

CHAPTER 5

CONCLUSIONS

Runoff hydrographs that were developed for the Onion Creek, South Mesquite, Little Fossil, Olmos Creek, and Trinity Basin-North watersheds were used to determine the affects that number of sub-watersheds had on the runoff hydrographs. It was found that the increase in the number of sub-watersheds does not significantly affect the simulated runoff hydrograph. The surface runoff is directly related to the curve number which is one of the most important characteristics of the watershed. The appropriate CN of the sub-basin should be accurately determined and incorporated into the hydrological model, or else, the results may never be satisfactory.

This study also shows that none of the subdivision schemes were able to accurately simulate peak flows or runoff volumes from individual events. However, the study shows somewhat better in predicting the time to peak. In general, this study, as performed, indicates that unless the engineer needs internal flows, subdivision simply to gain accuracy does not justify the additional modeling effort. Future research is needed to ascertain if the results obtained in this study will change if using initial abstraction/constant loss model or some runoff generation model that is less sensitive to hyetograph behavior than the *CN* loss model.