TRASPORTATION SYSTEM FOR REGI

MODEL TOWN PESHAWAR

Subject:

BSc Mini project report on QGIS

(Civil Engineering)

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this research work titled

Signature of student

DEDICATION

The effort is dedicated to my loving parents and my prestigious teachers, for all the support and motivation they have given me throughout my life. You have given me so much and thanks for teaching me that I should never surrender. I also dedicate this dissertation to my friends.

1. INTRODUCTION

1.1 Introduction

- The purpose of the project is to improve connections between transit providers and other modes of transportation, and to assist on-going and future transportation planning efforts at the local and regional scale.
- The Project is about finding a GIS based solution to the problem of public transportation within Regi Model Town (RMT) Naserbagh Road , Distric Peshawar
- Regi Model Town Peshawar (RMT) is under the supervision of Peshawar Development Authority.

1.2 Geographic Information Systems (GIS)

Geographic Information Systems (GIS) store, analyze and visualize data for geographic positions on Earth's surface. GIS is a computer-based tool that examines spatial relationships, patterns and trends. By connecting geography with data, GIS better understands data using a geographic context.

The 4 main ideas of Geographic Information Systems (GIS) are:

- **Create** geographic data.
- **Manage** it in a database.
- **Analyze** and find patterns.
- **Visualize** it on a map.

Because viewing and analyzing data on maps impacts our understanding of data, we can make better decisions using GIS. It helps us understand **what** is **where**. Analysis becomes simple. Answers become clear.

Every day, GIS powers millions of decisions around world. It makes a big impact in our life and you might not even realize. For example, we use GIS for:

- Pinpointing new store locations
- Reporting power outages
- Analyzing crime patterns
- Routing in car navigation
- Forecasting and predicting weather

1.3 Problem Statement

- Regi Model Town lacks efficient public transportation system because of no proper transportation system.
- Public transportation system of Regi Model Town consists of only Taxi and rakshasa services. This systems have their own merits and demerits. Taxi system is efficient in terms of time consumption but very expensive; so in other words Regi Model Town doesn't have any efficient public transportation system i.e. one that is efficient both in terms of time and money.

Taxi in Regi model town

Rakshasa in Regi model town

1.4 Objectives

- To facilitate the people living in Regi Model Town (RMT).

i. Without wastage of money

ii. And reached on time to our destination.

Efficient transport system for Regi model town

2. LITERATURE REVIEW

2.1 Overview

Literature Review consists of studying literature related to similar problems and their solutions found in other locations. Transportation planning is an art and science of arranging the transportation infrastructure and facilities according to suitability and appropriateness of the distribution basing on the population and socio-demographic needs of the locality. It deals largely with issues and problems encountered by transportation services, operation, infrastructure and facilities, as highlighted by the contemporary literature.

2.2

The New River Valley (NRV) Metropolitan Planning Organization (MPO) recently launched a project creating a regional GIS portal in support of transit planning initiatives. The purpose of the project is to improve connections between transit providers and other modes of transportation, and to assist on-going and future transportation planning efforts at the local and regional scale.

The project was conducted in two phases. Phase I included meetings with stakeholders to assess regional needs and to discuss transit-planning processes, GIS technologies, and existing data sources. Several stakeholder agencies collaborated to share transit-related data, which was cataloged and edited for public consumption. Phase II made transit data available to the public.

