

INTRODUCTION

DESTINATION PROFILE

DESTINATION/MUNICIPALITY: **ZRENJANIN**

PROVINCE: **VOJVODINA**

REGION: **CENTRAL BANAT DISTRICT**

COUNTRY: **SERBIA**

DESTINATION BOUNDARY (political and physical):

DISTANCE FROM THE NATIONAL CAPITAL CITY AND OTHER POINT OF INTEREST: **66,53 km**

COORDINATES: **45°22'52" N; 20°23'26" E**

ALTIUDE: **76 m**

1. GENERAL OVERVIEW

1.1. Location of the city of Zrenjanin

The city of Zrenjanin is located in the north-east of the Republic of Serbia, in the center of the Serbian part of Banat, part of the Autonomous Province of Vojvodina. The area of the City extends to 1,327 km², which is slightly more than 6.1% of the surface area of the statistical region of Vojvodina, and the second is by surface in the Republic of Serbia.

Zrenjanin is located on the western edge of the Banat, at the place where the channeled river Begej flows into the former trough of the Tisa river. The city lies at an altitude of 80 m, and in the city area the altitude ranges from 77m to 97m.

Zrenjanin is 75 kilometers away from Belgrade, about 50 kilometers from Novi Sad, and about 60 kilometers from the European Union (the state border with Romania), which makes its position an extremely important transit center and a potential resource in the north - south and east - west direction.



Connection with European corridors:

- Corridor 10 - Novi Sad - 50km
- Corridor 7 - Dunav-Tisa-Begej
- Corridor 4 - Timisoara - 8km

Figure 1.1.1. Location of the city of Zrenjanin on the territory of Vojvodina¹

¹ Sustainable Development Strategy of Zrenjanin for the period from 2014. to 2020. years

1.2. Territory of Zrenjanin

The area of the city consists of 23 settlements: Aradac, Banatski Despotovac, Belo Blato, Botos, Centa, Ecka, Elemir, Farkazdin, Jankov Most, Klek, Knicanin, Lazarevo, Lukicevo, Lukino Selo, Melenci, Mihajlovo, Orlovat, Perlez, Stajicevo, Taras, Tomasevac, Zlatica and Zrenjanin (Figure 1.2.).



Figure 0.2. Territory of the city of Zrenjanin²

The area of the settlement Zrenjanin consists of 14 local communities:

- | | |
|-------------------------|----------------------------|
| 1. LC "Centar" | 8. LC "Zeleno Polje" |
| 2. LC "Mala Amerika" | 9. LC "Dositej Obradovic" |
| 3. LC "Zarko Zrenjanin" | 10. LC "Sonja Marinkovic" |
| 4. LC "Nikola Tesla" | 11. LC "Veljko Vlahovic" |
| 5. LC "Gradnulica" | 12. LC "Berbersko-bolnica" |
| 6. LC "Sumica" | 13. LC "Sava Kovacevic" |

² GIS Center Zrenjanin, <http://gis.zrenjanin.rs/>

7. LC "Dolja - Crni Sor"

14. LC "Muzlja"



Figure 1.3. The area of the Zrenjanin with division on 14 local communities³

1.3. Specify if your territory is divided into traffic analysis zones (TAZ)⁴ (provide a GIS file or dwg/jpeg if GIS is not available)

³ Official presentation of the City of Zrenjanin, <http://www.zrenjanin.rs>

Territory of Zrenjanin currently not have an official division into TAZs

1.4. If there is not an official division into TAZs, divide your area in homogeneous zones according to the socioeconomic characteristics, compactness of TAZs' shapes, according to administrative limits (like census sections, municipal borders, etc), physical geographic separators placed on territory (like railways, rivers etc.), exclusiveness, etc.

1.5. The main attractors in Zrenjanin

As a main attractors in the city of Zrenjanin are listed the most important economic zones, the zone of schools and universities, the most popular tourist attractions and the other public and private services.

The industrial zone represents the zones of the City whose areas are intended for production facilities of industry, small business, trade, crafts, business facilities, warehouses and services, supply stations for road vehicles with propulsion fuel, warehouse spaces and escorts contents as well as other contents that do not endanger life envirement with their work and all other complementary content. In the territory of the City of Zrenjanin is defined surfaces for nine industrial zones. Figure 1.4. shows position of industrial zones in the settlement Zrenjanin.

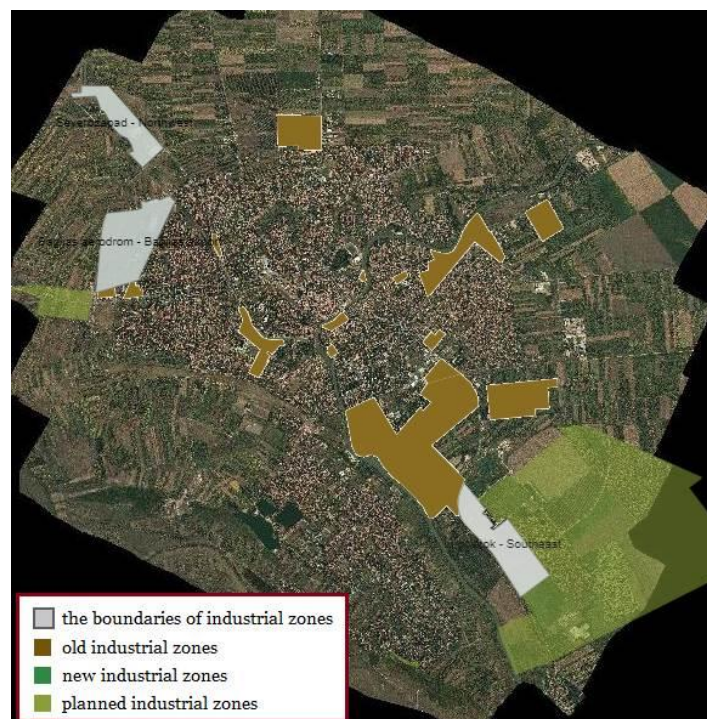


Figure 1.4. Industrial zones in the city of Zrenjanin⁵

⁴ Traffic analysis zone: a portion of territory with homogeneous characteristics according to activities, accessibility, transport infrastructures and transport service.

⁵ GIS Center Zrenjanin, <http://gis.zrenjanin.rs/>

Within the territory, there are also business complexes dispersed throughout the city. Their total area is 39.3 ha and they are located in urban areas, in areas of other purposes: city center and housing. Some of them are: AD ZIP Beer Industry Complex located in the city center, AD "Udarnik" an enterprise registered for the production of socks (knitted and knitted) located in the city center, AD "Zitoproduct", whose activity is the grinding of cereals, DOO "Kolpa" produces bathroom equipment and materials for outdoor use coating facilities - located in the immediate vicinity of the hospital, "Sinvoz" complex - production and repair of the wagon is located near the hospital complex, Complex of hat factory AD "Begej" which is engaged in production clothing and accessories, located along the river Begej, Company "Duvanika" DD, "Zirko" is located along the river Begej, "Naftagas" - "Maintenance", Complex PC "Purity and greenery", Block for mixed purposes, Block "Urosh Predic".

There are a total of 31 elementary schools in the territory of the city of Zrenjanin, of which 10 elementary schools are on the territory of Zrenjanin. Based on the Bureau of Statistics, is known for the fact that in 2016. year there are a total of 9251 elementary school students, which makes elementary schools one of the most important attractors. Total of 9 middle schools are on the territory of the city. Based on the Bureau of Statistics, is known for the fact that in 2016. year there are a total of 1097 middle school students, so middle schools as well represent one of the most important attractors.

On the territory of the city exists 2 faculties. The first one is Technical faculty "Mihajlo Pupin" and the second is High Technical School of vocational studies. Based on the Bureau of Statistics, is known for the fact that in 2016. year there are a total of 1762 students, of which 1178 is attending Technical faculty, and 584 students is attending High Technical School. This two faculties attract a large number of students in this part of the city.

The locations of all elementary schools, middle schools and high schools located in the city are shown on the figure 1.5.



Figure 1.5. Location of elementary schools, middle schools and high schools in Zrenjanin⁶

Through Zrenjanin, of great importance for tourism, stretches: state roads and roads of the first and second order, railroad, navigable transit direction - of the Begej River within HS channel Dunav-Tisa-Dunav.

The basic characteristics of tourist activity in Zrenjanin are:

- low level of tourist traffic,
- the highest number of business visits,
- increase of number of student excursions,
- small average length of visitors' stay,
- low level of use of accommodation capacities,
- small tourist consumption that is realized mainly in catering,
- domestic tourism is the main feature of tourism,
- possibility of placement of hunting tourism and increase of foreign tourist traffic.

Within the tourist offer of Zrenjanin there are cultural and historical monuments, cultural institutions and organize manifestations, hunting and fishing tourism, sports-recreational tourism and student excursions.

Famous places in the city:

- National Theater (oldest theater in Serbia from 1839),
- Museum (1906),
- Town House - County Palace (1826 with a crystal festive hall, stained-glass windows and "Pantelidjev sat", City Hall park with rare flora, terrarium and music pavilion),
- Historical archive,

⁶ GIS Center Zrenjanin, <http://gis.zrenjanin.rs/>

- The building of the former camp (in the city garden),
- Catholic Church (1868),
- Monument to Petar I Karadjordjevic,
- Bukovec palace,
- Bence's palace,
- Tuner's palace,
- Pani's palace,
- Serbian Savings Bank Palace,
- Dunderski Palace,
- Court Palace,
- Alley of the giant in Karadjordjevo park with bistros of the famous one's fellow citizens.



Figure 1.6. Location of the cultural monument on the map of Zrenjanin⁷

Hunting and fishing tourism

The Begej River flows through Zrenjanin. Fishing tourism is planned in the spatial integrity number II, within the complex of the lake. On the southern edge of the city, in the spatial integrity number VI - "Mužlja", the surfaces are arranged ("PESKARA"), which provide the possibility for the development of fishing tourism.

In the City there are several sports and recreation centers suitable for development of sport's and recreational tourism:

1. Sport's center "Karadjordjev trg" with City park, hall "Medison", a new sports hall that is under construction, with a football stadium, a small sports stadium and an auxiliary - recreational terrains;
2. Sport's and recreation center "Jug" with a complex of open and indoor pool;
3. Sport's and recreation center "Sumica" - a picnic area with a motel on the shore of the DTD channel with a sleeve surrounding the picnic, has sports facilities, trim trail, children's playground, camping settlements and supporting infrastructure; at this location it is planned regulation of picnic area into the bathing area;
4. Sport's and recreation center "Gradnulica" with a stadium for small sport's, football fields, tennis and volleyball courts, close to the City shooting range Beckerek;
5. Sport's and recreation center "Pescara" is a complex of artificial lakes caused by sand excavation, and space is suitable for sports-recreational tourism;

⁷ GIS Center Zrenjanin, <http://gis.zrenjanin.rs/>

6. "Jezera" complex, the system of three artificial lakes originating from the old meander of Begej, in the central part of the City, intended for sports, recreation and fishing.

Also places that attract travel to the city are markets and cemeteries.

The following markets operate in the city:

1. Central Market;
2. Market in Jug Bogdan;
3. Market on Bagljas;
4. Market in the Man;
5. Planned Kvantash Market;

Health tourism has the longest tradition in the area of Zrenjanin. Spa Rusanda (*Figure 1.7.*) located in Melenci started to work in 1867. Since the trend of the spa & wellness centers takes an increasing share of the market tourist offer, this locality, with known and recognized medicinal properties has the conditions that along with the primary health function also develops a tourist offer. Special hospital for physical medicine and rehabilitation Rusanda Melenci is expanding its activity to organizing workers' recovery and pensioners, the preparation of top athletes and the provision of preventive recovery services.



Figure 1.7. Spa Rusanda⁸

Currently, in Zrenjanin is located seven cemeteries (Tomasevacko, Grdanulicko, Temisvarsko, Reformativ-Evangelical cemetery, Catholic cemetery, Muzljansko cemetery and New cemetery) in total area 62,4 ha.

⁸ Tourist organization of the Vojvodina, <https://vojvodinaonline.com>



Figure 1.8. Location of city markets and cemeteries⁹

Zrenjanin is the city of bridges which are deployed on 10 locations:

- 1) The Great pedestrian bridge from 1971, erected at a place known "Ajfelova Cuprija" (1904),
- 2) Small bridge (1904, the so-called "Beckerecka Cuprija"),
- 3) Main Bridge at Princip Street (1992),
- 4) Main Bridge at the SUP (1965),
- 5) Bridge in Zmaj Jovina Street (1969),
- 6) Hanging pedestrian bridge (1962) is a unique object of this type made of steel, concrete and steel wire. Since 1985, after the river flows over, the bridge has lost its function
- 7) Harbor pedestrian Bridge (1963), which connects the quarter "Little America" with an industrial zone,
- 8) Harbor Bridge at the "Berber" settlement (1970), built on the foundations of the wooden pontoon bridge (1927) - "Daunova Cuprija",
- 9) The iron railway bridge (1937) was built at the site of the old railway bridge (1889) when establishing the railway Zrenjanin - Vrsac,
- 10) "Muzljanski" bridge from 1957. he replaced the wooden scaffold that connected for decades the suburban settlement Muzlje with the city.



