

Simulation of Streamflow on Safagaa- Qusair Road

Dawoud Youssef , Abdallah Rizk , Amr Alaa , Eslam Ayman and Amin Alaa
Military Technical College, Egypt

Supervisor: Nabil Hussain, Mostafa Tarek
Military Technical College, Egypt, Mostafa_tarek45@hotmail.com

Abstract– The instructions give the basic guidelines for preparing papers for the IUGRC conference proceedings adapted from the IEEE 2-Column format for conference proceedings. You can use this document for the instructions and as a template into which you can type your own text over the given text or select the preset styles (shown in parentheses). Student paper submissions are limited to 10 pages, and extended abstract to 2. All authors MUST be undergraduate students associated with supervisor (s).

Keywords-- List at most 5 key index terms here.

I. INTRODUCTION

Floods are the most widely distributed natural risk to life compared to all natural risks. It considered being one of the worst weather-related natural disasters. Floods result in losses of life and properties damage. Population increase results in more urbanization which leads to more impervious area, less infiltration and greater flood runoff.

Several factors affect the flooding, and the most important of them are the rainfall intensity and the storm duration. Intensity is the rate of rainfall, and duration is how long the rain takes. Topography, soil conditions, ground cover, wind speed and direction and many other factors also play important roles.

Floods may come in the form of "flash floods" which have short warning time before occurrence or with no alarm at all, other floods take more time. "Flash flood" is a term widely used by flood experts and the general population in Aerial regions because these areas characterized by heavy rainfall but with long return period.

II. PROBLEM STATEMENT

Safagaa- Qusair road is the main road between Safagaa and Qusair. For this reason, we must study the floods and its influence on the road. For this extension project, Safagaa-Qusair road proposed flood protection scheme to protect the road by diverting the water into the red sea.

For example, the damages caused by the 1994 flood in the Red Sea District are: (A) Cutting of the asphalt roads in the Qusair Area; (B) Damage of the constructions; (C) Damage of the buildings south of Qusair; (D) Erosion features in Wadi Quaiah; (E) Fixing the road after damage by floods; (F) Flood water looks like a lake in Quaiah Area. The main flooding sites in this area.

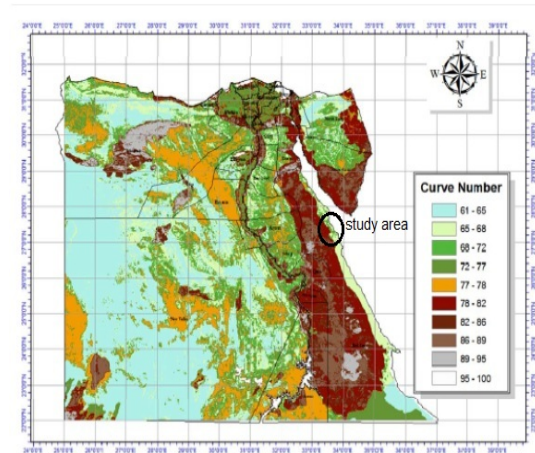


Fig. 1 Study Area

III. STUDY OBJECTIVES

There are three principal objectives for this study:

- (1) Computing the hydrograph and estimating the total volume of runoff at the outlets of the studied area.
- (2) Suggesting protection works for the existing residential areas and roads.
- (3) Locating the places having high risk against floods for any future constructions.

IV. METHODOLOGY

The following illustrated diagrammatic sketch explains the research structure for this study.

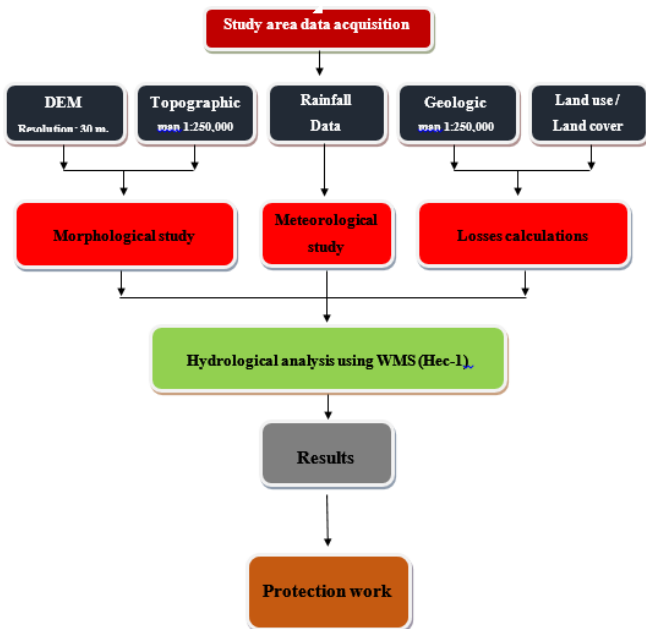


Fig. 2 Study Methodology

V. DATA ACQUISITION

VI. RESULTS

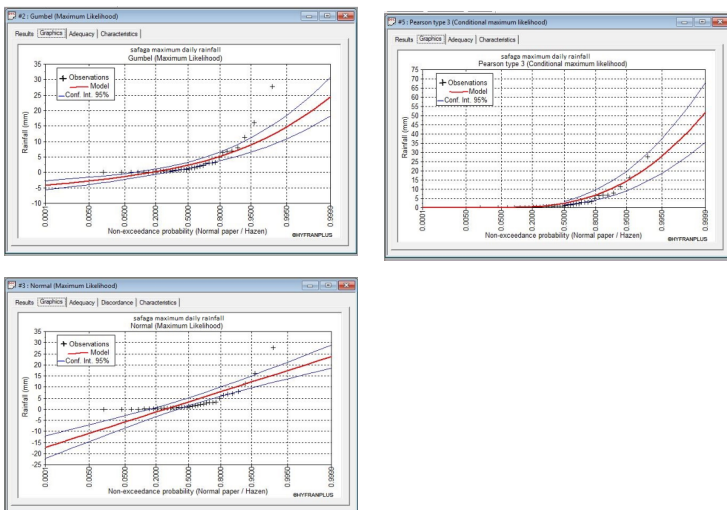


Fig. 3 Frequency analysis for Safaga station

Return period (years)	2	5	10	25	50	100
Safaga station rainfall (mm)	2.33	6.86	10.6	15.8	19.8	23.9

ACKNOWLEDGMENT

The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g.” In this section, please acknowledge your faculty supervisor/advisor and any sponsor that helped finance your research and participation in conference.

REFERENCES

- [1] Manuscript Templates for Conference Proceedings, IEEE. http://www.ieee.org/conferences_events/conferences/publishing/templates.html
- [2] M. King, B. Zhu, and S. Tang, “Optimal path planning,” *Mobile Robots*, vol. 8, no. 2, pp. 520-531, March 2001.
- [3] H. Simpson, *Dumb Robots*, 3rd ed., Springfield: UOS Press, 2004, pp.6-9.
- [4] M. King and B. Zhu, “Gaming strategies,” in *Path Planning to the West*, vol. II, S. Tang and M. King, Eds. Xian: Jiaoda Press, 1998, pp. 158-176.
- [5] B. Simpson, et al, “Title of paper goes here if known,” unpublished.
- [6] J.-G. Lu, “Title of paper with only the first word capitalized,” *J. Name Stand. Abbrev.*, in press.
- [7] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” *IEEE Translated J. Magn. Japan*, vol. 2, pp. 740-741, August 1987 [*Digest 9th Annual Conf. Magnetics Japan*, p. 301, 1982].
- [8] M. Young, *The Technical Writer’s Handbook*, Mill Valley, CA: University Science, 1989.