

Developing a model for finding optimum location for urban facilities by using GIS

**Instructor: Dr. Baqer Al-Ramadan
Course Title: Introduction to GIS
Course: CRP-514**

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Content

Problem Statement

Objectives and scopes

Study Approach

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Expected outcome

Problem statement

Choosing a suitable location for various urban facilities is a gigantic task for city planners and managers because it involves a lot of factors and decision dilemmas like finding and managing land parcels, **land prices**, **connectivity**, **nature of services**, **services areas** etc. The concept of this model deals with the meeting of possible factors those are involved in choosing optimum location by the technique of GIS as a tool.

Objectives

Primary Objective: To build a model for deciding the best possible location on the basis of different criteria

Secondary Objective: To learn how to use the different GIS tools in respect to real world application

Scopes

Dilemmas arise: The municipal authority of the city of Tyler wants to provide a domestic Airport to accelerate national and international accessibility

City planner is asked to find out best suitable location on the basis of some criteria:

- **Vacant land**
- **Most of the land owned by public**
- **Minimum an area of 280 acre**
- **Close proximity to highway**
- **Close proximity to city loop etc.**

Study Approach

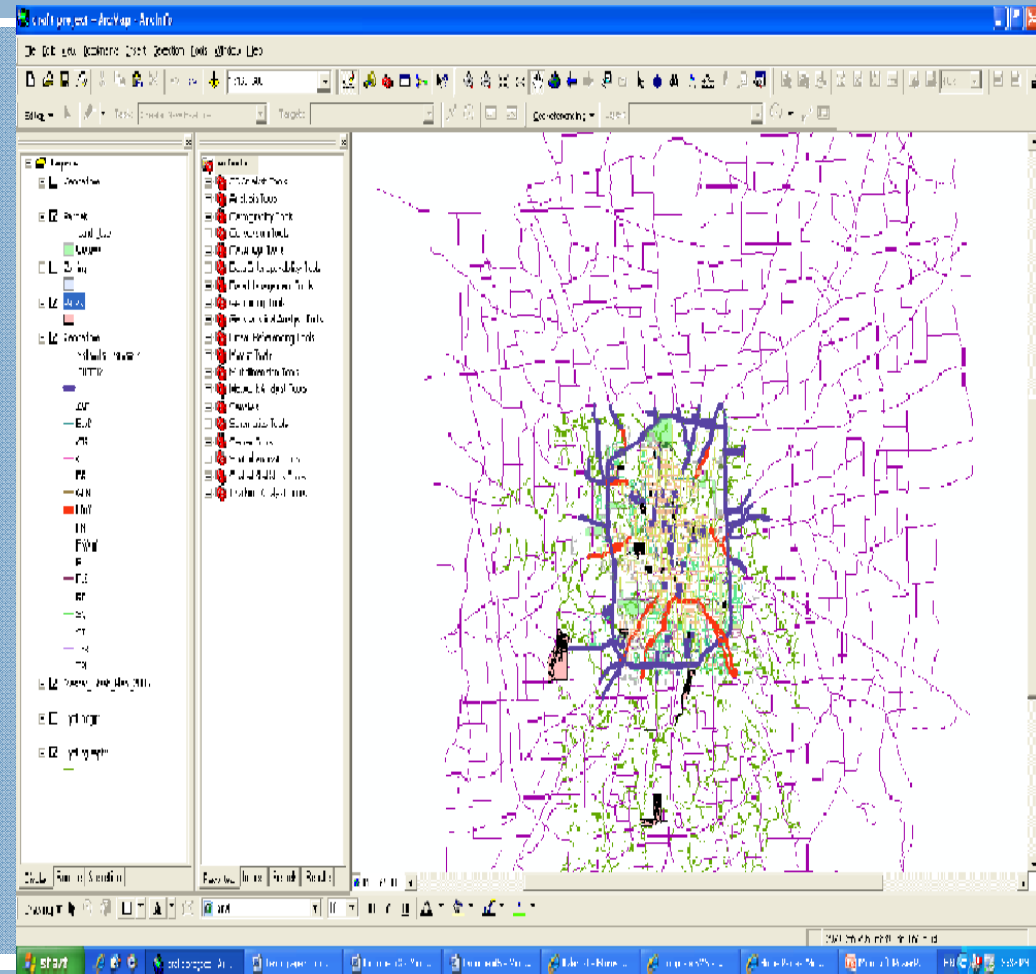
Data base

GIS data: City of Tyler, Texas, USA

Source: Internet

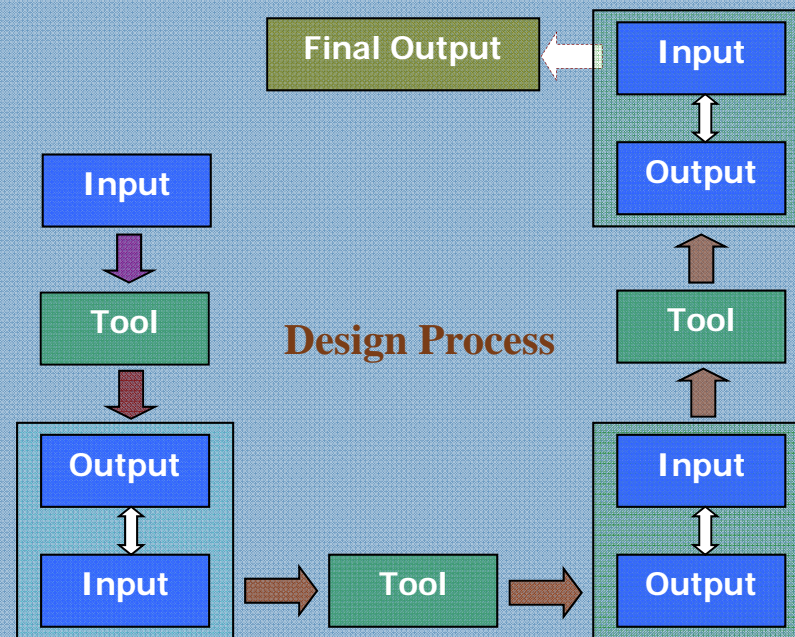
Data set: shapefiles

- ❖ Center line
- ❖ Parcels
- ❖ Zoning
- ❖ Parks
- ❖ Master street plan
- ❖ Hydrology etc.

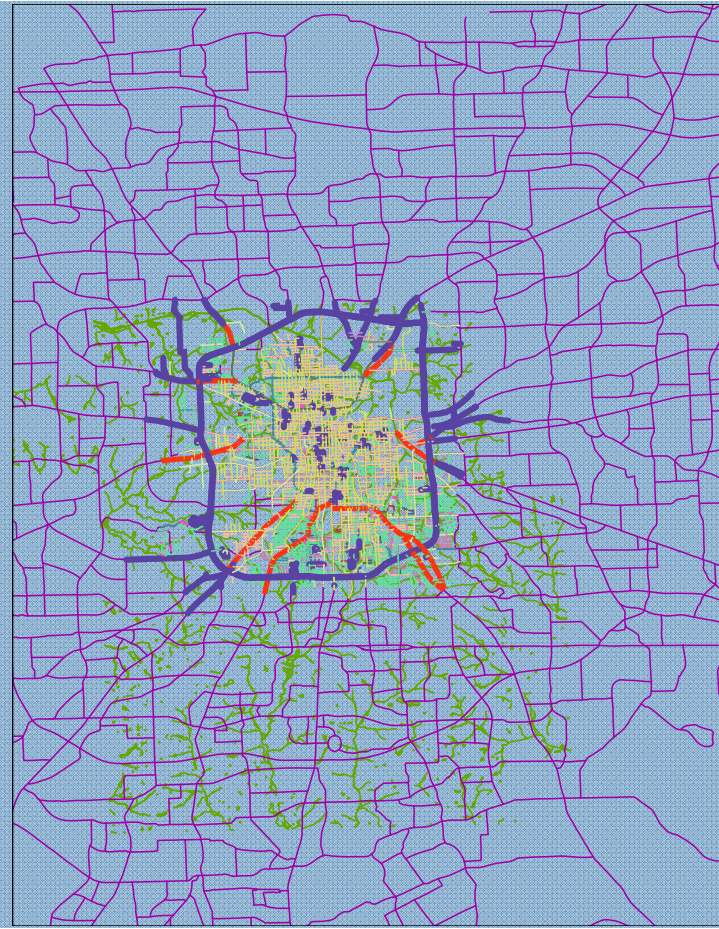
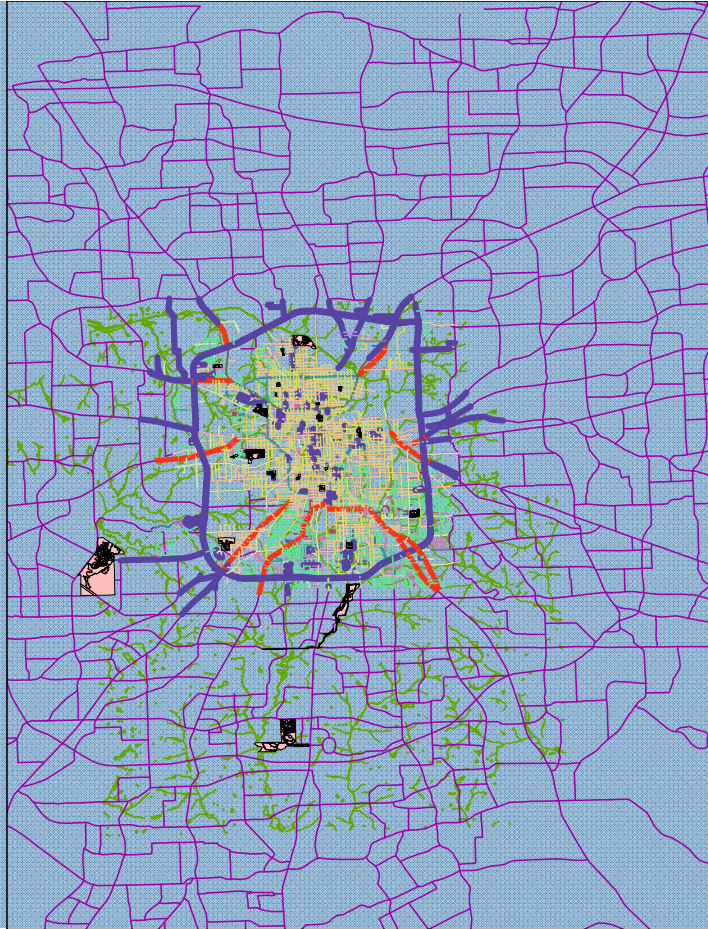