1.The Great pedestrian bridge



2.Small bridge



3.Main Bridge at Princip Street

⁹ GIS Center Zrenjanin, <http://gis.zrenjanin.rs/>



4. Main Bridge at the SUP



5. Bridge in Zmaj Jovina Street



6. Hanging pedestrian bridge



7. Harbor pedestrian Bridge



8. Harbor Bridge at the "Berber" settlement



9. The iron railway bridge

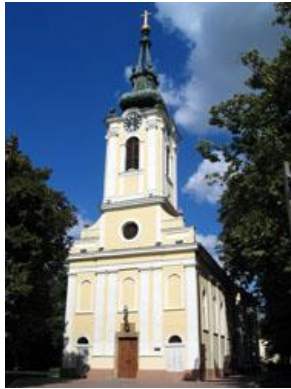


10. "Muzljanski" bridge

Figure 1.9. The appearance of all 10 bridges located in Zrenjanin¹⁰

Religious buildings built in the urban area represent a cultural and historical heritage, and in relation to the specificity, significance and architectural value of the building, they earn a certain degree of protection. They are a benchmark facilities, dominant during the formation of the urban matrix of the city. The religious buildings that exist in Zrenjanin are:

¹⁰ Official presentation of the City of Zrenjanin, <http://www.zrenjanin.rs>



1. Temple of the Assumption of the Holy Virgin



2. Roman Catholic Cathedral



3. Temple of "Vavedenja" of the Holy Virgin



4. Reformatory church



5. Slovak Evangelical Church



6. Church of the Holy Archangel Michael



7. Piarist Church



8. Monastery of Saint Melania of Rome



9. The Roman Catholic Church in Muzlja

Figure 1.10. The appearance of all 9 Religious buildings located in Zrenjanin¹¹

Also the temples were built in all settlements in the City of Zrenjanin and many of them have an important architectural and artistic value.

¹¹ Official presentation of the City of Zrenjanin, <http://www.zrenjanin.rs>

Every year in Zrenjanin, events are organized which are interesting both for the local population and for tourists, as follows:

- "Zrenjanin Cultural Year",
- "Beer Days",
- "Lala", - international folklore festival,
- "Sunflower",
- "INO - COOP",
- "The Great Wave of the Horse",
- "Harvest Days"

2. GEOMORPHOLOGICAL DATA

2.1. Approximate size of the destination (in square km) and main physical characteristics (rivers, hills, bays, altitude etc.)

	Size (Km ²)
City	1327
Urban Area	7.26

Main physical characteristics:

1. The Territory of the City of Zrenjanin gravitates toward the four navigable rivers and the dense channel network of the Hydrosystem "Dunav - Tisa - Dunav", which makes it one of the densest river hubs in Europe. Zrenjanin is formed and lies on the river coast of the River Begej, which flows through Zrenjanin in a length of about 13km. River regulation in the period 1970-1985. year, its course is shortened, and the meander around the settlement "Little America" has been turned into three lakes for recreation, sport and fishing. Surface area of the lakes is 0.08 km². Only ten kilometers from the City flows the river Tisa, the largest tributary of the Dunav throughout its course. The confluence of the Tisa River in the Dunav, about thirty kilometers from Zrenjanin, represents the administrative border of the territory of the City. The fourth river on the City territory is Tamis;
2. Of the total area belonging to the City of Zrenjanin, 82.5% is agricultural land;
3. The altitude of Zrenjanin is 80 meters, and in the territory of the City it ranges from 77 to 97 meters;

3. WEATHER PATTERN

Sunshine: average number of hours per season

Summer	June	July	August	September
hours	261	291	274	204

Winter	December	January	February	March
hours	65	72	102	153

Shoulder Season	April	May	October	November
hours	188	242	163	97

Precipitation: average mm per season

Summer	June	July	August	September
mm	41	8	23	54

Winter	December	January	February	March
mm	53	11	11	20

Shoulder Season	April	May	October	November
mm	51	28	35	22

Temperature: average day and night temperatures per season

Summer	June	July	August	September
Day °C	20,6	22,3	23,9	18,7

Night °C	14,8	17,4	16,7	13,1
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Winter	December	January	February	March
Day °C	2,1	1	3,5	6,5
Night °C	-2,4	-7,2	-6,8	0,65

Shoulder Season	April	May	October	November
Day °C	12,1	17,5	14,7	8,3
Night °C	7,09	11	3,25	1,05

4.LAND USE AND BUILT ENVIRONMENT

4.1. Land use (square km)¹²

Residential: 15,704 km²
 Retail: 0,07 km²
 Office: 0,393 km²
 Industrial: 11,485 km²
 Traffic areas: 4,682 km²
 Traffic complexes: 0,106 km²
 Communal areas: 0,675 km²

Public buildings: 0,388 km²
 Water surfaces: 0,868 km²
 Public vegetation: 0,654 km²
 Sport and recreation: 0,611 km²
 Agricultural land: 1,33 km²
 Utilitarian vegetation: 0,96 km²
 Protected vegetation: 1,759 km²

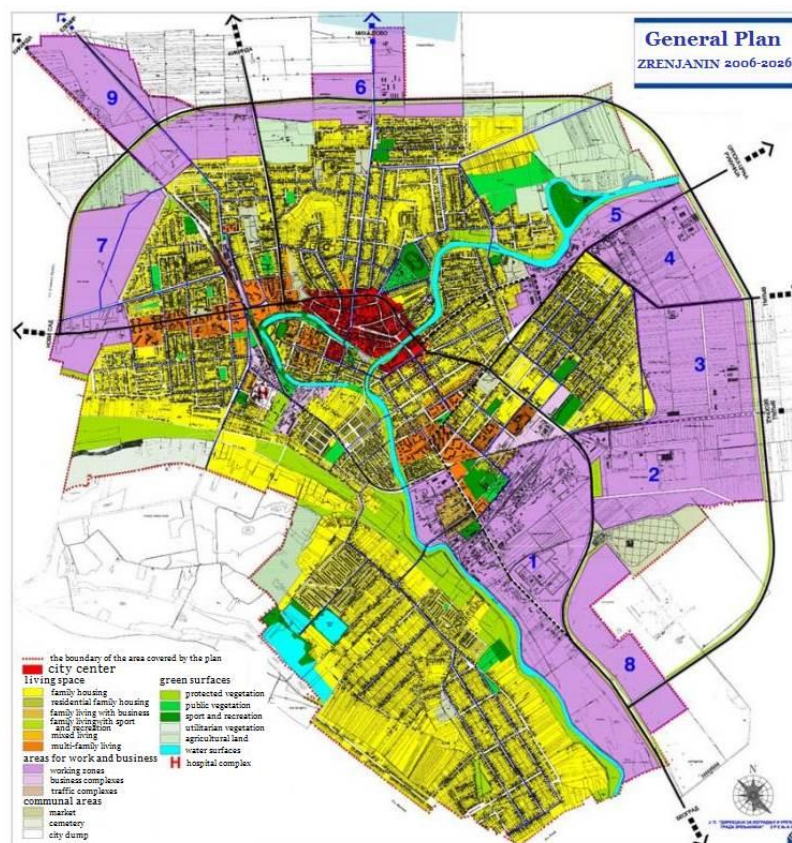


Figure 4.LAND USE AND BUILT ENVIRONMENT1.Map from General plan of Zrenjanin with land use for period 2006-2026. Year¹⁰

¹² Data from General Plan of ZRENJAN for 2006-2026;

http://www.zrenjanin.rs/userfiles/file/Urbanizam_PlanskiDokumenti/GeneralniPlan/2.1.%20namena%20povrsina.pdf

In Zrenjanin, the largest percentage of land use is for residential purposes, as much as 15,70 km², and the percentage which industry is taking is also significant, 11,48 km².

4.2. Average Property values

Average prices per square meter of real estate (in euro per m²)¹³

Types of real estate	I ZONE	II ZONE	III ZONE	IV ZONE	V ZONE
Building land	27.86	20.92	13.39	2.73	2.73
Agricultural land	/	0.90	0.90	0.87	0.80
Apartments	574.97	574.97	/	162.66	/
Houses	375.31	311.21	293.05	163.58	104.14
Business building and others construction objects that serve for performing activities	628.87	628.87	/	290.37	/
Garages	206.55	206.55	/	90.32	/

Official middle exchange rate for dinar on 01.01.2018. year is 1 din. = 118,47 euro

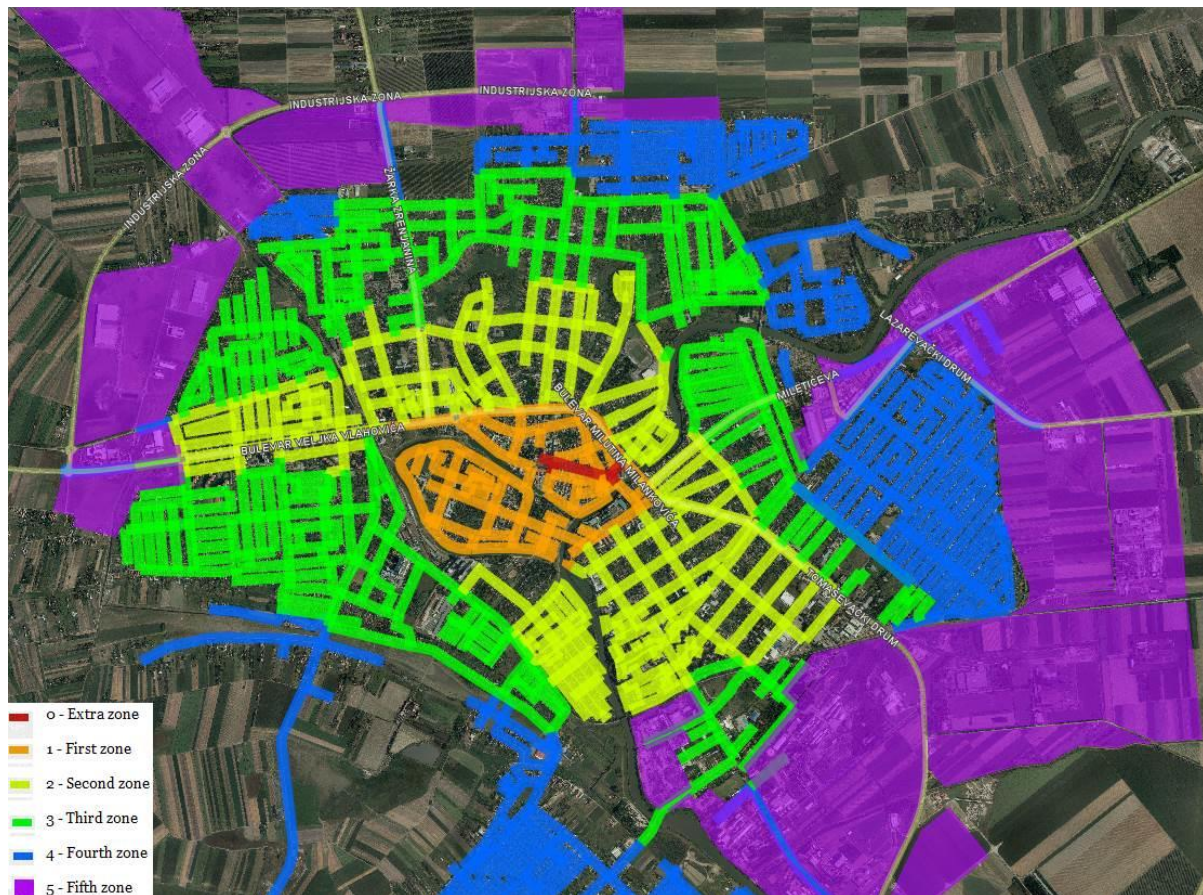


Figure 4.2. Map of Zrenjanin with shown division in 5 urban zones¹⁴

In the territory of the Zrenjanin, five zones have been designated, depending on public utility equipment and facilities, traffic connections with the central parts of the city of Zrenjanin, i.e. working zones and other contents in the settlement. The first zone is the best equipped zone.

¹³ Official Gazette of the City of Zrenjanin (number 34 from 30. November 2017.)

¹⁴ GIS Center Zrenjanin; <http://gis.zrenjanin.rs/?map=demo>

Depending on the area (zone) in which the property is located, depends the average price per square meter of real estate (displayed in dinar) and the table above shows the rates which are used in determining the property tax for 2018 year in the city of Zrenjanin.

