TIRANA MUNICIPALITY

Improvement of Educational Infrastructure in Tirana Municipality

Feasibility Study

NOVEMBER 2016

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1. INTRODUCTION

1.1. Definition of terms

The terms used in the course of this review mainly refer to the "Guidelines for definition of school buildings - Norms and Standards", issued by Ministry of Education and Sports, and law No.69/2012 "On Pre-University Education System in the Republic of Albania" as following:

Pre-university education includes education levels with Codes 0, 1, 2 and 3, according to "International Standard Classification of Education", approved by the 29th session of UNESCO General Conference in November 1997, respectively:

a. "Level of Code 0", pre-school education;
b. "Level of Code 1", primary education;
c. "Level of Code 2", lower middle education;
d. "Level of Code 3", higher middle education.

Basic education (fundamental): Classes from 1 to 9 (age group 6-17 years).

Basic education: Includes lower middle education. Level of classes 1-6 (age group 6-12) addressing elementary school "buildings".

Lower middle education: includes 6-9 classes (age group 12-17) This level addresses the school building of "Lower Middle Education".

Higher middle education: Class 10 to 12 (age group 15 to 21 years). This level addresses "higher middle school" buildings.

General teaching room or physical class: A space designed and equipped for teaching of subjects to students.

Education Institution is the kindergarten or school.

Additional education institution is the institution that enriches life and teaching experiences of students.

Class/ Teaching class: Group of students teaching in the same school. In the rotatory system the class does not always consist of the teaching room.

Kindergarten is the educational institution offering educational service of the level of Code 0.

Curricula is the complex of documents such as: curricula framework, school plan, teaching program, text and other materials of a learning subject and the entire activity organized in the teaching environment, serving to provide a determined education for learners.

Minister is the Minister in charge of pre-university education affairs.

Ministry is the ministry in charge of the pre-university education affairs.
Teacher is the person who has obtained the right to exercise the profession of teaching in pre-university education.

Student is the person who is graduated in the pre-university education.

Disabled student is the person who suffers from long-term physical, mental, senses, attitude damage that in inter-action may hamper him to fully and equally participate in the learning activity and social life.

Teaching program is the document containing the goals of the subject, its specific competences, objectives for the students' achievements, main content, specific teaching methodology, learning and evaluation of students ´achievements.

School is the institution offering education service for the levels of Codes 1, 2, 3.
Private school is the non-public school that is not founded, financed and administrated by the local and central government.

1.2. General Description

This study aims to identify the mid-term and long-term needs of Tirana Municipality for construction of new education objects of the pre-university cycle, as well as determination of cost-efficient way for realization of this infrastructure. Even though, Tirana Municipality is evaluating the opportunity for implementation of this project through the Public-Private Partnership (PPP) scheme, envisaged in law no. 125/2013, "On Concessions and Public-Private Partnership", Article 18, a commission for PPP granting has been established pursuant to the Decision of the Head of Municipality No.15742, dated 24.05.2016 "On Establishment of the commission for completion of procedures of concession/ public-private partnership for improvement of education infrastructure in Tirana Municipality".

One of the tasks of this commission was to draft the feasibility study for the concession/ public-private partnership, which shall define the implementable procedure for granting of the concession/public-private partnership and will prepare the tender documents.

Identification of these needs comes as a result of the considerable demographic growth of Tirana Municipality in the course of these years, which has resulted in some over-crowded schools in the capital and in some empty schools mainly in the suburbs. The new territorial reform has attached to the new municipality 13 Administrative Units - former border communes of the capital - causing the further increase of the population and territory

administrated by the Municipality. As a result, this increase has pointed to the need of constant increase and improvement of primary public services, such as education.

This document is based on an updated database of the current situation, through collection of information on the ground, exploitation of existing database of Tirana Municipality, data collected from the Regional Education Directorate and Ministry of Education, as well as is based on consultations of previous studies at local, regional and national level to create a clear panorama of the situation. Based on the collected data, the study provides an in-depth analysis of the existing situation, forecast of current and future needs of the municipality, coordination of the project with national and sectorial policies, as well as evaluation of the most efficient method for financing and implementation of the object of study.

At first, the first chapter defines the terms used in the study and offers a general description of the project.

The second chapter of the document represents in general the current situation of education infrastructure of Tirana Municipality pointing to the need of realization of this project and objectives to be achieved through it. Later on, the document continues with the objectives of the project in coordinating national and sectorial policies, aiming to harmonize local policies with the regional and central policies. At this stage, the study offers also an analysis about strategic and operational benefits expected from this project, which will be in the direct interest of about 12,390 students, as well as most of the citizens of the municipality.

Third chapter of the study offers a panorama of the existing legislation about responsibilities and competences of Central Local Unit regarding pre-university education, as well as methodology used for realization of this study. The latest is based on the evaluation of some indicators, which derive as legal or standard references recommended by the respective ministry, such as: number of students/general teaching room; cover range of pre-university education service; number of schools based on population; designing standards of pre-university cycle schools, etc. The comparison of these indicators with the current situation of Tirana Municipality strongly highlights the lack of standards in pre-university education in Tirana and the strategic importance of this project in achievement of these standards. In this respect, it is presented the in-depth analysis of current situation making evident in details the problematic of education infrastructure of Tirana Municipality, accompanied with mid-term and long-term projections of the needs for new education infrastructure..

The forth chapter makes a panorama of the technical analysis of the project, where are made evident the most suitable areas for construction of the new education structures. Their identification has been achieved by taking into account a series of characteristics, such as surface of the territory range covering the education infrastructure service, surface of lands and their ownership, typological and geological harmonization of the site, infrastructure of the zone, etc. This chapter represents a panorama of the total cost for implementation of the

project starting from the designing, construction and maintenance costs, costs for furniture, as well as other potential general costs.

After making sure of needs for new education infrastructure and identification of potential sites for their realization, the study continues in the fifth chapter with an analysis of the environmental and social impact of the schools construction.

Sixth chapter is focused on economic and financial aspects of the project. In this chapter is evaluated the economic model of Public Private Partnership, taking into account the best practices of developed countries, where this model is widely used. This chapter reviews the cost analysis, to continue with income analysis for financing of the project. The chapter makes a Financial Analysis for a 7-year period in the framework of PPP scheme, as well as assesses the economic accomplishment of this project. The chapter ends with a quantitative and qualitative risk and sensitivity analysis.

The last chapter of the study concludes with the reasons that determined the selection of PPP schemes for realization of this project, and in details focuses on which PPP method is the most appropriate from the technical and financial point of view.

2. PROJECT´S KICK-OFF

Tirana Municipality counts in total 191 public schools: 17 special high schools, 13 united high schools, 40 elementary schools and 121 nine-year schools. In total, about 13963 students attend special high schools, 4557 students in united high schools, 56950 in the nine-year elementary education and 795 students in the elementary education. Taking into consideration that the number of students is higher than the maximal capacity of these schools, a considerable part of them have registered a larger number of students than their maximal capacity, which forces them to hold the teaching process in over-crowed classes of in two shifts. Based on the calculations carried out in this feasibility study, it results that 61 schools count more students than their maximal capacity, 10 out of them are special highs schools, 2 of them are united high schools and 49 consist of 9-year education schools. About 57 schools perform the teaching process in two shifts, 3 out of them are special high schools, 3 united high schools, 1 elementary and 50 consist of 9-year education schools. In total, Tirana Municipality counts about 14 292 students beyond the maximal capacity of the education infrastructure and 14 919 students attending school n the second shift.

The insufficient number of schools of Tirana Municipality has favoured the continuation of some sharp problems faced by community in the course of the years.

1. **Two-shifts learning**. In Tirana Municipality, about 66% of nine-year elementary schools in urban areas and 8% of nine-year schools in sub-urban and rural areas perform classes in two shifts. Whereas 15% of high schools in urban areas and 25% of high schools in sub-urban and rural areas perform the teaching process in two shifts. It is certified by different studies that attendance of classes in two-shifts is the source of a series of problems, such as weak concentration of children during studies carried out in the afternoon; limited opportunity of parents to accompany children to school due to clashes with working hours; over-use of schools and their rapid amortization, etc.

- **Big number of students per class**, or as it is known in international literature “class size"[1]. Today in Tirana, a considerable number of nine-year schools and high schools have a class size amounting to over 30-35 students per class, where the average class size of OECD countries is 21-25 students for the primary education[2].

- **Difficulty in school access**. Rapid demographic development of Tirana and concentration of new constructions in peripheral non-developed territories until the beginning of ´90 has made difficult the access of students in some Tirana Administrative Units urban areas without the presence of education institutions.

[1] According to OECD definition

2 This ratio on pre-university education (5-8 class) includes 24 students per class and regarding high school is about 25 students per class. Small classes enable teachers to focus more on individual needs of the students and reduce the necessary time to deal with different interruptions. According to OECD, small classes are more suitable recommended for elementary level than high schools. (See OECD ’Education at a Glance’ 2011 - Chapter D “The Learning Environment and Organisation of Schools”

According to the Decision of Council of Ministers No. 671 dated 29.07.2015 “On approval of the regulation of the territory planing rules”, the coverage range of pre-university education in aerial distance shall be as following :

The aerial distance range for elementary and nine-year schools:
- 500 - 600 meters in urban areas
- 1000 – 1500 meters in rural areas

The aerial distance range for high schools:
- 1000 – 1500 meters in urban areas
- 2000 – 4500 meters in rural areas

This project aims to solve the above-mentioned problems with the construction 17 new schools, 10 out of them will be nine-year education schools and 7 high schools. With the construction of these new schools, Tirana will stop having over-crowded schools or two-shift schools. The drafting and implementation of this project is an important element of the political program of Head of Tirana Municipality for 2015-2019 term and is in line with the national and sectorial planning process, as well as long-term policies for the development of Tirana.

2.1. National, regional and sectorial planning process

The program of interventions for development of educational infrastructure aims to boost quality and standards of pre-university education in Tirana Municipality by improving the physical education infrastructure. One of the major challenges faced by pre-university education today is the bad situation of physical infrastructure of education institutions. This problematic is one of the challenges of education sector also in the 2015 - 2020 National Strategy for Development and Integration (NSDI) where is underlined that “*general weak situation of the physical infrastructure of school buildings hampers the performance of a qualitative education in all levels*"[3]. This serious problem in Tirana Municipality is not only related to the basic conditions of school buildings (such as illumination, heating, recreation and sports space, etc), but also the non-efficient distribution and weak accessibility of school objects, especially in informal areas of the capital.

Starting from early ’90-ies until today, population of Tirana city has been object of radical changes, as a result of big demographic movements. According to INSTAT data, population of old Tirana Municipality in 1989 was estimated at about 245 thousand inhabitants, whereas according to 2011 Census, it has almost doubled amounting to about 420 thousand. In the mean time, the new territorial reform has added to Tirana Municipality 13 former-communes, i.e. increasing three times the

[3] See NSDI II 2015-2020, pg. 129 “Current general situation of education system in Albania"

number of residential population estimating it to around 780 thousand inhabitants4. But the improvement of public services have not followed the same pace with increase of population and therefore such services as education in Tirana suffers from the over-crowded classes. The addressing of this problem has turned into one of the main and emergent priorities of Tirana Municipality.

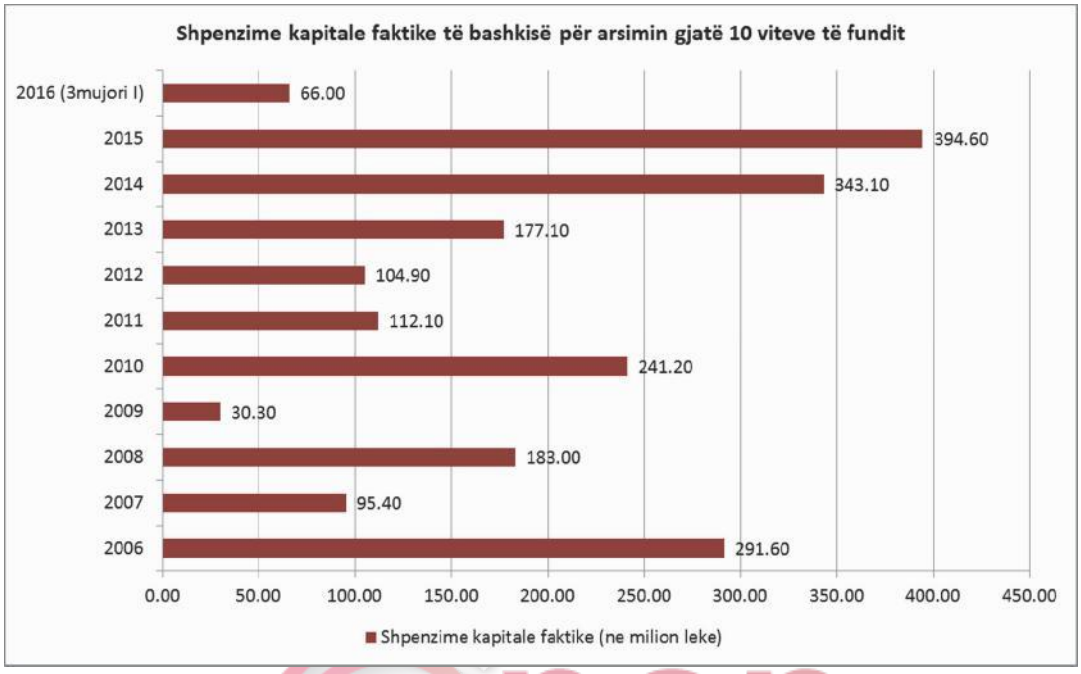
In the course of these years, investments in pre-university infrastructure in Tirana have been increased. Nevertheless, beside needs for new schools, which is dictated by the drastic increase of Tirana population in the last two decades, these investments have been mainly focused on reconstruction of existing school premises to improve teaching conditions and meet the standards. Through government's program "Construction and Rehabilitation of Schools"[5] with a partial financing of about 12.4 million € from Council of Europe Bank, which started implementation in 2005, in the capital have been built 7 new schools (4 elementary education schools and 3 high schools) as well as have been rehabilitated the premises of 12 other schools (9 elementary education schools and 3 high schools).This program contributed also in the improvement of academic norms and physical venues of schools in the interest of about 17.000 students and 1.000 teachers.

According to the graphic below, the capital expenses for investments in education of Tirana Municipality incomes in the last 10 years consisted of about 2 billion leke, out of which only in 2015 and first quarter of 2016 were invested about 460.1 million leke or 23% of the entire investments in 10 years.

[4] According to Civic Registry Office in 2016.

[5] https://www.coe.int/t/dg4/epas/Source/Tirana/CEB-note-info EN.pdf

Picture 1 - Capital expenses for education in the last 10 years



2.2. Coordination of national and sectorial policies

Despite the so far investments in many pre-university education institutions in Tirana, the further improvement and increase of capacities with construction of new objects is still a necessity.

This project is based on the vision of Tirana Municipality regarding the education sector, which aims at *offering a modern infrastructure for the education institutions, in line with meeting the needs and interests of Tirana students to guarantee the increase of teaching quality, achievement of standards and highest access of all the groups in the entire territory of the Municipality, as well as transformation of education institutions in important community centres.*

This vision remains also the Government´s goal expressed in the national strategic framework "**2015-2020 National Strategy for Development and Integration (NSDI)"** and "**2014-2020 Strategy for Pre-University Education"**, where is underlined the need to provide an all-inclusive and qualitative education for all the students, whose education consists of one of the most fundamental investments for development of the Albanian society. The Policies of Tirana Municipality are focused exactly on this strategic framework.

NSDI[6] has set as an important objective in Government´s policies in relation with pre-university education, the **improvement "Qualitative education for all" service through update and establishment of infrastructure in new and existing kindergarten and schools, in line with European standards, including the access for the disabled.**

On the other side, **2014-2020 Strategy for Pre-University Education** underlines that one of the major challenges in this sector is the non-satisfactory level of financing of pre-university education regarding approved objectives in the Government´s program to realize functions approved by law. To address the "***Community Support*** *challenge*: *as a public and personal good it is necessary to provide* ***financial support from all the potential sources of the society****,"* - this is defined as one of the leading principles of the implementation of the strategy´s vision.

Hence, beside the financing of this sector from public funds, such as contribution of local government or Local Governance Unit budget, the strategy envisages also mobilization of public private partnership and drafting of policies for encouragement and attraction of funds from the private sector.[7].

The territorial administrative reform boosts the role of municipalities regarding implementation of joint functions, such as the pre-university education system and sets a very important objective for local governance - "*providing a quality of services in compliance with national standards and policies"*[8]. In the framework of the program "school as a community center", the strategy underlines that the municipalities will be the main authority in implementation of this program through instruments and activities with education institutions.

2.3. Coordination of long-term policies of Tirana development

This project is based and oriented on four main pillars of new vision of Tirana development defined in the Territory Development Plan of Tirana Municipality, "Tirana 2030".

[6] 2014-2020 Strategy for Development of Pre-University Education, Leadership Principles, pg. 28

[7] 2014 -2020 Strategy for Development of Pre-University Education. Perfection of Governance, Leadership and Management of Human Resources, pg. 29

[8] 2015-2020 Inter-Sectorial Strategy for Decentralization and Local Government, Joint Functions, pg. 33

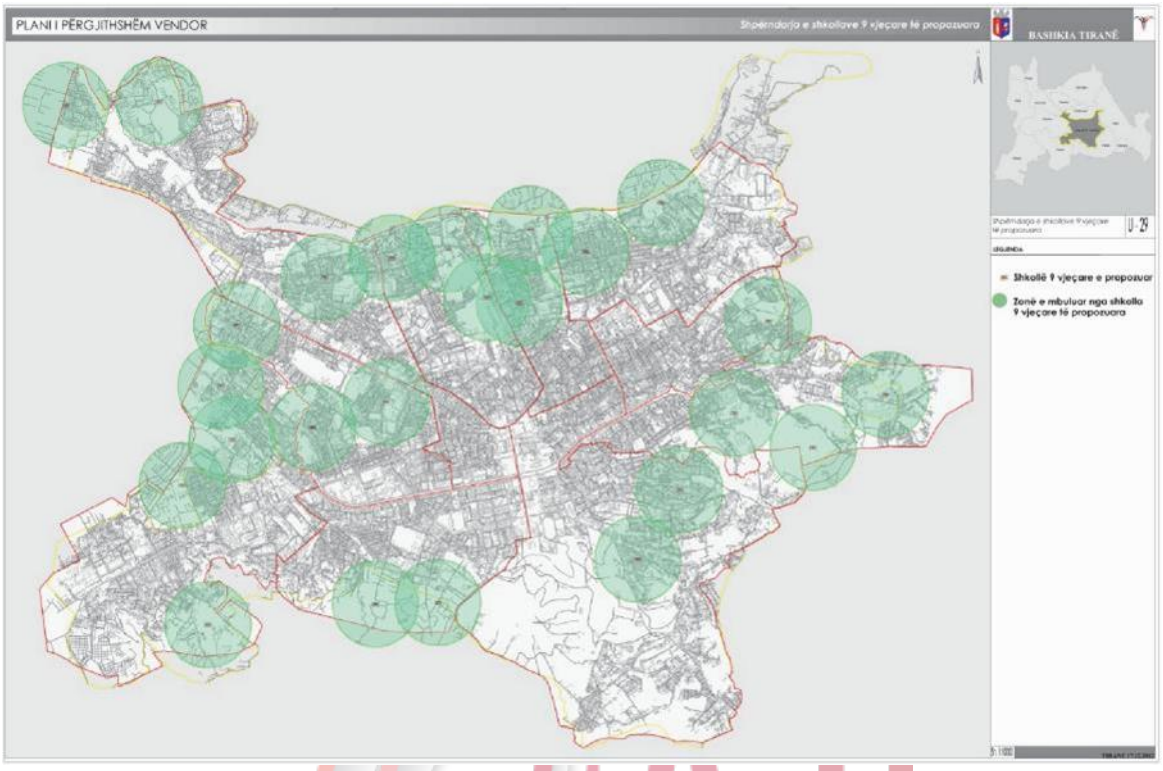
Picture 2 Main development pillars of Tirana

These main pillars are also led by the principle for a sustainable development of the capital, which will orient the investment policies of the municipality in order to meet the above-mentioned vision for development of Tirana. In the framework of the pre-university education, this study is in compliance with this vision offering an easily accessible education infrastructure, all-inclusive, which meets the goals of a 'smart' polycentric city.

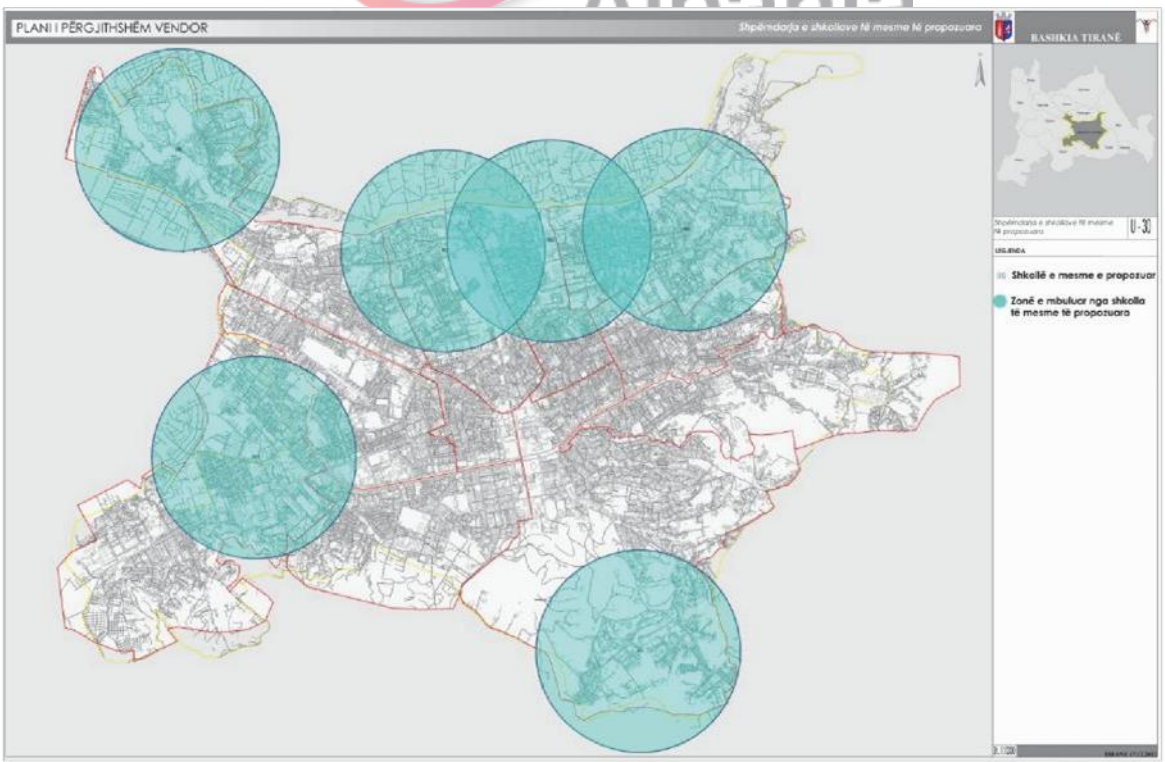
The need for construction of new schools for pre-university education is considered as an important point also in the previous development plans of the older Tirana Municipality. The 2013 General Local Plan (GLP) made evident some problematic areas of the capital, which counted shortcomings in the appropriate pre-university education infrastructure. These areas are mainly stretched in the suburbs of Tirana and consist of informal areas that have been overcrowded with the passing of time as a result of the internal migration. In the 2013 GLP was proposed the construction of 25 of nine-year elementary education and 6 schools of middle education. Majority of the proposals for the construction sites is located in the northern, western and eastern part of the capital, i.e. the most problematic. The proposals of this plan aim at covering the whole territory of Tirana Municipality with a range of elementary and middle education service, but it does not include a broad analysis of other indicators, such as number of students/class or other sectorial indicators. Likewise, the GLP has determined the areas where new schools can be built; there were no concrete proposals at site (plot) level. In concrete, this GLP envisages the following schools:

- 3 nine-year elementary schools in Unit No. 1
- 2 nine-year elementary schools and 1 high school in Unit No. 2
- 1 nine-year elementary school in Unit No.3
- 2 nine-year elementary schools and 1 high school in Unit No. 4
- 2 nine-year elementary schools in Unit No. 5
- 4 nine-year elementary schools and 1 high school No. 6
- 3 nine-year elementary schools in Unit No. 7
- 2 nine-year elementary schools and 1 high school in Unit No. 8
- 3 nine-year elementary schools and 1 high school in Unit No. 9
- 3 s nine-year elementary schools and 1 high school in Unit No. 11

Map 1- Distribution of proposed nine-year schools in 2013 General Local Plan of Tirana Municipality



Map 2 – Distribution of proposed high schools in 2013 General Local Plan of Tirana Municipality



For 2015-2017 period, Regional Development Fund will finance about 867 million leke for school objects, therefore covering about 59% of the total amount of investments, while municipality will cover 41% of it or 357 million leke[9]. This shows that investments in this sector are still minimal compared to big and urgent needs of Municipality to address the problem of over-crowded schools and provide lacking areas with educational infrastructure.

2.4. Priorities of policies

The political program of Tirana Mayor for 2015-2019 governance term highlights that "over-crowded schools and kindergarten have affected in the worsening of quality and standards offered by these institutions". 10 A kindergarten in the capital includes an average of 198 children, whereas a school counts an average of 819 students, while in country scale, this ratio is 44 children per kindergarten and 276 students per school. The construction of new kindergarten and schools which will put an end to the problem of over-crowded schools and learning in two shifts is one of the most important commitments of the head of Tirana Municipality.

This political engagement has been reflected in the 2016-2018 Mid-Term Budget Program, where is underlined that one of the main priorities of this MBP is the elimination of the two-shift teaching.11 For the realization of this priority, upon a Decision of Municipal Council no. 59 dated 30.12.2015 was set the Interim Tax on Education Infrastructure, which will be paid by all the families, physical and juridical persons, locals or foreigners, who live and exercise economic activity within the territory of Tirana Municipality. The collection of this tax has started in 2016 and will be applied for 7 years. The report accompanying this Decision of Municipal Council is clearly underlined that income from this tax will be used to put an end to the two-shift learning through construction of new schools and in case of a fiscal opportunity for reconstruction of the existing schools. The incomes collected by this tax are envisaged at 630,000,000 leke in 2016, 690,000,000 leke in 2017 and 720,000,000 leke in 2018.

Never the less, income collected in the first three years of the tax application are not sufficient to realize the construction of all necessary education objects at once. In the mean time, in the course of the second half of 2015 and 2016, through different initiatives and Tirana Municipality funds, there are totally reconstructed all the nurseries and kindergartens, whereas the construction of new schools requires very high costs, impossible to be covered by the budget of Municipality. As a result, construction of necessary new schools may need the use of an alternative way of financing, such as Public Private Partnership. Financing with the help of Public Private Partnership may be considered as an alternative aiming to build the necessary education

[9] 2015-2017 Mid-term budget plan of Tirana Municipality

10 Contract with Tirana, pg. 26.

11 Tirana Municipality, 2016-2018 Mid-term Budget Program. Relation, Part I, pg. 5.

infrastructure in a shorter time possible, financing investments through private partners, whereas the payment of these investments can be carried out in a longer period of time, making use of all the income that Municipality will collect through the interim tax on educational infrastructure or even other incomes focused on pre-university education section. In the course of the last years, this partnership is more and more considered as one of the most efficient ways for offering public services, which cannot be covered by the resources of local and central governments[12].

Following are some aspects that identify the important role of public private partnership:

- ensuring necessary additional capital;
- better identification of needs and optimal exploitation of resources;
- providing an added value for the public and consumer;
- offering alternative managerial and implementation abilities

2.5 General Description of existing infrastructure situation

According to official INSTAT data, Tirana city population has doubled in the last 25 years as a result of internal migration from urban and rural areas from entire Albania. This figure is even higher, as a result of continuous unreported movements of the population. The unplanned and uncontrolled development of the city in the course of these years have caused its enlargement by creating informal areas almost in its entire suburb space of Tirana city and boosted the density of the population in urban traditional areas.

Despite great and rapid development of the city, the realization of major investments in the field of construction has been unilateral, mostly in the field of dwellings and economic objects. It has not been accompanied with a progressive improvement of the educational infrastructure in general, causing considerable shortcomings in the traditional urban center and new urban centers in the suburbs of Tirana or in the rural areas surrounding the city.

Therefore, there has been created an unfair proportion between the functions of the areas, especially between the central and peripheral ones. Even though the majority of interventions in the educational intervention in the last years were partial, they were accompanying in general with the construction of additional venues in the existing buildings to complete the premises and have rarely consisted of construction of new educational institutions. As a result, current functions of educational objects are forced.

The majority of nine-year schools and high schools of Tirana Municipality experience very amortized conditions of teaching premises and recreation venues, as a result of the lack of periodical intervention for their maintenance and reconstruction. But, the most important thing – capacity of

12 Law No. 125/2013 "ON CONCESSIONS AND PRIVATE PUBLIC PARTNERSHIP" Article 4 "Field of implementation of concessions/public private partnership", item dh) science and education

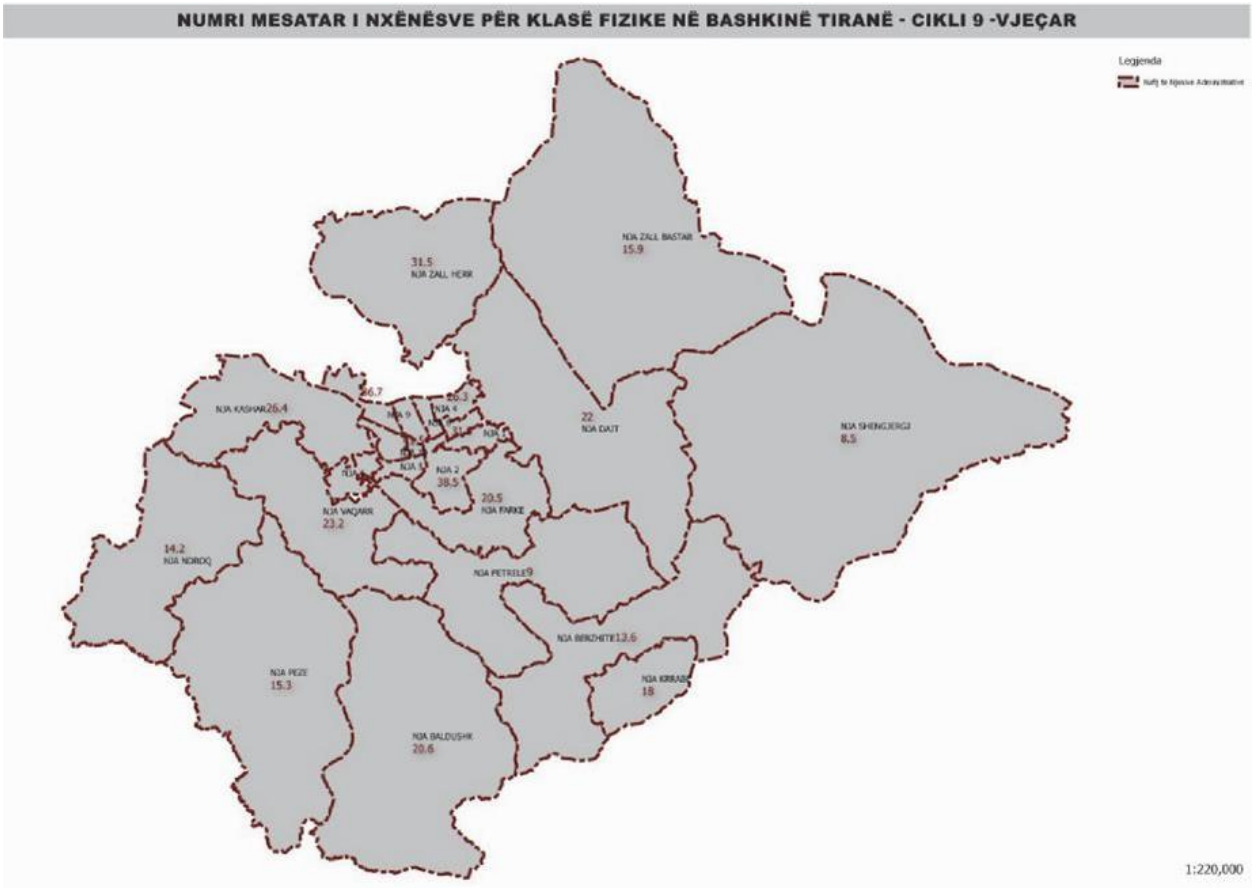
education infrastructure, their administration, distribution in the territory and other elements assisting in evaluation for the offering of this service present different characteristics in urban areas and rural areas of the Municipality.

In rural zone of Tirana Municipality (Administrative Units 1-11), over-crowded classes and learning in two shifts remains one of the main concerns of citizens and municipality. The density of classes in most cases is not very optimal: with an average that varies from 36.5 students/physical class in urban areas to 18.8 students/physical class in rural areas. The ratio student/physical class in urban schools passes the envisaged maximum of about 30-35 students/class in the respective sectorial legislation. In some schools, this average amounts up to 65.8 students /physical class, forcing administrators of these institutions to organize the teaching process in two shifts. In this respect, these data go beyond the average recommended by EU or levels of neighbour countries, according to OECD.13

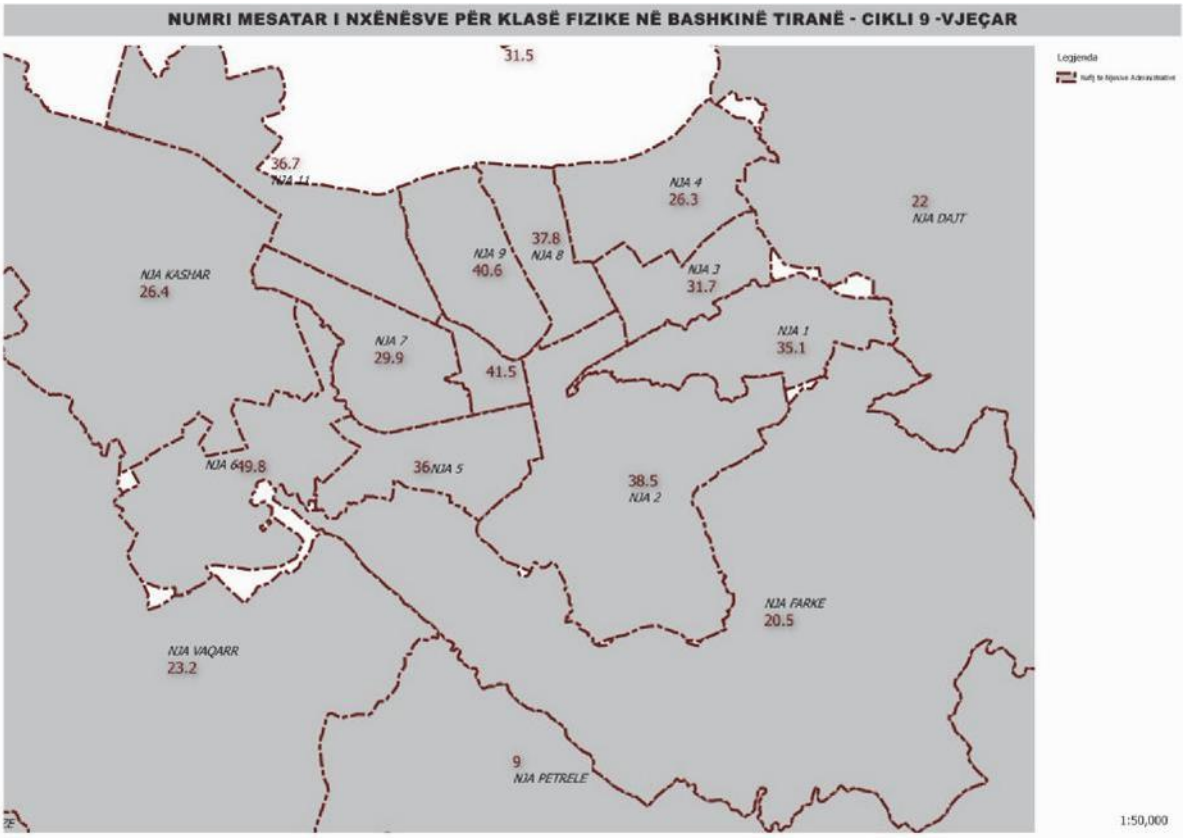
The following map shows number of students per physical class in nine-year schools according to Administrative Units. The most problematic units in this respect are Unit 6 with a ratio of 49.8 student per physical class, Unit 10 with 41.5 students per physical class, Unit 9 with 40.6 students per physical class to continue with Units 2, 5, 8 and 11 with a ratio of about 35 students per physical class. In majority of cases, this average is referred to schools which due to this over-population perform the teaching process in two shifts.

13 OECD 'Education at a Glance' 2011 - Chapter D 'The Learning Environment and Organisation of Schools

Map 3 – Average Number of students per physical class according to Administrative units for nine-year education schools

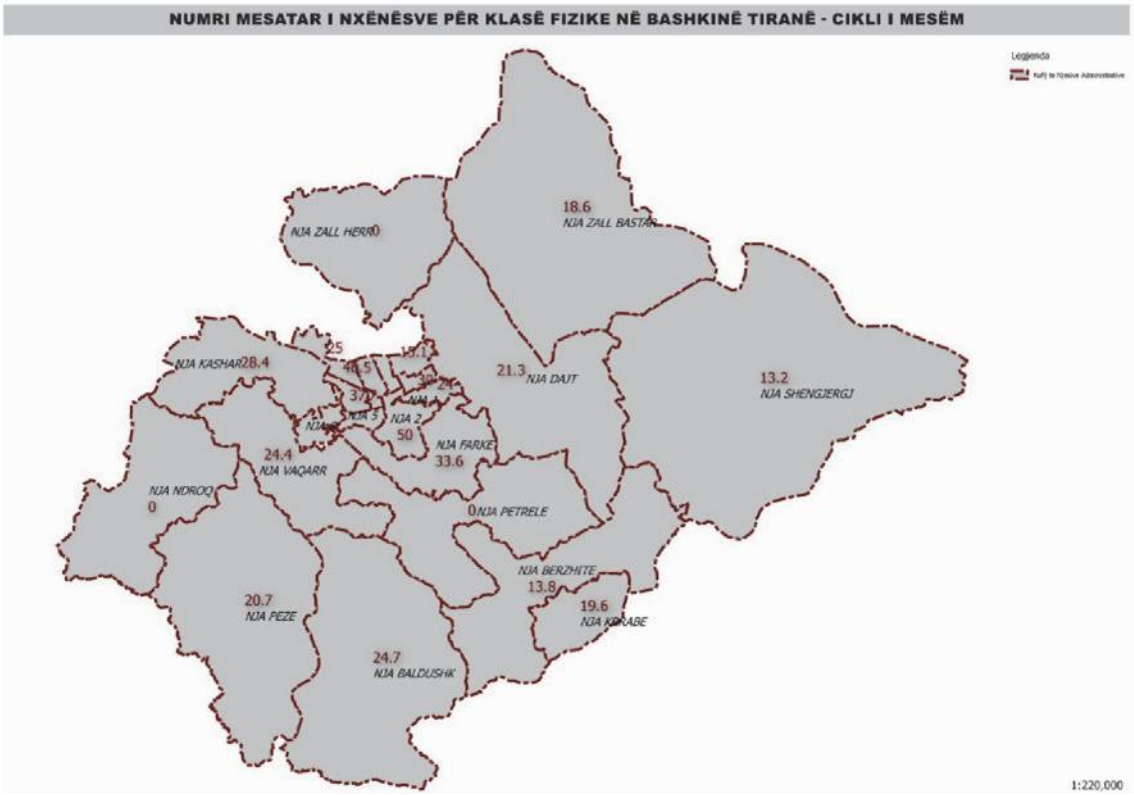


Map 4 – Average number of student per physical class in urban area and AU in nine-year elementary school.

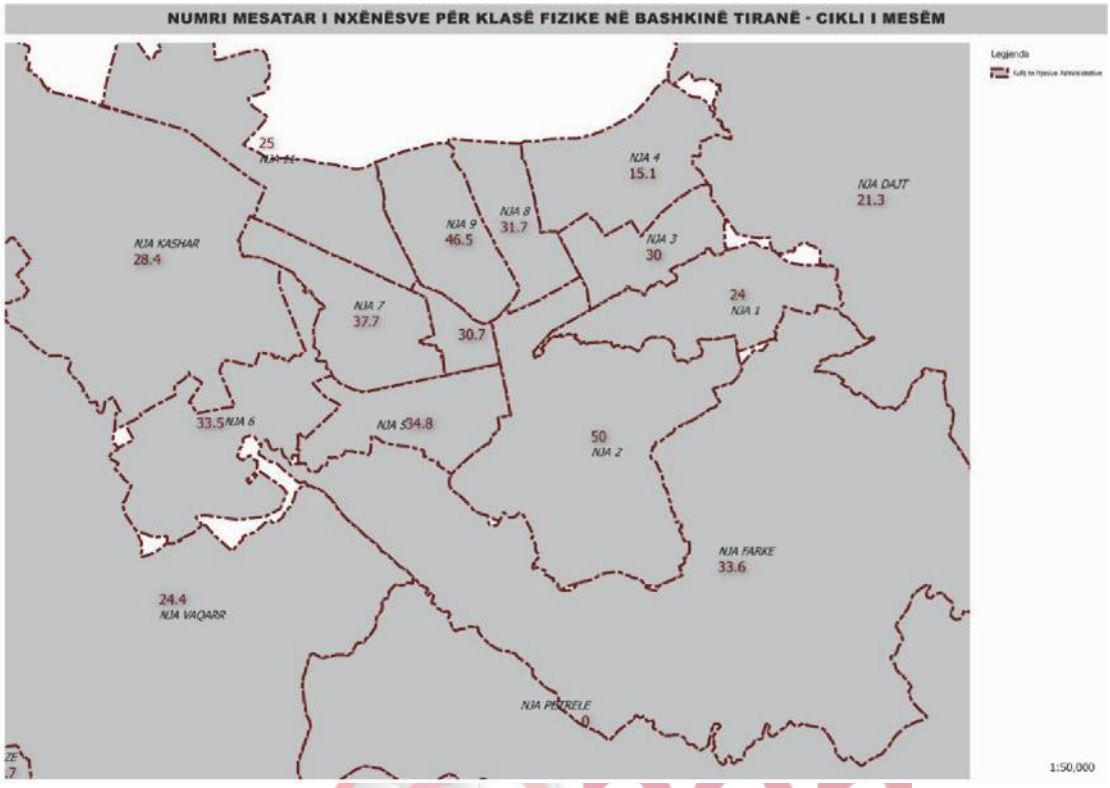


Situation of over-crowded schools is problematic also regarding the number of students per physical class in secondary schools. Administrative Units that suffer this problem the most are Unit no. 2 with a ratio of about 50 students per physical class and unit no. 9 where this ratio is 46.5 students per physical class. Even other administrative units such as Unit No. 7, 6, 5, 10 and Farka are affectd by this problem, even though in a moderate scale.

Map 5 – Average number of students per physical class according to Administrative Units for high schools



Map 6 – Average number of students per physical class in urban areas and surrounding Aus for high schools



In Tirana Municipality, 66% of nine-year schools and 14.2 % of high schools in urban areas attend teaching in two shifts. In concrete, the most problematic units in this aspect are: **Unit 2** (with 63 teaching classes of nine-year education and 18 teaching classes of secondary education operating in the second shift); **Unit 6** (with 72 teaching classes of nine-year education operating during the second shift) and; **Unit 9** (with 50 teaching classes of nine-year education and 17 teaching classes of secondary education operating during the second shift).

Meanwhile, in sub-urban rural areas, 2.5% of elementary schools, 19% of nine-year schools, 33.3% of high schools (1 from 3) and 23% of united high schools perform the teaching process in the second shift, mainly in Administrative Units of Dajt, Farke, Kashar and Vaqarr.

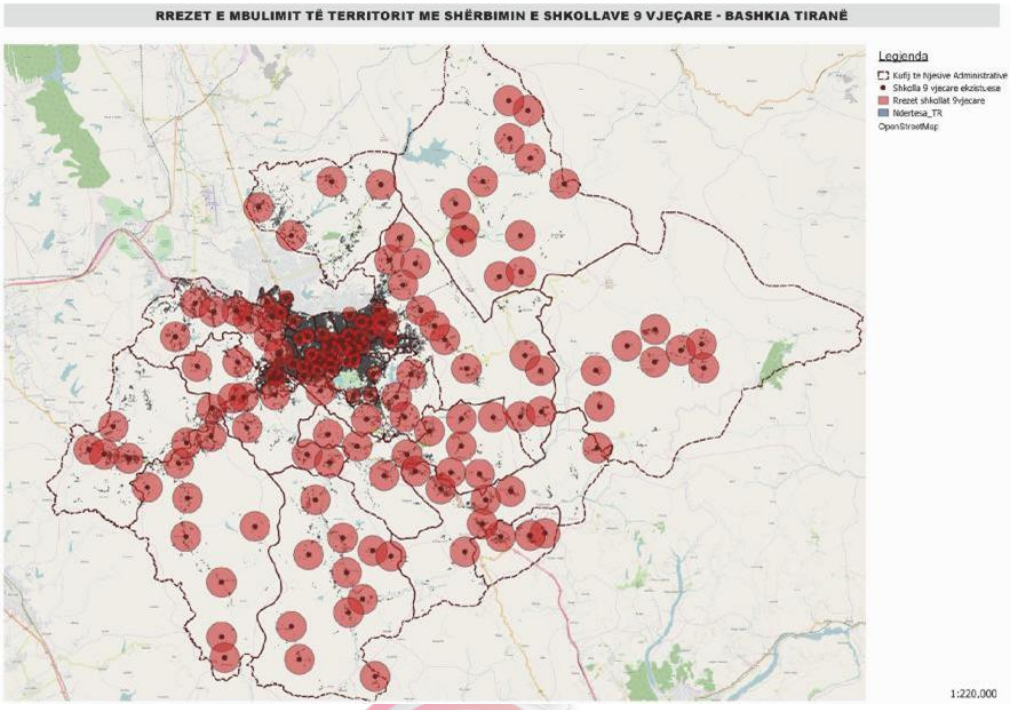
The problem of over-populated classes or two-shift teaching has been somehow eased with the construction of additional venues in existing buildings, but on the other side these additional venues have reduced the surface of yards, outdoor sports venues or green spaces. Over 90% of Tirana schools register shortcomings regarding surfaces and quality of external venues (yards), which affects the general quality of students' performance in school. Nevertheless, a considerable number of buildings lack security elements, fire protection, ramps for the disabled, which makes evident also the problem of all-inclusion and limited accessibility of schools in Tirana.
Therefore, such intervention seems to have limited and short-term efficiency in solving the problem of over-crowded schools, making the need of planning and realizing an intervention for a long-term and sustainable solution a necessity.

On the other side, situation in rural areas is different. With the exception of some cases, majority of schools in rural areas do not maximally make use of their capacities as a result of low number of students. Therefore, most schools operate with collective classes, according to MoES guideline.

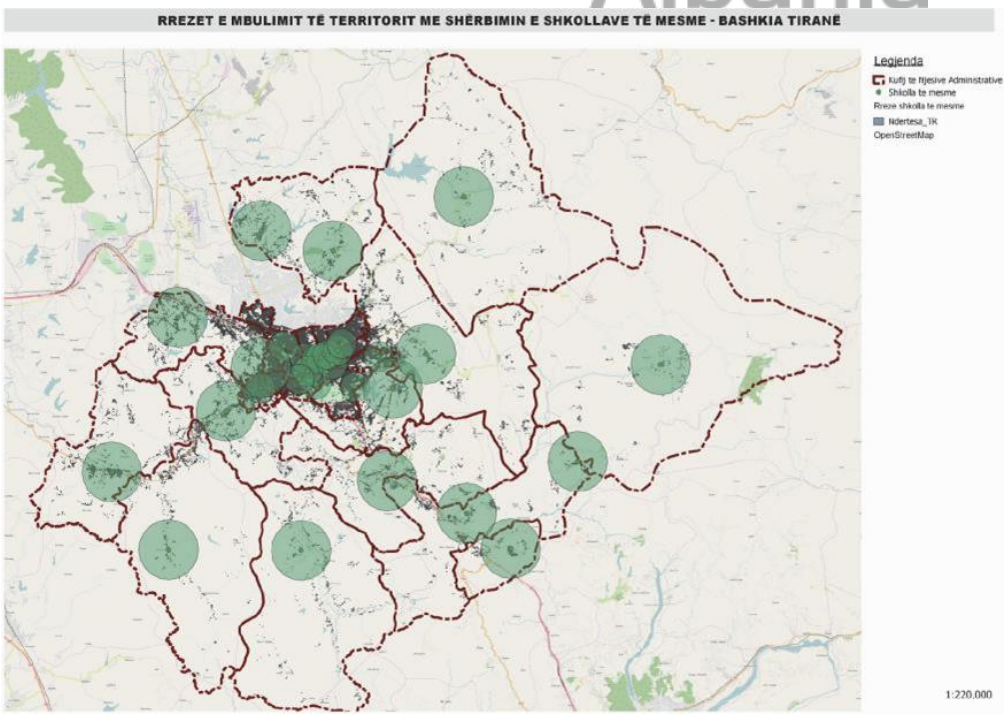
In both cases, especially in urban suburbs and rural areas there are inhabited quarter that are not covered by the range of pre-university education institutions service, as defined in standards envisaged in the Territory Planning Regulation (Council of Ministers Decision no. 671). According to these standards, the coverage range shall be 500m for urban nine-year schools, 1000m for rural nine-year schools, 1000m for urban secondary schools and 2000m for rural high schools. According to the following map, many residential areas of Tirana, irrespective of the high density of the population, lack education infrastructure. The situation is more problematic in the Unaze e Re zone and Yzberisht, Administrative Unit of Kashar, in Fresku Zone in Administrative Unit of Dajt, in Shkoze zone in the Administrative Unit No. 1, in Sauk area in Administrative Unit no. 2, in the urban area of Administrative Unit of Farke, as well as in the majority part of Administrative Units no. 8 and no. 9.

In all the above-mentioned areas, the distance from inhabited areas is much bigger than the allowed standard. As a result, students of these areas are forced to make use of public transport – in case there exists in the vicinity or private transport or walk relatively long distances, also in unfavourable atmospheric conditions.

Map 7 – Territory coverage range with nine-year schools service



Map 8 – Territory coverage range with high schools service



Regarding general physical quality of existing educational infrastructure, a part of them are amortized with the passing of the years and need immediate intervention. Some of them do not meet the basic teaching conditions, because the situation with schools walls, toilets, roofs, etc requires emergent solution. A big number of schools have been reconstructed after ´90-ies and need to be reconstructed from the beginning because of not complete or bad quality works. The situation is better for the schools reconstructed after 2004, where the majority of them have been equipped with a central heating system, even though in most of them this system is out of order. A big number of school buildings have problems with the illumination system, sewage works and humidity, which is also present even in those schools with a functional heating system.
Even though partial or full reconstructions of existing educational objects are not object of this study, Tirana Municipality will continue to plan rehabilitating interventions in these objects each year, through special projects in this respect.

2.6. Project Objectives

Education is a powerful mean offering people abilities to compete in the labor market, as well as to offer better life standards. Hence, in the Albanian government strategies, such as "2015–2020 National Strategy for Development and Integration" and "Strategy for Pre-University Education 2014-2020" children education is considered as one of the fundamental investments for the development of society. Considered a fundamental right, the responsibility for offering education belongs to the public sector. Tirana Municipality aims to boost quality and standards of pre-university education by improving the physical education infrastructure, through increase of the capacities of this infrastructure.

According to the analysis of current situation of education infrastructure in Tirana Municipality, it results that pre-university education faces serious problems. Taking into consideration the dynamics of development of the city and suburban areas, the need for increase of existing infrastructure is becoming more and more necessary. Among problems that require urgent solution are big number of students per class, two-shift classes, weak access and unfavourable conditions of educational buildings.

Following are the objectives aiming to be achieved by this project :

1. **Elimination of learning in two-shifts** – Majority of pre-university schools in Tirana Municipality operate in two-shifts. The construction of new schools will put at the disposal of students schools spaces operating at normal capacity;
2. **Normalization of the ratio students per class** – Objective is to achieve an average of 30 students per class;
3. **Improvement of access – S**ome areas of Tirana city, subject of the increase of population, lack educational objects and as a result, students have to travel much longer distances than approved standards. This project – with the construction of new schools in zones not covered with educational institutions – aims to improve the access of students in line with required

standards.

4. **Improvement of teaching conditions** – New buildings will be equipped with the necessary tools for performance of the teaching process, such as sports venues, labs, recreation spaces and even refectories;
5. **Improvement of teaching quality** – Smaller classes will enable teachers to pay more attention to students and for students will be easier to concentrate during the teaching process;
6. **Revitalization of zones with new schools -** As long as new schools will be built in suburbs where there are few institutions, their will turn into points of reference and centers for social activities, which will revitalize the zone, also with the help of projects such as "School as a Community Center".

2.7. Strategic and operational benefits to be generated by the project

Increase of demand and need for qualitative education faces the existence of limited public funds for realization of some strategic public projects, in particular those related to capital investments. Lack of budget to meet such needs or demands has turned the private public partnership as an important source for financing of public investments. At the moment, pre-university sector in the entire Albania, especially Tirana Municipality, requires a large amount of money for capital investments regarding construction of new school buildings and improvement of the conditions in existing buildings. As long as the necessary capital to be invested in this direction is much bigger compared to the current possibilities of Tirana Municipality, the alternative of PPP financing shall be considered as an opportunity for solution of some urgent problems.

