

Clause No. 7 in Report No. 5 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on November 21, 2013.

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2014 TO 2018 ORTHOPHOTOGRAPHY RENEWAL

Committee of the Whole recommends adoption of the following recommendations contained in the report dated November 7, 2013 from the Executive Director, Corporate and Strategic Planning:

1. RECOMMENDATIONS

It is recommended that:

1. Council approve the award of a contract to First Base Solutions Inc. for annual orthophotography and digital elevation model on the following terms:
 - a) the term of the agreement be for a period of five (5) years commencing on December 1, 2013 and expiring on December 1, 2018;
 - b) the Region pay First Base Solutions Inc. approximately \$88,000 per year with a 5% increase each year for a total cost of \$481,000, excluding HST.
2. The Executive Director, Corporate and Strategic Planning be authorized to execute the agreement with First Base Solutions Inc. on behalf of the Region.

2. PURPOSE

The Purchasing Bylaw requires a competitive procurement process where the cost of goods or services exceeds \$100,000. This report seeks Council approval to enter into a 5 year agreement with First Base Solutions Inc. as an exception to the requirement for a competitive procurement process for reasons outlined in the report. The agreement is to acquire orthophotography and an updated digital elevation model on a yearly basis on behalf of the Region and the members of the YorkInfo Partnership which include the nine (9) local municipalities, two (2) school boards, and two (2) conservation authorities.

3. BACKGROUND

Up-to-date orthophotography combined with other data is integrated into operational systems used by York Region staff, local municipal employees and York Regional Police

Digital orthophotography has become essential information in support of Regional and YorkInfo Partners operations, programs and strategies. Orthophotography is a photograph of the earth's surface usually taken from an aircraft or a satellite.

Detailed orthophotography and elevation data have proven to be a high-impact tool that provides rich geographic context for such activities as the VivaNext planning and land acquisitions; planning infrastructure; community and long range planning analysis; emergency response; and communication with the public.

Orthophotography has become an essential tool for staff in their day to day operations. The images have been integrated into asset management systems such as Cityworks and Maximo and with road and parcel information in the police helicopter navigation system. The collection of imagery also provides us a view of the past and has been used in court for bylaw violations, tree cutting and legal cases.

The public get access to all of the orthophotography the Region holds through YorkMaps, the Region's internet mapping site.

Since 2002, the Region has acquired orthophotography and elevation data from First Base Solutions Inc.

Digital orthophotography was acquired for York Region starting in 1995. Subsequent acquisition in 1999, 2002, 2005, 2007, 2009, 2011, 2012 and 2013 were made to meet Regional growth management needs and operations. First Base Solutions Inc. (FBS) has been under contract with the Region for twelve (12) years as the provider of orthophotography and digital elevation model. FBS has been the successful vendor for each of the competitive Request for Proposals, three (3) over the last twelve (12) years, released by the Region. They have a proven track record of providing excellent quality, service and responsiveness to the Region and its Partners.

First Base Solutions Inc. is offering the option to acquire the imagery through a licence agreement. For the first time York Region has the option to licence an existing orthophotography data set from First Base Solutions Inc. instead of incurring the cost of collecting the data itself providing a substantial savings in cost to York Region. This option permits the acquisition and usage of this data at a reduced cost compared to purchasing the data outright.

The existing licence contract with J.D. Barnes Limited and its wholly owned subsidiary First Base Solutions Inc. provided orthophotography for 2009 to 2013 and this contract expires in 2014.

York Region has acted as the primary subscriber for the YorkInfo Partnership that includes 14 organizations

The Region has acted as the primary subscriber of orthophotography and its digital elevation model on behalf of the YorkInfo Partnership comprised of the nine (9) local municipalities, two (2) school boards, and two (2) conservation authorities since 1995. The Partners have access to the imagery and derivative products by signing a sublicense with the Region. Partnering provides everyone with consistent orthophotography and the ability to see changes within the area of interest over the years.

