frontier Closed Area at the northern boundary of the New Territories. It is bounded by Man Kam To Road to the east and south, Lo Wu Village, MTR Lo Wu Station and Lo Wu Station Road to the west and Shenzhen River to the North.
- 1.2.1.2** There are two public cemeteries situated in Sandy Ridge, namely Sandy Ridge Cemetery and Sandy Ridge Urn Cemetery. They were both constructed in 1949 and opened to the public in 1950. At that time, the Sandy Ridge Cemetery comprised of 4 coffin sections: Sha Ling (general), Roman Catholic Church, Little Sister of the Poor and Tung Wah; while the Sandy Ridge Urn Cemetery consisted of nine sections: Sha Ling (general), Tung Wah, Chaozhou, Enping, Zhongshan, Heshan, Xinhui, Zengcheng and Fujin. All of the above were managed by private sectors except for Sha Ling (general).
- 1.2.1.3** Due to the shortage of land resulting from post-war immigration, the Hong Kong Government aimed to ‘concentrate as many burials as possible in the public cemetery at Wo Hop Shek and the urn cemetery at Sandy Ridge’ as a general burial policy. In order to limit funerary land use, the requirement of exhumation of all coffin burials after six years in public cemeteries was part of government policy on cemeteries pre-1970. In addition, the practice of exhumation was further encouraged in the renewed burial policies introduced in 1970 and 1976. Some sections in the Sandy Ridge cemeteries were established to accommodate graves relocated from cemeteries that had ceased operation as a result of urban development and burial policy.
- 1.2.1.4** Sandy Ridge Cemetery is also a final home for unclaimed human remains. The unclaimed graves from various cemeteries ceased operation, such as Shek O Cemetery, Kai Lung Wan East Cemetery, New Stanley Cemetery, New Kowloon Cemetery No.7 and Sham Wan Cemetery were relocated to Sandy Ridge Cemetery since its opening in 1950.
- 1.2.1.5** Sandy Ridge Cemetery has remained its use as cemetery since its establishment in 1949. Apart from the cemetery, the area comprises of undeveloped terrain with vegetation coverage. There are some indigenous villages and rural settlements scattered near the cemetery.

1.3 The Project

- 1.3.1.1** As described in the EIA Study Brief (ESB-271/2014), the Project comprises site formation and infrastructural works for the development of C&C facilities at Sandy Ridge Cemetery. The Project comprises:

- Site formation and associated works of about 10 hectares of land including landscaping, geotechnical, drainage and

sewerage works, waterworks, and other utilities services for development of C&C facilities at the Sandy Ridge Cemetery;

- Road works including access road, tunnel and viaducts within Sandy Ridge Cemetery;
- Pedestrian walkway between MTR Lo Wu Station and proposed columbarium;
- Widening the eastbound of Choi Yuen Road near MTR Sheung Shui Station from 1-lane to 2-lane carriageway (widening by about 3m) for about 400m length; and
- Widening a section of Lin Ma Hang Road (about 1.4km in length) from 6.5m to 7.3m.

1.3.1.2 However, according to the latest development, the construction of a pedestrian walkway between MTR Lo Wu Station and columbarium facilities at the Sandy Ridge Cemetery and associated works including a mini concourse and modification works at MTR Lo Wu Station and widening the eastbound of Choi Yuen Road near MTR Sheung Shui Station are no longer required. In addition, it is proposed to have off-site pick-up / drop-off points for shuttle buses at MTR Kwu Tung Station, MTR Fanling Station, existing Sheung Shui Landmark North Public Transport Interchange (PTI) and layby at Pak Wo Road near Flora Plaza. All these off-site pick-up / drop-off areas would be within existing highway corridors. No excavation works would be required and only road furnishing would be conducted. For MTR Kwu Tung Station (including the PTI and shuttle bus services area), it will be constructed under the Planning and Development Study on North East New Territories (NENT) Contract and will be available by 2026. In addition, and a barging point at Siu Lam, Lok On Pai, currently used by the Express Rail Link project would also be required.