In this respect, strategic and operational benefits expected to be generated by this project are as following :

1. **Elimination of learning in two-shifts.** One of the main goals of the project is to avoid two-shift teaching process. Learning in the second shift is not recommended because it reduces the concentration of students during studies and as a result also their performance in school.[14]. Elimination of second shift will also provide benefits for teachers and parents, who find it difficult to accompany children to school due to clashes with their work schedule. The elimination of second shifts avoid also over-crowded schools, where as a result slows down even the amortization of schools and reduces maintenance costs. The realization of this project will favour directly the interest of about 12,390 students, who currently study in the second shift or in over-crowded classes.
2. **New and qualitative buildings meeting the EU standards.** Investments in the pre-university educational infrastructure will enable implementation of EU standards and will make sure that every school will include the following elements:

[14] The Review of Economics and Statistics - "How the time of day affects productivity: evidence from school schedules", March 2016.

- *Qualitative conditions of the buildings.* The project envisages new well-isolated school buildings in comparison with the existing schools, thus reducing the heating/cooling costs of the venues. Likewise, they shall include a qualitative heating system, illumination, hydro-sanitary works, etc, which help in the performance of a teaching process in line with required standards.
- *Students security.* Each school must meet the security standards for fire or earthquakes, it shall be equipped with emergency exit and other security elements, according to necessary standards.
- *Suitable premises for teaching curricula approved by Ministry of Educatint.* New schools shall be equipped with labs, IT classes, music room, sports venues, etc, according to the curricula.
- *Easy access for the disabled.* The Project aims at providing all the necessary facilities for access of the disabled in school buildings.
- *Attractive and creative school.* Beside quality and security elements, the project aims also at having attractive schools from the designing point of view to create favourable venues that could help students boost their creativity and increase their interest during teaching process. Together with the benefits in relation to the teaching performance, attractive schools have a positive impact also in the revitalization of the community. A good example in this aspect and closer to Tirana's reality is the successful project of "Social Urbanism" of Medellin city in Columbia[15]. In the framework of this project, in the last 10 years in Medellin, have been built and reconstructed a considerable number of attractive and creative schools. The main aim of the project is to fight poverty in communities through qualitative equation of children, by creating more vitality and development in the areas surrounding schools. As long as Tirana Municipality faces the same challenges and objectives, adaptation of Medellin example can be a history of success also for the Albanian capital.

[15] Calderon, C. (2012) - "Social Urbanism - Participatory urban upgrading in Medellin, Colombia", in Lawrence, Yildiz & Kellett (ed.) "Re-qualifying the Built Environment: Challenges and Responses". Hogrefe Publishing, Göttingen

Picture 3 – View from venues of some schools in Medellin, Columbia

3.**Increase of teaching and learning capacity**. The solution of the over-crowded schools problem and offering of suitable conditions to carry out the teaching process, creation of laboratories and sports venues, increases also the quality of teaching and students performance. This project will offer a qualitative teaching process to all the students who today study in the second shift or overpopulated classes.

4.**Easy accessible and all-inclusive education system**. One of the main problems of pre-university education in Tirana is also the lack of schools in some suburb areas of the capital. Students living in these areas are forced to travel long distances to reach school, which causes difficulties for them and relatives. In the mean time, registration of these students in other units schools is one of the reasons for over-population of schools. In this respect, one of the main strategic gains of this project will be the distribution and optimal coverage with educational buildings in those units that lack it or have over-crowded schools.

5.**Meeting all the needs and conditions for inclusion of students in the Tirana Municipality territory in pre-university education.** This project aims to create necessary conditions for students in order to avoid or reduce the level of abandoning compulsory education that by law includes the nine-year cycle. In the course of last decade, number of students leaving basic education in the entire Albania has almost reduced by half 16. Out of 4200 students abandoning school in

[16] "Annual Book of Statistics on Education: 2013 – 2014 and time series" – Ministry of Education and Sports

2004-2005, in 2013-2014 amounts to 2200 students. Nevertheless, the abandoning levels are still concerning. Among the reasons favouring this phenomenon may be: lack or long distance schools in some zones, over-crowded classes and incapability of teachers to focus on problematic of students, lack of conditions for the disabled students, etc.

6. **Schools as community centers.** New schools will be built taking into account their exploitation as community centers after the studies. The project aims at creating venues and favourable conditions for exploitation of school space for different initiatives in the interest of community. Sports venues, but also other school premise may be used after classes for different community activities, such as professional course, poetry evenings, art activities, etc.
7. **Revival of construction industry.** For years, construction industry has been the engine of the Albanian economy. Concentrated mainly in Tirana, this industry is facing stagnation. A public investment of such dimensions will help the city's economy by considerably influencing the increase of employment.
8. **Increase of employees in schools.** The implementation of this project envisages also creation of a considerable number of temporary and permanent jobs. The temporary employees will be the project implementers and buildings constructors, whereas the permanent employees will be the school staff members.
9. **Increase of the value of immovable properties in the vicinity of schools.** One of the criteria that make a certain area preferable for families is its coverage scale with different social services. One of these services is also education. In this respect, requests for residence near schools are higher and as a result even the value of properties in the vicinity is higher[17].
10. **Increase of number of business around schools and development of the zone.** Trend of communities around the schools for expansion establishes a chain development process because it motivates the increase of number of businesses in these areas, and as a result favors the development of the zone.
11. **Increase of security in the surrounding zones.** The construction of schools and revitalization of the zones thanks to businesses around the site will create a more secure environment for the community because the movement in the zone is bigger and there exist more security cameras in the vicinity.
12. **Indirect benefits of community from education of youth in the zone**. The first education years determine the entire performance of a student and even their career. Improvement of quality in schools and kindergarten offers opportunities for a good start for children to later on influence in their better academic performance, by growing up more educated citizens and more qualified professionals.

[17] Këame Oëusu-Edusei, Jr., Molly Espey and Huiyan Lin (2007). Does Close Count? School Proximity, School Quality, and Residential Property Values. Journal of Agricultural and Applied Economics.

3. CURRENT SITUATION

3.1. Legislation

3.1.1. Pre-university education as a public service

Role of Local Self-Governance Unite in the field of education was envisaged in Law no. 8652, dated 31.07.2000 "On organization and functioning of local government" (abrogated). According to article 11, among common functions of the Municipalities and communes with central power is the function of pre-school and pre-university education.

Today, Law no. 139/2015 "On local self-governance" regarding functions of municipalities in the field of public infrastructure and services envisages the responsibility for construction, rehabilitation and maintenance of educational buildings of pre-university system, excluding vocational schools in the territory of their jurisdiction[18].

Likewise, referring to legislation on education, it is envisaged that local units are accountable for construction, reconstruction and maintenance of pre-university education objects. This is specified in Law 69/2012, Article 28, item 2:

Main competences of basic local governance are:

a) Construction and reconstruction of buildings of public educational institutions, in line with standards approved by Council of Ministers, with State Budget funds, or funds from unconditioned transfers or its own incomes;

b) Guarantee of intact educational institutions in its jurisdiction, as well as in their venues;

c) Preservation and maintenance of public education institution;

ç) Guarantee of hygiene-sanitary and heating conditions public educational institutions buildings.

Likewise, law no. 69/2012 includes more detailed competences of the Ministry, such as determination of number of students per class (Article 26, item 2.d), including those of Local Educational Unit which cooperates with basic local government unit for planning, realization and maintenance of school objects.

3.1.2. Administration of pre-university educational institutions

- Opening of a public educational institution

Opening of a public educational institution is the process of establishment and functioning for the first time of one of the public pre-university educational institutions, such as pre-university educational objects.

Criteria for their opening are defined in Council of Ministers Decision No. 662 dated 8.10.2014 envisaging that the initiative for opening of a public pre-university educational institution may be taken by basic local governance unit. Proposal for the opening is presented to the respective Minister of Education. Article 5 envisages that documents accompanying the proposal are:

[18] Law 139/2015 **On Local Self-Governance** Chapter VII, article 23, item 11

a) Arguments about necessity of opening a public educational institution.
b) Data on contribution of basic local governance unit.
c) Data on contribution of community in the public education institution or business/social partners, where the education institution is expected to open
ç) Data on fulfilment of criteria envisaged in item 7 of this decision.

This Council of Ministers Decision envisages **two scenario** regarding time limits on the submission of proposal:

- 3 months before the beginning of education year in case of the opening of an existing building;
- 1 year before the beginning of education year in case of the opening of a new building

Criteria to be met by the object – envisaged in point 7 – consists of fulfilment of the standards of the building and surrounding venues, according legislation in force, water supply system of the building, power supply, telephone and internet service, as well as heating system, equipment of the building with teaching tools, guarantee of number of students per class according to legal requirements, as well as guaranty of the qualification of teaching and administrative staff.

- Students registration

Registration, as a rule, is carried out in the kindergarten and school defined by the territorial division of residence determined by local power upon proposal of Educational Directorate. The registration out of the territorial division can happen only if it fits the conditions and capacities of the venues.

Whereas, **Normative Provision 2013** for Pre-University Education System, article 14 on "Classes beyond the norm in pre-university education schools", envisages that the Headmaster cannot register students who do not belong to the school in case of the creation of classes with a number of students beyond the allowed norm.

- Number of students per class

Regarding optimal number of students per class, we refer to guideline of MoES no. 21, dated 23.7.2010 "On norms of teaching-educative work and number of students per class in pre-university education institutions", changed to Guideline No. 44[19], dated 16.10.2014.

Table 1 - MoES Standard for number of students per class

Education	Classes	Number of students
Basis education	Preparatory classes	25
	First class	26 -30
	II-IV Class	30-35
Lower middle education		30-35

[19] Based on article 26, item d of law no. 69/2012 "On pre-university education in the Republic of Albania".

Distribution of parallel classes:

Basic education : distribution of parallel classes is carried out according to the following conditions:

- 2 parallel classes, when number of students is 36-70 (31-60 students in the first class);
- 3 parallel, when number of students is 71-105 students (61-90 students in the first class);
- 4 parallel, when number of students is 106-140 students (91-120 students in the first class);
- 5 parallel, when number of students is 140 students (121-150 students in the first class).

For low middle education:

- 2 parallel, when number of students is 36-70 students;
- 3 parallel, when number of students is 71-105 students;
- 4 parallel, when number of students is 106-140 students;
- 5 parallel, when number of students is over 140 students".

Higher middle education:

Distribution of parallel classes is carried out according to the following conditions :

- 2 parallel, when number of students is from 36-70 students;
- 3 parallel, when number of students is from 71-105 students;
- 4 parallel, when number of students is 106-140 students;
- 5 parallel, when number of students is over140 students.".

- Maintenance of pre-university education institutions

Local government units are accountable for maintenance of pre-university education institutions as mentioned in law no. 69/2012 "On pre-university education system" as well as law No. 139/ 2015 on "Local Self-Governance".

3.1.3. Planning and construction of pre-university education institutions

Regarding planning and construction of pre-university education institutions, Law No. 107/2014 "On Planning and Development of Territory", Article 21 envisages that one of the objectives of General Local Plan (GNP) is to organize location and programs for public infrastructure and public services.

Council of Ministers Decision No. 671/2015, Article 54 requires that GNP shall include typology, quality, distribution in the territory and service coverage range. In this respect, article 83 determines minimal standards of public education structures as following:

- For primary and nine-year schools:

i) One school per 6,000 inhabitants;
ii) School service range in aerial distance is 500-600 meters in urban areas and 1,000- 1,500 meters in rural areas;
iii) depending on number of classes, a school is planned according to 20 m2-25 m2/students;
iv) depending on the number of classes, school plot is 1,500 m2-7,000 m2 and offers all the services envisaged by the respective ministry and special legislation.

- For high schools:

i) one school per every 9,000 inhabitants;
ii) as a basic rule 1.5 m2/inhabitant;
iii) school service range in aerial distance is 1,000-1,500 meters in urban zones and 2,000-4,500 meters in rural zones;
iv) depending on number of classes a school is planned based on 20 m2-30 m2/student;
v) depending on number of classes, school plot is 2000 m2-7000 m2 and consists of all services envisaged by the respective ministry and special legislation;
vi) if a secondary school offer the hostel accommodation of 100-400 places, the plot is 4,000 m2-9,000 m2 and is planned according to 25-35 m2/students.

- Internal space

The paper document dated 27/05/2015 with subject "On implementation of the Guideline 'For designing the construction of schools, norms and standards", No. Protocol 6205 that Ministry of Education has sent to Municipality requires all the physical/juridical subjects, as well as private and public entities, involved in the planning, programming, designing and construction of new school objects or rehabilitation of existing objects to draft and take over the projects in line with norms and standards envisaged in the Guideline on Designing the School Buildings.

According to this guideline, the evaluation of need for space for teaching and educational support is based on:

a) Curriculum;
b) Weekly fund of teaching hours;
c) Percentage of exploitation and capacity of rooms

Rooms/Administration Offices and services are defined according

to: a) number of exploiters and their functions.

Number of toilets and other sanitary spaces is defined in proportion with the general capacity of the school (for example, for one toilet is calculated an average of about 30 students).

Table 2 – Types of schools

Type	Location	Cycle	No. class	Stnd/Class	No students total	M2/students	Total
Type 1	Urban	9-year	20	30	600	8.23	4938
Type 2	Urban	9-year	30	30	900	7.32	6588
Type 3	Rural	9-year	20	24	480	8.42	4041.6
Type 4	Urban	Higher middle	21	30	630	6.35	4000.5

Necessary and total surfaces per student for each type of selected schools is detailed in the following tables, according to standards referred to Guideline "For designing of school construction, norms and standards" approved by MoES:

	STANDARD SCHOOLS FOR BASIC EDUCATION (20 Classes)	**TYPE 1 Urban**	
	Education level	3	Levels
	Number of cycles (parallels)	2	Cycles
	Number of Classes	20	Classes
	Number of students /class	30	Students per class
	Total Number of students	600	Students
Ref.	**Spaces**	**Nett Surface**	**Gross Surface**
A	**TEACHING AND PEDAGOGICAL SUPPORT**		
		2 cycles	**students:**
1.0	**Pre-Elementary Level**	**2 Classes**	**60**
	Total Surface	**281.3**	**315.0**
	M2/ students	**4.7**	**5.3**
		2 cycles	**students:**
2.0	**Elementary Level**	**10 classes**	**300**
	Total Surface	**1237.68**	**1386.20**
	M2/ students	**4.13**	**4.62**
		2 cycles	**students:**
3.0	**Lower middle level**	**8 Classes**	**240**
	Total Surface	**2044.06**	**2309.79**
	M2/ students	**8.52**	**9.62**
B	**COMMON SPACES**		
	Total Surface	**279.21**	**315.51**
	M2/ students	**0.47**	**0.53**
C	**COMMON SERVICES**		
	Total Surface	**539.57**	**609.71**
	M2/ students	**0.90**	**1.02**
	GRAND TOTAL		
	Total Surface	**4,381.77**	**4,936.21**
	M2 / students	**7.30**	**8.23**

Table 4 – Designing Standard for Type 2 School

	STANDARD SCHOOLS FOR BASIC EDUCATION (30 Classes)	**TIPI 2 Urbane**	
	Education level		
	Number of cycles (parallels)	3	Levels
	Number of Classes	3	Cycles
	Number of students /class	30	Classes
	Total Number of students	30	Students per class
	STANDARD SCHOOLS FOR BASIC	900	Students
Ref.	**Spaces**	**Nett surface**	**Gross Surface**
A	**TEACHING AND PEDAGOGICAL SUPPORT**		
		3 Cycles	**Students:**
1.0	**Pre-Elementary Level**	**3 classes**	**90**
	Total Surface	**401.6**	**449.8**
	M2/ students	**4.5**	**5.0**
		3 Cycles	**Students:**
2.0	**Elementary Level**	**15 Classes**	**450**
	Total Surface	**1812.18**	**2029.64**
	M2/ students	**4.03**	**4.51**
		3 Cycles	**Students:**
3.0	**Low middle level**	**12 Classes**	**360**
	Total Surface	**2527.81**	**2856.43**
	M2/ students	**7.02**	**7.93**
B	**COMMON SPACES**		
	Total Surface	**279.21**	**315.51**
	M2/ students	**0.31**	**0.35**
C	**COMMON SERVICES**		
	Total Surface	**827.57**	**935.15**
	M2/ students	**0.92**	**1.04**
	GRAND TOTAL		
	Total Surface	**5,848.34**	**6,586.48**
	M2 / students	**6.50**	**7.32**

Table 5 - Designing Standards for Type 3 School

	STANDARD SCHOOLS FOR BASIC EDUCATION (20 Classes)	**TYPE 3 Rural**	
	Education level		
	Number of cycles (parallels)	3	Levels
	Number of Classes	2	Cycles
	Number of students /class	20	Classes
	Total Number of students	24	Students per class
		480	Students
	Spaces		
Ref.		**Nett Surface**	**Gross Surface**
	TEACHING AND PEDAGOGICAL SUPPORT		
A			
	Pre-Elementary Level	**2 cycles**	**students:**
1.0	**Total Surface**	**2 classes**	**48**
	M2/ students	**220.2**	**246.6**
		4.6	**5.1**
	Elementary Level	**2 cycles**	**students:**
2.0	**Total Surface**	**10 classes**	**240**
	M2/ students	**745.32**	**834.76**
		3.11	**3.48**
	Low middle level	**2 cycles**	**students:**
3.0	**Total Surface**	**8 classes**	**192**
	M2/ students	**1964.01**	**2.219.34**
	COMMON SPACES	**10.23**	**11.56**
	Total Surface		
B	**M2/ students**		
	COMMON SERVICES	**238.62**	**269.64**
	Total Surface	**0.50**	**0.56**
	M2/ students		
5.0	**GRAND TOTAL**		
	Total Surface	**417.02**	**471.23**
	M2 / students	**0.87**	**0.98**
	GRAND TOTAL		
	Education level	**3.585.17**	**4.041.58**
	Number of cycles (parallels)	**7.47**	**8.42**

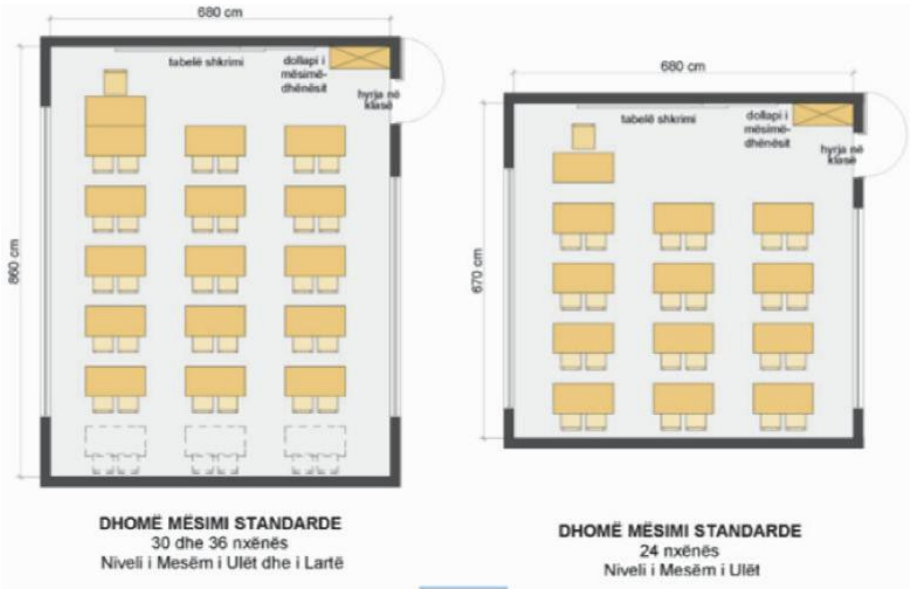
Table 6 - Designing Standards for Type 4 School

	STANDARD SCHOOLS FOR MIDDLE EDUCATION – HIGHER CYCLE	Tipi 4 Urban	
	Education level	1	Levels
	Number of cycles (parallels)	7	Cycles
	Number of Classes	21	Classes
	Number of students /class	30-36	Students per class
	Total Number of students	630-756	Students
Ref.	**Spaces**	**Nett Surface**	**Gross Surface**
A.			
1	**Higher middle level**		
	Total Surface	**3300.04**	**3729.05**
	M2 / students		
2.0	**ADMINISTRATION**		
	Total Surface	**312.73**	**353.38**
	M2 / students	**0.41**	**0.47**
3.0	**COMMON SERVICES**		
	Total Surface	**632.94**	**715.22**
	M2 / students	**0.84**	**0.95**
GRAND TOTAL			
	Total Surface	**4245.71**	**4797.65**
	M2 / students	**5.62**	**6.35**

- Class size

Based on Guideline for design of educational buildings issued by Ministry of Education, average surface of teaching rooms are considered from 44 to 48 m2 for schools in a low density areas for classes with 24 students, and from 58 to 65 m2 in areas with high density for classes with 30-36 persons (see table 2.4 above). This dimensions have been calculated based on the required capacities (24 and 30-36 students), number and sizes of benches in frontal rows (3 double benches), as well as horizontal rows (see models of teaching rooms in the following picture).

Picture 4- Teaching room



- Outdoor space

External space is divided into three categories :

a) Spaces determined for recreation space (sports fields) and sports venues ;
b) Road Movement zones including the ones for vehicles (roads and parking) and for pedestrians (pavements and alleys);
c) Green spaces and planted zone with trees, bushes, as well as valleys.

Minimal request of land surface for each school is calculated by adding the external necessary spaces for the construction surface of each building. This surface depends on the school capacity, number of floors and pre-calculates proportion of land per planted surfaces and movement spaces.

Decision of Council of Ministers No.671 "On Territory Planning" defines that for nine-year schools the plot surface shall consist of 1500 m^2 - 7000 m^2, whereas for high schools consists of 2000 m^2 – 7000 m^2, including all the surfaces envisaged by MoES.

3.1.4. Financing of pre-university educational institutions

3.1.4.1. Financial resources

Financial resources of pre-university education are envisaged in Law No 69/2012 "On Pre-University Education", Article 37 are as following:

a) State budget;
b) Incomes from local government units ;
c) donations and sponsorships;
ç) incomes obtained by education institutions;

d) other legal incomes

State Budget financing is planned with the formula "per students", according to special indicators of educational levels and conditions of public educational institutions. State Budget, for basic local governance units, accords a fund "per student", which is used for maintenance of public education institutions in line with maintenance standards in education institutions, determined upon a decision of Council of Ministers.

The Additional Guideline, No. 1, Dated 15.1.2016, On Implementation of 2016 State Budget, item 70 affirms that: Municipalities have full competence to provide for maintenance and functioning of all pre-university education venues in their community. Funds for maintenance and functioning of pre-university education venues are included in their own local sources. Each municipality defines the level of financing that it accords for such function from all its resources at disposal in the budget. Responsible Ministries for pre-university education- Ministry of Education and Sports and Ministry of Social Well-fare and Youth – prepare and determine national standards of security and health implementable for pre-university education venues. These standards must not limit the decision-taking of municipalities in fields of clear local interest.

Each municipality and commune defines the financing level granted for maintenance and functioning of pre-university education venues from all resources at disposal in their budget. Expenses related to functioning and maintenance of pre-university education are approved as part of the budget for each municipality and commune.

3.1.4.2. Public-Private Partnership

A way to realize the construction of school objects is the Public Private Partnership. This type of partnership is regulated based on Law 125/2012, "On concessions and Public Private Partnership", changed[20]. The scope of this law is to create a favourable and sustainable framework for encouragement, attraction and establishment of facilities for investments that are realized as concessions/public and private partnerships. Article 4 of this law envisages the implementation fields of the concessions/public partnerships and education is one of them (item dh).

According to this law, private and public partnership consists of a long-term type of cooperation, regulated by contract, through the contracting authority, i.e. public partner and one or more economic operators, i .e private partnership takes the responsibility of offering public services to service users within the field of competences of public partner and/or obligations to offer to public partners the necessary pre-conditions to provide the service users with public services and/or activities within the field of its competences. Aiming to meet these obligations, the private partner may take the responsibility of financing, designing, building and/or reconstructing/renewing the public infrastructure object, to operate and maintain the public infrastructure object, built and/or rebuild/renewed recently (Article 8, item 1/b/i).

[20] Law has changed two times through Law no.88/2014 and law no.7/201

3.2. Methodology

The detailed analysis of existing situation and projection of needs for pre-university education infrastructure is based on the evaluation of some indicators, which are legal request or standards recommended by Ministry of Education. These indicators have served to measure the maximal capacity offered by the existing infrastructure and to define the need for the new infrastructure to accommodate Tirana students. Likewise, with the help of the same indicators was carried out an analysis of the existing territorial distribution of these educational institutions, defining the uncovered territories with schools and kindergartens. Orientation for construction of new schools in these territories has been carried out to optimise the distance of education infrastructures from students' residence. In the end, this study takes into consideration even some planning and designing standards for the education infrastructure that help in planning unpredicted interventions.

- Number of students/general teaching room: Based on article 102 of the Constitution of the Republic of Albania, Article 26, item d, Law no. 69/2012 "On pre-university educational system in the Republic of Albania", as well as its by-legal acts, the optimal number of students per class is 30 or within the intervals expressed in the table below:

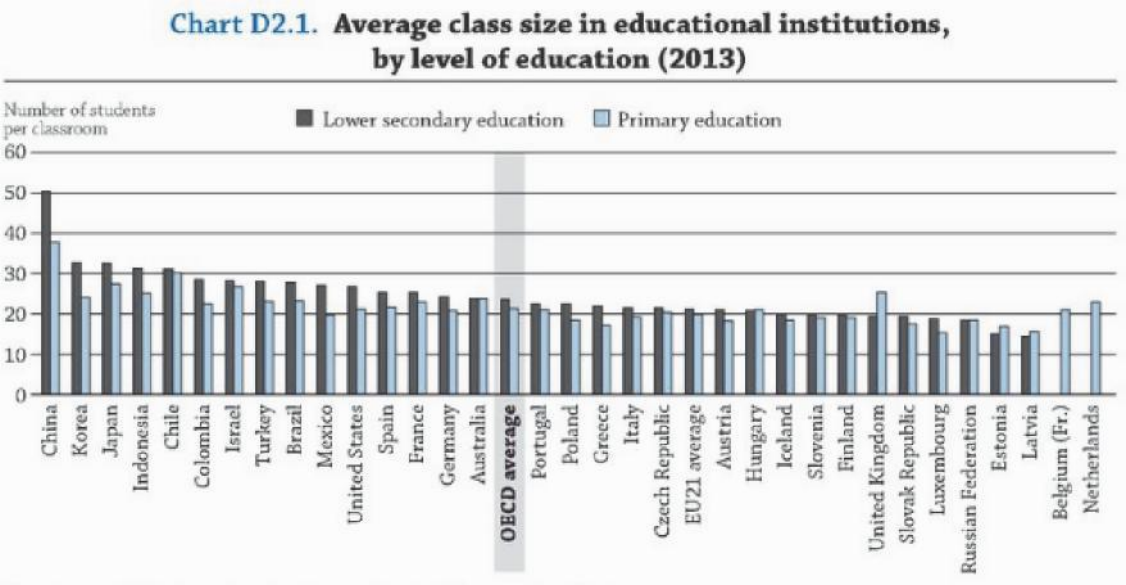
Table 7 – Standard number of students per teaching class

Education	Classes	Number of students
Basic education	Preparatory classes	25
	First class	26 -30
	Class II-IV	30-35
Lower middle education		30-35
Higher middle education		30-35

Meanwhile, according to annual publications of Organization for Economic Cooperation and Development (OECD), "Education at glance – 2015"[21], the average class size for elementary education was 21 students per class in 2013, and in any case classes are less than 30 students, except for countries with a higher density of population such as China, Korea, Japan, Indonesia and Chilli (Picture 3). As long as international trends highlight the trends of reduction of students per general teaching room, considering this indicator as closely related to quality of development of teaching activities, performance of students and teachers, this study aims at evaluating the need for intervention in education infrastructure in Tirana Municipality *aiming to achieve the standard of a maximum of 30 students per general teaching room.*

[21] "Education at a Glance" Published on November 24, 2015

Picture 5 – Average class size in educational institutions by level of education (2013)



With the help of this indicator was assessed the existing infrastructure of educational infrastructure for nine-year and secondary cycle and were make evident cases of over-crowded infrastructures and was measures the over-population size (number of students attending school over its accommodation capacity of about 30 students/physical class). Therefore, the maximal capacity of existing infrastructure is determined by multiplying the number of physical classes by 30, which is the maximal number of students per class. In case in a school are registered more students than its maximal capacity, the school is considered over-populated. To measure the over-population mass, from the total number of students attending a schools was deduced the number of students according maximal capacity of the school, calculated with 30 students/physical class.

This formula has been used to define the number of necessary schools. Summing the number of students beyond the capacity of a school with the number of students beyond the capacity of other schools of the same administrative unit, we obtain the total number of students over the capacity of this unit. If this number is high enough, in this unit has been envisaged the construction of one or more new schools (depending on the total number of students beyond the capacity that shall be accommodated in new schools as well as projected types of schools).

Likewise, the study's methodology has been adapted by taking into consideration the phenomenon of over-population in some schools as a result of inclusion of students from other administrative units of the school. Article 14 of Normative Provisions for Pre-University Education System, item 1, says, "Headmaster shall not register students from zones that do not belong to the school when : a) there are classes with a number of students beyond the norm determined by the minister's guideline; b) there are no sufficient teachers for opening of new classes". Taking into consideration this normative provision, the analysis of existing situation regarding this indicator is focused on identification of need for new education infrastructure in each administrative unit, if a student could attend one of the schools within residential

administrative unit where he lives.

Methodological note: Data on analysis of this indicator are collected in a questioner drafted to obtain direct data from headmasters of nine-year and secondary schools in Tirana Municipality, necessary for the Feasibility Study (Annex 1). These data are collected and analyzed through use of some software (excel, GIS), aiming to analyze the existing situation in an coherent way. Data regarding number of students according to origin has been collected in a disaggregated manner and have been used to calculate the total number of students attending nine-year and secondary public education according to each administrative unit. The study has been realized taking into account the number of students attending nine-year and secondary education **according to their residence.** This means that even though a % of students attend schools outside their residential units, in the calculation of needs, this number of students has been included in the Administrative Unit where they live and not in the Administrative where they attend school.

- Coverage range of pre-university education service: This is an indicator that assess distribution of educational infrastructure in the territory and coverage of inhabited areas with this service. The CoMD No. 671, date 29.07.2015, "On approval of regulation of territory planning", determines following standards for coverage range according to types of schools and types of territory[22]:

- For primary and nine-year schools, the coverage range in aerial distance: ○ 500-600 meters in urban areas ○ 1000-1500 meters in rural areas
- For secondary schools, the coverage range in aerial distance: ○ 1000-1500 meters in urban areas ○ 2000-4500 meters in rural areas

The administrative unit where based on over-population analysis of existing schools, need construction of one or more new schools, these new schools will be built in zone not covered by the existing coverage range of schools. Likewise, in cases of zones where over-population analysis of existing schools has pointed to the necessity of construction of new schools, but in these zones there are no existing educational objects and students need to travel long distances, was decided to build new schools.

- Number of school based on population: This is an indicator helps the planning of education infrastructures, taking into account the number of inhabitants to use these infrastructures. This indicator aims to plan education infrastructure according to number of inhabitants who will use them. This indicator is used mainly during territory planning processes and aims to orientate public institutions toward needs for intervention: such needs must be analyzed in detail according

[22] Artice 83, item 1/c and 1/ç

sectorial standards. Council of Ministers Decision no.671, dated 29.07.2015, "On approval of regulation of territory planning", determines the following standards for number of schools on the number of population basis[23]:

- 1 nine-year school per 6000 inhabitants
- 1 high school per 9000 inhabitants

- Designing standards of pre-university education schools : These standards have been referred in the study, after the determination of needs for new education infrastructure, which help in the preliminary planning of spaces and financial budget for their realization. These standards are evidence for planning and during the drafting of architectonic and engineering projects may vary based on the concrete technical specifications of each project.

Aiming to facilitate the preliminary planning of external and internal spaces, the calculations of this study are carried out referring to requirements of "Guidelines for designing of school buildings – Norms and Standards", as well as all standards referred in the chapter "Legislation regulating the object of field of investment" of this study.

3.3. In-depth analysis of the existing situation

3.3.1. Nine-year education

In the course of compilation of this analysis were reviewed 174 nine-year schools in Tirana Municipality, including the united high schools[4], even though they consist also of teaching classes of nine-year cycle, as well as subordinating schools. Out of these, 57 nine-year schools are located in the urban territory of Tiran Municipality (inside the older administrative border of Tirana Municipality), whereas 117 schools are located in the territory of Administrative Units included in Tirana Municipality after the Territorial and Administrative Reform : 13 united high schools, 64 nine-year schools and 40 primary schools. The nine-year schools under review in this preliminary study do not included schools with special curricula needs, such as "Luigj Gurakuqi" school, Institute of Students who do not hear and see - as cases institutions with specific needs.

During the drafting of this analysis, there were taken into consideration two key elements: Existing capacity of education infrastructure and their distribution in the territory.

Analysis of the existing capacities of education infrastructure is drafted based on two key elements. **First element** has to do with the existing capacity of education infrastructures to serve students that use this infrastructure. Total number of necessary classes to meet the capacity of education infrastructures,

[23] Article 83, item 1/c and 1/ç

[24] Detailed data on situation in Annex 1 and Annex 2

according to their current attendance, is 300 classes distributed mainly in the most over-crowded units, i.e. 2,5,6,9 and 11. Further detailed data will be presented in the table below, as well as in Annex 2.

Table 8 – Existing capacity of educational infrastructure of nine-year cycle toward attending students

No	ADMINISTRATIVE UNIT (Au)	NO STUDENTS	TEACHING CLASSES	ST/CL	PHYSICAL CLASSES	UNEXPLOITED CLASSES	ST/CL PHYSICAL	ST IF AVERAGE IS 30 ST/CL	BALANCE PER ST EXTRA (according to attendees)	BALANCE OF EXTRA OR MISSING CLASSES (according attending students)
1	AU 1	4144	134	30.9	118	10	35.1	3540	-604	-20
2	AU 2	5394	177	30.5	140	10	38.5	4200	-1194	-40
3	AU 3	2439	81	30.1	77	4	31.7	2310	-129	-4
4	AU 4	3178	107	29.7	121	8	26.3	3630	452	15
5	AU 5	6259	203	30.8	174	2	36.0	5220	-1039	-35
6	AU 6	5876	188	31.3	118	3	49.8	3540	-2336	-78
7	AU 7	4366	148	29.5	146	9	29.9	4380	14	0
8	AU 8	3893	122	31.9	103	3	37.8	3090	-803	-27
9	AU 9	4992	163	30.6	123	4	40.6	3690	-1302	-43
10	AU10	2157	70	30.8	52	1	41.5	1560	-597	-20
11	AU 11	5066	172	29.5	138	3	36.7	4140	-926	-31
	URBAN ZONE TIRANA TOTAL	47764	1565	30.5	1310	57	36.5	39300	-8930	-298
12	AU DAJT	2041	101	20.2	102	5	20.0	3060	1019	34
13	AU FARKE	1268	65	19.5	62	0	20.5	1860	592	20
14	AU VAQARR	1137	58	19.6	52	4	21.9	1560	423	14
15	AU KASHAR	2987	122	24.5	113	0	26.4	3390	403	13
16	AU NDROQ	1003	49	20.5	56	4	17.9	1680	677	23
17	AU PETRELE	681	61	11.2	54	6	12.6	1620	939	31
18	AU PEZE	711	67	10.6	42	0	16.9	1260	549	18
19	AU BALDUSHK	769	43	17.9	48	2	16.0	1440	671	22
20	AU BERZHITE	815	57	14.3	59	0	13.8	1770	955	32
21	AU KRRABE	456	25	18.2	26	1	17.5	780	324	11
22	AU SHENGJERGJ	331	22	15.0	39	0	8.5	1170	839	28
23	AU ZALL BASTAR	761	74	10.3	77	2	9.9	2310	1549	52
24	AU ZALL HERR	1944	75	25.9	62	9	31.4	1860	-84	-3

	RURAL ZONE TIRANA TOTAL	14904	819	18.2	792	33	18.8	23760	-84	-3
	TOTAL TIRANA MUNICIPALIT	62668	2384	26.3	2102	90	29.8	2700	-9014	-300

Another phenonom coming across this analysis is over-population of some schools as a result of the attendance of students arriving form out units, which deals with the **second issue addressed** in the framework of the analysis of existing capacities. Article 14 of Normative Provisions for Pre-University Education System, item 1 clearly states *"School headmaster shall not register any students from zones that do not belong to the school because a) favour creation of classes with a number of students beyond the norm defined in the Minister's guideline: b) there are no sufficient teachers for opening of new classes*". Nevertheless, this phenomenon continuous. In this respect, according to Methodology of Study, the analysis is focused on identification of need for new educational infrastructure in each administrative unit, where each of the students attends one of the respective schools in the administrative unit where he lives.

According to this approach, total number of necessary classes to meet the education infrastructure capacity according to number of resident students for each Administrative Unit for nine-year system is 289, which shall be envisaged mainly in the over-crowed Administrative Units as Unit 2, 5, 6 and 11. More detailed data are presented in the table below and Annex 2.

Table 9 – Existing capacity of educational infrastructure of nine-year cycle toward number of resident students in each AU

No	ADMINISTRATIVE UNIT (AU)	NO STUDENTS	STUDENTS RESIDENT IN THIS UNIT	PHYSICAL CLASSES	UNEXPLOITED CLASSES	ST/CL PHYSICAL	ST IF AVERAGE IS 30 ST/CL	BALANCE PER EXTRA ST (according to resident st	BALANCE OF EXTRA OR LACKING CLASSES (according to resident students)
1	AU 1	4144	3637	118	10	35.1	3540	-97	-3
2	AU 2	5394	6074	140	10	38.5	4200	-1874	-62
3	AU 3	2439	2546	77	4	31.7	2310	-236	-8
4	AU 4	3178	4194	121	8	26.3	3630	-564	-19
5	AU 5	6259	6147	174	2	36.0	5220	-927	-31
6	AU 6	5876	6494	118	3	49.8	3540	-2954	-98
7	AU 7	4366	3905	146	9	29.9	4380	475	16
8	AU 8	3893	2110	103	3	37.8	3090	980	33
9	AU 9	4992	3864	123	4	40.6	3690	-174	-6
10	AU 10	2157	1260	52	1	41.5	1560	300	10
11	AU 11	5066	5881	138	3	36.7	4140	-1741	-58
	URBAN ZONE TIRANA TOTAL	47764	46111	1310	57	36.5	39300	-8567	-286

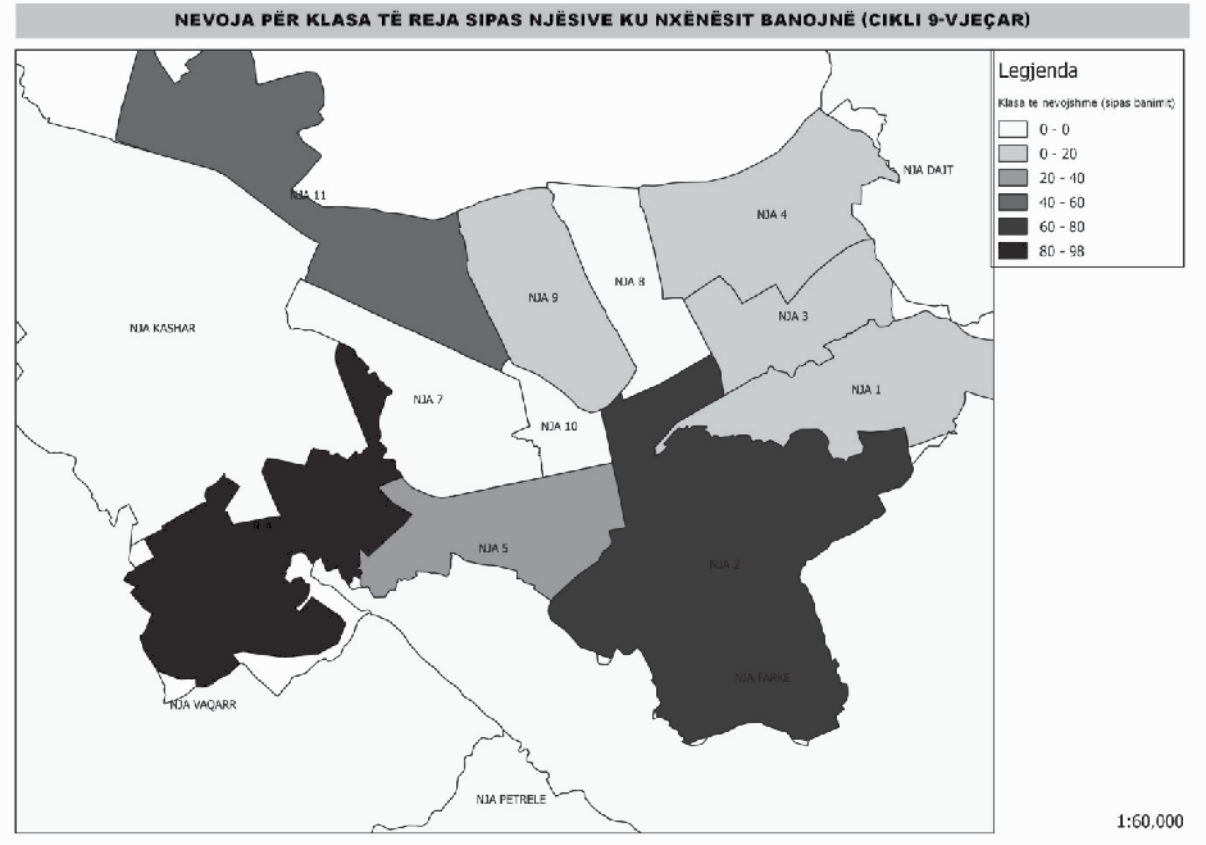
12	AU DAJT	2041	2433	102	5	20.0	3060	627	21
13	AU FARKË	1268	1387	62	0	20.5	1860	473	16
14	AU VAQARR	1137	1214	52	4	21.9	1560	346	12
15	AU KASHAR	2987	3206	113	0	26.4	3390	184	6
16	AU NDROQ	1003	1080	56	4	17.9	1680	600	20
17	AU PETRELË	681	734	54	6	12.6	1620	886	30
18	AU PEZË	711	667	42	0	16.9	1260	593	20
19	AU BALDUSHK	769	778	48	2	16.0	1440	662	22
20	AU BËRZHITË	815	831	59	0	13.8	1770	939	31
21	AU KRRABË	456	456	26	1	17.5	780	324	11
22	AU SHËNGJERGJ	331	343	39	0	8.5	1170	827	28
23	AU ZALL BASTAR	761	777	77	2	9.9	2310	1533	51
24	AU ZALL HERR	1944	1967	62	9	31.4	1860	-107	-4
	RURAL ZONE TIRANA TOTAL	14904	15872	792	33	18.8	23760	-107	-4
	TOTAL TIRANA MUNICIPALITY	62668	61983	2102	90	29.8	2700	-8674	-289

As noted in the results of the above-mentioned analysis, the total number of necessary classes in both cases is similar, but the distribution of needs in the territory changes. The maps below show the change of distribution of need for new clasess on the ground according to both approaches of the analysis:

Map 9 –Need for new classes according units where students attend school (nine-year education)

NEVOJA PËR KLASA TË REJA SIPAS NJËSIVE KU NXËNËSIT FREKUENTOJNË SHKOLLËN (CIKLI 9-VJEÇAR)

Map 10 – Need for new classes according to units where students live (Nine-year Cycle)



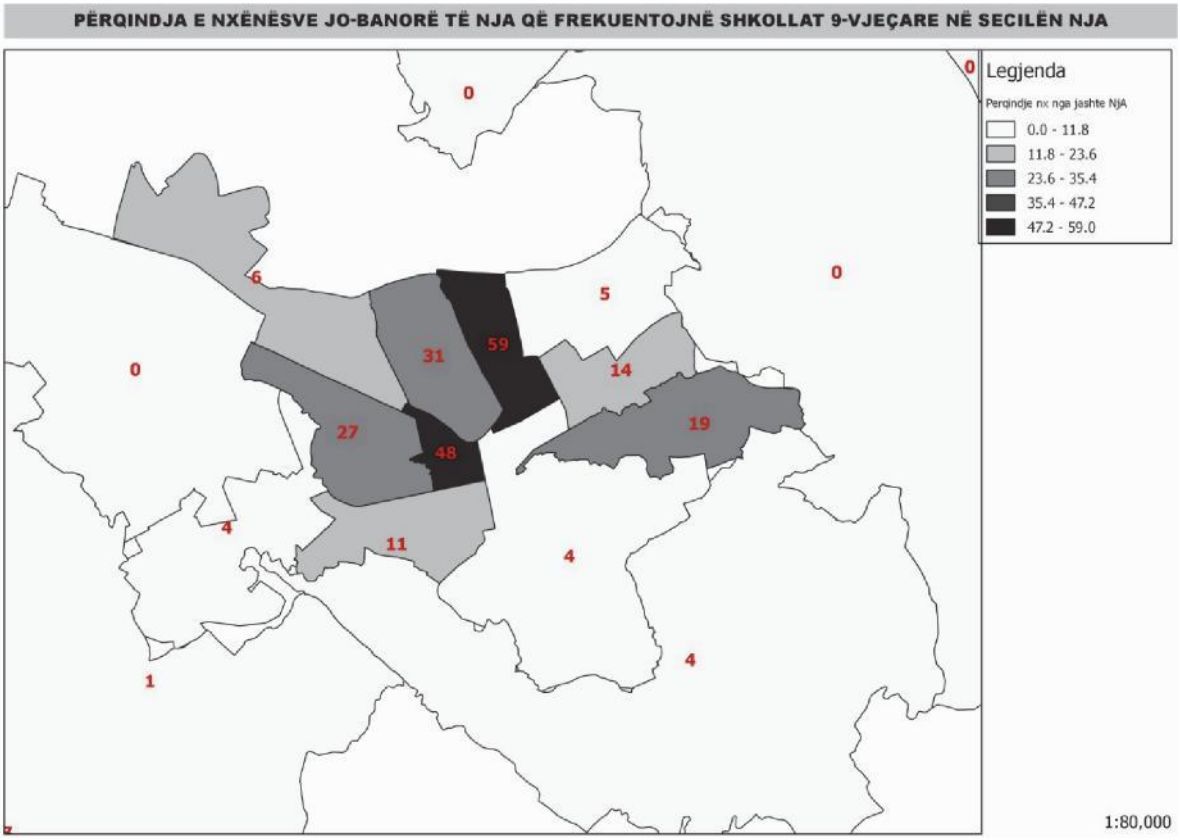
This means that intervention with new educational infrastructure will be carried out taking into consideration Administrative Units that expect a high inflow of students, who most of the time are not inhabitants of these units, therefore a considerable number of new classes must be included for Administrative Units 8 and 9. Meanwhile, these units are attended by a considerable number of students, who do not live there, as shown in the table below. On the other side, if the intervention with new educational infrastructure is carried out taking into consideration the Administrative Units with more attending students of nine-year cycle, then the intervention shall be focused more on Administrative Unit that do not hve sufficient existing education infrastructure and as a result do not serve the number of students living in them, e.g. units 2,6 and 11. The following table clearly shows the difference between number of resident students and attending students in each Administrative Unit.

Table 10 – Location of students and Administrative Unit where they attend school nine year cycle)

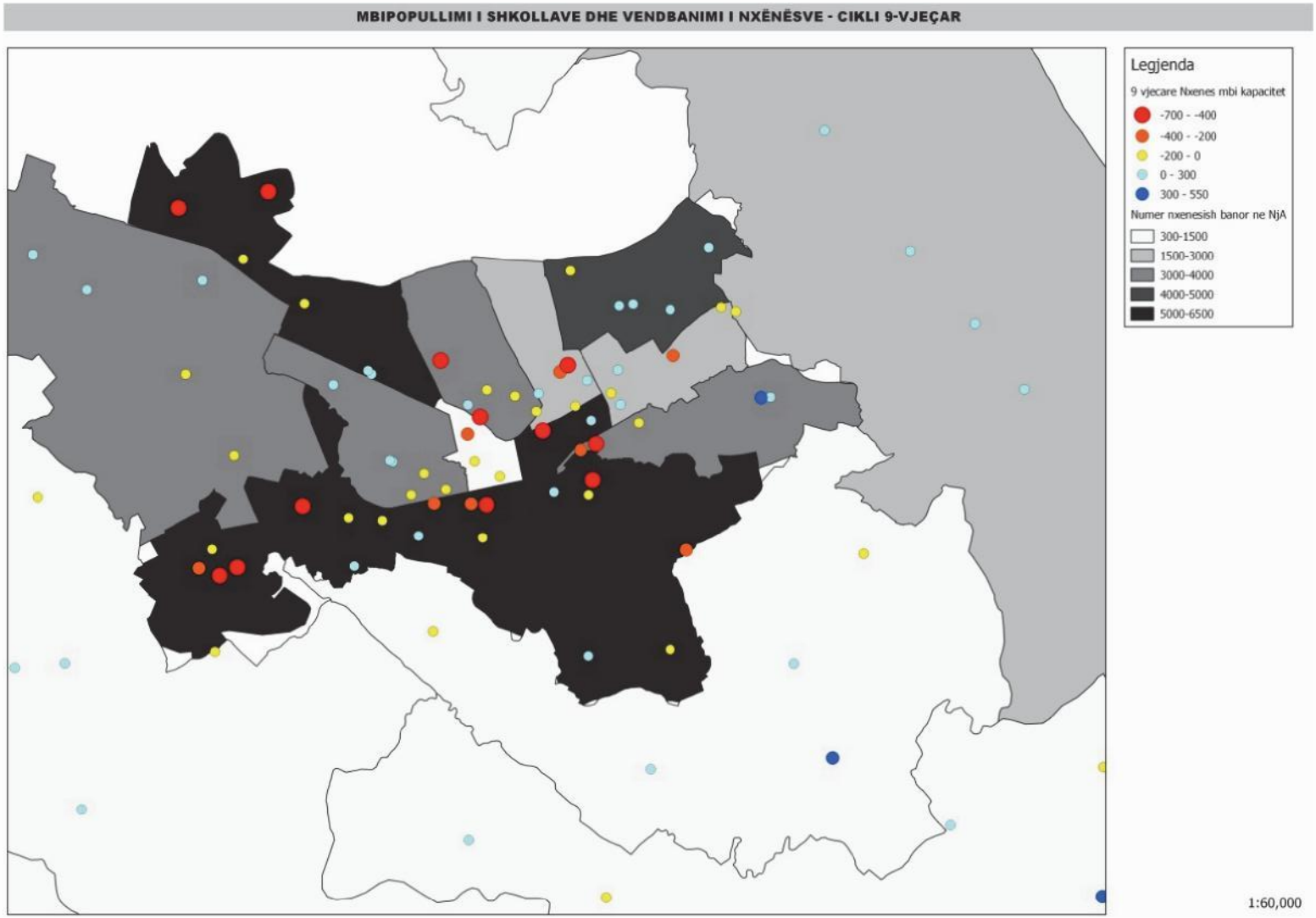
NJESIA	NJESIA KU FREKUENTOJNE SHKOLLEN																												
	NA1	NA2	NA3	NA4	NA5	NA6	NA7	NA8	NA9	NA10	NA11	NJA DAJT	NJA	NJA VAQARR	NJA	NJA	NJA PEZE	NJA	NJA BALDUS	NJA BERZHI	NJA	NJA SHENGJ	NJA ZALL	NJA ZALL HERR	TOTAL	TOTAL JASHTE NJESISE	%
NJESIA ADM 1	332	8	6	1	3		1	3	5	2	3		4			1									366	34	9%
NJESIA ADM 2	32	506	9	5	5		4	28	0	5	8		2												602	96	16%
NJESIA ADM 3	3		206	7	8		7	22	2	5	3						1								256	46	17%
NJESIA ADM 4	0	2	8	384	9		4	91	6	5	6					1									423	119	28%
NJESIA ADM 5	5	0	2	3	521	8	27	11	4	5	3					1									596	65	10%
NJESIA ADM 6	8	3	5	2	21	554	57	7	2	0	5		1	4			3								614	58	10%
NJESIA ADM 7	1	9	3	5	9	8	394	4	5	22	15		2												475	78	16%
NJESIA ADM 8	0	4	7	5	6		6	159	41	0	2														210	51	24%
NJESIA ADM 9	2	4	1		4		5	14	346	11	2		7			1									394	48	12%
NJESIA ADM 10	1	7	0	1	3		6	6	17	104	8														157	26	16%
NJESIA ADM 11	2		4		4		12	9	65	57	462														612	120	20%
NJAUAJT	39		4	6	1			9	0		2	208													446	57	13%
NJAFARKE	6	6	1		1		1	4	2	5	2		109					9							150	21	14%
NJAVAQARR		1			4	5	8	1						119		5	1								134	8	6%
NJAKASHAR	1		2		5		8	2	1	8	5				229										346	29	8%
NJANDROQ						8	8									67	8								83	16	19%
NJAPEZE								4						3		9	54								61	4	6%
NJAPETRELE	3	3			2			3					2					47		5					55	8	13%
NJA BALDUSHK		2						7											63						67	9	13%
NJA BERZHITE	8	8	1		3			1												77	10				78	3	4%
NJAKRRABE	1	1			2			5													41				40	9	23%
NJA SHENGJERGJ	2							1														31			34	3	9%
NJA ZALL BASTAR	4			6			1	5			2												72		80	8	10%
NJA ZALL HERR	4			5					4	8													2	94	117	23	20%
TOTAL	451	568	287	308	624	569	462	406	483	248	499	208	129	116	229	76	56	56	63	82	51	31	74	94			
TOTAL NGA JASHTE NJESISE	19	29	81	78	75	26	115	297	152	92	37	0	9	7	0	9	4	9	0	5	10	0	2	0			
%	12%	4%	14%	45%	11%	4%	25%	53%	31%	48%	6%	0%	43%	0%	0%	8%	6%	13%	0%	43%	22%	0%	0%	0%			

The phenomenon of over-crowded schools due to attendance of non-resident students of the Administrative Units where these schools are situated is presented in the two maps below. Map 11 indicates the percentage of attending students of schools for each Administrative Unit who do not live there. As noted, Units 6, 8, 9 and 10 are units where nine-year schools are over-populated by students who do not live in these units. The same phenomenon is presented also in Map 12. This map indicates the level of over-population of nine-year schools through size and color of circles (red circles show the most over-crowded schools). Meanwhile, this information is reviewed with the number of resident students in each Administrative Unit. As noted also in the map, some over-crowded schools are situated in AUs that do not have a big number of resident students, such as Units 8, 9 and 10. This happens exactly because of the above-mentioned reason – attendance of resident students from other neighbouring units. These students travel every day toward these schools from their homes, more than the envisaged standard for nine-year schools, i.e. 500m – 600m in aerial distance. An intervention with new education infrastructure in these Administrative Units would not solve this problem, therefore calculations for new education infrastructure will be made taking into account the number of resident students in each Administrative Unit, as well as distribution on the ground of the existing schools and coverage range of respective service.

