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Planning and Engineering Study on Development of Lok Ma Chau Loop Stage One Public Engagement

PURPOSE

This paper is to seek Members' views on the Preliminary Outline Development Plans (PODP) and development proposals for the Lok Ma Chau (LMC) Loop and the environmental issues associated with the proposed developments.

BACKGROUND

2. In 2008, the Hong Kong (HK) and Shenzhen (SZ) governments agreed to jointly commission a planning and engineering feasibility study for the development of the Loop. In order to collect the public's views on the future land use of the Loop, a series of public engagement activities were carried out in HK and SZ simultaneously in June and July 2008. The outcome of the engagement exercise indicated that among the various uses proposed, higher education, research and development (R&D) of high technology industries as well as cultural and creative (C&C) industries received general community support.

3. The Planning and Engineering Study on Development of the Loop (the Study) commenced in June 2009. The study area comprises the Loop (i.e. Area A) and the adjoining area in HK (i.e. Area B). A separate planning study

is also commissioned by the SZ authorities for the adjoining area in SZ (i.e. Area C).

PRELIMINARY OUTLINE DEVELOPMENT PLAN FOR AREA A

4. Based on the result of the public engagement exercise conducted in 2008, the two governments considered that higher education could be the leading land use in the Loop, complemented by hi-tech R&D and C&C industries. These three main land uses form the basis for formulating the PODP in the Study.

5. The key features of the PODP are highlighted as follows:

Overall planning concept

(a) To foster cross-boundary exchange of talent, knowledge and technology in the area, the Loop comprises the following five zones:

- 'Education Zone' for higher education development;
- 'Innovation Zone' for hi-tech R&D and C&C developments;
- 'Interaction Zone' as a social interaction platform for the Loop users;
- 'Ecological Zone' for conservation purpose; and
- 'Riverside Promenade' for creating pleasant environment.

(b) To allow flexibility, the layout can be easily adapted to cater for different mix of the three main land uses proposed for the Loop.

Development parameters

(c) Taking into account its location and surrounding development, a total gross floor area (GFA) of about 1.2 million m² (amounting to a gross plot ratio of 1.37) is adopted.

- (d) The proposed development parameters of Area A are summarized below:

	Site area (ha)	GFA (m ²)	Plot ratio [#]	Maximum building height (No. of storey)	No. of hotel guests	Maximum no. of students	No. of staff/ workers
Higher education	22.4	720,000	3.2	15	-	24,000	6,000
High-tech R&D	8.5	330,000	4.8	15	-	-	16,500
C&C industries		81,000		15	-	-	4,050
Supporting commercial	1.2	60,000	5	12	500	-	2,670
Other uses e.g. boundary crossing facilities, sewage treatment works, district cooling system, fire station and transport interchange	6	9,000	<1	2	-	-	150
Ecological area	12.7	-	-	-	-	-	-
Open space	10.5	-	-	-	-	-	-
Amenity/ Activity corridor	15.9	-	-	-	-	-	-
Road	10.5	-	-	-	-	-	-
Total/Overall	87.7	1,200,000	1.37	-	500	24,000	29,370

The plot ratio is calculated on a gross site basis.

Urban design and open space framework

- (e) Linear strips of amenity/activity corridor are proposed within the Loop. Landscape features, planting, leisure facilities, cycle track will be provided in these corridors in order to achieve a comfortable, pedestrian and cyclist-friendly environment. Apart from providing greenery to enhance the quality of the environment, the corridors will be visually linked up with the long term proposed development of Area C in SZ.

- (f) To create a diverse and interesting skyline for the Loop, a stepped height profile is adopted. Low-rise developments for higher education, ranging from seven to eight storeys, are proposed along the edge facing SZ River. The proposed height of buildings for R&D uses in the west is about 15 storeys, whereas buildings ranging from eight to 15 storeys are proposed at the central and eastern part of the Loop. The building height would then progressively reduce to three storeys towards the ecological corridor in the south.
- (g) A 50 m-wide landscaped open space is proposed along the SZ River as a visual buffer to the boundary fence. Together with the two strips of public open space along the old meander, a total of about 10 ha of land are proposed for open space development to create a pleasant and green riverside environment. The interaction zone in the central part will also form the core open space of the Loop.