5. DEMOGRAPHIC DATA

5.1. Permanent residents (minimum 10-year time series) ¹⁵

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
number	127416	126325	125391	124501	123362	122508	121683	120709	119710	118699	117735
% male	48,5	48,5	48,5	48,7	48,7	48,6	48,6	48,6	48,6	48,6	48,6
% female	51,5	51,5	51,5	51,3	51,3	51,4	51,4	51,4	51,4	51,4	51,4

Observing the period from 2007 to 2017. year, based on the data taken on the Republic Statistics Institute of the Republic of Serbia, it can be concluded that the number of permanent residents declining over time, and for the period of 10 years the number of inhabitants has decreased by almost 10,000 inhabitants. As for the percentage of men and women in the total population, women have a mild preference for all the observed years.

5.2. Non-permanent residents (transfer student, transfer workers, etc.) (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
number											
% male											
% female											

Data of number of non-permanent residents are not available.

5.3. Population Density

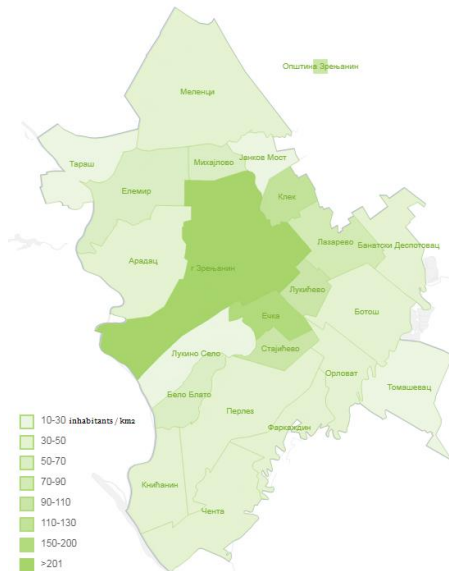
Average Population Density (ab/square km)¹⁵

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ab/km ²	97	96	95	94	94	93	92	92	91	90	89

Table 5.3. shows average population density which decreases over the years, but ranges from 89 to 97 inhabitants per square kilometer. Figure 5.1. shows population density for City of Zrenjanin taken from the GIS site of the City with displayed population density distributed on territory for 2002. year (on the left) and for 2011. year (on the right). It is noted that the densest areas of the City of Zrenjanin are Zrenjanin itself, then settlements Ecka, Klek, Stajicevo, Lukicevo, and then the rest.

¹⁵ Republic Institute of Statistics, Republic of Serbia, Municipalities and regions in the Republic of Serbia, editions from 2007 to 2017

Population density distributed on territory for 2002. year



Population density distributed on territory for 2011. year

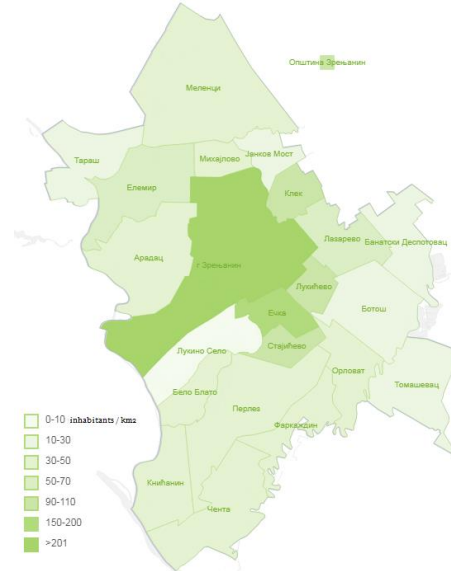


Figure Error! Use the Home tab to apply Naslov 2 to the text that you want to appear here. Map of city of Zrenjanin with displayed population density distributed on territory for 2002. year (on the left) and for 2011. year (on the right)¹⁶

The densest area of City of Zrenjanin based on the census from 2011. year¹⁶

densest area	ab/km ²
a) settlement Zrenjanin	577
b) settlement Ecka	152.7
c) settlement Klek	109.4
d) settlement Stajicevo	94.4
e) settlement Lukicevo	92.1

5.4. Age of permanent residents ¹⁷

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Average age of permanent residents	40.31	40.93	41.15	41.34	41.52	41.71	42.30	42.52	42.74	42.92	43.12	43.34
Senior index	107.7	108.6	109.2	109.6	109.6	118.3	120.2	124.6	128.7	132.19	138.95	138.98
Birth rate	8.9	9.3	8.9	9.1	8.7	8.8	8.5	8.1	8.7	8.9	8.3	/

5.5. Distribution of population by age classes (number)¹⁸

	2002	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
0-14	20268	18972	18689	18395	18141	17445	17253	17034	16929	16909	16752	24946
15-24	17929	87843	87229	86834	86473	14501	84517	83423	81992	80449	79244	58120
25-34	17288					16323						
35-44	18510					16500						
45-64	37377					37958						
over 65	20679	20601	20407	20162	19887	20635	20738	21226	21788	22352	22703	34669

¹⁶ GIS portal Zrenjanin; <http://gis.zrenjanin.rs/>

¹⁷ Senior Index is a dynamic statistical indicator used in demographic statistics to describe the weight of the elderly population in a given population. Senior Index=(PR>65/PR<14)*100 with P=Permanent Resident

¹⁸ Republic Institute of Statistics, Republic of Serbia, Municipalities and regions in the Republic of Serbia, editions from 2007 to 2017

Total	132051	127416	126325	125391	124501	123362	122508	121683	120709	119710	118699	117735
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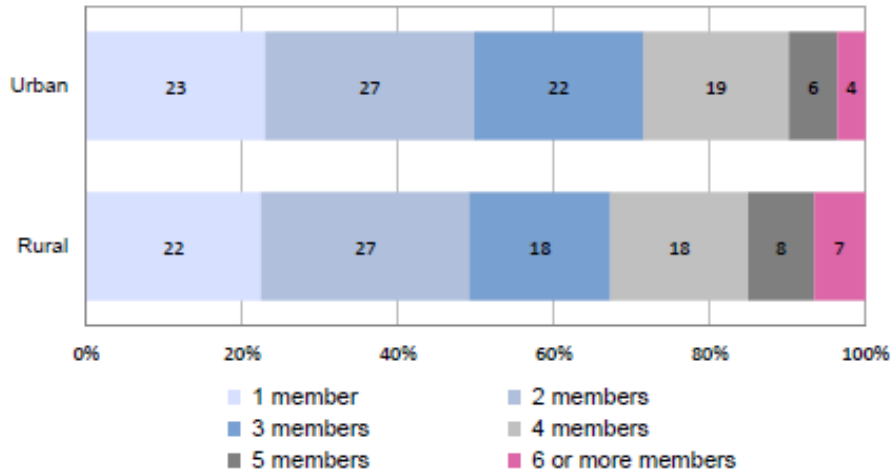
Although complete data for all age groups are available only for 2002. and 2011. year when the population census is done, it is noted first that the number of inhabitants in Zrenjanin decreases from year to year, and also has more senior citizens than children under 14 years of age. Average age of permanent residents from 2006. to 2017. year is 42,5.

5.6.Family ¹⁸

	2002	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of households	46375	/	/	/	/	44470	/	/	/	/	/	/
Average members for household	2,84	/	/	/	/	2,77	/	/	/	/	/	/

Only available data from 2002 and 2011 about average members for household when the population census is completed. Average members for household on 2011. year is 2,77 members. Below are the percentages of households by number of members. The most numerous households in 2011. year are with 1 and 2 members.

Households according to the number of members, 2011



Source: Census of Population, Households and Dwellings, SORS.

6. SOCIOECONOMIC DATA

If available, provide the following data for each TAZ

Data for paragraphs 6.1 and 6.2 are not available.

6.1. The most developed economic sectors of your area (%) (minimum 10-year time series)

Sector	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Primary											
Secondary											
Tertiary											

6.2. The most developed activities in the mentioned sector (%) and relation to the national average

Activity	%	National Average (%)
other		

6.3. School: indicate the number of students (minimum 10-year time series)¹⁹

School	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Junior High School	10692	10315	10110	10023	9830	9693	9592	9460	9391	9441	9317
High School	6362	6100	6014	6007	5954	5908	5742	5635	5302	5091	5039
University	3337	3337	3043	2591	2284	2378	2233	2165	1926	1753	1762
Total	20391	19752	19167	18621	18068	17979	17567	17260	16619	16285	16118

As is the case with the population, as the same may be concluded that the number of students in schools is getting smaller every year. For a period of 10 years the total number of students decreased for more than 25%.

6.4. Number of employed and operators for each economic sector or activity in Zrenjanin

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Industry	7739	6739	6489	6948	7360	7713	7713	8006	8401	9143
Public service	4047	4195	4186	4192	4210	4268	4237	4147	4129	5563
Private service	5804	5586	5426	4968	4364	4161	4161	4301	4717	4815
Tourism	284	268	262	259	251	247	245	248	219	278
School	2437	2601	2615	2683	2702	2696	2696	2671	2665	2292
Agriculture	1700	1453	1325	1280	1164	1071	1071	1074	964	813
Other	8385	5467	5983	6562	7360	7428	7354	7396	6987	9353

On the basis of the available data, it can be concluded that the observed period is accompanied by a gradual increase in the number of employees in public sectors as well as the indrustation, while the reduction in the number of employees occurs in the private sector as well as in agriculture.

¹⁹ Republic Institute of Statistics, Republic of Serbia, Municipalities and regions in the Republic of Serbia, editions from 2007 to 2017

6.5. Relative contribution of tourism to the destination's economy (% GDP) (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
% GDP											

6.6. Population employed in tourism related jobs (%) and relation to the national average (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Population employed in tourism (%)											
National Average (%)											

Data for paragraphs 6.5 and 6.6, concerning the contribution of tourism to GDP as well as the number of employees in tourism related jobs, are not available.

6.7. Unemployment (number) and relation to the national average (number)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Unemployment ²⁰	15 365	12377	12523	11717	11078	10130	8948	8493	7797	8371	6052
National Average ²¹	850004	755935	746605	744222	752838	761834	774890	767435	743158	713153	617000

Based on the table with the number of unemployed, it can be concluded that the number of unemployed over the years in Zrenjanin has been steadily declining, and that for a period of 10 years, unemployment has decreased by 60%. It is noticeable that at the national level, the number of unemployed also decreases. It can be noticed that in relation to the national total number, Zrenjanin makes 0.98% of unemployment.

6.8. Income ²⁰

Average Income (€) and relation to the national average (€)

	2006	2007	2008	2009	2010	2011
Average Income (€)	26,069,708.9	36,452,107.52	37,003,623	27,484,242.4	25,292,890.3	30,359,604.4
National Average (€)	1747,763,962	2,025,136,055	2,079,996,873.6	1,733,941,047	1,811,688,378	2,060,259,604.4

	2012	2013	2014	2015	2016
Average Income (€)	41,494,575.3	31,422,967.6	29,148,032.4	31,498,380.3	30,925,285.5
National Average (€)	2,516,754,001.1	2,110,048,796.2	1,914,158,936.8	2,017,311,855.6	2,212,357,908.8

6.8.1. Euro exchange rate ²²

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1 dinar = [euro]	79	79.24	88.6	95.89	105.49	104.64	113.72	114.64	120.96	121.63	123.47

²⁰ Republic Institute of Statistics, Republic of Serbia, Municipalities and regions in the Republic of Serbia, editions from 2007 to 2017

²¹ National Employment Service of Republic of Serbia, <http://www.nsz.gov.rs>

²² National Bank of Serbia, <http://www.nbs.rs>

Based on the table with the average income, it can be noticed that in relation to the national total number for 2016. year, Zrenjanin makes 1.5% of income. The income of Zrenjanin ranges from 25.3 to 41.5 million euros per year.

Average income for different macro areas defined in 1.2 and 1.4 (€):

- a) _____
- b) _____
- c) other

Data of average income for different macro locations are not available.