Map 11 – Percentage of students attending schools non-resident/ resident student of each AU



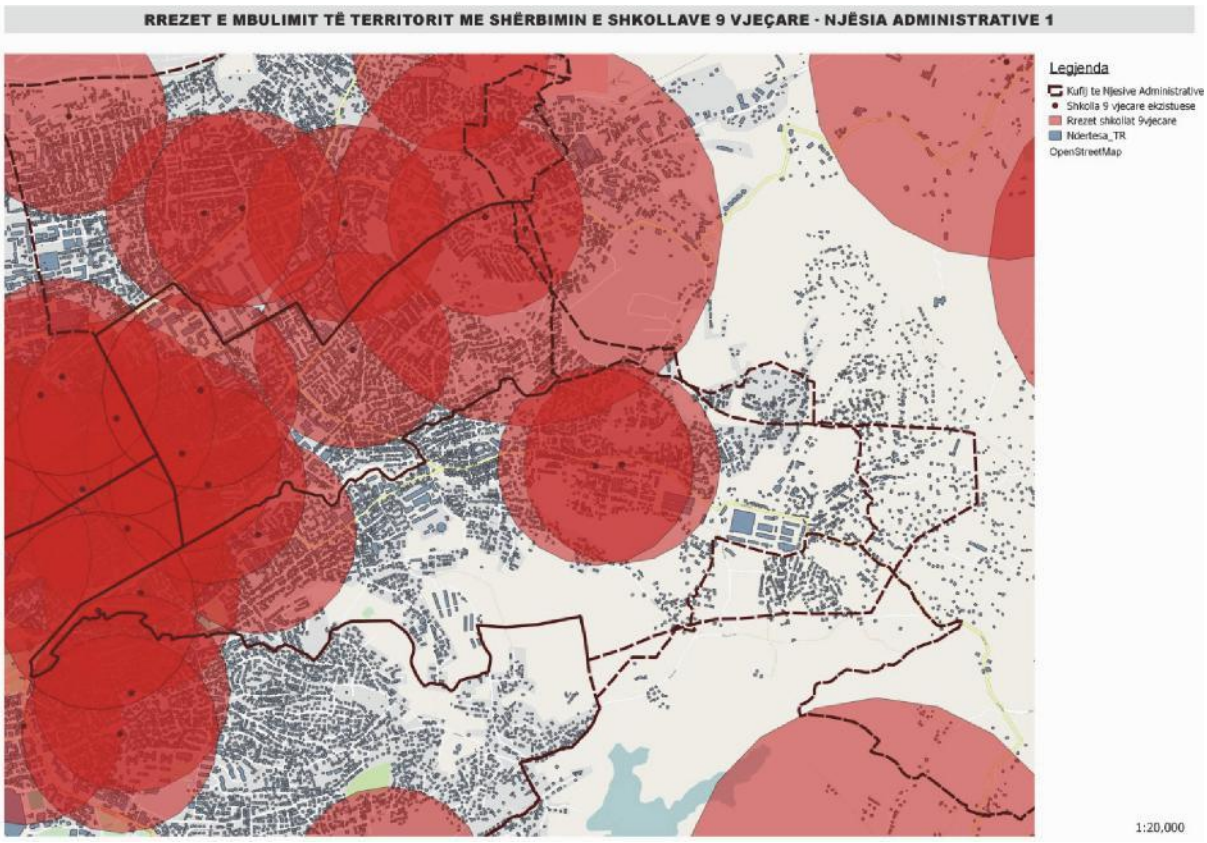
Map 12 – Over-population of schools and students residence – nine-year cycle (Note: negative values indicate number beyond the capacity for school



Administrative Unit 1

This administrative unit counts of total of 3637 resident students and 4144 attendees students of nine-year education schools of this unit. As a result of the big number of students living in other units and attending studies i the schools of this unit, “1 Maji” and “Ali Demi” schools are over-populated with about 330 and 572 students beyond the capacity respectively. About 26% of the students of “1 Maji” school are inhabitants of Administrative Unit 2. On the other side “Androkli Kostallari” school has a number of students below the maximal capacity of 30 students/physical class. Regarding coverage service range, there are areas in this unit that remain outside the coverage range, as shown in the map below :

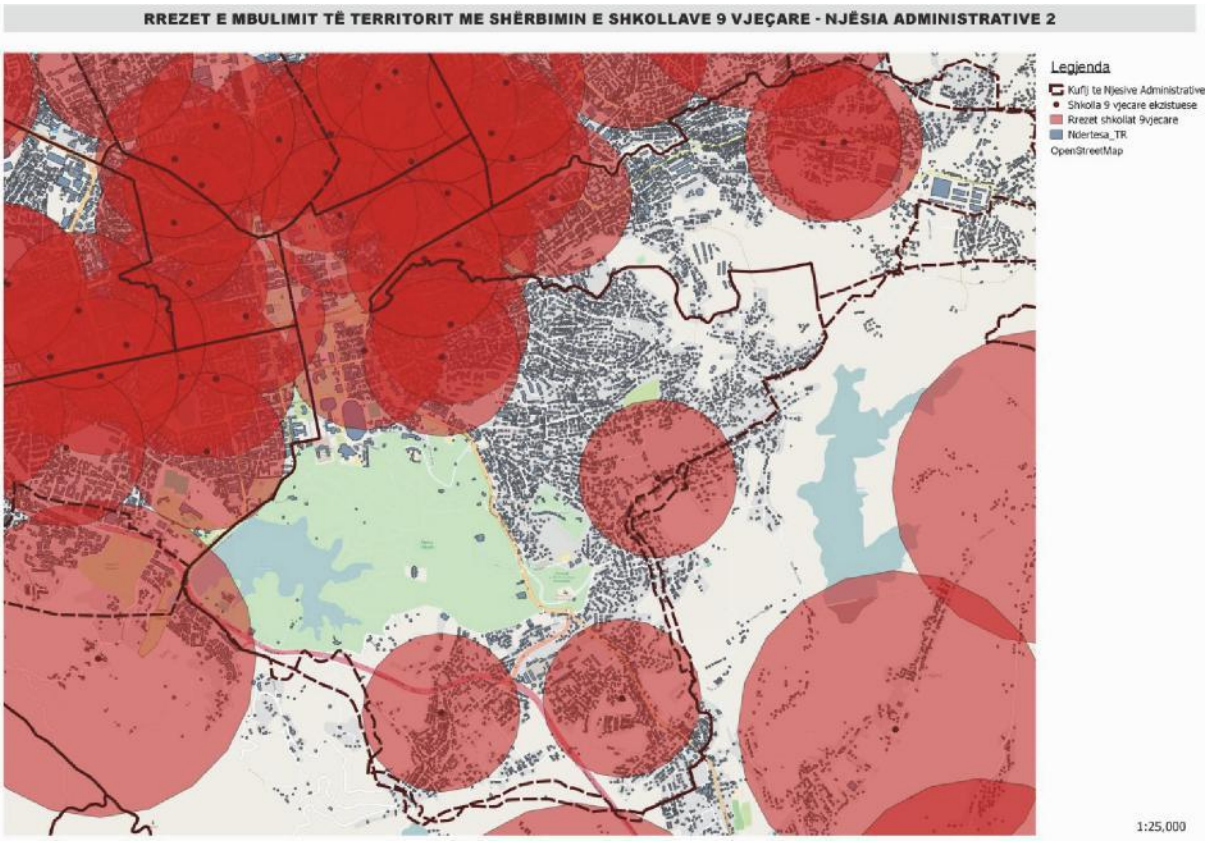
Map 13 – Territory Coverage Range with nine-year schools - AU 1



Administrative Unit 2

This Administrative Unit has a total of 6074 resident students and 5394 students attending nine-year schools of this unit. As a result of big number of students attending the nin-year schools of this unit, “Mihal Grameno” and “Fan Noli” schools are over-crowded with 620 and 550 students beyond the capacity, respectively. Likewise, even “M.Q. Ataturk” and “Mustafa Grebllleshi” schools – even though less than the above-mentioned. About 380 students of this unit attend schools of Administrative Unit 1 and about 300 other students of this unit attend schools of Administrative Unit 8, mostly “E Kuqe” School. Coverage Service range is not very good, because it leaves outside some residential zone, such as zone behind students’ campus, as presented below:

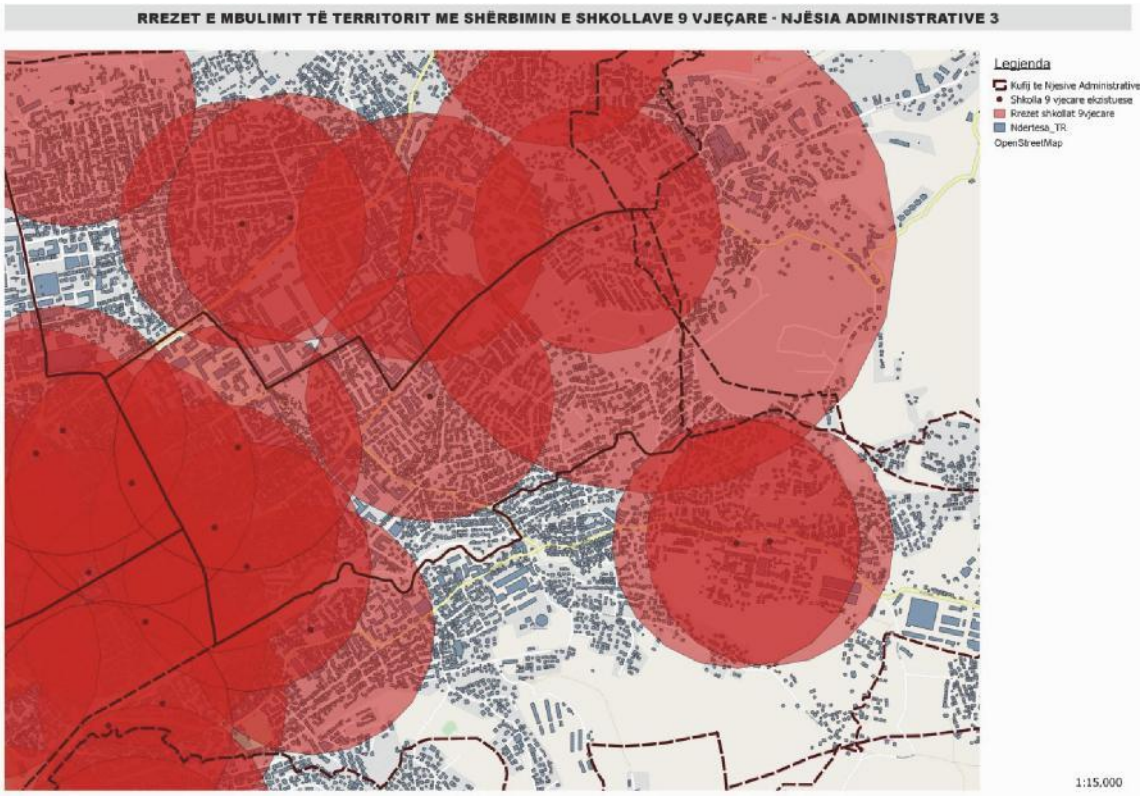
Map 14 – Territory Coverage Range with nine-year school service -AU 2



Administrative Unit 3

This Administrative Unit counts a total of 2546 resident students and 2439 attending students of nine-year schools of this unit. The “Hasan Prishtina” school counts about 380 students beyond the capacity, whereas “Xhezmi Delli” and “Niket Dardani” schools operate without unising the full capacity of their teaching venues. This means that with a good balance in distribution of students, the existing schools of this unit may solve the over-population problem. Regarding coverage service range, this unit is well-covered:

Map 15 – Territory Coverage range with nine-year schools service - AU 3



Administrative Unit 4

This Administrative Unt has a total of 4194 resident students and 3178 attending students of nine-year schools of this unit. About 950 students of this unit attend studies in Unit 8 schools, in particular in "Misto Mame" and "Skënder Çaçi" schools, causing problems with over-population. Meanwhile, through IPA funds in this unit will be constructed an educational and social complex.

IPA 2012 Project assists a community of about 16.000 inhabitants of Administrative Units 4 and 8, who live in an informal zone, where about 5% of its population belongs to Roma community. The project consists in building :

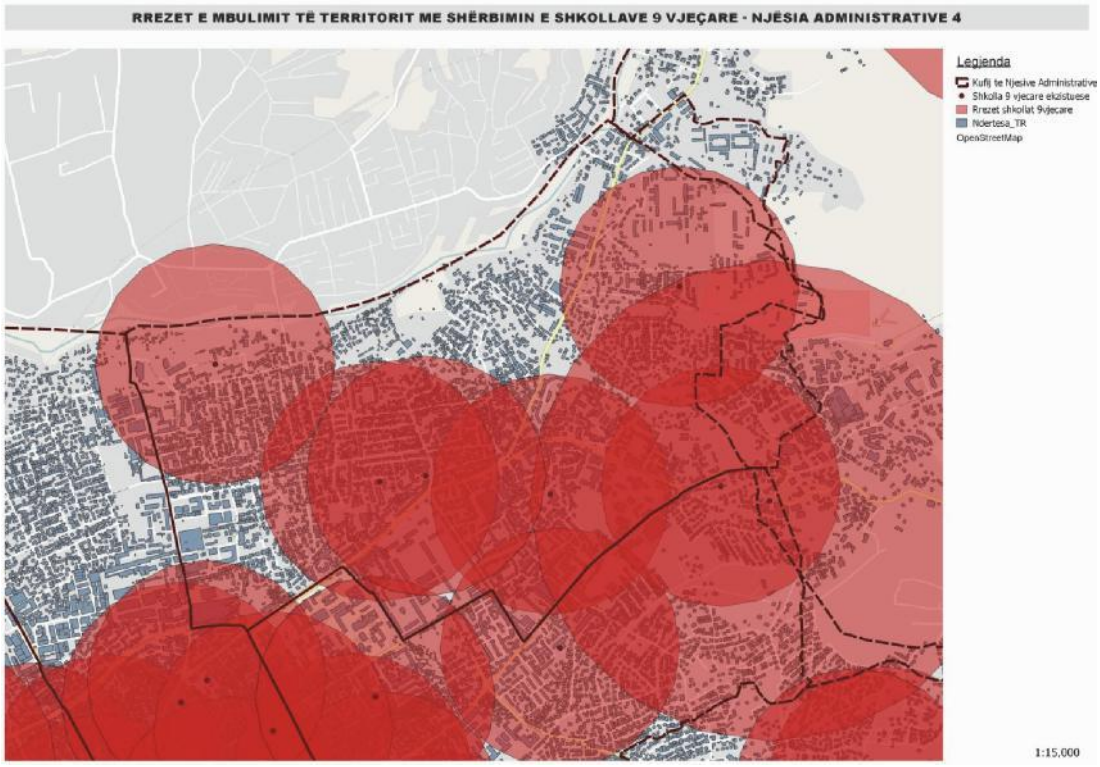
A nine-year school (Selaudin Bekteshi) composed of 20 classes with 30 students, i.e. a total of 600 students, as well as all the respective facilities, such as labs and sports venues.

A kindergarten – nursery, composed of 7 classes, with 20 children, ie. a total of 140 children for three different age groups, as well as offers all the necessary facilities – recreation premises and refectories.

A social center with a surface of about 900m2, serving people in need in this community.

With the construction of this education and social complex the entire administrative unit will be covered by a range of nine-year education service.

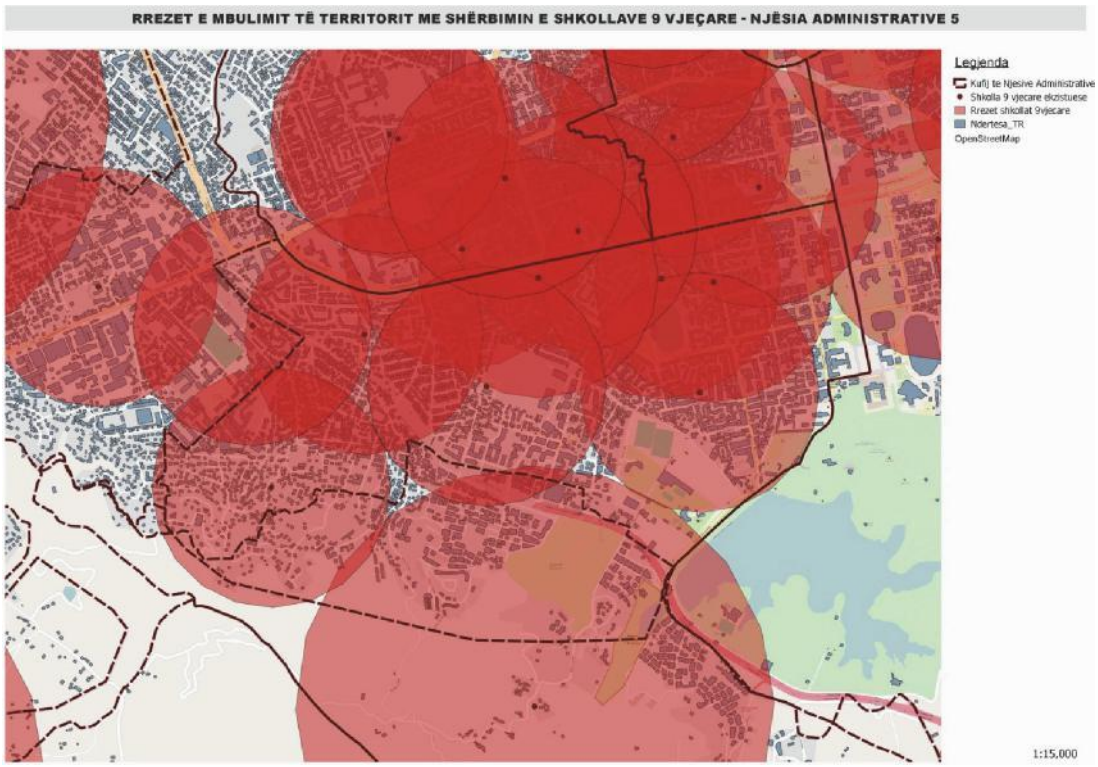
Map 16 – Territory Coverage Range with nine-year schools service - AU 4



Administrative Unit 5

This Administrative Unit has a total of 6147 resident students and 6259 attending students of nine-year schools of this unit. As a result of the big number of resident students in this unit and attending students, “Edit Durham” and “Vasil Shanto” schools are over-populated, with about 540 and 320 students beyond the capacity respectively. Likewise, even “Emin Duraku” and “Dëshmorët e Lirisë” schools are over-populated, even though less than the above-mentioned schools. About 200 students of this unit attend studies in Administrative Unit 7 schools. The coverage service range is a following :

Map 17 – Territory Coverage Range with nine-year schools -AU 5



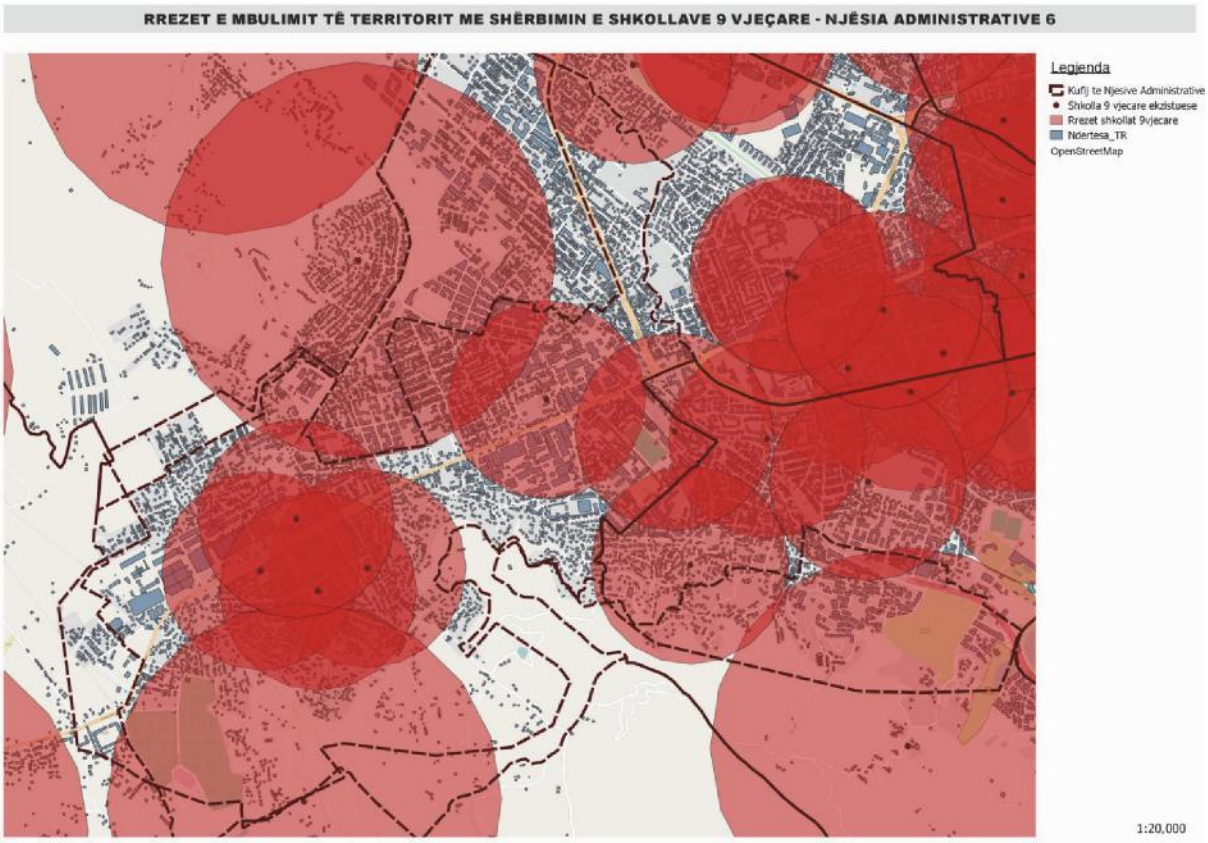
Administrative Unit 6

This Administrative Unit has a total of 6494 resident students and 5876 attending students of the nine-year schools of this unit. Almost all schools of this unit are over-populated. About 500 resident students of Administrative Unit 6 attend schools of Unit 7, in particular “Dhora Leka” school. This dynamics may include also resident students in residential area of Yzberisht registered in Unit 6. As long as it is a neighbour zone with Yzberisht relatively high residential density, schools of this unit are over-crowded because they serve also to this residential zone.

A new nine-year school has started to be built in this unit, near former textile plant. This school will have 600-712 students, 27 classes with an average of 25-30 students.

With the construction of this new school, the administrative unit will have the following coverage of nine-year schools service range :

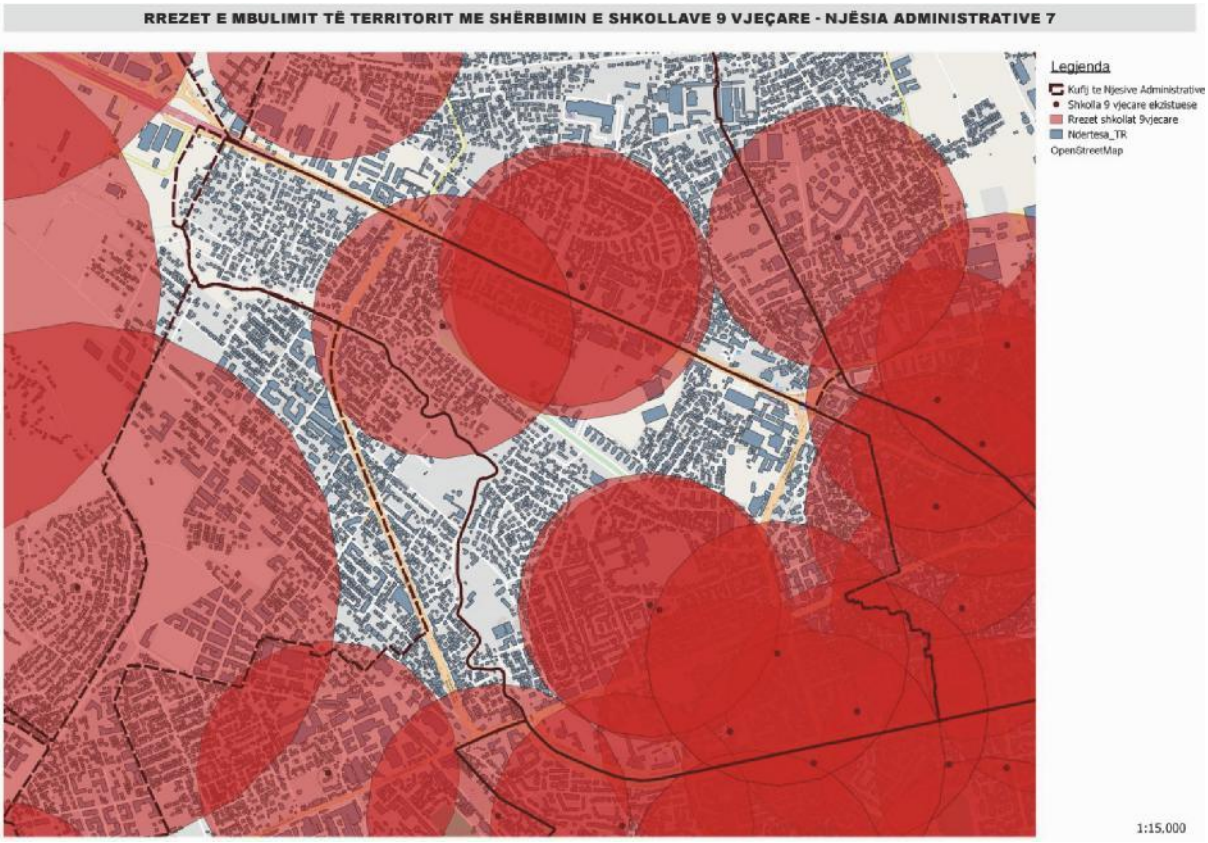
Map 18 – Territoy coverage range with nine-year schools - AU 6



Administrative Unit 7

This Administrative Unit counts a total of 3905 resident students and 4366 attending students in nine-year schools of this unit. Some of the non-resident students attending schools in this unit are inhabitants of Administrative Unit 6 and Administrative Unite of Kashar, in Yzberisht area. Beside "Pjetër Budi" school, which counts about 190 students beyond the capacity, other schools are not over-crowded. The schools service range in this unit is presented in the map below:

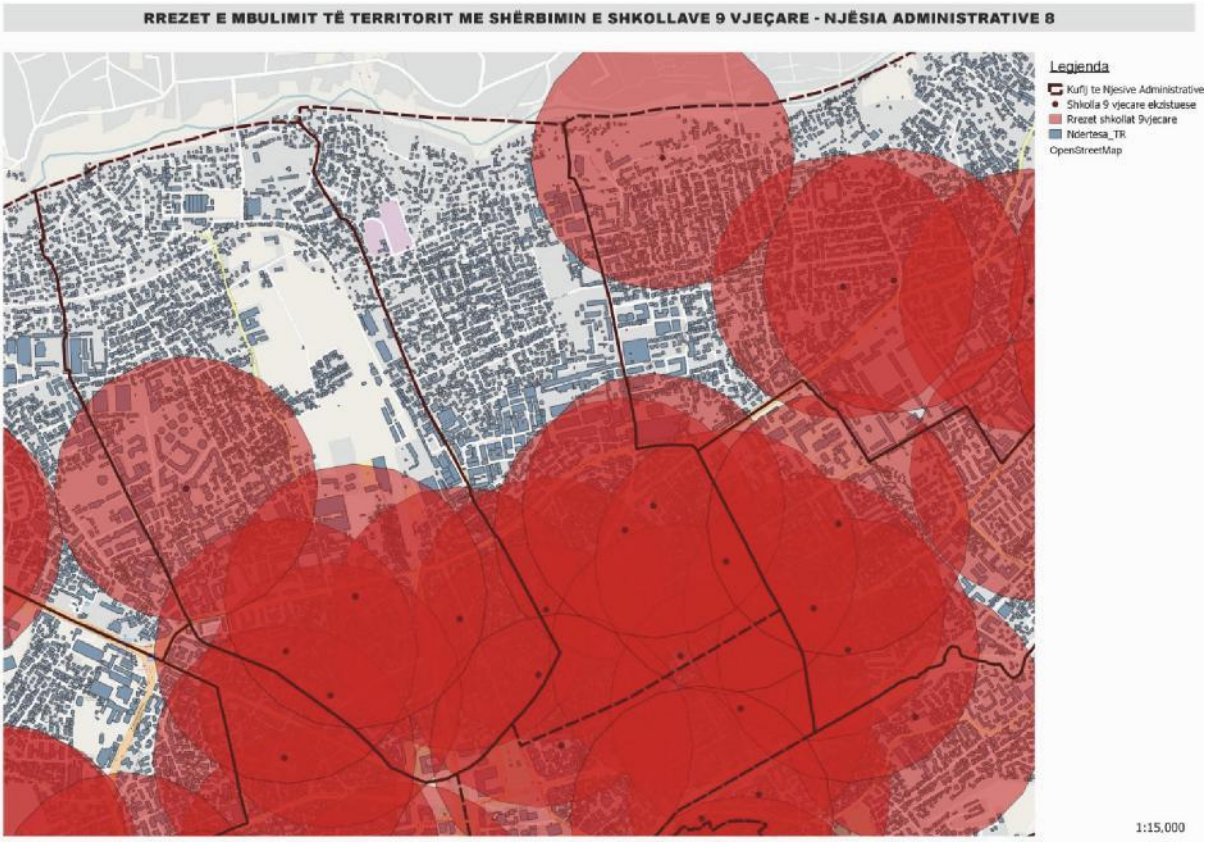
Map 19 – Territory Coverage Range with nine-year schools service -AU 7



Administrative Unit 8

This unit has a total of 2110 resident students and 3893 attending students of nine-year schools in this unit. “Skënder Çaçi” and “Misto Mame” schools are over-crowded, with 430 and 340 students over the capacity, respectively. This over-population is mainly caused because they are attended also by students of neighbour units. The construction of “Selaudin Bekteshi” school in Administrative Unit 4, the number of students attending the over-populated schools is expected to fall. The service range of schools in this unit are as following :

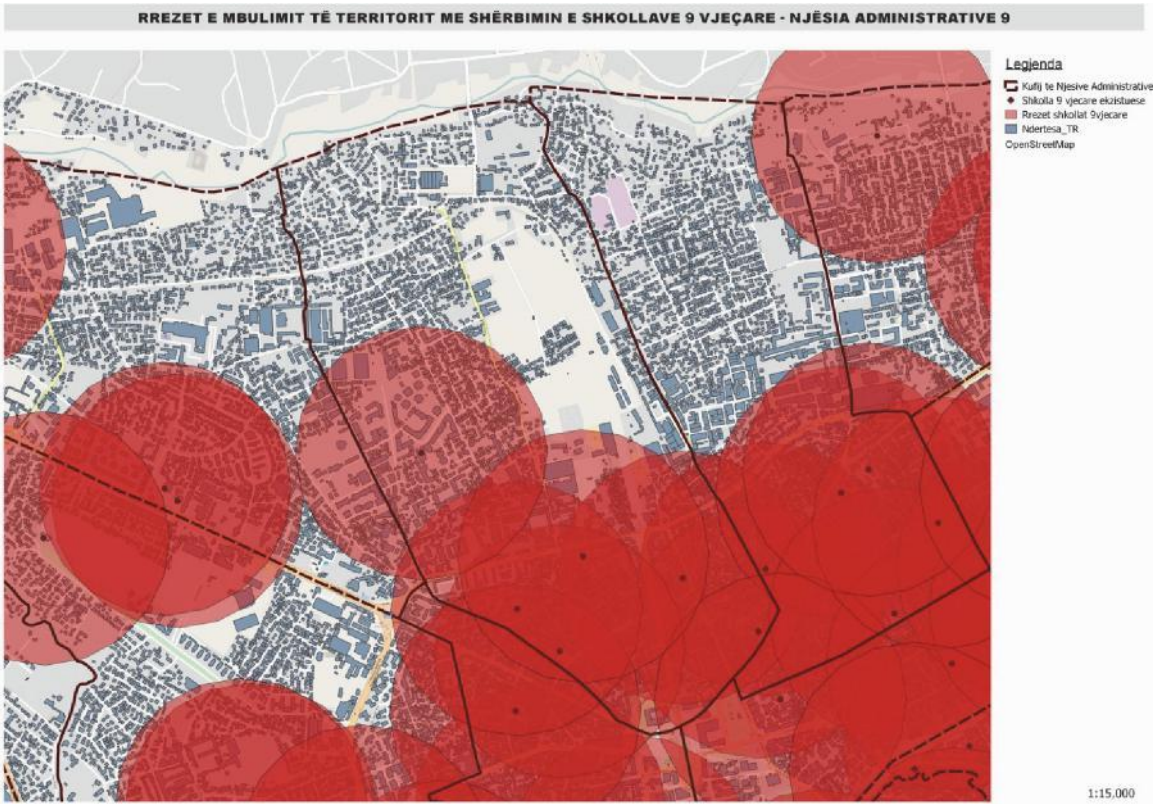
Map 20 – Territory Coverage Range with nine-year schools service - AU 8



Administrative Unit 9

This administrative unit has a total of 3864 resident students and 4992 attendig students of nine-year schools of this unit. “Qazim Turdiu” and “Jeronim De Rada” schools are over-crowded, 460 and 570 students over the capacity, respectively. Likewise, “Servete Maçi” and “7 Marsi” schools count about 140 students over the capacity each. This over-population is mainly caused because these schools are attended by students of neighbour units, such as in the case of “Servete Maçi” school, where 70% of the students do not live in Unit 9. Service ranges of schools in this unit are shown in the map below:

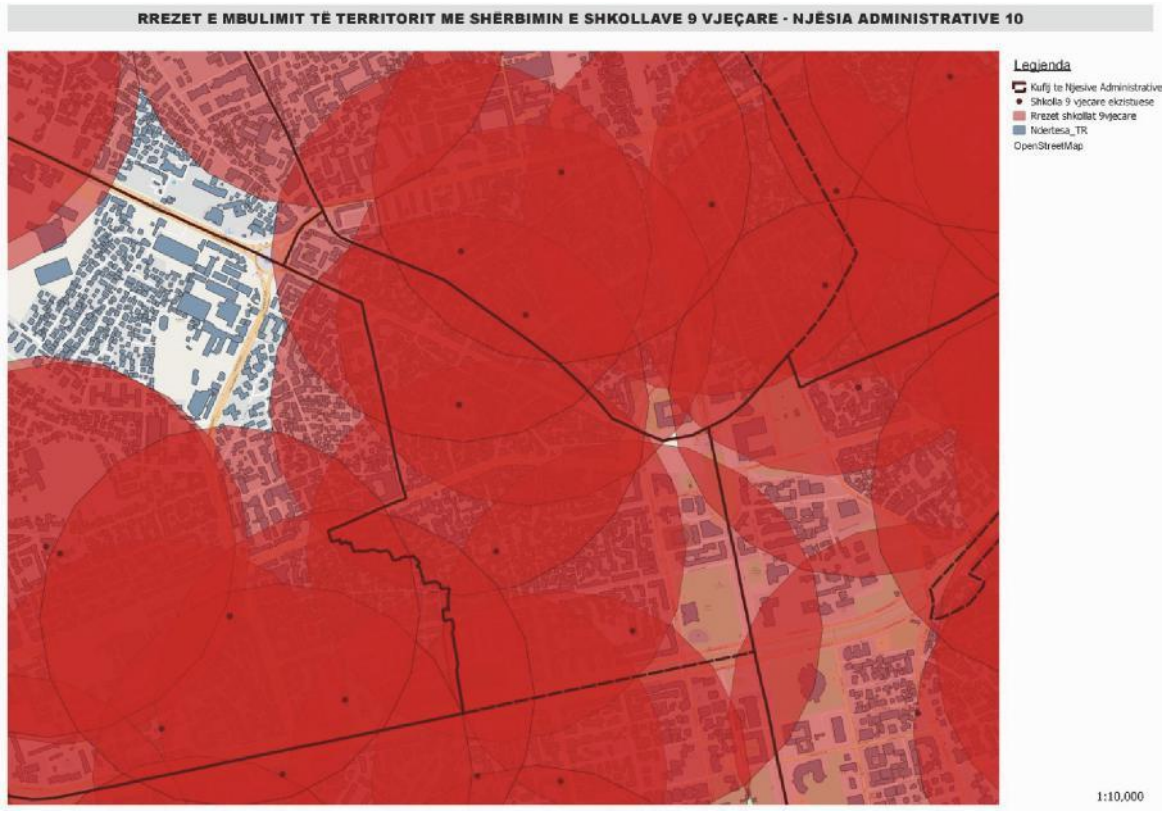
Map 21 – Territory coverage range with nine-year schools - AU 9



Administrative Unit 10

This administrative unit counts a total of 1260 resident students and 2157 attending students of nine-year schools in this unit. The three schools in this unit are over-crowded, pointing to "Avni Rustemi" school with about 360 students over the capacity. This over-population is caused because students of other units attend these schools. The unit is totally covered by the service range of existing nine-year schools.

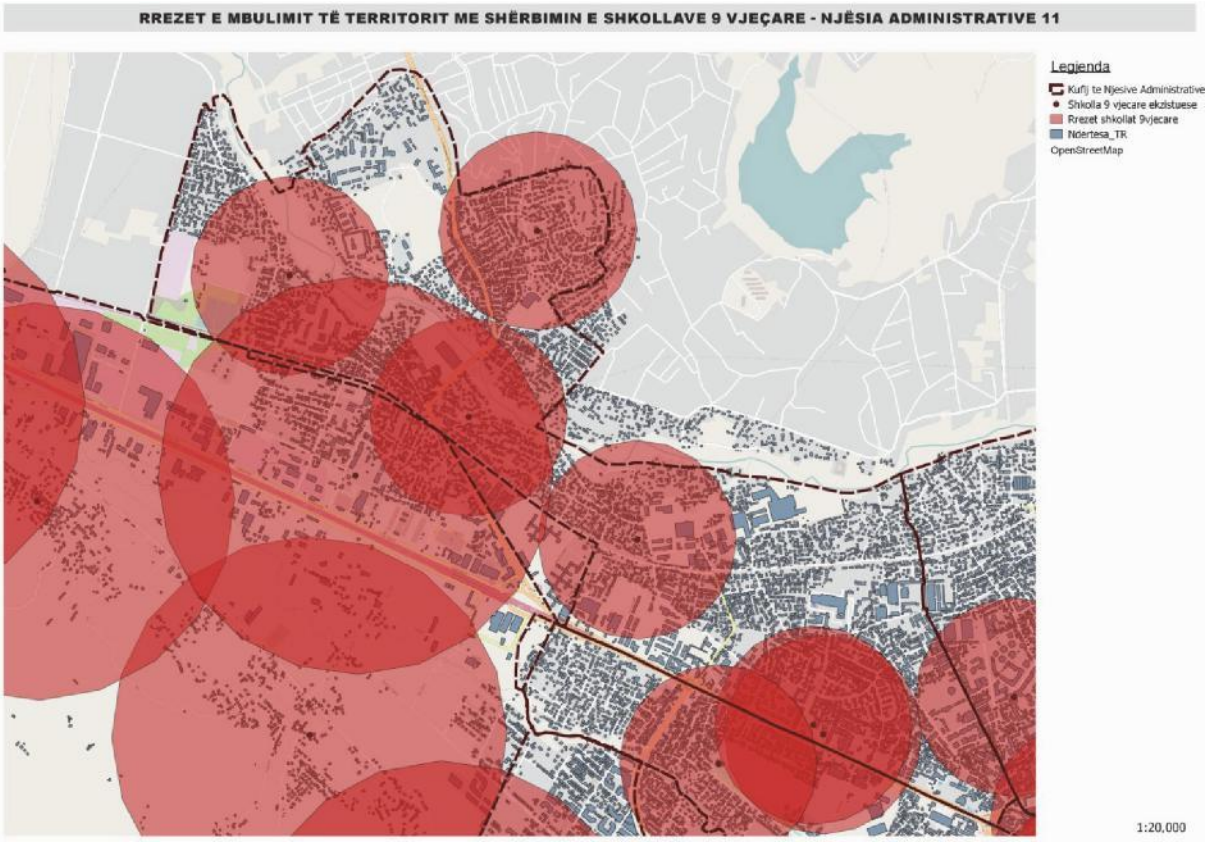
Map 22 – Territory coverage range with nine-year schools -AU 10



Administrative Unit 11

This administrative unit has a total of 5881 resident students and 5066 attending students of nine-year schools in this unit. The over-crowded schools of this unit are “Isa Boletini” and “Kolë Jakova”, with 480 and 420 students beyond the capacity, respectively, attended by “Gjergj Fishta” school with 170 students beyond capacity. Likewise, about 550 resident students of this unit attend schools of unit 9 and about 250 attending students attend schools of unit 10. Service range of these schools is indicated in the following map:

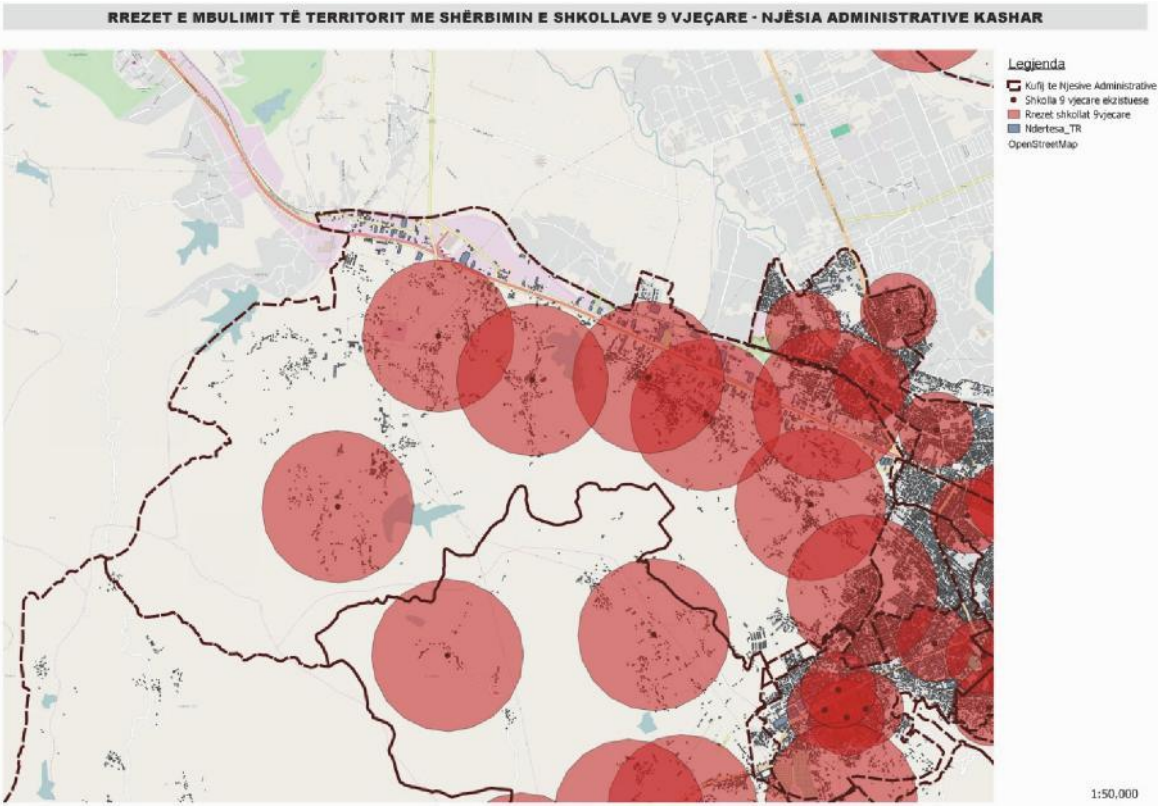
Map 23 – Territory coverage range with nine year schools - AU 11



Administrative Unit of Kashar

This administrative unit counts a total of 3206 resident students and 2987 attending students of nine-year ad united high schools of this unit. “Kasem Shima” school has about 150 students beyond the capacity. As noted also in the map below, even though the administrative unit of Kashar has been subject of the application of sevice range with nine-year schools of about 1000m, as envisaged in the regulation of rural zones planning, the residential zone of Yzberisht does not have any educational structure of pre-university cycle. This urban are with urban typological features uses schools of Administrative Unit 6, thus causing problems with the over-population of schools in this unit.

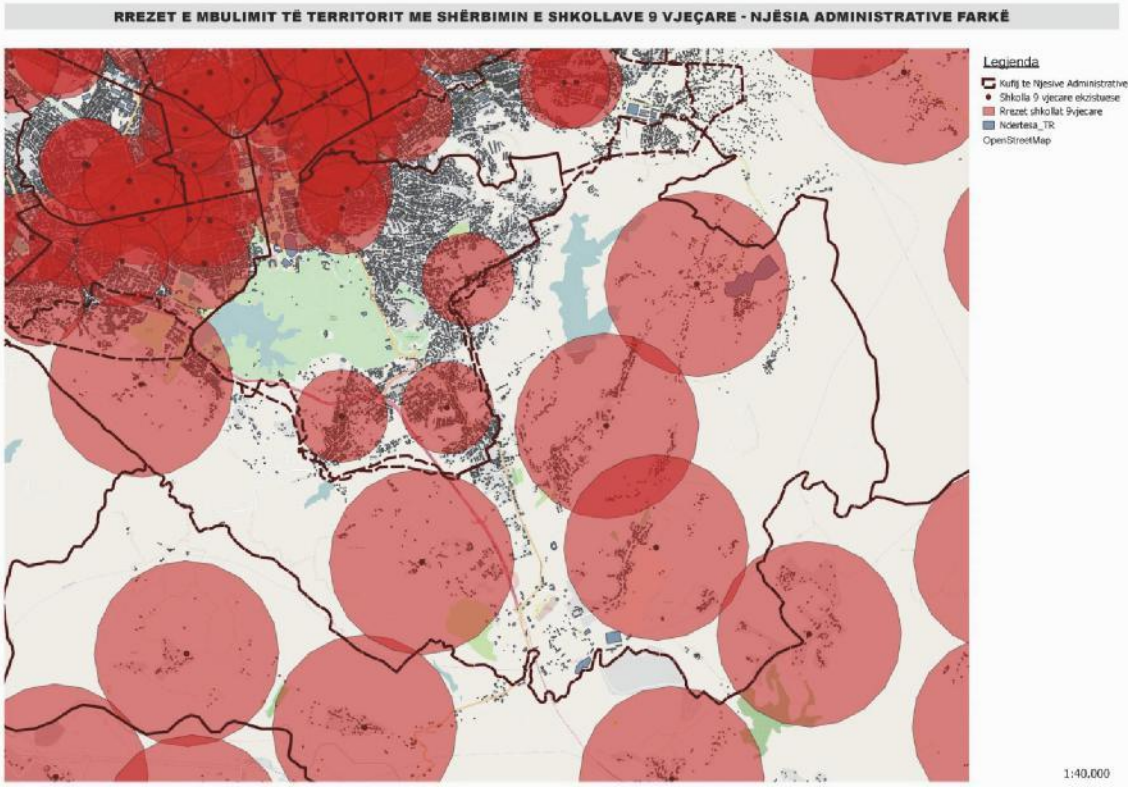
Map 24 – Territory coverage range with nine-year schools - AU Kashar



Administrative Unit of Farke

This administrative unit has a total of 1387 resident students and 1268 attending students of nine-year and united high schools of this unit. Even though the existing schools of this unit do not have problems with over-crowded schools, the urban zone with a relatively high density near Botanic Garden is far from reach for existing education infrrastucture. Same as in Administrative Unit of Kashar, even in Farke unit was applied the service range of 1000m for nine-year schools, as envisaged in the regulation of rural zones planning. Nevertheless, the residential zone near Botanic Garden is considered an urban zone due to typological features and density and should be subject of the application of 500m distance from nearest nine-year schools; such standard is not currently met.

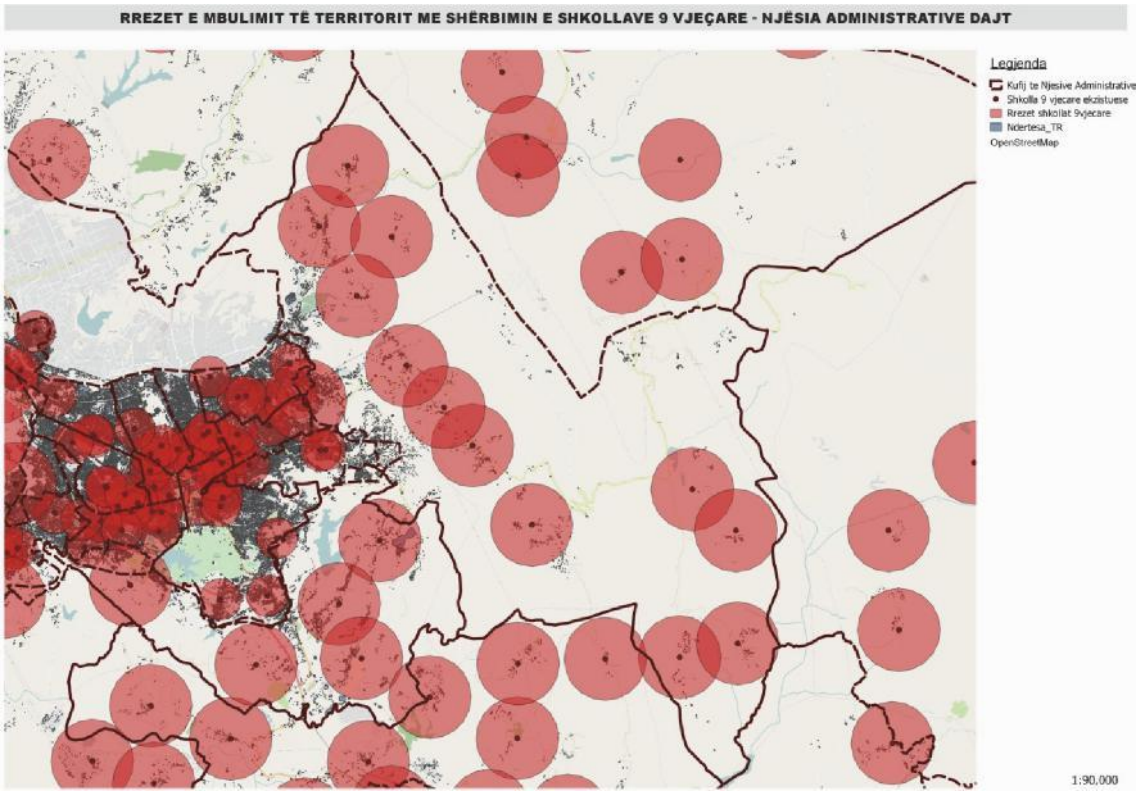
Map 25 – Territory coverage range with nine-year schools AU Farke



Administrative Unit of Dajt

This administrative unit counts of total of 2433 resident students and 2041 attending students of nine-year and united high schools in this unit. The only over-crowded school is “17 Shkurti” in Qesarake, with 150 students overthe capacity. As long as the number of students beyond capacity consists of 5 physical classes, this problematic may be settled through rehabilitation interventions in the existing schools.

