

EEI Imaging - Case Study #03

5/15/2016

Canyon Place Homeowners – WISP Project

Canyon Place Homeowners wanted to create a neighborhood wide wireless system to improve internet service for their rural area. EEI Imaging was there with some project planning solutions.

Canyon Place homeowners were tired of poor internet service and service quality was becoming an issue with property values for the rural Rapid City, SD community. A program model was discovered for a rural Puget Sound community with the

Service Provider) for the association.

One of the first issues the steering committee ran into was determining tower and relay locations within the hilly community and to neighboring Rapid City.

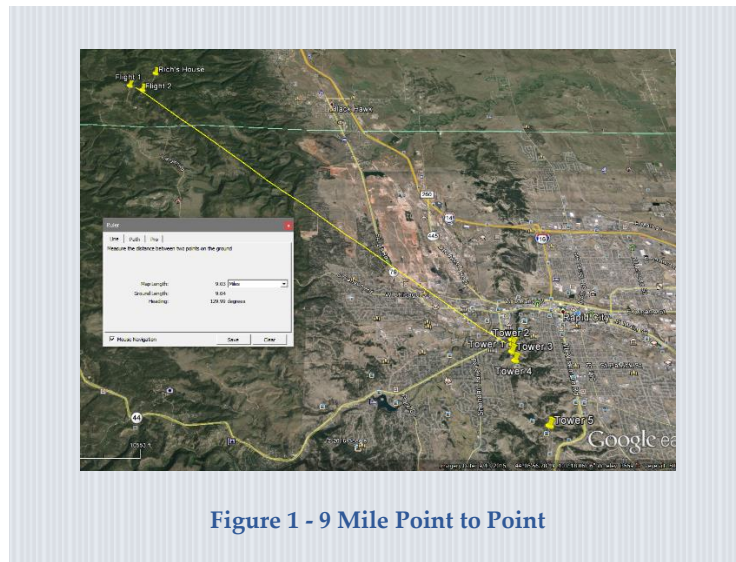


Figure 1 - 9 Mile Point to Point

same issues. A committee was formed to research the costs and logistics of creating a WISP (Wireless Internet

Several tower locations within the association needed to be evaluated for line of sight to house



Executive Summary

Client Challenge:

How to evaluate proposed tower locations for suitability. Tower sites needed to be evaluated for:

- Line of sight coverage within the association boundaries.
- Line of sight to tower locations in Rapid City.

EEI Imaging Solution:

Provide UAS gathered video, still pictures and panoramic composite views.

- Record data and several locations quickly
- Create useful high resolution images from the collected Data

locations in the association. Potential locations also needed to be evaluated for line of sight to tower locations in Rapid City for a microwave link to bring internet access. This is where EEI Imaging was able to help.

Brian Jensen, Project Engineer, brought EEI's Spreading Wings S1000 UAV with a 22 Megapixel camera to the potential tower sites. With the ability to hover at several proposed tower locations, he

was able to simulate line of site conditions from the proposed antenna elevations. Geolocated video and still pictures were recorded from each location. Processing of the data created panoramic views that were used to determine which sites offered the most comprehensive coverage of the community. Still images were used to determine "line of sight" to potential tower locations in Rapid City.

Impact on Client:

"The detailed views from elevation were critical in being able to quickly determine our optimum tower location" according to William Savage, member of the steering committee. "The panoramic views will continue to be an important part of the implementation of the project as we grow the network from the new tower location."

Figure 2 - 360° Panorama: Tower Site #1



Figure 3 – House Locations



Figure 2 – Tower Line of Sight

EEI Imaging provides reality capture services with the use of UAV and LIDAR Scanning equipment

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