



CRP 514

TERM PROJECT PRESENTATION

INTRODUCTION TO GIS

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WELCOME  
TO  
TERM PROJECT PRESENTATION  
ON

# GIS: A TOOL IN URBAN PLANNING APPLICATIONS

*SUBMITTED TO  
DR. BAQER AL-RAMADHAN*

*BY  
MOHAMMED OBAIDULLAH  
(ID: 220 362)*

*DATE: 6/JAN/2004*





## *Outlines Of Presentation*

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- 1. INTRODUCTION*
- 2. OBJECTIVES*
- 3. METHODOLOGY*
- 4. ANALYSIS AND RESULTS*
- 5. OBSERVATIONS AND CONCLUSIONS*

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## 1. Introduction

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A geographic information system (GIS) is a computer-based tool for solving problems. A GIS integrates information in a way that helps us understand and find solutions to problems.

People use geographic information system (GIS) software because they understand that better information leads to better decisions.

In general, people use a GIS for four main purposes: data creation, data display, analysis, and output.

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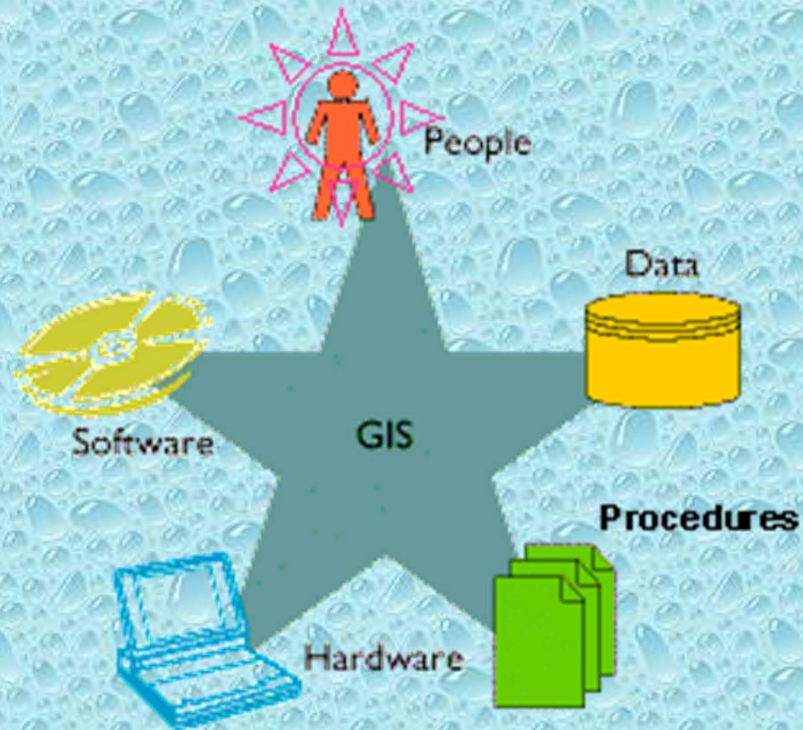
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# INTROCUCTION TO GIS

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GIS has five components. They are: people, data, hardware, software, and procedure



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## Case Study

The case study is about the city of Austin in Texas state. The geographic data was obtained from the website of city of Austin.

The data obtained is in the format of shape files, and arranged in different layer.

The data obtained are

- Base Map showing different land use zoning

- Layer showing all the street networks, including major roads

- Layer showing different facilities like schools, hospitals etc.

- Layer showing the rail network for the city

- Layer showing the location of parks

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## 2. Objectives

The problems pertaining to the urban design and planning applications deals with a different types of spatial data, and they are to be analyzed simultaneously.

It is very difficult to analyze problems of urban applications which involves multiple spatial entities; which are to be analyzed simultaneously.

The following are the objectives of study

To locate the residential/ commercial areas those are more susceptible to crime on the basis of its distance from the police neighborhood.

To find out the location of all the Single family and double family houses in the vicinity of the commercial center.

Site selection for railway station

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### **3. Methodology**

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The software used is Arc GIS INFO 8.3, in that the most of the analysis was done in Arc MAP.

