

CHRONOLOGY OF THE URBAN EXPANSION OF BITOLA

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ABSTRACT

The spatial expansion and sprawling of cities in one particular territory is a condition that has greatly influenced the contemporary city and society.

The topic of this study is the genesis and the matrix of the spatial development of Bitola and determining the cause-effect factors and results.

The main thesis of the study suggests necessity for introducing a program-spatial matrix/paradigm in the development, so as to regulate the spatial expansion of the urban web. The program-spatial matrix is associated with the segment of planning, or the introduction of the normative structure.

The work methodology is based on a comparative analysis of the changes from a spatial-physical and a planning point of view. Due to the specifications of the region concerned, this study, in methodological sense, starts with providing documentary grounds, based on methods of collecting, documenting and analyzing the information found.

The conclusion of this study encourages the need for introducing a normative structure in the spatial development planning of cities in order to improve the spatial quality, the economic dynamics and the social cohesion.

The results of the study analyses ought to provide a clearer representation of the relations between the urban planning (spatial and general) and the space as well as the consequences of their implementation, or non-implementation.

Keywords: Bitola, spatial development, spatial expansion, urban development

INTRODUCTION

The topic of this study is the city of Bitola, a conglomerate and a development center, a pole with a great influence in the region and the country, its position in the region, , i.e. the spatial-physical context in the geographical surroundings, as a phenomenon with its own specific individual development. For better understanding of the issue, an analysis of the natural-geographic, social-geographic and economic-geographic features of the space has been made.

The spatial and urban city planning has been observed as a second segment. The city of Bitola is marked by nearly a hundred years of history of spatial planning. The spontaneous and non-regulated development of the urban web (up to 1929) has been replaced by a process of urban development and urban planning from 1929. The planning documents are the result of the social-political conditions that existed in that particular moment, as well as of the position and the significance of Bitola in that particular territory. From 1929 until today seven urban plans have been adopted, each of them covers the city integrally and defines its development as such. The plans have different content and

qualitative characteristics. They represent the atmosphere, the aspirations of the officials in charge and the actual relevant legislation, and their complementation does not usually indicate continuity in the planned development in relation to the existing situation. In this study, different planning treatments are separately discussed in relation to the adopted plans, their decision on the boundaries of the urban-planning area as well as the city boundaries. This is done in order to obtain a more comprehensive analysis of the process of spatial and urban expansion of the city of Bitola.

GEOGRAPHICAL LOCATION AND ADMINISTRATIVE ORGANIZATION

Geographical location

The city of Bitola is located in the Pelagonia Valley, in the southwestern part of R. N. Macedonia between the latitudes of 41° 01' and 41° 03' N and longitudes of 21° 18' and 21° 22' E. Within its natural-geographic boundaries, the valley covers an area of about 4000 km², extending over the territories of our country and neighboring Greece. The Pelagonia Region itself covers a territory of 4,717 km² or 18.9% of the area of the Republic of North Macedonia. On the southern side, it borders the Republic of Greece and the Republic of Albania. The space is physically surrounded by the mountains Dautitsa from the north, Babuna from the northeast, Selechka Planina and Nidze from the east, Neredska Planina from the south and southwest, and the mountains Galichitsa, Plakenska and Busheva Planina from the west. [25][26].



Figure 1. Geographical location of the city of Bitola and the Pelagonia planning region in the Republic of Macedonia. Source: Markoski B. 2023

Administrative organization

Administratively, the territory of the Pelagonia Valley is covered by the Pelagonia Region (NUTS level 3) [2], as one of the eight non-administrative units - statistic regions which arise by grouping the municipalities from lower rank in administrative units in the Republic of Macedonia. With the Law on Territorial Organization of Local Self-Government in the Republic of Macedonia, the territory of the Pelagonia Planning Region is organized into 9 units of local self-government-municipalities. Five of the abovementioned nine municipalities are based in a city (Bitola, Demir Hisar, Krushevo, Prilep and Resen), and four are based in a village (Krivogashtani, Mogila, Novaci and Dolneni), with the villages that belong to them territorially.

RESEARCH METHODOLOGY

The research process is based on several scientific methods. Due to the specifics of the problem area, the study, methodologically, includes the phase of providing a documentary ground (collecting, documenting and analyzing the obtained planning documents), i.e. the acquisition method. Original spatial and urban plans, cartographic and planning documents from state institutions, local self-government, the State Archive of the Republic of North Macedonia, the Archive of the City of Bitola, the Real Estate Cadastre Agency of the Republic of North Macedonia, planning houses, etc. are used as primary sources. Texts and comments from professional journals, publications, monographs and previously published scientific papers were used as secondary sources.

The data collected with the method of generalization and systematization have been processed, so that the data which have been obtained may be compared.

The basic method on which the research is based is the comparative analysis, which allows for the monitoring of the different conditions, that is, the changes from a spatial-physical and planning aspect. Analytical statistical methods and information methods were used for those needs. Tables, diagrams, etc. are used for clearer monitoring of the conditions.

The research results are presented as individual findings, as well as collectively. The conclusions and recommendations represent a synthesis of the research results and their comparison with the established hypotheses and basic theoretical postulates.

RESULTS

Chronology of the urban expansion of the city of Bitola

In the evolution of the urban development of Bitola, the following factors have a dominant influence: the socio-political environment, the dynamics of administrative and political changes, the role of the city of Bitola and its importance in relation to its surroundings, the legislative framework, the planning approach, the existing structure as a construction fund, and the conditions for the implementation of the planning decisions. From an administrative-territorial point of view, the city had its most significant role in the 19th century, when it became the seat of the Rumelian Vilayet, thus gaining the primacy of the capital city in the European part of Turkey. During this period, Bitola had developed craftsmanship, with strong commercial connections in the European centers. It is particularly significant that it also became a diplomatic center with 20 consulates opened in a certain period. Since 1864, the city of Bitola was the seat of the newly formed Bitola Vilayet, which covered a much smaller territory than before, that is, about 32,000 km², including territories of today's Greece and Albania. Since 1913, after the Balkan Wars,

the city was occupied by the Serbs, within the Kingdom of Serbs, Croats, and Slovenes. In the period between the two world wars, Bitola lost its geo-strategic importance and the influence it had on Greece and Albania. In the period immediately before the First Balkan War, the vilayet had a population of over 1,000,000 inhabitants. [21][25]

In general, the urban development of Bitola can be analyzed through two periods: the pre-planning period until 1929 and the planning period from 1929 until today. In the pre-planning period and in the absence of spatial planning regulation, Bitola developed spontaneously and unsystematically. The planning period began after the First World War when the first urban ideas for the city were initiated. They were oriented towards de-Ottomanization, with ideas for transforming the existing city structure with elements of European cities. [14]

Chronological review of urban plans

Regulation Plan of the City of Bitola from 1929

The first planning document for the city of Bitola was drafted in 1929. The first cadastral records of the city were also prepared for the needs of this plan. There is only one copy of the Regulation plan of the city of Bitola, made on ozalid paper with a scale 1:5000, as a source document, which is kept in the Historical Archive in Bitola, i.e. the State Archives-Department of Bitola. For the purposes of this research, a document from the municipal administration was used, which is a certified copy "true to the original".