Traffic and transport

- (h) To provide convenient access to the Loop, elevated traveller and environmentally friendly transport modes such as automated people mover (APM) system, electric bus linking LMC Spur Line Station and the Loop are being investigated. A road connecting Fanling/San Tin Highway via LMC Road in the west and a road linking the proposed Kwu Tung North New Development Area (KTN NDA) in the east are also under study.
- (i) As a long term proposal, reservation has been made for provision of a link across the SZ River at the northern end of the Loop to Area C in SZ where a station of SZ Metro Line is planned. Subject to further study and agreement of the two governments, associated boundary crossing facilities may be further considered, if the link is to proceed.

Other supporting infrastructure

- (j) Land will be reserved on the PODP for supporting infrastructure which will include on-site tertiary sewage treatment works (STW), centralised district cooling system (DCS), electricity substations, fire station and boundary crossing facilities.

- (k) The water mains, drainage and gas pipes, electricity and tele-communication lines would be connected to the Loop along the western and eastern approach roads.

DEVELOPMENT PROPOSAL IN AREA B

6. The Loop is currently an isolated piece of land without any infrastructure provided. Area B of the Study is mainly intended for the provision of connection roads to serve the development of the Loop. According to the preliminary assessment, a western connection road through widening the existing LMC Road and a new eastern connection road to the proposed KTN NDA will be required to support the proposed development in the Loop.

7. Opportunity is taken to review the land uses alongside the proposed roads in Area B. It is revealed that sites along LMC Road (mainly zoned “Undetermined” on the San Tin Outline Zoning Plan) would have scope to support some rural commercial activities such as retail, restaurants or hostel facilities to complement the development of the Loop. In view of the capacity constraints of the LMC Road even after upgrading, the development potential of the sites alongside the western approach road is very limited. Besides, as the existing developments in most of these areas are low-rise and low density in nature, a maximum plot ratio of 0.4 and a maximum building height of three storeys are proposed for the future development in this part of Area B.

8. The eastern part of Area B, near Hoo Hok Wai, mainly comprises hilly terrain and grassland as well as wetland/fish ponds. As the fish ponds adjoining the eastern connection road are of high ecological value, they will pose challenges to the developments of this area.

DEVELOPMENT PROPOSAL IN AREA C

9. Area C in SZ mainly comprises the existing Huanggang Boundary Control Point (BCP). According to SZ, part of the site could be released for development in the long run. Moreover, the proposed SZ Metro Line (Route No. 7) will run through Area C with two stations located at its centre and eastern end.

10. According to SZ's planning study, land to be released from the Huanggang BCP is proposed to be developed as a R&D and information exchange zone, which should be complementary to the development of the Loop. The additional GFA is about 1.5 million m². A stepped building height profile with the lowest building fronting the SZ River will be adopted.

ENVIRONMENTAL ISSUES

11. The proposed Loop development is a Designated Project under the EIA Ordinance (EIAO). A statutory EIA study is being carried out under the Study. Major environmental considerations and concerns are highlighted in the following paragraphs.

Environmental considerations

12. The LMC Loop is planned to be developed into a sustainable, environmentally friendly, energy efficient and people-oriented community. To achieve this aim, one of the guiding principles on planning is to adopt a low carbon approach in developing and operating the buildings/facilities in the LMC Loop. The following green initiatives are being studied:

Green traffic and transport strategy

- (a) To minimize road traffic and vehicular emission within the Loop and to promote walking and cycling within the Loop, comprehensive cycle track and pedestrian walkway networks with extensive greenery will be provided in the Loop. Two transport interchanges (TIs) with parking facilities, environmentally friendly public transport and good connection to cycle tracks and pedestrian walkways are proposed to be located near the entrances to the Loop so that motorists will switch to green modes of transport inside the Loop.
- (b) Elevated traveller and environmentally friendly transport modes such as APM and electric bus are being investigated to provide a convenient link between LMC Spur Line Station and the Loop.

Ecological reserve

- (c) To compensate for the loss of existing reedbed/wetland resulting from the proposed developments and to preserve a flight path for birds and movement corridor for mammals, a strip of land of about 100 m in width with an area of about 12.7 ha is reserved as an ecological area in the southern flank of the Loop.