There were some customization done for the data acquired which is

Arrangement of Data layer in proper format

Symbolizing the different feature data sets

Symbolization was done for the following layers

Zoning layer

Facilities layer

Layer for streets and roads

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## 4. Analysis & Results

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The analysis tools that were used were

Buffering of selected features

Selection by attribute tool

Selection by location tool

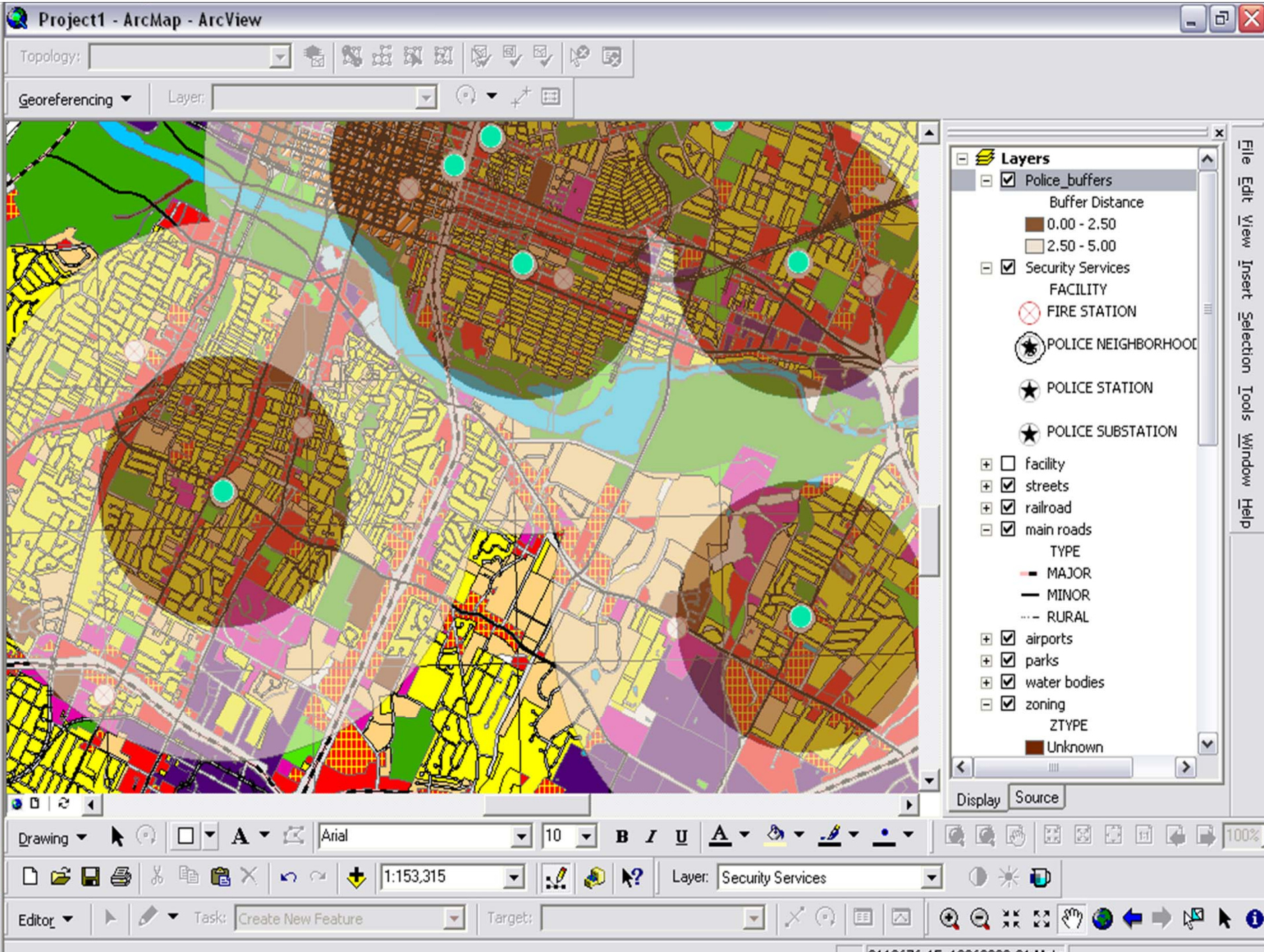
Task 1: To locate the residential/ commercial areas those are more susceptible for theft and crime on the basis of its distance from the police neighborhood.