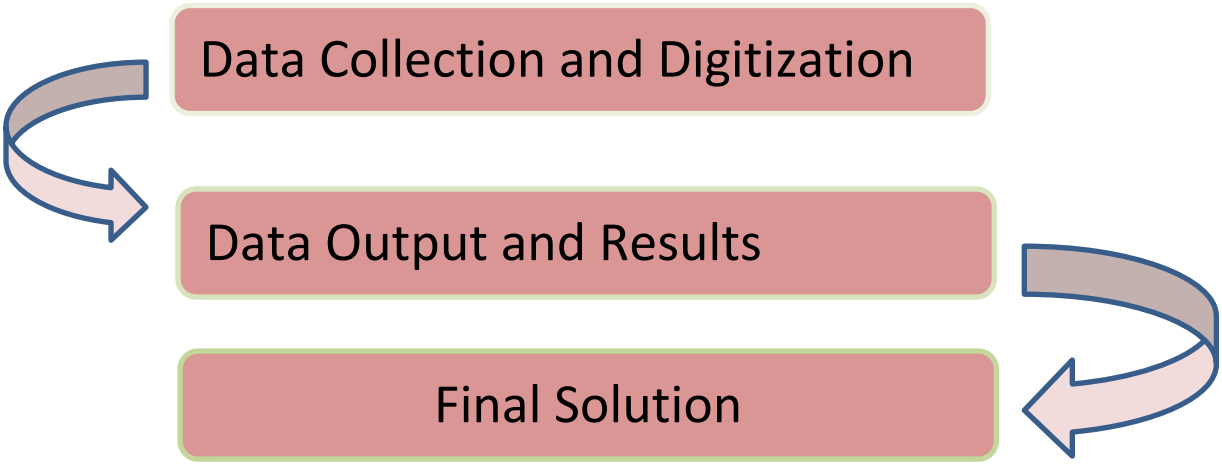
The MPO partnered with the NRV Planning District Commission (PDC) to host the transit data on a FTP site. Using ArcGIS Online, an interactive web map was created featuring route and stop layers for the four fixed-route providers in the region. The project provided an outlet for important discussions between regional transit stakeholders and led to increased communication and collaboration between agencies. A regional transit GIS portal was created to share transit data

featuring links to the FTP site, web map and additional resources regarding the MPO project. [1]

2.3

Geotechnical information acquired from site and laboratory tests are vital for a safe and economical design of building and infrastructure works especially in land development projects. This paper describes the use of GIS in processing and presenting geotechnical data into formats that are useful to engineers, planners and land development professionals. A case study in Seri Iskandar, District of Perak Tengah, and Perak, Malaysia is discussed in this paper. In this study, data stored in GIS systems are processed and presented into maps describing soil types and soil strengths (SPT values) at various depths. Thus, the data are always available and this can reduce a lot of time to retrieve them. [2]

3. METHODOLOGY



3.1 Data Collection and digitization

a) Analysis of existing system of public transportation system of Regi model town
b) Road Network Analysis.
c) Identification of possible destinations and important places of regi model town

a) Analysis of existing system of public transportation system of Regi model town

Currently there is no bus system in regi model town to transport the passengers on regi model town. Because the regi model town is newly constructed town in Peshawar under the supervision of Peshawar development authority.

There is only one transport system which is texi services.

All of these texi pick up most of their passengers from board market stop. The satellite image of board market stop is shown in figure 1.