1.3.1.3 The location plans for the proposed development are shown in **Figures 1.1** and **1.2**. The plan for the proposed land platform for the C&C facilities at Sandy Ridge Cemetery is shown in **Figure 1.1**. The plan for proposed road widening work along Lin Ma Hang Road and the barging point at Siu Lam are shown in **Figures 1.2** and **1.3** respectively.

1.3.1.4 More detailed description of the C&C facilities at Sandy Ridge Cemetery and Lin Ma Hang Road is given in **Chapter 2**. It should be noted that the Crematorium is a separate Schedule 2 designated project and hence the respective project proponent would conduct a separate EIA Report for submission under the EIAO. The site formation work for the crematorium would however be included in this EIA Study.

1.3.1.5 The barging point is located off-site along Tsing Fat Street in Tuen Mun. In order to reduce the impact on road traffic, surplus inert construction and demolition (C&D) materials from the construction of the C&C facilities at Sandy Ridge Cemetery and Lin Ma Hang Road

will be stored at a temporary stockpile area on-site. The surplus inert C&D materials will be transported to the designated barging point facility in Tuen Mun by lorries, and then transported by barges for the reuse of other concurrent projects. The maximum number of barge movement is 2 round trips per day. The current location is an existing barging point used by the Express Rail Link project according to the approved EIA report for Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (AEIAR-143/2009). Minor construction works for the tipping halls and new ramps are required. No maintenance dredging is required and no night-time operation is anticipated.

1.4 EIA Study Brief

1.4.1.1 In accordance with the requirements of Section 5(1) of the EIAO, a project profile (no. PP-503/2014) for the Project was submitted to the Director of Environmental Protection (DEP) for application for an EIA Study Brief on 13 March 2014. Pursuant to Section 5(7)(a) of the EIAO, the DEP issued a Study Brief (No.: ESB-271/2014 dated 23 April 2014) for the EIA study.

1.4.1.2 The purpose of this EIA study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the Project and related activities that take place concurrently. This information will contribute to decisions by the Director on:

- The acceptability of any adverse environmental consequences that are likely to arise as a result of the Project;
- The conditions and requirements for the design, construction and operation of the Project to mitigate against adverse environmental consequences; and
- The acceptability of residual impacts after the proposed mitigation measures is implemented.

1.5 Designated Projects

1.5.1.1 The Project comprises the following which are classified as Designated Projects (DPs) as per Schedule 2, Part I of the EIAO:

- Item A.8 – A road or railway bridge more than 100m in length between abutments; and
- Item I.1(b)(vii) – A drainage channel or river training and diversion works which discharges or discharge into an area which is less than 300m from the nearest boundary of an existing or planned conservation area.

1.5.1.2 One of the new road sections leading from Man Kam To Road up to the platform of the Project comprises of a viaduct section of

approximately 300m long. Both ends of the viaduct would need to be in a form as abutments. Since the length between the abutments is more than 100m, it will be a DP under Item A.8 of Schedule 2, Part I of EIAO.

1.5.1.3 The Conservation Area (CA) at Yuen Leng Chai is located approximately 45m north west of the proposed Project and there is a vertical difference between the proposed platform and the CA. Hence, a portion of the surface run-off from the proposed platform will be drained into this CA. Hence, it will be a DP under Item I.1(b)(vii) of Schedule 2, Part 1 of EIAO.

1.5.1.4 The locations of the above DP under the Project are shown in **Figure 1.4**.

1.6 Objectives of the EIA Study

1.6.1.1 According to Section 1.5 of the EIA Study Brief (No.: ESB-271/2014), this EIA study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the Project and related activities that take place concurrently. This information will contribute to decisions by the Director of Environmental Protection on:

- The acceptability of any adverse environmental consequences that are likely to arise as a result of the Project;
- The conditions and requirements for the design, construction and operation of the Project to mitigate against adverse environmental consequences; and
- The acceptability of residual impacts after the proposed mitigation measures is implemented.