Selection Criterion - The effective area of any police neighborhood is about 5 miles from the center of it

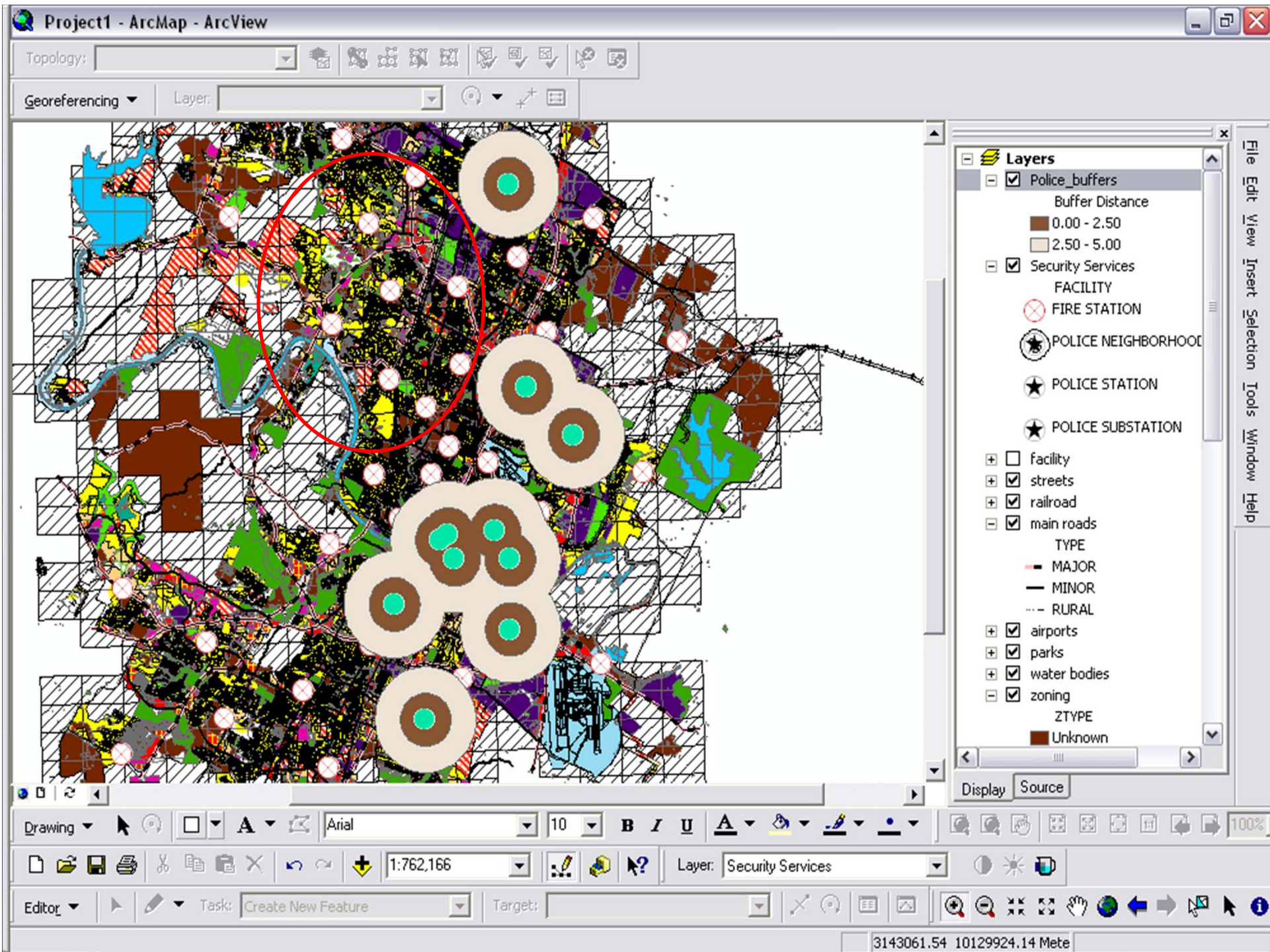
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**Task 2:**

The second task is regarding the commercial services.