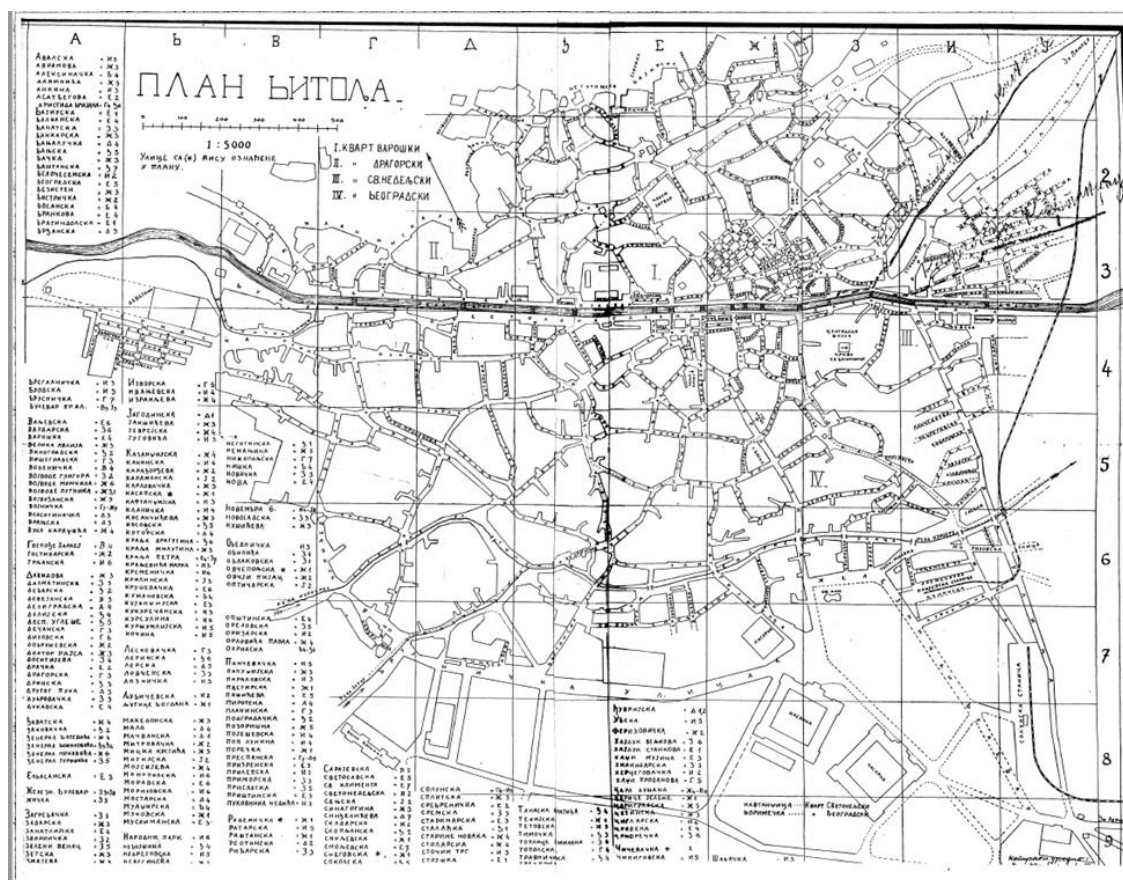


Figure 2. Regulation Plan from 1929. Source: municipality of Bitola [15]

In a socio-political context, the city was under Serbian occupation within the Kingdom of SCS. Between the two world wars, Bitola lost its geo-strategic importance and

influence on the territories in Greece and Albania. [25][21]. From the point of view of urban definition of the city web, it is significant that in this period the city started to be built and shaped systematically, exactly according to the plan of 1929. During this period, the city had a population of about 27,000 inhabitants and covered a territory of approximately 394.4 ha.

The legislative framework was defined with the document "Regulation on the construction profession in the liberated and annexed areas of the Kingdom of Serbia".

Directive Regulation Plan of Bitola from 1949

The first plan of the city of Bitola after the Second World War was developed by a group of authors at the Urban Institute of the People's Republic of Croatia in Zagreb, led by the architect Vlado Antolić, so it is included in the series "postwar author plans". There is no preserved documentation of this plan, except for a brief review in the professional journal "Architecture" no. 25-27 of 1949, - Zagreb, dedicated to urbanism in the People's Republic of Macedonia [8]. The graphical display shown below is from the text "Urban planning in Macedonia in the last fifty years" from the jubilee anthology "50 years of the Faculty of Architecture" from 1999. In the planning solution, Antolić shows restraint in his concept, with maximum respect for the construction fund and plans minimal interventions in the city web. He places the emphasis on mass construction in the peripheral parts of the city. He instructs that it is necessary to intervene carefully in the established central city areas by developing detailed urban plans.[24] The planning area obtained by approximating and applying the boundaries to the cadastral records is approximately 720 ha. In that period, the city had a population of 30,761 inhabitants.



Figure 3. Directive Regulation Plan of Bitola, 1949 [10].

General Urban Plan of Bitola from 1958

In 1958 the General Urban Plan of Bitola was developed in two stages: conceptual study and conceptual project. The study was made in the "General Plan" design studio from Belgrade, under the supervision of eng. arch. D. Momcilović. Due to a series of expert comments made by the Republic Revision Commission, especially on the traffic solution, zoning and population density, this plan was not officially adopted by the City People's Committee at that time. Even though it was not adopted, the construction in the period 1958-1965 took place according to that plan.[8]

Basic urban plan from 1968

In 1965, the Assembly of the municipality of Bitola adopted the "Decision on the construction and organization of the city of Bitola", which replaces the urban plan, and in June 1966 it adopts the "Urban Study" prepared in the Institute of Urbanism and Architecture - Bitola. One of the reasons for establishing this Institute at the beginning of 1962 was to engage it in the development of a basic urban plan, in accordance with the first Law on Urban Planning from 1958.