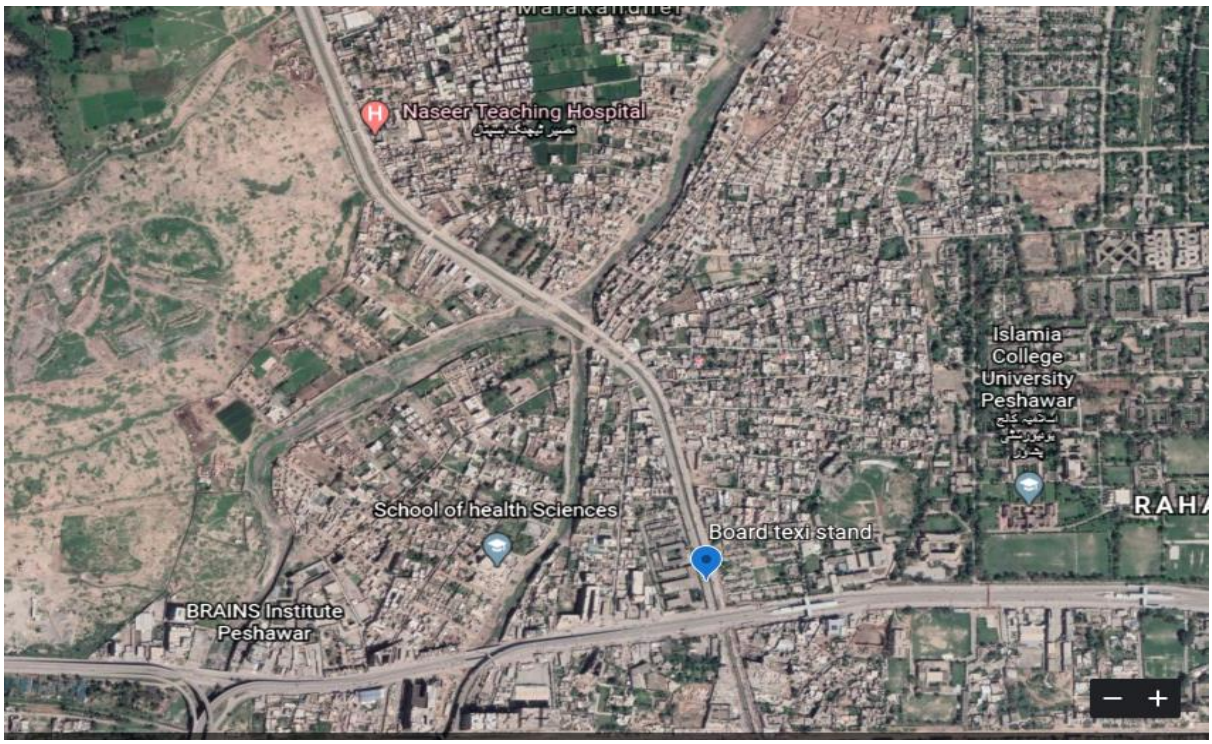


Figure 1 Satellite image of Board stop

b) Road Network Analysis

After that the road network of regi model town was analyzed and roads were divided into different categories as shown in figure 2.