Context of the problem

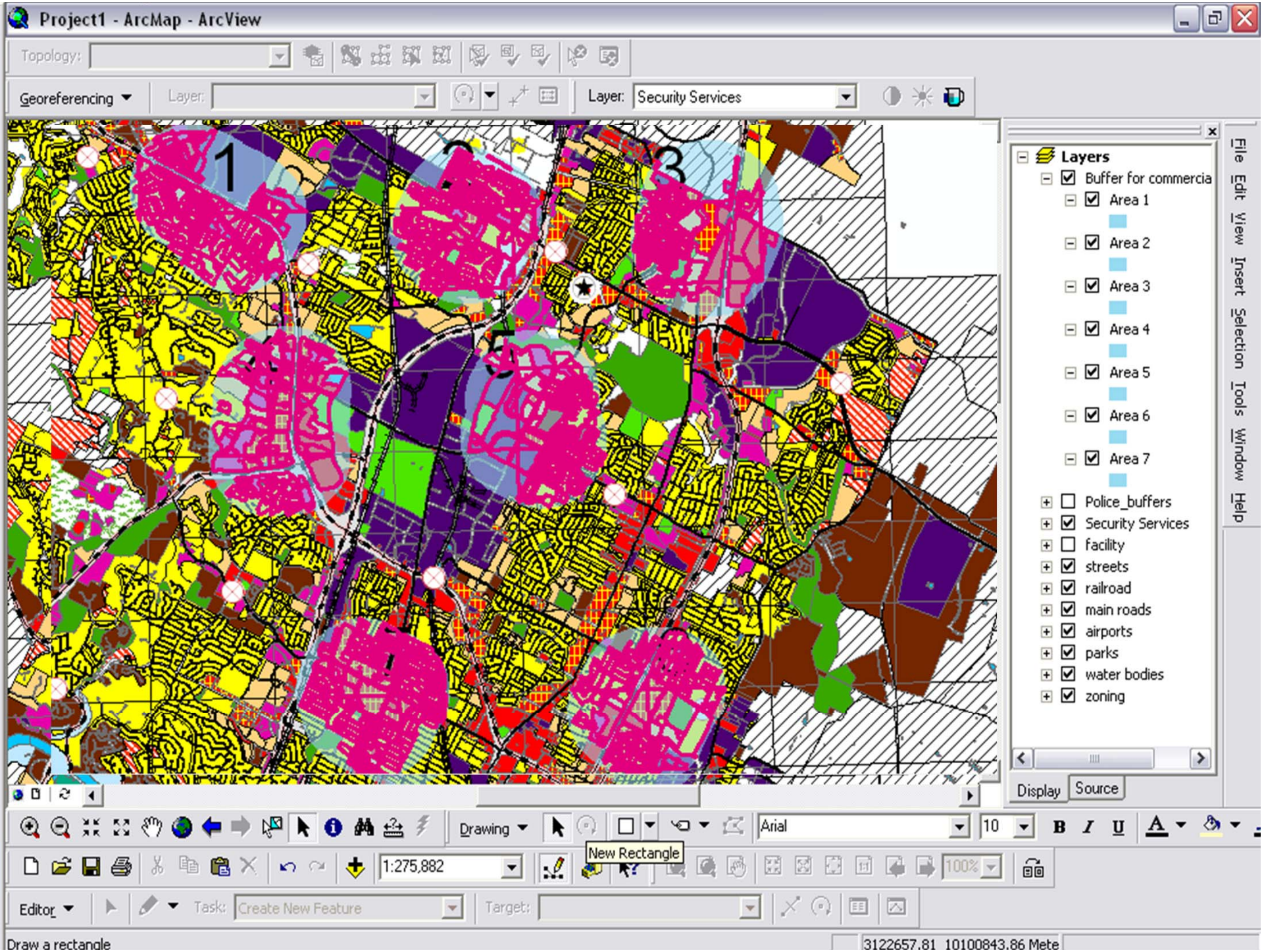
Criteria for selection

Only single family and double family users are the buyers of this particular product