A common feature of the previous planning documents is that the primary emphasis was given to the residential zones, while the rest of the functional zones were not dealt with at such a great length. They did not develop the plans multidisciplinary, with the participation of sector studies, but the development concept was guided by the intuitive insights of the authors. The processing method was impractical due to the fact that they included more details than a basic urban plan was supposed to have, which in practice turned out to be more restrictive than simply directional. Another unifying element for the previous plans is the planning approach which did not respect the existing city structure and its heritage at all, which is especially seen in the planned traffic concept.

Based on a study from 1966, the Institute from Bitola in cooperation with the Institute for Urban Planning and Housing-Communal Technology of FRM - Skopje, prepared the Basic Urban Plan of Bitola. The plan was adopted by the Assembly of the municipality in February 1968. The Study and the Plan were developed under the supervision of the architects Gogo Vidimche, Dimitar Dimitrovski and Kiril Stojanovski from the Institute of Urbanism and Architecture - Bitola. When it comes to legislative regulations, the Law on Regional, Spatial and Urban Planning was in force ("Official Gazette of FRM" no. 7/65 and 16/67).

The plan was developed for a planning period of 20 years, that is, 30 years after the adoption of the urban study from 1966. In 1961 the city had 49,001 inhabitants, with an average standard of 8m of net residential area per inhabitant. The estimation was that by 1996, 95,000 inhabitants would live in the inner city area and another 13,000 in the suburbs of Gorno Orizari and Bukovski Livadi, or a total of 108,000 within the wider urban area.

The traffic solution, made without a preliminary study, does not respect the existing street network. Three entry-exit points of the city are stipulated. These transit routes limit the inner construction area.

The plan provides a dedicated treatment of seven functional zones (housing, work, greenery, sports and recreation, reserves for post-plan construction, special-purpose grounds, agricultural and free areas for off-site greenery).

Compositionally, the plan stipulates 60-80 m wide areas with a high intensity of construction, along with the primary traffic routes.

The urban area is treated as: 750.99 ha of inner construction area; 1,641.80 ha of wider construction area and 2,392.79 ha of area within the limits of urban development. It must be noted that the analyzes were made with the total area in the analytical territory of the city, which is 1,250 ha.

The plan determines three stages of implementation, which are accompanied by fiscal projections for their implementation.

A very low percentage of the planned construction was accomplished in the first stage. This is greatly due to the traffic solution and the disregard for the existing urban web, as well as the construction of the areas along the roads, which was prevented because the valorization of the construction fund that was supposed to be demolished never happened. This led to a decision to revise the planning solution.

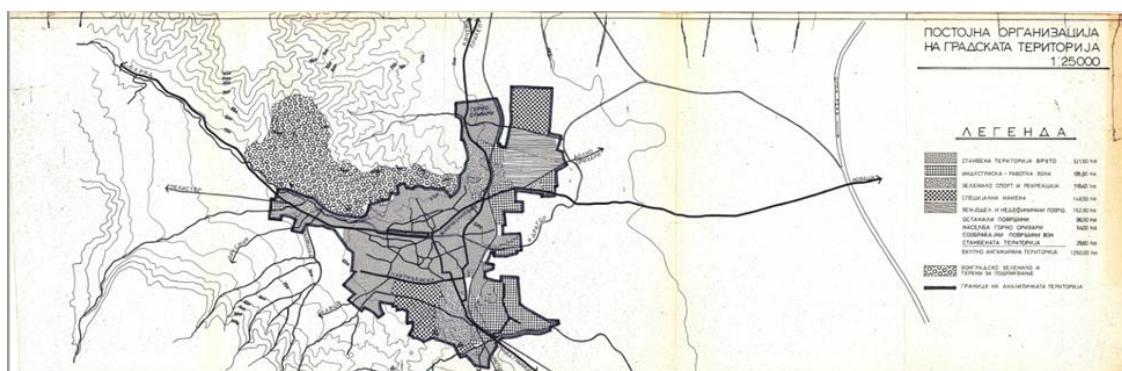


Figure 4. Existing organization of the city territory (BUP 1978 – documentary grounds) from 1978. Source: municipality of Bitola [7]

It should be pointed out that in the period from after the war until 1976, or in a time frame of thirty years, the city was exposed to a strong process of urbanization, like other urban centers in the country, and as such it could not be controlled, directed and organized in an optimal framework. During this period, illegal residential construction is realized in a higher percentage than the legal one, which can be seen from the ratio of 106 ha versus 87 ha of construction of new areas. At the end of the period of the first stage of the implementation of the plan, the sector study showed that 25% of the entire housing fund was illegal construction.[7]

Basic Urban Plan - Amendments from 1978

In the period from 1968-1975, socio-economic and commercial trends imposed a need for amendments to the Basic Urban Plan of Bitola from 1968. The planning document was adopted on April 3, 1978 with a planning period until 2000. The amendments were made in the Institute for Urban Planning and Design-Bitola, with the participation of the Directorate for Spatial Planning Ohrid-Skopje and a specially formed team under the supervision of the architect Kiril Stojanovski, an authorized independent designer from the Institute, and a consulting group led by prof. Borko Novaković PhD from the Faculty of Architecture in Belgrade. These amendments were made simultaneously with the first Spatial Plan of the municipality of Bitola. The need to create a spatial plan proceeds from the new Law on Spatial and Urban Planning ("Official Gazette of FRM" No. 15/73). The spatial plan itself indicates the need to review the Basic Urban Plan in terms of optimization of the further development of the city, and, at the same time, it treats the phenomena and processes in a wider regional context in which Bitola acquires a more prominent position as a regional hot spot of development.

"The amendments to the BUP from 1978 were made based on the principle of urban zoning by determining the directions of the spatial development of the basic functional zones and connecting them into a single and compact city organism." (Third amendments to the GUP of Bitola - text) [7]

The plan is based on several important planning principles: the BUP is a spatial projection of the long-term socio-economic development of the city with maximum respect for the natural and man-made environment and material opportunities; the BUP is a contract and agreement of all subjects, users of the plan and citizens of Bitola; the planning is a system of plans that influence and complement each other, which requires the implementation of a vertical and horizontal planning system; the urban planning is a unity of the procedure for the preparation and implementation of the plan, which requires a continuous and permanent process of planning and tracking the changes; the planning as a process of tracking, analyzing and predicting the overall development requires scientific and interdisciplinary considerations; in the long-term development of planning, mid-term stages are introduced to ensure the flexibility and implementation of the long-term plan; the amendments to the plan should be understood as spatial insights for the long-term development of the city that are changed, that is, replaced, in a shorter time than the planning period. The last principle is perhaps the most important essential assumption of the work methodology and the determination of what the usability and applicability of the plan will be, while the plan must follow the development processes of the city and its planning, with a critical attitude towards the previous development, condition, immediate and planned development.

