Saskatchewan Municipal
Best Practice

Unmanned Aerial Vehicle (UAV)/Laser Survey

CONTACT

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THE PRACTICE

In consultation with the Town of Kerrobert's engineers, Walker Projects of Regina, it was decided that a survey of the Town would be done to provide an asset map, to provide topographical information so that drainage plans could be developed in a timely manner, and to address the infrastructure planning requirements. Plans were put in place to complete the survey. The man-hours required for the surveying were going to be tremendous and in discussions with the engineers the question was posed about utilizing an Unmanned Aerial Vehicle or drone to complete the work. The Town of Kerrobert felt that if the drone technology was going to be used that the entire corporate limits should be surveyed so that we would have seamless mapping for current and future planning needs.

THE PROCESS

Town Council approved the use of UAV/ drone technology to complete the comprehensive survey of the Town's corporate limits. Town Administration through the Economic Development Officer was the liaison between Council, the Engineers and Brandt Technologies. Public Works foremen worked with the Engineers and provided updates to Administration.

Brandt Technologies contacted the Federal Department of Transport to get permission for the UAV/drone survey. We knew that UAV technology had previously been used for mapping, but quickly discovered that it had never been used to survey an entire Municipality! What we thought was a simple request for permission to fly the UAV by fully certified operators turned into months of wrangling with the Department of Transport.

In October of 2015 Brandt Technologies received very limited permission from the Department of Transport to utilize the UAV for mapping of the areas of the Town of Kerrobert which had no appreciable population – which translated into being able to map the undeveloped farmland within the Town's corporate limits.

As time was becoming a very critical factor in getting the mapping completed; The Town, Walker Projects and Brandt Technologies now had to come up with a solution for mapping the inhabited portion of the Town. It was decided to utilize laser technology to accomplish this. Again, the Town and our partners were on the cutting edge as this technology had been used in smaller mapping applications, but never used for an entire Municipality.

Dates for the mapping were set for mid-October 2015. The Town of Kerrobert was required to provide notice to all residents of the dates for the mapping and information on the technology being used. Notices were placed in our local newspaper and by mass mail out. Brandt Technologies arrived in Kerrobert with their UAV and their mobile laser mapping unit. Over the course of two days the entire corporate limits of the Town of Kerrobert were surveyed with an accuracy level of 1cm! This task would have taken a traditional surveying crew up to seven months to accomplish the same task. The resultant products are an Asset map, and a topographical map.

THE RESULTS

Kerrobert now has an accurate, up-to-date Asset Map; an Infrastructure Upgrade Master Plan has been developed and of course the topographical information for the entire Town is readily available for the development of Drainage Plans and for sale to Developers for future projects.

LESSONS LEARNED

The number one lesson we learned is that if the Municipality is looking at doing something completely new, innovative, or outside-the-box; allow plenty of time to navigate the hurdles that inevitably appear. The second lesson is to persevere. The third lesson we learned is to examine the processes we currently have in place and while ensuring that we are doing our due-diligence and making the best decisions for the majority of the citizens, that we are serving our citizens well, and that we are not seen as placing unnecessarily absurd obstacles in their path to that service