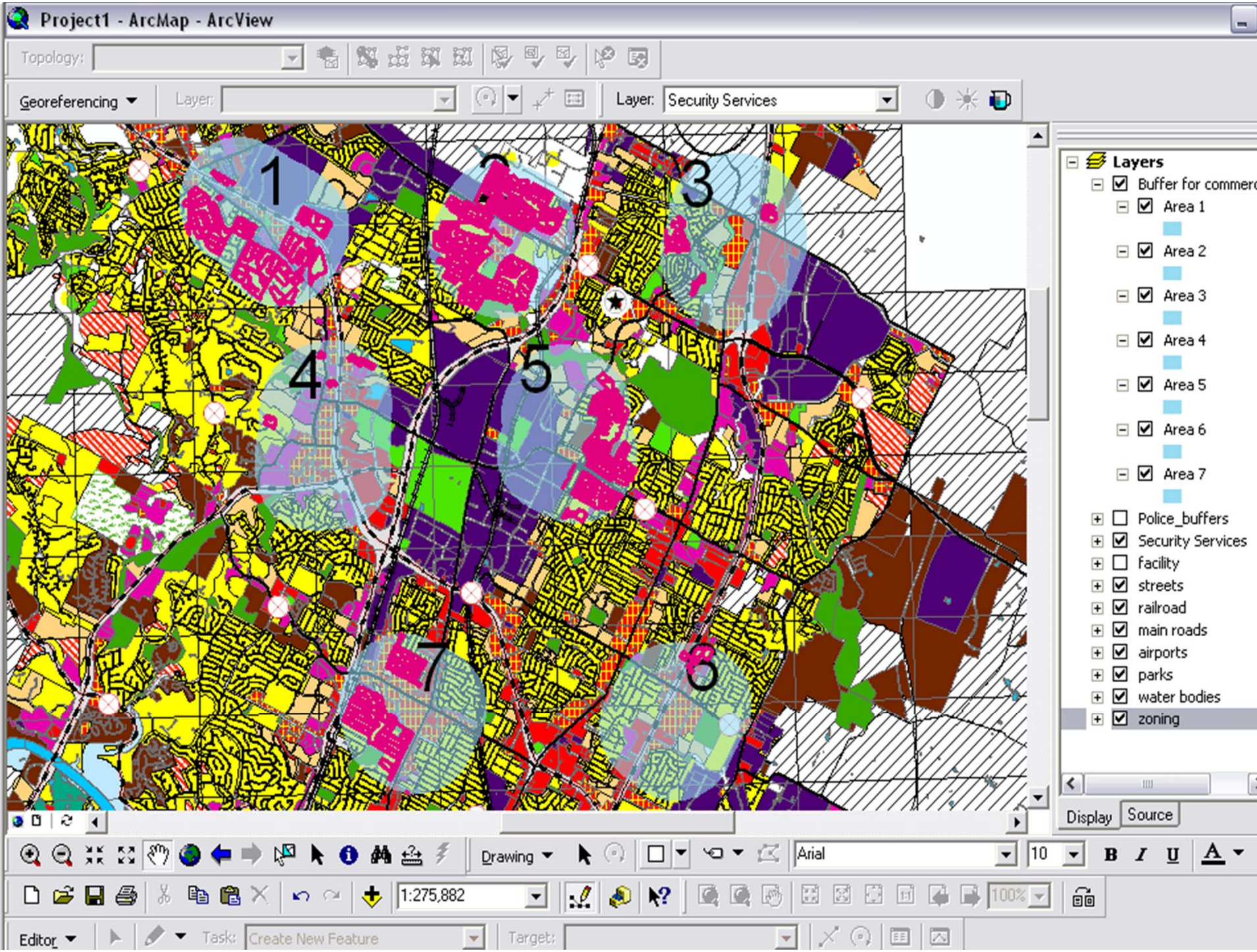
Commercial center serves around 2 miles of its area.

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**Task 3:**

The third task is to justify for the site selection for the railway station along the existing track.