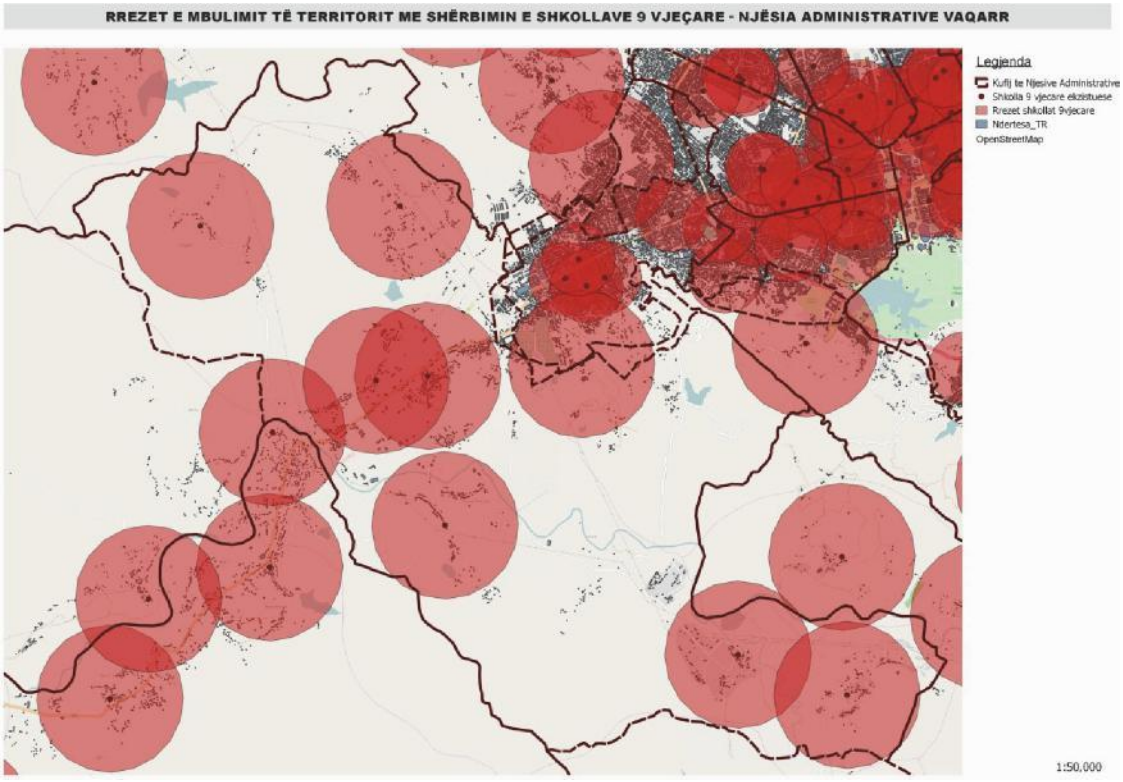
Map 26 – Territory coverage range of nine-year schools - AU Dajt



Administrative Unit of Vaqarr

This administrative unit counts of total of 1214 resident students and 1137 attending students of nine-year and united secondary schools in this unit. The only over-crowded school is “Ibrahim Hima” (Gropaj), with about 95 students beyond the capacity. Following the same logic as in administrative unit of Dajt, as long as the number of students beyond capacity consists of three physical classes, this problematic may be settled through rehabilitation interventions in the existing schools.

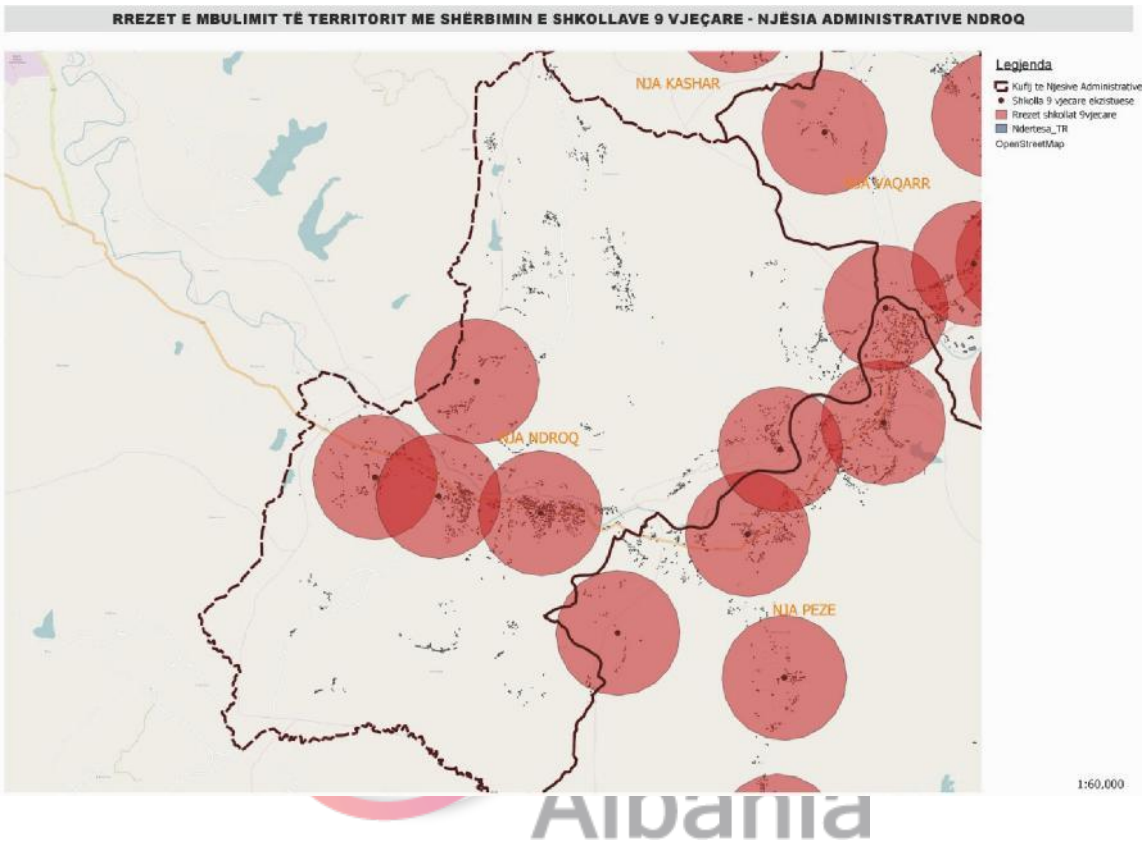
Map 27 – Territory Coverage Range with nine-year schools - AU Vaqarr



Administrative Unit of Ndroq

This Administrative Unit counts a total of 1080 resident students and 1003 attending students of nine-year schools of this Unit. No existing school is over-crowded, on the contrary average number of students per physical class is 14.2 students.

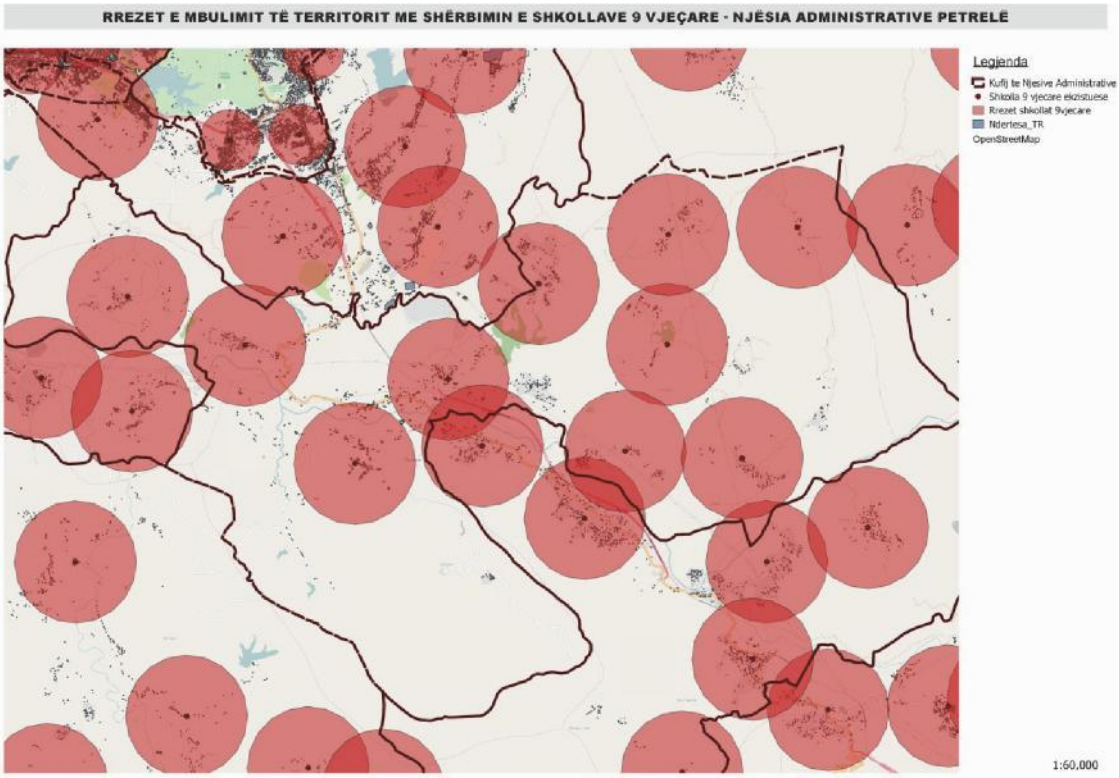
Map 28 – Territory coverage range with nine-year schools service -AU Ndroq



Administrative Unit of Petrele

This Administrative Unit counts a total of 734 resident students and 681 attending students of nine-year schools in this unit. No existing school is over-crowded, on the contrary average number of students per physical class is 9 students.

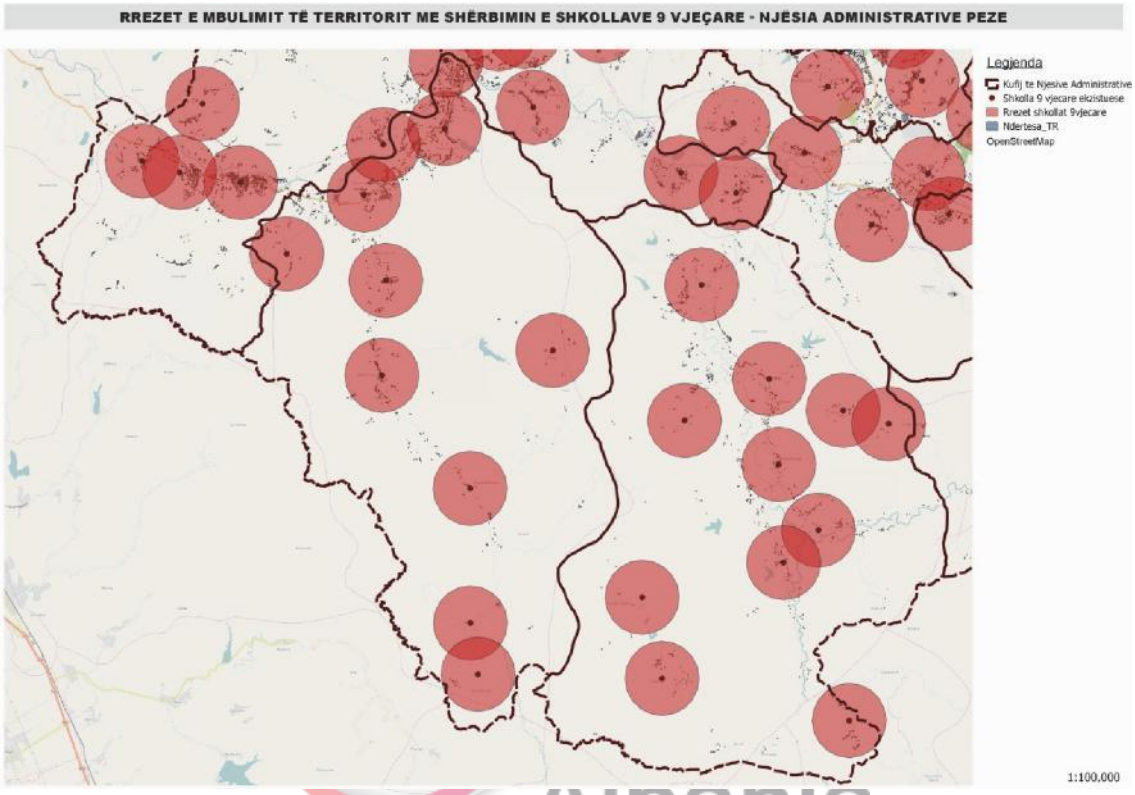
Map 29 – Territory coverage rage with nine-year schools - AU Petrelë



Administrative Unit of Peze

This Administrative Unit counts 667 residents students and 711 attending students of nine-year schools and united high schools of this unit. None of the existing schools in this unit faces over-population, on the contrary, the average of students per physical class in 15.3 students.

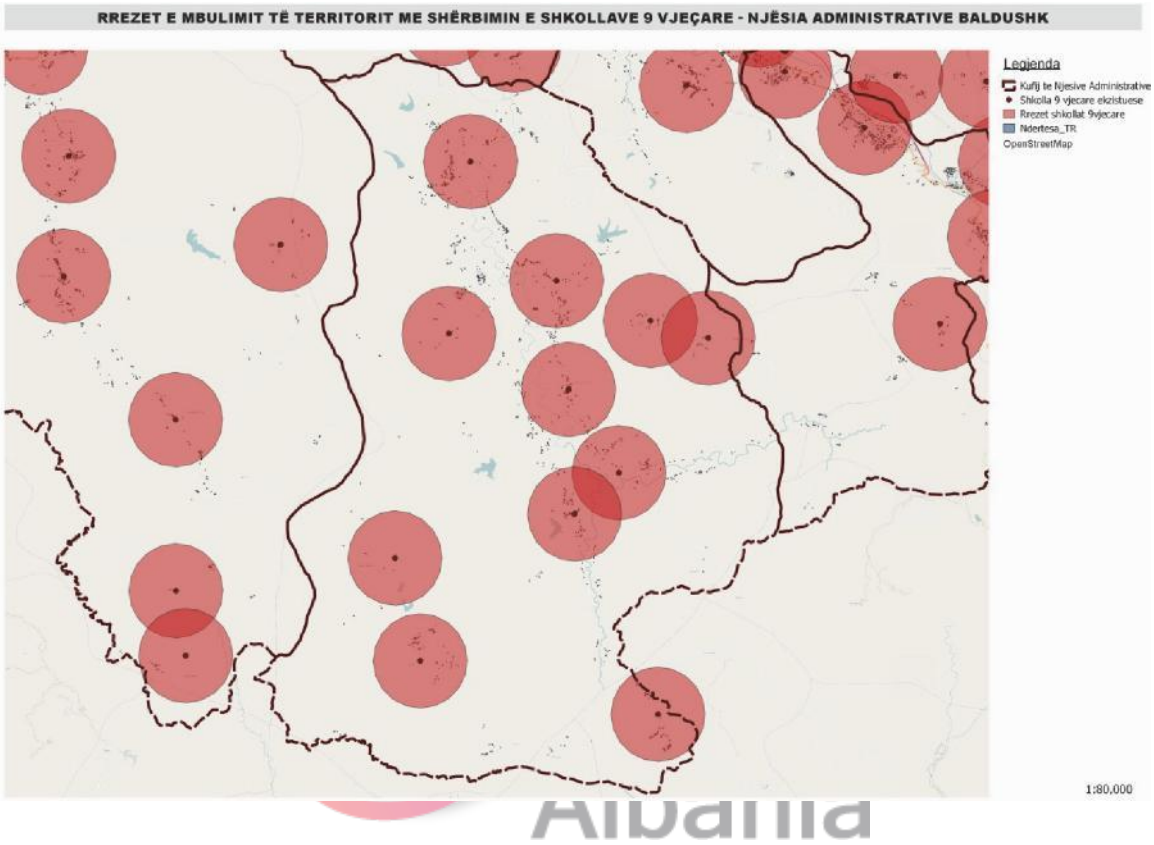
Map 30 – Territory coverage range with nine-year schools service - AU Pezë



Administrative Unit of Baldushk

This Administrative Unit counts a total of 778 resident students and 769 attending students of nine-year and united high schools of this unit. None of the existing schools is over-crowded, on the contrary, average number of students per physical class in 20.6 students.

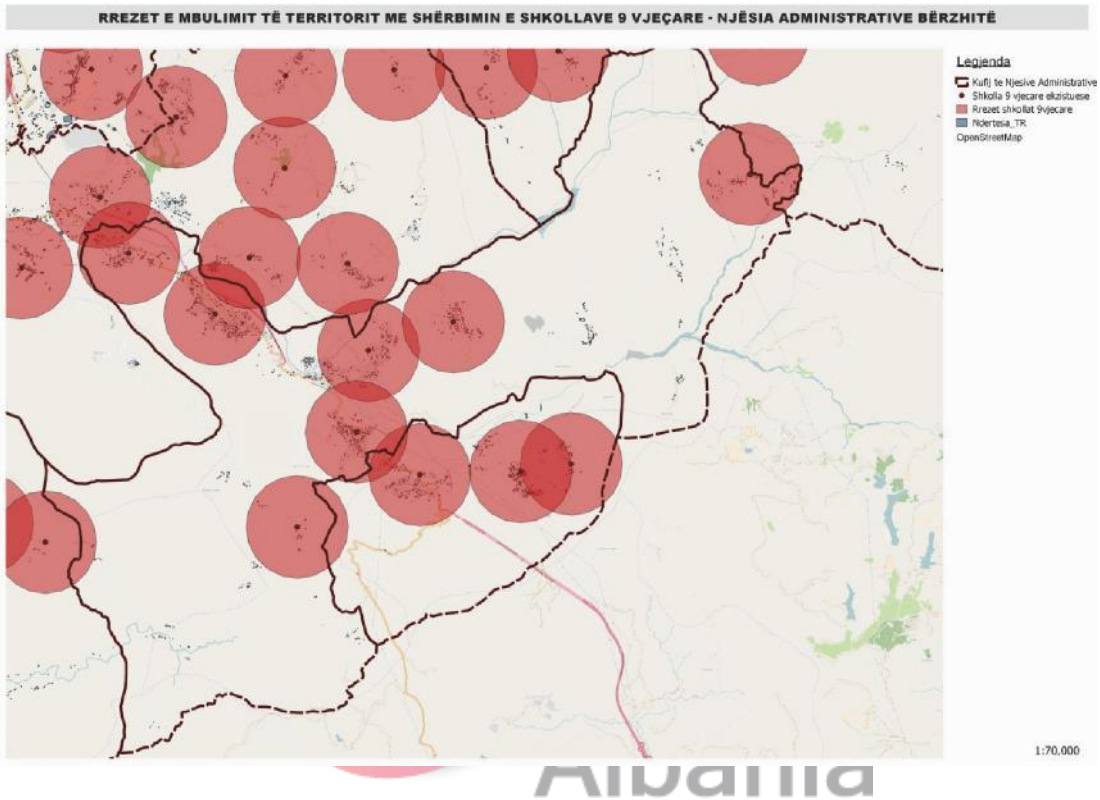
Map 31 – Territory Coverage Range with nine-year schools service – AU Baldushk



Administrative Unit Berzhite

This Administrative Unit counts a total of 831 resident students and 815 attending students of nine-year schools and united high schools of this unit. None of the existing schools in this unit faces over-popoulation, on the contrary the average of students per physical class in 13.6 students.

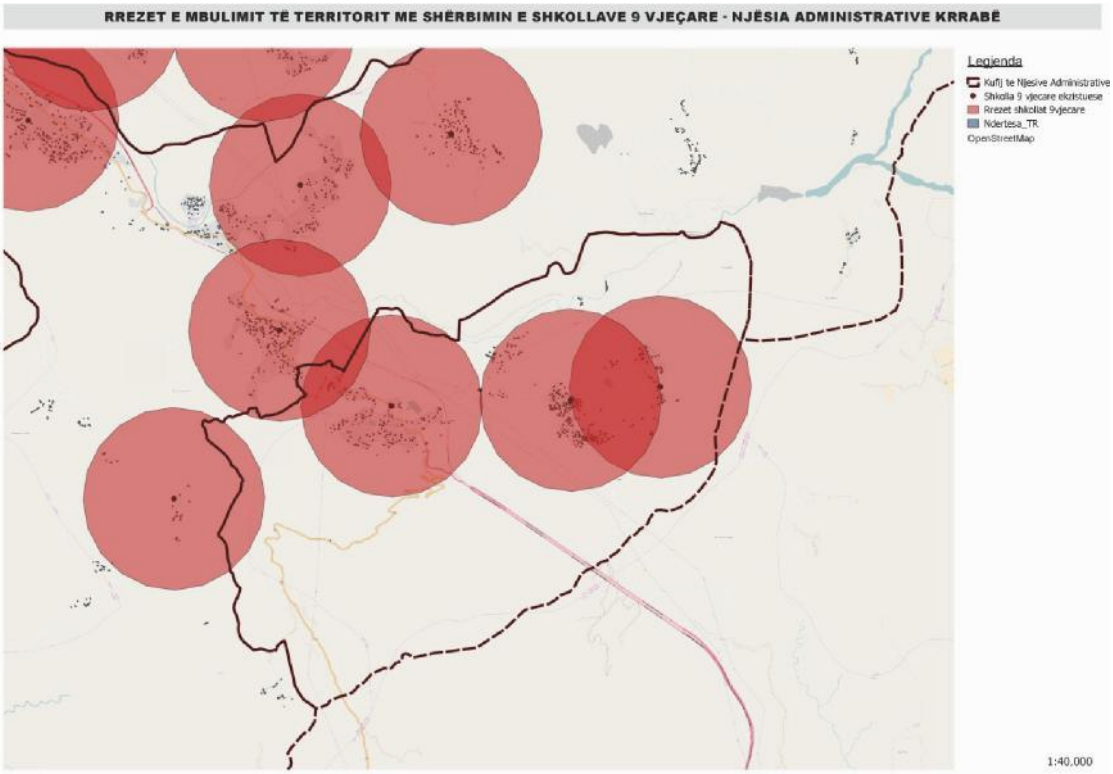
Map 32 – Territory Coverage range with nine-year education service - AU Berzhitë



Administrative Unit of Krrabe

This Administrative Unit counts a total of 456 resident students and 456 attending students of nine-year schools of this unit. None of the existing schools in this unit presents any problems, on the contrary, the number of students per physical class is 18 students.

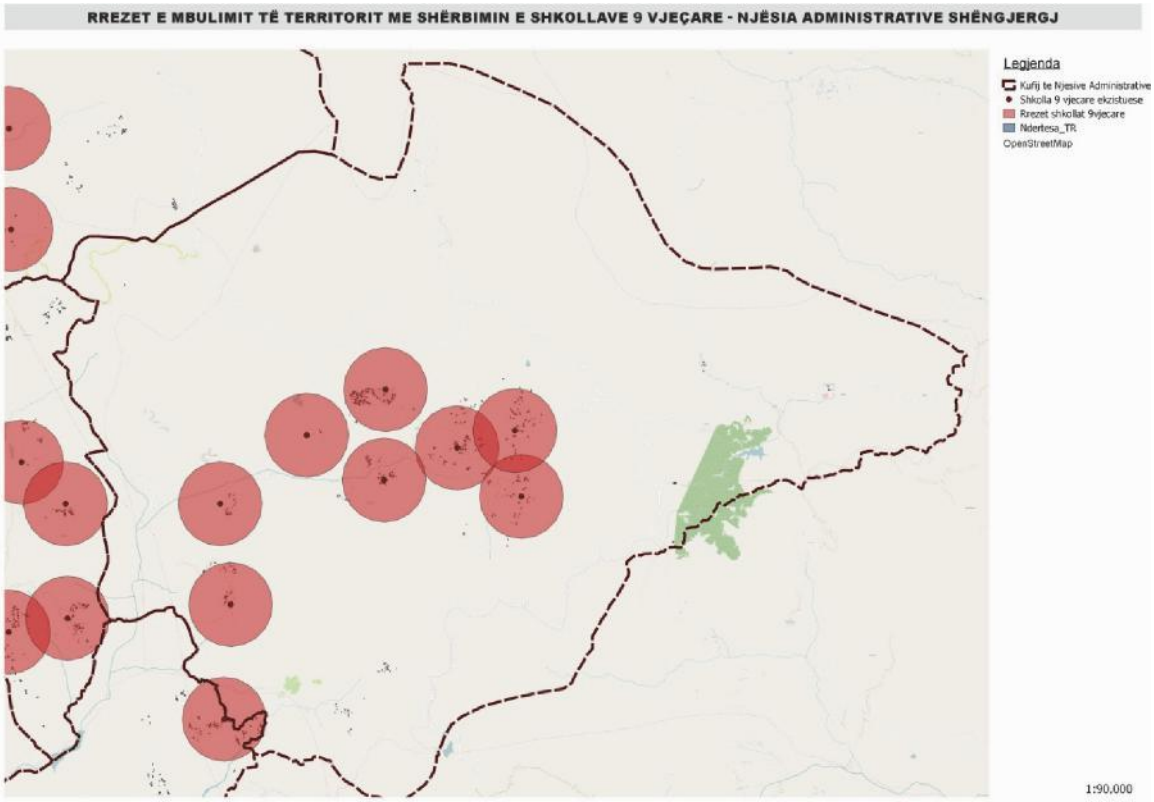
Map 33 – Territory Coverage Range with nine-year school service - AU Krrabe



Administrative Unit of Shëngjergj

This Administrative Unit counts a total of 343 resident students and 331 students attending nine-year schools of this unit. None of the existing schools faces over-population problems, on the contrary average students per physical class 8.5 students

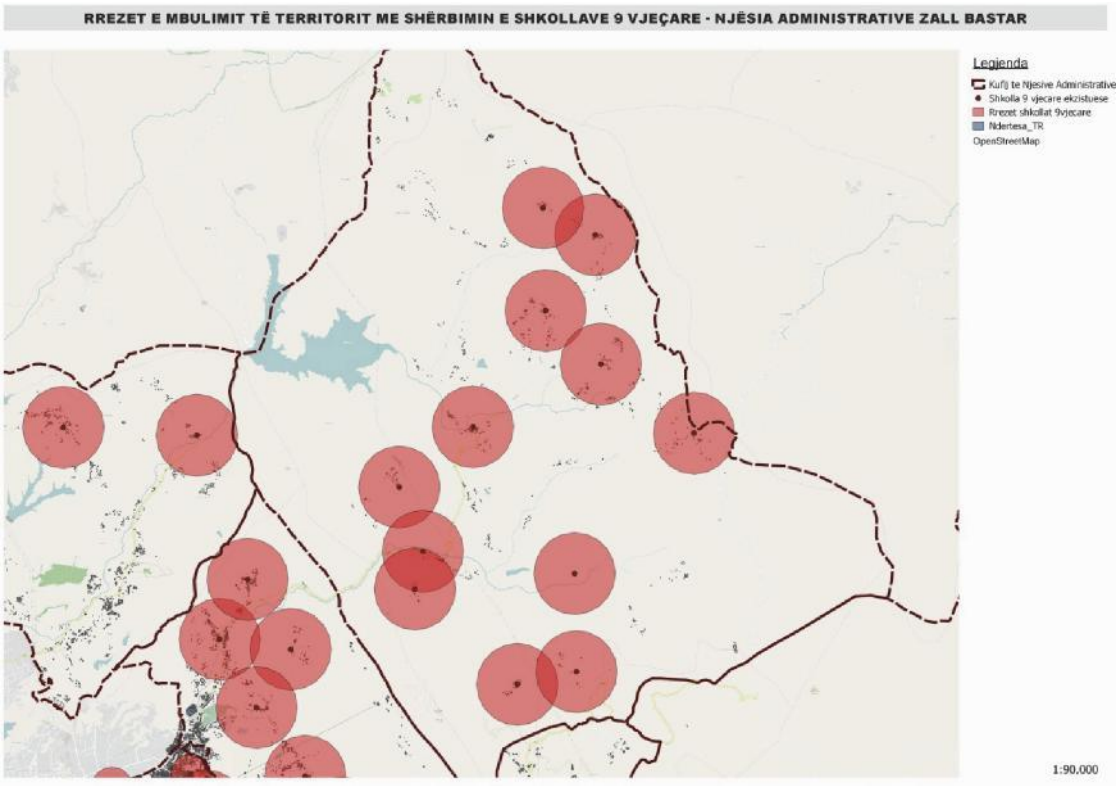
Map 34 – Territory Coverage Range with nine-year schools service - AU Shëngjergj



Administrative Unit of Zall Bastar

This Administrative Unit counts a total of 777 resident students and 761 attending students of nine-year schools located in this unit. None of the existing schools has problems with over-crowed classes, on the contrary the average students per physical class is 15.9 students

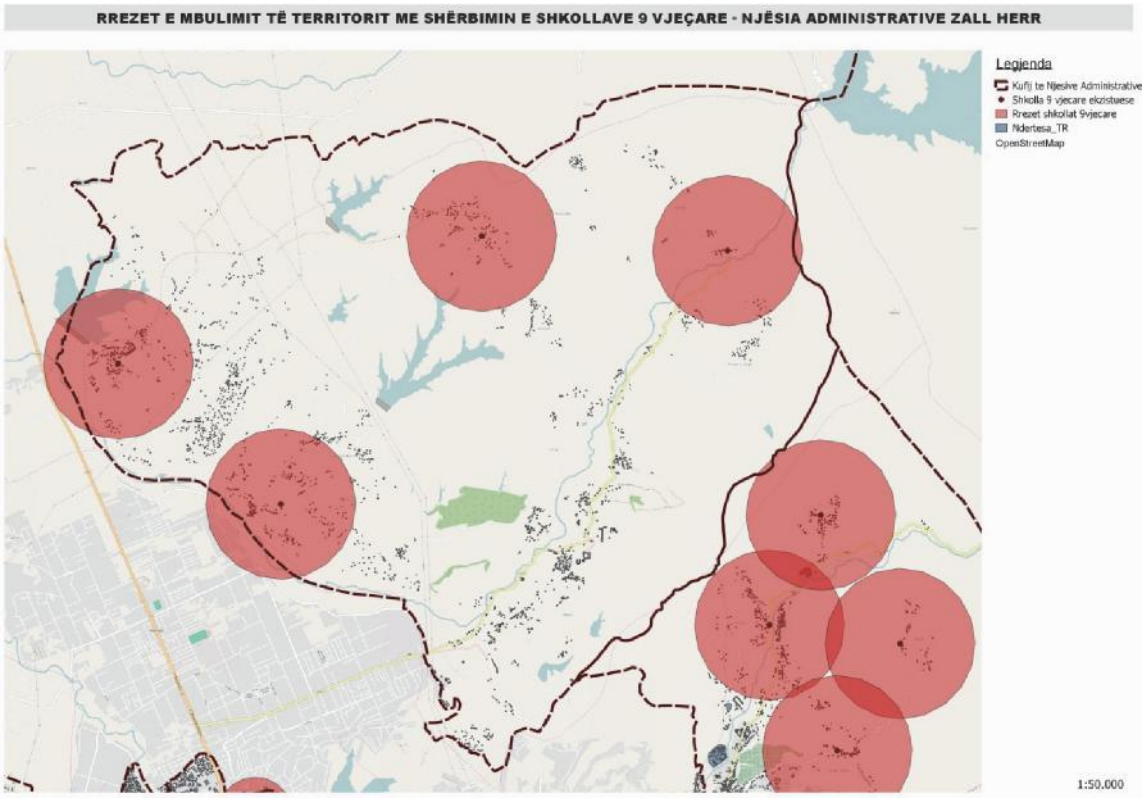
Map 35 - Territory Coverage Range with nine-year schools service - AU Zall Bastar



Administrative Unit of Zall Herr

This administrative unit counts a total of 1967 resident students and 1944 attending students of nie-year schools of this unit. The most over-crowded schools are Dritas, with about 47 students beyond the capacity and Kasalle schools with 100 students over the capacity. Eventhough the number of students over the capacity consists of 2 physical classes, this problematic may be solved through rehabilitation in existing schools, through a future project focused on rehabilitation of education infrastructure by Tirana Municipality.

Map 36 – Territory coverage range with nine-year schools - Zall Herr



Conclusions: After defining the number of students beyond maximal capacity of existing schools, there has been a calculation of the need for new schools aiming to achive the maximal standard of about 30 stn/ physical class. According to this calculation, there is a need for 289 new classes, distributed in administrative units according to current students population. Nevertheless, taking into consideration also the schools under construction (nine-year school in administrative unit 6, at the former textile plant and nine-year school in administrative unit 4, Selaudin Bekteshi), this number is reduced to 243 new necessary classes. Translated into number of schools - in order to meet the need for 243 new classes – there are needed 7 new schools [25]. These schools are envisaged to be built in the Administrative Units where number of students is beyond the capacity to copy with the number of students. In some Administrative Unit, irrespective of the need for construction of new schools, number of new necessary classes is not sufficient for planning a new school. In these cases, over-population problem has been solved through reconstruction interventions in the existing buildings. Regarding the case of Administrative Unit 6, despite the need for increase of capacity in this unit, this need came as a result of lack of sufficient education service in residential zone of Yzberishtit, part of Administrative Unit of Kashar. In this respect, taking into account the poor coverage range of this zone, the necessary schools envisaged for Administrative Unit 6 will be built in Yzberisht.

On the other side, during the evaluation of existing educational infrastructure in the ground, there are noted some considerable residential zones without the service range of nine-year education. These areas are mainly situated in northern part of Tirana Municipality, in concrete in northern part of units 8 and 9. Exactly in this part of the town, through some documents of territory planning (GLP 2013, project for expansion of boulevard by Grimshaw Architects, and GLP 2016) is envisaged the Tirana boulevard expansion and encouragement of development of the city in this direction. This means that the zone will be densified and offer beside residential and trade spaces also supporting recreation, education and social spaces. In this respect, in each of these units are identified the suitable sites for construction of two nine-year schools.

Likewise, through analysis of service range of existing nine-year schools, it was made evident that the residential zone near the Botanic Garden and Dry Lake, part of AU Farke, which has a relatively high density, remains uncovered with such service. Taking into account the density of this zone, it is envisaged the construction of a nine-year school in this area. This proposal is based also on the projections of territory planning instruments of this unit that have been in force until the compilation of 2016 draft-GLP.

At the end of this detailed quantitative, qualitative and hartographic analysis, it results that Tirana Municipality needs the **construction of 10 new nine-year schools** to achieve the quality of service specified in the objectives of this study.

25 School size varies from 20-30 clases per schools. In this case, calculation of schools has been calculated based on each case, according to total number of necessary classes for each Administrative Unit

Table 11 – Number of neccessary schools

no	ADMINISTRATIVE UNIT AU)	BALANCE OF EXTRA OF LACKING CLASSES (according to resident students)	NEW SCHOOLS FOR INCREASE OF CAPACITY	NEW SCHOOLS FOR COVERAGE SERVICE RANGE
1	AU 1	-3	0	0
2	AU 2	-62	2	0
3	AU 3	-8	0	0
4	AU 4	0	0	0
5	AU 5	-31	1	0
6	AU 6 (Yzberisht)	-71	2	0
7	AU 7	16	0	0
8	AU 8	33	0	1
9	AU 9	-6	0	1
10	AU 10	10	0	0
11	AU 11	-58	2	0
	URBAN ZONES TIRANA TOTAL	-239	7	2
12	AU DAJT	21	0	0
13	AU FARKE	16	0	1
14	AU VAQARR	12	0	0
15	AU KASHAR	6	0	0
16	AU NDROQ	20	0	0
17	AU PETRELE	30	0	0
18	AU PEZE	20	0	0
19	AU BALDUSHK	22	0	0
20	AU BERZHITE	31	0	0
21	AU KRRABE	11	0	0
22	AU SHENGJERGJ	28	0	0
23	AU ZALL BASTAR	51	0	0
24	AU ZALL HERR	-4	0	0
	RURAL ZONE TIRANA TOTAL	-4	0	1
	TOTAL TIRANA MUNICIPALITY	-243	7	3

3.3.2. Secondary education

Methodology used in this analysis is the same with the methodology explained above for the nine-year education level. During the drafting of this analysis were take into review 30 high schools in Tirana Municipality, including united high schools. The secondary schools taken under this preliminary review do not include schools with special teaching curricula, such as different vocational schools.

During the analysis, there were taken under consideration two key elements: existing capacity of education infrastructures and their distribution on the ground.

Same as nine-year cycle, analysis of existing capacity of educational infrastructure was carried out by addressing two key elements. **First element,** deals with existing capacity of education infrastructure to serve students attending these infrastructure. Number of necessary classes to meet the capacity of education infrastructure according to their current attendance is 81, distributed in over-populated units, i.e. Units 2, 5 and 9. Detailed data have been presented in the table below and Annex 2.

Table 12 – Existing capacity of high school education toward number of attending students

NO	ADMINISTRATIVE UNIT (AU)	NO ST.	TEACHING CLASS	ST/CL	PHYSICAL CLASS	UNEXPLITED CLASSES	ST/CL PHYSICAL	ST. IF AVERAGE IS 30 ST/CL	BALANCE OF EXTRA ST (according to attendees)	BALANCE OF EXTRA OR LACKING CLASSES (according to attendee
1	AU1	360	11	32.7	15	0	24.0	450	90	3
2	AU2	2249	61	36.9	45	1	50.0	1350	-899	-30
3	AU3	1048	33	31.8	35	2	29.9	1050	2	0
4	AU4	392	16	24.5	26	10	15.1	780	388	13
5	AU5	2229	66	33.8	64	0	34.8	1920	-309	-10
6	AU6	1107	33	33.5	33	1	33.5	990	-117	-4
7	AU7	604	18	33.6	16	0	37.8	480	-124	-4
8	AU8	855	27	31.7	27	0	31.7	810	-45	-2
9	AU9	2235	68	32.9	48	1	46.6	1440	-795	-27
10	AU10	1201	39	30.8	39	0	30.8	1170	-31	-1
11	AU11	575	19	30.3	23	3	25.0	690	115	4
	URBAN ZONES TIRANA TOTAL	12855	391	32.9	371	18	34.6	11130	-2320	-77
12	AU DAJT	320	15	21.3	15	2	21.3	450	130	4
13	AU FARKË	605	25	24.2	18	0	33.6	540	-65	-2
14	AU VAQARR	440	18	24.4	18	0	24.4	540	100	3
15	AU KASHAR	1024	42	24.4	36	2	28.4	1080	56	2
16	AU NDROQ	270	11	24.55	11	0	24.55	330	60	2

17	AU PEZË	186	12	15.5	9	0	20.7	270	84	3
18	AU PETRELË	302	10	30.2	11	0	27.45	330	28	1
19	AU BALDUSHK	321	13	24.7	13	0	24.7	390	69	2
20	AU BERZHITË	381	26	14.7	29	0	13.1	870	489	16
21	AU KRRABË	370	18	20.6	19	1	19.5	570	200	7
22	AU SHËNGJERGJ	198	11	18.0	15	0	13.2	450	252	8
23	AU ZALL BASTAR	248	15	16.5	15	0	16.5	450	202	7
24	AU ZALL HERR	1000	32	31.25	32	1	31.25	960	-40	-1
	RURAL TIRANA TOTAL	5665	248	23	241	6	23.51	7230	-105	-4
	TOTAL TIRANA	18520	639	29	612	24	30.3	18360	-2425	-81

Same as nine-year schools, even in secondary school over-population of some schools is a problem as a result of the attendance of students arriving form out units, which deals with the **second issue addressed** in the framework of the analysis of existing capacities. Article 14 of Normative Provisions for Pre-University Education System, item 1 clearly states *"School headmaster shall not register any students from zones that do not belong to the school because a) favour creation of classes with a number of students beyond the norm defined in the Minister's guideline: b) there are no sufficient teachers for opening of new classes*". Nevertheless, this phenomenom continuous. In this respect, according to Methodology of Study, the analysis is focused on identification of need for new educational infrastructure in each administrative unit, where each of the students attends one of the respective schools in the administrative unit where he lives.

According to this approach, total number of necessary classes to meet the education infrastructure capacity according to number of resident students for each Administrative Unit for secondary system is 96, which shall be envisaged mainly in the over-crowed Administrative Units as Unit 2, 6, 7 and 11. More detailed data are presented in the table below and Annex 2.

Table 13 – Existing capacity of education infrastructure of higher middle education toward students resident in each AU

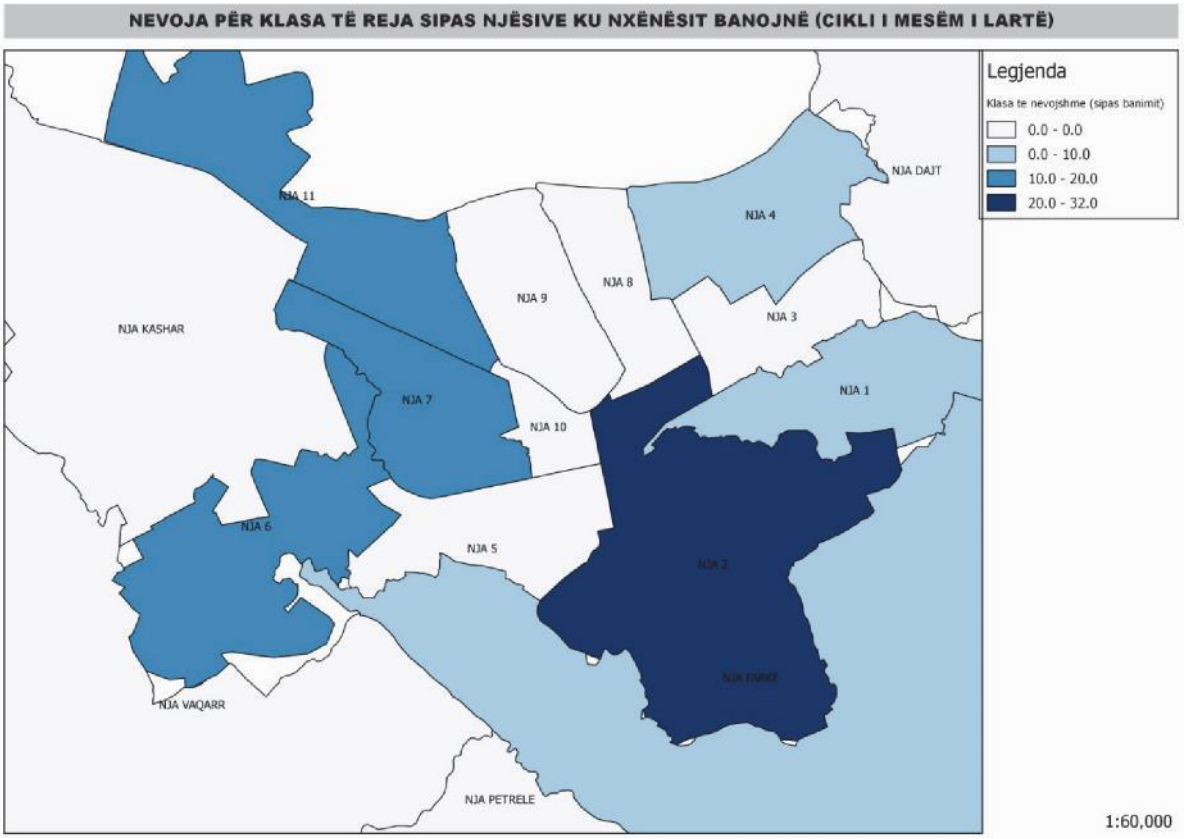
No	ADMINISTRATIVE UNIT (AU)	NO STUDENTS	PHYSICAL CLASSES	UNEXPLOITED CLASSES	ST/CL PHYSICAL	ST IF AVERAGE IS 30 ST/CL	BALANCE FOR EXTRA ST (according to st resident	BALANCE OF EXTR OR LACKING SCHOOLS (according to st resident)
1	AU 1	360	15	0	24.0	450	-72	-2
2	AU 2	2249	45	1	50.0	1350	-971	-32

3	AU 3	1048	35	2	29.9	1050	222	7
4	AU 4	392	26	10	15.1	780	-36	-1
5	AU 5	2229	64	0	34.8	1920	575	19
6	AU6	1107	33	1	33.5	990	-528	-18
7	AU7	604	16	0	37.8	480	-532	-18
8	AU8	855	27	0	31.7	810	280	9
9	AU9	2235	48	1	46.6	1440	451	15
10	AU10	1201	39	0	30.8	1170	788	26
11	AU11	575	23	3	25.0	690	-587	-20
	URBAN ZONES TIRANA TOTAL	12855	371	18	34.6	11130	-2726	-91
12	AU DAJT	320	15	2	21.3	450	14	0
13	AU FARKË	605	18	0	33.6	540	-106	-4
14	AU VAQARR	440	18	0	24.4	540	30	1
15	AU KASHAR	1024	36	2	28.4	1080	242	8
16	AU NDROQ	270	11	0	24.55	330	128	4
17	AU PEZË	186	9	0	20.7	270	61	2
18	AU PETRELË	302	11	0	27.45	330	153	5
19	AU BALDUSHK	321	13	0	24.7	390	65	2
20	AU BERZHITË	381	29	0	13.1	870	432	14
21	AU KRRABË	370	19	1	19.5	570	201	7
22	AU SHËNGJERGJ	198	15	0	13.2	450	23	1
23	AU ZALL BASTAR	248	15	0	16.5	450	163	5
24	AU ZALL HERR	1000	32	1	31.25	960	-49	-2
	RURAL ZONES TOTAL	5665	241	6	23.51	7230	-155	-5
	TOTAL TIRANA MUNICIPALITY	18520	612	24	30.26	18360	-2881	-96

As noted from the results of the above-mentioned analysis, the total number of necessary classes in both cases is similar, but the distribution of needs on the ground changes. Maps 37 and 38 indicate the change of need for new classes on the the cground according to both approaches of the analysis.

This means that if the intervention with new education infrastructure is done taking into account the administrative unit with a high inflow of students, who do not live in this units, then a considerable number of new classes must be envisaged for Administrative Units 2 and 9. On the other side, if the intervention with new education infrastructure is done taking into account the administrative units with an increased population of students attending high schools, then the intervention must be focused on the Administrative Units that do not have a sufficient educational infrastructure and do not serve the number of students in them, eg. units 2, 6, 7 and 11. Table 14 clearly shows the difference between the number of resident students and attending students of schools in each Administrative Unit.

Map 37 – Need for new classes according to units where students attend school (higher middle education)



Map 38 – Need for new classes according to units where students live (higher education cycle)

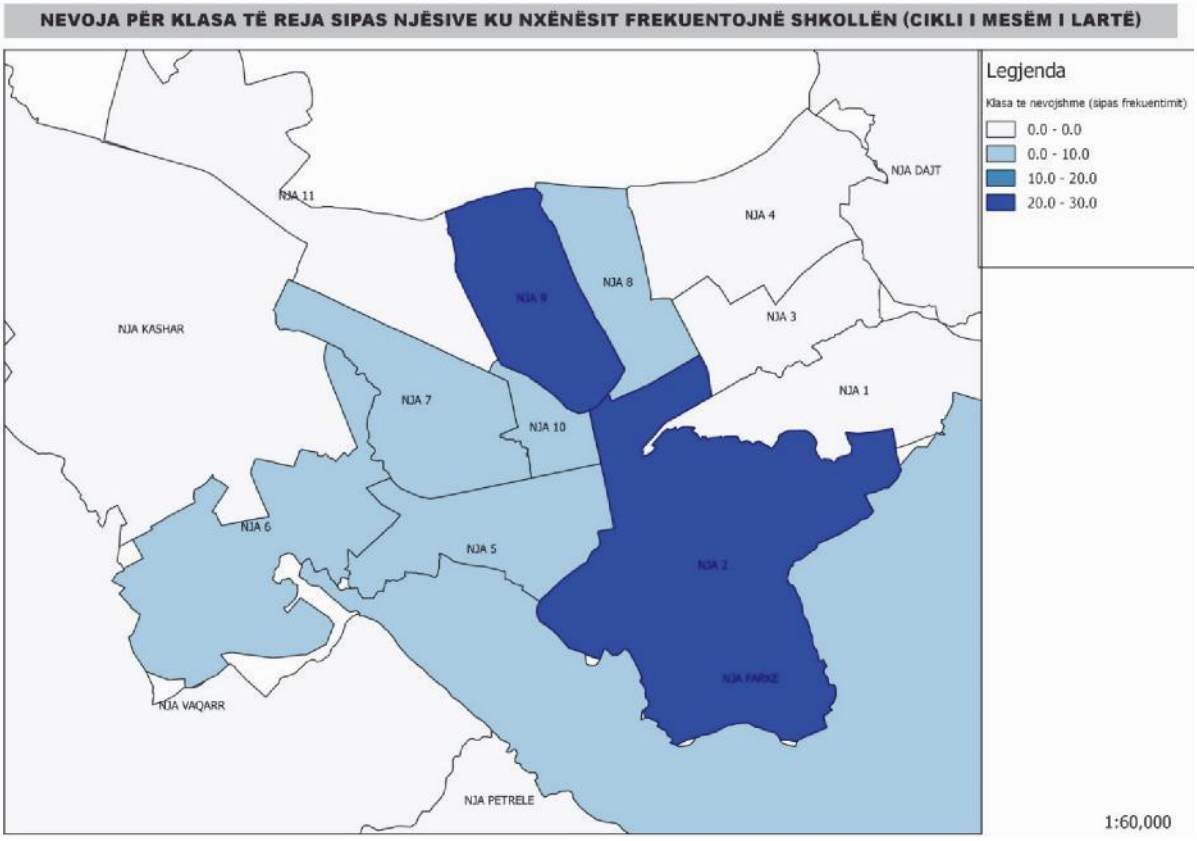
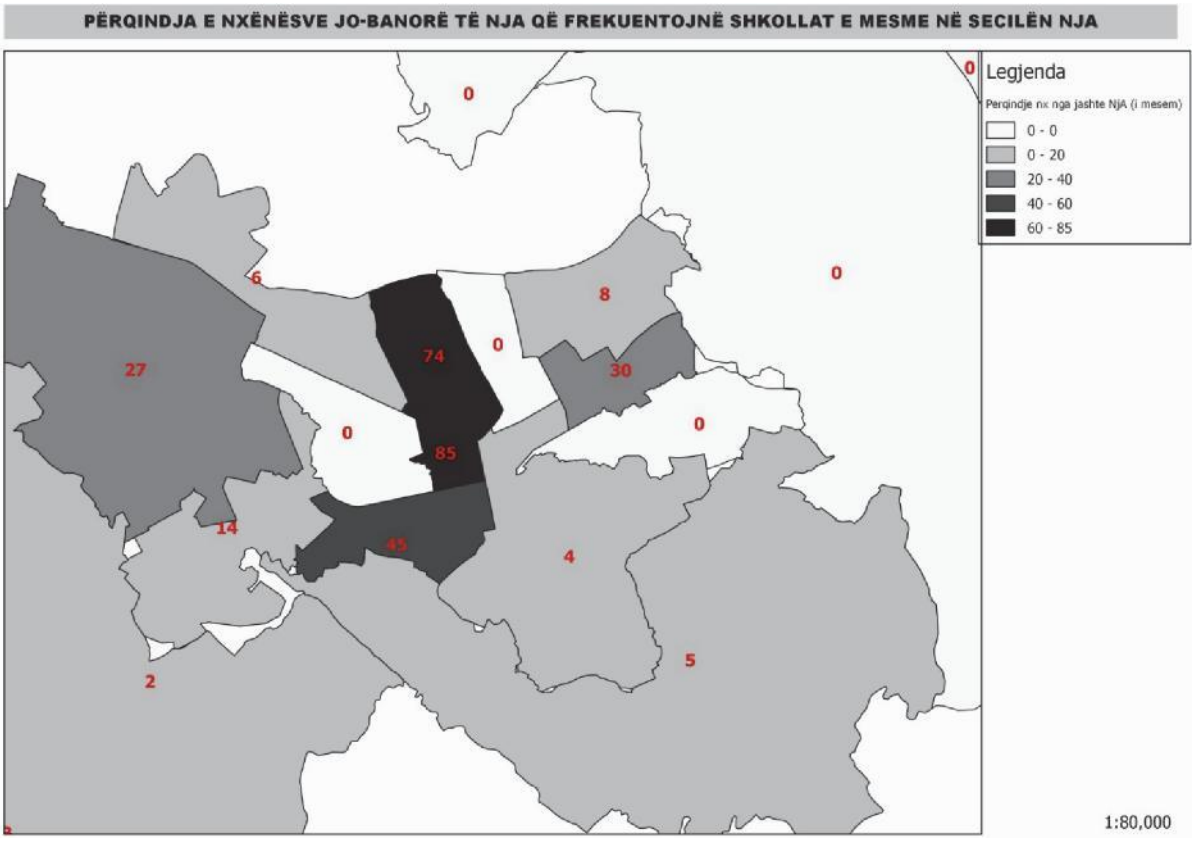


Table 14 – Location of students and Administrative Uni where they attend school (high school cycle)

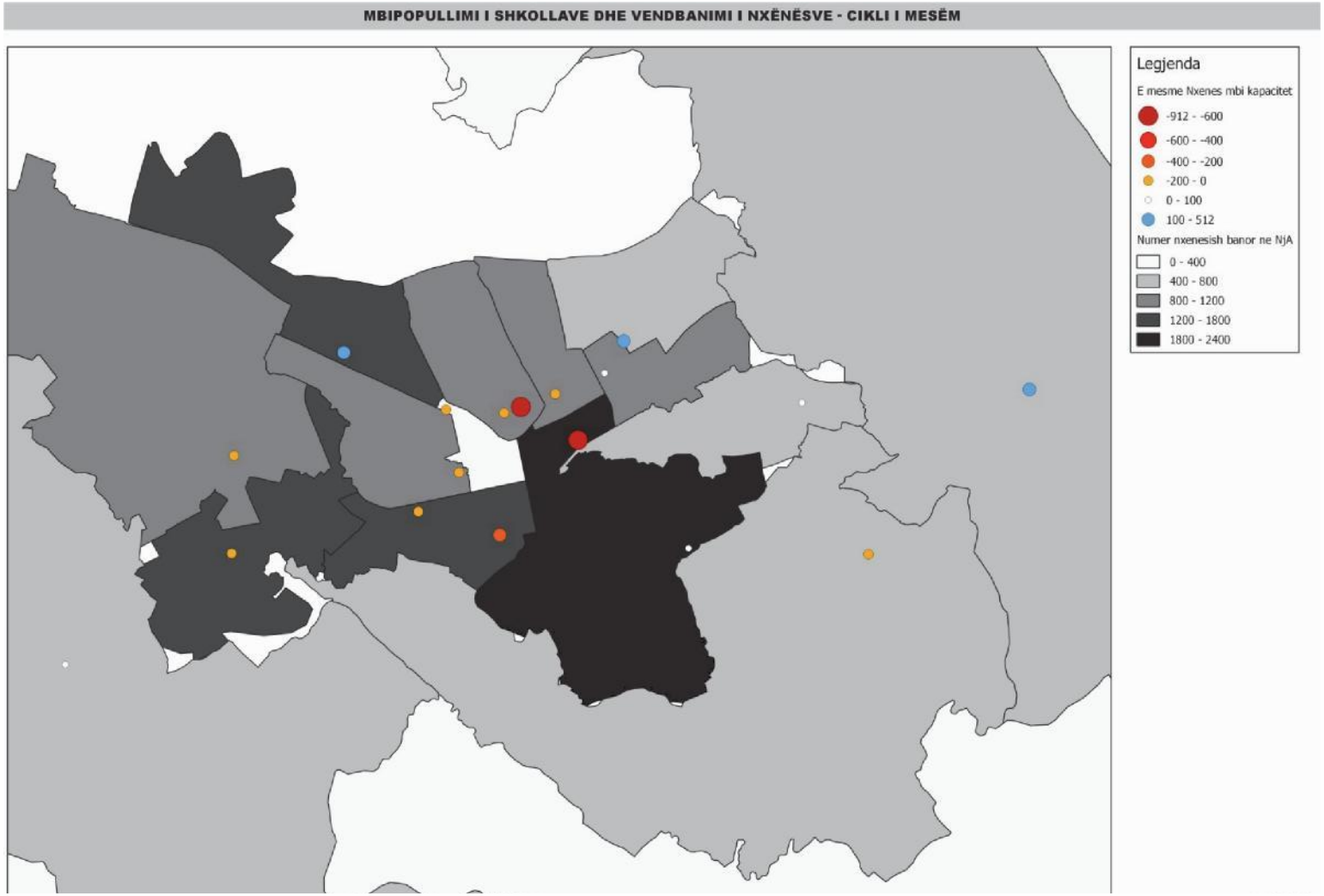
	NJESIA KU FREKUENTOJNE SHKOLLEN																										
NJESIA ADMINISTRATIVE	NJA1	NJA2	NJA3	NJA4	NJA5	NJA6	NJA7	NJA8	NJA9	NJA10	NJA11	NJA DAJT	NJA FAKRE	NJA VAQARR	NJA KASHAR	NJA NDROQ	NJA PEZE	NJA PETRELE	NJA BALDUS	NJA BERZHITE	NJA KRRABE	NJA SHENGJE	NJA ZALL	NJA ZALL HERR	TOTAL	TOTAL JASHTE NJESISE	%
NJESIA ADM 1 NJESIA	349	23	0		4	3			6	9			2		2										1	7	3%
NJESIA ADM 3 NJESIA		2	3	360	2	6			5	6	6				7		1								2	9	1%
NJESIA ADM 5 NJESIA		3			1217	8			7	3	6			7	2		3								5	8	9%
NJESIA ADM 7 NJESIA		1			5	7	422	855	0	6	5				5										12	9	53%
NJESIA ADM 9 NJESIA		1			6	2			3	0	6				3										9	8	4%
NJESIA ADM 11 NJA DAJT			42	31	8	2			6	317	542	320			8										2	6	5%
FARKE NJA		39			22	60			10				574	431	1		1								6	7	1%
KASHAR NJA					10	9			42	6	6				8		1								8	93	11.1%
NJAPEZE						15								2	1		180								208	28	13.5%
BALDUSHK NJA		1			1					1					3				321	456	5				3	4	2%
NJA KRRABE			31																		369	198			0	0	0%
NJA ZALL BASTAR NJA ZALL HERR									7	1	6												280		287	7	2.4%
TOTAL	0	73	312	31	8	152	0	0	18	15	33	0	30	9	281	0	6	0	0	0	5	0	0	0			

The over-population of schools as a result of attendance of students who do not live in the administrative units where these schools are located is clearly shown in the maps below. Map a 39 shows the percentage of attending students in each Administrative Units who are not inhabitants of that unit. As noted, Units 3, 5, 9, 10 and Kashar are units with over-crowded high schools with students who are not inhabitants of these units. The same phenomenon is indicated in Map 40. This map shows the over-population level of high schools with the help of size and color of circles (red circles show most over-crowded schools). In the mean time, this information is compared also with the number of students resident in each Administrative Unit. According to the map, the over-population of school does not always coincide with Administrative Units with biggest number of resident students. This happens exactly because of the reason mentioned above – attendance of schools by students living in neighbour units. These students travel each day to these schools from their residence further than the standard envisaged for high schools education, which is 1000 m in aerial distance for urban areas. An intervention with new education infrastructure in these Administrative Units would not solve this problem. Therefore, it is better to project new education infrastructure taking into consideration the number of resident students for each Administrative Unit and distribution on the ground of existing schools and coverage range with respective services.

