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City and Regional Engineering Department, College of Environmental Design

GIS – Modeling A part of Rakah Area by its Services

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What is GI

- Geographic Information can be defined as : data that specify location of geographic features and their descriptive attributes.
- Such features could be
 - Water wells
 - Roads
 - Land parcels
- Attributes of such features :
 - Water well depth ,
 - Road Width
 - Area of land parcel



What is GIS ?

“GIS is a system of computer software, hardware, and data and personnel to help manipulate, analyze and present information that is tied to spatial location.

- ▶ Spatial location- usually a geographic location
- ▶ Information-visualization of analysis of data
- ▶ System- linking software , hardware,data
- ▶ Personnel- a thinking explorer who is key to the power of GIS



Data For GIS Applications

▶ Digitized and Scanned Maps

- purchased, donated, free (Internet)
- created by user

▶ Data Bases – Tables of data

▶ GPS – Global Positioning System

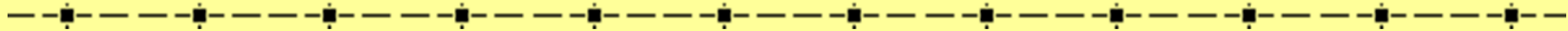
- accurate locations

▶ Field Sampling of Attributes

▶ Remote Sensing & Aerial Photography



Data integration



A GIS makes it possible to link, or integrate, information that is difficult to associate through any other means. Thus, a GIS can use combinations of mapped variables to build and analyze new variables.



Benefits of GIS

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- ✓ Automating GI and transferring them from paper to digital format.
 - ✓ Linking location and attributes of features within the framework of one system.
 - ✓ Automation of map making and updating.



Other GIS Applications

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- 1) system design,
 - 2) coastal processes,
 - 3) natural resource management,
 - 4) coastal planning,
 - 5) disaster management,
 - 6) water quality management,
 - 7) coastal geology.



GIS Useful For :

- **Location** (what are the attributes at a specific place?)
- **Condition** (where are the sites that possess certain attributes?)
- **Trends** (how do attributes change spatially over time?)
- **Routing** (what is the shortest/least expensive/most cost-effective path between places?)
- **Patterns** (what is the distribution of attributes and the process/reason accounting for their distribution?).



Statement of the Problem

- The basic problems to be discussed here is representing Rakah Action Area near Dammam in various forms of services and also create database for various features relating to the attribute table in ArcView GIS.
- The project will be based on two types of areas available for the existing site. One for **Existing Land use** and other for the **Proposed Land use**.



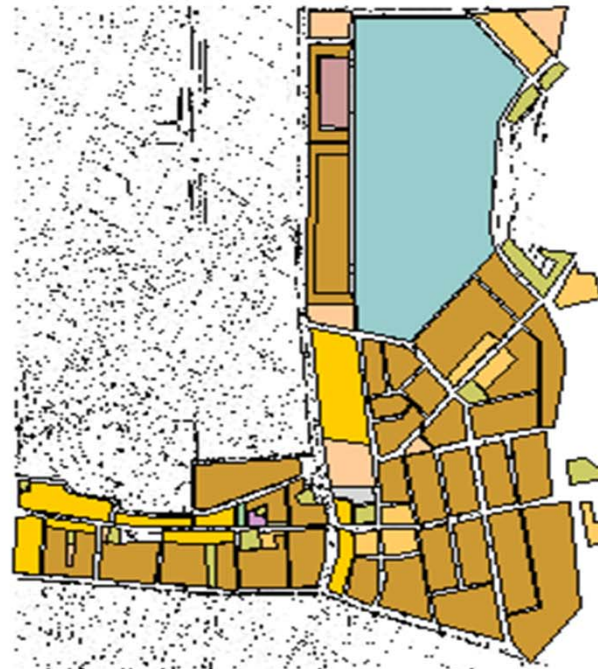
Methodology

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- The digitized map of the study area i.e. Rakah Action Area, Dammam was taken to work on with.
 - ArcView was used so as to create various shape files in the form of layers and then they were added to the document and worked on with.



Rakah Action Area ----- Dammam

Rakah Action Area Land Users



- Landuse.shp
- H.Commercial
 - Institutional
 - L. Commercial
 - Residential
 - Sports & Recreat
- Proposed projects.shp
- Community Park
 - Higher Education
 - Maternity Clinic
 - Neighbourhood Pa
 - Parking area
 - Police Station



Conclusion

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- In an Arc View GIS, it is possible not only to create different features but also to maintain a database of the features in an attribute table so as to get the information of any of the features selected either on the map or in the table.



Conclusion

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- This property of any GIS makes it a very powerful tool for any sort of spatial analysis, as just by a click it is possible to get most of the information of any feature anywhere in the world.
 - Also the attributes can be used to create thematic maps i.e. Maps in which colors or other symbols are applied to features to indicate their attributes.

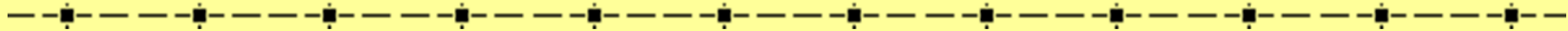


Acknowledgement

-
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 - **Mr. Raziuddin ,Lab Coordinator, GIS Unit**



REFERENCES:



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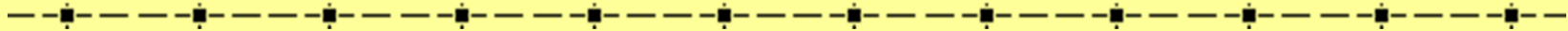
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THANK YOU

Questions?