7. ANY ADDITIONAL INFORMATION RELEVANT TO YOUR DESTINATION THAT YOU FEEL HAS NOT BEEN COVERED IN THE SECTIONS ABOVE

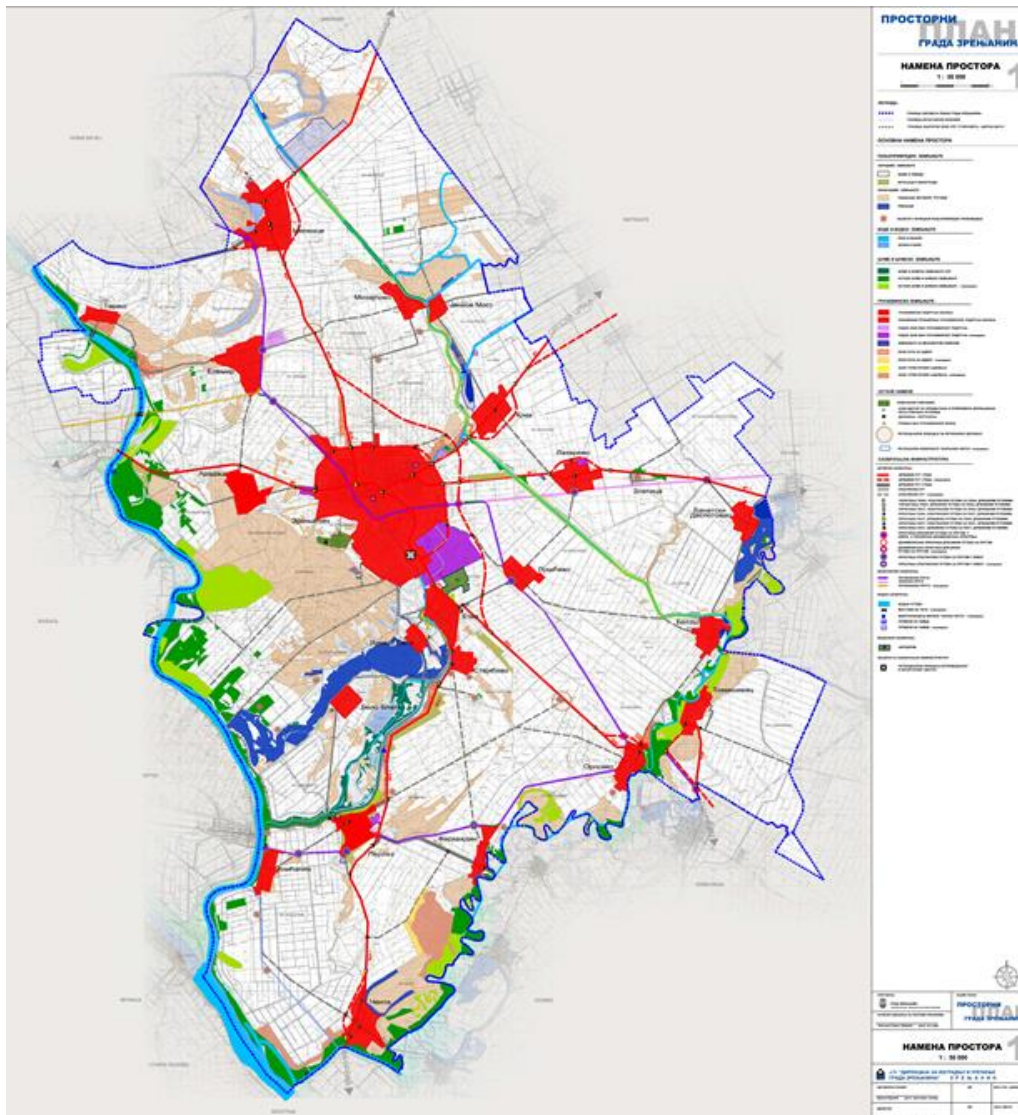


Figure Error! Use the Home tab to apply Naslov 2 to the text that you want to appear here. Map of city of Zrenjanin from a spatial plan²³

On figure 7.1. is shown a map of the City of Zrenjanin with the displayed border of the city as well as with the basic purpose of the area, which includes agricultural land, water and water land, forests and forest land, construction land, traffic infrastructure (road, rail, water and air traffic). In addition to the existing infrastructure, the map shows the purpose of the land, as well as the planned new traffic infrastructure. A detailed description of the image is available on the site mentioned in the footnote.

TRANSPORT SYSTEM

8. TRANSPORT DEMAND

8.1. Number of residents, commuters and tourists in your area ²⁴

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Residents	135376 (popis 2001)				122714 (popis 2011)						
Commuters	1000	1071	1232	1506	1794	1958	2035	2082	2150	2186	2219
Tourists	7789	18974	16271	15278	15451	15324	16862	15147	14713	15261	11216

Observing the period from 2007 to 2017. year, it can be concluded that the number of residents declining over time, but at the same time the number of commuters is increasing. Average number of tourists in 10 years period is 14,753.00.

8.2. Number of total trips in your area ²⁴

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
n° trips	372789	409974	466271	565278	670451	730324	759862	775147	799713	813261	821216

From the shown, annual level of total trips in Zrenjanin, it is noticeable that the number of trips has grown from year to year, so in 2017 it was higher for 448,427.0 trips, or 2.2 times higher.

8.3. Number of trips made by residents, commuters and tourists ²⁴

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Residents	45000	47100	48100	49400	50010	51200	52060	52950	53650	54150	54980
Commuters	365000	391000	450000	550000	655000	715000	743000	760000	785000	798000	810000
Tourists	7789	18984	16271	15278	15451	15324	16882	15147	14713	15261	11216

The largest number of trips are made by commuters, than residents and eventually tourists.

8.4. Trips by reason of transport (number) ²⁴

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Trip for study	daily	8010	7950	7650	7865	7961	8100	8065	7832	7941	8095	8165

²³ Official presentation of the city of Zrenjanin <http://www.zrenjanin.rs/1-405-404-0/Prostorni-plan>

²⁴ The data in paragraphs 8.3, 8.4, 8.5 and 8.6 were submitted from the relevant local institutions of the City of Zrenjanin

	peak hour	4020	3561	3950	3840	3762	4032	4100	3845	3650	3941	4120
Trip for work	daily	32730	33050	34153	35320	36890	37565	38780	39563	40298	41320	42890
	peak hour	32510	32980	33200	34420	35900	36421	37800	38642	39460	40532	41890
Other	daily	5650	5230	5760	5890	6500	7450	6120	6320	5980	6470	6130
	peak hour	1020	1450	1650	1250	1132	1780	1537	1356	1210	1105	1360

Regarding the distribution of travel, the largest number of trips are trips for work, and then trips for study.

8.5. Number of trips for each economic sector or activity ²⁵

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
industry	3633940	3704750	4025000	4737700	5292500	5519165	5832700	6164850	6529850	7118960	7335770
public service	777450	802270	855925	875270	896440	908850	923450	1003750	974550	894250	854100
private service	1828650	1817700	1980150	1897270	1853470	1815510	1838140	1811495	1869895	1921725	1934865
tourism	55012	71256	72030	72560	72689	73120	73560	73780	74006	74450	65480
school	1440000	1435250	1429800	1430120	1435600	1436890	1436740	1429250	1434650	1437800	1438012
agriculture	9123	8956	9213	9351	9560	9354	9245	9150	9012	9256	9345

The largest number of trips, based on each economic sector, occurs in the industry, then in the private sector. Also, a significant number of trips are made with the purpose of attending school.

8.6. Number of originated trips (10-year time series)

TZA	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1											
2											
3											
....											

8.7. Number of attracted trips (10-year time series)

TZA	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1											
2											
3											
....											

8.8. Provide the trips distribution (OD Matrix) among the TZAs or districts. If available, provide it by different transport modes.

Data for paragraphs 8.6, 8.7 and 8.8, concerning the number of originated and attracted trips as well as the trips distribution among traffic analysis zones, are not available.

8.9. Number of passenger trips and freight trips in your municipality (total, generated and attracted). If available, provide it by different transport modes.

Total trips	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Passengers											
Freight											
Total											

Generated trips	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Passengers											
Freight											
Total											

²⁵ The data in paragraph 8.7 were submitted from the relevant local institutions of the City of Zrenjanin

Attracted trips	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Passengers											
Freight											
Total											

Data for paragraph 8.9, concerning the number of total trips for passengers and freight as well as the generated and attracted trips for passengers and freight are not available..

8.10. Number of passenger trips - travel mode choice ²⁶

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Car	2554560	2574631	2593475	2686541	2798563	2865401	2995150	3056890	3110980	3156784	3285697
Taxi	182365	189456	195789	205647	245689	278900	295456	301589	328963	345789	365890
Bus	2654123	2698456	2723158	2745626	2768123	2812564	2854156	2895456	2912456	2978547	3001255
Tram	/	/	/	/	/	/	/	/	/	/	/
Subway	/	/	/	/	/	/	/	/	/	/	/
Train	5123	5236	5356	5489	5689	5741	5865	5984	7023	7125	7360
Bicycle	40523	41990	42890	43650	44736	45890	46590	47950	48980	59465	60230
Motorcycle	6532	6890	6975	7065	7148	7236	7398	7565	7690	7861	7956
Walk	18256123	18456123	18245698	18023478	17865445	17895354	18012365	17569147	18654871	18452314	18256987
Other	/	/	/	/	/	/	/	/	/	/	/

The largest number of trips in Zrenjanin is done walking. Immediately after walking are travels made by car and by bus. Also a huge number of people use a taxi as theirs travel mode choice.

8.11. Number of freight trips – travel mode choice (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Car											
Light commercial vehicles (<3.5t)											
Heavy goods vehicles (>3.5t)											
Train											
Airplane											
Ship											
Bicycle											
Motorcycle											
Other (please describe)											

Data for paragraph 8.13, concerning the number of total freight trips made by travel mode choice are not available..

8.12. Vehicle registered in Zrenjanin²⁷

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cars	27843	24498	24995	27023	27346	27566	28421	29027	29267	29434	30040
Motorcycle	457	515	616	648	620	601	676	748	793	773	770
Bus	172	144	146	188	109	89	90	98	102	125	141
Light commercial vehicle (<3.5t)	/	/	/	/	0	1	2	1	1	2	2
Heavy goods commercial vehicle (>3.5t)	2439	2190	2320	2446	2052	2035	1887	1872	2680	2754	2877

²⁶ The data in paragraph 8.12 were submitted from the relevant local institutions of the City of Zrenjanin

²⁷ Republic Institute of Statistics, Republic of Serbia, Municipalities and regions in the Republic of Serbia, editions from 2007 to 2017

Other (includes mopeds, working vehicles, road tow truck and trailers)	13141	561	618	667	1078	1851	2619	3144	2713	2923	2974
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The largest number of vehicles registered on the territory of the city are passenger cars, on average 27769, then heavy goods vehicles, on average 2323, trailers, on average 1631, working vehicles, on average 795, motorcycle on average 656, moped on average 508, road tow truck on average 293, and then buses, on average 128.

8.13. Electric/hybrid vehicles registered in your area (number) (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cars	/	/	/	4	1	1	0	0	1	0	2
Motorcycle	0	0	0	0	0	0	0	0	0	0	0
Bus	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0

Electric/hybrid vehicles are currently present in the territory of the city of Zrenjanin only in the form of a small number of passenger car. Data is available only from 2010. The data was provided by the police administration of the City of Zrenjanin.

8.14. Number of cars per 1.000 inhabitants (minimum 10-year time series)²⁸

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
n° cars / 1000 inhabitant	208	213	215	221	228	229	240	251	258	269	272

For the characteristic 10-year period, it is noticeable that, from one year to the next, the number of cars per 1000 inhabitants is increasing.

8.15. Number of licensed driver (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
no. licensed driver	45114	45207	44938	44671	44485	44207	43953	43588	43176	42818	42434

8.16. Occupancy rates of passenger cars²⁹(minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
no. occupancy	1.38	1.67	1.22	1.46	2.1	1.64	1.52	1.74	1.48	1.9	1.54

Data such as: number of other vehicles per 1.000 inhabitants, distribution of passenger cars by fuel supply and Euro emission standards, distribution of freight vehicles by fuel supply and Euro emission standards, average distance covered by freight vehicles in Zrenjanin, amount of freight movement (tonne-km) in Zrenjanin, modal share of freight transport, modal share of intermodal/combined freight transport, freight movements and commuters by type of transport, all shown in paragraphs from 8.17 to 8.25, are not available.

²⁸ The data in paragraph 8.15 were submitted from the relevant local institutions of the City of Zrenjanin

²⁹ Occupancy rate of passenger cars is the average number of passenger in a car during a trip.

8.17. Number of other vehicles per 1.000 inhabitants (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Vehicles: van (<3.5t) including mini-buses, trucks, camper vans and other vehicles (<3.5t)											
Heavy goods vehicles (Trucks, TT,AT), where: - truck: Single truck (>3.5t), other vehicles (>3.5t) - TT: truck + trailer -AT: articulated truck											
Coach: Tour coach, holiday coach											
Bus: Urban bus, public transport bus											
Extra-urban buses											
MC: Motorcycle											
Other (please, describe it)											

8.18. Distribution of passenger cars by fuel supply and Euro emission standards (number) (minimum 10-year time series). If possible, for three engine classes; < 1.4l, 1.4l - 2l, > 2l.

Total	Gasoline	Diesel	LPG	Methane	Other
Euro 0					
Euro 1					
Euro 2					
Euro 3					
Euro 4					
Euro 5					
Euro 6					

<1.4 l	Gasoline	Diesel	LPG	Methane	Other
Euro 0					
Euro 1					
Euro 2					
Euro 3					
Euro 4					
Euro 5					
Euro 6					

1.4 l – 2.0 l	Gasoline	Diesel	LPG	Methane	Other
Euro 0					
Euro 1					
Euro 2					
Euro 3					
Euro 4					
Euro 5					
Euro 6					

>2 l	Gasoline	Diesel	LPG	Methane	Other
Euro 0					
Euro 1					
Euro 2					
Euro 3					
Euro 4					
Euro 5					
Euro 6					

8.19. Distribution of freight vehicles by fuel supply and Euro emission standards (number) (minimum 10-year-time series).