Context of the problem

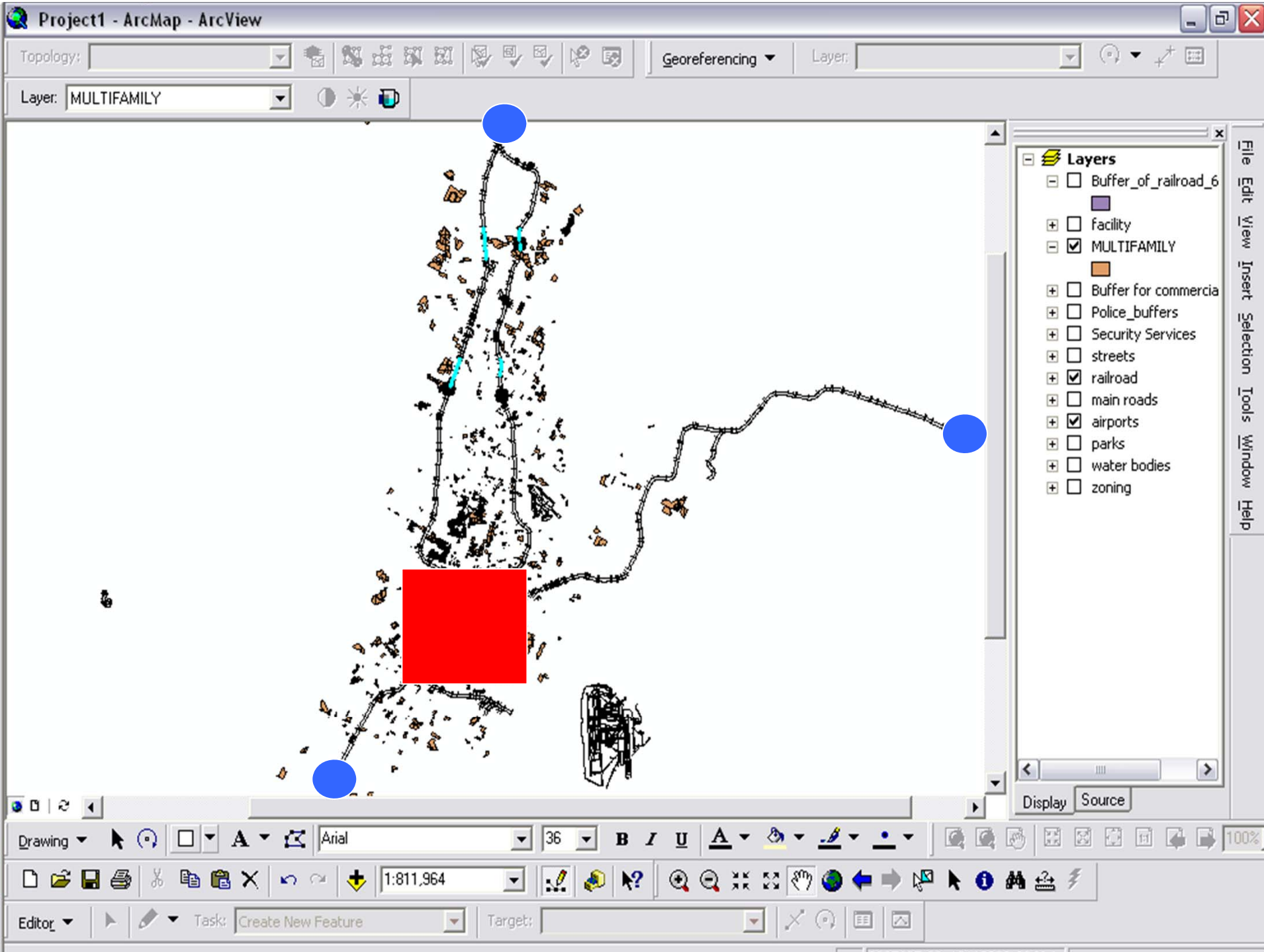
The selection criteria are

People staying in multi family neighborhood use more frequently the railway services

Another criterion is that the railway station should be about 5 miles in reach of the houses.

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Project1 - ArcMap - ArcView

Topology:

Georeferencing

Layer:

Layer: MULTIFAMILY

Layers

- Buffer\_of\_railroad\_6
- Facility
- MULTIFAMILY
- Buffer for commercia
- Police\_buffers
- Security Services
- streets
- railroad
- main roads
- airports
- parks
- water bodies
- zoning