Map 39 – Percentage of attending students non-resident / resident for each AU



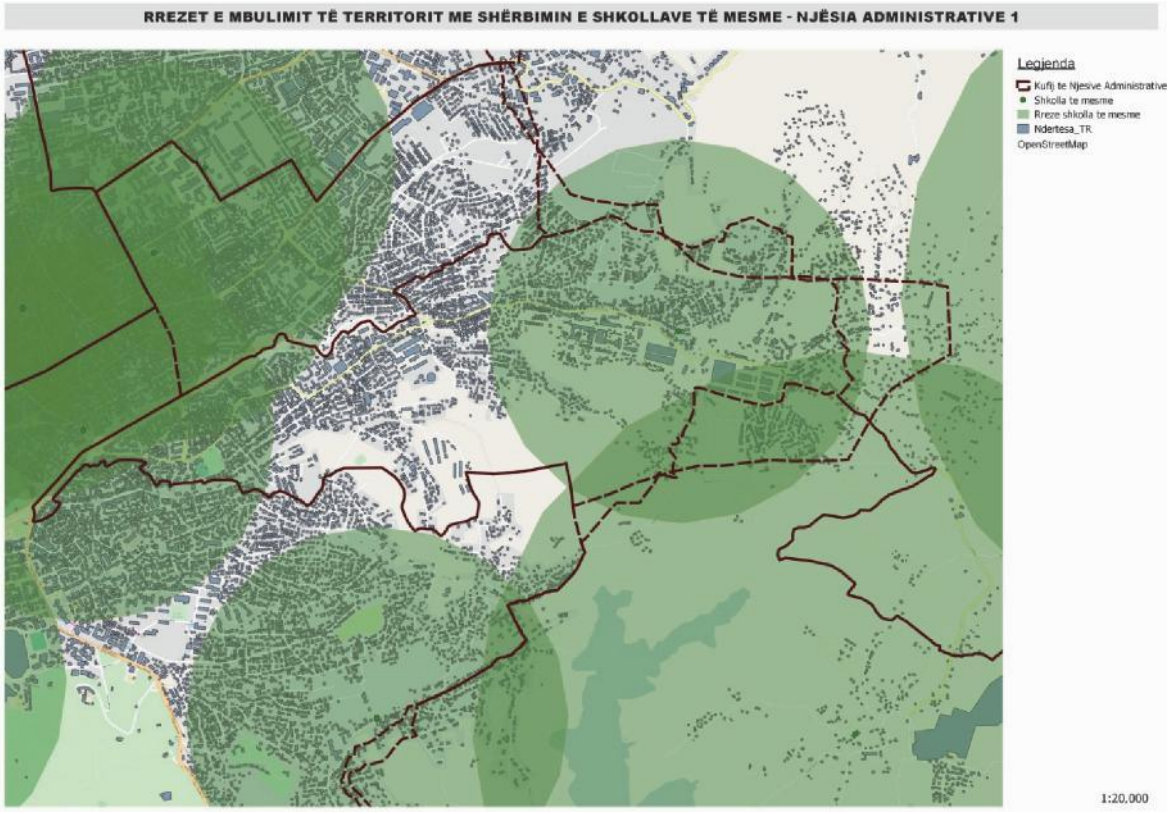
Map 40 – Over-population of schools and residence of students – high school education (Note : negative values show the number beyond capacity each school)



Administrative Unit 1

This Administrative Unit counts a total of 522 resident students and 300 attending students of this unit. The only high school of this unit - "Avdulla Keta" has an everage of about 24 students/ physical class. About 100 resident students in this unit attend schools of Unit 5 and 9 ("P.Nini Luarasi", "Besnik Sykja", "Sami Frashëri" and "Sinan Tafaj"). Regarding coverage service range, we may say that some zones of this unit remain out of the coverage range, as indicated below:

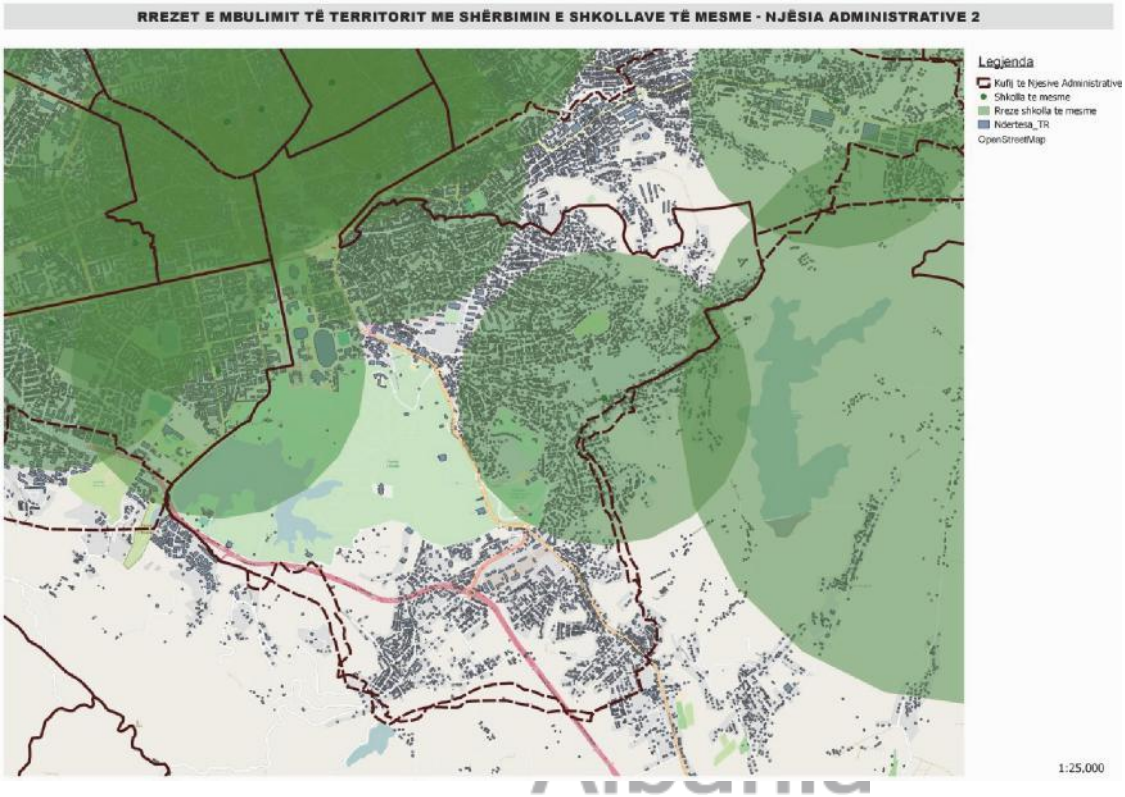
Map 41 – Territory Coverage range with high schools - AU 1



Administrative Unit 2

This administrative unit counts a total of 2321 resident students and 2249 attending students of high schools in this unit. “Ismail Qemali” high school has about 900 students over the accommodation capacity, whereas “Sandër Prosi” is within the capacities. The unit has a good service range indicated in the following map:

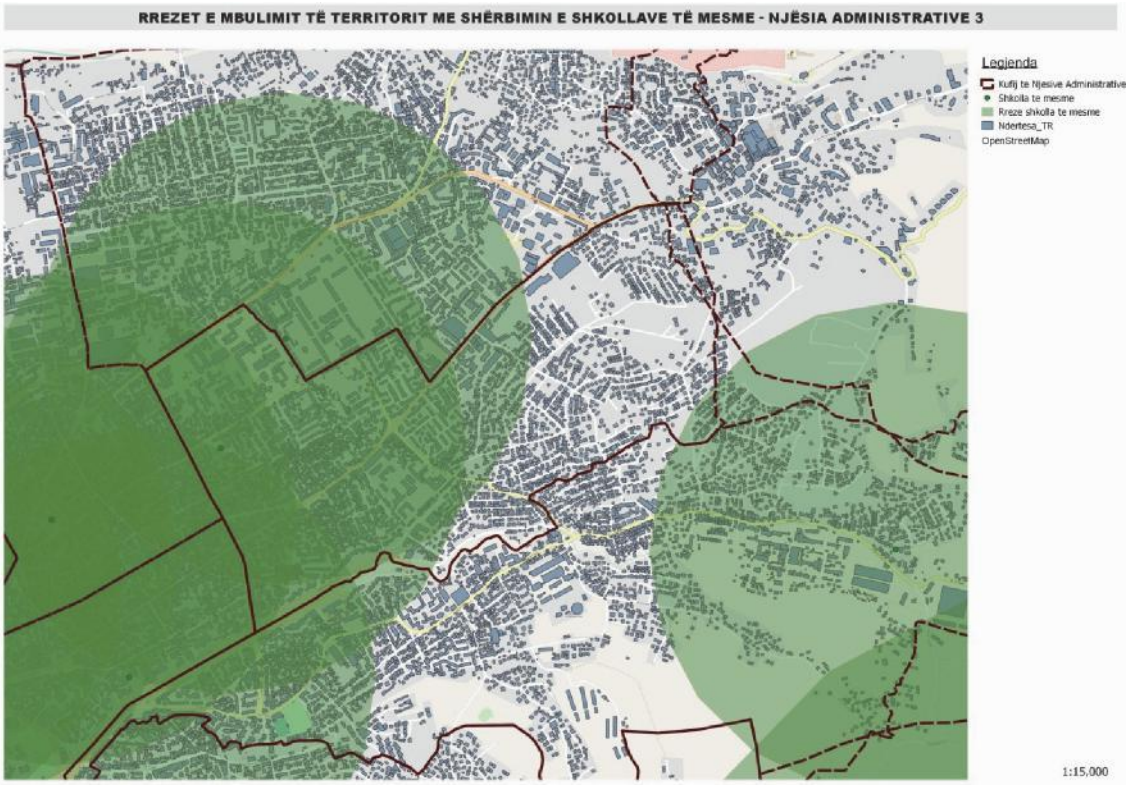
Map 42 – Territory coverage range with high schools -AU 2



Administrative Unit 3

This administrative unit has a total of 828 resident students and 1048 attending students of high school of this unit. “Andon Zako Çajupi” has an attendance within the capacities for accommodation of students. Regarding service range coverage, this unit is well-covered:

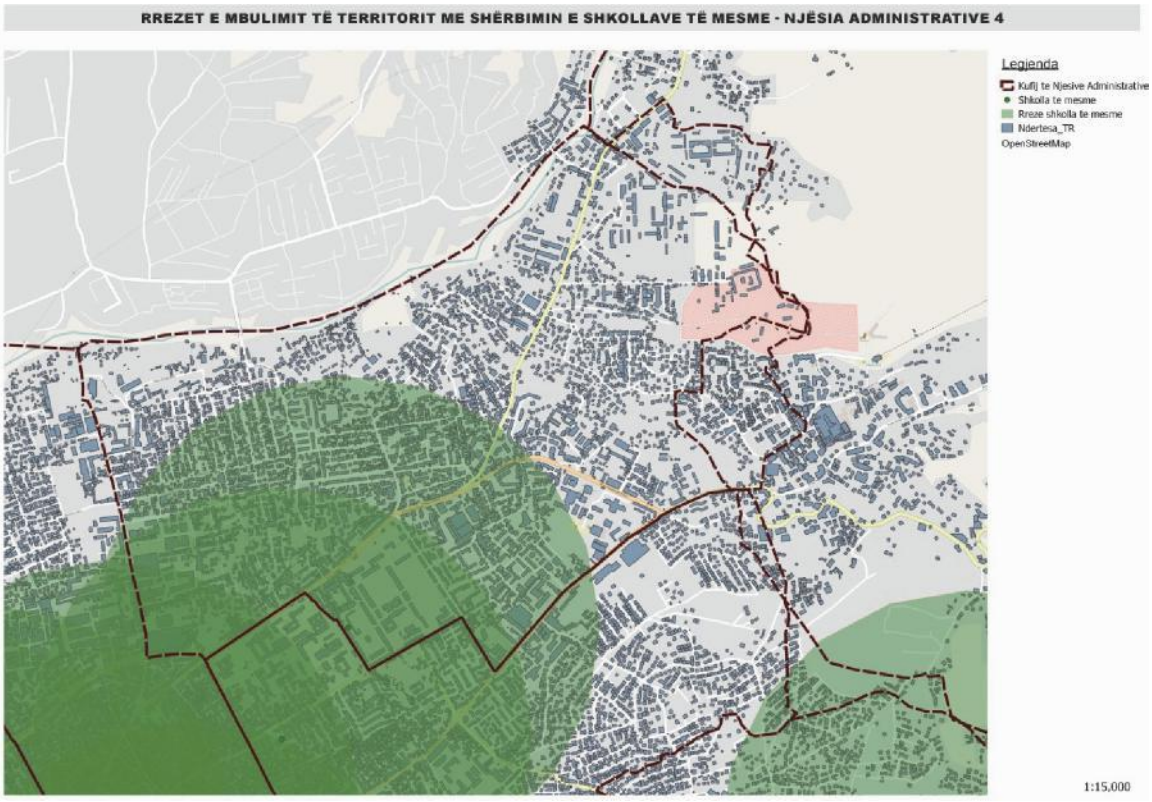
Map 43 – Territory coverage range with high schools - AU 3



Administrative Unit 4

This Administrative Unit counts a total of 815 resident students and 392 attending students of the high school in this unit - "Eqerem Çabej". This school is used at almost 50% of its capacity to accommodate students, whereas about 200 resident students of this unit attend high schools in Administrative Unit 9, in particular "Sami Frashëri" school. A part of the unit remains uncovered by the high schools service range, indicated in the following map:

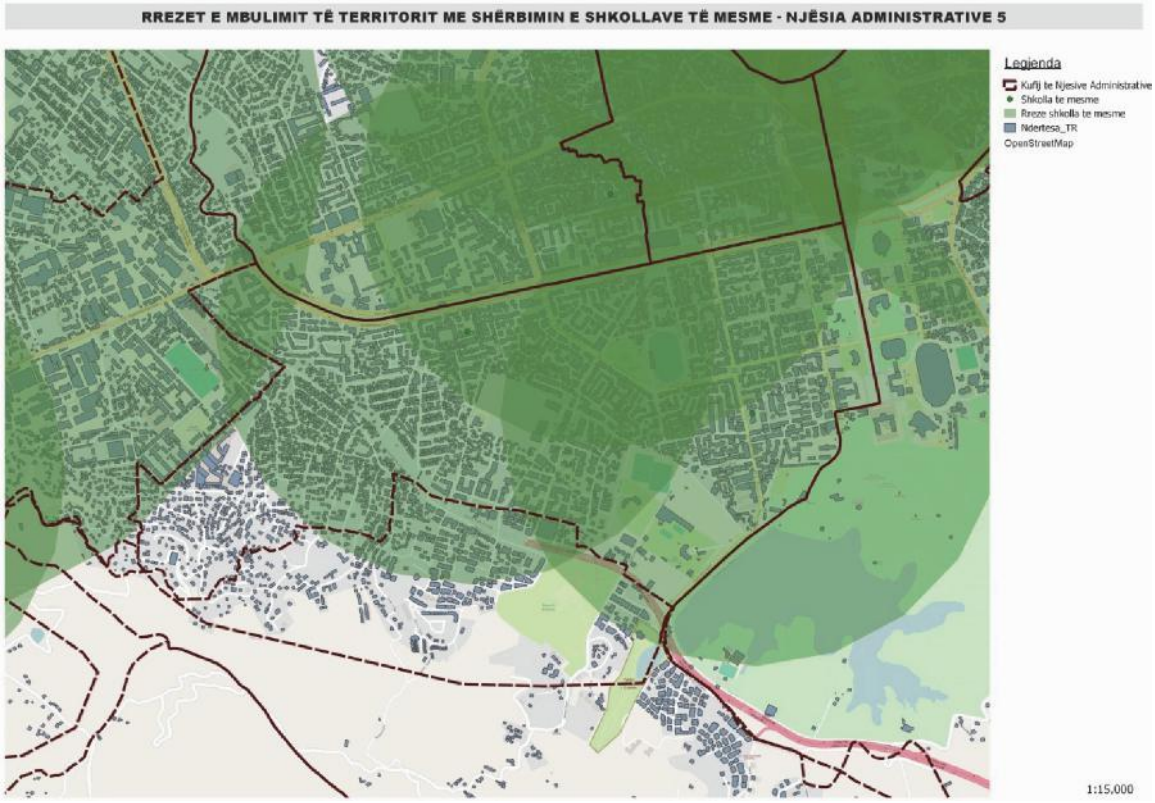
Map 44- Territory Coverage Range of high schools in - AU 4



Administrative Unit 5

This administrative unit counts a total of 1345 resident students and 2229 attending students of the high schools in this unit. “Petro Nini Luarasi” high school accommodates 300 students beyond its infrastructure capacity, whereas “Besnik Sykja” high school has an average of 31 students/physical class. The unit is well-covered with service range :

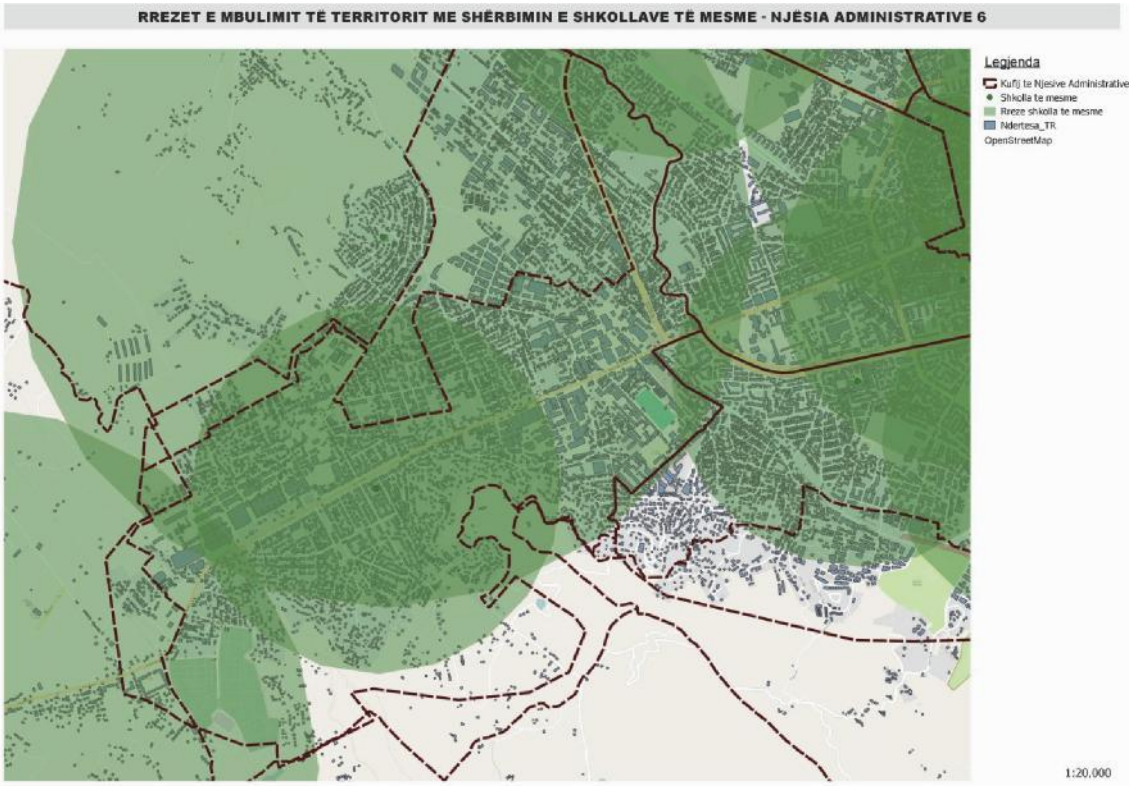
Map 45 – Territory coverage range with high school s -AU 5



Administrative Unit 6

This administrative unit has a total of 1517 resident students and 1107 attending students of "Myslym Keta" high school, which counts about 120 students beyond the accommodation capacity. Meanwhile, about 300 resident inhabitants of this unit attend high schools in unit 5, in particular "Besnik Sykja" school, and about 100 high school students of this unit attend high schools in administrative unit 9. Regarding coverage range, the residential zone alon the ring road remains uncovered by this range, as indicated in the following map :

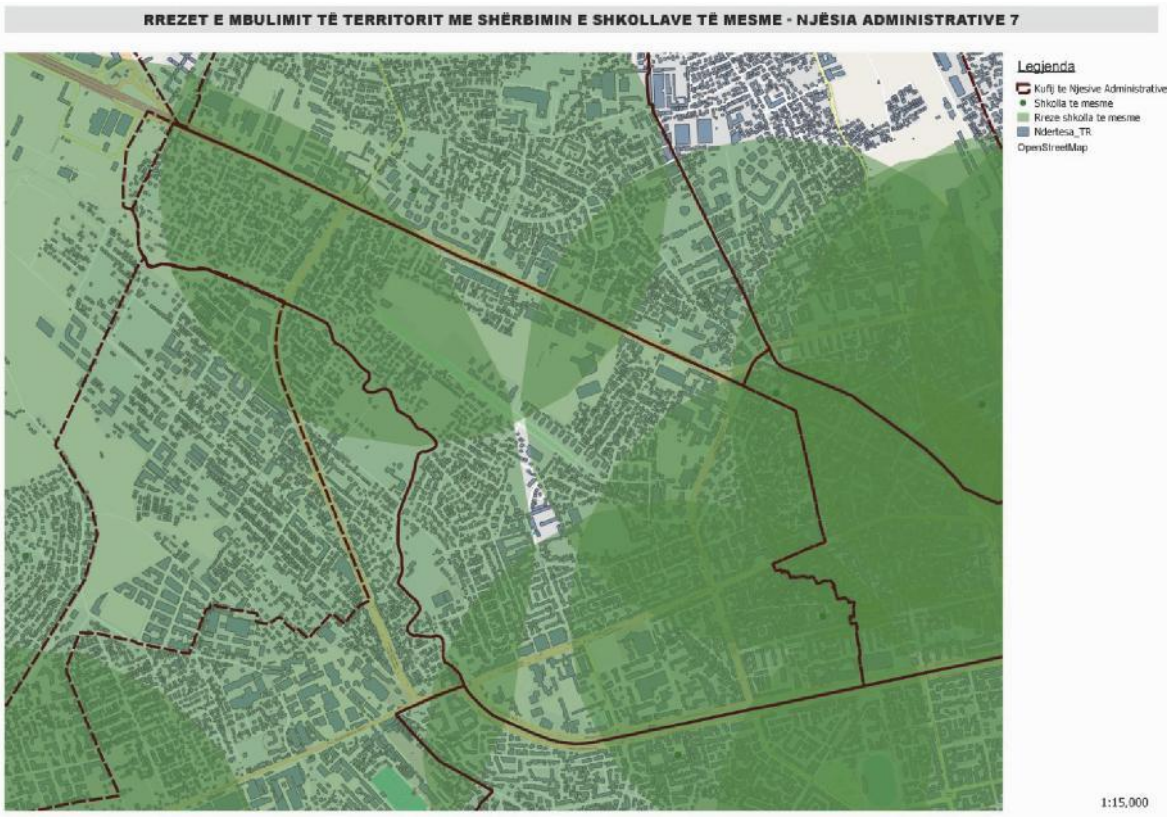
Map 46 – Territory coverage range with high schools -AU 6



Administrative Unit 7

This Administrative Unit counts of total of 1012 resident students and 604 attending students of "Arben Broci" high school. This school counts about 120 students over the capacity. Over 500 students of this unit attend high schools in administrative units 5, 9 and 10. As indicated in the following map, the zone is not fully covered by the service rage of "Arben Broci" high school:

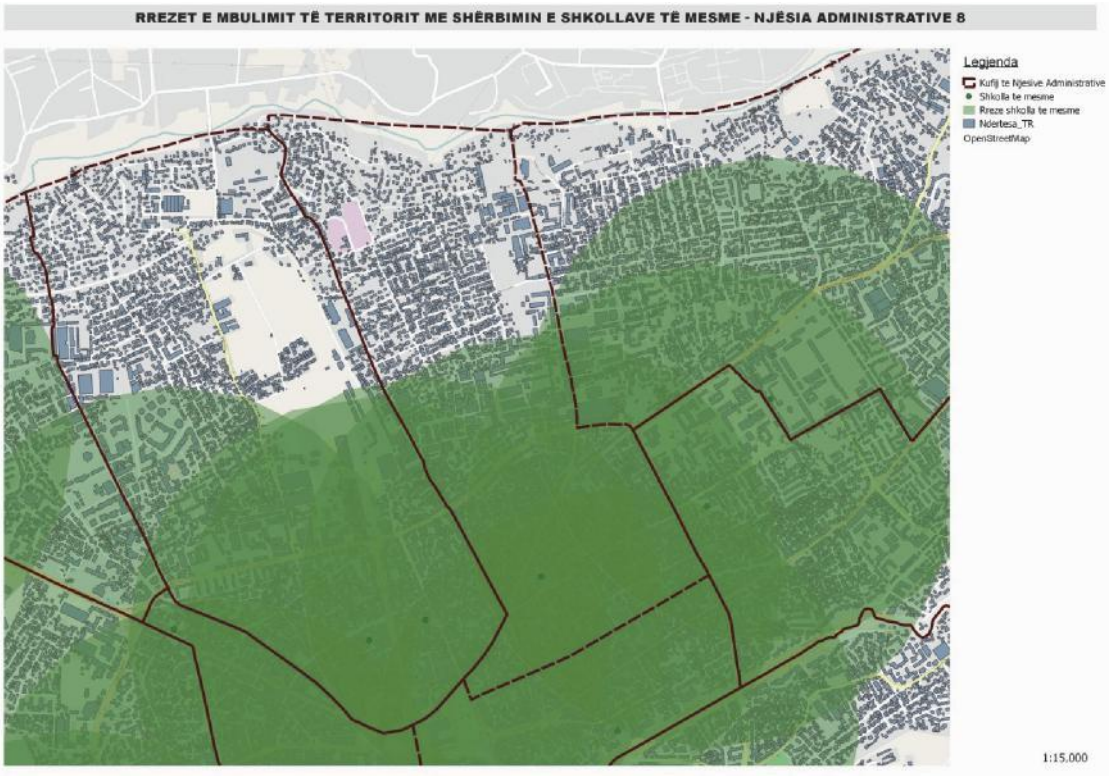
Map 47- Territory coverage range with high schools - AU 7



Administrative Unit 8

This Administrative Unit has a total of 529 resident students and 855 attending students in "Partizani" high school, which is slightly over-populated. About 200 resident students of htis unit attend "Sami Frashëri" and "Sinan Tafaj" schools in unit 9. Almost half of the territory of the administrative unit is not covered by high schools service range.

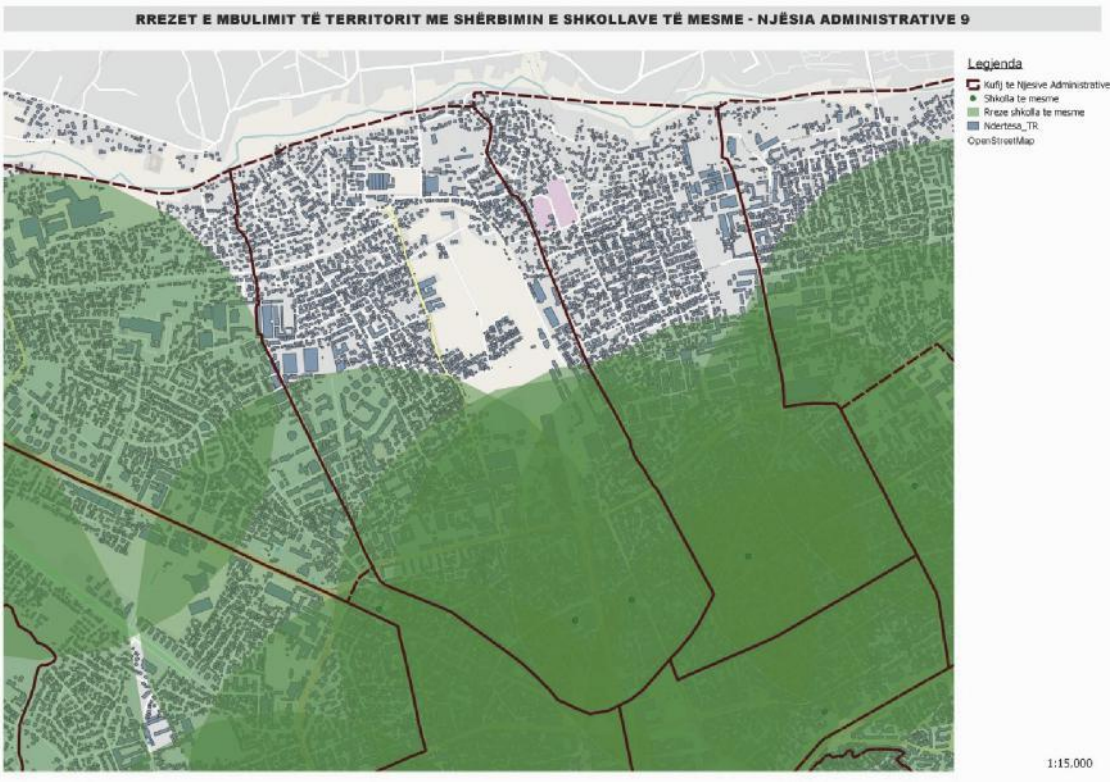
Map **48 – Territory coverage range with high schools - AU 8**



Administrative Unit 9

This administrative unit counts a total of 989 resident students and 2235 attending students of "Sami Frashëri" and "Sinan Tafaj" high schools. "Sami Frashëri" school counts a total of 700 students above the capacity, whereas "Sinan Tafaj" counts about 100 students beyond capacity. Less than 30% of students of these schools are resident of administrative unit 9, which brings back the problematic created due to lack of respect of normative provisions for school attendance based on residential zones. The coverage with service range is indicated in the following map :

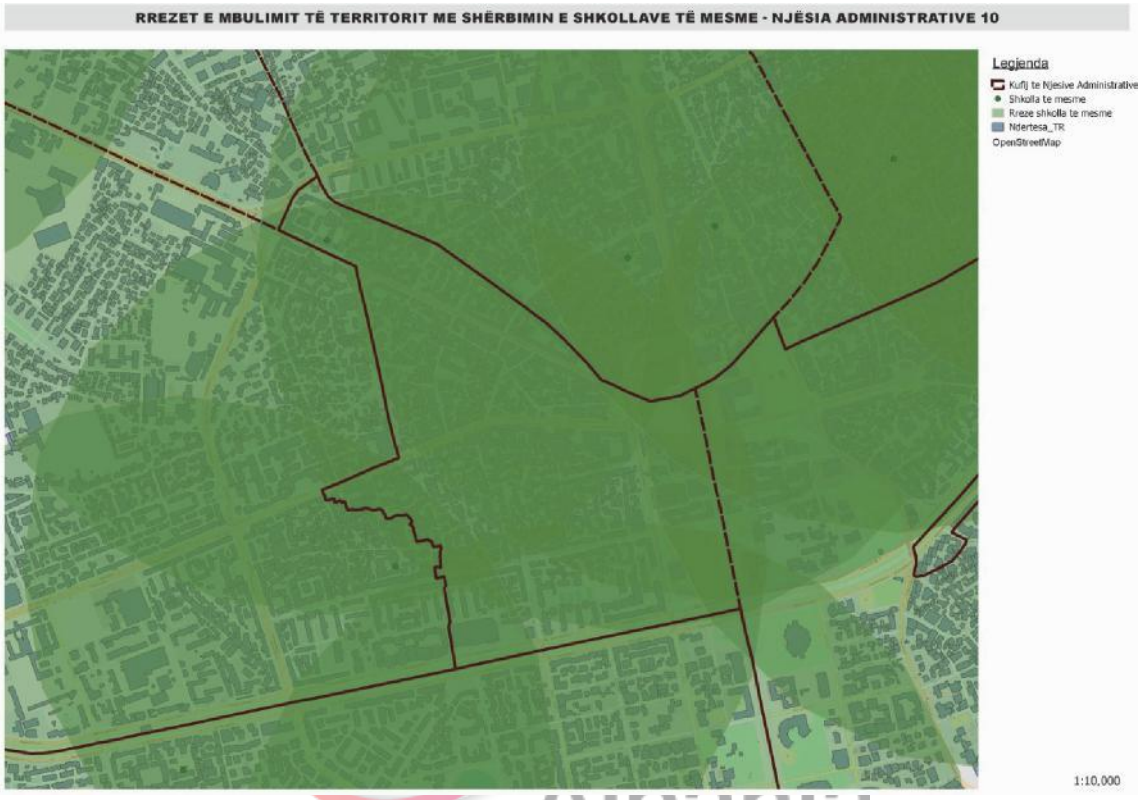
Map 49 – Territory coverage range of high schools - AU 9



Administrative Unit 10

This Administrative Unit counts a total of 381 resident students and 1201 attending students of "Qemal Stafa" high school. This school is not over-populated and the unit has a coverage range as following :

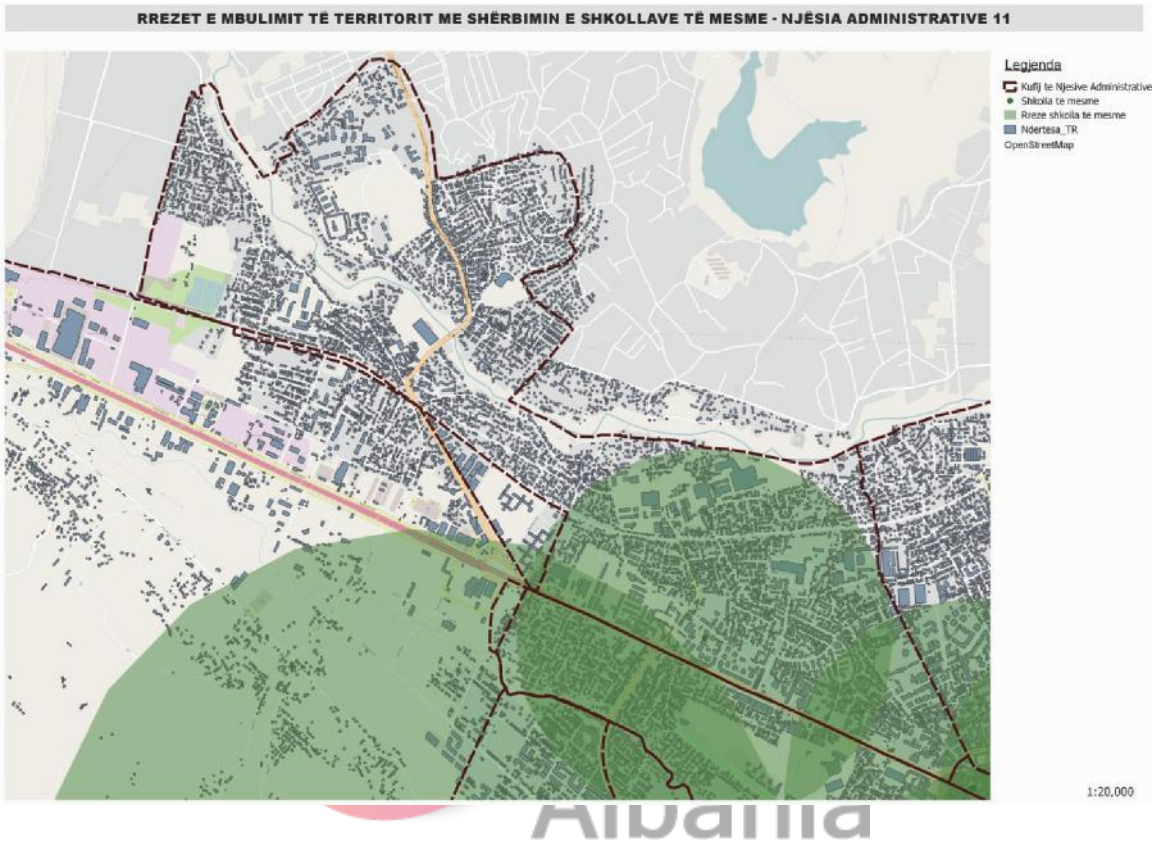
Map 50 – Territory Coverage range with high schools service -AU 10



Administrative Unit 11

This Administrative Unit counts a total of 1277 resident students and 575 attending students of the secondary school "Aleks Buda". Around 300 students of this unit attend schools of Administrative Unit 9. Likewise, the coverage range of the unit is not optimal:

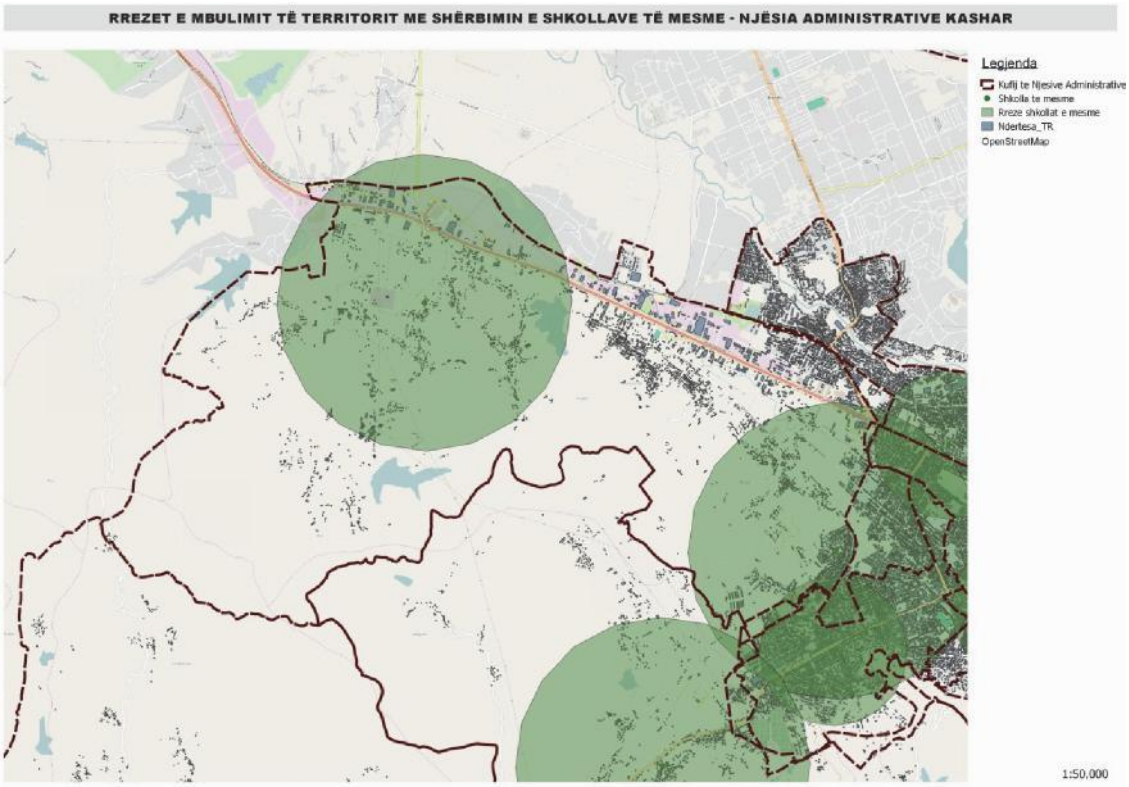
Map 51 – Territory coverage range with high school service -AU 11



Administrative Unit of Kashar

This administrative unit counts of total of 837 resident students and 1024 attending students in the high schools of this unit. “Myslym Shima” has about 150 students beyond capacity. As noted in the following map, eventhough the applied service range for high schools is about 2000m, as envisaged in the regulation of rural zones planning, the residential zone of Yzberisht does not have high school education structures in its vicinity. This newly urbanized area with typological urban features uses high schools of administrative unit 6, causing an over-population of schools in this unit.

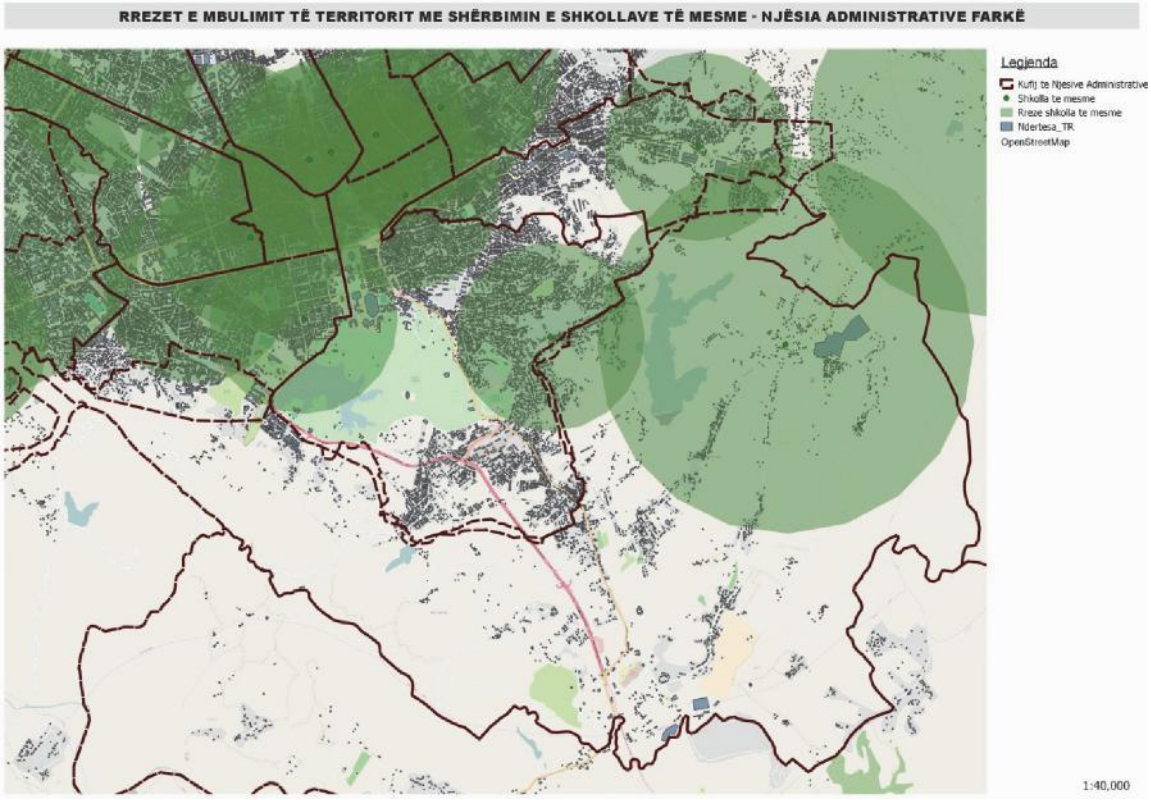
Map 52 – Territory coverage range of high schools – AU Kashar



Administrative Unit of Farke

This Administrative Unit has a total of 646 resident students and 605 attending students of high school education. Secondary school of "Farkë" that operates together with the nine-year schools is lightly over-crowded with about 65 students beyond the capacity. The coverage service range is indicated as following :

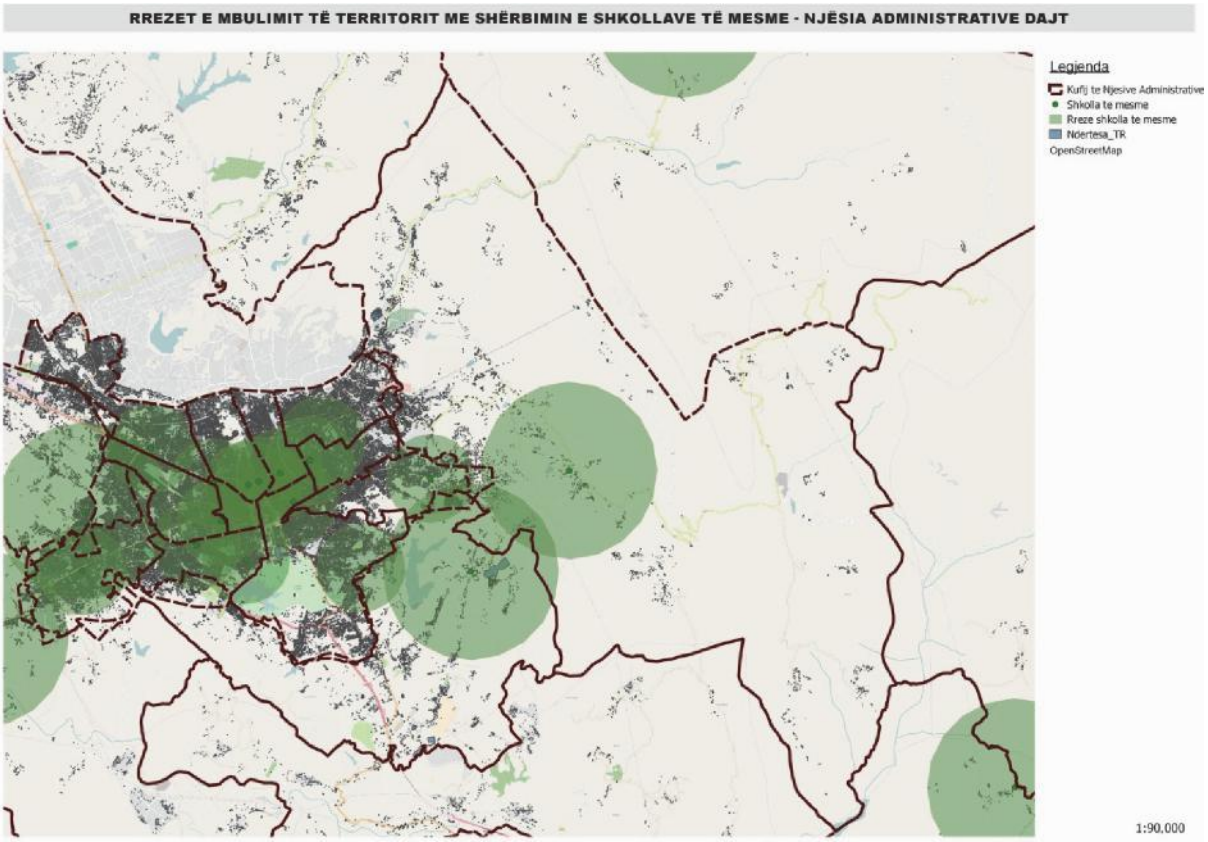
Map 53 – Territory coverage service range of high schools -AU Farke



Administrative Unit of Dajt

This Administrative Unit counts a total of 435 resident students and 320 attending students of high school. As noted in the following map, even though the applying service range of high schools for administrative unit of Dajt is 2000m, as envisaged in the planning regulation of rural areas, this residential zone of Qesaraka does not have secondary schools structures. This zone is now urbanized with urban typological features, therefore it must be carefully assessed during planification of new educational structures.