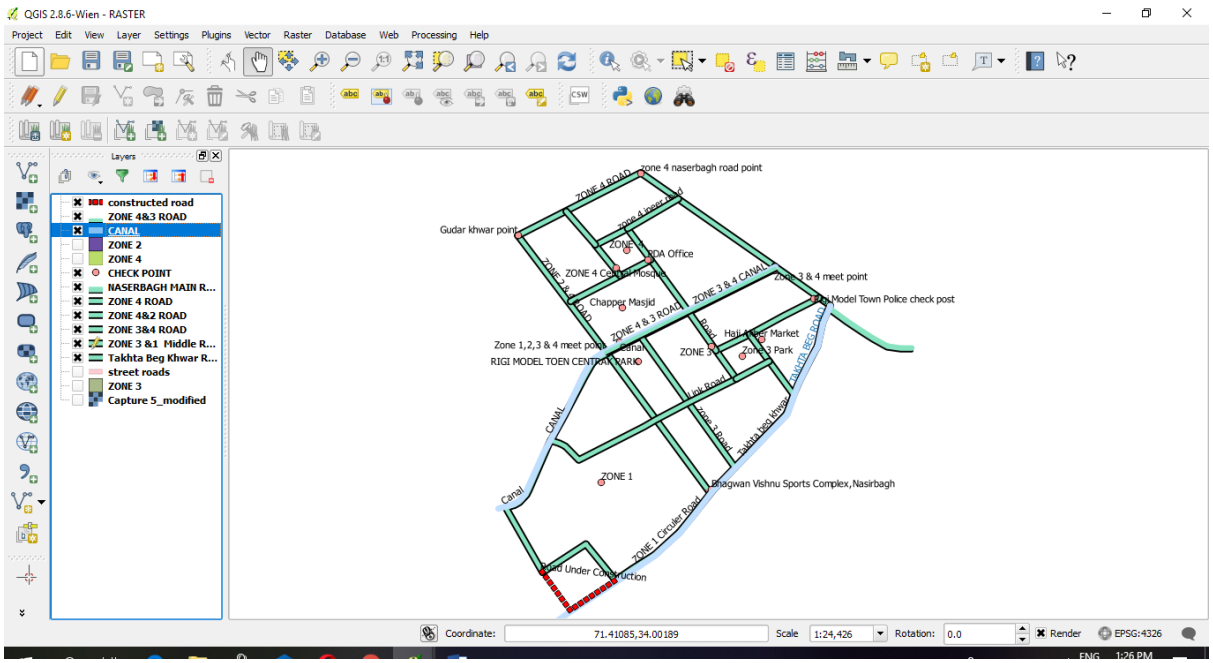


Figure 2: Road network analysis

c) Identification of possible destinations and important places of regi model town

After that different possible destinations were identified and located on a map as shown in figure which included parks masjids etc. Sports complex, commercial areas such as haji Akbar market, super market, zone 4 market etc., and offices such as PDA etc. shown in figure 3.

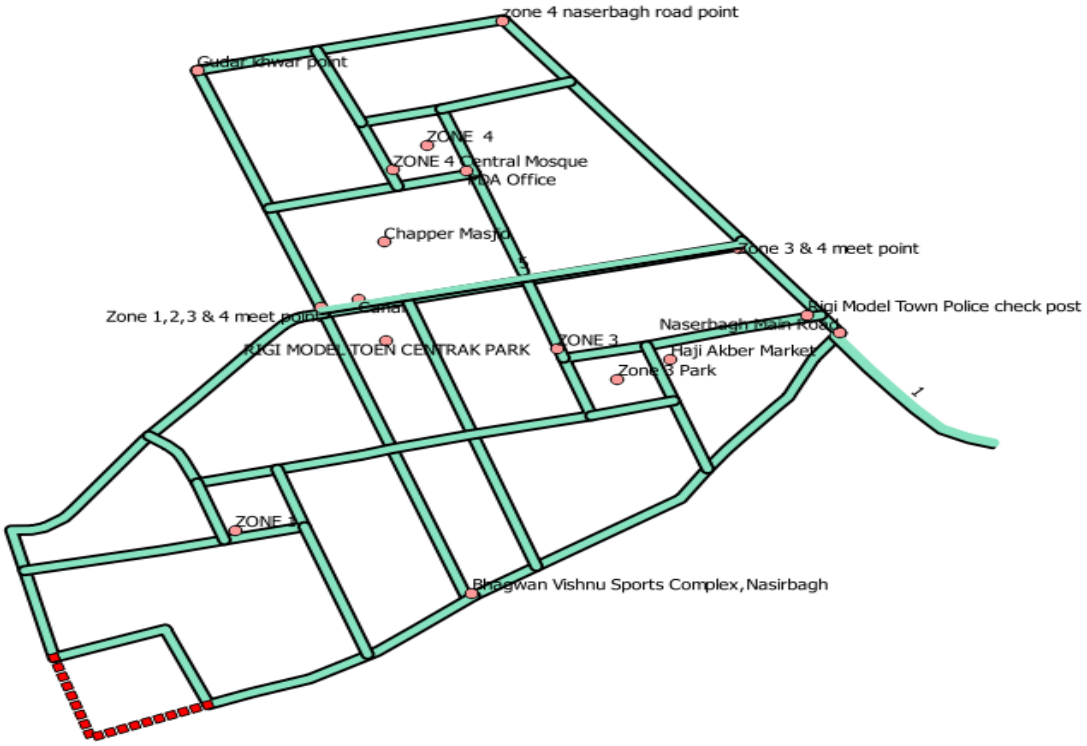


Figure 3: Important places of regi model town

3.2 Data Output and Results

Using these GIS techniques 3 different Routes were identified each one with different properties. Route 1 is shown in figure 4.

Figure 4: Route number 1

The length of this route is 12.803km, it serves 16 number of possible destinations (That are within 200m of this route).