Drawing

Arial

36

B I U

100%

1:811,964

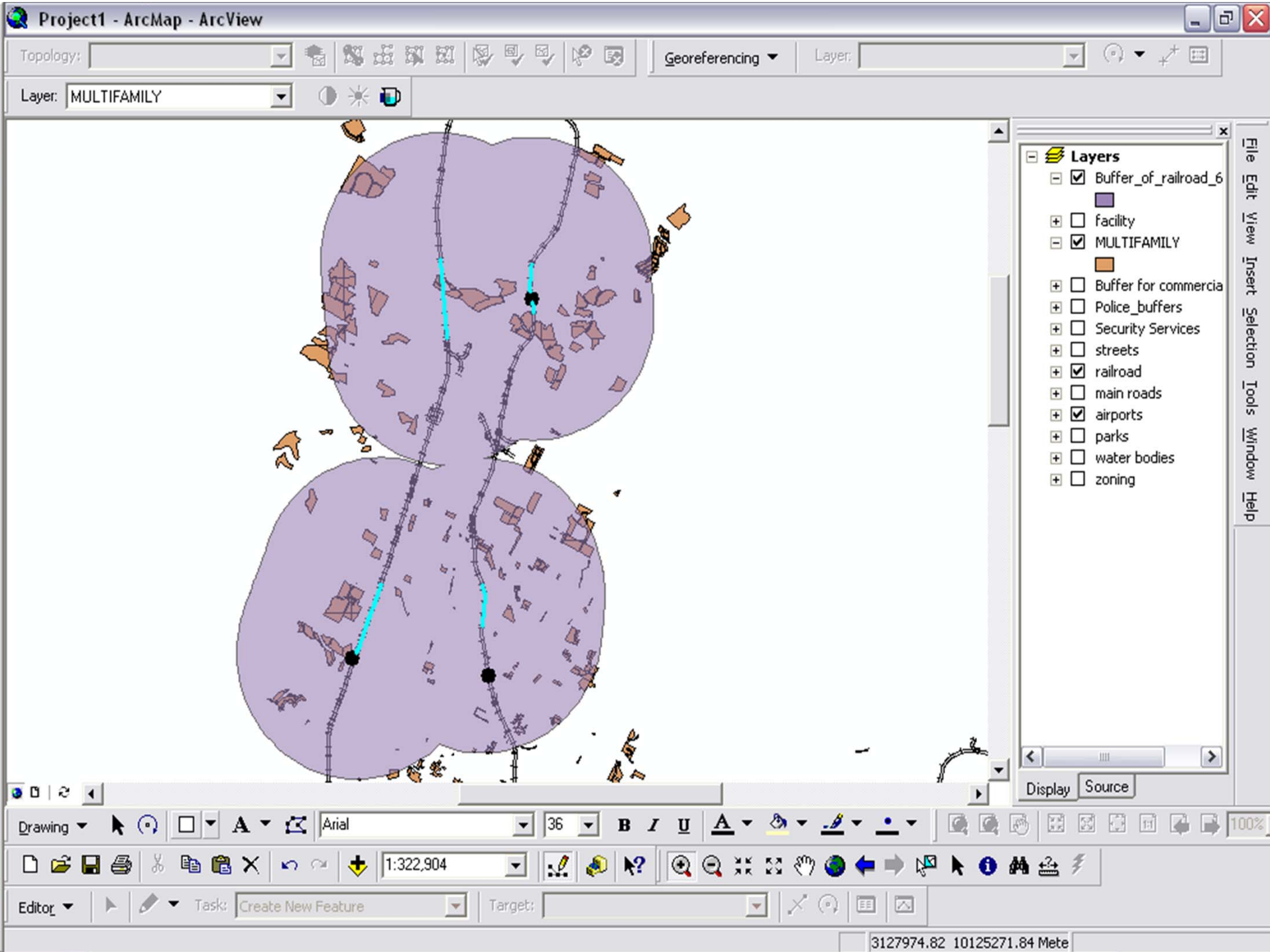
Editor

Task: Create New Feature

Target:

File Edit View Insert Selection Tools Window Help









## 5. Conclusions

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1. Having seen the vast applications of GIS in urban planning applications it can be concluded that GIS is a very powerful tool that can deal with any complex problem.
2. It is very easier for any city's authority like municipality to solve different instantaneous problems such as find out the location of houses with infants for the vaccination program; or it could be the determination of most crowded streets.
3. GIS helps in any governing authority either on federal, state or local level in finding out the working conditions of various facilities available for the society.

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4. There are numerous multi operational tools in GIS that deals with multi layer problems such as; site selection – which depends on many different criteria for selecting an appropriate site.
5. Finally the most important component of GIS is the data. If there is no proper data available even with the availability of best resources i.e., hardware and software nothing can be done.

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THANK "U"

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