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3 January 2020

Clerk to the Establishment Subcommittee  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
(Attn.: Miss Judy Yee)

Dear Miss Yee,

### Legislative Council Establishment Subcommittee

#### Follow-up Actions to the Meeting held on 18 December 2019

At the meeting of the Establishment Subcommittee (ESC) on 18 December 2019, Members requested the Government to provide supplementary information on the proposed creation of two supernumerary posts to oversee the implementation of the Common Spatial Data Infrastructure (CSDI), viz. the Chief Land Surveyor (CLS) (D1) post in the Development Bureau (Planning and Lands Branch) (DEVB(PLB)) and the Government Land Surveyor (GLS) (D2) post in the Lands Department (LandsD). The consolidated replies from the DEVB(PLB) and LandsD are as follows:

- (a) **Details of the 140 current spatial datasets and the additional 70 spatial datasets including the concerned bureaux/departments, datasets format, data conversion processes in implementing data sharing, related legislative issues to be resolved; and the required expenditures in data conversion.**

For the some 140 current spatial datasets released through the Hong

Kong GeoData Store (alpha version of the future CSDI portal), they are mostly the locational information of public amenities and facilities, including government office premises and facilities; schools; hospitals; clinics; community and social service facilities; cultural, leisure and sports facilities; postal services facilities; job centres; country and marine parks; licensed hotels and guesthouses; government land on short-term tenancy or available for leasing by non-governmental organisations; and population census statistics. These datasets are contributed by a wide range of bureaux/departments (B/Ds) and public organisations including Agriculture, Fisheries and Conservation Department; Census and Statistics Department; Department of Health; Education Bureau; Environmental Protection Department; Food and Environmental Hygiene Department; Home Affairs Department; Hospital Authority; Hongkong Post; Immigration Department; Lands Department; Labour Department; Leisure and Cultural Services Department; Office of the Government Chief Information Officer; Social Welfare Department; Transport Department; and Urban Renewal Authority. Hong Kong GeoData Store has converted these datasets into open and machine-readable formats of GeoJSON, GML, KML, and CSV together with an Application Programming Interface<sup>1</sup> (API) to facilitate free download and use by the public.

As for the some 70 new datasets to be made available through the future portal of the CSDI for public use by end 2022, they cover infrastructural facilities and public amenities including drainage, sewerage and waterworks facilities; underground storm water and sewerage pipes; natural and man-made slopes; buildings; road network; 3D pedestrian network; real-time parking vacancy space of Kowloon East; and old and valuable trees and stonewall trees, as well as other datasets including Outline Zoning Plans and other planning data; addresses; smaller scale maps; and population projections. These datasets are mainly contributed by departments under DEVB, including Architectural Services Department; Buildings Department; Civil Engineering and Development Department; Drainage Services Department; Energizing Kowloon East Office; Lands Department, Planning Department and Water Supplies Department. In a bid to enrich the CSDI datasets and enhance their usefulness to the general public, the Spatial Data Office (SDO) under DEVB has reached out to B/Ds beyond DEVB's regime to see whether they are willing and ready to release

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<sup>1</sup> An API is a tool that enables a software application to share its functionalities and data with other software applications. It can greatly facilitate application development by allowing application developers to integrate specific functionalities and data to their applications without having to "reinvent the wheel" and spending time to create functionalities and data that already exist.



their datasets through the CSDI portal. Response has been positive. Subject to further discussion with B/Ds on the technicalities involved, non-DEVB datasets including excavation permit information; public transport stops; metered on-street parking location with vacancy information; cycling track and parking space; and past population census statistics are also expected to be made available through the CSDI portal by end 2022.

Datasets to be released through the CSDI portal are required to meet the CSDI standards, which include conversion of spatial data to an open and machine-readable format, documentation of data specifications<sup>2</sup> and metadata<sup>3</sup>, establishment of API and geo-tagging of non-spatial data.

While the above 140 datasets are already in open and machine-readable formats with API, they are however without data specifications and metadata. Similarly, the majority of the 70+ additional spatial datasets are not yet CSDI-compliant. For example, some data, though machine-readable, are in proprietary format, necessitating data conversion efforts; some data are in textual format, which need to be geo-tagged into spatialised data; some data have metadata but not in format required by the CSDI standards; all the 70+ datasets have no data specifications nor developed API. The above 210+ datasets as well as those from non-DEVB departments will require different degree of data conversion efforts to render them fully compliant with the CSDI standards and ready for sharing through the CSDI portal. To this end, subject to the approval from the Finance Committee for allocating \$300M for the development of CSDI and 3D digital map in due course, \$30M has been earmarked for assisting B/Ds to enhance the datasets to meet the CSDI standards.

**(b) Details of the proposed 4 quick win projects to be implemented under the CSDI portal including how to consult and collect stakeholders' views.**

The "Consultancy Study on Development Strategy of a CSDI" (hereinafter "Consultancy Study") commissioned by DEVB and completed in 2018 has recommended amongst other things that the Government

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<sup>2</sup> Data specification is to enable users to understand the definition and details of a dataset including data definition, data content and structure, data quality, data workflow and data maintenance, delivery and exchange etc.