The plan deals with three levels of observations, analyzes and syntheses, as a basis for planning the development, usage and organization of the space. The first level is within the framework of the spatial-functional organization of the country as a territory, directly conditioned by the position of the city in the overall social-political and spatial-functional organization of FRM. The second level is the city of Bitola in the role of a regional center. The third level is the city as a whole, its internal organization and connection with the environment.

In relation to the concept of spatial organization and establishing a long-term concept for spatial development, the emphasis is placed on integration and planned organization of the development activities. Due to such development aspirations and the importance of the city in the regional context, the plan stipulates an inner and wider urban area.

In the wider area of the city, the creation of a new metropolitan structure with a radius of 7km is stipulated. With the plan to satisfy the assumptions for development, two planning periods are given, until 1985 and long-term until the year of 2000 with the following planning guidelines: - the planning area of 1250 ha increases to about 2300 ha of analytical territory (or 2440 ha in the graphical displays) approximately allocating one-third for housing, work and recreation respectively; - the space outside the city territory is treated as a wider metropolitan area, in terms of organizing the suburban villages and in terms of the way in which the populated territory is used; - the expansion of the city with a purely residential structure shall be carried out in the unoccupied terrains in the west, and the residential-working structure in the north and south, thus achieving the most rational ratio in the quantitative usage of the urban space. The plan protects the fertile agricultural area to the east.

In terms of demographic indicators, in 1975, when the amendments to the BUP began, Bitola had 73,400 inhabitants, with an average density of 58.7 inh/ha. The housing standard of net housing area was 11.9 m² per inhabitant. During this period, migration

movements from rural areas to the city were strongly expressed. The spatial plan stipulates other urban centers in the municipality in the long-term development. Their function would be to reduce the pressure of the population on the city and ensure a rational spatial organization of the entire space in the municipality. The plan makes a projection of 110,000 inhabitants for the end of the planning period in 2000 within the limits of the planning area of the city, based on the findings of the research of the Spatial Plan of the city. The plan stipulates an increase in the housing standard, that is, the average net housing area to be 18m² per inhabitant. In order to meet this standard, the construction of new housing facilities with an area of 1,317,600 m² is planned, which is twice as much as the existing housing fund. The planned growth of newly built apartments per 1000 inhabitants tends to approach the parameter 10 on an annual level, respecting the recommendations of the ECE – The United Nations Economic Commission for Europe. "The dynamics of construction of about 10 apartments per 1000 inhabitants annually is considered to meet the needs of the natural and mechanical population growth of the developing countries." Among the provisions for regulating the planning aspects of housing, it is interesting to point out that the plan advises that the sales value of 1m² of residential area should approach the amount of the average monthly personal income. The total area intended for housing within the planning area is 610 ha.

The analyzes indicate insufficient capacity of the existing city center for the functions of importance for the city and the region, so the plan stipulates an increase in the area for public functions in the space of the wider central city area. The plan also stipulates a hierarchical system of centers, corresponding to the zones of functional organization, to meet the needs of the planned capacity of 110,000 inhabitants in the city, i.e. 130,000 in the metropolitan area. The total area intended for central public functions is 134 ha.

The working area is planned to be 503 ha, which represents a significant increase compared to the existing situation at the time. The development zones are planned with the necessary accompanying infrastructure facilities and functional equipment.

Regarding the traffic concept, the BUP is based on the following settings: - retention of the major roads along the sides of the city core; - establishing functional connections between the industrial zone, the housing areas and the central area of the city; - a favorable connection with the external and suburban network of roads; - removing the intense motor traffic from the city center; - minimum intervention in the old part of the city in order to ensure the optimal conditions for the preservation of the architectural heritage and the old city bazaar.

The green areas have a significant role in the plan. A norm of 16.7 m²/inhabitant was achieved, of which 7.59 m²/inhabitant is city greenery, while 9.11 m²/inhabitant is regional greenery. The size of the planned green areas satisfies the basic functions, but their spatial distribution in the overall structure of the city is not even. Except for the city park, which is located closest to the central parts of the city, all other parks are located peripherally. The plan stipulates off-site greenery by using the potentials that the city has on the southwest side of the slopes of Pelister, as well as on the north side of the slopes of the Oblakovno-snegovski massif. For this type of green areas, 1650 ha were provided in the immediate vicinity of the city, which represents a capacity of 150 m²/inhabitant. The zone for greenery, sports and recreation covers an area of 592 ha.

This plan too provides guidelines for gradual implementation within the two planning periods, with specified concrete segments for implementation.[7]

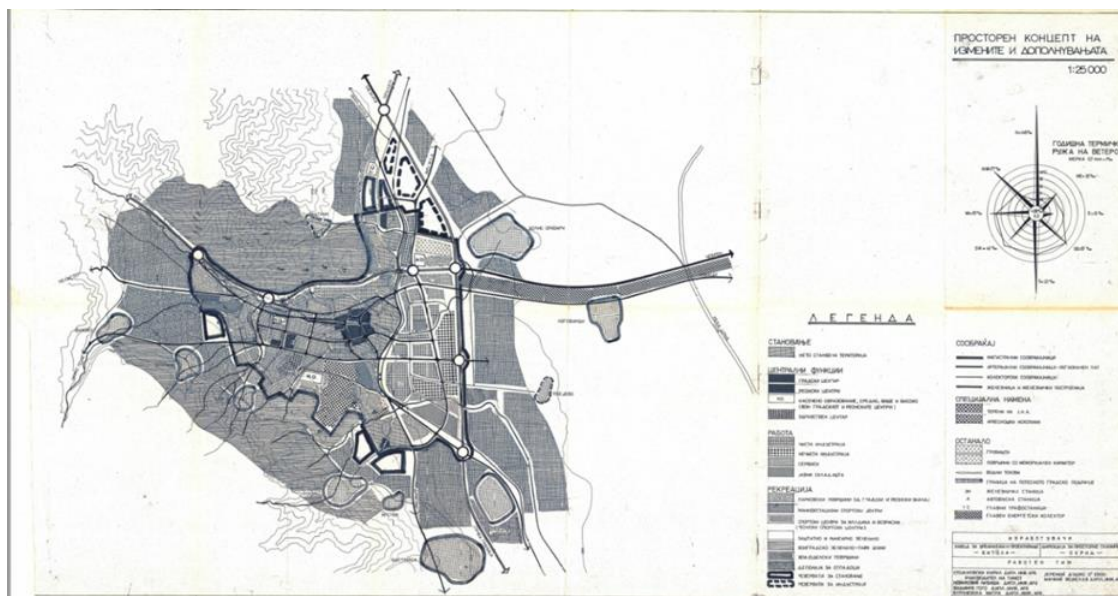


Figure 5. The spatial concept of the amendments, BUP 1978. Source: municipality of Bitola [7].