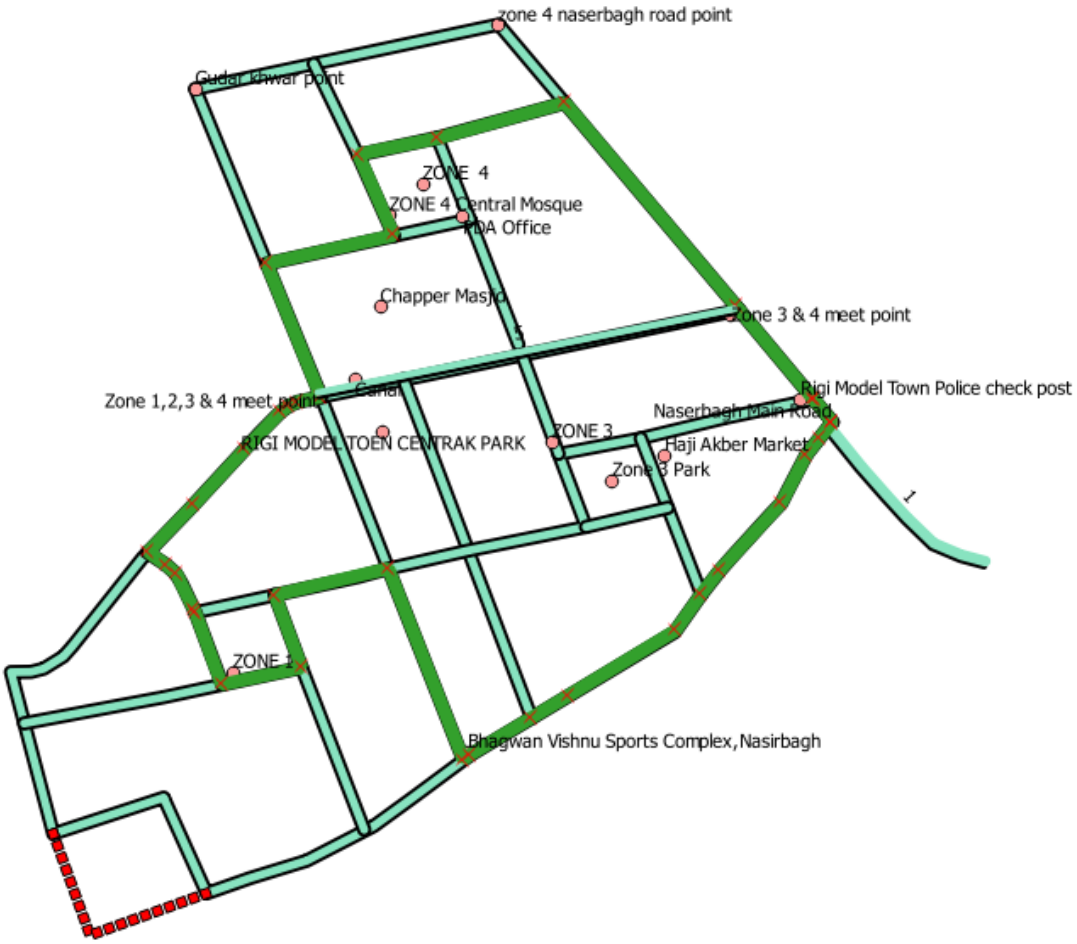


Figure 5: Route number 2

The length of route 2 is 12.522km and serves 23 numbers of possible destinations. It serves highest population compared to other routes; meanwhile the capacity of some of the roads of this route is very low.