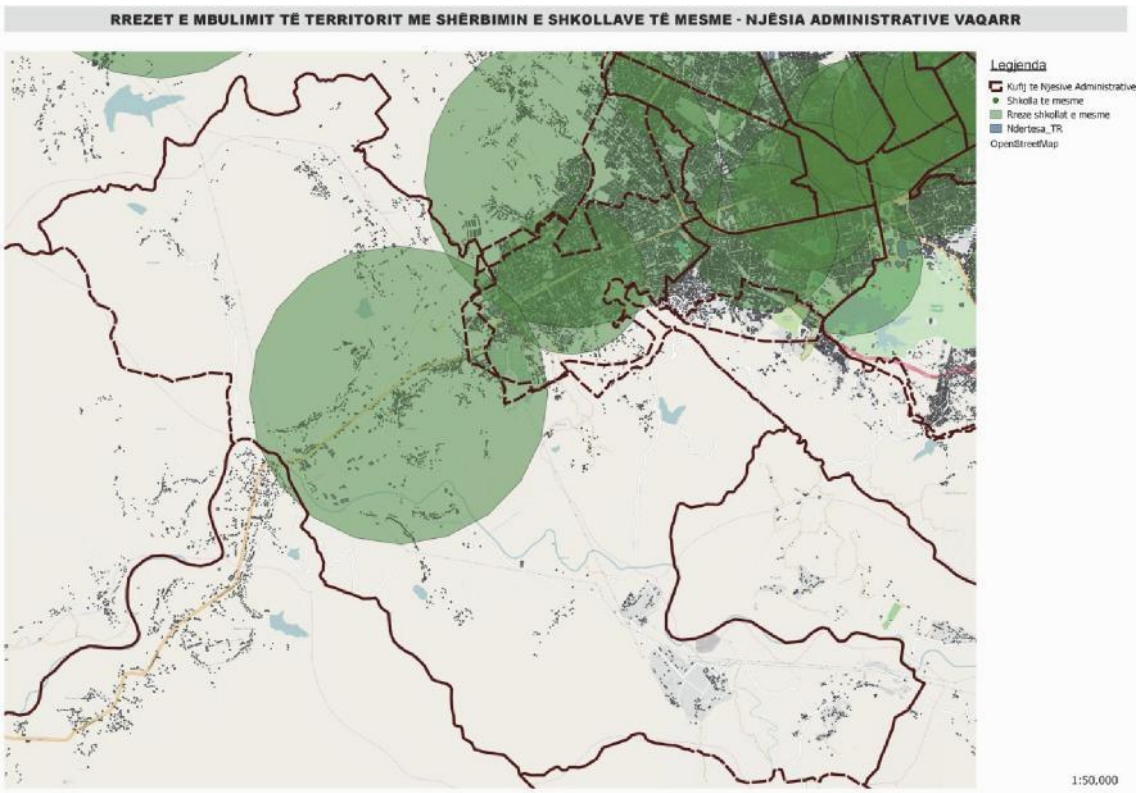
Map 54 – Territory coverage range of high schools - AU Dajt



Administrative Unit of Vaqarr

This administrative unit counts a total of 509 resident students and 440 attending students of high school. This school has an average of about 24.4 students /physical class and does not face any problems with over-population. This unit is covered by a service range as following :

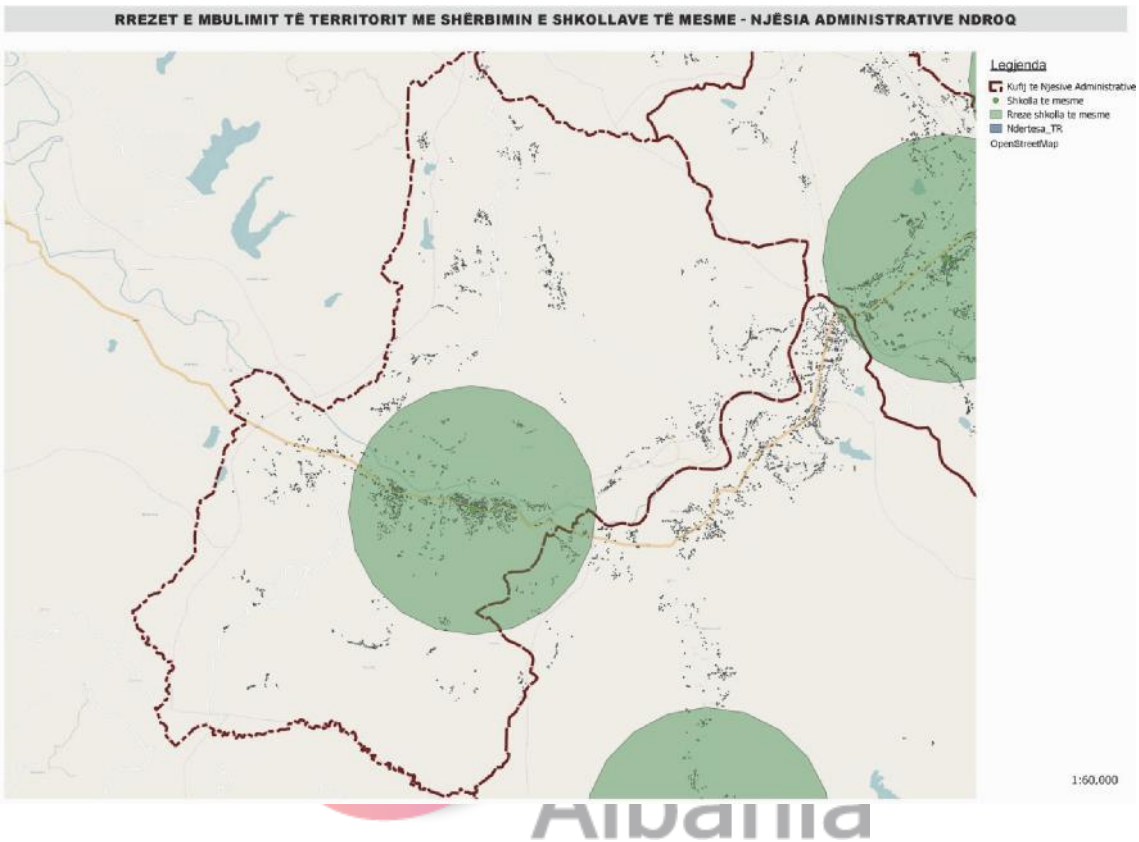
Map 55 – Territory coverage range with high schools - AU Vaqarr



Administrative Unit of Ndroq

This Administrative Unit has a total of 202 resident students and 270 attending students of high school education. This school counts an average of about 24.5 students/physical class and does not face any problem. The coverage service range of this unit is as following:

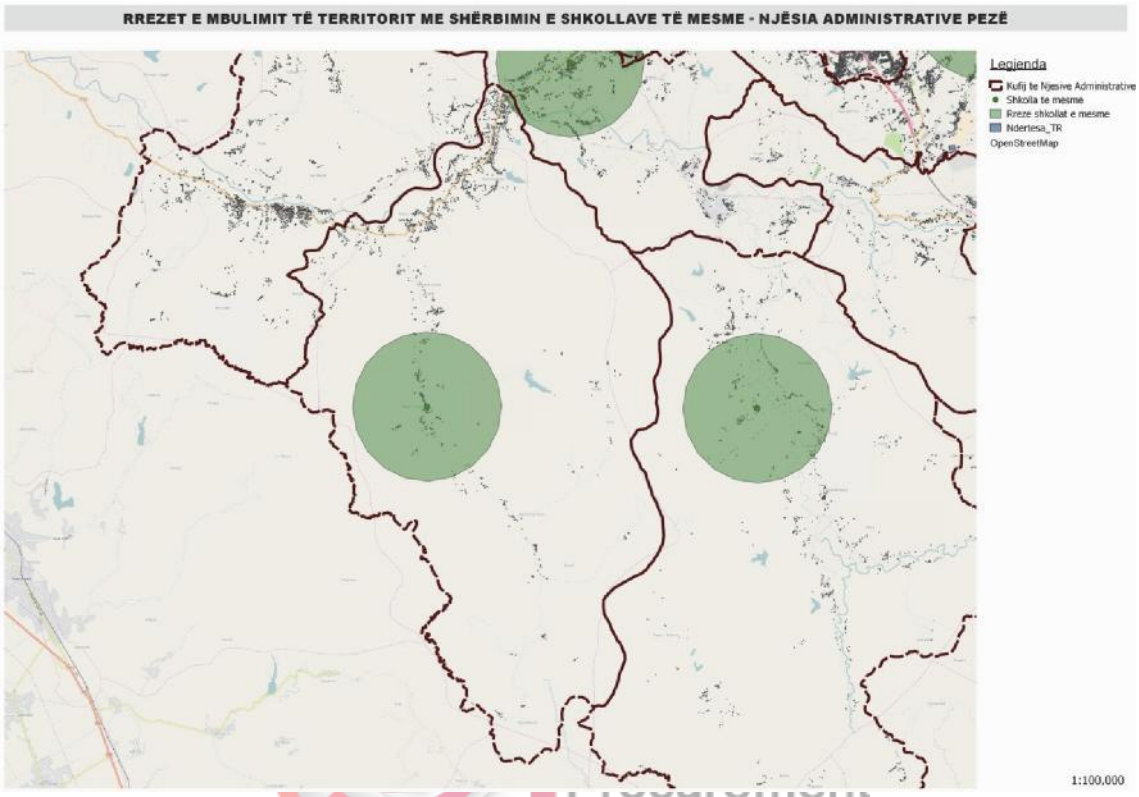
Map 56 – Service Coverage range of territory with highs schools -AU Ndroq



Administrative Unit of Peze

This Administrative Unit counts a total of 208 resident students and 186 attending students of high school education, which currently registers an average of 20.7 students /physical class.

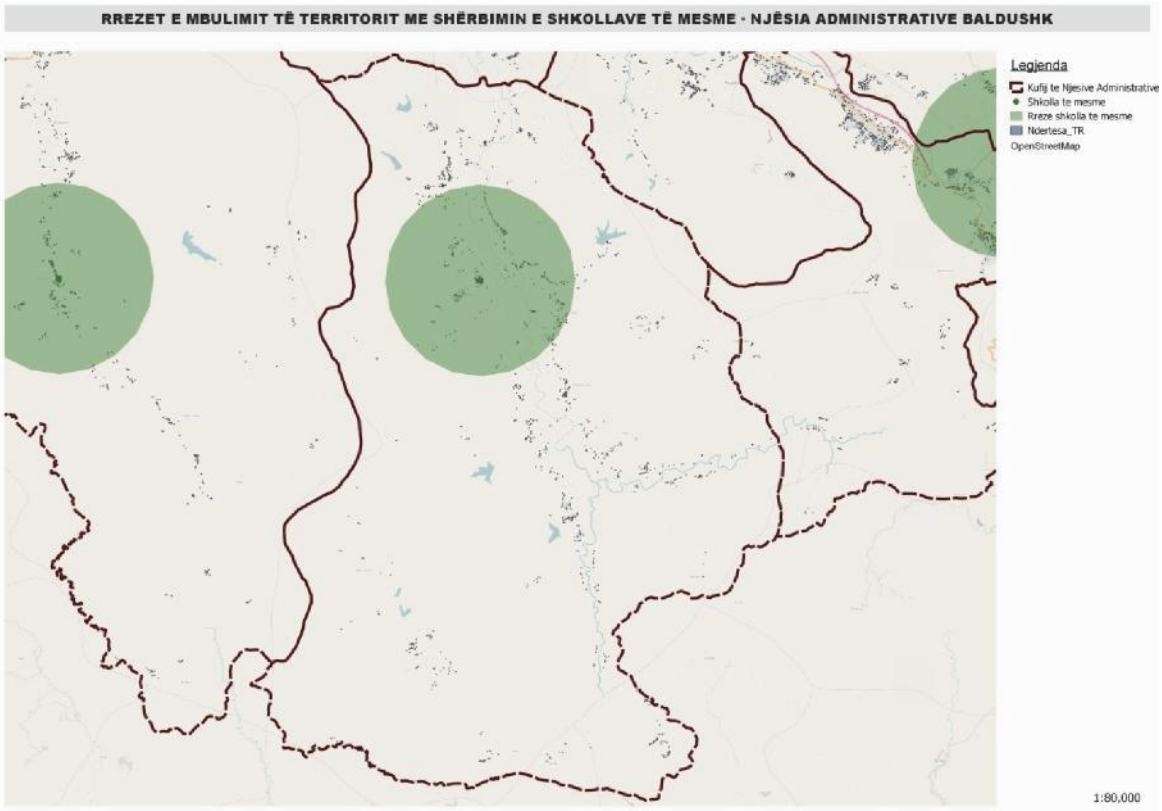
Map 57 – Territory coverage service range of high schools - AU Pezë



Administrative Unit of Baldushk

This Administrative Unit counts a total of 324 resident students and 321 attending students of the high school, which currently has an average of 24.6 student/ physical class .

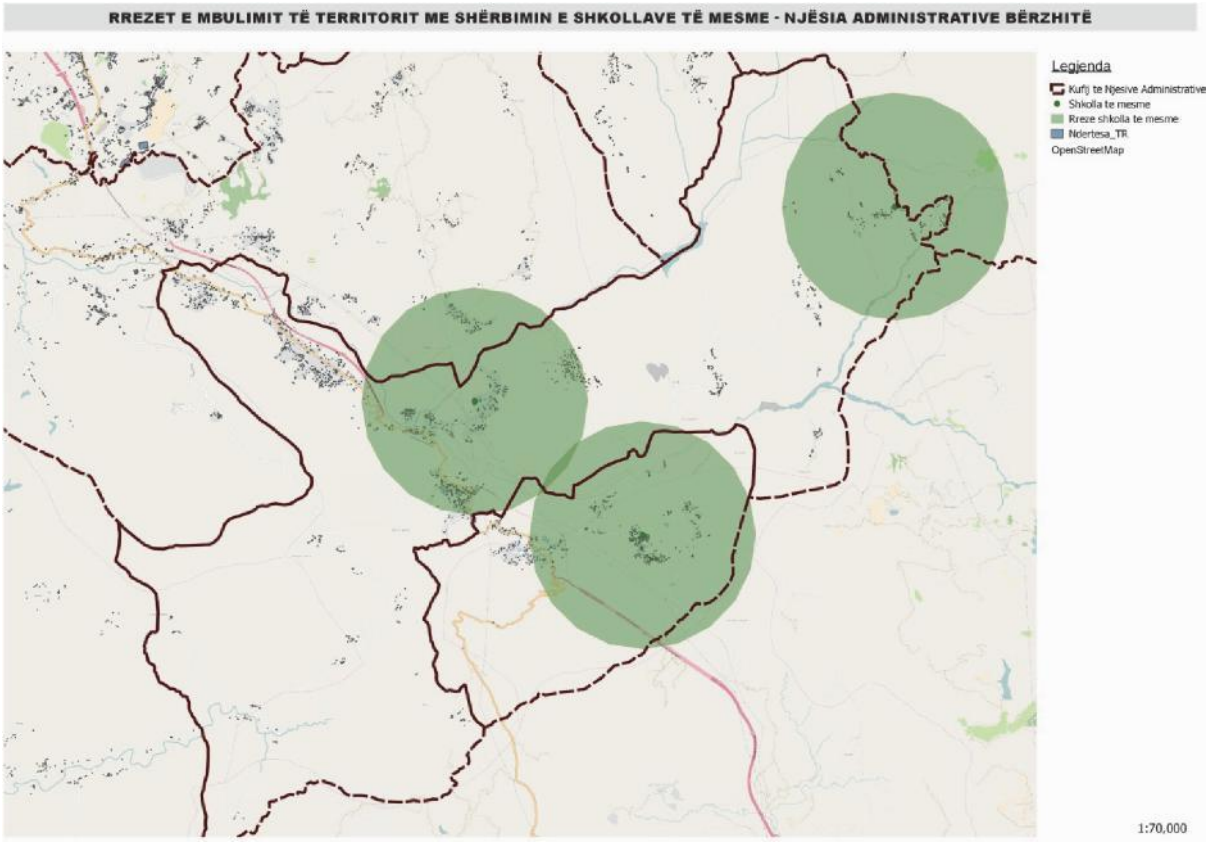
Map 58 – Territory Coverage Range with high school service -AU Baldushk



Administrative Unit of Berzhite

This Administrative Unit counts a total of 392 resident students and 381 students attending secondary schools of Mersin Duqi and Kllojke, which do not present any over-population problem. .

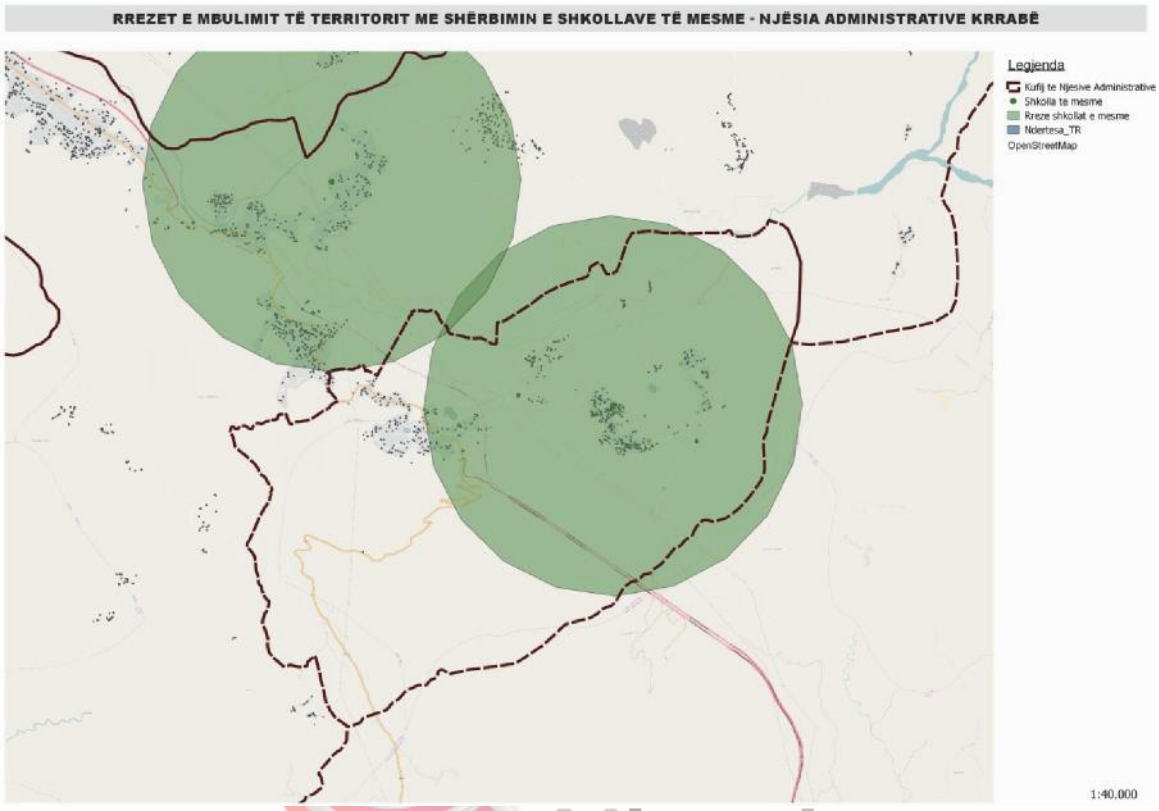
Map 59 – Territory coverage range of high schools service - AU Bërzhitë



Administrative Unit of Krrabë

This Administrative Unit counts a total of 365 resident students and 370 attending students of high school, which has an average of 19.6 students/ physical class.

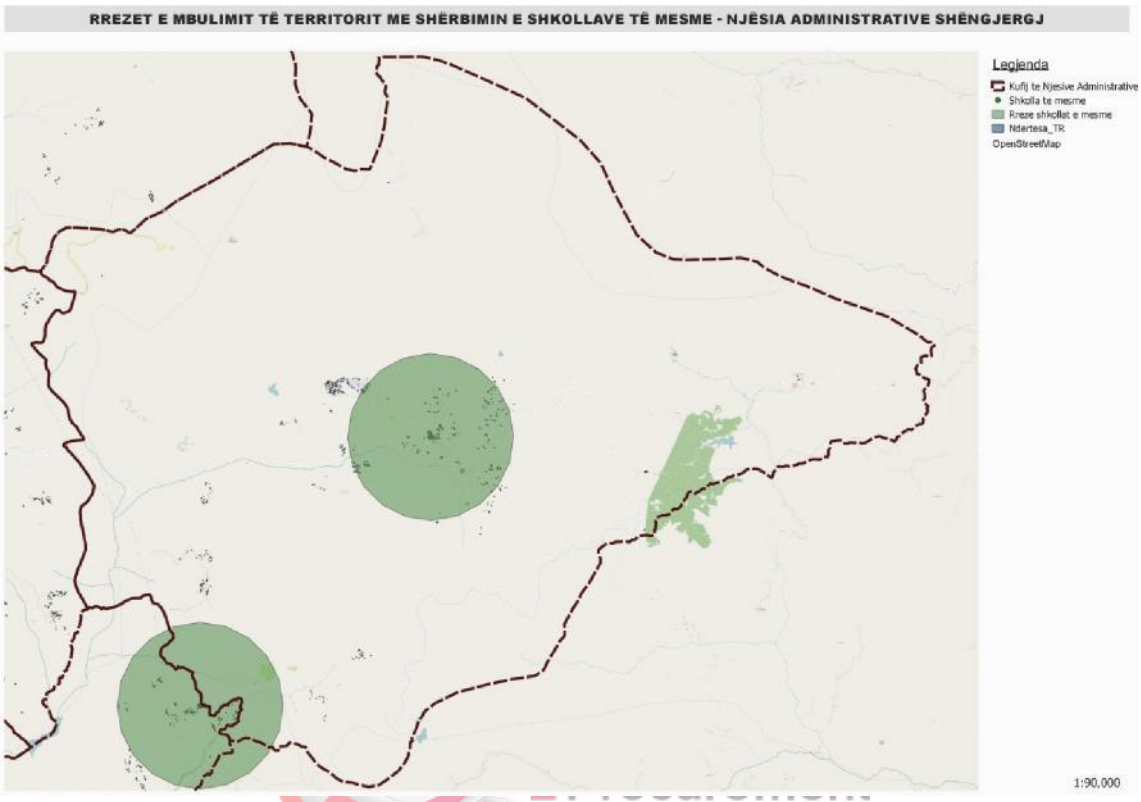
Map 60 – Territory Coverage Range with high schools service -AU Krrabë



Administrative Unit of Shëngjergj

This Administrative Unit counts a total of 229 resident students and 198 attending students of its high school, which currently has an average of about 13.2 students /physical class.

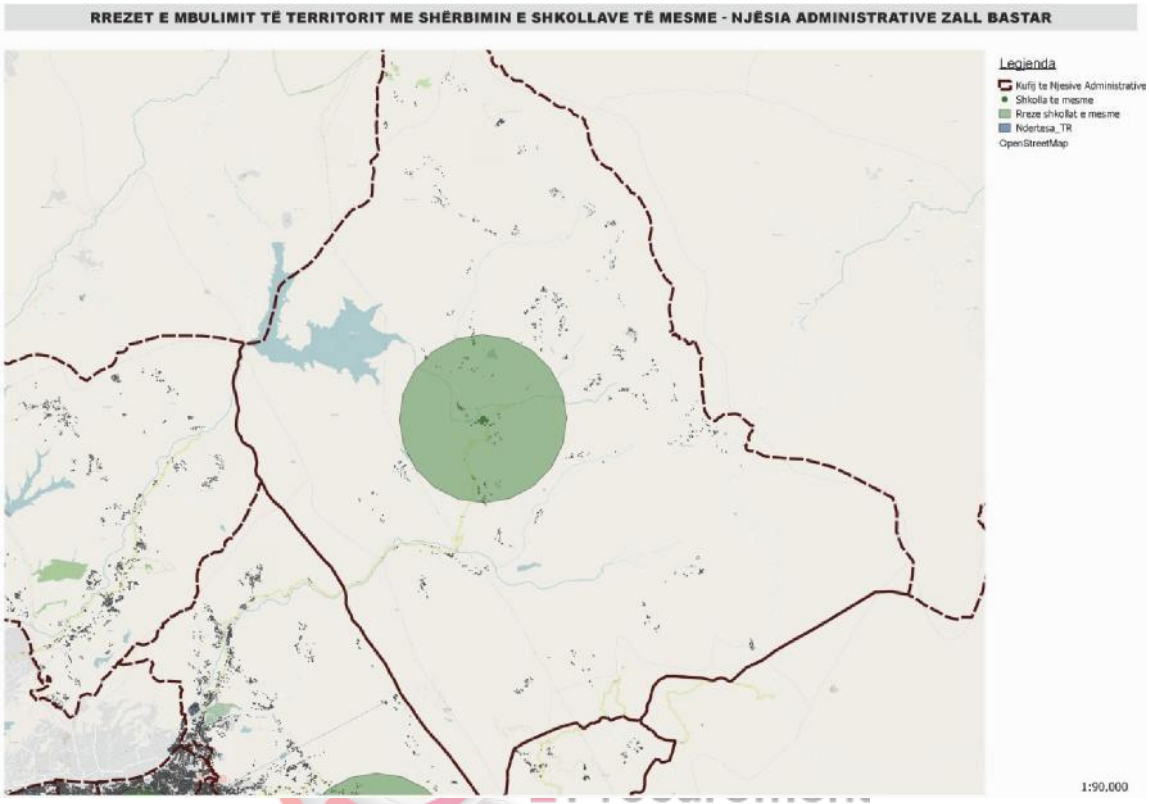
Map 61 – Territory Coverage Range with high school service -AU Shëngjergj



Administrative Unit of Zall Bastar

This Administrative Unit has a total of 255 resident students and 248 attending students of its high school which currently has an average of about 18.6 students /physical class.

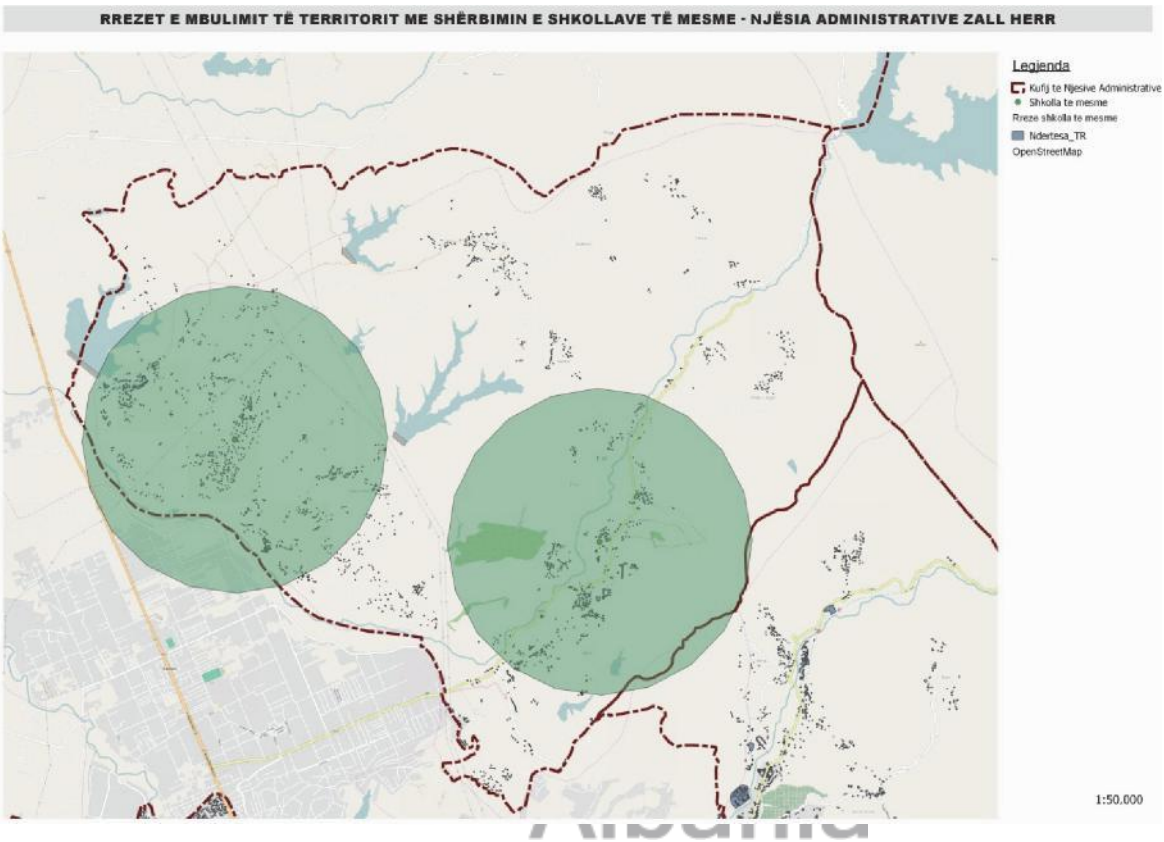
Map 62 – Territory Coverage Range with high schools service - AU Zall Bastar



Administrative Unit of Zall Herr

This Administrative Unit counts of a total of 1008 resident students and 1000 attending students in its two united high schools. United High School of Kasalle is over-crowded, whereas M.K. Ataturk school has an average of less than 30 students/class.

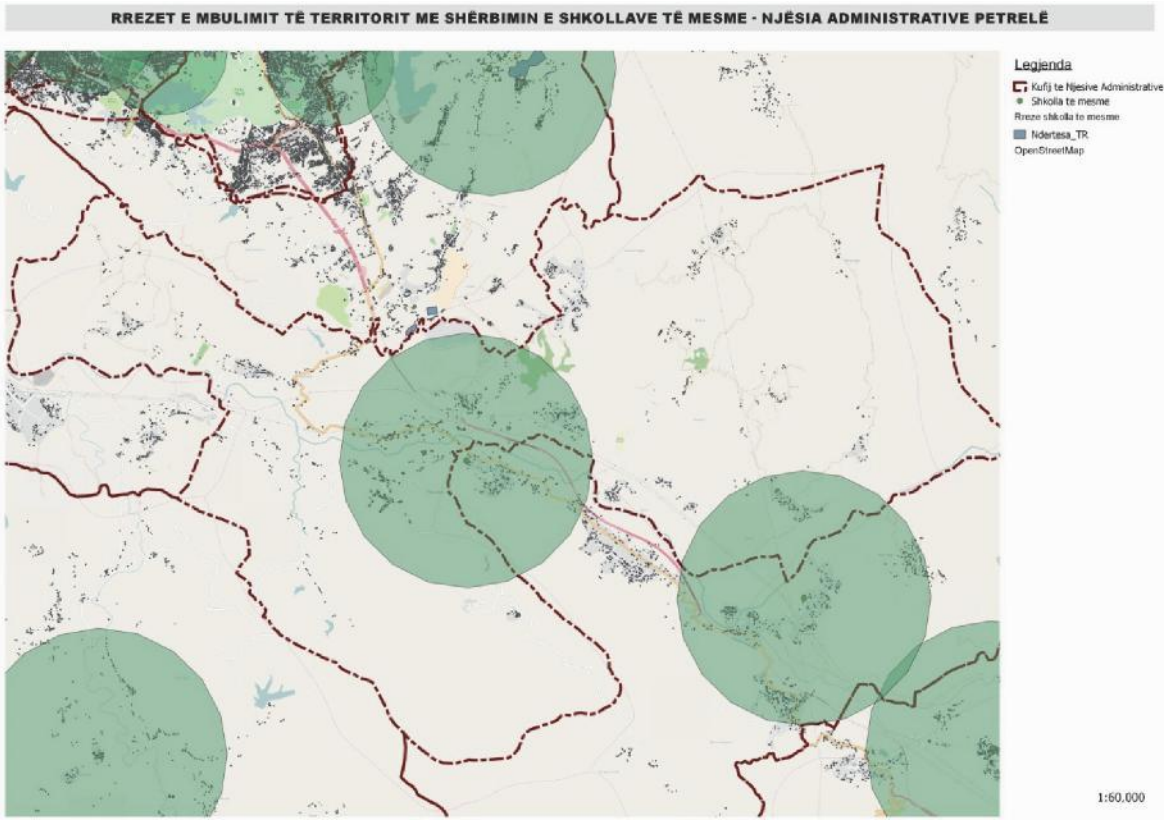
Map 63 – Territory Coverage Range with highs school service - AU Zall Herr



Administrative Unit of Petrele

This Administrative Unit counts a total of 177 resident students and 302 attending students in its two united secondary schools. The high school Ibrahim Hasmema has an average of 30.2 students per class. Coverage service range is indicated in the map below :

Map 64 – Territory coverage range with high schools - AU Petrelë



Conclusions : After determining the number of students beyond maximal capacity of existing schools, it is calculated the need for new schools aiming to achieve the maximal standard of about 30 st/ physical class. According to this projection, there are needed 96 new classes divided into administrative units according to current population with students. Translated into number of schools, to meet the needs for 96 new classes are necessary 4 new schools[26]. These new schools have been envisaged in Administrative Units, where number of resident students is beyond the capacity of existing schools. In the same review of analysis of needs for nine-year schools, regarding the case of Administrative Unit 6, even though the need for increase of capacity is noted in this unit, this need has been created mainly due to lack of necessary education services in residential zone of Yzberisht, part of Administrative Unit of Kashar. In this respect, taking into account the weak coverage of service range in this zone, the necessary schools in Administrative Unit 6 will be envisaged in Yzberisht.

26 School size varies from 20-30 classes per school. In this case, calculation of schools is done based on each case, according to total number of necessary schools for each Administrative Unit

Same as expressed in the nine-year schools analysis, even in the case of high schools are noted some considerable residential zones not covered by the service range. These areas are mainly located in the Northern side of Tirana Municipality, in concrete in northern part of Units 8 and 9. Exactly in this part of the city, some territory planning documents (2013 GLP, projext of boulevard expansion by Grimshaw Architects and 2016 draft GLP) envisage expansion of boulevard of Tirana and encouragement of city development in this direction. This means that the zone will be densified and will offer not only residential and trade spaces but also recreation, educational, social and supporting spaces. In this respect, in each of these units were identified suitable territories for construction of 2 nine-year schools.

Likewise, through analysis of service range of existing high schools, it was made evident that residential zone of “Fresku”, part of Dajt AU, which has a relatively high development density remains uncovered by this service. Taking into account the density of this zone, as well as its urban typology, it is necessary to build a secondary school in thi area. This proposal is alo based on projection of territory planning instruments of this unit, which has been in force until the drafting of 2016 draft GLP.

In the end of this detailed quantitative, qualitative and hartographic analysis, it results that Tirana Municipality requires the construction of 7 new secondary schools in order to achieve the quality of service specified in the objectives of this study.

Table 15 – Number of new schools

No	ADMINISTRATIVE Unit (AU)	BALANCE OF EXTRA OR LACKING CLASSES (according to st residents)	NEW SCHOOLS FOR INCREASE OF CAPACITY	NEW SCHOOLS FOR COVERING SERVICE RANGE
1	AU 1	-2	0	0
2	AU 2	-32	1	0
3	AU 3	7	0	0
4	AU 4	-1	0	0
5	AU 5	19	0	0
6	AU 6	-18	1	0
7	AU 7	-18	1	0
8	AU 8	9	0	1
9	AU 9	15	0	1
10	AU 10	26	0	0
11	AU 11	-20	1	0
	URBAN ZONE TIRANA TOTAL	-91	4	2
12	AU DAJT	0	0	1
13	AU FARKE	-4	0	0
14	AU VAQARR	1	0	0
15	AU KASHAR	8	0	0
16	AU NDROQ	4	0	0
17	AU PEZE	2	0	0
18	AU PETRELE	5	0	0
19	AU BALDUSHK	2	0	0
20	AU BERZHITE	14	0	0
21	AU KRRABE	7	0	0
22	AU SHENGJERGJ	1	0	0
23	AU ZALL BASTAR	5	0	0
24	AU ZALL HERR	-2	0	0
	RURA ZONES TIRANA TOTAL	-5	0	1
	TOTAL TIRANA MUNICIPALITY	-96	4	3

3.4. Analysis of existing and necessary education infrastructure based on number of population

Furthermore, the analysis continues with the need for new schools referring to number of population according to administrative units. With a standard reference of one nine-year school per 6000 inhabitants and a standard of one high school per 9000 inhabitnts, defined by Council of Ministers Decision No. 671 "On Territory Planning" results that Tirana Municipality for 2016 was supposed to have 54 new nine-year schools and 64 new high schools except the existing one.

This analysis refers to the current number of population in Tirana Municipality and projections for 2016 – 2031 period. These projections are based on 2016 population, distribution according to Administrative Units and agegroups obtained from civil registry office. Due to calculation effects, this population has been subject of population change rages of Tirana city obtained from "2011 – 2031 Population Projections".

The difference between the number envisaged by territory planning standards and current number of schools highlights the need for new schools according to the population for 2016 – 2031 period. According to standard number of schools per population, Tirana Municipality needs to build 72 nine-year schools and 76 high schools within 2031. In majority of the cases, these schools need to be built in urban or peri-urban zone. Nevertheless, in some cases, it is necessary to build a school irrespective of the low number of population in the respective Administrative Unit, exactly because this standard does not envisage a "limit" of population that needs the education infrastructure.

Tabela 16 – Number of new necessary schools according to standard of population

	Year	Nine-year schools	Secondary
No of schools according to population [27]	2016	54	64
	2021	7	4
	2026	5	5
	2031	6	3
Total		**72**	**76**

Nevertheless, this standard has only orientation purpuses – territory planning – and shall be considered with reserves. As long as the fulfilment of the standard of 30 students/class is achieved by building only 10 nine-year schools and 7 high schools, the investment for construction of 148 new schools would consist of a non-efficient use of public finances. Furthermore, the construction of 148 new schools requires an investment of about 48 billion leke, an amount 10 times higher than 2015 factual budget of Tirana Municipality – fulfilment of this standard is financially impossible. Nevertheless, a part of this necessary infrastructure can be planned to be realized in mid-term and long-term periods of time, as suggested in the draft General Local Plan of Tirana Municipality, which includes the long-term needs until 2030.

[27] See Annex 3 for more detailed data

3.5. Need for kindergartens

The lack of premises, as a result over-population, is not a problem only for schools of Tirana city but also pre-school education institutions – kindergartens. This problem is evident also for central education institutions, such as Regional Education Directorate of Tirana City, which through Document No. Prot. 3051, dated 05.08.2016 addressed to Tirana Municipality makes evident the over-population of kindergartens and demands the increase of capacities or construction of new kindergartens, especially in zones with a big number of population or expanding areas.

Based on this demand, but taking into account the constant need of citizens of Tirana Municipality for increase of kindergarten venues, it might be necessary to consider the possibility of integrating kindergarten venues in nine-year education structures.

Despite the increasing number of Tirana, number of public kindergartens from 2006 to 2016 has not changed. Currently, Tirana counts 43 kindergartens. According to data from RED of Tirana, the total capacity of these kindergartens is 5645 children, whereas in 2015 the kindergartens were attended by 7051 children. A difference clearly indicating the over-population of kindergartens in Tirana beyond their normal capacity.

Table 17 – Number of kindergartens in the course of years

No. Kindergartens	Academic year	'06-'07	'07-'08	'08-'09	'09-'10	'10-'11	'11-'12	'12-'13	'13-'14	'14-'15	'15-'16
	Public	44	44	44	44	45	43	42	43	43	43
	Non public	17	16	18	19	7	19	51	45	47	46

According to Guideline No.21, dated 23.7.2010 of Ministry of Education, group of children in kindergartens in the city are less than 25 children. If we have a look at the ratio children per kindergarten, we will notice that public kindergartens have an average of 152 children per kindergarten. Based on the following data, it clearly results that kindergartens in Tirana are over-crowded with an average ratio of about 50 children per group, two times more than allowed norm.

Table 18 – Ratio of children per kindergarten

		Average for '06-'16 period			
		No kindergartens	No. children	Ratio children/kinderga	Ratio children/group
Kindergaterns	Public	44	6614	152	51
	Non public	29	902	32	11

On the other side, increasing need for kindergartens is being faced with a constant increase of private kindergartens. Thus, number of private kindergartens in Tirana has increased from 17 in 2006 in 46 in 2016, an increase of about 170%. Despite this increase, total capacity of pre-school education institutions in Tirana (combining public and private kindergartens) is much less than needs of the city for kindergartens.

According to 2016 data of Civil Registry General Directorate, number of children belonging to agegroup of 3-5 year old is 27673. Meanwhile, the total capacity of public and private kindergartens – according to Table 2 – is about 7500-8000 children. This analysis indicates that about 20 thousand children in Tirana – even though in the age to attend kindergartens - do not exercise this right today due to lack of existing capacities.

Table 19 – Tirana Population according to agegroups of 2016

Agegroup	0 - 2	3 – 4	5	6 – 15	16 – 18	19+	Total
Population	16 807	18 544	9 129	90 690	29 441	615 920	780 531

Majority of these children spend time under the case of their family members, who as a result do not have the chance to dedicate themselves to daily activities – such as labor. Hence, failure to attend kindergartens is a problem for children themselves, who do not benefit from the cognitive, emotional and social development in the kindergartens, making adaptation in school more difficult.

Based on the above-mentioned analysis it results that construction of new kindergartens is a necessity not only to solve the over-population problem but also to satisfy the great need of Tirana families for this service. Therefore, all the nine-year schools to be built by this program will include the construction of integrated kindergartens, which will have a separated yard and entrance. The construction of integrated kindergartens solves the sharp problem of the lack of pre-school infrastructure and counts a lower construction cost than construction of two different objects.

3.6. Forecast of mid-term and long-term needs for new educational infrastructure

After determination of number of students beyond maximal capacity of existing schools, it was calculated the need for new schools aming exactly the achievement of the maximal capacity standard of about 30 st/ physical class, as well as coverage of entire residential territory with a considerable service range of pre-university education. According to the calculations, as noted in the abovementioned detailed analysis of the existing situation, in order to achieve the standard of maximal capacity of about 30 students/class are needed 243 new classes for nine-year cycle and 96 new classes for higher middle cycle. For fulfilment of these standards are needed 7 new nine-year schools and 4 new higher middle education schools.

On the other side, taking into consideration the distribution of existing educational infrastructure on the ground, there are noted some consideration residential zone without the service range of nine-year and high school education. Taking into account the uncovered zones with service range of pre-university education and projections of territory planning instrutements and the draft of General Local Plan, the proposal includes also 3 nine-year schools and 3 high schools, beside the ones mentioned above.

Hence, in total, it is envisaged the construction of 10 schools of nine-year cycle, which will include also venues for kindergartens inside their building and 7 schools of high school education. Following are the calculations for each of them.

This need for new necessary capacities of educational infrastructure was projected in schools with a number of classes according to standards specified by MoES through guideline "Guideline for designing of school buildings". These school models offer the opportunity of meeting the requirements for pre-university education, by respecting legal and technical specifications for definition of parallel classes according to each teaching cycle.

Taking into account the need for kindergartens, nine year schools and high schools, as well as to boost the efficiency of this investment, during the study were taken into consideration also these needs calculating the integration of spaces for kindergartens in buildings of nine-year education cycle. These spaces may be integrated in the same building, but with a separated yard and entrance, providing all the technical necessary parameters that guaranty the security of children and well-going of education and care processes of children of these age groups.

Refering to teaching programs and standards defined by Ministry of Education and Sports, types of classes, their size, necessary space for each level, for nine-year education will be according to Tables No. 1- No. 4 (Annex 4).

Refering to teaching program and standards defined by Ministry of Education and Sports, types of classes, their size, necessary spaces for each level, for higher middle schools will be according to Table No. 5 (Annex 4). Depanding on the location of the zone where the schools will be built, they are divided into urban and rural zones schools. According to calculations, average number of students in urban areas will be 30 students/ class, whereas in rural areas, with a lower residential density, will be 24 students/class. As long as need for educational institutions in Administrative Unit of Dajt is calculated for an urban area, therefore it is obligatory to respect the standards of urban areas.

In this respect, there 4 types of schools:

Table 20 – Types of schools

Type	Location	Cycle	No classes	st/class	No st. total	M2/students	Total surface
Type 1	Urban	Basiceducation	20	30	600	8.23	4938
Type 2	Urban	Basic education	30	30	900	7.32	6588
Type 3	Rural	Basic education	20	24	480	8.42	4041.6
Tiye 4	Urban	Higher middle education	21	30	630	6.35	4000.5

Based on the calculations, distribution of new schools according to above-mentioned typology is shown as following :

Table 21 – Distribution of schools according to typology

	nine-year	secondary

ADMINISTRATIVE UNIT	New school	School Typology	No Students	New schools	School typology	No students
ADMINISTRATIVE UNIT 1	**0**	0	0	**0**	0	0
ADMINISTRATIVE UNIT 2	**2**	Type 2 - 30 classes	1800		**1** classes Type 4 - 21	630
ADMINISTRATIVE UNIT 3	**0**	0	0	**0**	0	0
ADMINISTRATIVE UNIT 4	**0**	0	0	**0**	0	0
ADMINISTRATIVE UNIT 5	**1**	Type 2 - 30 classes	900	**0**	0	0
ADMINISTRATIVE UNIT 6	**0**	0	0	**0**	0	0
ADMINISTRATIVE UNIT 7	**0**	0	0		**1**classes Type 4 - 21	630
ADMINISTRATIVE UNIT 8	**1**	Type 1 - 20 classes	600		**1**class Type 4 - 21	630
ADMINISTRATIVE UNIT 9	**1**	Type 1 - 20 classes	600		**1**classes Type 4 - 21	630
ADMINISTRATIVE UNIT 10	**0**	0	0	**0**	0	0
ADMINISTRATIVE UNIT 11	**2**	Type 2 - 30 classes	1800	**1**	Type 4 - 21 classes	630
AU DAJT	**0**	0	0	**1**	Type 4 - 21 classes	630
AU FARKE	**1**	Type 3 - 20 classes	480	**0**	0	0
AU VAQARR	**0**	0	0	**0**	0	0
AU KASHAR	**2**	Type 2 - 30 classes	1800	**1**	Type 4 - 21 klasses	630
AU NDROQ	**0**	0	0	**0**	0	0
AU PEZE	**0**	0	0	**0**	0	0
AU PETRELE	**0**	0	0	**0**	0	0
AU BALDUSHK	**0**	0	0	**0**	0	0
AU BERZHITE	**0**	0	0	**0**	0	0
AU KRRABE	**0**	0	0	**0**	0	0
AU SHENGJERGJ	**0**	0	0	**0**	0	0
AU ZALL BASTAR	**0**	0	0	**0**	0	0
AU ZALL HERR	**0**	0	0	**0**	0	0
TOTAL	**10**		**7980**	**7**		**4410**

Identification of territories for construction of schools was made taking into account the above-mentioned table and inhabitated surfaces which are not covered by service range of existing schools in each administrative unit. In this respect, service range with educational subjects in urban areas, in aerial distance, is 500-600 m for nine-year education and 1000-1500m for secondary education, whereas in rural areas is 1000-1500m for the nine-year cycle and 2000-4500m for higher middle cycle.

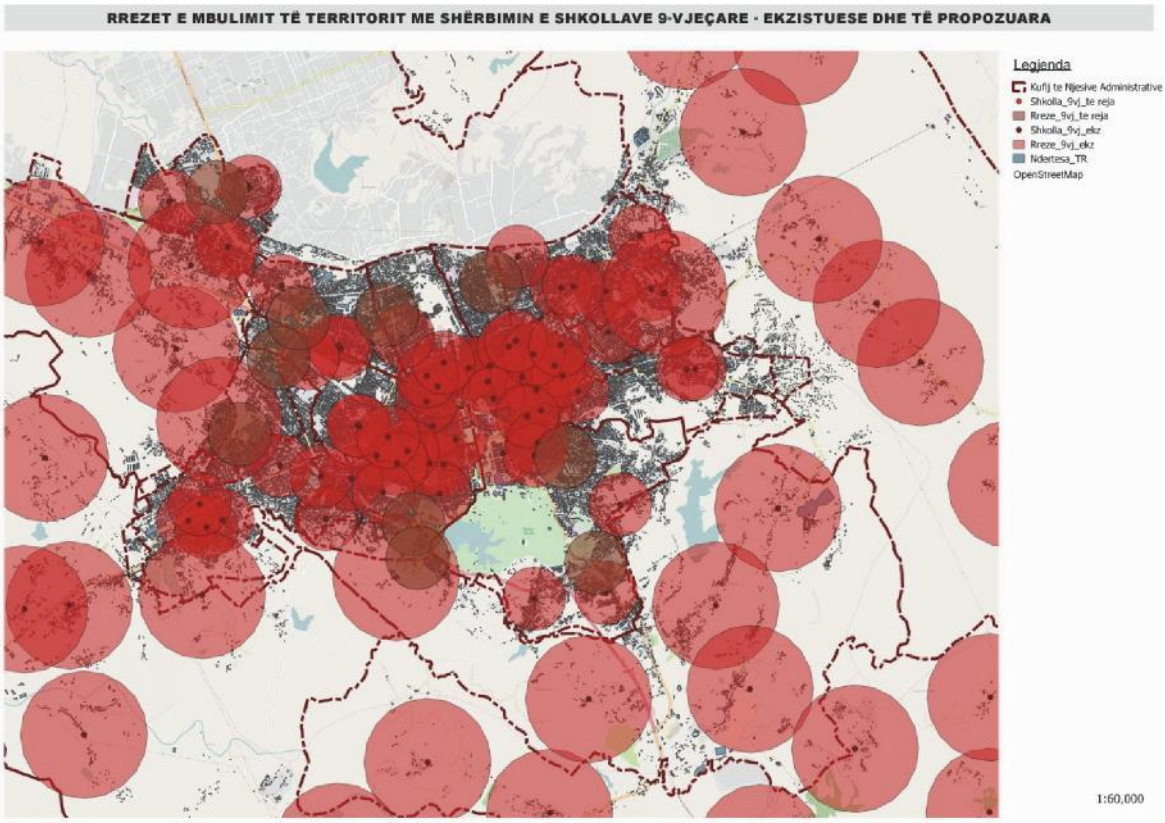
Determination of territories for construction of schools is based on real opportunities of the city with such basic criteria as :

- Exploitation of free surfaces - eventhough few – of public ownership
- Establishment of property management schemes through state-private agreements

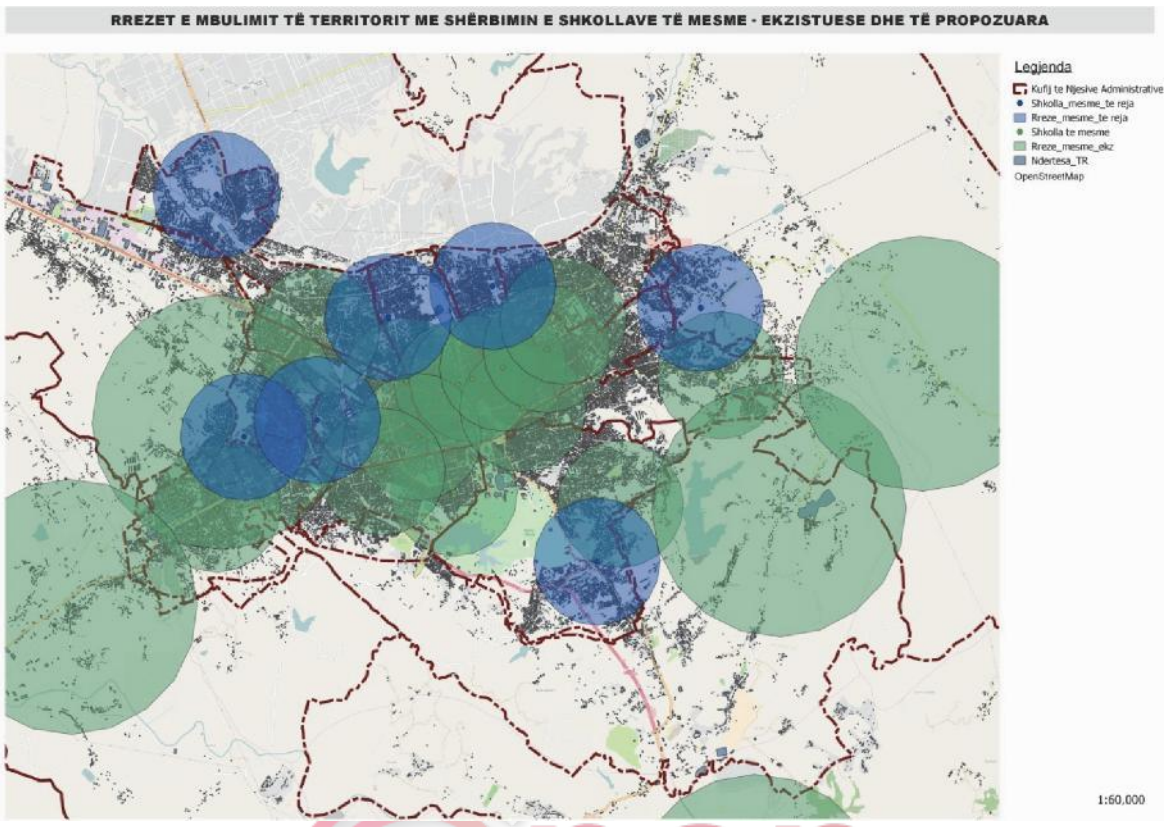
- Management of economic zones (former industrial zones) which have a considerable surface for development mainly located in the suburbs of the city, where it is more necessary to have new education infrastructure
- In cases when it was impossible to identify public territories were identified private properties that will be expropriated.
- In all the cases, identification of territories with a 1500-7000 m^2 surface, as determined in Territory Planning Regulation (DoCM no.671)

The following maps indicated the distribution of existing and proposed schools according to the above-mentioned criteria, as well as territory coverage range.