	≤3.5 t		>3.5 t
	Gasoline	Diesel	Diesel
Euro 0			
Euro 1			
Euro 2			
Euro 3			
Euro 4			
Euro 5			
Euro 6			

8.20. Average distance covered by freight vehicles in your municipality (minimum 10-year-time series).

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
≤3.5 t	Gasoline											
	Diesel											
>3.5 t	Diesel											

8.21. Amount of freight movement (tonne-km) in your municipality (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
tonne/km											

8.22. Modal share of freight transport (%) in your municipality (minimum 10-year-time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Air											
Waterway											
Railway											
Road											
Other (please describe)											

8.23. Modal share of intermodal/combined freight transport (number or %) (minimum 10-year-time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Air and Road											
Trucks											
Rail and Truck											
Water and Truck											
Rail and Water											
Other (please describe)											

8.24. Freight Movements (minimum 10-year-time series)

n° of goods vehicles moving in city center during:

SUMMER (Jun- Sep) - typical weekdays (Mon-Fri) + daily values

SUMMER (Jun-Sep) - holidays (Sat-Sun) + daily values

WINTER (Dec-Mar) - typical weekdays (Mon-Fri) + daily values

WINTER (Dec-Mar) - holidays (Sat-Sun) + daily values

SHOULDER SEASON (Apr-May) (Oct-Nov) - typical weekdays (Mon-Fri) + daily values

SHOULDER SEASON (Apr-May) (Oct-Nov) - holidays (Sat-Sun) + daily values

8.25. Commuters by type of transport (number or %) (minimum 10-year-time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Car											
Taxi											
Bus											
Train											
Bicycle											
Walk											
Other (please describe)											

8.26. Arrivals/ Overnight stays/ Average length of stay (minimum 10-year-time series)³⁰

This is the template to provide 'Arrivals/ Overnight stays/ Average length of stay' data for Summer and Winter Seasons. Fill in the template for each Season since Summer 2007 and Winter 2006/2007 until Summer 2017 and Winter 2016/2017.

Summer Season (June-September) 2017															
Country of origin	Arrivals					Overnight stays					Average length of stay				
	Total Number	June	July	August	September	Total Number	June	July	August	September	Total Number	June	July	August	September
From your country	33856	7962	8245	9325	8313	186756	42156	45123	54980	44497	5.52	5.30	5.47	5.9	5.35
EU countries	13374	3123	3498	3973	3780	26890	6123	6890	7547	6330	2.01	1.96	2.0	1.9	1.68
European countries no EU	12345	3123	3078	3250	2894	24890	6023	6250	6489	6128	2.02	1.93	2.03	2.0	2.12
Non-EU countries	8006	1956	2014	2436	1600	17154	4036	4213	4957	3940	2.14	2.05	2.09	2.09	2.47
Total															

From your country	29847	7689	7854	7359	6945	135890	35468	38457	35479	26486	4.55	4.61	4.9	4.82	3.81
EU countries	9856	2658	2589	2312	2297	31569	7892	8078	7698	7901	3.2	3.0	3.12	3.33	3.44
European countries no EU	9215	2303	2456	2214	2242	27689	6856	7012	6914	6907	3.0	2.98	2.86	3.12	3.08
Non-EU countries	4890	1247	1356	1389	898	11987	2971	2987	3012	3017	2.45	2.38	2.2	2.17	3.36
Total															

8.27. Annual arrivals by means of transport (%) (minimum 10-year-time series)³⁰

Vehicle	%
Airplane	12

³⁰ The data in paragraph 8.26 and 8.27 were submitted from the relevant local institutions of the City of Zrenjanin

Train	7
Private Car	53
Bus	25
Boat/Ship	0
Bike	3

Arrivals by means of transport in Zrenjanin has a distribution so 53% arrivals is by private car, 25% is by bus, 12% by airplane, 7% by train and 3% by bike.

8.28. Means of transport used by tourists within destination areas (type and percentage) (minimum 10-year-time series)³¹

Means of transport	%
Car	69
Bus	25
Bike	5
Boat	1

Means of transport used by tourists in Zrenjanin has a distribution so 60% is by car, 25% by bus, 5% by bike and 1% by boat.

8.29. Average daily tourist expenditure (€/person) (minimum 10-year time series)³¹

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Daily spending per overnight tourist (accommodation, food and drinks, other services) (€)	65	68	64	63	69	71	73	74	70	69	75
Daily spending per same day visitors (€)	20	19	17	18	16	20	21	18	19	21	23

Table shows average daily tourist expenditure, so daily spending per overnight tourist on accommodation, food, drinks, and other services is ranging from 63 to 75 euros, and daily spending per same day visitors is ranging from 16 to 23 euros in period for 10 years.

8.30. Gender of tourists (percentage, minimum 10-year time series)³¹

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Male (%)	56	58	51	54	59	52	49	55	57	59	54
Female (%)	44	42	49	46	41	48	51	45	43	41	46

Table shows percentage of participation of men and women in the total full structure of tourists in the city of Zrenjanin. It is noticeable that male tourists are prevail over female in all years, except in 2013. year.

8.31. Age Classes (minimum 10-year time series)³¹

Age classes	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
0-14	25478	27893	28012	28111	28412	28654	28555	27993	28661	28922	26866
15-24	32145	33745	33854	32998	33965	34012	34156	34220	34752	35050	33258
25-34	34123	36212	36357	36589	36972	37582	37125	37432	37662	37469	35681
35-44	30125	30667	31225	31365	31147	31452	31689	31982	32002	32121	31111
45-64	70256	72560	73385	73125	73658	74192	74258	74658	75003	75200	72230

³¹ The data in paragraph 8.28, 8.29, 8.30, and 8.31 were submitted from the relevant local institutions of the City of Zrenjanin

Over 65	36583	38212	38298	38457	38888	38505	38499	38792	38960	38864	37689
Average age											

Table shows numbers of tourists classified by age classes, for the 10-year observation period, where it can be concluded that by far the highest number of tourists is in the age group of 45-64 years for all years, next is the age group of over 65, then the age group of 25-34, the age group of 15-24, the age group of 35-44, and at the end the age group of 0-14 years.

8.32. Visit this area as (%)³²

As:	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
A couple	12	9	11	15	12	13	11	8	10	12	14
A family	15	12	13	10	16	18	14	14	18	17	15
A part of a group	48	50	52	53	49	47	54	52	51	49	46
Alone	14	16	12	14	15	14	11	17	16	15	11
With friends	11	13	12	8	8	8	10	9	5	7	14

The largest number of tourists visit Zrenjanin as part of the group, while others come with their families, alone, with a couple or with a friend.

8.33. Motivation of the holiday (%)³²

As:	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Relax and Wellness Holiday	6	8	7	5	9	9	8	10	10	11	10
Active Holiday	11	12	10	10	13	15	15	12	14	14	15
Natural Holiday	15	16	18	17	15	15	14	17	16	18	18
Cultural Holiday	50	48	52	53	49	50	51	50	47	48	50
Enogatronic Holiday	18	16	13	15	24	11	10	11	13	9	7

The largest number of tourists have motivation for visit Zrenjanin as cultural holiday, while others come on natural, active, enogatronic holiday or relax and wellness holiday.

8.34. Traffic flows - quantitative data + GIS file (minimum 10-year time series)³³

³² The data in paragraph 8.32 and 8.33 were submitted from the relevant local institutions of the City of Zrenjanin

³³ The data in paragraph 8.34 were submitted from the Public Enterprise Roads of Serbia



State roads IB category No 12 – Zabalj-Zrenjanin (AADT)	2013	2014	2015	2016	2017
Passenger car	5914	6036	3120	6423	5840
Bus	56	57	61	69	64
Light commercial vehicle	114	118	120	124	119
Medium commercial vehicle	191	200	188	183	156
Heavy goods vehicle	630	666	569	550	483
Total	6905	7077	7058	7339	6653

State roads IB category No 12 – Zrenjanin – Zitiste (AADT)	2013	2014	2015	2016	2017
Passenger car	/	4589	4766	4892	4933
Bus	/	46	40	36	59
Light commercial vehicle	/	82	84	80	84
Medium commercial vehicle	/	77	82	76	81
Heavy goods vehicle	/	255	269	293	309
Total	/	5049	5241	5337	5466

State roads IB category No 13 – Melenci-Zrenjanin (AADT)	2013	2014	2015	2016	2017
Passenger car	4102	4214	4395	4625	4749
Bus	59	64	63	58	61
Light commercial vehicle	87	98	95	103	111
Medium commercial vehicle	132	139	144	151	156
Heavy goods vehicle	557	621	625	608	592
Total	4937	5136	5322	5545	5669

State roads IB category No 13 – Zrenjanin – Ečka (AADT)	2013	2014	2015	2016	2017
Passenger car	7773	6289	6900	7249	6910
Bus	271	95	95	92	161
Light commercial vehicle	133	141	140	145	126
Medium commercial vehicle	221	203	210	218	189
Heavy goods vehicle	930	730	760	820	765
Total	9328	7458	8105	8524	8151

State roads IB category No 18 – Zrenjanin – Sutjeska (AADT)	2013	2014	2015	2016	2017
Passenger car	3416	3464	3576	3711	3788
Bus	41	40	41	38	40
Light commercial vehicle	57	59	61	64	69
Medium commercial vehicle	48	51	53	55	57
Heavy goods vehicle	191	217	206	257	224
Total	3753	3831	3937	4125	4178

In the tables above, there are shown annual average daily traffic (AADT) on the State roads IB category passing through Zrenjanin. Data are available by category of motor vehicles for the period from 2013 to 2017. Data on traffic flows are not available for the city area.

9. TRANSPORT SUPPLY

9.1. Transport modes available in your area for passenger trips (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Car	X	X	X	X	X	X	X	X	X	X	X
Taxi	X	X	X	X	X	X	X	X	X	X	X
Bus	X	X	X	X	X	X	X	X	X	X	X
Train	X	X	X	X	X	X	X	X	X	X	X
Bicycle	X	X	X	X	X	X	X	X	X	X	X
Motorcycle	X	X	X	X	X	X	X	X	X	X	X
Walking	X	X	X	X	X	X	X	X	X	X	X
Other (please describe)											

9.2. Transport modes available in your area for freight trips (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Car	X	X	X	X	X	X	X	X	X	X	X
Light commercial vehicles (<3.5t)	X	X	X	X	X	X	X	X	X	X	X
Heavy goods vehicles (>3.5t)	X	X	X	X	X	X	X	X	X	X	X
Train	X	X	X	X	X	X	X	X	X	X	X
Airplane	X	X	X	X	X	X	X	X	X	X	X
Ship	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Bicycle	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Motorcycle	X	X	X	X	X	X	X	X	X	X	X
Other (please describe)											

Transport mode for freight trips made by airplane is available only with transport airplanes up to 7 tons of load capacity.

9.3. Indicate the length of transport infrastructures in your municipality

	Length [km]
Urban Roads	68.2
Extra urban Roads	129.3
Freeways	0
Railways (of which electrified)	55 (0)
Tramways	0
Electrified railway	0
Other (please describe)	

Transport infrastructures in Zrenjanin have 129.3 km of extra urban roads, 68.2 km of urban roads, and 55 km of railway.

9.4. Number of city buses (that operate in your municipality) and their classification according to the Euro emission standards (Euro 0-6) (minimum 10-year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Euro 0											
Euro 1											
Euro 2											
Euro 3										30	30

Euro 4										15	20
Euro 5											
Euro 6											

Number of city buses and their classification according to the Euro emission standards are not been available. The only information available is the number of city buses with Euro 3 and Euro 4 engines for 2016 and 2017 year.

9.5. Provide information about public transport companies that serve in your municipality (consider the companies active since 2007). Provide a GIS file including stops and lines.

Name of public transport company	Service type (Urban or extraurban)	Number of company Vehicles	Service Capacity (number of passenger that can be moved by company)	Passenger moved every year	Kilometers covered each year	Years in which the company has performed the service
Net Bus company	Urban and extraurban	50	3.855	9.125.450	4.000.000	Last 10 years

In Zrenjanin, public urban and suburban transport was entrusted to the company Net Bus. GIS file is available only for location of the bus lines in Zrenjanin, and is displayed below in figure 9.2.