<sup>3</sup> Metadata is to enable users to discover data, determine data fitness for use, data access and use of data. Metadata shall provide summary information on the data including, but not limited to, data inventory or catalogue; geospatial coverage; conditions applying to access to and use of spatial datasets; the quality of spatial data and the custodian agencies.

should identify some quick win projects to demonstrate the value of CSDI early on. Amongst the potential quick wins recommended by the Consultancy Study, we have selected the following four projects for implementation (details of which are set out in paragraph 8 of our paper EC(2019-20)13 submitted to ESC for the meeting to be held on 8 January 2020):

- (i) Map API;
- (ii) Geo-tagging Tool;
- (iii) Address Data Infrastructure (ADI); and
- (iv) District-based Spatial Information Dashboard

To help us better anticipate the required processing capacity of the CSDI portal when launched together with the four quick wins for public use by end 2022, we have released the testing version of the Map API on the Hong Kong GeoData Store in end October 2019. A hit rate of 2,700 was recorded on the first day and the total hit-rate reached 438,000 in the past two months. We are encouraged by these figures which show that the public including application developers have a strong demand for downloading our web map services for development of mobile applications amongst other things.

The four quick wins have been recommended in the Consultancy Study after taking into account the views of stakeholders both within and outside the Government. Having regard to the views expressed by Members at the ESC meeting on 18 December 2019, we have started consulting the respective District Councils since 23 December 2019 on the types of district-based data to be included in the District-based Spatial Information Dashboard. SDO will also shortly set up the Common Spatial Data Advisory Committee to engage the non-governmental sector and tap outside experts and stakeholders' advice on how best to develop the CSDI for full operation by end 2022 that can suit the needs of society and economy.

**(c) Annual recurrent costs of the CSDI portal and three-dimensional (3D) digital map and the expected economic benefits**

**(i) Annual recurrent costs of the CSDI portal and 3D digital map**

The estimated annual recurrent costs of the CSDI portal and 3D



digital map<sup>4</sup> to be incurred from 2024-25 onward are \$17.5 million and \$22.1 million respectively. Both annual recurrent cost estimates are around 15% of the one-off implementation costs, generally comparable to the corresponding percentage for other information technology projects.

**(ii) Expected economic benefits of the CSDI portal and 3D digital map**

On a strategic level, the CSDI portal and 3D digital map are core components of the digital infrastructure underpinning Hong Kong's smart city development. By having the ability to integrate different datasets, analyse a large volume of data and present the data analysis in innovative and informative formats, the CSDI portal and 3D digital map can open up a wide range of possibilities which would otherwise not materialise. They can also promote a data-driven problem solving approach whereby the Government, businesses and the general public can visualise and analyse spatial data to make better decisions, create economic opportunities, and improve daily living.

For example, spatial data and 3D mapping allow planners in the Government to perform sophisticated modelling and simulation to analyse noise impact or heat island effect in our complex urban environment. Businesses such as fast food chains can leverage spatial data such as consumer demographics and commuting patterns to determine optimal locations for their stores. Through the CSDI portal, the public including application developers can access detailed and authoritative map content which can be customised to their daily contexts such as providing public transportation options for point-to-point travels.

Many places such as the United Kingdom (UK) have recognised the economic and social values of sharing spatial data with businesses and the general public. The report entitled "An Initial Analysis of the Potential Geospatial Economic Opportunity" released by the UK Cabinet Office in August 2018 has estimated that data sharing with the private sector could unlock up to £6-11 billion per year of economic value, while better use of spatial data in the public sector will create additional economic and social value, though this has not yet been sized. This initial analysis has contributed to the UK Government's decision of setting up the Geospatial

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<sup>4</sup> Including cloud hosting services, communication network, staff expenses for CSDI maintenance support, training and promotion, and consumables for the CSDI portal; and including staff expenses for 3D digital map maintenance support, office accommodation cost and training for the 3D digital map.

Commission under the Cabinet Office in 2018<sup>5</sup>.

**(d) Details of the calculations of the salaries and staff on-costs for government officers at Directorate Pay Scale Point 1 (D1) and Directorate Pay Scale Point 2 (D2).**

The annual salary costs of the CLS (D1) and GLS (D2) posts are the annual salaries calculated at the mid-point salaries (to the nearest pay point) of the pay scales of the respective ranks. On the other hand, the full annual average staff costs are the full annual costs of staff in average terms calculated from the total costs of the 2018-19 annual basic salaries and fringe benefits (such as retirement benefits, housing benefits, medical and dental benefits, and leave passage) of the CLS and GLS ranks respectively, with reference to the strengths of the respective ranks.

Separately, we have beefed up as appropriate our submission for the next ESC meeting on 8 January 2020 to address other concerns raised by Members at the last meeting, including why the two posts should be filled by members of the land surveyor grade, as well as the operational justifications for the supernumerary CLS post in DEVB(PLB).

Yours sincerely,



(Winnie SHIU)

for Secretary for Development

c.c. Deputy Director/Survey and Mapping, Lands Department

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<sup>5</sup> The Geospatial Commission is an expert committee that sets the UK's geospatial strategy and promotes the best use of geospatial data.