Map 65 – Territory coverage range with existing nine-year schools (red) and proposed (brown)



Map 66 – Territory coverage range with existing high schools (green) and proposed (blue)



4. TECHNICAL PROJECT

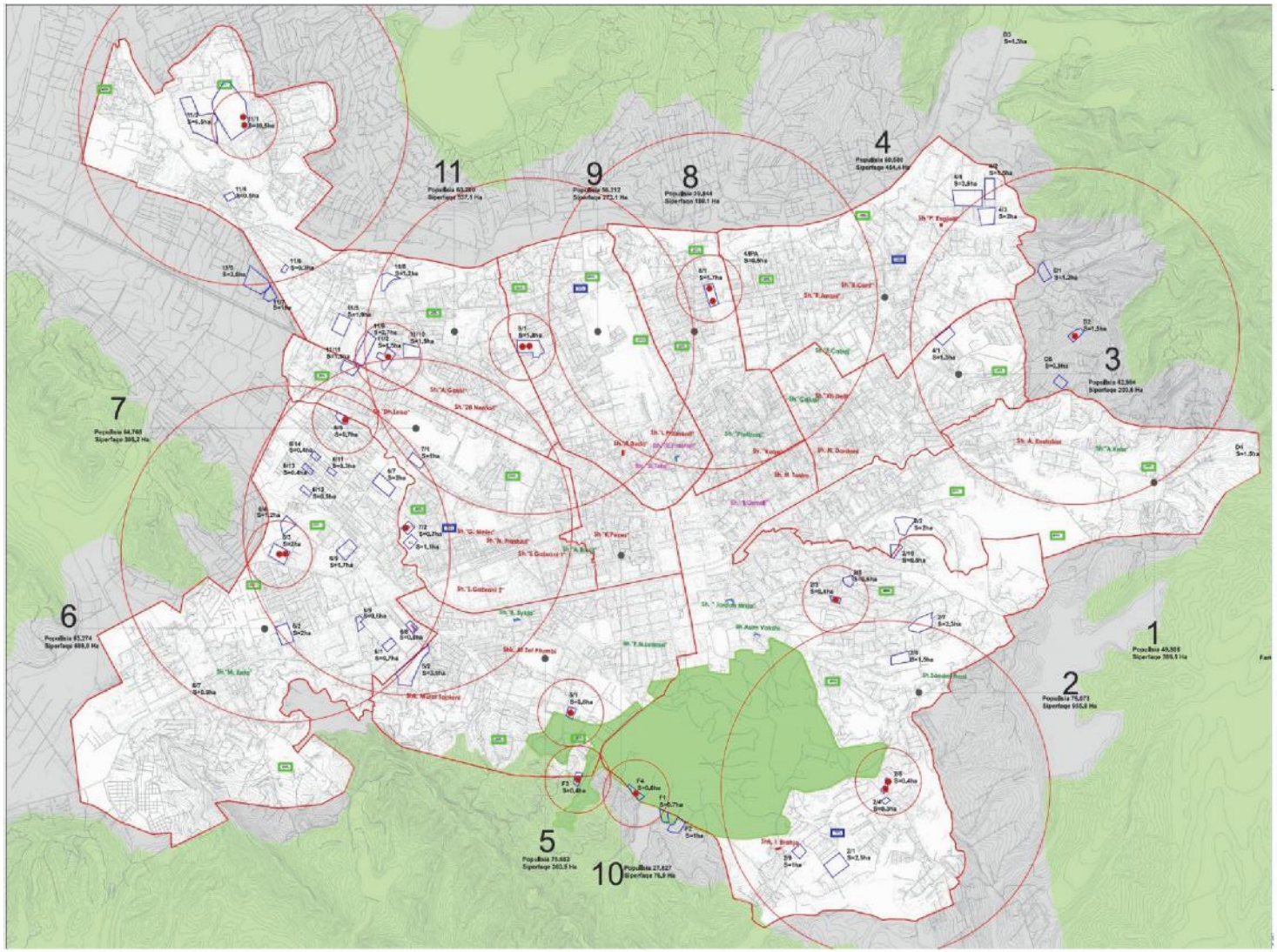
4.1. Location and territory

4.1.1. Location and potential alternatives

The following map indicates the selected locations for the proposed nine-year and higher middle education schools. In total, there are identified 12 constrcution sites. In some of them is envisaged the construction of two schools (nine-year and high schools) as separated objects with different yards. Likewise this map shows also some alternative locations, beside the selected territories. If for different legal or technical reasons, one of the selected territories can not be put at disposal for realization of the investment project, the following map indicates some lands with similar characteristics as alternatives. In red and service range are noted the preferred sites. Whereas in blue are signed some alternative sites to be considered in case during the project implementation the use of one of preferred sites becomes impossible due to legal or technical reasons. During the determination of school sites, was taken into account the following :

a. New schools must cover with their service range (nine-year schools : 500 m, secondary schools: 1000m) inhabitated zones that remain uncovered in each administrative unit where they are projected.
b. Construction of new schools must be calculated on lands, possibly state-owned land, with a surface of: 1500 m2 – 7000 m2 for nine-year schoos, and : 2000m2 – 7000m2 for high schools
c. The selected plots shall be accessible by road infrastructure and with underground infrastructure, or easily connected with underground engineering networks, as well as to meet all the standards for definition of pre-university educational objects location, according to sectorial legislation in force
d. Definition of locations of new schools must be in coordination with requirements of General Local Plan that is being drafted by Tirana Municipality.

Map 67 – Selected sites and alternative sites for construction of proposed schools



4.1.2. Total surface to be seized permanently SITE 2/3

Picture 6 – Orthophoto of site

LOCATION :

Proposed site no.2/3 for nine-year school located near Hygiene Directorate. Accessable from Mihal Grameno street.

TECHNICAL DATA : Site 2/3 : 4093.5 m2

CURRENT SITUATION OF THE SITE :

- A zone owned by a private subject, surrounded.
- Considerably slopy
- Located in a zone of high density.
- No high schools in the zone.
- Problematic road infrastructure .

Picture 7 - Photo of site 2/3

SITE 2/6

Picture 8 – Orthophoto of the site

LOCATION:

Proposed site no. **2/6** for construction of a nine-year school and a high school is located in the southern part of Tirana city, Administrative Unit no 2. Accessable from "Elbasani" str and " Haxhi Aliaj" str.

TECHNICAL DATA : **Site 2/6 :** 5425 m^2.

CURRENT SITUATION OF THE SITE:

- A relatively calm and easily accessable zone
- It is an developing zone with 2-3 story buildings
- Good road infrastructure .

Picture 9 – Photo of the site 2/6

SITE 5/1

Picture 10 – Orthophoto of the square

LOCATION : Proposed site no.5/1 for nine-year school near the lake zone. Accessable from Hasan Alla str. and Tiranë-Elbasan Highway.

TECHNICAL DATA : Site 5/1 : 3481 m2

CURRENT SITUATION OF THE SITE :

- Located near the Botanic Garden, a high density residential zone
- Easy access.

Picture 11 - Photo of the site 5/1

SITE 6/3

Picture 12 – Orthophoto of the site

LOCATION : Proposed site no.**6/3,** for construction of a nine-year school and one high school is located near the "Kombinati i mishit" Yzberisht. Accessable from "3 Deshmorët" street.

TECHNICAL DATA : Site 6/3 : 9103.5 m2

CURRENT SITUATION OF THE SITE :

- Easy access.
- No high school in the zone.
- Surrounding zone is organized and counts green spaces, presenting a favourable zone for construction of a new school.

Picture 13 – Photo of site 6/3

SITE 6/6

Picture 14 – Orthophoto of the site

LOCATION :
Proposed site no.**6/6** for a nine-year school is located near the Dogana Roundabout. Accessable from Teodor Keko str and is located near Lana River.

TECHNICAL DATA : Site 6/6 : 4930 m2

GJENDJA AKTUALE E SHESHIT :

- It is a zone owned by private subjects, surrounded.
- Located near a residential zone with a high density .
- Easy access from two streets .
- No high schools in the zone .
- Problematic road infrastructure .

Picture 15 - Photo from site 6/6

SITE 7/2

Picture 16 – Orthophoto of the site

LOCATION :

Proposed site no.**7/2** is located near Lana River. Accessable from "Javer Malo" str. and "Stavri Themeli" str,.

TECHNICAL DATA : Site 7/2 : 8482 m2

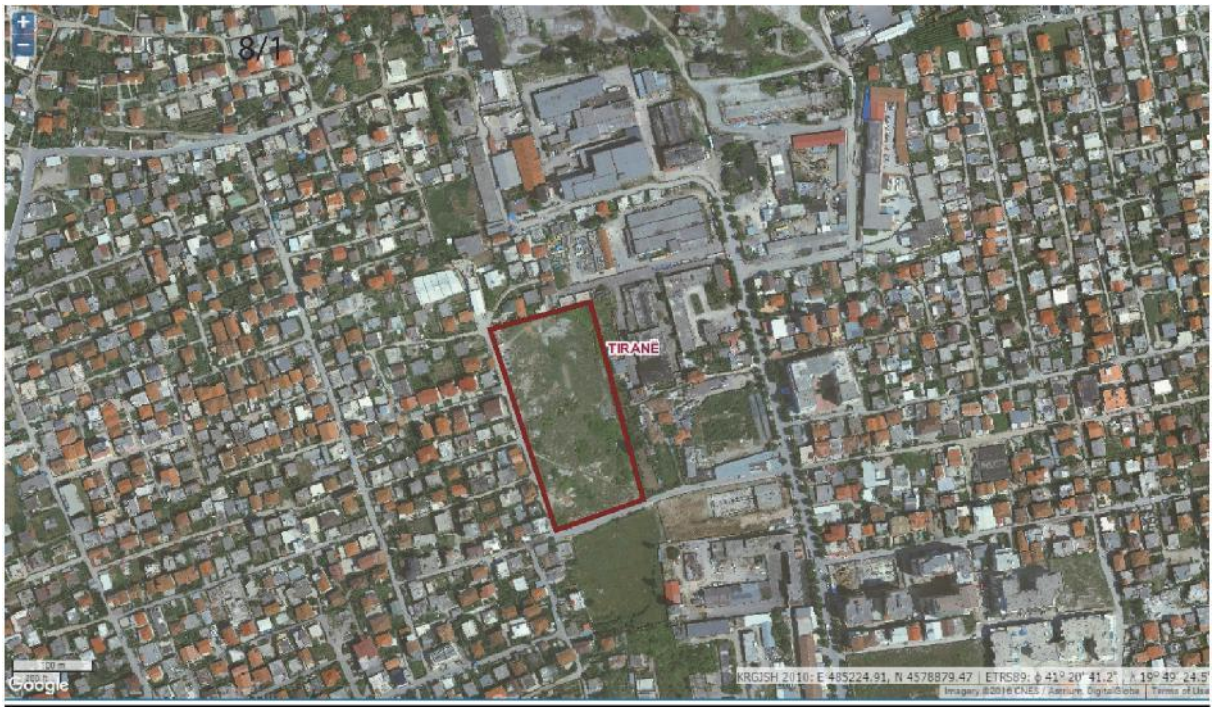
CURRENT SITUATION OF THE SITE :

- No high schools in this area, but an increased density.
- Problematic road infrastructure

Picture 17 - Photo from site 7/2

SITE 8/1

Picture 18 – Orthophoto of the square



LOCATION : Proposed site no. **8.1** is located near "5 Maji" stree in Unit8.

TECHNICAL DATA : Site 8.1: 17,520 m2

CURRENT SITUATION OF THE SITE :

- It is a relatively calm zone.
- Access to the site is easy. Problematic road infrastructure. Many positive aspects, due to its location in a high density area.

Picture 19 - Photo from site 8/1

SITE 9/1

Picture 20 – Orthophoto of the site

LOCATION : Proposed site no.**9/1** is located near "Don Bosko" neighbourhood. It is a developing zone with high story residential buildings and low informal dwellings.

TECHNICAL DATA : Site 9/1:12,989 m2

CURRENT SITUATION OF THE SITE :

- It is a relatively calm zone.
- Access to the site is easy. Problematic road infrastructure. Many positive aspects due to the location in a high density zone.
- No high schools in the area
- Site includes in its territory an old warehouse, but i t seems interesting due to its big surface.

Picture 21 - Photo of the site 9/1

SITE 11/1

Picture 22 – Orthophoto of the site

LOCATION : Proposed site no. 11/1 is located inside the University Complex of Tirana Agricultural University. This square is bordered by "Taulantët" str. and "Blu" Blv.

TECHNICAL DATA : Site 11/1: Surface – 8,967 m2

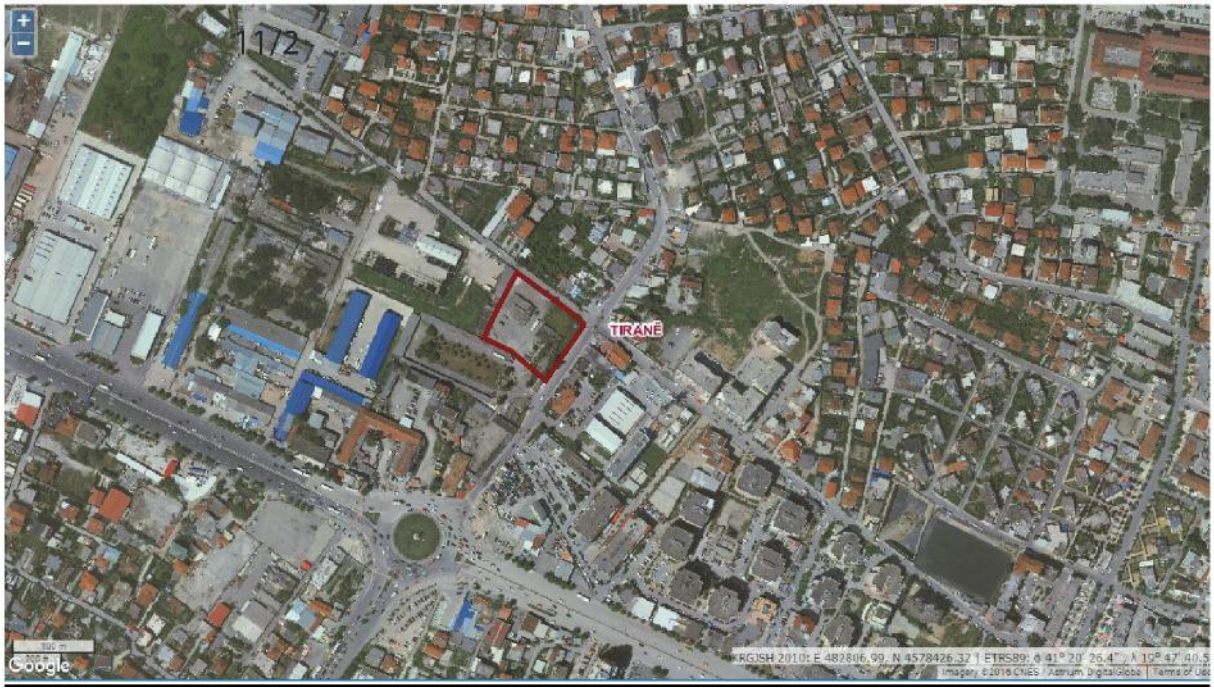
CURRENT SITUATION OF THE SITE :

- It is an intact zone with few green spaces.
- Site is considerably slopy .
- Problematic road infrastructure – Access to the site difficult

Picture 23- Photo of the site 11/1

SITE 11/2

Pictue 24 – Orthophoto of site



LOCATION : Proposed site no. **11/2** is located near the Customs Roundabout. Accessable from Vangjel Noti street.

TECHNICAL DATA : Site 11/2: surface 14,102 m2

CURRENT SITUATION OF THE SITE :

- This is a zone owned by Ministry of Defense
- Located near inhabitated zone
- Easily accessable

Picture 25 - Photo of site 11/2

SITE D2

Picture 26 – Orthophoto of the site

Location: Proposed site no.**D2** is located near Linza, Administrative Unit of Dajt.

Accessed through "Shefqet Kuka" street.

TECHNICAL DATA : Site D2 : 13.244 m2

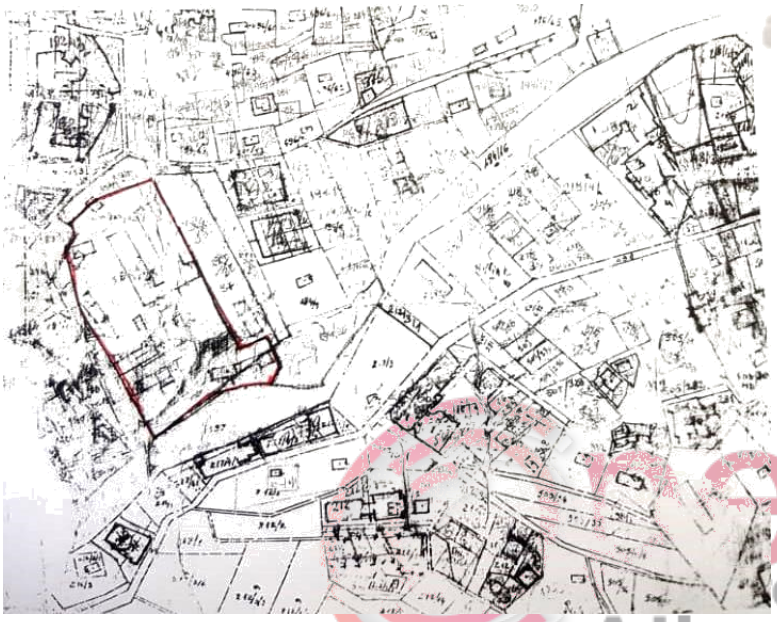
CURRENT SITUATION OF SITE :

- Simple access and presence of road network in the vicinity of site ;
- Site is located near the inhabited zone of Linze

Currently the site is composed of land and buildings owned by former-Military Informative Service

Picture 27 - Photo of site D2

Picture 3 – Cadastral map of site D2



SITE F3

Pciture 28 – Orthophoto of the site

LOCATION : Proposed site no.**F3**

TECHNICAL DATA : Site F3 : 8340 m2

CURRENT SITUATION OF THE SITE :

- Difficult access
- Relatively slopy site
- Problematic road infrastructure

Picture 29 - Photo of site F3

1.1.1. Legal status of selected lands

Site 2/3

Map 1- Indicative map of properties

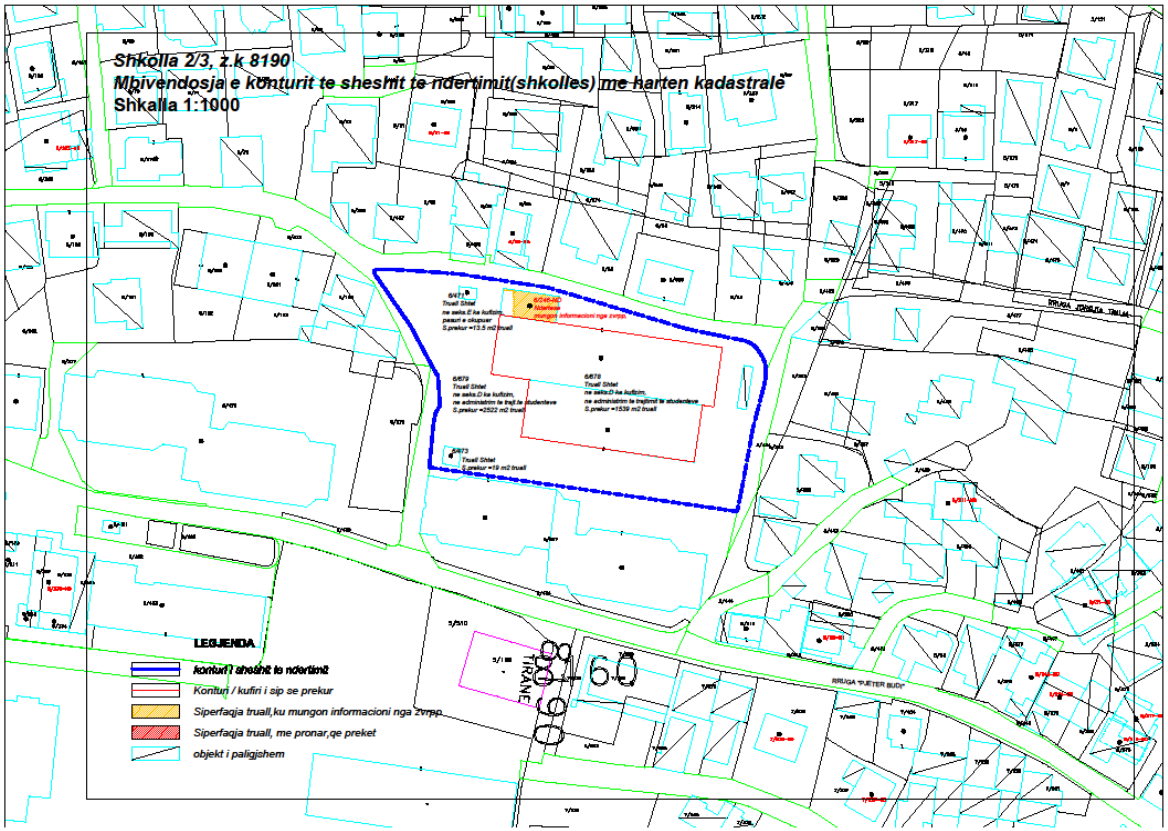


Table 1- Table with preliminary calculations of properties to be affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of affected land (m²)	Land Price lek/m²	SIP. Obj. prekur (m²)	Price of the object lek/m²	Amount in leke
1	State	Occupied property	8190	6/471	13.50	66969			0.0
2	Non information	Residence	8190	6/246 - ND	0.00	66969		32113	0.0
3	State	Sec.D limit in administ. of students treatment	8190	6/678	1539.00	66969			0.0
4	State	Sec.D limit. in administration of students treatment	8190	6/679	2522.00	66969			0.0
5	State		8190	6/473	19.00	66969			0.0
					4093.50				0.0

The school to be built in cadastral zone 8190 will affect a total 4093.5 meter square property, consisting of 4 state-owned properties, whereas for property no. 6/246 there is no legal information about the legal state, but depending on the zone the price of the object will be 32,113 per meter square.
1. For land, (calculated price is based on CoMD 89, dated 03.02.2016.

Site 2/6

Map 2- Indicative map of properties

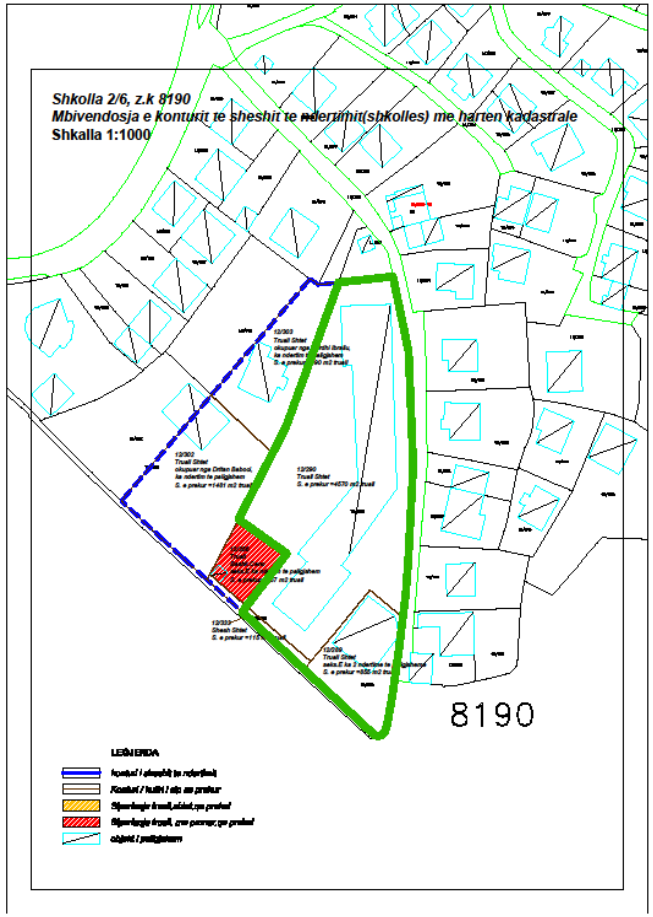


Table 2 –Table with preliminary calculations of selected properties

No	NAME	Note in Sect E	Cadastral zone	No. Property	Surface of affected land (m²)	Land Price lek/m²	Surface of affected object (m²)	Price of the object lek/m²	Amount in leke
1	State-owned land	Informal construction	8190	12/289	855.00	66969			0.0
2	State owned land		8190	12/290	4570.00	66969			0.0
					5425.00				0.0

The school to be built in this zone will affect a total of 5425 meter square property, consisting of two state-owned properties. For the land (calculated price is based on CoMD No. 89, dated 03.02.2016.

Site 5/1

Map 3- Indicative map of properties

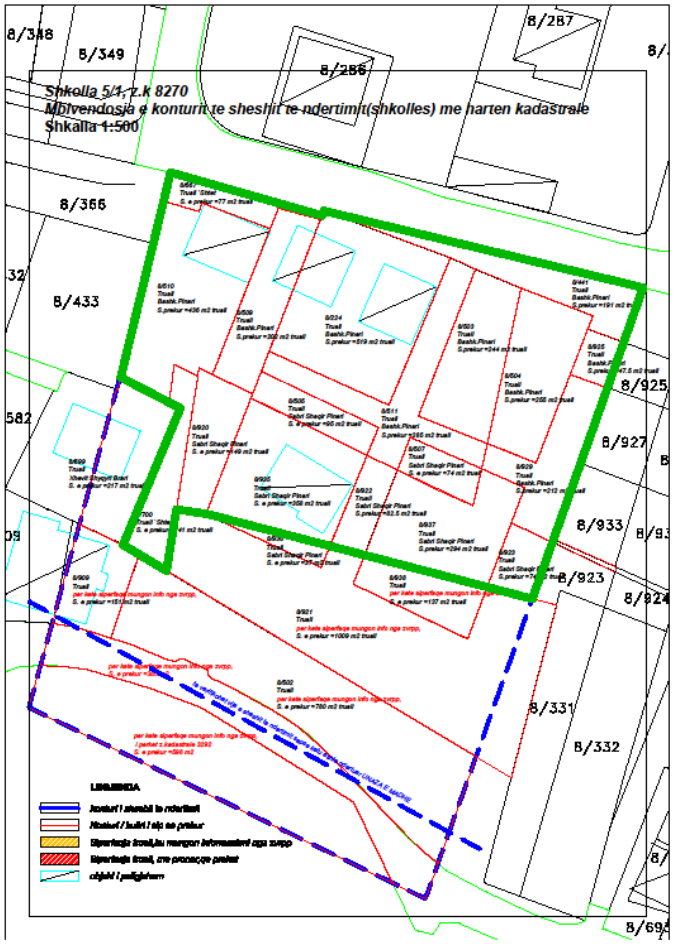


Table 3-Table with preliminary calculations of the selected properties

No	NAME	Father's name	Surname	Cadastral Zone	No. Property	Surface of affected land (m²)	Land price lek/m²	Surface of affected object (m²)	Price Obj.lek/m²	Amount in Leke
1	State			8270	8/700	141.00	66969			9,442,629.0
2	Sabri	Shaqir	Pinari	8270	8/935	358.00	66969			23,974,902.0
3	Sabri	Shaqir	Pinari	8270	8/920	149.00	66969			9,978,381.0
4	Sabri	Shaqir	Pinari	8270	8/922	82.50	66969			5,524,942.5
5	Sabri	Shaqir	Pinari	8270	8/937	294.00	66969			19,688,886.0
6	Sabri	Shaqir	Pinari	8270	8/923	74.00	66969			4,955,706.0
7	Co-owners		Pinari	8270	8/510	436.00	66969			29,198,484.0
8	State			8270	8/667	77.00	66969			5,156,613.0
9	Co-owners		Pinari	8270	8/509	202.00	66969			13,527,738.0
10	Co-owners		Pinari	8270	8/224	519.00	66969			34,756,911.0
11	Sabri	Shaqir	Pinari	8270	8/505	95.00	66969			6,362,055.0
12	Co-owners		Pinari	8270	8/511	285.00	66969			19,086,165.0
13	Co-owners		Pinari	8270	8/503	244.00	66969			16,340,436.0
14	Sabri	Shaqir	Pinari	8270	8/507	74.00	66969			4,955,706.0
15	Co-owners		Pinari	8270	8/441	191.00	66969			12,791,079.0
16	Co-owners		Pinari	8270	8/925	47.50	66969			3,181,027.5
17	Co-owners		Pinari	8270	8/929	212.00	66969			14,197,428.0
						3481.00				218,921,661.0

The school to be built in the Cadastral Zone 8270 will affect a total of 3481 meter square of this property, consisting of 17 properties, 16 private properties and one state-owned. The property No. 8/667 is state-owned. For the land (price has been taken from CoMD No. 89, dated 03.02.2016.

Site 6/3

Map 4- Indicative map of properties

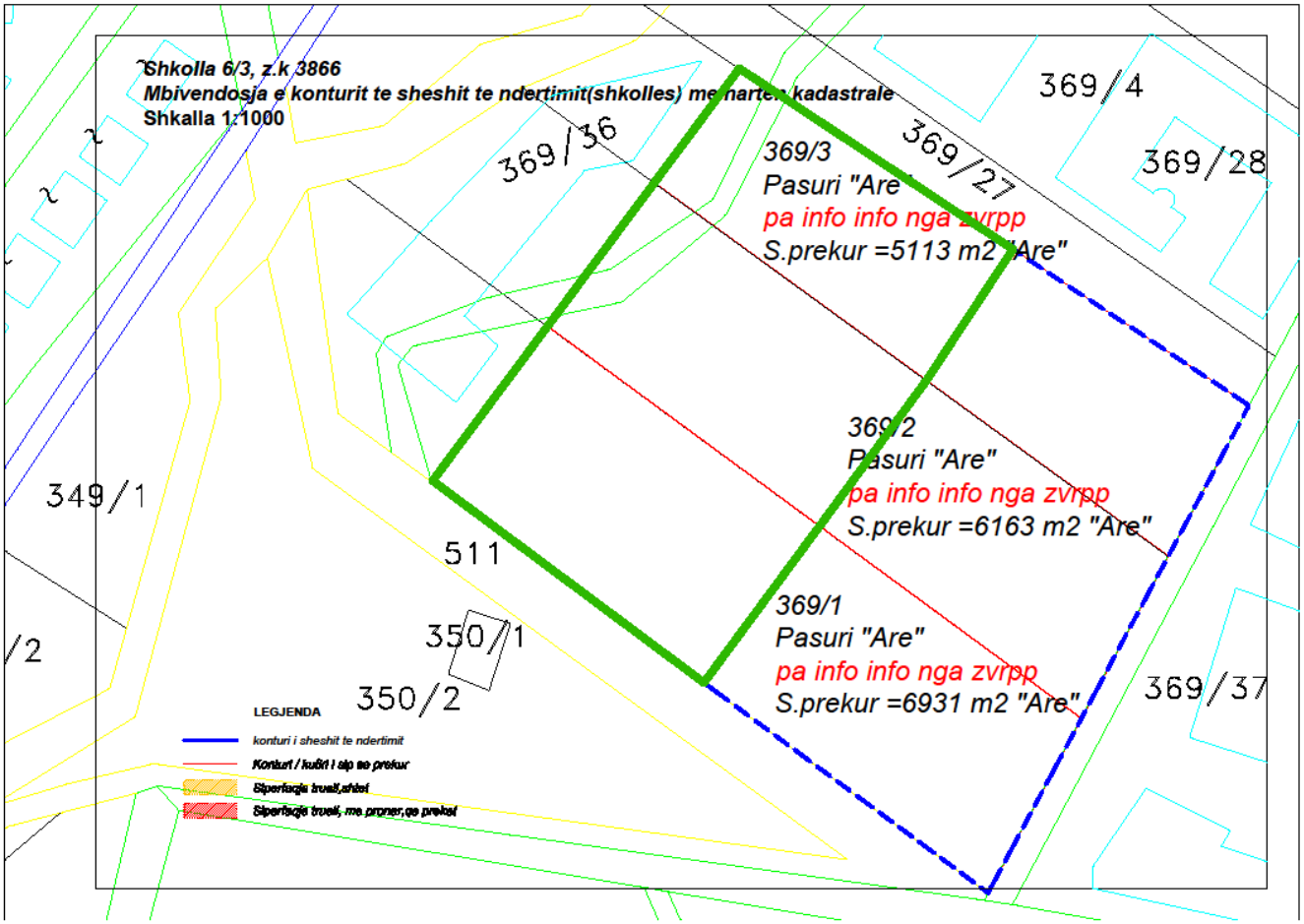


Table 4-Table with preliminary calculation of the selected properties

No	NAME	None in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m²)	Land Price lek/m²	Surface of the affected object (m²)	Price of the object lek/m²	Amount in leke
1	No information	Arable Land	3866	369/1	3465.50	448			1,552,544.0
2	No information	Arable Land	3866	369/2	3081.50	448			1,380,512.0
3	No information	Arable Land	3866	369/3	2556.50	448			1,145,312.0
					9103.50				4,078,368.0

The school to be constructed in cadastral zone 3866 will effect a total of 9103 meter squares property, composed of three properties. The three properties consist of arable lands. Currently there is not information abut the ownership. For the land (price has been taken from CoMD No. 89, dated 03.02.2016.

Site 6/6

PPP Evaluation Commission has not managed to obtain information on the legal status of properties affected by the proposal of plot with Code 6/6 within the deadlines for drafting this feasibility study. Aiming to plan the necessary budget for completion of expropriation for this project, the Commission has assumed that the properties included in this plot consist of land and private properties and in this respect it has calculated also the expropriation costs. These costs will be reviewed with the obtaining of the complete information from Local Office for Immovable Properties Registration and certainly before the beginning of tender procedures.

Map 5- Orthophoto of the site

Table 5-Table with preliminary calculations of the selected properties

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m²)	Land lek/m²	Surface of the affected property (m²)	Price of the object lek/m²	Amount in Leke
1	No information				4930	4242			20,913,060
					4930				20,913,060

Site 7/2

Map 6- Indicative map of properties

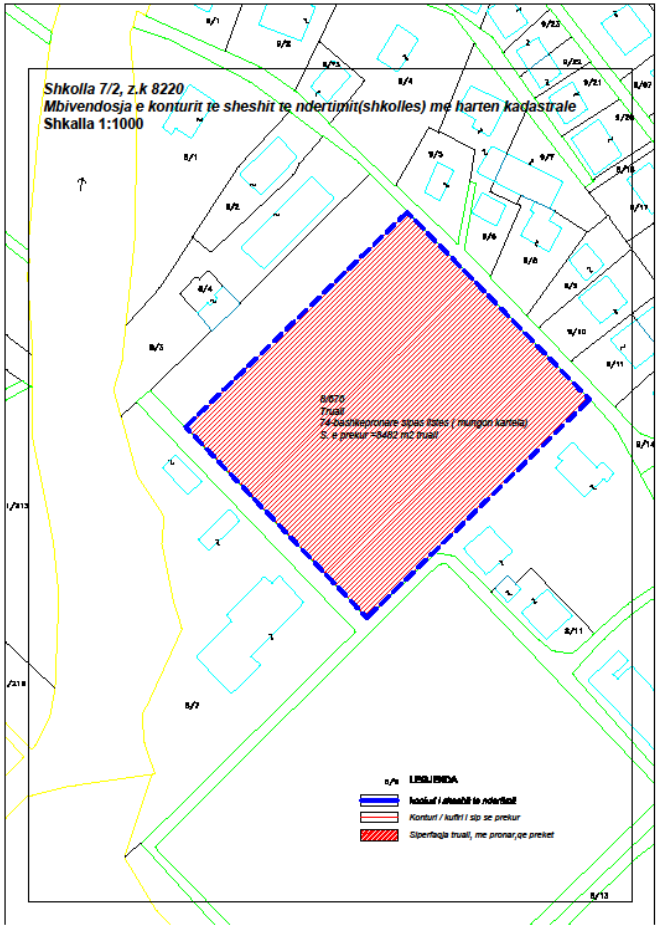


Table 6-Table with preliminary calculations of properties affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of affected land (m²)	Land Price lek/m²	Surface of affected project (m²)	Object Price lek/m²	Amount in leke
1	74 co-owners	Missing List	8220	8/676	8482.00	30783			261,101,406.0
					8482.00				261,101,406.0

The school to be built in cadastral zone 8220 will affect in total about 8482 meter square property, consisting of one single property, no. 8/676, owned by several co-owners. For the land (price has been taken from CoMD No. 89, dated 03.02.2016.

Site 8/1

Map 7- Indicative map of properties

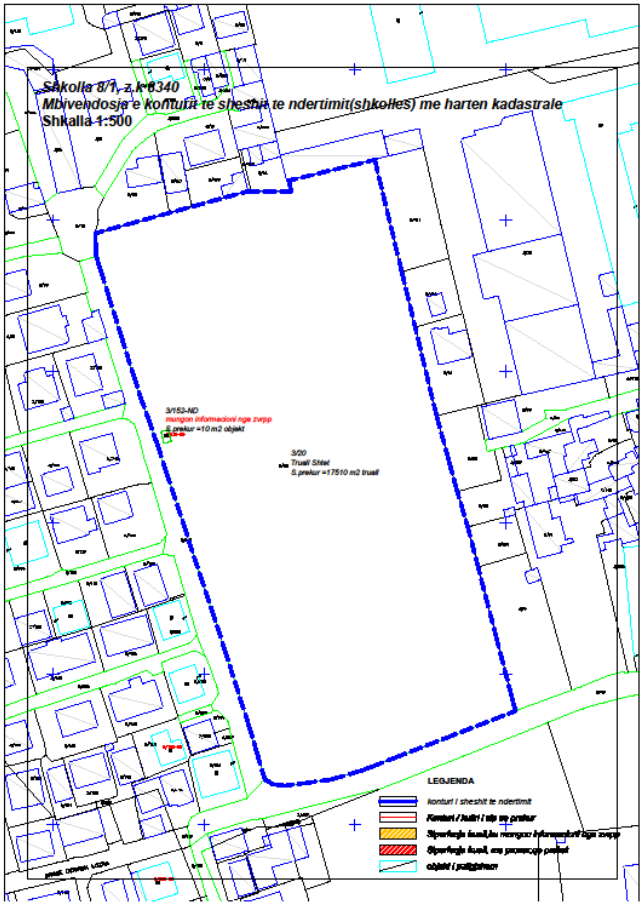


Table 7-Table with preliminary calculations of properties to be affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m²)	Land price lek/m²	Surface of the affected object prekur (m²)	Price Obj.lek/m²	Amount in leke
1	State Owned Land		8340	3/20	17.510	30158			0.0
2	No information	Object	8340	3/152 - ND	10.00	30158			301,580.0
					17.520				301,580.0

The school to be built in the cadastral zone 8340 will affect a total of 17,520 meter square property consisting of 2 properties, 1 of them is a state-owned object No. 3/20 and the other one is property No. 3/152 with no information. For the land (price has been taken from CoMD No. 89, dated 03.02.2016.

Site 9/1

Map 8- Indicative map of properties

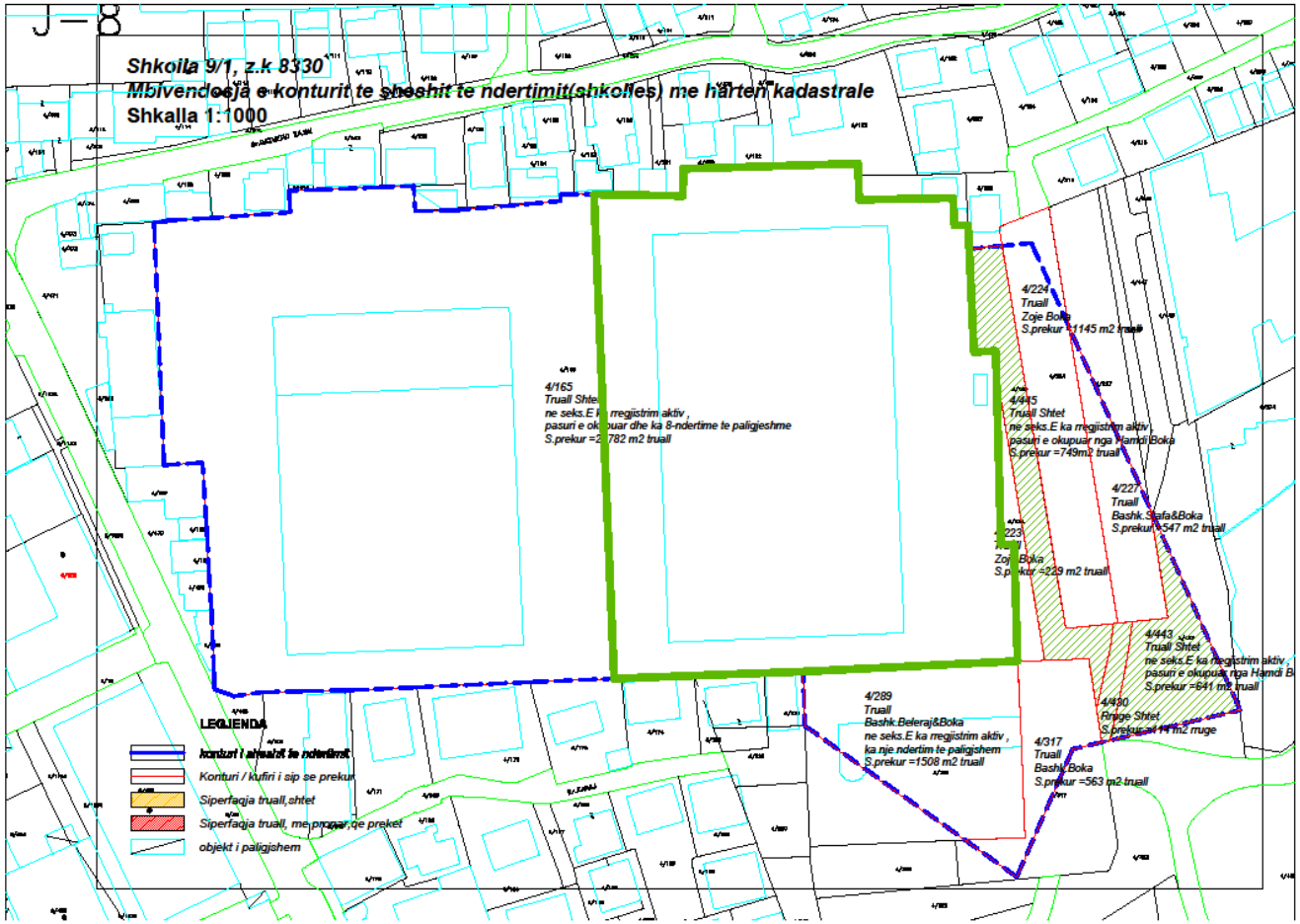


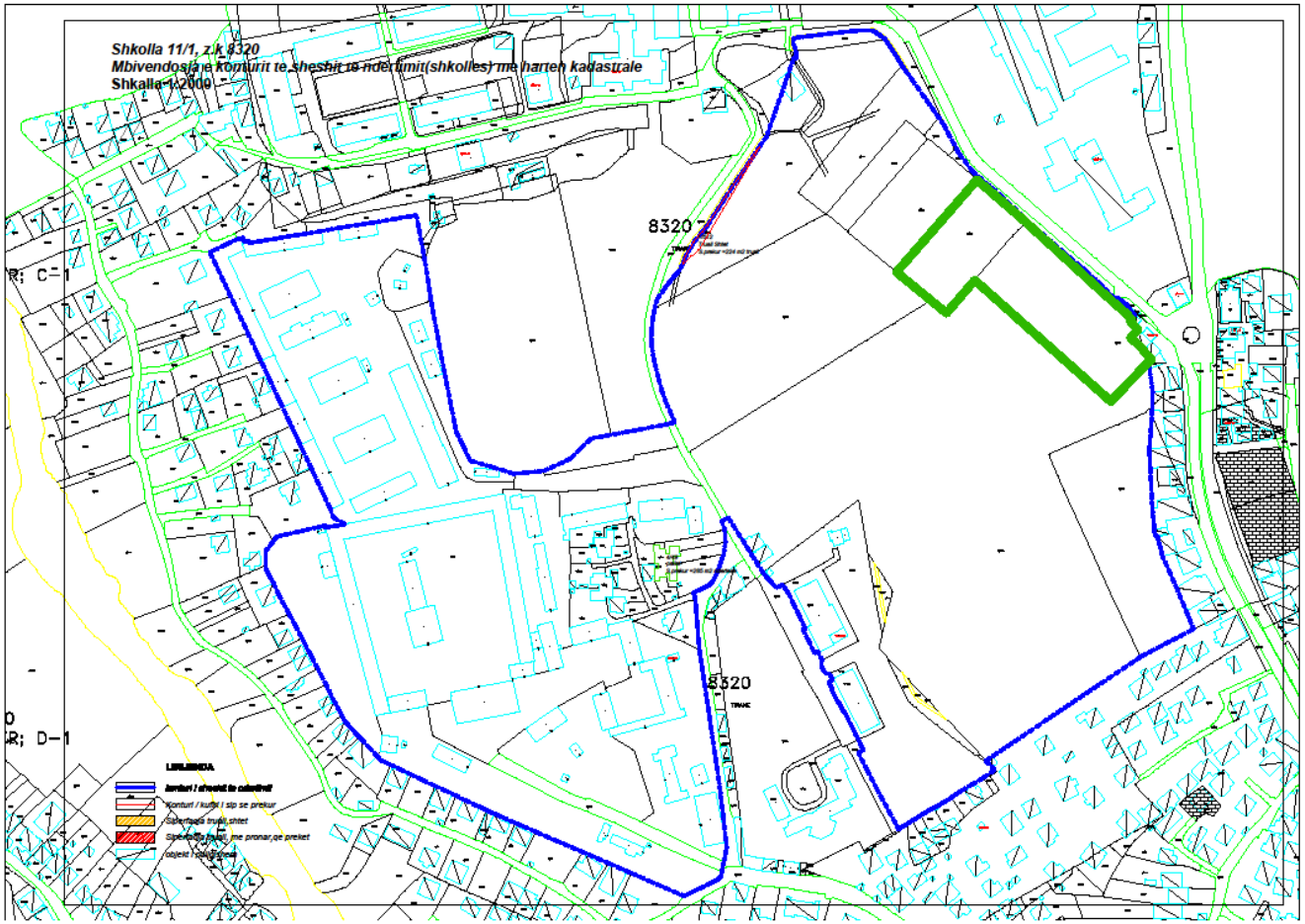
Table 8-Table with preliminary calculation of properties to be affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of affected land (m²)	Land Price lek/m²	Surface of affected land (m²)	Price Obj.lek/m²	Amount in leke
1	State-owned land	Occupied with 8 constructions	8330	4/165	10111.00	34068			0.0
2	Zoje Boka		8330	4/224	1145.00	34068			39,007,860.0
3	State-owned land	Occupied Hamdi Boka	8330	4/445	749.00	34068			0.0
4	Zoje Boka		8330	4/223	229.00	34068			7,801,572.0
5	State-owned land	Occupied by Hamdi Boka	8330	4/443	641.00	34068			0.0
6	Rruge Shtet		8330	4/430	114.00	34068			0.0
					12989.00				46,809,432.0

The school that will be built in Cadastral Zone 8330 will affect a total of about 12,989 meter square property, consisting of 6 properties, 4 out of them are state owned object and 2 are private properties. For the land (price has been taken from CoMD No. 89, dated 03.02.2016.

Site 11/1

Map 9- Indicative map of properties



PPP Evaluation Commission has not managed to obtain information on the legal status of properties affected by the proposal of plot with Code 11/1 within the deadlines for drafting this feasibility study. Aiming to plan the necessary budget for completion of expropriation for this project, the Commission has assumed that the properties included in this plot consist of land and private properties and in this respect it has calculated also the expropriation costs. These costs will be reviewed with the obtaining of the complete information from Local Office for Immovable Properties Registration and certainly before the beginning of tender procedures.

Table 9-Table with preliminary calculations of properties to be affected by the project

No	NAME	Note in sec. E	Cadastral Zone	No. Property	Surface of the affected land (m²)	Land price lek/m²	Surface of the affected project (m²)	Price Obj.lek/m²	Amount in leke
1	No information				8,967	22,985			206,106,495
					8,967				206,106,495

Site 11/2

Map 10- Indicative map of properties

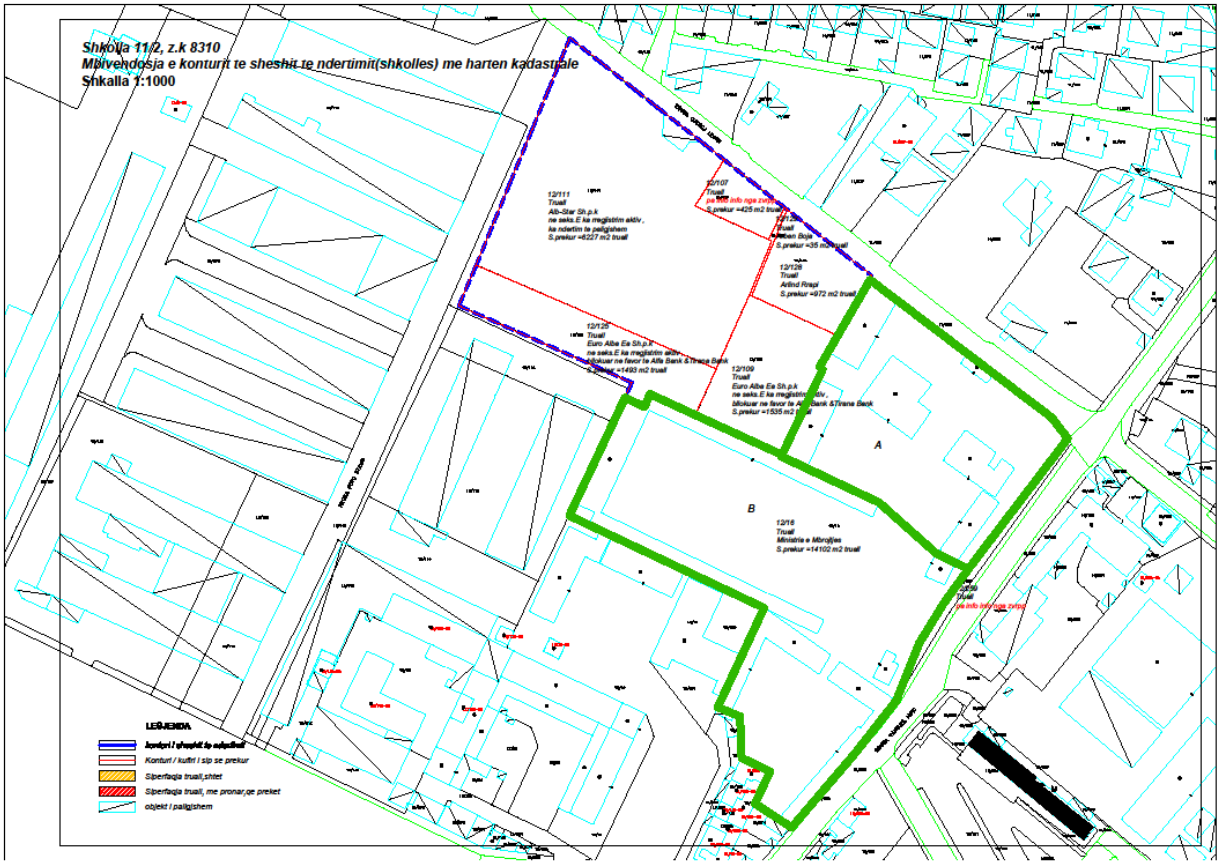


Table 10-Table with preliminary calculations of properties to be affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m²)	Land price lek/m²	Surface of the affected object (m²)	Price Obj.lek/m²	Amount in leke
1	Ministry of Defense		8310	12/16	14102.00	31219			0.0
					14102.00				0.0

The school to be built in Cadastral Zone 8310 will affect a total of 14,102 meter square property consisting of 1 property no. 12/16, which is currently under the ownership of Ministry of Defense. For the land, the calculated price is referred to CoMD No. 89, dated 03.02.2016.

Site D2

Map 11- Orthophoto of the site

PPP Evaluation Commission has not managed to obtain information on the legal status of properties affected by the proposal of plot with Code D/2 within the deadlines for drafting this feasibility study. Aiming to plan the necessary budget for completion of expropriation for this project, the Commission has assumed that the properties included in this plot consist of land and private properties and in this respect it has calculated also the expropriation costs. These costs will be reviewed with the obtaining of the complete information from Local Office for Immovable Properties Registration and certainly before the beginning of tender procedures.

Table 11- Table with preliminary calculations of properties affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m²)	Land Price lek/m²	Surface of the affected Obj. (m²)	Price Obj.lek/m²	Amount in leke
1	No information				14,900	3,560			53,044,000
					14,900				53,044,000

Site F3

Map 12- Indicative map of properties

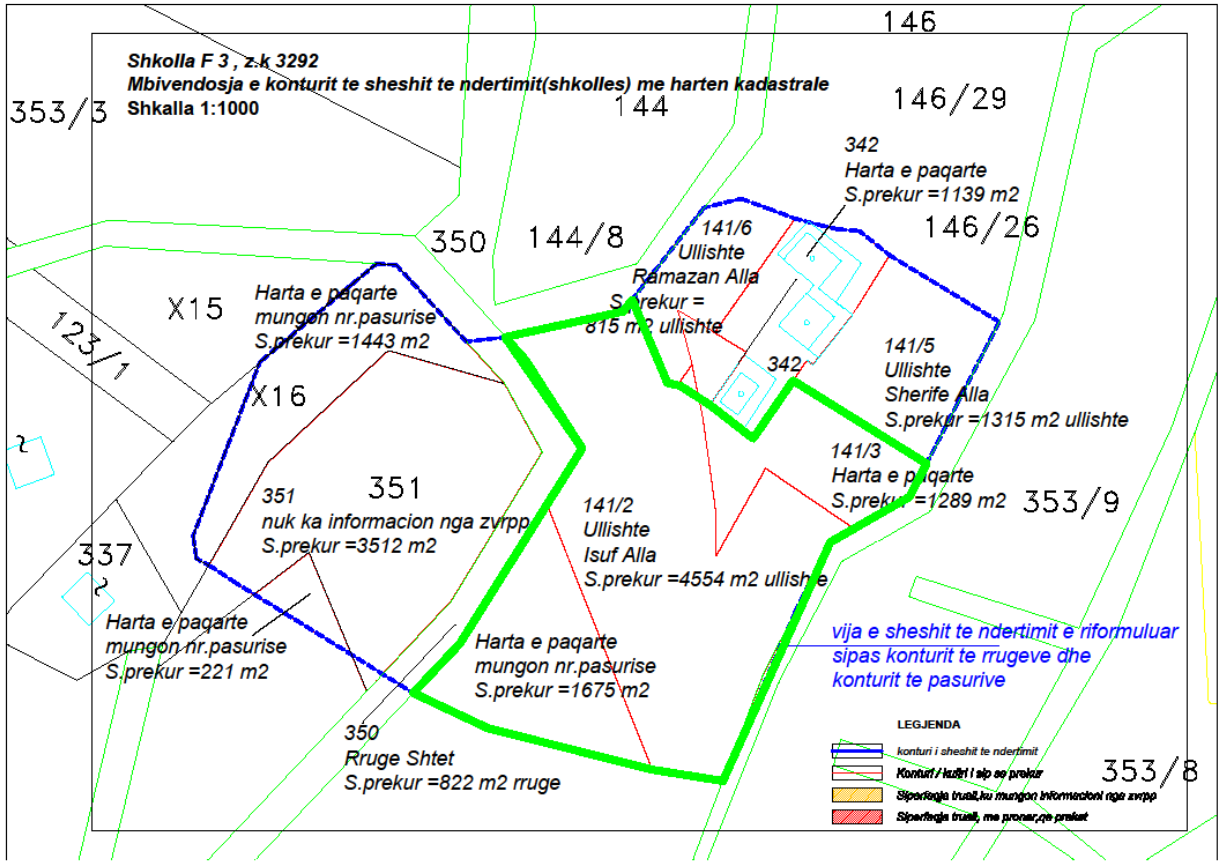


Table 12-Table with preliminary calculations of the assets to be affected by the project

Nr	EMER	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m²)	Land price lek/m²	Surface of the affected object (m²)	Price Obj.lek/m²	Amount in leke
1	State owned road		3292	350	822.00	448			0.0
2	Unclear map	No number of property	3292		1675.00	448			750,400.0
3	Isuf Alla	Olive grove	3292	141/2	4554.00	448			2,040,192.0
4	Unclear map		3292	141/3	1289.00	448			577,472.0
					8340.00				3,368,064.0

The school will be built in cadastral zone 8292 will affect a total of 8,340 meter square property, consisting of 4 properties, 8 object out of them are of private ownership, 1 object, no. 12/16 is under the ownership of Ministry of Defense and one other object is missing information. For the land, the calculated price is referred to CoMD No. 89, dated 03.02.2016.