1.6.1.2 The objectives of the EIA study are as follows:

- To describe the Project and associated works together with the requirements and environmental benefits for carrying out the Project;
- To identify and describe elements of community and environment likely to be affected by the Project and/or likely to cause adverse impacts to the Project, including natural and man-made environment and the associated environmental constraints;
- To identify and quantify emission sources (including air quality, noise, water quality and waste, etc. as appropriate) and determine the significance of impacts on sensitive receivers and potential affected uses;
- To identify and quantify any potential ecological and fisheries impacts arising from the construction and operation of the Project and to propose measures to mitigate these impacts;

- To identify any negative impacts on sites of cultural heritage and to propose measures to mitigate these impacts;
- To identify any potential landscape and visual impacts and to propose measures to mitigate these impacts;
- To propose the provision of infrastructure or mitigation measures to minimise pollution, environmental disturbance and nuisance during construction and operation of Project;
- To investigate the feasibility, practicability, effectiveness and implications of the proposed mitigation measures;
- To identify, predict and evaluate the residual environmental impacts (i.e. after practicable mitigation) and the cumulative effects expected to arise during the construction and operation phases of the Project in relation to the sensitive receivers and potential affected uses;
- To identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these residual environmental impacts and cumulative effects and reduce them to acceptable levels;
- To investigate the extent of the secondary environmental impacts that may arise from the proposed mitigation measures and to identify constraints associated with the mitigation measures recommended in the EIA study, as well as the provision of any necessary modification;
- To design and specify environmental monitoring and audit requirements to check the effective implementation of the recommended environmental protection and pollution control measures; and
- To identify any additional studies necessary to implement the mitigation measures or monitoring and proposals recommended in the EIA report.

1.7 Need for the Project

1.7.1.1 As discussed in **Section 1.1**, with a growing and aging population in Hong Kong, the number of deaths and the corresponding number of cremations have been rising gradually every year, resulting in an increasing public demand for columbarium facilities. Based on past data, the average annual numbers of deaths and cremations in the next 20 years (i.e. from 2014 to 2033) are estimated to be about 54,000 and 51,000 respectively. Upon completion of the latest reprovisioning projects of Wo Hop Shek and Cape Collinson Crematoria by late 2015, the total annual capacity of all public cremators will be increased from 38,000 sessions to 53,000 sessions. This will sufficiently meet the cremation demand up to around 2024. There is genuine need to construct new crematoria at Sandy Ridge Cemetery

to address the demand beyond 2024. As for columbarium, the supply of public niches is uncertain after the completion of the Diamond Hill Columbarium extension, the new public columbarium at Kiu Tau Road in the Wo Hop Shek Cemetery and the Cheung Chau Cemetery extension in 2012 and 2013 providing about 1,500, 43,700 and 1,000 respectively of which allocation of niches would be largely completed in mid 2015. Hence, there is a need to construct new columbarium facilities.

1.8 Environmental Benefits of the Project

1.8.1.1 The environmental benefits of the Project are summarised below:

1.8.2 Existing Visitors

1.8.2.1 All the existing users and visitors to the cemetery and the graves would need to rely on the existing Sha Ling Road to access Sandy Ridge. During the festive days in particular, they are required to make their own transport arrangement to Man Kam To Road. From there, most of the visitors would need to either walk up the existing Sha Ling Road or take franchised mini buses to access Sandy Ridge Cemetery. However, the existing Sha Ling Road is only 6m wide without a proper pedestrian walkway and the gradient at some sections are relatively steeper. On the other hand, the capacity of the franchised mini buses is limited. Under such circumstance, a small portion of users would drop off at MTR Lo Wu Station and use an existing footpath to reach Sandy Ridge area. This existing footpath is only 1.5m wide and is not paved, which would be inconvenient especially during rainy days.