9.6. Provide a GIS file including the road network (urban, extra urban and Freeway).

The GIS file with the traffic infrastructure is shown on figure 7.1 in paragraph no. 7

9.7. Attach a GIS file (or a dwg/Jpeg file) including all following data:

Train Tracks - The GIS file with the train tracks (existing and planned) is shown on figure 7.1 in paragraph no. 7

The location of train station and airport:

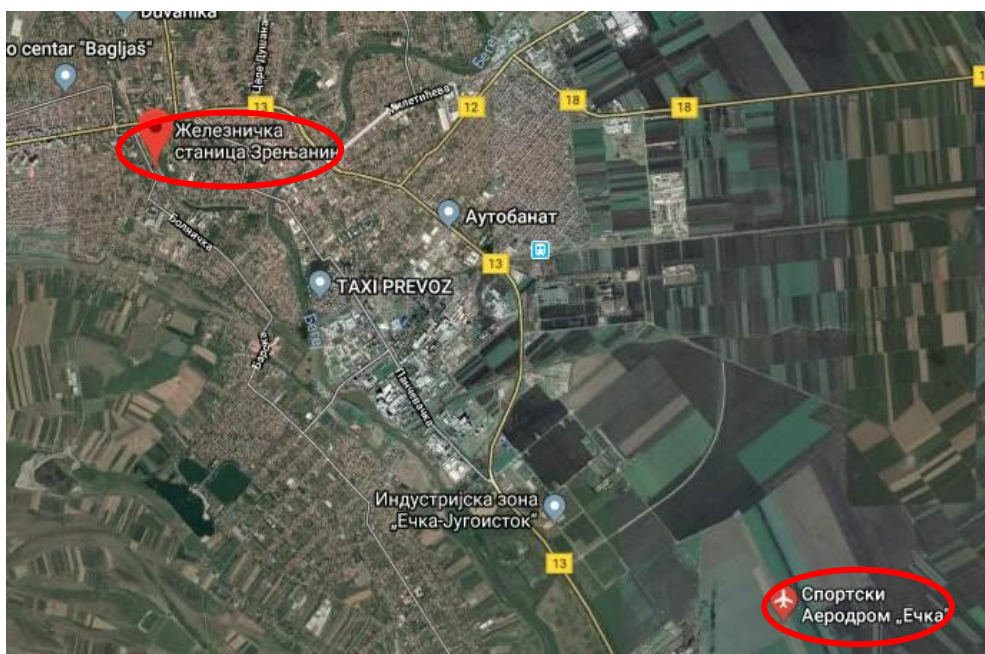


Figure 9.1. Location of sports airport “Echka” and the main train station in Zrenjanin³⁴

The GIS file with locations of the bus stations are not available. In figure 9.2. are presented GIS file with the lines of public transport.

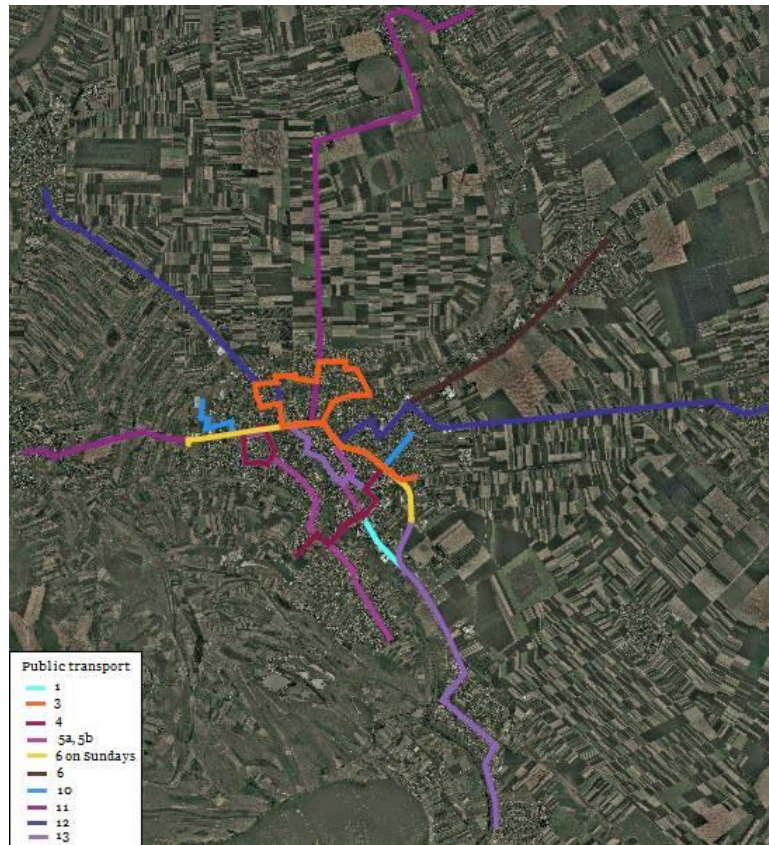


Figure 9.2. Location of the bus lines in Zrenjanin ³⁵

Parking: GIS file with location of parking zones

³⁴ Google maps

³⁵ GIS Center Zrenjanin; <http://gis.zrenjanin.rs/?map=demo>



Figure 9.3. Location of the parking zones in Zrenjanin ³⁶

Bike-sharing Stations: NO (There are no such stations in Zrenjanin)

Pedestrian Areas:

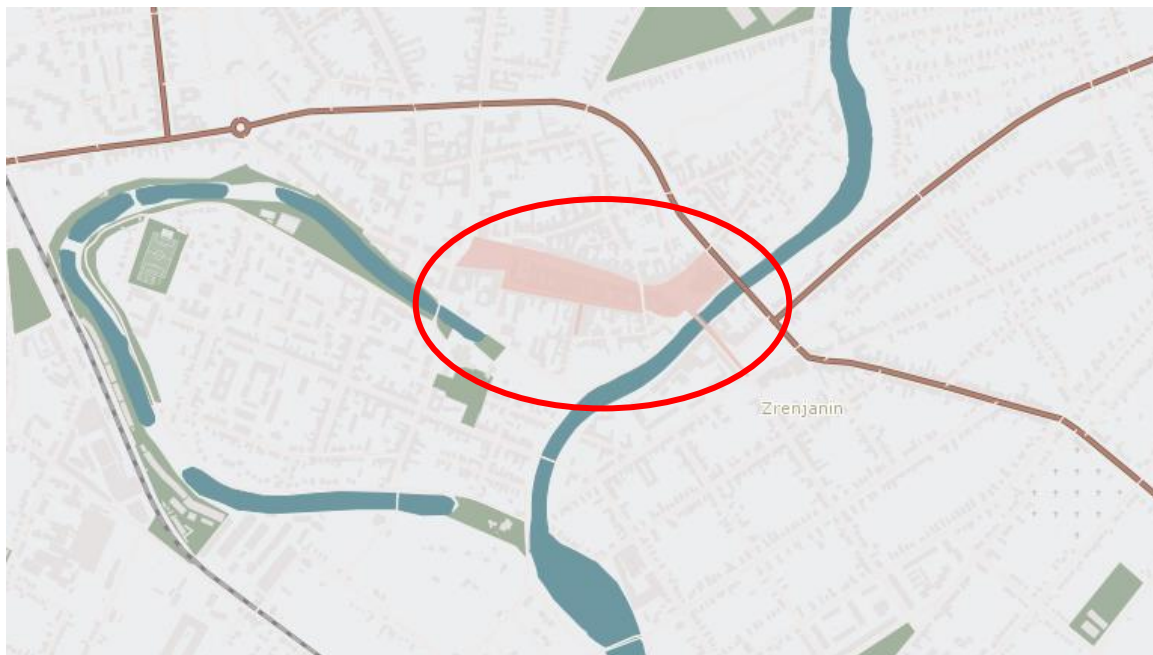


Figure 9.4. Location of the pedestrian zone in Zrenjanin ³⁷

Ports (indicate if it is a touristic o commercial port): NO

Intermodal Terminals: NO

Tollbooths: NO

Freeway exit: NO

³⁶ GIS Center Zrenjanin; <http://gis.zrenjanin.rs/?map=demo>

³⁷ GIS Center Zrenjanin; <http://gis.zrenjanin.rs/?map=demo>

9.8. Cycling infrastructure (if possible, provide a GIS file or a Jpeg)

Current state	
Cycling lanes (km)	35
Public Parking facilities (n°)	/
Urban Cycle rental system (n°)	/
Fatal cyclist road traffic accidents per year in urban areas (n°)	2
Cycling counts	
A no-working day of Summer (Jun-Sep) (n°)	
A typical weekday of Summer (n°)	
A no-workin day of Winter (Dec-March) (n°)	
A typical weekday of Summer (n°)	
In three year	
Cycling lanes (km)	35
Public Parking facilities (n°)	/
Urban Cycle rental system (n°)	/

Tradition and natural conditions emphasize the importance of cycling traffic in the territory of the city of Zrenjanin. As for the infrastructure for this transport medium, there are currently 35 km of cycling lanes in the city. The advantage of using bicycle traffic is a great connection between the city settlement Zrenjanin and suburban settlements and connecting local communities, where the bicycle is used as a means for performing daily migrations and as a means of sports and recreation.



Figure 9.5. Locations of the cycling lanes in Zrenjanin ³⁸

³⁸ Official presentation of the city of Zrenjanin, <http://www.zrenjanin.org.rs>

The expansion of the network of bicycle paths is planned to be built ³⁹:

- cycling track Zrenjanin-Klek;
- bicycle track Lazarevo-Zlatica;
- bicycle trail in the SRP area "Stari Begej-Carska Bara".

9.9. Pedestrians paths or areas (km or square km) (if possible, provide a GIS file)

Current state	n ^o	total km or km ²	location
Pedestrian Area	1	2.4	center
Pedestrian Path			

In three years	n ^o	total km or km ²	location
Pedestrian Area	1	1.4	center
Pedestrian Path			

The pedestrian zone is located in the center of Zrenjanin, and the GIS file with location of the pedestrian zone is shown on figure 9.4 in paragraph no. 9.7.

³⁹ SPATIAL PLAN OF ZRENJANIN CITY ("Official Gazette of the City of Zrenjanin" No. 11/11)

9.10. Parking System (provide a GIS file)

Number of parking lots: n° 2191

How is the parking system structure:

- outdoor parking lots: n°2191
- closed parking lots: n°662
- on street parking lots: n°1529

List all parking lots and report: size (cars) and location

l=4.8m

Parking fees (divided into different parking structure) (€)

I zone 0.42 €/h

II zone 0.33 €/h

III zone 0.25 €/h

The parking zones location in Zrenjanin is shown on GIS file on figure 9.3 in paragraph no. 9.7.

9.11. Soft mobility and sharing services available (yes/no and number of elements)

	Yes/No	number
Car sharing	No	/
Bike Sharing	No	/
Cargo-Bike	No	/
IT Mobility Service	No	/
Other (please describe)	No	/

Currently, there are no soft mobility and sharing services available in Zrenjanin.

9.12. Train (provide a GIS file) - Main Routes

Main routes	Origin	Destination	Price (€)	Time (h)	Distance (km)
Zrenjanin – Belgrade	Zrenjanin	Belgrade	2.86	2.54	88
Zrenjanin – Subotica	Zrenjanin	Subotica	3.7	4	126
Zrenjanin – Kikinda	Zrenjanin	Kikinda	2.6	2.2	72
Zrenjanin – Novi Sad	Zrenjanin	Novi Sad	3.7	3.5	121

Table shows main routes for train in Zrenjanin. The GIS file with the train tracks (existing and planned) is shown on figure 7.1 in paragraph no. 7.

9.13. Urban Bus in Zrenjanin - Main Lines

Main lines	Origin	Destination	Price (€)	Time (h)	Distance (km)
1	Okretnica	Termoelektrana	0.51	0:48:00	16.5
3	Fabrika stanica Zr	Strelišće	0.51	0:49:00	14.7
4	M.Kolonija	M.kolonija	0.51	0:55:00	18.5
5	Mužlja 1	Mužlja škola	0.51	0:47:00	16.3
6	Mužlja 1	Mužlja 2	0.51	0:47:00	16.5
10	TC Zrenjanin	Klek 3	0.51	0:28:05	13
10A	Klek 3	TC Zrenjanin	0.51	0:28:05	13
12	Stajićevo	Novo Groblje	0.53	0:50:00	26

Table shows main lines for urban buses in Zrenjanin. It is displayed for 8 urban lines-prices, time from origin to destination, and distance. The GIS file with the main lines is shown in figure 9.2 in paragraph no. 9.7.

9.14. Suburban Bus (provide a GIS file) - Main Lines

Main lines	Origin	Interstellar	Destination	Price (€)	Time (h)	Distance (km)
P1	Zrenjanin	Lukino selo	Belo blato	1.4	0:45:00	24.2
P2	Zrenjanin	Perlez	Knicanin	2	0:46:00	37.9
P3	Zrenjanin	Perlez	Chenta	1.8	0:34:00	34
P4	Zrenjanin		Farkadzdin	2.1	0:52:00	40.5
P5	Zrenjanin	Stajicevo	Belo blato	1.4	0:47:00	28
P6	Zrenjanin		Elemir	1.1	0:17:00	13.4
P7	Zrenjanin		Melenci	1.3	0:21:00	21.4
P8	Zrenjanin	Elemir	Tarash	1.4	0:28:00	23.2
P9	Zrenjanin	Orlovat	Tomashevac	1.8	0:43:00	37.5
P10	Zrenjanin	Orlovat	Botosh	1.8	0:40:00	34.7
P11	Zrenjanin	Mihajlovo	Jankov most	1.4	0:21:00	17.6

Table shows main lines for suburban buses in Zrenjanin. It is displayed for 11 suburban lines-prices, time from origin to destination, and distance.