Low carbon sewage treatment strategy

- (d) An on-site tertiary STW is proposed to treat the sewage generated from the Loop development instead of conveying the sewage to existing STW far apart. The carbon footprint due to the construction of the rising mains and pumping stations and conveyance of sewage over long distances with an otherwise off-site STW option will be significantly reduced.

Water conservation and recycling

- (e) The on-site STW is planned to treat sewage to high effluent standards suitable for reuse. It is intended that the treated effluent will be re-used for non-drinking purposes such as flushing and irrigation.

District cooling system

- (f) A centralized DCS is planned to serve the Loop development for energy saving and carbon reduction. It will be further studied taking into account the technical feasibility, financial viability, implementation, operation and maintenance arrangement.

Other green initiatives

- (g) In the next stage of the Study, carbon appraisal will be conducted to estimate the carbon emissions of the proposed developments. Other initiatives such as requirements on green buildings and design, use of sustainable/green construction materials and application of renewable energy will be further explored.

Environmental constraints

13. The major environmental constraints are identified as follows:

Remediation of contaminated mud

- (a) The Loop was used before as a dumping ground for mud extracted from the SZ River training works. Based on the findings of the site investigation works, there are only five local spots with the metal ‘Arsenic’ slightly exceeding the limits stipulated in the “Risk-based Remediation Goals (RBRGs) for Contaminated Land Assessment and Remediation” promulgated by the Environmental Protection Department in August 2007. The problem is therefore not as serious as previously expected. Further investigation is being arranged to ascertain the detailed extent of contamination. Subject to the EIA, the contaminated mud will be treated using on-site decontamination before commencement of the construction works for the proposed developments.

Ecology

- (b) The Loop is close to Mai Po Nature Reserve and surrounded by fish ponds with high ecological value. Development of the Loop may directly affect reed marsh within it, causing indirect disturbance impacts on both the flight line and ground-level elements of the ecological corridor that traverses the area and disturbance of Eurasian Otter (水獺) habitats. The proposed layout in the Loop, notably the ecological area, has been formulated to address the concerns about compensating for the reedbed loss and maintaining the ecological corridor. The proposed eastern connection road near Ngau Kok Shan will have both direct and indirect impacts on fish ponds and wetland habitat. Its road alignment and design options will be further investigated to minimize the potential ecological impacts as far as possible.

Sewage treatment and sewerage infrastructure

- (c) Though the on-site STW is a low carbon option and has an added

advantage of reuse of the treated effluent, the requirement of ‘no net increase in pollution load in Deep Bay’ poses challenges to the proposal. Further study is on-going with a view to protecting the sensitive Deep Bay water and allowing the proposed developments at the same time.

Odour from SZ River

- (d) Current study findings reveal that there are two main odour emission sources along SZ River in the vicinity of the Loop, namely (i) confluence of Futian River and SZ River; and (ii) drainage culvert to the immediate west of the LMC BCP/Huanggang BCP Bridge. Both sources lie in SZ boundary. Exceedance of odour criterion is predicted for the cumulative odour impacts due to SZ River. We shall further liaise with the SZ authorities and conduct further investigation to address the odour issue. Possible mitigation measures will be proposed in the EIA.

PUBLIC ENGAGEMENT

14. The purpose of the Stage One Public Engagement exercise is to collect public views on the PODP as well as the preliminary development proposals for Area B. However, to facilitate the public to understand the content and planning rationale of the PODP as well as the proposals for Areas B and C in a comprehensive manner, information on Areas A, B and C has been included in the Public Engagement Digest (**Annex**). During the two-month consultation period, we will consult the relevant Boards/Committees, District Councils and Rural Committees. Briefing sessions will also be arranged for professional bodies and other interested organizations. A similar public engagement exercise is being conducted in SZ by SZ Government in parallel. The public views received will be taken into account in refining the planning proposals in the PODP.

15. After the Stage One Public Engagement, we will take on board amendments to the PODP and conduct more detailed impact assessments to prepare an EIA Report under the EIAO for approval.

ADVICE SOUGHT

16. Members are invited to give views on the development proposals for the Loop as detailed in the Stage One Public Engagement Digest and on the environmental issues mentioned in paragraphs 12 and 13 above.

Planning Department

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