Basic Urban Plan of the city of Bitola - second major amendments

The second major amendments to the Basic Urban Plan of the city of Bitola date from February 16, 1990 and represent the sixth planning document which deals with the city integrally. This plan was developed at the Institute for Urban Planning and Design, Bitola, by a specially formed team under the supervision of Ljubisa Novaković, B.Sc. eng. arch., an authorized independent designer in the Institute, and a consulting team under the supervision of prof. Borko Novaković from the Faculty of Architecture in Belgrade. The plan essentially represents an analysis of the implementation of the first stage of the previous amendments (in the period 1976-1985) and is a guideline for the implementation in the next period until the year of 2000.

This plan maintains the development guidelines conceptualized by the previous plan, and provides continuity to the established functional zones and their connection within the city agglomerate and beyond it. The urban area is rounded to 2,440 ha in the text of the plan, while graphically it covers an area of 2,600 ha. [8]

General Urban Plan of Bitola from 1999 - third major amendments

After the adoption of the previous plan in 1990 and the second major amendments to the BUP of Bitola, the processes which represent a negation of the previous social-political and economic system start. A substantial change is taking place in the designation of the proprietary rights holder, as well as in the transformation of the economy in general in order to enable it to function in market operating conditions. These altered socio-economic conditions impose a need to reconsider the attitudes and the development guidelines of the existing BUP. The plan was started in 1995, with a planning period for development of 15 years, i.e. until 2010.

Demographic analyzes based on the results of the 1994 census show a large decrease in the total number of inhabitants in the municipality and the city. Namely, according to the predictions of the BUP, around 94,000 inhabitants were supposed to live in the city in 1994, but the census recorded 79,456 inhabitants. This large trend of population decline is due to the high rate of migrations and the drastically decreased natural population growth. Based on the results of the census and the analyzes (until the end of the planning

period), the plan makes two different predictions for the number of inhabitants, a pessimistic one and an optimistic one, A mean prediction, which estimates the number of inhabitants to be 82,400 by the end of 2000, 84,800 by the end of 2005 and 87,500 by the end of the planning period in 2010, is accepted as a plausible prediction.

The analytical review of the economy reflects pessimistic development trends during the period of preparation of the plan. The process of centralization of the departments for analysis and a plan at the Secretariats for the economy from the municipal level to the central-state level caused an interruption in the monitoring of the situation in the economy and planning. This was directly reflected on the prediction of the development of the economy and on economic planning in general. The development predictions of the previous BUP were realized in the first decade of its implementation, but they were not within the predicted frameworks in the period from 1986-1990. This was a period marked by a state of stagnation and decline, which was ascertained by the Second Amendments to the BUP from 1990. The conditions noted in the period 1991-1995 show that the development planned by the BUP was unfeasible, with economic flows that are contrary to those predicted. The new GUP examines the aspects for the development of the economy and bases them on the following circumstances: - the city as the center of the largest agrarian area in the country; - the city as a center with great energy potentials; - existing development of industrial facilities and -a solid infrastructure for their realization. One of the goals of this GUP is the creation of a work zone which, through the projection of spatial distribution and functional connectivity, will not represent a barrier to implementation.

The planning solution of these third major amendments retains the concept of the previous plan, respecting the evolutionary line of the development of the urban web. The planning continuity is practically based on the plan from 1978, which is a key strategic document that determines the development direction of the city agglomerate. The following plans fully accept it conceptually and make small corrections in certain segments in order to comply with the current needs and trends, as well as the existing situation. The plan abandons the strict zoning of the city by means of strictly differentiated basic functional zones and begins a process of interweaving different functions and uses of the land, to the extent that it will not disturb or threaten the basic purpose and function.

The urban area is taken from the previous plan, but with certain cuts: the routes of the M5 main roads and the planned branch to Medjitlija are excluded from the area; most of the off-site greenery is excluded; areas for planned expansion (working and residential zone), which makes the total area to be 2,245 ha.