Study Approach

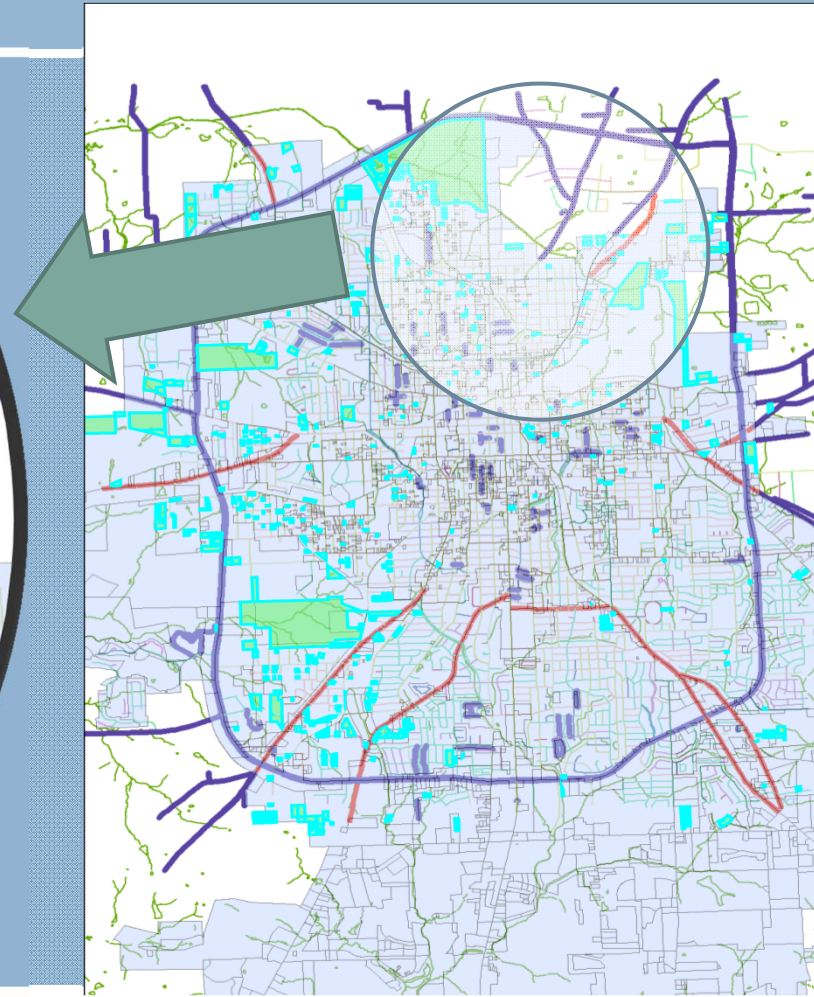
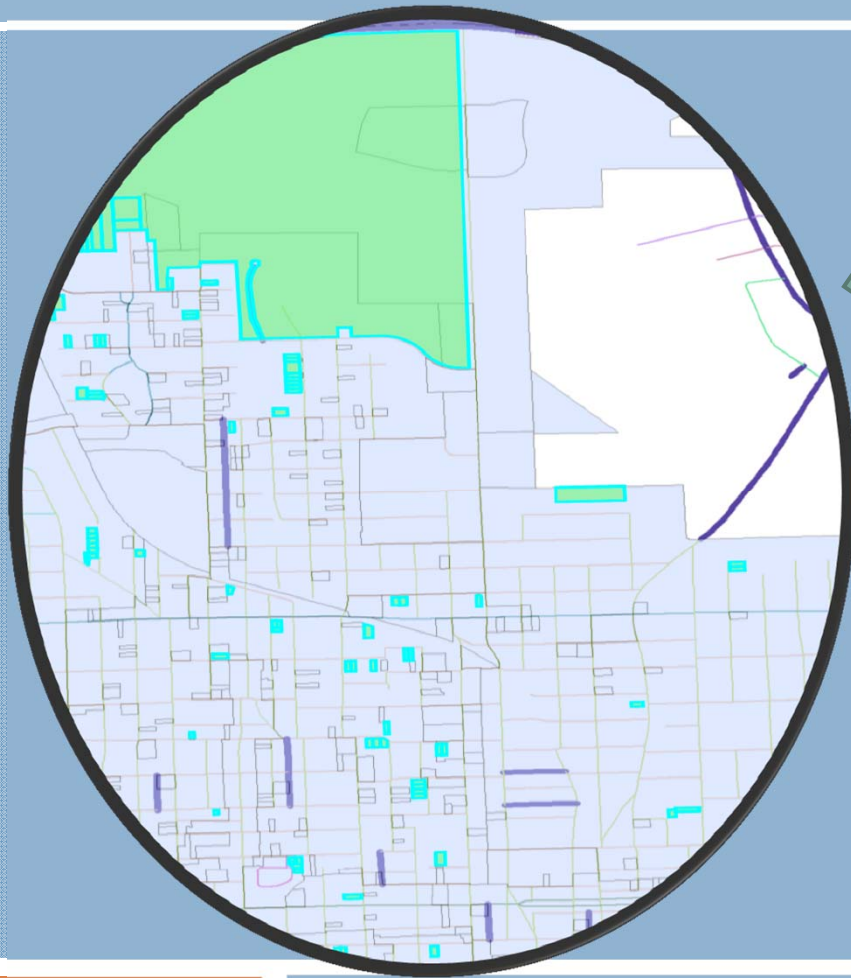
- Querying Data
- Joining and relating tables
- Selecting features
- Preparing data for analysis
- Analyzing spatial features