As in previous year's acquisitions, the Region solicited the YorkInfo Partners to see who was interested in participating in sharing the cost to licence the orthophotography on an annual basis. All of the YorkInfo Partners have agreed to participate and pay 55% of the York Region's cost with the Region paying 45% to acquire the orthophotography and digital elevation model. The funding model was based on the population and area of each of the municipalities.

4. ANALYSIS AND OPTIONS

Licensing orthophotography compared to owning the data allows for large cost savings

Purchasing through a right to use licence agreement allows for the acquisition and usage of the data at a reduced cost compared to purchasing the data outright. Licenced orthophotography is significantly cheaper than purchasing for outright ownership. The licence agreement places limits on what the Region is able to do with the data. Under the terms of the licence agreement the Region can share the data with "registered associates" including municipalities, school boards, and conservation authorities. This also includes municipally-owned corporations and contractors working on their behalf. Through the licence, the Region and its registered associates have the right to use this data in perpetuity.

First Base Solutions Inc. is the only vendor to offer orthophotography and elevation data through a license agreement

As the only vendor to offer a licence agreement, FBS' licencing model is unique in the industry. They retain ownership and intellectual property of the data, in order to be able to licence its usage to multiple users. This enables the full cost of the data collection to be

spread across multiple unrelated purchasers. First Base Solutions Inc. can therefore offer orthophotography at a significantly lower cost.

Purchasing from First Base Solutions Inc. will save Regional and local staff time to merge with new orthophotography and existing mapping data

While it is generally agreed that orthophotography is a valuable Geographic Information Systems (GIS) layer, it is costly to acquire on your own and moving to a different vendor incurs costs as well. For each acquisition since the Orthophotography program began, the Region has partnered with the YorkInfo Partnership to make the purchase. An advance in technology provides greater picture resolution with the use of digital cameras while flying at the same altitude. This has lowered the cost of acquiring orthophotography.

The Region's first acquisition in 2002 cost approximately \$450,000 for one collection. The 2005 contract allowed for two deliveries of data for 2005 and 2007 at a cost of \$500,000. The 2009 contract allowed for 3 deliveries in 2009, 2011 and 2013 at a cost of \$400,000. All deliveries since 2002 included both orthophotography and digital elevation data. The cost of the orthophotography and digital elevation data would increase if the Region were to move to another vendor for the acquisition. This additional cost would be due to staff time to conduct quality control of the data before acceptance, and moving the layers of data to match the existing orthophotography.

While there are other companies offering some of the services as First Base Solutions Inc., they will need to establish control points to position the imagery. FBS also has multiple sales of the same orthophotography, thereby reducing costs to individual purchasers which then contributes to the overall cost distribution amongst the purchasers. Costs will increase with having to collect a new set of control points and having no additional sales of the orthophotography and digital elevation model. The cost of the acquisition will increase approximately \$50,000 to \$65,000. The real savings comes with having multiple sales of the orthophotography reducing the overall cost for everyone.

The Region and its Partners require orthophotography and digital elevation model to be of a consistent specification with previous years of orthophotography. Using First Base Solutions Inc., who is the owner of the ground control points, allows all Partners to receive imagery that fits with all years of previous imagery. The consistent specification provides us with imagery that has no effect on the integration of orthophotography into applications such as the Police helicopter navigation systems. This consistency of the data reduces time in realigning any vector data such as roads and parcel, some of the core data available. The resolution of the imagery will remain at 15 cm for internal use and mapping websites such as YorkMaps.

Option to acquire orthophotography on a yearly basis from First Base Solutions Inc. benefits the members of the YorkInfo Partnership and saves time and money

First Base Solutions Inc. is offering the Region and its current Partners, including York Regional Police access to imagery captured annually. The previous contracts provided us new imagery and updated elevation data bi-annually. Staff often asked when the next update of the imagery would occur; they needed more current information on the changing landscape. More frequent orthophotography helps with operational decision-making.