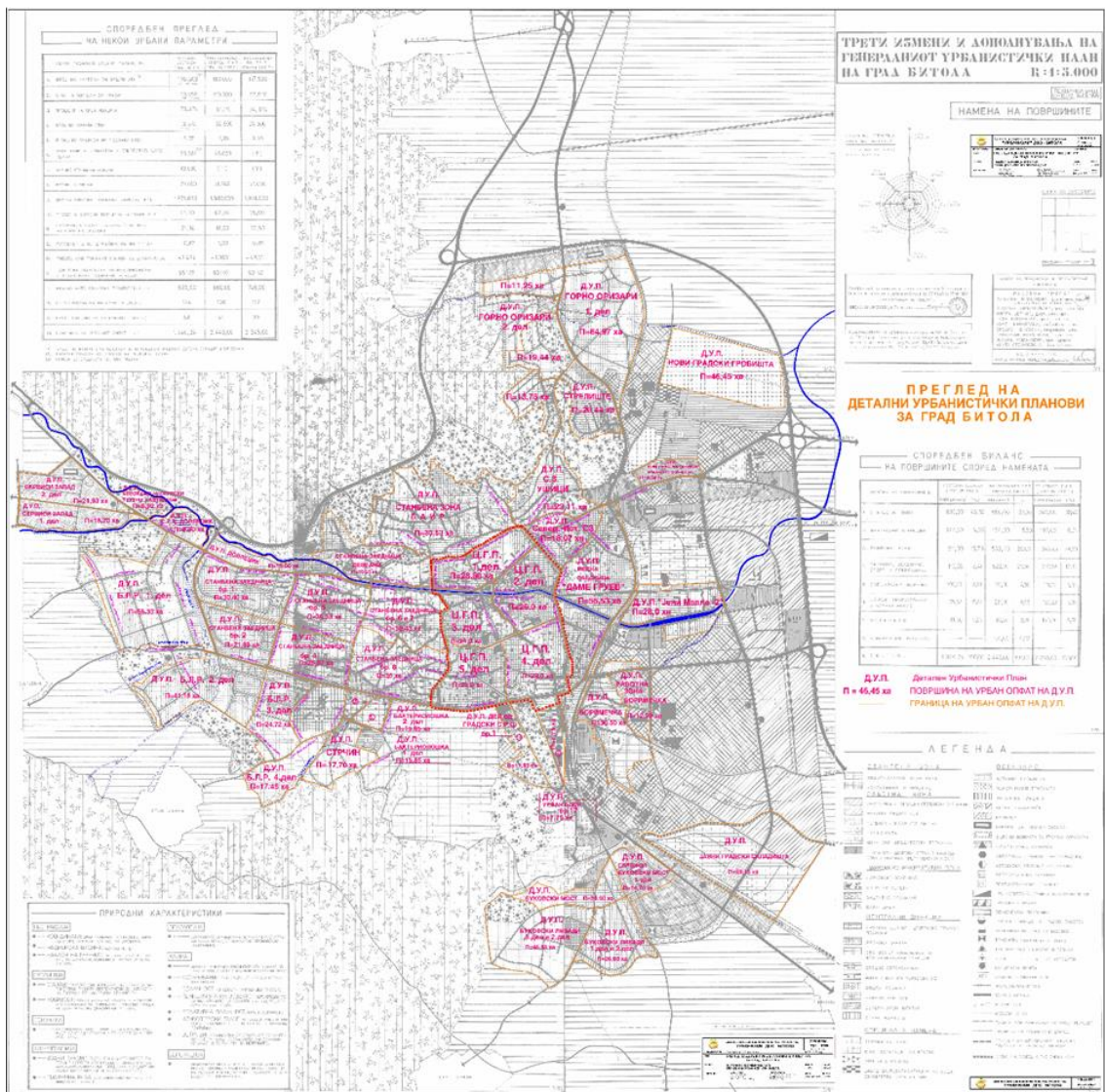


Figure 6. General Urban Plan from 1999 - graphical display of land use with an overview of detailed urban plans. Source: municipality of Bitola [8].

Regarding the residential zone, it should be noted that a high percentage of the demographic predictions made by the previous plan were not realized. Instead of the planned 110,000 inhabitants in 2000, the city had 74,550 inhabitants in 2002. This plan estimates that there will be 87,000 inhabitants by the end of the planning period in 2010. Despite the large decline in the planned number of inhabitants with the current plan and the planning of a smaller number with the new plan, the residential zone does not decrease, but increases from 630ha to 749ha. About 89ha of clusters of illegally constructed residential buildings are included in the expansion. The planned average net density is 117 inh/ha, and the gross at the city area level is 39 inh/ha. The housing standard has increased significantly, with the net usable area per inhabitant in 1995 being 21.04 m², which is expected to grow to 23 m² by the end of the planning period. Quantitatively, the housing capacity meets and exceeds the needs of the city, and the planning of this fund is aimed at qualitative improvement of the standard of housing in general. Similar to the situation in the residential zone, the planned growth was also not achieved in the working zone, in terms of the realization of the areas for this purpose. With the

previous plan, the working zone had an area of about 500 ha. The 1995 inventory showed that out of those 500 ha only an area of 210 ha was realized. Despite the large reserves of planned area for the economy, the plan again provides for an increase in the area of the working zone to 643.45 ha. The expansion is mostly due to the zone for dirty industry which is planned without realistic assumptions for a specific user or users of the space, but in order to reserve an area for the appropriate purpose and to protect the land from illegal construction.

Unlike the residential and working zone, the plan shows a different development trend in the park and recreational zone. The new GUP reduces the planned 622 ha for greenery, sports and recreation (allocated with the previous BUP) to 276.88 ha. This difference of about 347 ha is actually not so drastically expressed in terms of the areas for the realization of the abovementioned contents, but primarily refers to the protective belts of the traffic corridors which are excluded from the plan area.[8]

DISCUSSION-ANALYSIS OF THE URBAN EXPANSION OF BITOLA

The development line of the territorial expansion of the city of Bitola is a reflection of the aggregate reaction of several variables. In the wide range of factors of influence, the dominant position is taken by the socio-political environment with a pronounced dynamics of change, the role of the city in the administrative-economic-functional context and its significance at the level of a certain territory, the legislative framework, the planning approach, the existing structure as a construction fund and conditions for implementation of the planning solutions. [4][21]

Analysis of the fluctuation of the population number

Considering the demographic analyses from the beginning of the twentieth century, it can be seen that the city goes through periods of different intensity of population fluctuation. The most pronounced downward trend was at the beginning of the last century, where, in a period of two decades, there was a decrease of the city population by 55%, from about 60,000 to 27,000 inhabitants. This is the result of a period of great social turbulence, starting with the Ilinden Uprising, the Young Turk Revolution, the Balkan Wars, the First World War, after which many changes took place in the wider socio-political situation, which strongly reflected on the city of Bitola. This is followed by a period of growth in the population number, until the Second World War, when, consequently, the number of inhabitants decreases again. [21]

In the post-war period, a trend of population growth begins, especially pronounced in the fifties and sixties (more than 30%), continuing with a more moderate rate of 20% in the seventies and 7% in the eighties, when the stagnation in the development processes in the city is already begun.

In the period that follows, the city enters a negative trend of population growth.

According to the census of 1994, a large decrease in the total number of inhabitants in the former municipality and the city was ascertained, which is illustrated in the analytical part of the plan. According to the predictions in the PP of the former municipality of Bitola, at the end of 1990, about 158,000 people were supposed to live in the municipality and about 94,000 in the city. With linear interpolation in the predictions between 1990 and 2000, in the middle of the last decade of this century (1994-1995) around 169,000 were supposed to live in the municipality, and around 102,000 in the city. The census of June 20, 1994 denied these two predictions, with the municipality having a total of 108,203 inhabitants (60,797 fewer than the predictions), and the city together with Gorno Orizari

79,456 inhabitants (22,544 fewer than the predictions). (GUP text part III Demographic development). Due to the previous findings, the GUP from 1999 projects that in 2010 the city will have 87,500 inhabitants, which did not happen (12,950 less inhabitants according to the 2002 census, and 18,213 less than the 2022 census).

Looking at the final population figures in the period from 1900-2022, the city recorded a population growth of only 15.48% or 1.15 times in 120 years, and 2.57 times in the period 1921-2022 (the period of planned development).

Table 1. Changes in the number of the population in the city of Bitola in the censuses from 1900 to 2002.

year	1900	1910	1921	1937	1948	1953	1961	1971	1981	1991	2002	2022
Number of population	60.000	52.729	27.000	33.024	30.761	37.561	49.001	65.035	78.507	84.002	74.550	69.287
%		12,13↓	48,8↓	22,31↑	6,85↓	12,2↑	30,5↑	32,7↑	20,7↑	7↑	11,2↓	↓7,1

*Sources of data: [4, 5, 6, 7, 9, 16, 17, 18, 21]

