







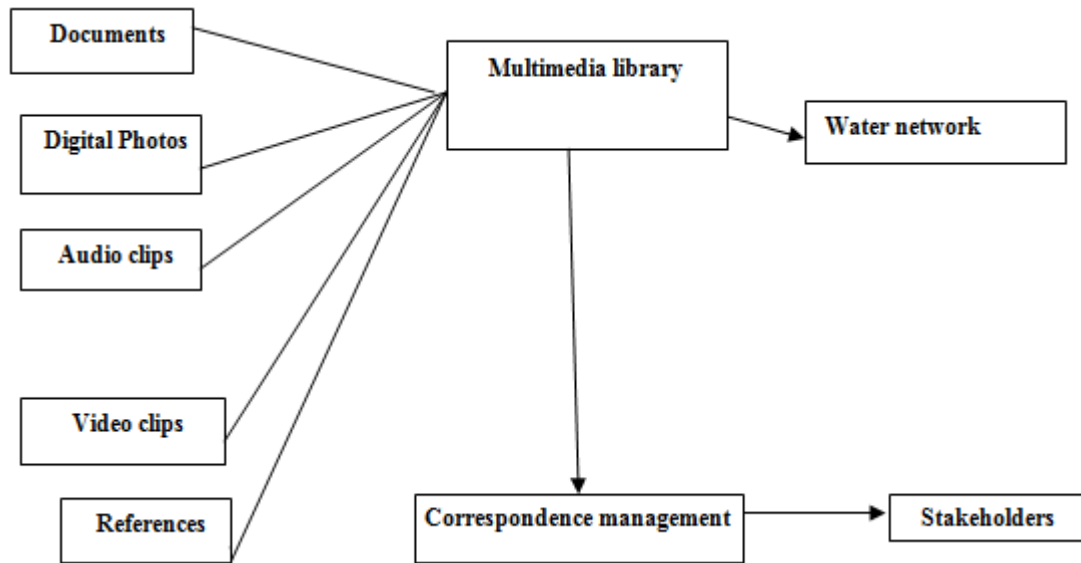




### Data Storage

This is one of the important modules of the water management system. In this module options will be there for storage of the data using tools of multimedia. The archived

data will be in the form of documents, slide shows, sound clips, video clips, references etc., Can be accessed by stakeholders at any point of time. The data storage will be taken care of with multiple backups. (Fig-9)



**Figure 9:** Data Storage

### 6. Conclusion

The groundwater information system (GWIS) designed and discussed above will have effective applicability on groundwater resource management. The integrated approach which includes groundwater resource recharge, groundwater resource protection, groundwater resource sustainable utilization, groundwater resource spatial database management. This integrated approach will help a given region for effective management of groundwater resources resulting conservation of the resources and protection from pollution, implementation of legislative measures, temporal and spatial database system for policy decision, etc.

The application of this system to an urban environment like Visakhapatnam has been indicated and its applicability tested such information system will help to conserve the groundwater resources and help in design of programs to ensure clean and sustainable groundwater resource. The available spatial database systems can be customized for suitability and can be used to other cities or urban centres.

### References

- [1] **Anjaneyulu, B.J.N.S..R.**, 1950. The study of the black sand concentrates and geology of coastal strip from Analkapalle to Vizianagram, M.Sc. Thesis, Andhra University Waltair.
- [2] **Bhaskara Rao, V.U.**, and **Vaidyanadhan, R.**, 1975. Photo Geomorphologic study of coastal features between Visakhapatnam and Pudimadaka in Andhra Pradesh. *Photonirvachak*, 3(1), 43-46
- [3] **Jagannadha Rao, M, J.Syam Kumar, B. Surya prakasa Rao and P. Srinivasa Rao** (2003) Geomorphology and land use pattern of Visakhapatnam Urban-Industrial area. *Photonirvachak, Journal of the Indian Society of Remote Sensing*, Vol. 31, No. 2, 2003
- [4] **Jagannadha Rao, M, Greeshma A.G, Anil N.C, Avatharam .P and Karunakarudu K** (2014). Studies on coastal Geomorphology along Visakhapatnam to Bhimunipatnam. Vol.16, No.4, pp. 179-187.
- [5] **King,W.**, 1886. The geological sketch of Visakhapatnam District, *RecGeol.Surv,India*, 19,143-156.
- [6] **Murthy, M.S.**, 1961. Structure, mineralogy and petrology of the charnockite series and associated rocks of Visakhapatnam, Unpublished, Ph.D. Thesis, Andhra University Waltair.
- [7] **Mahadevan, C. & Sathapathi, N.**, 1949. The origin of Waltair high lands, *Ind. Geogr. J.* 24, 1-26.
- [8] **Natarajan, V., Nanda. K. & Subrahmanyam, M.R.**, 1979. Geology and its influence on physical environment of Visakhapatnam city and its neighbourhood. Paper presented in work shop on integrated resource evaluation for Visakhapatnam Urban growth center, 1.2, 1-10.
- [9] **Nooka Raju, D and Vaidyanadhan, R.**, 1971. Hill slope elements and surficial deposits near Visakhapatnam, Andhra Pradesh, *J of the Ind. Geol. Sci. Association*, 13, 45-51.
- [10] **Shyam Kumar J (1995)** Environmental Geology and Impact Assessment of two Geological sub-Environments from Visakhapatnam Urban-Industrial area. A.P. Unpublished Ph D thesis Andhra University.
- [11] **Srinivasa Sastry, C.**, 1952. Geology of western part of Toposheet, 65 O/5. M.Sc. thesis, Andhra University, Waltair.