The First Base Solutions Inc. arrangement allows the Region to determine the term of the agreement. Previous contracts were between 4 – 5 years each. The five year term balances cost effectiveness against potential changes in orthophotography technology that may influence the price in the future. The current digitally-based orthophotography process will likely be the technical standard over the next few years, but further advances in orthophotography and processing have the potential to bring the cost down in four or five years. For this reason a five year term seems optimal in balancing cost and the technical consistency of the product delivered.

The YorkInfo Partnership has been pleased with the orthophotography and services from FBS and is supportive of a 5 year term, as it enables stable budgets for their organizations. The FBS agreement also offers refreshed elevation data in 2016.

YorkInfo Partners participate in the cost of acquiring imagery over a five (5) year period

York Region has solicited participation from the YorkInfo Partners to share in the acquisition and cost of jointly purchasing the orthophotography and its digital elevation model. All members of the Partnership have agreed to make this purchase which will allow us to have access to the most up-to-date imagery on an annual basis. The frequency of access will allow the Region and its Partners to have quality images to support decision making.

Link to Key Council–approved Plans

The orthophotography program supports the *2011 to 2015 Strategic Plan* in the priority area of “Strengthen Organizational Capacity” as it provides ongoing access to a consistently managed information resource for Regional staff and staff in other organizations.

5. FINANCIAL IMPLICATIONS

Utilizing the same vendor with a licence agreement format offers the Region and its Partners a lower cost

First Base Solutions Inc. offers considerable financial benefit in several areas. Their approach provides the Region and its partners with the same consistent technical specification for imagery on a yearly basis, 2014 through 2018, and digital elevation model for a cost of \$481,000. The annual price is specified and stabilized for a five (5) year period.

First Base Solutions Inc. proposed a payment schedule that will allow the cost of elevation data to be spread across the 5 year period to minimize budget fluctuations. The funds required for the orthophotography are budgeted in the annual Operating Budgets for Geographic Information Services and no additional annual amount is required related to this item.

6. LOCAL MUNICIPAL IMPACT

Geographic Information Services held discussions with the YorkInfo Partners on their requirements as well as the opportunity for ongoing cost sharing and avoidance of duplication. All members of the YorkInfo Partnership have agreed to cost share for a total value of 55% of the cost of acquiring the orthophotography and digital elevation model. The data will be made available to members of the YorkInfo Partnership in the Region's continued efforts to share data, application and resources. In the past, the YorkInfo Partnership's cost of the orthophotography and the digital elevation model averaged 50% less than if they purchased the information independently from the vendor. Signing a licence agreement with First Base Solutions Inc. will benefit both the Region and the YorkInfo Partnership with the same geographic currency across multiple jurisdictions.

7. CONCLUSION

Up-to-date orthophotography is an essential tool to the Region, YorkInfo Partners and York Regional Police. It helps staff to make informed decisions in our rapidly changing region and is a useful aid in visualizing the changing landscape of the Region. Orthophotography is used to support operational decisions by reducing the need for site visits – confirmation of encroachment complaints or zoning infractions, identification of rooftop equipment and being able to calculate the area of a site. Orthophotography integrated directly into applications is becoming more frequent. York Regional Police has the orthophotography available in their helicopter navigation system; identifying

buildings and accurate addresses to guide the ground patrol to the scene with little confusion. It is also accessible on a daily basis to the public through the internet.

The proposed agreement with First Base Solutions Inc. provides for annual orthophotography at a very reasonable cost compared to an outright purchase. It also allows for a number of clients to be served under one agreement.

The Region partnered with members of the YorkInfo Partnership which provides savings of both staff time and money compared to each organization purchasing the orthophotography separately.

For more information on this report, please contact John Houweling at Ext. 1529.

The Senior Management Group has reviewed this report.