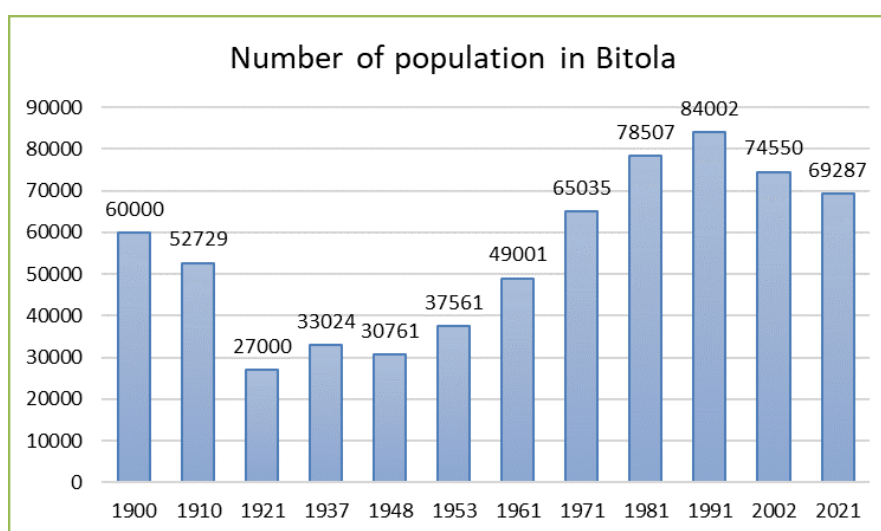


Figure 7. Changes in the number of the population in the city of Bitola in the censuses from 1900 to 2002.

Analysis of the territorial expansion of the city

The analysis of the territorial expansion of the city is made with the method of comparison- by overlapping the surfaces of urban areas of the urban plans. Based on that, a documentation basis was created, as a foundation for the development of urban plans. The obtained measurements are plan-by-plan and integrally discussed.

Table 2. Preview of surfaces of urban areas of urban plans

Urban Plan	Regulation Plan 1929	Directive Regulation Plan of Bitola 1949	Basic Urban Plan 1968	Basic Urban Plan – Amendments 1978	Basic Urban Plan – second major amendments 1990	General Urban Plan 1999
Surface area (ha)	394.4	720	1.250	2.440 (graphic)	2.600 (graphic)	2.245
Surface increase (ha and %)		325,6 (82,56%) ↑	530 (73,61%) ↑	1.190 (95,2%) ↑	160 (6,56%) ↑	-355 (-13.65%) ↓

Source: [7, 8, 10, 15]

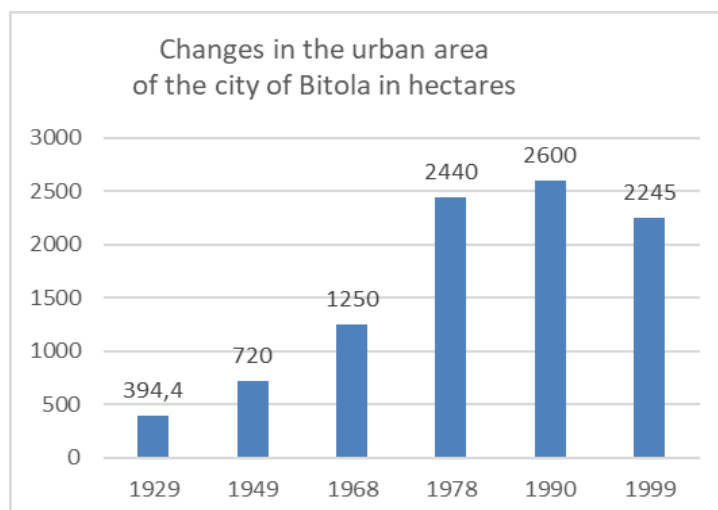


Figure 8. Changes in the territorial expansion of the city of Bitola in the period from 1929 to 2021.

Regulation Plan 1929. The boundaries of the city are about 394.4ha in the plan from 1929. [15]

Directive Regulation Plan from 1949. With this first post-war planning document, an increase in the city territory is planned. The expansion is emphasized in the peripheral parts, with a tendency to respect the existing city structures of the old core. The boundary of the city's area was obtained by applying, that is, marking the foundation of the plan and it is approximately 720ha, which represents an increase of 82.56% compared to the boundary of the previous plan. [10] [24]

Basic Urban Plan from 1968. The plan deals with an inner construction area of 750.99ha; a wider construction area of 1,641.80ha and an area within the boundaries of the urban area of 2,392.79 ha. However, the actual analytical territory of the city is 1,250ha, based on which all the analyses were made. The plan was drafted for a planning period of 20 years. The records from the documentation basis of the Basic Urban Plan – Amendments from 1978 were used for the analyses. The plan stipulates an increase of the city boundaries by 1.74 times or 73.61%. The plan also stipulates large reserve areas for the future expansion of the city which are not taken into account by the analytical calculations.[7]

Basic Urban Plan - Amendments from 1978. The plan uses a comprehensive approach, with the creation of a spatial plan with relevant sector studies. The new planning concept expands the city area greatly. The plan stipulates the expansion of the purely residential structure to be carried out in the terrain to the west, the residential-working structure to the north and south, while protecting the fertile agricultural area to the east. Namely, in the wider area of the city, the creation of a new metropolitan structure with a radius of 7 km is stipulated. The plan (in order to satisfy the assumptions for development) provides two planning periods, until 1985 and long-term until 2000, planning a city territory twice its size (from 1,250 ha it increases to about 2,300 ha analytical territory, i.e. 2,440 ha in the graphical displays). [7]

Basic Urban Plan of the city of Bitola - Amendments from 1990 (second major amendments). The plan itself is actually an analysis of the implementation of the first stage of the previous amendments and is a guideline for the implementation in the next period until the year of 2000. This plan retains the development guidelines conceptualized by the previous plan and provides continuity to the established functional zones and their connection within the city agglomerate and beyond it. The urban area is rounded to 2,44

0ha in the text of the plan, while graphically it covers an area of 2,600 ha, so there is an insignificant increase of 6.56%, that is, it can be considered that it retains the city boundaries determined by the previous plan. [8]

General Urban Plan from 1999. The planning solution follows the established planning concept, but considering the negative demographic trends, optimizes the city boundaries and, with the purpose of rational land use, a smaller planning area is planned for the first time. The city is territorially narrowed from the planned 2,600 ha to 2,245 ha, which represents a decrease of 13.65%. [8]