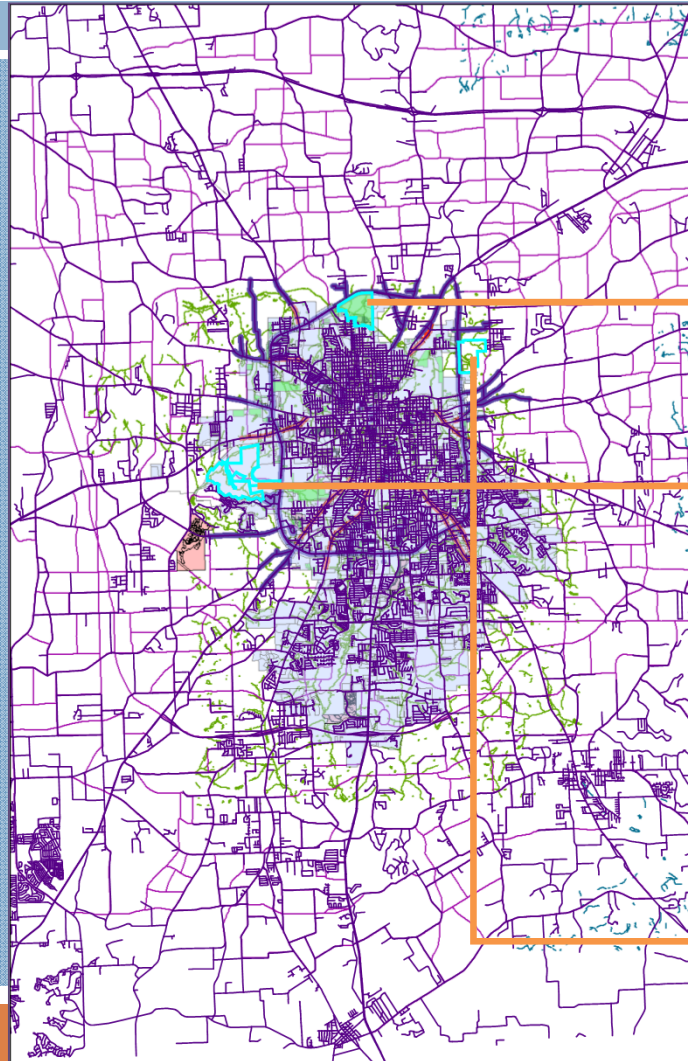
Findings



Findings



Findings



Buffered zones

Expected outcome

- This model will help city planners to decide the optimum location of the various services on the basis of evidence
- It reduces the time of decision making process
- Helps alleviating decision dilemmas which are commonly found
- Make sure the proper distribution system among the services
- Helps identifying in the further research, monitoring and evaluation of the infrastructure and services system of existing and future planning process
- Ultimately this model will reduce the municipal budget as it makes sure the balance distribution of the services

Q & A

Thank you