

Designing a wireless campus area network assignment



**ASSIGN
BUSTER**

Texas needs to connect four additional government offices to its remarry network located in the City Hall building. These buildings include the police station, public works office, animal shelter, and the fire station. The challenge for the city is that the buildings are separated by a state highway controlled by the State of Texas, a railroad controlled by BINS, and another road controlled by the city. The implementation schedule does not allow sufficient time to secure right of way permission from either the State of Texas or the BINS railroad.

After initial investigations and a site survey, the following two wireless methods were identified to connect the buildings together: 1. The use of radio frequency links 2. The use of free space optics link The results from the site survey are listed in Appendix A. Assignment As the city network administrator, the city manager has asked you to perform a technical evaluation of both the radio frequency and the free space optics solution and to make a recommendation as to which technology the city should use.

Your report will be distributed to city council members and will be used for final approval of the project. To ensure that all stakeholders are knowledgeable concerning the options, your report must include: 1 . Manufacturer of the selected equipment 2. Model number of the selected equipment 3. Cost of each piece of equipment required 4. How the equipment should be mounted to each building 5. The speed each link will be able to achieve 6. For the radio frequency link, include the band that will be used and the possible channels in that band that could be used.

You must explain why you selected the band and why you rejected the other possible bands. . A technical analysis for each option that includes advantages and disadvantages in solving the city business problem 8. Your recommendation to the city manager concerning your proposed solution; you are free to choose either a single technology for all links or a combination of link technologies, if that is appropriate. You must identify your reasons for selecting one technology and rejecting the other. You must also state how your solution meets Joshua business requirements and goals.

Appendix A Site Survey Results A map of Joshua, Texas is shown below. State Highway 917, also called S. Main SST, is shown in yellow. The BINS railroad track is shown between S. Main SST. And Santa Fee SST. The aerial view of downtown Joshua below shows the relationship of the five buildings. The following photographs show each building, along with the BINS railroad tracks. City Hall and Police Station Public Works Fire Station Animal Shelter The following image provides a perspective of the railroad tracks and showing the typical distance between the buildings.