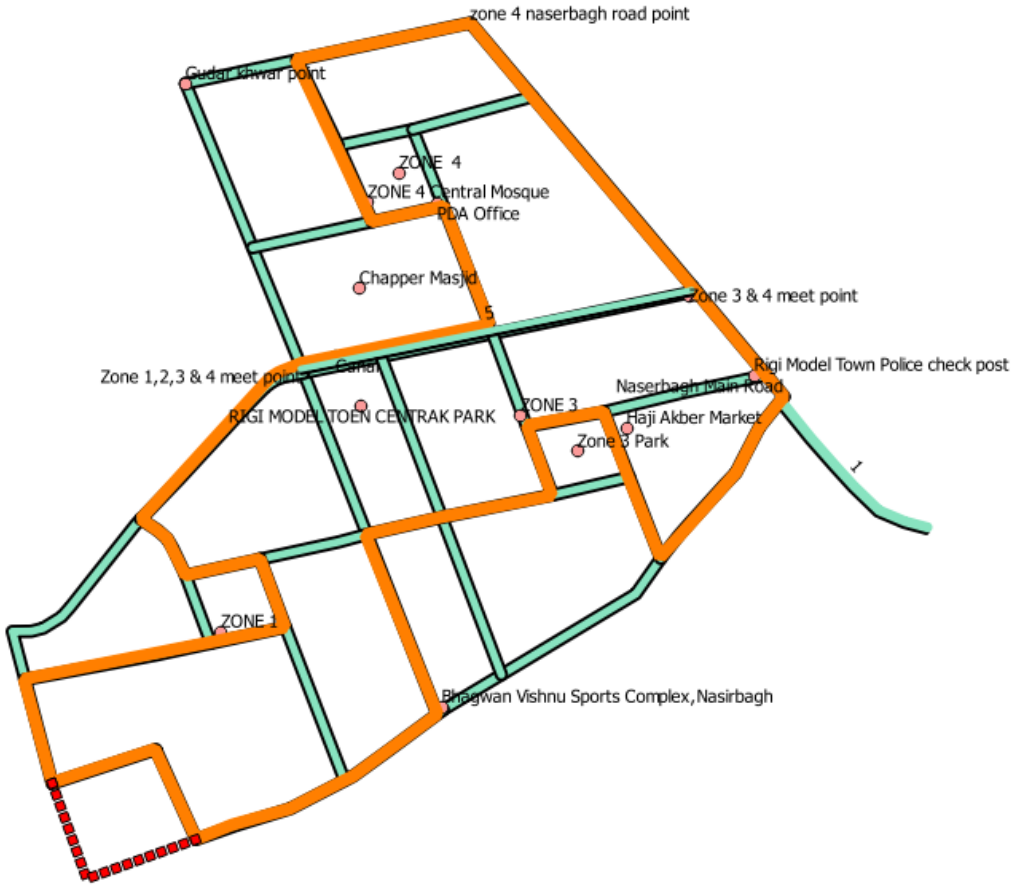


Figure 6: Route number 3

The Final possible route identified is described as route 3 and is shown in figure 6.The length of the route is 19.273km and covers 35 numbers of possible destinations.

4. RESULTS AND DISCUSSIONS

Overall findings showed that the Regi Model Town (RMT) Peshawar District needed better bus services operations. The dependency on the future demand of public transportation service. It is recommended that the local authority and state government to provide an allocation to upgrade and enhance the public transport service and its facilities to sustain the mobility of Regi Model Town (RMT) Peshawar District's people in economic and other daily activities. Level of Service (LOS) of public transport service analysis was very important in determining the efficiency and the quality of current service provided. The LOS is a factor that influences the future demand on public transport service.

5. Applications of the project:

The project has the following applications

- Development of a transit route for public transport users of Regi Model town.
- Provision of frame work for future improvement of public transport system of Regi Model town.
- Provision of a sample and example for development of public transportation routes in other regions of Peshawar.

6. REFERENCES

1) Catherine Howey; Erik Olsen,;Graham M Owen,; DEVELOPMENT OF A REGIONAL GIS PORTAL WITH TRANSIT DATA.
2) W. N. S. Wan-Mohamada,; A. N. Abdul-Ghanib,; The Use of Geographic Information System (GIS) for Geotechnical Data Processing and Presentation.