

Exemption from Tender - Aerial Photography

File No: X121701

Summary

This report seeks an exemption from tender for the City of Sydney's procurement of aerial photos.

Aerial photos are critical information in the City's Geographic Information System (GIS) for operations and decision-making. Aerial photos allow City staff to view the real world from above in 2d and 3d. The photos are overlayed onto spatial basemaps and spatial layers (such as property and planning boundaries and position of assets). The overlaying of the photos is extremely accurate, with a precision of within 10cm to the world's coordinate system.

Since 2018, the City has engaged Aerometrex Pty Limited (ABN 94 153 103 925) to provide off the shelf, high resolution, true orthographic, downloadable aerial photos to overlay on spatial basemaps and layers to improve and augment the City's existing GIS information.

This report recommends that, in accordance with section 55(3)(i) of the Local Government Act 1993, Council grant an exemption from tender for the provision of aerial photography services for a period of 3 years.

Recommendation

It is resolved that:

- (A) Council approve an exemption from tender in accordance with section 55(3)(i) of the Local Government Act 1993 to purchase aerial photos from Aerometrex Pty Limited for the amounts set out in Confidential Attachment A, to the subject report as a satisfactory result would not be achieved by inviting tenders at this time;
- (B) Council note that a satisfactory result would not be achieved by inviting tenders for aerial photos because:
 - (i) market scanning reveals that Aerometrex Pty Limited is the only supplier that meets the City's essential requirements that the photographs be:
 - (a) high resolution;
 - (b) true orthographic (overhead aerial orientation);
 - (c) off the shelf and taken at regular time intervals; and
 - (d) downloadable at full resolution and able to be stored within the City's GIS; and
 - (ii) the very specific and niche nature and location of the services means that the number of suppliers who provide a service that meets the City's essential requirements is very limited and static;
- (C) Council note that there are sufficient funds allocated for this service within the current year's operating budget and future years' forward estimates; and
- (D) authority be delegated to the Chief Executive Officer to negotiate, execute and administer the contract/s for a term expiring on 30 June 2028.

Attachments

Attachment A. Market Review and Financial Implications (Confidential)

Background

1. Aerial photos are critical information in the City's Geographic Information System (GIS) for operations and decision-making. Access to regular updates of aerial photos allows City staff to view changes over time.
2. Aerial photos allow City staff to view the real world from above in 2d and 3d. Aerial photos can be oblique (from an angled perspective) or orthographic (directly overhead). Note that oblique photos do not meet the City's requirements. Orthographic aerial photos are overlayed onto spatial basemaps and spatial layers (such as property and planning boundaries and position of assets). The overlaying of orthographic photos is extremely accurate, with a precision of 10 cm to the World's coordinate system.
3. Aerial photos can be captured by satellite, aeroplane, helicopter, drone and hot air balloon.
 - (a) Satellites are too far from the earth to capture imagery in high enough resolution for the needs of the City. Their orbit path is not conducive to capturing the whole local area on a single day, revisit times are weeks apart and often not scheduled in the middle of the day.
 - (b) Helicopters, drones, and hot air balloons cannot practically be deployed in sufficient parallel flight paths to capture the whole local area.
 - (c) Aeroplanes are the only suitable vehicle for orthographic aerial photography of the local area.
4. Orthographic aerial photos are taken by light aircraft equipped with special, high-technology cameras. The aircraft fly in parallel lines over geographic regions taking many overlapping photos, which are then stitched together, colour-balanced, and geo-coded so they can be accurately overlayed onto the spatial basemaps. The altitude of the camera must be low enough to sufficiently capture the scene in high resolution whilst avoiding obliqueness at the edges of images, which can distort tall buildings and cause them to appear to be leaning.
5. The cost of procuring custom aerial photos for a single customer is prohibitive as there is significant expense in getting a light aircraft into the air. There are also expenses related to logistics such as air traffic control clearances and limited flying time windows. Prior to 2011, the City purchased custom aerial photos, but the high cost resulted in photos only being purchased every 3 to 5 years.
6. Since 2011, the City has purchased off-the-shelf aerial photos on a regular basis, and from 2018 up to four times a year. This only became possible due to reduced cost (advances in camera technology and subsequent image processing and spatial processing by the supplier) and the benefits of economies of scale with the supplier capturing a large geographic extent comprising multiple council areas at the same time. Having regular updates to aerial photos allows City staff to view changes over time - for example, changes in road and rail works and development activity. Purchasing aerial photos on a quarterly basis currently meets the City's requirement of the photos being sufficiently up to date.