9.15. Boat/Ship (provide a GIS file) - Main Routes

Main Routes	Origin	Destination	Price (€)	Time (h)	Distance (km)

Mode of transport is not available.

9.16. Taxi

Number of Taxi rank: **101**

Number of vehicles: **427**

Taxi trips compared to total modal share (%): **4.1**

Taxi trips per day: around **3500**

9.17. Rent Car

Number of vehicles rental companies: **3**

Number of leased vehicles per month (data and graphic): /

9.18. Connection Airport-City (shuttle, people moved, etc.)

Airport-city connection is available only with passenger car or by taxi.

9.19. Other transport services available (Uber, blabla car, Flixbus, On-call bus, etc.)

There are currently no other transport services available in Zrenjanin.

9.20. Intermodal Terminal (if possible, provide a GIS file)

There are no intermodal terminals in Zrenjanin

9.21. Equal opportunities for people with reduced mobility

In the last ten years, when designing and carrying out infrastructure work in all facilities with pedestrian flows, account is taken of the needs of the visually impaired persons as well as persons in wheelchairs. A sufficient number of parking spaces are available in all zones where controlled parking is carried out, ramps are built on pedestrian flows. Also, there are built-in equipment with sound signals for the visually impaired person on five intersections with traffic lights.

Platforms accessibility: Share of platforms (%)_____, Share of lines (%) _____
(Platforms have level access to vehicles and to pedestrian network, are smoke- free and have audio and visual announcements)

Vehicle accessibility: Share of vehicles (%)_____, Share of lines (%) _____
(Vehicles have low floor, kneeling and/or ramps, designated place for wheelchair users and both audio and visual announcements)

Safe infrastructure for people with disabilities: (%)_____

(e.g. crossings with aids for visually impaired; pedestrian crossings adapted to people with reduced mobility)

9.22. Train - Main tourist routes (provide a GIS file) (if different from 9.12-9.15)

Main Routes	Origin	Destination	Price (€)	Time (h)	Distance (km)
Zrenjanin – Kikinda	Zrenjanin	Kikinda	2.55	2.14	55
other					

Table shows main train route that tourists use in Zrenjanin.

9.23. Bus - Main tourist lines (provide a GIS file) (if different from 9.12-9.15)

Main Routes	Origin	Destination	Price (€)	Time (h)	Distance (km)
a) Zrenjanin – Beograd	Zrenjanin	Beograd	5.4	1.3	80
b) Zrenjanin – Novi Sad	Zrenjanin	Novi Sad	3.33	1	55
other					

Table shows main buses routes which tourists use in Zrenjanin.

9.24. Boat/Ship - Main tourist routes (provide a GIS file) (if different from 9.12-9.15)

Main Routes	Origin	Destination	Price (€)	Time (h)	Distance (km)
a)	Zrenjanin	Carska Bara	3.8	2	4.5
b)					
c)					
other					

9.25. Number of cars and other vehicles rented by tourists/worker per month (data and graphic):

The number of cars and other vehicles rented by tourists / workers on a monthly basis is around 35

9.26. Number of taxi trips compared

According to the expert assessment, the number of passengers transported by taxi service on a daily basis in Zrenjanin is around 3500

9.27. Campaigns and initiatives to encourage a low carbon mobility (bike to school; bike to work; events)?

Yes/No: **No**

If, yes describe them and report links and/or results of the events.

9.28. Company offering sustainable transport service to passengers (numbers)

There are currently no such companies, who's offering sustainable transport service to passengers, in this area.

Free bicycles/Rent Bicycles:

Total number of companies: **0**

Specify which company are involved and where they are located (if possible, provide the prize):

- a) _____
- b) _____
- c) _____

Shuttle Service to the Airport/Port/Train Station

Total number of companies and other amenities: **0**

Specify which companies are involved and where they are located (if possible, provide the prize):

- a) _____
- b) _____
- c) _____

9.29. Indicate the number of recharging stations for electric vehicles, if any. Provide the numer and the localization

For now, there are no built charging stations for electric vehicles.

TRANSPORT SCENARIO AND POLICY

10. GENERAL STATE OF MOBILITY

10.1. The general state of mobility in Zrenjanin

Zrenjanin, like many cities of today, faces a multitude of challenges related to traffic jams, noise, air quality, health, safety, quality of life and various other problems in the field of urban traffic. On a global level, the challenge of climate change and their impact on the environment, health and economy is strongly related to traffic and behavior that is accompanied by unsustainable mobility. Promoting a long-term change in the commitment of the users of the traffic system to more efficient and less polluting traffic are some of the goals that are set out today in many strategic decisions.

In driving demand management, encouraging alternative transport models include measures to encourage the use of environmental transport models through different campaigns. The basic concept of these models is an attempt to raise the level of awareness about the environment in which users move and the ways in which their movement affects the environment, but also on them. Increase in the number of campaigns related to the improvement of the public transport system, the promotion of the participation of bicyclists and pedestrians in traffic, the integration of different modes of transport, all in order to increase the quality of alternative urban mobility.

Transport information and public campaigns can affect people's awareness, attitudes and behavior of passengers in such a way as to encourage the use of bicycles, hiking and the use of public transport. Campaigns can be conducted to raise awareness of the general public, target groups, or as individualized campaigns.

One of the goals of mobility management is finding ways to meet the need for moving through more efficient and integrated use of existing alternative modes of transport and infrastructure, as well as to improve cooperation among different modes of transport, facilitating the interconnection and functioning of existing transport networks.

The use of public transport includes walking, both at the beginning, at the end of the road, as well as during the transit. In general, walking is an alternative to short trips. Street design refers to factors such as the size of residential blocks, intersection (number, width and use of traffic lanes, parking lots, traffic islands, and sidewalks), traffic calming characteristics, pavement conditions, street mobilier (benches, poles, bins, gardeners) The application of street design that reduces the speed of motor vehicles, improves connectivity, favors alternative modes of transport and improves conditions for walking and cycling, striving to reduce the use of cars and encourage the use of alternative modes of transport.

Motorcycles are generally considered recreational vehicles, although there is a growing tendency for their use in our area when traveling to work. The primary advantage of these vehicles in urban environments is their efficiency in terms of space and fuel.

Taxis are considered to be an integral part of public transportation systems in some countries. In any case, there is also a taxi service that represents an important part of traffic for those who do not own a car, older citizens and categories of citizens with reduced mobility. In the last few years, this type of transport has become equal with other forms of public transport, and in some cases, taxi is the most viable mode of transport.

Measures to use a private car are undertaken in order to make it more efficient. The measures are concentrated primarily on improving the traffic flow itself and increasing the utilization rate of the vehicle itself.

10.2. The main issues related to mobility in Zrenjanin

Insufficiently built infrastructure that would significantly change the traffic image on the network and thus impact the redeployment of modes of transport which would significantly affect the overall mobility. Resource management (car use management) requires the introduction of new methods for understanding mobility in order to sustain the city's development.

10.3. In the last ten years, have new transport infrastructures, new attractors (school, industries, commercial center, political center, hospital, business districts, etc.) been built and opened? If yes, provide a description and indicate the opening year.

In the last ten years, there have been new open-source sites in the city that have influenced the mobility i.e. layout of the users movements on the network. A new Medical School was opened and it was significantly built on a brand new location. Two industrial centers "Istok" and "Jugoistok" with completely new infrastructure were opened. Various facilities were opened in these locations, which enabled the opening of thousands of new jobs.

10.4. Which is the average transport cost per km for each transport mode in your area (time cost and monetary cost)

The data about average transport cost per km for each transport mode in Zrenjanin is not been established by the research.

10.5. Which is the average distance run by residents and commuters for work and study purposes?

The average distance between residents and passengers on their way to work and school is 4,4 km

10.6. What kind of actions can you suggest to achieve a more sustainable mobility

Actions aimed at resource management (management of car use):

- Pedestrian zones
- Zones protected from motor traffic
- Limiting access for passenger cars to specific zones or at specific times
- Slowing down traffic
- Manage and charge parking
- Traffic management

Development and management of the public transport system (system building, development, integration and quality):

- Separation and priorities
- Operational system management
- Information systems for users
- Development of paratransit

Planning and tax mechanisms (management development, restrictions on the use of passenger cars, financing of development):

- Planning and land use (reservation of locations for certain modes of transport, for example railway subsystems of public transport)
- Control the entrance to the center

10.7. The transport policies that have been implemented in the last 10 years in Zrenjanin

Construction of the bypass around the City where more than 50% of the route has been completed so far (*Figure 10.1*). Renewal and construction of new road network with the introduction of circular flows as a regulatory solution at the crossing points.

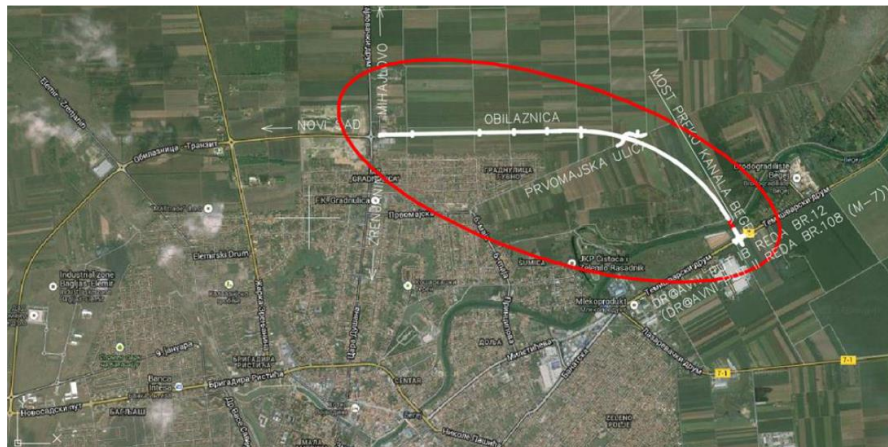


Figure 10.1. Planned continuation of the construction of the bypass Zrenjanin⁴⁰

10.8. Have you adopted IT tools or Smartphone apps to promote a sustainable mobility?

IT tools or Smartphone apps for promoting a sustainable mobility have not yet been adopted in Zrenjanin.

10.9. Existing Sustainable Urban Mobility Plans (SUMPs) or other Policy Document on Sustainable Tourism Mobility?

Yes/No: **NO**

If yes,

Year of implementation	
Main objectives	
Expected results or achieved results	
Attach a document or a link	

If no,

Describe the current state of the art' in Transport Policy:_____

10.10. Promotion of electrical vehicles

Yes/No: **No**

If yes, where? _____

⁴⁰ GIS file submitted from the relevant local institutions of the City of Zrenjanin

10.11. Availability of sustainable mobility information for tourists in your area. For example, do tourist Information Centers promote soft mobility and sharing services?

Yes/No: **NO**

If yes, where? _____

10.12. Incentive strategies to promote sustainable mobility of tourists (Apps, tourist travel tickets, etc.)

Yes/No: **NO**

If yes, place an X against all that apply:

- a) **Tourist travel ticket** that provides unlimited public transport travel
- b) **Tourist card** that provides unlimited public transport travel and admission to number of tourist attractions.
- c) Development of Soft Mobility Corridors
- d) Implementation or development of **City Tourist Information System**
- e) Implementation of hotel cycle rental scheme
- f) **Shuttle bus service** in order to reduce the car access
- g) Pedal powered taxis
- h) other (describe)

10.13. Incentives to promote sustainable mobility of commuters (Apps, travel passes, etc.)

Yes/No: **NO**

If yes, place an X against all that apply:

- a) Commuter pass that provides unlimited regional transport travel
- b) Tax deduction
- c) Discounts to use service
- d) other (describe)

10.14. Incentives to promote sustainable mobility of inhabitants (Apps, travel passes, etc.)

Yes/No: **NO**

If yes, explain them.

