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Forging a Resilient Future
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Title:
Driving Geospatial Innovation in a Unique Collaborative Environment

Greetings

Distinguished guests,

Ladies and gentlemen,

1. It is my pleasure to join you, virtually, at the 2020 ESRI Singapore User Conference. The Singapore Land Authority and I are deeply honoured to have this opportunity to speak on how we together shall go forward in geospatial, amid this pandemic.

2. Imagine what life would be like without technology – without your computers, the internet, and other digital friends? Many of

you would agree that technology, when working seamlessly in the background, is something we take for granted nowadays. It has become something we cannot live without. This is especially so, in such a time when some businesses have been forced to close, and people need to adapt to new working arrangements.

Navigating COVID-19 by Mapping Data and Patterns

3. The COVID-19 pandemic has thoroughly upended the status quo in almost every corner of the world. As the pandemic continues to unfold, organisations are using tools to identify underlying relational data and visualise patterns over space and time. Many of you would have realised by now, geospatial has emerged as a powerful technology, assisting health authorities to monitor, analyse and model in the effects of the pandemic, as well as helping cities and countries to safely manage, navigate and emerge from this pandemic.

Combating COVID-19 with Geospatial Technology

4. The leading example is the Coronavirus Resource Centre at John Hopkins University which created a near real-time interactive dashboard on the spread of Covid-19. It helps health authorities and researchers, and in fact everyone who has internet access, to monitor and swiftly respond to the pandemic.

5. In Singapore, public agencies use geospatial to create portals such as *NParks' Safe Distance* @ Parks and URA's *SpaceOut* to help people avoid crowded areas. *OneMap* has helped people to locate nearby essential amenities, such as clinics, supermarkets and eateries. GovTech and the Ministry of Health use OneMap for *Flu Go Where* and *Mask Go Where* – to help you and I locate the nearest public health clinics and mask collection points.

6. There are many other such similar examples around the world. One sticking issue has, however, emerged – that is, individual privacy concerns in location tracking. This has somewhat lessened the use of geospatial in a pervasive and effective manner in tackling the spread of Covid-19. Not just us in Singapore, this issue affects many other countries as well.

Accelerated Growth of Geospatial Market

7. While the concern on location privacy awaits innovative policy and technical solution, it has not slowed down the adoption of geospatial in other areas. According to Inkwood Research, the global geospatial market is projected to grow at a Compound Annual Growth Rate (CAGR) of over 14% by 2028, with Asia Pacific being the fastest-growing region – at a rate of 15.71%. Despite current uncertainties surrounding this pandemic, such high projected growth rates signify the vast untapped potential in the geospatial industry.

Future Trends in the Geospatial Industry

8. A large part of the growth, as we have observed, would stem from a rising convergence of geospatial technology, location-based services and enterprise IT into one integrated system in today's world. We are witnessing an unmistakable trend of geospatial moving from being a vertical to becoming a horizontal. As we enter a new chapter of human development, or the 4th industrial revolution as we know it, innovative breakthroughs and trends that integrate geospatial with other emerging technologies such as AI and IoT, will lay the groundwork for its mainstreaming and mass adoption.

9. At heart, I believe that every cloud has a silver lining. It is during times of crises where we find opportunities for government agencies, industry players, and individuals like you and me, to work together and leverage on new technologies. As the breadth, depth and speed of technological integration, and the on-going pandemic are forcing nations to reassess and reinvent

existing practices and frameworks, I want to share with you how we can work with one another to drive innovation, in a unique collaborative environment, and towards a geo-led future.

Leading the Geospatial Arena Through the Geospatial Masterplan

10. With a proliferation of geographic data across different industries such as transportation, utilities and services, it is crucial for government agencies to play a facilitative role in jumpstarting collaborative efforts. For this reason, SLA takes the lead in uniting various stakeholders through *the Singapore Geospatial Masterplan*. The masterplan covers 3 interdependent pillars – a *GeoSmart* government, a nation of *GeoEmpowered* people, and a thriving *GeoIndustry* – to articulate the common vision of a Geospatial-Powered Singapore.

11. To position Singapore as a vibrant *GeoHub* of the region, we have set up GeoWorks, Singapore's geospatial industry centre. This is probably a world's first! It currently hosts more than 42

companies consisting of both geospatial scale-ups and large established geospatial organisations. ESRI, one of our geo-partners, has greatly supported GeoWorks, and this important conference is now a major anchor of the ongoing Singapore Geospatial Week, that being the most significant geospatial industry event in a year in Singapore, if not in the ASEAN region.