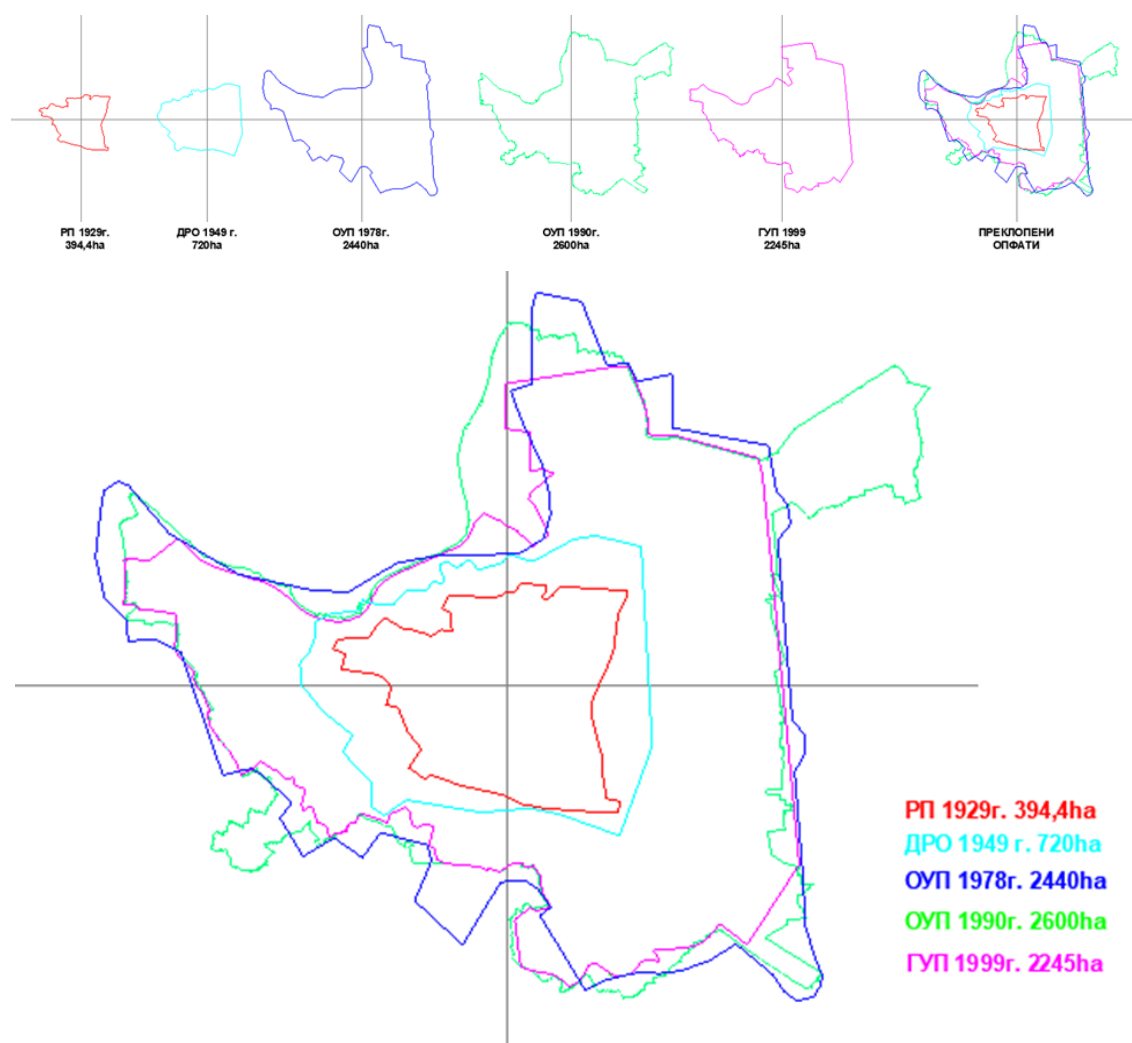


Figure 9. Overlap of planning areas of adopted plans
Source: author [7][8][10][15]

CONCLUSION

Having in mind all elaborations, it can be perceived that the development line of the city of Bitola, as a result of the planned treatment, begins in 1929 with the Regulation Plan which plans the city an area of 394,4ha, which is almost doubled (82.56%) in a period of two decades with the Directive Regulation Plan. The trend of increasing the city area continues at a similar rate (73.61%) in the next Basic Urban Plan, with a time span of two decades (1968). This is then followed by the greatest territorial expansion, with an increase of 92, 5% of the city area, in a period of only one decade (Basic Urban Plan –

Amendments from 1978). With the next plan from 1988 (Basic Urban Plan - Second Amendments) the growth rate of the city territory is declined, predicting a small increase of 6.56%, and with the last adopted General Urban Plan from 1999 the growth rate has a negative value for the first time and the territory of the city decreases by 16.35%. Following the figures within the period of planned development (94 years to date) the area of the city increases from 394.4ha to 2,245ha or by 5.7 times.

Taking into account the demographic analyses and the increase in the number of inhabitants of the city within the same planning period, it is ascertained that the population has grown by 1.15 times, while the territory of the city has grown by 5.7 times. This means that there is a huge disproportion of growth between the population and the territory of the city of Bitola.

These data, which express the great growth rate of the boundaries of the city of Bitola, inevitably raise the issue of sustainable development policy, rational land use and, of course, protection of agricultural land and forests.

The elapsed time, during which the transition process continuously has been taking place, has brought about major economic changes which generate structural changes in the development plans of Bitola. The dynamics of this process has implications for the creation of new spatial relationships and conditions the need for planned articulation of the city space. The alteration of spatial constellations necessarily requires the evaluation of the urbanization process, the territorial and morphological development of the city, the re-examination of urban processes, the spatial consolidation and the establishment of a consistent urban model. Two decades after the adoption of the current GUP, in the "Analysis of the degree and manner of implementation and realization of the urban plans in the area of the municipality of Bitola", prepared by the Commission for Urban Planning, established by the mayor of the municipality of Bitola, from December 20, it is stated that the General Urban Plan has 68% realization, in accordance with the adopted detailed urban plans within the boundaries of the GUP and it is stated that "it is in contradiction with the goals for sustainable development and other global development documents in the field of urban planning..." (Analysis of the degree and manner of implementation and realization of urban plans in the area of the municipality of Bitola (2021): p. 3).

Due to the complex structure involving different segments and their interrelations, there is a need of all-inclusive analysis. In this way, we can obtain an integral representation of the occurrence and its meaning in general. The research has to provide the mutual relations, the conflict points and the negative effects of the urban expansion of the city web, at the expense of the elements for sustainable development and rational land use, protection of agricultural land and forests. When determining the proper program-spatial matrix as a tool for spatial planning, apart from all aspects of the existing situation, the inventory, the relations in the urban web, the relations between the urban and rural sections, the needs, the spheres of interest, the possibilities for alternative and multipurpose use, as well as the conflict points in using the land, the developing line should be based on the strategic theses of the European Union for spatial planning. They are mainly oriented towards polycentric and balanced spatial development, integration of the urban and rural environments, territorial integration in the international functional regions, providing competition in regions based on strong local economies, improving communication infrastructure between the population, the community and the economy. This can be done if all aspects of protecting and enhancing the environment and the cultural goods are taken into account. [1][4][5][6][7][8][9][15][16][17][18] [21][22][23]

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