10.15. Describe the urban planning tools adopted in the last 10 years (if any)(max 500 words)

Urban planning in Zrenjanin during the last 10 years was carried out through the adoption of strategic documents:

Spatial plan of the City of Zrenjanin ("Official Gazette of the City of Zrenjanin" no. 11/11);

- General plan of the Zrenjanin 2006-2026 ("Official Gazette of the Municipality of Zrenjanin" no. 19/07 and 01/08 and "Official Gazette of the City of Zrenjanin" no. 24/08 and 17/09 - Decision on alignment of the plan with the law);
- General Regulation Plan of the populated place:
 - Lazarevo ("Official Gazette of the City of Zrenjanin" No. 35/17);
 - Muzlja in Zrenjanin ("Official Gazette of the City of Zrenjanin" No. 5/16);
 - Dolja in Zrenjanin ("Official Gazette of the City of Zrenjanin" No. 15/15);

- Mala Amerika in Zrenjanin ("Official Gazette of the City of Zrenjanin" No. 15/15);
 - Berbersko - Hospital in Zrenjanin ("Official Gazette of the City of Zrenjanin" No. 14/14 and 26/17);
 - Amendments to the General Regulation Plan Bagljash in Zrenjanin ("Official Gazette of the City of Zrenjanin" No. 33/15);
 - Bagljash in Zrenjanin ("Official Gazette of the City of Zrenjanin" No. 25/14);
 - Jugoistok in Zrenjanin ("Official Gazette of the City of Zrenjanin" No. 32/14);
 - Gradnolica in Zrenjanin ("Official Gazette of the City of Zrenjanin" No. 8/15);
 - Centar ("Official Gazette of the City of Zrenjanin" No. 19/2016);
 - Amendments to the General Regulation Plan Gradnolica (Official Gazette of the City of Zrenjanin No. 14/18);
 - Detailed Regulation Plans
- All particular information about Detailed Regulation Plans are available on the link <http://www.zrenjanin.rs/1-408-404-0/Planovi-detajljne-regulacije>

10.16. Describe main laws and transportation plans adopted in the last 10 years (if any)(max 500 words)

- Law on Planning and Construction ("Official Gazette of the Republic of Serbia", No. 72/2009, 81/2009 - exp., 64/2010 - decision US, 24/2011, 121/2012, 42/2013 - decision US, 50 / 2013 - decision US, 98/2013 - decision US, 132/2014 and 145/2014);
- Law on roads („Official Gazette of the Republic of Serbia ", No. 41 of 31 May 2018);
- A public transport study in the territory of the city of Zrenjanin, Faculty of Technical Sciences, Novi Sad, 2015. year;
- Traffic study of the City of Zrenjanin from 1973. year;

11. MAIN NEGATIVE EXTERNALITIES FROM MOBILITY

Provide the following data for each TAZ, if possible

11.1. Fuel sold at provincial level (liters) (minimum 10 year time series)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Diesel											
LPG											
Gasoline											
Methane											

The data in paragraph 11.1 about fuel sold at provincial level is not available.

11.2. Air Quality (provide a map or GIS file mapping the different zones of your municipality) (minimum 10-year time series)⁴¹

Concentration	Annual average	Summer average	Winter average
CO (mg/m ³)	/	/	/
NO ₂ (µg/ m ³)	14	16.5	13
PM ₁₀ (µg/ m ³)	67	63.25	77.5
O ₃ (µg/ m ³)	3	2.5	3

EU limit	n° days/year
CO concentration > 10 mg/m ³	/
NO ₂ concentration > 40 µg/ m ³	0

⁴¹ The data were submitted from the relevant local institutions of the City of Zrenjanin

PM ₁₀ concentration > 40 µg/ m ³	15
O ₃ concentration > 120 µg/ m ³	0

11.3. Traffic emissions in differ zones of your municipality (minimum 10-year time series) (provide a map or a GIS file of road network/railways) ⁴²

Elemir, Žarka Zrenjanina no. 49	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
CO ₂ (µg/m ³)	/	/	/	/	/	/	/	/	/	/	/
CO (µg/m ³)	/	/	/	/	/	/	/	/	/	/	/
Particulate (µg/m ³)	/	/	/	/	/	/	/	/	/	33	30.25
NO ₂ (µg/m ³)	/	/	/	10	/	9	7	9	13	14	13.05
O ₃ (µg/m ³)	/	/	/	/	/	/	/	/	/	/	/

Bulevar Veljka Vlahovića br. 14	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
CO ₂ (µg/m ³)	/	/	/	/	/	/	/	/	/	/	/
CO (µg/m ³)	/	/	/	/	/	/	/	/	/	1.07	1.19
Particulate (µg/m ³)	/	/	/	173.02	/	178	140	65	74	39	34.48
NO ₂ (µg/m ³)	/	/	/	18.31	/	18	15	16	20	19	19.17
O ₃ (µg/m ³)	/	/	/	2.58	/	3	3	4	7	/	/

Trg Dositeja Obradovića bb	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
CO ₂ (µg/m ³)	/	/	/	/	/	/	/	/	/	/	/
CO (µg/m ³)	/	/	/	/	/	/	/	/	/	/	/
Particulate (µg/m ³)	/	/	/	103	/	67	55	54	67	37	34.32
NO ₂ (µg/m ³)	/	/	/	15	/	14	11	14	19	18	17.98
O ₃ (µg/m ³)	/	/	/	2	/	3	3	4	7	10	10.5

In Zrenjanin there are devices intended for measuring and quality control of air quality. Devices are located in three locations in the city. The locations of all three devices are shown in Figure 11.1. The tables above show the available emission data.

⁴² Official presentation of the City of Zrenjanin, <http://www.zrenjanin.rs/1-295-294-0/Monitoring>



Figure 11.1. Location of the measurement devices of air quality for environmental protection located in the Zrenjanin⁴³

11.4. Noise pollution (minimum 10-year time series) (provide a map or GIS file mapping the different zones of your municipality)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Day (dB)	/	/	63.10	/	/	61.50	60.50	61.00	62.00	58.40	57.80
Night (dB)	/	/	56.60	/	/	54.00	54.00	59.10	59.80	51.60	51.20
Average (dB)	/	/	59.80	/	/	57.75	57.25	60.05	60.90	55.00	54.50

Data in table above were submitted from the relevant local institutions of the City of Zrenjanin. In the tables below the data are classified according to 4 zones: school zone, hospital zone, industrial zone and zone of main roads. The data were obtained from the website of Official presentation of the City of Zrenjanin (*source in footnote number 41*).

School zone	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Day (dB)	66	66	60.5	60.5	60.5	62.5	57.5	61.5	56	62.65	60.45
Night (dB)	60.5	60.5	57	57	55.5	51	52	52	50	54.3	47.55
Average (dB)	63	63	58.5	58.5	58.5	57	55	55.5	53	58.4	56.95

Permissible noise level in school zone are 50dB for day and 45dB for night. Based on the data, it is noted that in the school zone for all 10 years the noise is higher than permitted, but it is also noticed that the noise is gradually decreasing from year to year.

Hospital zone	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Day (dB)	69.5	69.5	68.5	68.5	69	65	66.5	66.5	66.5	59.05	57.55
Night (dB)	59.5	59.5	60.5	60.5	60	56	60	57	60	52.4	48.6
Average (dB)	64	64	65	65	64.5	60	63	62	63.5	55.6	52.8

⁴³ GIS portal Zrenjanin; <http://gis.zrenjanin.rs/>

Permissible noise level in hospital zone are 50dB for day and 40dB for night. Based on the data, it is noted that in the hospital zone for all 10 years the noise is higher than permitted, but it is also noticed that the noise is gradually decreasing from year to year.

Main roads	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Day (dB)	72.5	72.5	70	70	70	69	67.5	68	68.5	55.9	60.05
Night (dB)	65.5	65.5	64	64	63	63	64	62	60	53.25	47.8
Average (dB)	69	69	67	67	67	66	65	65	64.5	54.8	56.85

Permissible noise level in main roads are 65dB for day and 55dB for night. Based on the data, it is noted that the noise, created as a result of traffic, is higher than permitted all until the end of 2015. year, but the improvement is visible in 2016 and 2017. years. where noise is within the limits of allowed values.

Industrial Zone	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Day (dB)	68	68	72	72	71.5	71	68	68.5	69	58.7	57.5
Night (dB)	58.5	58.5	65	65	64.5	64.5	62	60	60.5	51.5	56.1
Average (dB)	65.5	65.5	69	69	68.5	67.5	65	65	65	55.1	56.8

Permissible noise level in industrial zones are 60dB for day and 50dB for night. Based on the data, it is noted that the noise, created by industry, for daily values, is higher than permitted all until the end of 2015. year, but the improvement is visible in 2016 and 2017. years. where noise is within the limits of allowed values. As for the night values, for all 10 years the noise is higher than permitted.

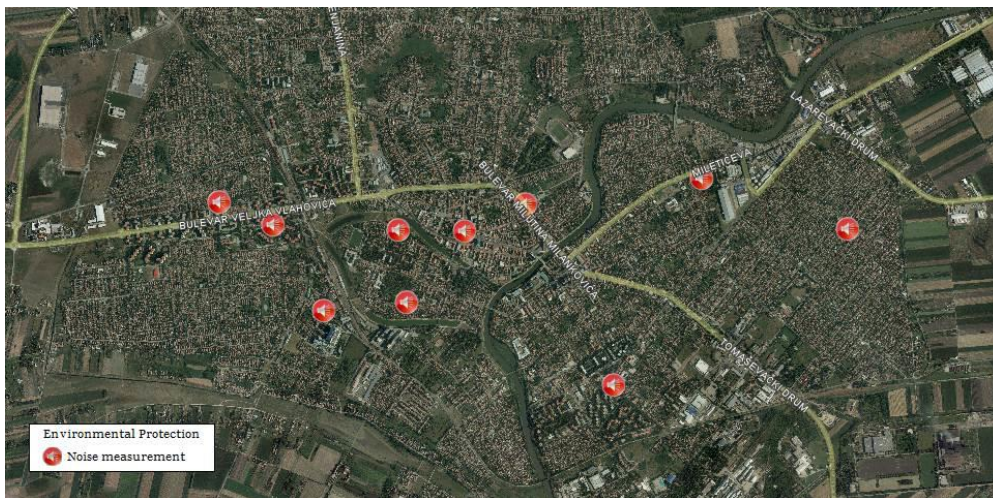


Figure 11.2. Location of the noise measurement devices for environmental protection located in the Zrenjanin⁴⁴

11.5. Number of road accidents (provide a map GIS file with the localization of events and indicate for each point the number of injuries and fatalities) (minimum 10-year time series) ⁴⁵

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of road accidents	1038	1001	918	503	483	355	317	344	346	361	344

⁴⁴ GIS portal Zrenjanin; <http://gis.zrenjanin.rs/>

⁴⁵ The data were submitted from the relevant local institutions of the City of Zrenjanin

Number of traffic – related injuries	644	720	809	602	467	371	344	337	376	380	374
Severe injuries	106	101	81	56	62	69	56	56	63	68	66
Slight injuries	538	619	728	546	405	302	288	281	313	312	308
Number of traffic fatalities	21	16	13	9	13	10	13	9	10	9	15

Table shows number of road accidents in Zrenjanin. It was observed that the situation in 2017. is significantly better than 10 years ago, with improvement of traffic safety, which results in a reduction in the total number of traffic accidents by 67%.

11.6. Indicate the most congested roads/zones due to traffic flows (provide a map or a GIS file including quantitative values):

- a) the street of the National Front, the Coast of Sonja Marinkovic, Obiliceva
- b) Nikola Pashic Street
- c) Zmaj Jovina Street
- d) Djura Jakshica Street
- e) the street of Vojvode Bojovic, Kocha Kolarova

11.7. Indicate the main reasons of congestion (infrastructural size, physical condition of infrastructure, private traffic, particular events, etc.)

Main reasons of congestion are overloading of traffic infrastructure, the number of vehicles exceeds the projected possibilities of the road. The old infrastructure inherits new traffic situation (industrial development, increase in the number of vehicles...)

11.8. Periods when road congestion occurs, duration of events, length of the road tail and average waste time for each vehicle (if available, provide the capacity/flow ratio)

Periods when road congestion occurs is:

07:00-09:00 h

14:00-16:00 h

11.7. Indicate the annual transport costs for the construction, maintenance and management of the transport infrastructures in your area⁴⁶

	2007	2008	2009	2010	2011
Construction cost	1,509,790.1	1,885,438.3	210,773.2	298,205.7	693,299.6
Maintenance costs	1,141,712.3	1,879,799.2	773,634.2	810,745.3	1,735,194.9
Management costs	346,295.5	562,518.4	153,758.3	361,991.0	574,348.9

	2012	2013	2014	2015	2016	2017
Construction cost	303,653.8	1,174,208.2	1,250,063.7	3,061,187.5	1,596,725.4	765,710.09
Maintenance costs	1,521,456.6	863,017.8	2,562,972.9	1,574,162.7	941,400.0	82,826.9
Management costs	400,789.8	462,608.6	506,341.2	613,092.1	451,900.9	/

Euro exchange rate ⁴⁷

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
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⁴⁶ The data were submitted from the relevant local institutions of the City of Zrenjanin

⁴⁷ National Bank of Serbia, <http://www.nbs.rs>

1 dinar = [euro]	79	79.24	88.6	95.89	105.49	104.64	113.72	114.64	120.96	121.63	123.47	118.83
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Table with annual transport costs for the construction, maintenance and management, is shown in euros for the period from 2007 to 2017, for which data were available. As data was obtained by the relevant local institutions of the City of Zrenjanin in dinars, the table with the average value of the exchange rate at the end of each year is attached.