1.8.2.2 With this project in place, the Sha Ling Road will be upgraded to a 7.3m wide with 2 lanes and pedestrian walkway, and the gradients along the road have also been optimized. Besides, additional public transport will be provided to allow for a more convenient access from Man Kam To Road up to the future platform. All these improvements in infrastructure would benefit the existing users and visitors to provide an easier and more convenient access. This improvement in accessibility may also attract some of the visitors to consider visiting Sandy Ridge Cemetery at alternative days other than festive days. This would help alleviating the traffic demand during festive days and hence the associated environmental impacts.

1.8.2.3 As discussed in **Section 1.1**, the proposed development would integrate columbarium, crematorium and other related facilities at one location. This arrangement would definitely minimise generation of any unnecessary off-site traffic (e.g. From Kwai Chung Crematorium to Hong Kong Cemetery) that would otherwise need to travel between columbarium and crematorium. Hence, the off-site traffic would be minimised and hence any nuisance that may have caused on the

communities in the vicinity of the access roads would also be reduced as much as practicable.

1.8.3 Existing Sewerage System

1.8.3.1 In addition, there is no existing sewerage system for Sandy Ridge Cemetery. With the Project in place, the disposal of waste water from the visitors will be collected properly through the proposed sewerage system. This would also help to improve the existing conditions.

1.8.4 Green Transportation

1.8.4.1 The other environmental benefit that would be brought about by the Project is from the arrangement for off-site pick-up / drop-off locations for shuttle buses. As discussed in **Section 1.3**, shuttle buses would be arranged at a number of MTR Stations at MTR Kwu Tung Station, MTR Fanling Station, existing Sheung Shui Landmark North Public Transport Interchange (PTI) and layby at Pak Wo Road near Flora Plaza. Instead of making their own arrangement (such as private cars, public transport to existing shuttle bus location at Sheung Shui), all the way from urban area to Man Kam To Road or areas in the vicinity, the future visitors could choose to use the shuttle bus route that is more convenient to them. Obviously, this convenience of using shuttle buses would encourage all the visitors to use public transport during festive days and hence help reducing vehicular emissions which would in turn be beneficial for air quality.

1.8.5 Existing Communities along Lin Ma Hang Road

1.8.5.1 The existing Lin Ma Hang Road is only 6m wide in some sections and with footpath of inconsistent width. As discussed in **Section 1.3**, part of the Project proposal is to widen the existing Lin Ma Hang Road to 7.3m up to standard requirement as given in Hong Kong Planning Standards and Guidelines (HKPSG) and a 2m wide of footpath would be provided. The footpath would be designed with appropriate landscape features such as tree planting, and would enhance aesthetic appeal of the surrounding environment, and provide a more convenient means of vehicular and pedestrian access for the local community.

1.9 Scenarios “With” and “Without” Project

1.9.1.1 As discussed in **Sections 1.1** and **1.7**, if the Project does not proceed, columbarium facilities may not be adequate to meet future demand. Alternative locations in other areas such as urban area may be required for columbarium facilities which may induce more environmental impacts (i.e. noise, air, visual, etc.) to the nearby communities.

1.9.1.2 Nevertheless, the implementation of the Project would inevitably introduce some temporary environmental impacts during construction phase. This would require some mitigation measures to alleviate the impacts. During the operational phase, some mitigation measures for noise, landscape and ecology would also be required to alleviate the associated impacts. **Sections 4 – 12** present the environmental assessments with respect to various environmental aspects and mitigation measures are also identified and recommended if necessary.

1.10 Concurrent Projects

1.10.1.1 The potentials impacts of concurrent projects during the construction and operation of the proposed Project are identified as follows. **Figure 1.5** shows the locations and alignments of these concurrent projects.

1.10.1.2 Most of the concurrent projects are located at a distance far away (i.e. >500m) from the Sandy Ridge Project boundary and therefore will not cause significant adverse cumulative landscape and visual impact.

1.10.1.3 Only the Widening of Lin Ma Hang Road (eastern and western sections) is adjacent to the Project. However, the demarcation of the two projects are clear and will not cause cumulative landscape and visual impact. The landscape and visual impact of each project would be assessed in other individual EIA and environmental review studies.