12. The Singapore Geospatial Week this year brings together 60 webinars across 2 weeks, showcasing the insights, journeys and enterprise of geospatial enthusiasts from our local community and all over ASEAN. This is only made possible with the valuable partnerships we have forged together as a geospatial community.

13. Overall, our collaborative spaces—both online and physical—allow for open interactions and networking. This brings us closer as a community and creates business opportunities for the whole geospatial industry. The fruition of the Singapore

Geospatial Week is a result of the combined efforts of various agencies, industries, academia and communities.

14. With all that said, like technology, almost no innovation can be attributed to a single source. I believe that governments, by and large, should exercise their strengths as a trusted party to bring diverse groups of stakeholders together. Concurrently, the private sector can exercise their ability to innovate, and tap into global markets.

Leveraging Strengths Through 3D Singapore Sandbox

15. Given the greater need for better and more accurate analysis using geospatial data, it is timely that SLA launched the *3D Singapore Sandbox* earlier this year. It is a first-of-its-kind collaborative environment to promote business growth and drive innovation among geospatial firms. In this initiative, 3D geospatial models of over 160,000 buildings nationwide,

coupled with other 2D data, are provided by SLA to industry partners such as ESRI and Autodesk. They then turn the models and data into digital twins using their tools and platforms, and develop innovative services focusing on the architectural, engineering and construction industry. The firms in the AEC industry can now try out a good range of 3D solutions from a variety of geospatial firms to solve their problems and cater to their business needs.

16. The 3D Singapore Sandbox is hosted at GeoWorks. The Sandbox is open to anyone interested to have a taste of digital twins of Singapore. Due to the Covid-19 situation, we have suspended its operations for now, and are working very hard towards reopening it as soon as the situation allows, with safe distancing measures in place. Do look out for our announcement.

17. The 3D Singapore Sandbox is yet another example of working together to drive innovation and promote business growth. I have not seen a similar arrangement in other parts of the world.

This really underscores the collaborative nature of our operating environment in Singapore, where the government and the industry play our respective strengths in meeting the needs of our stakeholders.

Collaborating with Stakeholders to Push Geospatial Capability Building

18. Apart from driving innovation to meet demands from the user industry, let us not forget the need to strengthen geospatial competency among our people. To this end, SLA is leading geospatial cluster development efforts by working closely with agencies and learning institutions to initiate strategies in education, workforce development and accessibility to geospatial tools.

19. At the university level, we now offer geospatial scholarships that span 8 agencies to individuals who want to pursue geospatial and geospatial-related courses. Simultaneously, in

collaboration with the private sector, the ESRI's *Boustead-Esri Geospatial Scholarship* offers attachment opportunities with public agencies for the scholarship recipients to gain insights into the geospatial profession.

20. At the public sector level, SLA has widened its capability building efforts to include geospatial training and re-skilling courses for all public officers. Since 2008, we have trained more than 3,600 public officers through courses such as Geospatial 101, and the Geospatial Foundation Programme. We are currently working with several agencies to develop *Geoplay* and a new *Geospatial101* to promote geospatial awareness, and develop specialised skills in data science, data acquisition and management, as well as system and applications development. These courses complement the Geospatial Competency Framework that support the professional development and growth of geospatial experts. We are seeking industry feedback on the competency framework and working on the details of the

different knowledge and skillsets required for Geospatial Smart Users, Specialists and Experts. Overall, this framework forms the cornerstone for future initiatives towards geospatial capability building.

21. As the saying goes, one is never too old or too young to learn. More opportunities exist to deepen our technological capabilities to meet emerging response needs related to dynamic geospatial data. Surely, this growth mindset is most crucial in a time like this.

Closing

22. In closing, I wish to share a thought I have on this frequently used phrase “Data is the New Oil”. Yes, it highlights the immense value of data. But I would venture to distinguish the two. Oil is known to be a scarce and finite resource. Data is not. Data is growing exponentially each day, as you know. We also know that more than 70% of the data we see is geographic in nature. Faced with this enormous amount and ever-growing types of

geospatial data, the opportunities for the geospatial firms and the geospatial professionals, like you and me, are aplenty. We are entering the golden era of geospatial. What are you waiting for? Let us seize the opportunities together in no time.

23. Well, we are indeed living in dangerous times with this mega pandemic. But it is also in these times when we can marshal the strengths to band together and pick ourselves up—not just to survive—but to prosper.

24. On this note, I wish all of you a fruitful virtual conference. Thank you.