7. There is no guarantee of availability or quality of aerial photos due to external factors such as poor weather, inappropriate time of day, shadows, air traffic control restrictions, etc. A requirement of the City is to be able to evaluate the photos before purchasing and not purchasing photos that do not meet minimum quality standards.
8. To ensure adequate user experience of the GIS, the City requires aerial photos to be stored at high resolution within the GIS, along with basemaps, cadastre, and other spatial layers. An alternative is to have the GIS access a supplier's servers under subscription and render the aerial photos on-demand in the GIS. However, this introduces latency, which impacts the GIS responsiveness for the user. Also, the City not having the aerial photos within the City's GIS means that the City is unable to retain the photos over time, which does not comply with the State Records Act 1998 (NSW) and prevents the City from maintaining a history of change over time.
9. A market review has been undertaken to evaluate suppliers and findings are included in Attachment A. There is only one supplier, Aerometrex Pty Ltd (ABN 94 153 103 925), that meets the City's requirements of: 1) high resolution; 2) true orthographic; 3) regular time interval off-the-shelf aerial photos; 4) downloadable at full resolution and able to be stored within the City's GIS.
10. The City has purchased aerial photos from Aerometrex since June 2018 as stand-alone products under stand-alone purchase orders with supplier terms and conditions. Itemised expenditure is contained in Attachment A.

Performance Measurement

11. The City reviews each available photo capture. If the photos do not meet minimum quality standards of image resolution, shadows and cloud cover, precision to world coordinate system, and acceptably low building distortion, they are not purchased.

Risks

12. The City's risk appetite for service delivery encourages new opportunities and has minimal appetite for disruption to regulatory services. If City staff do not have access to recent aerial photography they cannot conduct desktop reviews before visiting sites in the field, limiting informed decision making and impacting timelines and thereby service delivery.
13. This request for an exemption from tender presents very low risk as the products are low cost, and no commitment to purchase has been made. Approval of this request to purchase Aerial photography is within the City's risk appetite.

Financial Implications

14. There are sufficient funds allocated for this project within the current year's operating budget and future years' forward estimates.

Relevant Legislation

15. The exemption from tender process has been conducted in accordance with the Local Government Act 1993 and the Local Government (General) Regulation 2021.
16. Local Government Act 1993 - Section 10A provides that a council may close to the public so much of its meeting as comprises the discussion of information that would, if disclosed, confer a commercial advantage on a person with whom the council is conducting (or proposes to conduct) business.
17. Attachment A contains confidential commercial information which, if disclosed, would prejudice the commercial position of the organisation that supplied it.
18. Discussion of the matter in an open meeting would, on balance, be contrary to the public interest because it would compromise Council's ability to negotiate fairly and commercially to achieve the best outcome for its ratepayers.

Options

19. An alternative supplier of regular aerial imagery exists in the market. However, that supplier does not meet the City's requirements that the photos must be precisely positioned to world coordinate system, contain acceptably low distortion of buildings, and be able to be downloaded at full resolution and stored within the City's GIS.
20. Alternative suppliers of custom, bespoke capture of aerial photos exist in the market. However, the cost would be approximately four times greater, resulting in aerial photos only being purchased once per year. This does not meet the City's requirement of the currency of the aerial photos.
21. The market review of alternative suppliers is available in Attachment A.

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