1.10.2 Operation of the Crematorium at Sandy Ridge

1.10.2.1 During operational phase, as the crematorium is a Designated Project under Item N.4 of Schedule 2 of TM-EIAO, a separate EIA study would be conducted to fulfil all the statutory requirements and procedures under the EIAO and thus the fixed noise impact, chimney emission and odour will be excluded from this Assignment. However, vehicular emission and road traffic noise from its induced traffic is anticipated and therefore have been included in the assessment.

1.10.2.2 As discussed in **Section 1.1**, the crematorium at Sandy Ridge consists of 10 cremators, a funeral parlour with 30 service halls and a visitor service centre.

1.10.2.3 The construction of crematorium at Sandy Ridge will be commenced after completion of site formation and associated infrastructural works of the Project. Cumulative dust and noise during construction phase is therefore not anticipated.

1.10.3 Development of Organic Waste Treatment Facilities, Phase 2 (OWTF)

1.10.3.1 According to the approved EIA Study “Development of Organic Waste Treatment Facilities, Phase 2” (AEIAR-180/2013), the proposed OWTF is located at Sha Ling and the plant will process

around 300 tonnes of organic waste per day to produce biogas and soil enhancement products (e.g. soil conditioner / compost).

1.10.3.2 The proposed OWTF Phase 2 construction work will be commenced in 2016 / 2017 and is anticipated to be completed in 2018 / 2019. As the separation distance between OWTF Phase 2 and the Project is about 200m, cumulative dust and noise during construction phase are anticipated and therefore would be included in the assessment. However, as OWTF Phase 2 would not induce significant amount of traffic using Man Kam To Road, vehicular emission and road traffic noise during operational phase is not anticipated.

1.10.4 Police Facilities in Kong Nga Po

1.10.4.1 In October 2012, CEDD commenced an engineering feasibility study for Kong Nga Po. The objective of the Study is to ascertain the feasibility of developing the Kong Nga Po Site for residential use upon its release from the Frontier Closed Area (FCA). Meanwhile, an alternative land use option for co-locating various police facilities in Northern District to one centralised location in Kong Nga Po has been proposed. CEDD carried out a Preliminary Feasibility Assessment for co-locating police facilities in Kong Nga Po in July 2013. The project consists of relocation of existing police facilities, construction of new police facilities and road improvement works for Kong Nga Po Road, which is anticipated to be completed for operation by 2022. As the project is located outside 500m from the Project, cumulative dust and noise during construction phase is not anticipated. However, vehicular emission and road traffic noise from its induced traffic is anticipated and therefore would be included in the assessment.

1.10.5 Widening of Lin Ma Hang Road

1.10.5.1 According to the ESB-264/2013, the eastern section of Lin Ma Hang Road connecting Tsung Yuen Ha and Lin Ma Hang is widened to cater for the anticipated traffic growth of Lin Ma Hang Road and provide a safer and more efficient road network for local villagers and visitors. The proposed Lin Ma Hang Road widening is a DP under the EIAO. In addition, a part of western section of Lin Ma Hang Road connecting River Ganges and Ping Che Road is widened and an environmental review will be conducted. As the western section is located next to the Project, cumulative dust and noise during construction phase is anticipated and therefore would be included in the assessment. In addition, the vehicular emission and road traffic noise from its induced traffic is also anticipated and therefore would be included in the assessment.

1.10.6 Liantang / Heung Yuen Wai Boundary Control Point and Associated Works

1.10.6.1 According to the approved EIA Study “Liantang / Heung Yuen Wai Boundary Control Point and Associated Works” (AEIAR-161/2011), the proposed BCP and associated works is a DP under the EIAO. The proposed work is located at the boundary with Shenzhen near the existing Chuk Yuen Village and the connecting road alignment consists of six main sections located at Lin Ma Hang Road, Ping Yeung to Wo Keng Shan, Cheung Shan, Sha Tau Kok Road, Loi Tung and Fanling.

1.10.6.2 The proposed BCP and associated works has commenced in mid 2013 and is anticipated to be completed in mid 2018. As the proposed BCP and associated works is located outside 500m from the Project, cumulative dust and noise during construction phase is not anticipated. However, vehicular emission and road traffic noise from its induced traffic is anticipated and therefore would be included in the assessment.

1.10.7 Development of Lok Ma Chau Loop (LMC Loop)

1.10.7.1 According to the approved EIA Study “Development of Lok Ma Chau Loop” (AEIAR-176/2013), the proposed LMC Loop (about 87.7ha) will be developed with higher education as the leading land use, complemented by high-tech research and development, cultural & creative industries. The associated infrastructure such as connecting roads, service reservoir, water mains, etc has also been proposed. The proposed LMC Loop and the associated infrastructure include seven DPs under the EIAO.

1.10.7.2 The advanced works of the proposed LMC Loop will tentatively commence in mid 2016, site formation in 2018 and completed in early 2027 for final phasing. As the proposed LMC Loop is located outside 2.5km from the Project, cumulative dust and noise during construction phase is not anticipated. However, vehicular emission and road traffic noise from its induced traffic is anticipated and therefore would be included in the assessment.

1.10.8 North East New Territories New Development Area (NENT NDA)

1.10.8.1 According to the approved EIA Study “North East New Territories New Development Areas” (AEIAR-175/2013), the proposed NENT NDA is one of the ten major infrastructure projects in the 2007 – 2008 Policy Address to address long-term housing demand and job opportunities. The layout plan is to accommodate about 174,900 population with the associated infrastructure such as road works, sewage treatment works, drainage channel, wholesale market, etc. The total area of NENT NDA is about 614ha located at Kwu Tung North

and Fanling North and the NENT NDA includes thirteen DPs under the EIAO.

1.10.8.2 Kwu Tung North is located to the west of Sheung Shui and is generally bounded by Shek Sheung River to the east, Castle Peak Road and Fanling Highway (New Territories Circular Road) to the south, Pak Shek Au and Tit Hang villages to the west and the present Closed Area boundary to the north. The NDA has an area of some 450 ha and is proposed to accommodate a population of about 101,600 people on full development.

1.10.8.3 Fanling North is located immediately to the north-east of the established Fanling/Sheung Shui New Town and is bounded by Upper Ng Tung River to the north and east, Sha Tau Kok Road to the south, and Ma Sik Road and Tin Ping Road to the south-west. The NDA has an area of around 164ha and is proposed to accommodate a population of about 73,300 people on full development.

1.10.8.4 The proposed NENT NDA will be constructed in late 2017 and completed in early 2027 for final phasing. According to the approved EIA study “North East New Territories New Development Areas” (NENT NDA) (AEIAR-175/2013), the construction phase results showed that the 1-hr TSP concentration within the overlapped assessment area between the planned NENT NDA and the Project is lower than $200\mu\text{g}/\text{m}^3$ (or lower than $127\mu\text{g}/\text{m}^3$ excluding background TSP) and is complying with the $500\mu\text{g}/\text{m}^3$ TSP criteria. The current Project design only requires limited utility construction works within the overlapped area and the maximum predicted 1-hr TSP concentration is only $226\mu\text{g}/\text{m}^3$ (including background). Given the ample margin between the TSP criteria and the assessment results ($353\mu\text{g}/\text{m}^3$) and the small scale of utility construction activities in the overlapping area, adverse cumulative dust impact is not anticipated. In addition, cumulative construction noise is not anticipated as NENT NDA is outside 300m from the utilities construction. However, vehicular emission and road traffic noise from its induced traffic is anticipated and therefore would be included in the assessment.

1.10.9 Widening of Tolo / Fanling Highway between Island House Interchange and Fanling

1.10.9.1 The proposed widening of Tolo / Fanling Highway between Island House Interchange and Fanling comprises

- Widening of a section of Fanling Highway of approximately 3km long between Tai Hang and Wo Hop Shek Interchange from dual three-lane to dual four lane carriage
- Widening of the southbound slip road at Wo Hop Shek Interchange.

1.10.9.2 The tentative completion date is from Year 2015 and Year 2018 but is still under review by Highways Department. As the widening work is

located outside 4km from the Project, cumulative dust and noise during construction phase is not anticipated. However, vehicular emission and road traffic noise from its induced traffic is anticipated and therefore would be included in the assessment.

Table 1.1 Potential impacts of concurrent projects

Concurrent Projects	Project Proponent	Programme		Potential Cumulative Environmental Impacts	
		Start	Complete	Construction Phase	Operational Phase
Operation of the Crematorium at Sandy Ridge	ASD	[1]	2022	• [1]	• [2] • [3]
Development of Organic Waste Treatment Facilities, Phase 2	EPD	2016 / 2017	2018 / 2019	• Fugitive dust • Airborne noise	• Vehicular emission and road traffic noise during operational phase is not anticipated
Police Facilities in Kong Nga Po	CEDD	2018	2022	• [5]	• [2]
Widening of Lin Ma Hang Road	HyD	[4]	[4]	• Fugitive dust • Airborne noise	• [2]
Liantang / Heung Yuen Wai Boundary Control Point and Associated Works	CEDD	Mid 2013	Mid 2018	• [5]	• [2]
Development of Lok Ma Chau Loop	CEDD	Late 2013	2027	• [5]	• [2]
North East New Territories New Development Areas	CEDD, PlanD	2017	2028	• [7]	• [2]
Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling	CEDD	[6]	[6]	• [5]	• [2]

Note:

[1] The construction of crematorium at Sandy Ridge will be commenced after completion of site formation and associated infrastructural works of the Project.

[2] Traffic noise and vehicular emission caused by induced traffic.

[3] As the crematorium is a Designated Project under Item N.4 of Schedule 2 of TM-EIAO, a separate EIA study will be conducted to fulfil all the statutory requirements and procedures under the EIAO and thus the fixed noise impact, chimney emission and odour will be excluded from this Assignment.

[4] The tentative construction programme of the project is from Year 2016 to Year 2021.

[5] These concurrent projects are located outside 500m from the Project boundary.

[6] The tentative completion date of the project is from Year 2015 to Year 2018.

[7] Although this concurrent project is located within 500m from the assessment area, the distance is outside 500m from the project boundary. Cumulative construction noise and dust are not anticipated.

1.11 Structure of This EIA Report

1.11.1.1 The structure of this EIA Report is as follows:

<u>Chapter</u>	<u>Title</u>	<u>Aims</u>
1	Introduction	Introduces the project background and the objectives of the report
2	Alternative Design and Layout	Summarises the various options and scope for various environmental aspects
3	Alternative Construction Methodology	Describes relevant main construction / engineering aspects for the recommended layout
4	Air Quality Impact	Presents the legislation, methodology, assessment and recommendations for air quality impacts
5	Noise Impact	Presents the legislation, methodology, assessment and recommendations for noise impacts
6	Water Quality Impact	Presents the legislation, methodology, assessment and recommendations for water quality impacts
7	Waste Management	Presents the legislation, methodology, assessment and recommendations for waste management
8	Land Contamination Impact	Presents the legislation, methodology, assessment and recommendations for land contamination
9	Ecology Impact	Presents the legislation, methodology, assessment and recommendations for ecology impacts
10	Fisheries Impact	Presents the legislation, methodology, assessment and recommendations for fisheries impacts
11	Landscape and Visual Impact	Presents the legislation, methodology, assessment and recommendations for landscape and visual impacts
12	Impact of Cultural Heritage	Presents the legislation, methodology, assessment and recommendations for cultural

<u>Chapter</u>	<u>Title</u>	<u>Aims</u>
		heritage impacts
13	Environmental Monitoring & Audit Requirements	Presents the EM&A requirements
14	Summary of Environmental Outcomes	Presents a summary of the key environmental outcomes arising from the EIA study
15	Conclusion	Summarises the findings and concludes the overall acceptability of the project