4.2 Local Conditions

4.2.1 Topographic and geological harmonization in selected sites

Tirana city is located in the field with the same name stretched from foot of Mount Dajti in the east and foot of Sharra hills in the west. The length is about 12 km, whereas the width is 5 km. The city is surrounded from Dajti Mount (1600 m.) in the east, Sauk, Krraba and Vaqarr hills in southeast and southwest (with an average height of 400 m.) and a field space that continues in the northwest up to Fushe-Kruje and Lezhe. After the "90-ies, the city has been expanded with about 20 km2 in all directions. The most expanded parts are in the east at the foot of Dajti Mount, in the southwest in Selite and in the west in the Aviation Field Zone and Laprake. The most important geographical corridor is the one in the direction of west and north, with Durres and Fushe-Kruje respectively. The hill system in the west is created from a range of hills up do the Adriatic coast with two corridors from Durres, enabling easy access to the sea and allows the arrival of air maritime streams up to Tirana.

With the expansion of the city, the zone between Lana and Tirana River is now fully urban and development is stretched up to the hills surrounding the city. The Northern corridor toward the coast, which connects Tirana with Durres has seen a great development with a mixture of commercial, light industry and residential activities. A part of the urbanization is happening in the zones with an environmental geological and geomorphologic sensitivity in the east and southwest, such as Farke and Dajti zones.

CLIMATE

Air temperature - Regarding fluctuations of air temperature within the year, we have to do with a typical regime, where minimal temperature is registered in January - 6.9°C, whereas the maximal temperature is registered in July and August - 23.8°C. It is important also the number of days with a temperature below -10°C, which are called freezing days. In the zones subject of the study object, temperatures below -10°C are rare. Cold days happen also during the cold period of the year (November-March) where January and December are the most difficult months, whereas days with a temperature below -5°C are very rare. Regarding air temperature, the zone, object of the study, is characterized by a soft Mediterranean climate.

Fog - The highest annual average in Tirana is 10.5 foggy days. This is the highest in the entire Coastal Low Lands, where in Shkoder is 6.1 days and in Vlora 1.5 foggy days per year. It results that in the entire zone object of this study the fog occurs after midnight or 2 or 3 o'clock and continues until 9-10 in the morning. It also happens to have fog in the evening. As a rule, the warm period is not characterized by fog and when it happens it does not lasts for long, i.e in Tirana the average fog duration is 2 hours and 24 minutes.

Atmospheric conditions - Factors influencing the atmospheric rainfalls characteristics are the geographical position, proximity with the sea and orography. Zones where will be constructed the objects of study are located in the central part of the country in the Coastal

Low Lands near the Adriatic sea with a low field relief and hills surrounding the zone from the west and protect it from sea winds. The annual amount of rainfalls is about 1200 mm. The highest quantity of registered rainfalls has been 1770 mm and the lowest was 770 mm per year. Compared to the average value of the Albanian territory (140mm), this zone is lower regarding the atmospheric quantity of rainfalls.

Snow - A part of rainfalls in Albania come as snow in the cold period of the year. These rainfalls are more present in the mountainous area, where snow is a normal phenomenon. In the zone object of study snow is a rare phenomenon and may considered as an extraordinary phenomenon. The biggest number of snowy days is 3 day per year. January is the month with the biggest number of snowy days, followed by February and December.

Air Humidity - The highest values belong to November, December and January. In the meantime, the lowest values of relative humidity are noticed in July and August, exactly when on the Mediterranean Region is noted a strong anti-cyclone stability. The daily progress of relative humidity is the opposite of the air temperature. The first morning hours register also the highest values, whereas in the noon (before or after the noon) are registered the lowest values.

Wind - Wind velocity in the territory of this zone depends on the period of the year. The highest values are registered in winter, when the cycles activity is strong. In this zone, the average velocity is 1.6 m/s.

Storms - Storms, rare phenomenon for our country, happen during all the seasons of the year, and are accompanied with hails. Hail is more present in winter and half of autumn, and in the first half of spring. The biggest number of days characterized by hail is registered in Tirana and Kamez. Tirana counts about 8 days with hail. In general, the hailfall longs from 3 to 5 minutes. In the zone, object of this study, the hail is noted in any time of the year, but it is more present in the cold period of the year. In the course of January, it is noted at average a day characterized by hail. In the warm period, number of days with hail is few. Storms may happen in any period of the year, demonstrating the Mediterranean character of the zone.

TOPOGRAPHY

The zones selected for construction of education objects have the following topographic characteristics:

Site 2/3 is located in southern Tirana. This site is found in the hills near Students City and is sloppy.

Site 2/6 is located in souther Tirana, in Elbasani str., near roundabout of Sauk and is characterized by a flat surface.

The site 5/1 is located near “Hasan Alla” str, in an urban zone of Administrative Unit no. 5 and has a flat surface.

Site 6/3 is located in the western part of Tirana, near “Teodor Keko” str. It has a flat surface.

Site 6/6 is located near the western part of Tirana, near "Teodor Keko" str. It has a flat surface, bordered with blocks and on one side with Lana River.

Site 7/2 is located in Administrative unit no. 7, near "Javer Malo" and "Stavri Themeli" str.. The site has a flat surface surrounded by some light hilly formations and on one side is bordered with Lana River.

Site 8/1 is located in northern Tirana in Administrative Unit no. 8. The surface of this site is not sloppy, and the entire zone is not hilly.

Site 9/1 is located in Administrative Unit No. 9, near "Don Bosko" str, and it is characterized by a flat surface.

Site 11/1 is located in Administrative Unit no. 11, near Agriculture University of Tirana. The relief of this site is characterized by hilly formations and sloppy.

Site 11/2 is located near Dogana roundabout in Administrative Unit no. 11. This site is characterized by a flat surface and it is located in an urban area.

Site D2 is located in eastern Tirana in Administrative Unit of Dajt. The site is a slight sloppy and it is situated in the hills near Dajti Mount.

Site F3 is located near the Zoo in Administrative Unit of Farke. Located in Farke hills, this site is sloppy.

GEOLOGY

Tirana is situated on strata and quaternary pockets. They are alluvial soil along the inflow of two main rivers. Some old river strata consist of gravel, sandstones and clay mud. Underground waters are mostly found in the western side of the city and are used for potable water supply and private use, in particular for industry. Wells are sufficiently . Puset jane mjaft te ceket, about 15 meters deept, which exposes them to pollution from activities in the surface. Currently, there is no mineral extraction activity in Tirana.

In BT Zone, the surface geological faults are represented by deposits of soil formation, which are composed of consolidated deposits of Upper Miocene, but covered with a several of tens of meters of thickness from those of the still non-consolidated quaternary.

GEO-MORPHOLOGY

The study of geological phenomenon of zones is focused on the existing and new information obtained from the current study. Based on these data, we are making a description of geological phenomena present in the geological faults of this area.

The most noticeable geological and geo-dynamic phenomena are:

1. **Phenomenon of aeration** is more common in the root formations composed of argillite and alevroties. These roks are new depositations with a weak clay cementation.

Under the influence of atmospheric agents, they are transformed from soft rock to earth. This phenomenon is more common in the hilly part of the zone, i.e. in the site under study.

2. Phenomenon of erosion is more common in aerated formation of Neogen and in the diluvial-eluvial placer. The air streams during heavy rainfalls erode the diluvial-eluvial placer and aeration part of the soil formation. We recommend paying of attention in the construction sites and objects and their protection from erosion of streams of surface waters created during rainfalls, technological waters that will be created during the exploitation of this residential object.

3. The phenomenon of eluvial-diluvial placers motion toward the fall of relief. These depositations consist of sub-argillite and argillite strata composed of organic substances with pieces of soil rock. The diluvial-eluvial placer is found on a soil formation. Sites located in hilly and slopy zones face problems with the stability of slopes. During construction and exploitation of the object, it is necessary to take measures for preservation of slope´s stability.

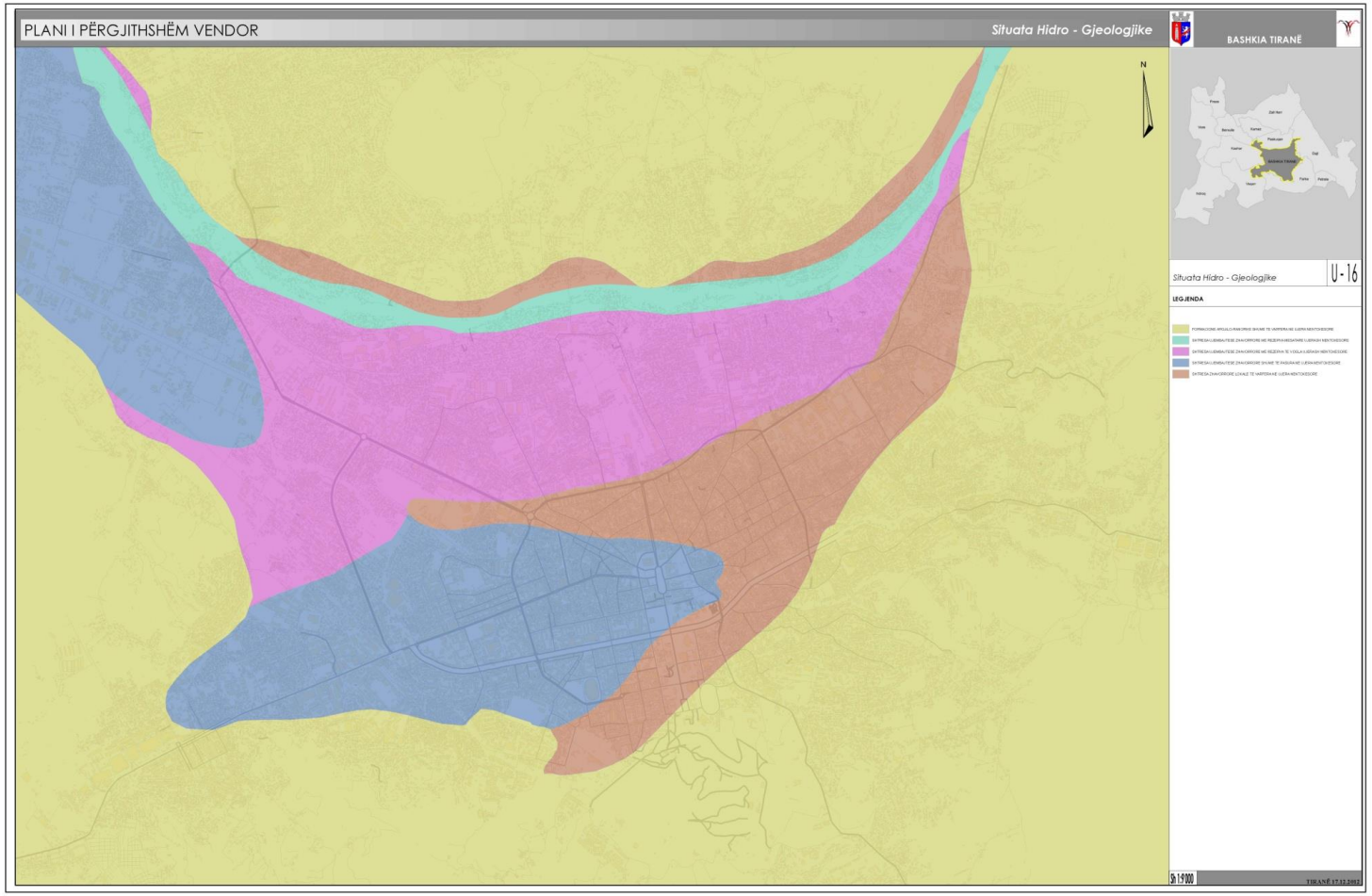
HYDROLOGY

The sites selected for construction of schools objects are mostly located in urban zones that are not crossed by brooks or river networks. With the exclusion of Sites 6/6 and 7/2 that are bordered with Lana River,

Lana River has a constant flow with a small influx. Despite a regular regime of the flow, depending on the rainfalls, this river gains the characteristics of an irregular flow, adding its flow and coming out of the bed. Nevertheless, this does not pose any risks because it is a rare phenomenon and does not cause erosion or floods.

Picture 1-View from Lana river near one of the sites envisaged for school construction (Site 6/6, Yzberisht)

Map 13 – Hydro-Geologycal Situation (Source: 2014 General Local Plan of Tirana Municipality)



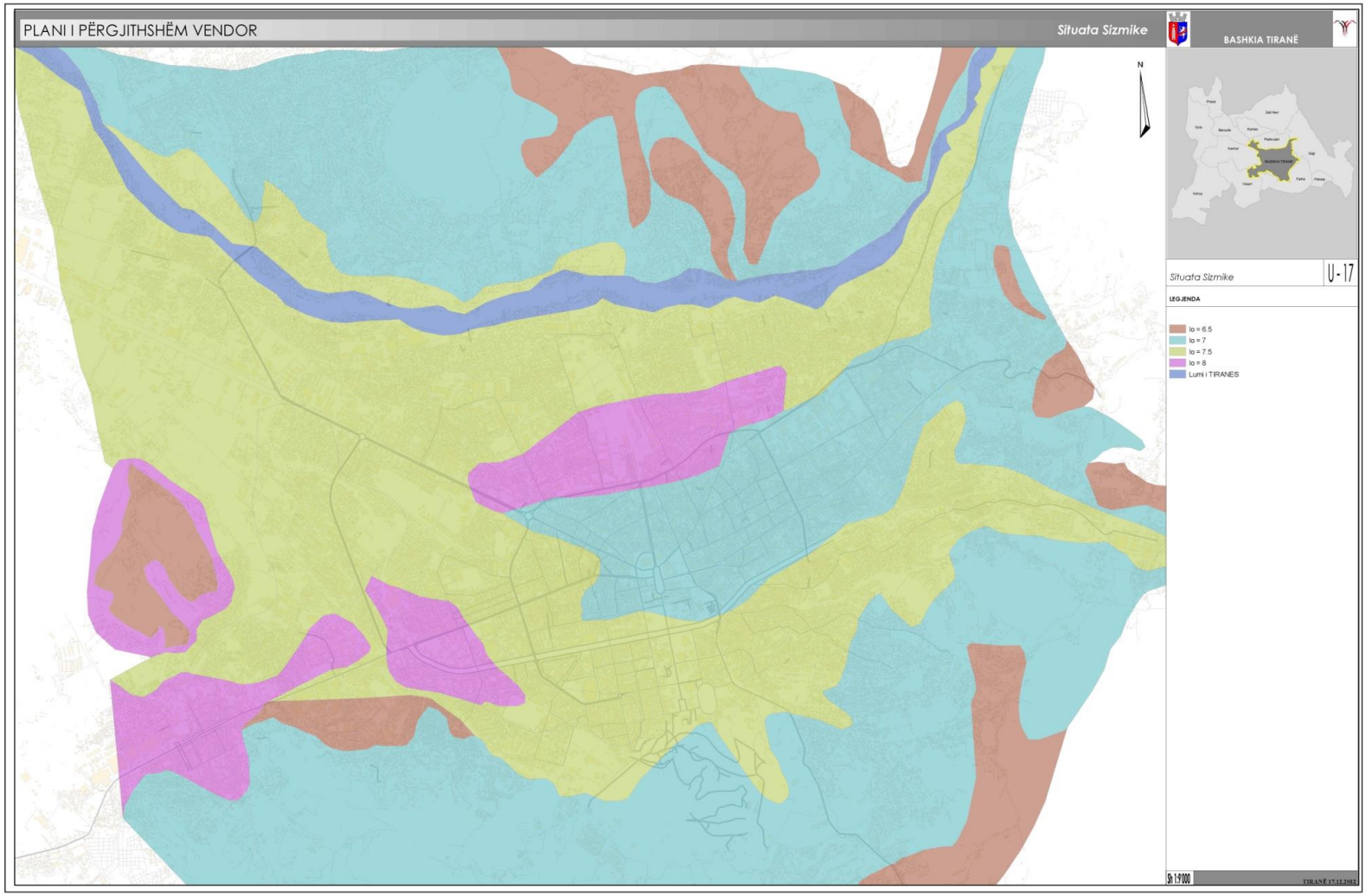
1.1.2. Seismicity

From the geological point of view, Tirana city is part part of the Sinclinal of Tirana. [Aliaj,1988].

The history of earthquakes in Tirana zone: 1617 of I0= 8 Richter scale (MSK-64) in Krujë, in 1852 of I0= 8 Richter scale (MSK64) in Cape of Rodon, in 1860 of I0= 8 Richter scale (MSK-64) in Beshiri Bridge, in 1934 of Ms= 5.6 in Ndroq, on 19.8.1970 of Ms= 5.5 and I0= 7 Richter scale (MSK-64) in Vrapi Zone, në 16.9.1975 of Ms= 5.3 in Cape of Rodon, 22.11.1985 of Ms= 5.5 in Drini Bay and on 9.1.1988 of Ms= 5.4 in Tirana.

Thus, Region of Tirana is affected by historic earthquakes of I0 = 8 Richter scale (MSK-64) and in the course of last century by earthquakes with M = 5.3 - 5.6 [Aliaj, 1997]. From the seismotectonical point of view, Tirana region may be hit in the future by earthquakes of M_{max} = 5.5 - 5.9 [Aliaj, 1997], whereas according to map of potential maximal earthquakes, Tirana city is included in the zone M_{max} = 5.8 - 6.4 ose M_{max} = 6.1±0.3 [Koyiu, 1986].

Map 14 – Seismic Situation (Source: 2014 General Local Plan of Tirana Municipality)



4.2.3. Situation of road and underground infrastructure of selected lands

Situation of road service, sewarage and water supply system

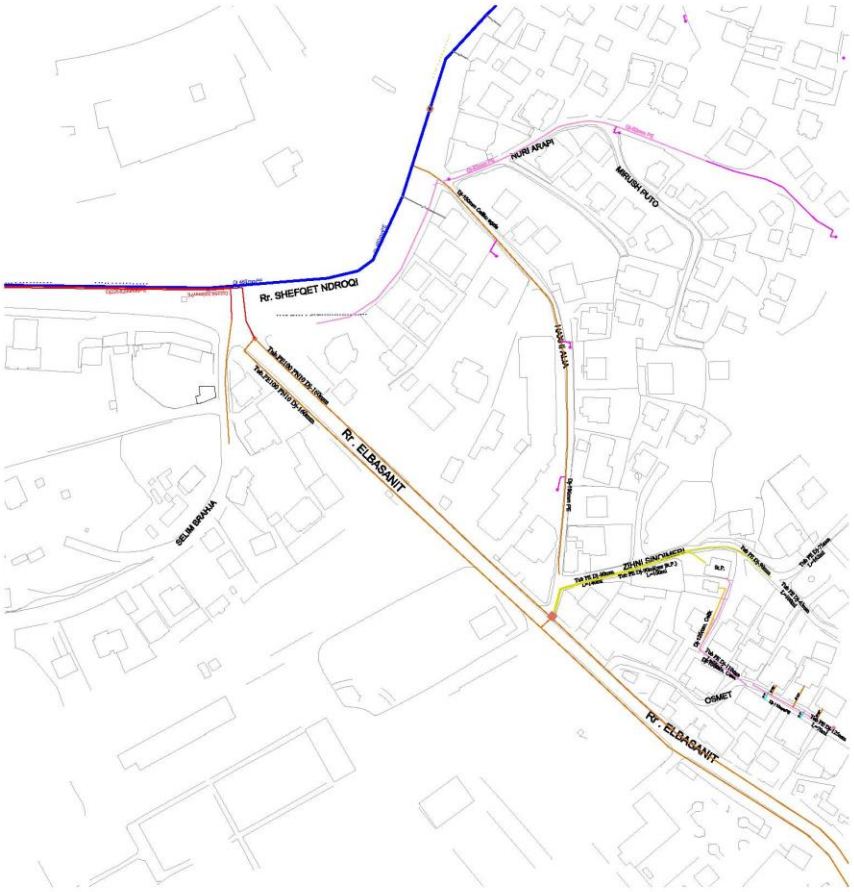
- **Administrative Unit 2**

Site of nine-year school - high school (Code 2/6)

This school is situated in Administrative Unit 2 and is connected with the main axis of urban road ‘’Elbasani’’and near the secondary urban street ‘’Zihni Sinoimeri’’. This site does not have a sewerage network and regarding water supply system in the East there is-Tube160-PE.

Map 15 – Situation of sewarage network of the site

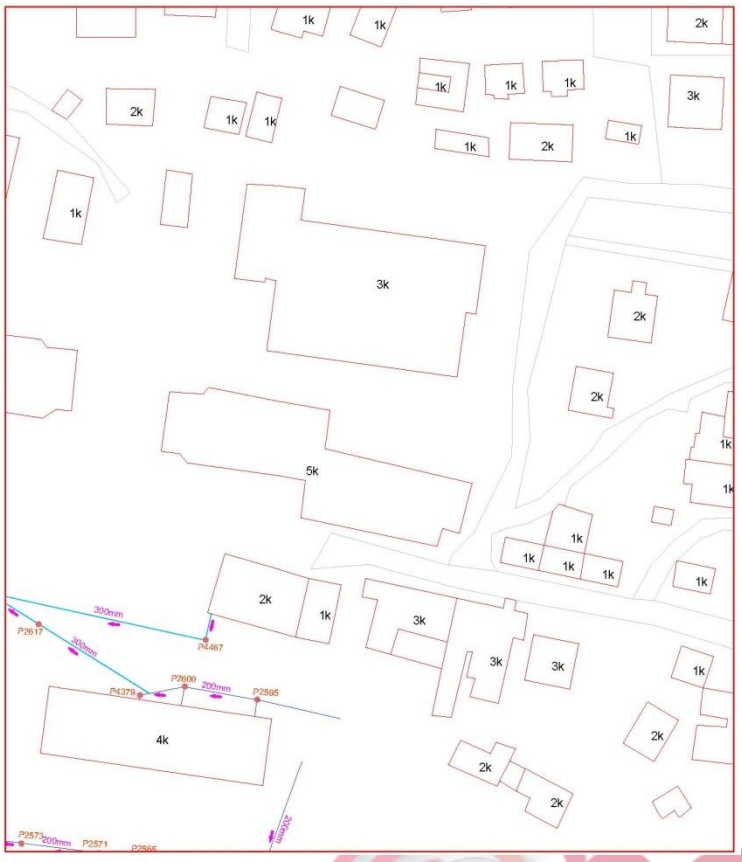
Map 16 – Situation with water supply system of the site



Site of nine-year school (Code 2/3)

This school is located in Administrative Unit 2 and is connected with the secondary street axis ‘‘Pjetër Budi’’and local street ‘’Jorgjia Truja’’. This site does not have a sewerage network, whereas regarding water supply system, there is North-Tub75-PE, East-Tub90PE, and South-180PE and West-Tub110PE.

Map 17 – Situation of water supply system in the site



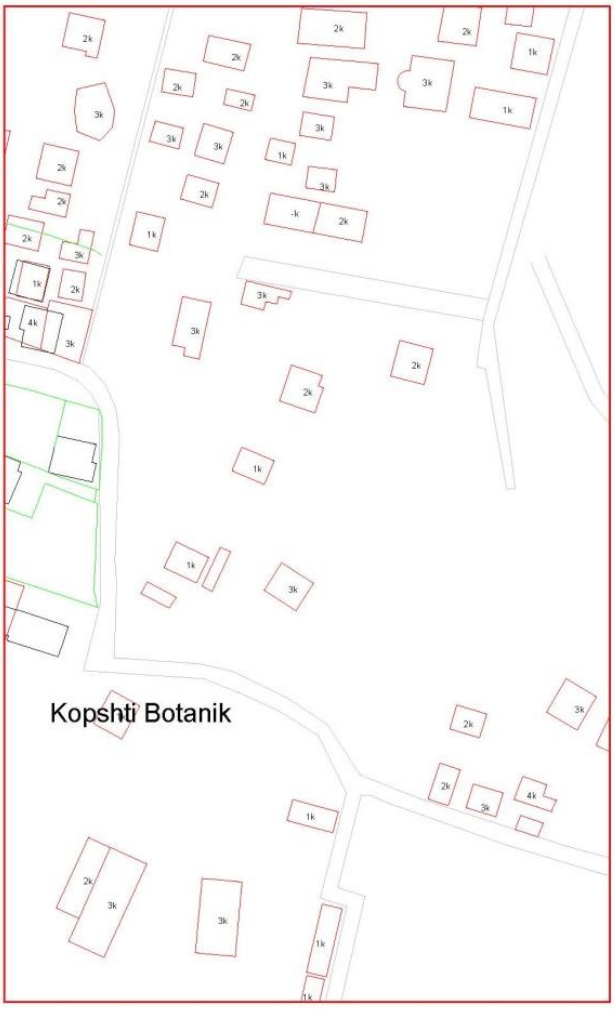
Map 18 – Situation of water supply system in the site

- **Administrative Unit 5**

Site of nine-year school (Code 5/1)

This school is situated in Administrative Unit 5 and is connected to axis of secondary urban street ‘’Liman Kaba’’and secondary urban street ‘’Prokop Mima’’. This site does not have sewarage system and no water supply system connection.

Map 19 – Situation of sewarage network of the site



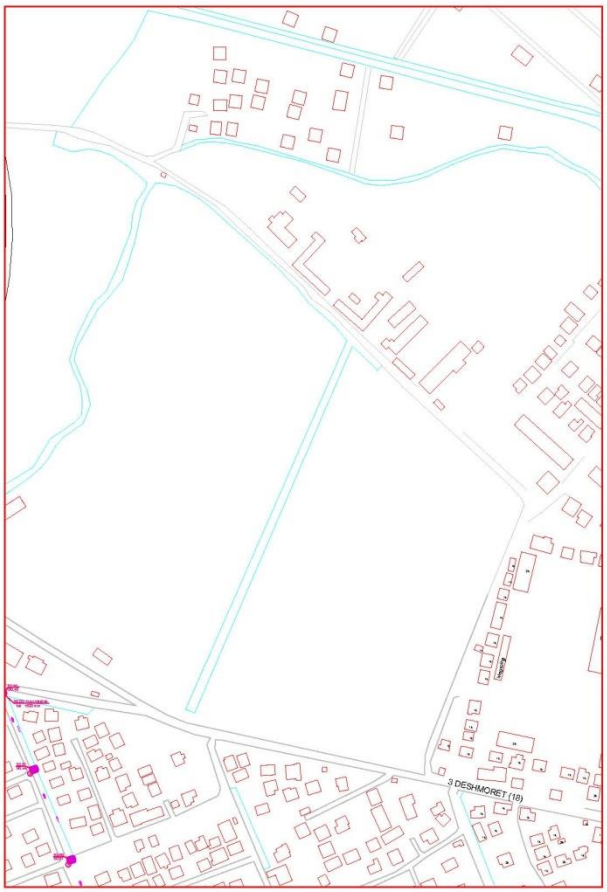
Map 20 –Situation of water supply system in the site

- **Administrative Unit of Kashar**

Site of nine-year and secondary schools (Code 6/3)

This school is found in Administrative Unit of Kashar and is connected with local street axis ‘‘Andrea Albani’’and local street ‘’Kole Koçi’’. This site does not have a sewerage network, whereas regarding water supply system, there is East-Tube 160PE and North - Tube 110PE.

Map 21 – Situation regarding sewarage network in the site

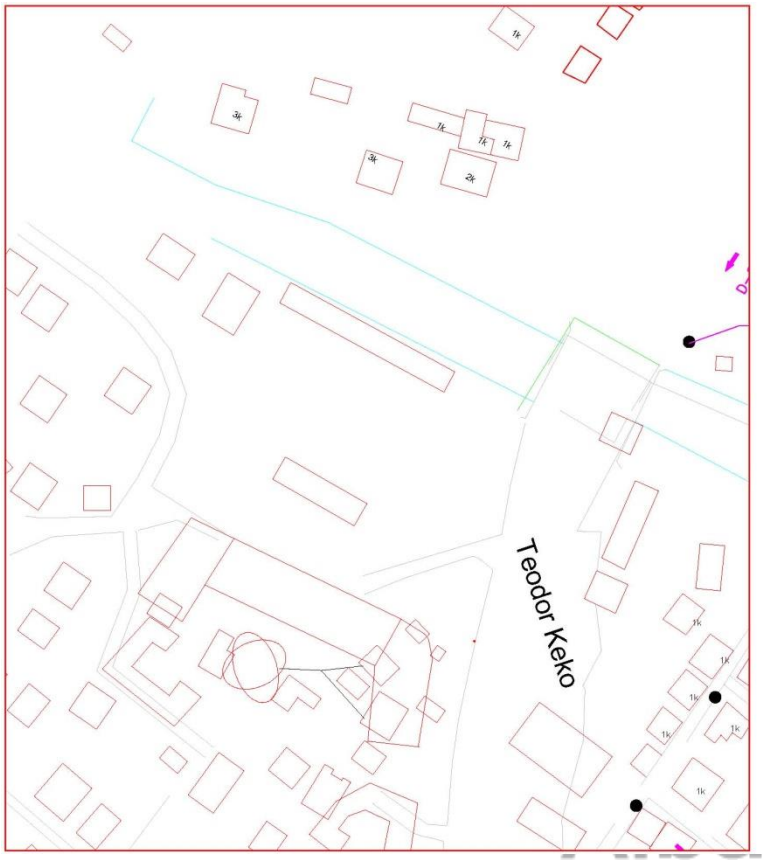


Map 22 – Situation of water supply system in the site

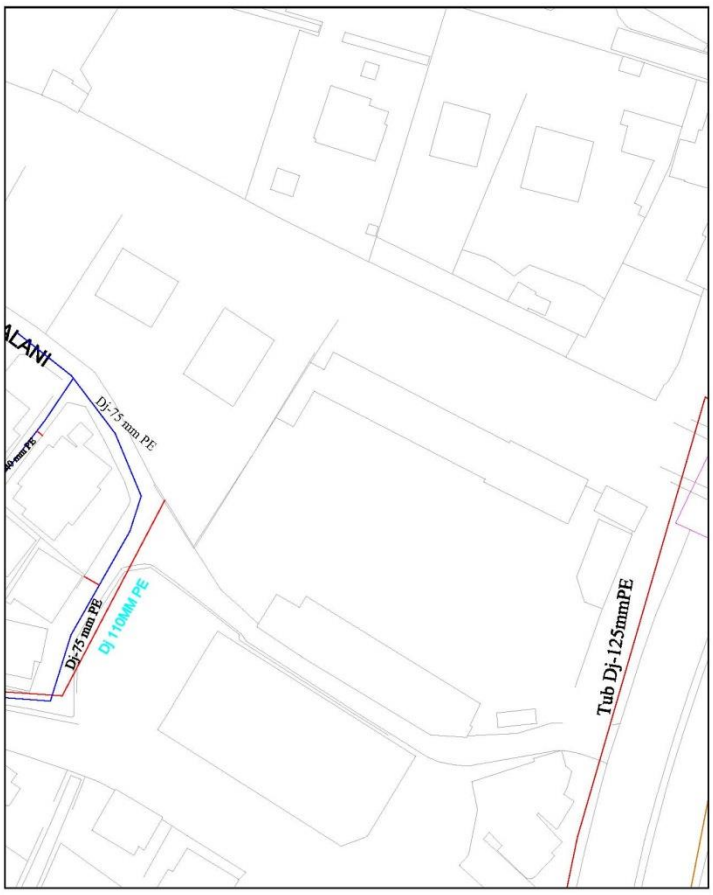
Site of nine year school (Code 6/6)

This school is located in Administrative Unit 6, which is connected with the axis of main road ‘’Teodor Keko’’ and urban secondary road ‘’Menduh Zavalani’’. This site does not have a sewerage network, whereas regarding water supply system, there is East -Tub 125PE.

Map 23 – Situation regarding sewarage network in the site



Map 24 – Situation of water supply system in the site

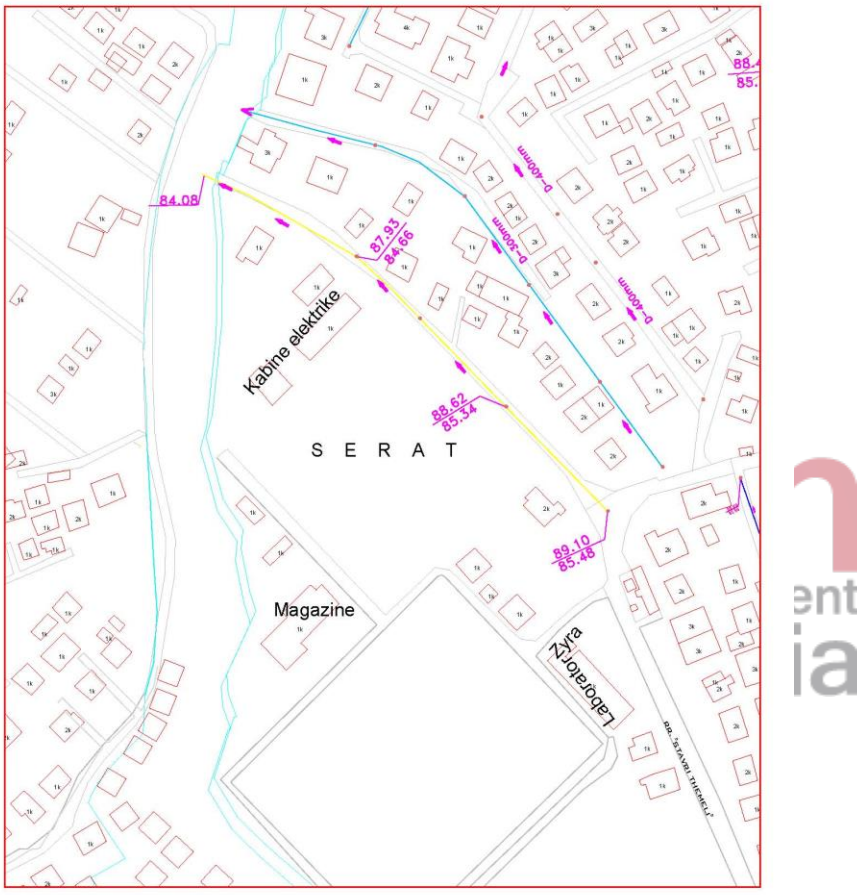


- **Administrative Unit 7**

Site of secondary street (Code 7/2)

This school is located in administrative unit 7, near “Javer Malo” and “Stavri Themeli” streets. This site has a Tube 1000 of sewerage network in the north. Regarding water supply system there is Tube 110PE in the East.

Map 25 –Situation of sewarage network in the site



Map 26 – Situation of water supply system in the site

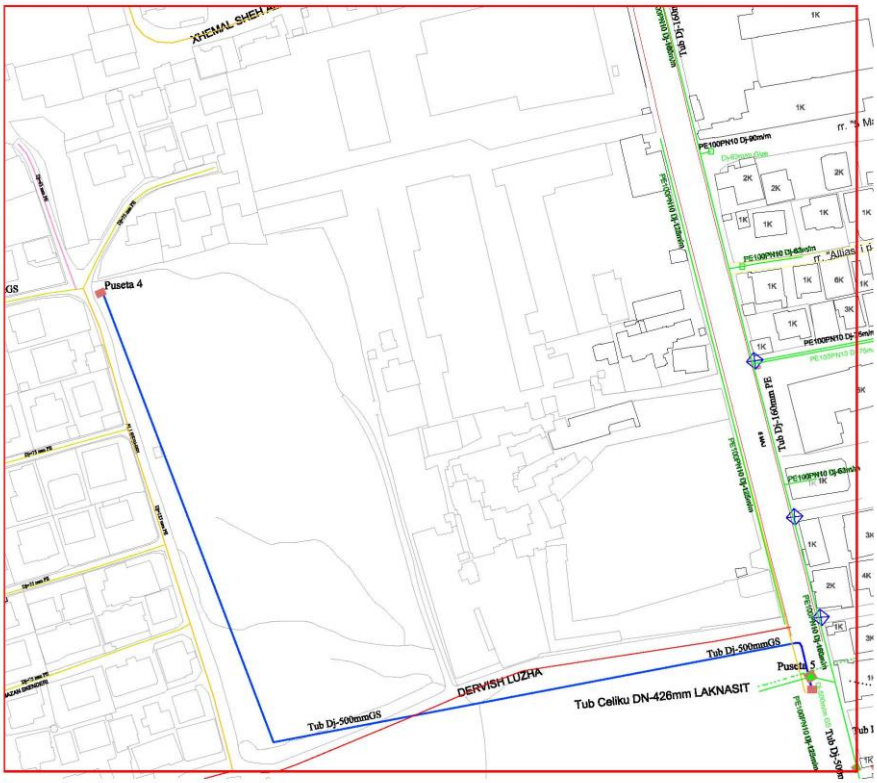
- **Administrative Unit 8**

Site of nine-year and secondary school (Code 8/1)

This school is located in Administrative Unit 8 and is connected to main road axis ‘’5 Maj’’ and turns left to secondary urban road ‘’Dervish Luzha’’. This site does not have a sewerage system, whereas regarding water supply system, there is Tube 110PE in the north.

Map 27 – Situation of sewarage network in the site

Map 28 – Situation of water supply system in the site

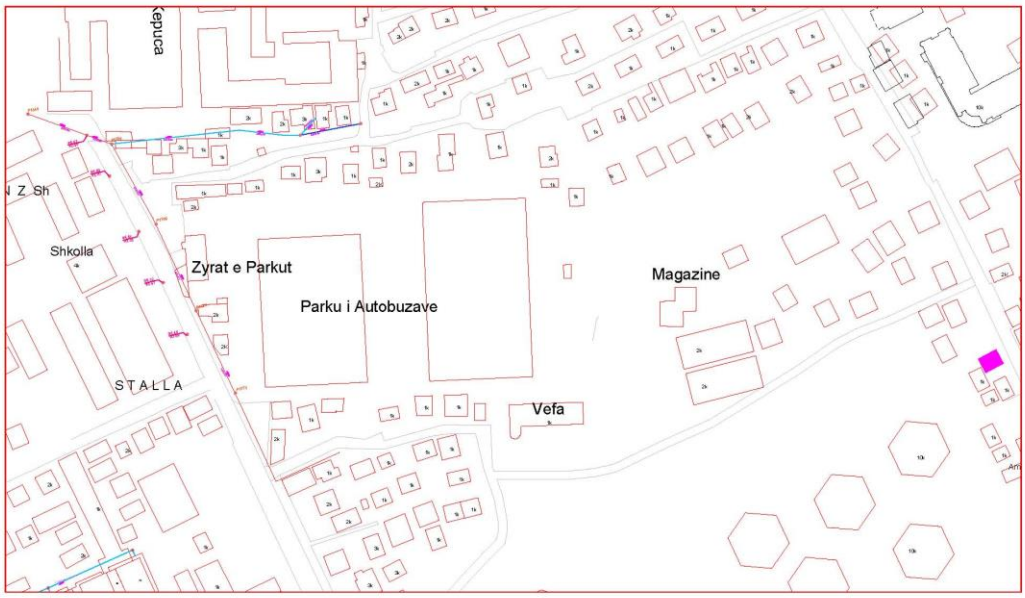


- **Administrative Unit 9**

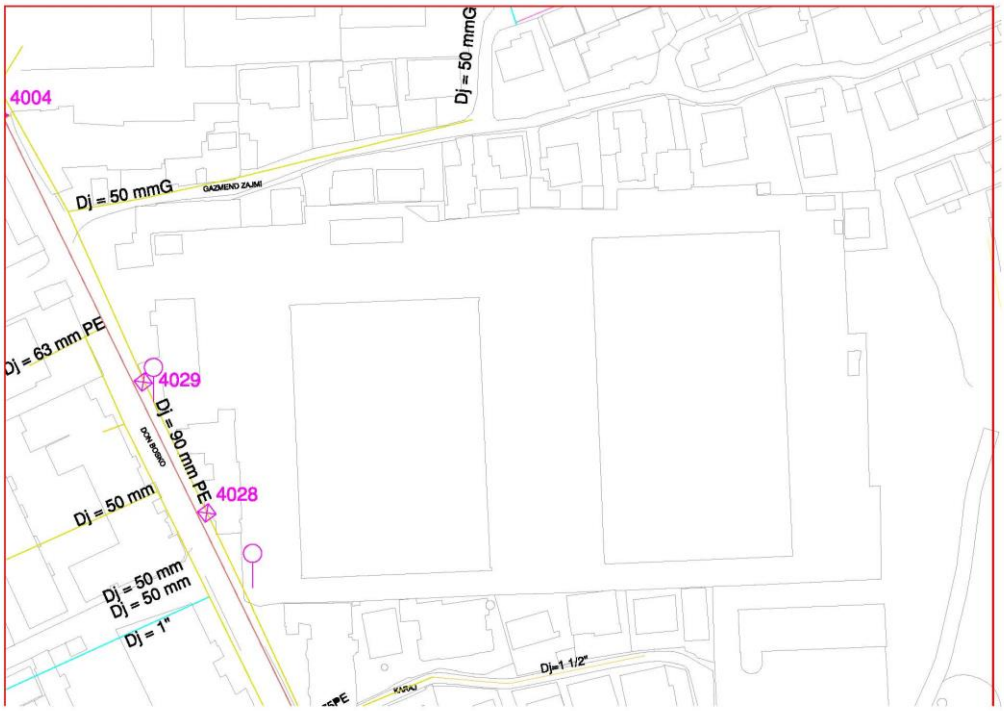
Site of nine-year and secondary school (Kode 9/1)

This school is located in Administrative Unit 9 and is connected with main urban road axis ‘’Don Bosko’’ and secondary road axis ‘’Karaj’’ and secondary urban road axis ‘’Gazmend Zajmi’’. This site does not have a sewerage network, whereas regarding water supply system there is -Tube 250Gize in the west.

Map 29 – Situation of sewerage network in the site



map 30 – Situation of water supply system in the site

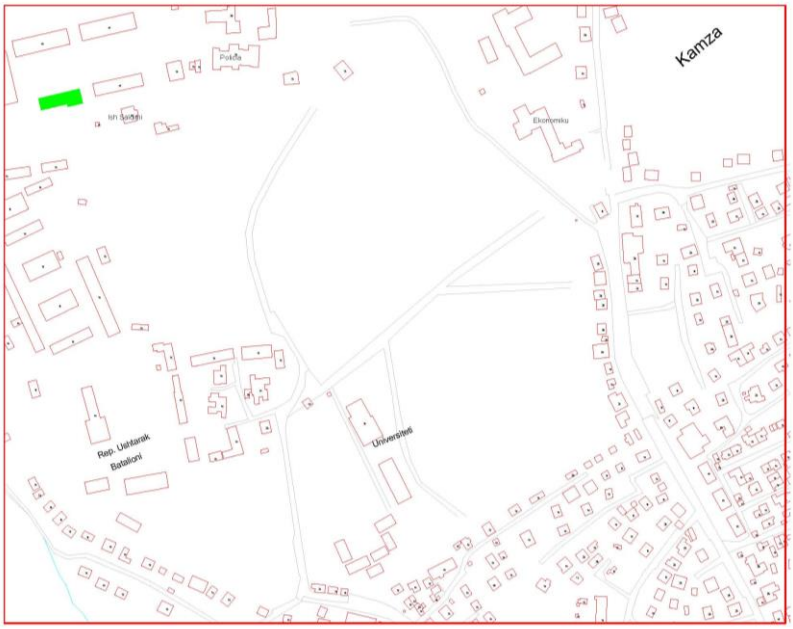


- **Administrative Unit 11**

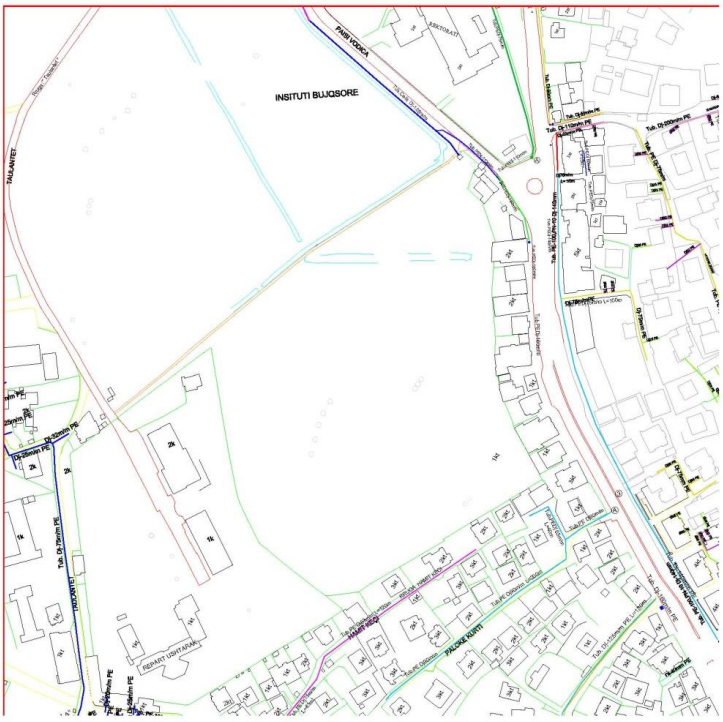
Site of nine-year and secondary school (Code 11/1)

This school is located in Administrative Unit 11 and is connected with the axis of main urban road ‘’Kastriotët’’ and secondary urban road ‘’Paisi Vodica’’ and secondary urban road ‘’Hamit Keçi’’. This site does not have a sewerage network, whereas regarding water supply system, there is -Tube160PE in the East, -Tub63PE in the South and Tub75PE in the West.

Map 31 – Situation of sewarage network in the site



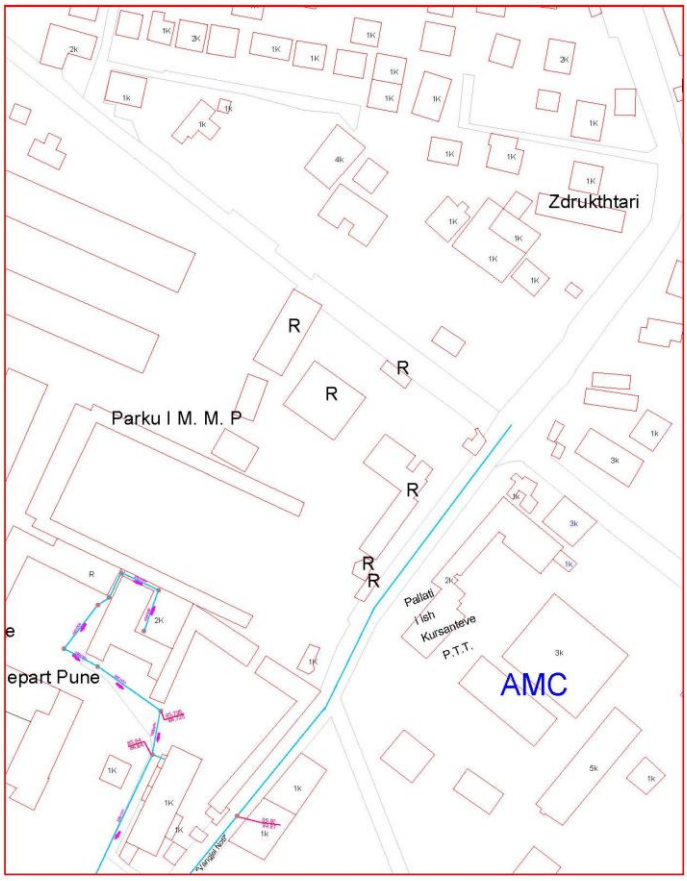
Map 32 – Situation of water supply system in the site



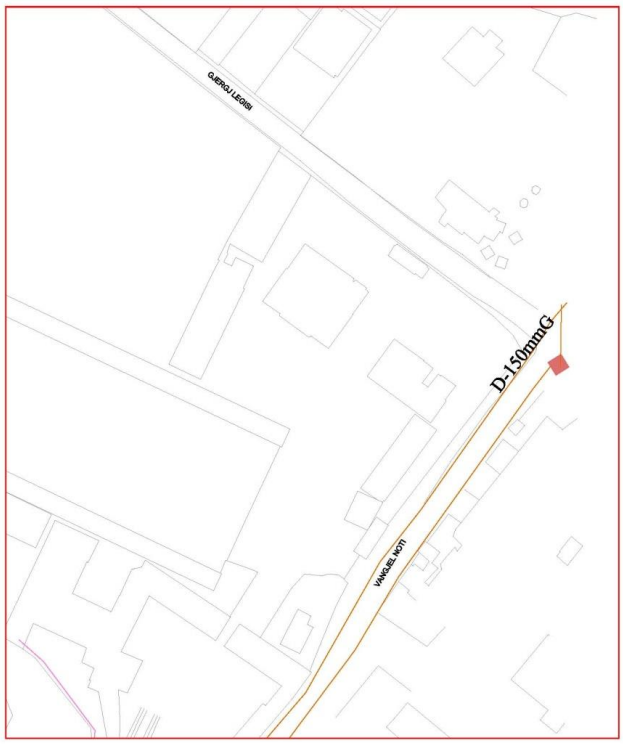
Site of nine-year school (Codi 11/2)

This school is located in Administrative Unit 9 and is connected to main road axis ‘’29 Nëntori’’ and secondary urban street ‘’Vangjel Noti’’, secondary urban street ‘’Foto Stamo’’and secondary urban street ‘’Gjergji Legisi’’. This site does not have a sewerage network, whereas regarding water supply system, there is Tube 150PE in the East.

Map 33 – Situation of sewarage network in the site



Map 34 – Situation of water supply system in the site



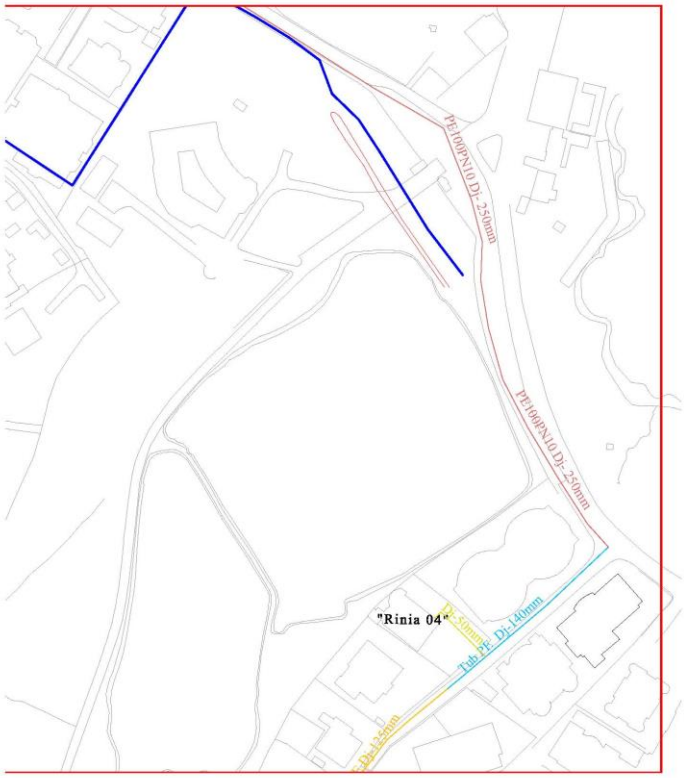
- **Administrative Unit of Farke**

Site of nine-year school (Code F3)

This school is located in the Administrative Unit of Farke and is connected to a local road (between Botanic Garden and Dry Lake). This site does not have a sewerage network, whereas regarding water supply system, there is Tube 250PE in the East.

Map 35 – Situation with the sewarage network in the site

Map 36 – Situation of water supply system in the site



- **Administrative Unit of Dajt**

Site of secondary school (Code D2)

This school is located in the Administrative Unit of Daj and is connected to the nearest road ‘’Dalip Topi’ and heads to Dajt, without a direct road access. This site does not have a sewerage network, whereas regarding water supply, system there is 50PE in the North.

Map 37 – Situation of sewarage network in the site

Map 38 – Situation of the water supply system in the site

4.3. Architectonic, construction and functional description of the project

4.3.1. Design Parameters

The following key parameters must be taken into consideration for realization of the project according to schools typology and location, referred to guideline "On Design of School Buildings" of Ministry of Education and Sports:

- For basic education schools

a) Education level includes

- Level 0, Pre-school education, 5-6 year old
- Level 1, elementary education, class 1- 6, 7 – 13 year old
- Level 2, lower middle education, class 7 – 9, 14 – 16 year old.

b) Number of cycles (parallels)

The study refers to schools with 2 cycles and 3 cycles

c) Number of classes

Depending on the number of cycles were defined also the number of classes, which have 20 classes and 30 classes

d) Number of students/class

For the urban area, number of students per class is estimated at 30 students/ class, whereas for rural areas is 24 students / class.

e) Total Number of students

Depending on the construction zone and number of cycles, total number of students in a school varies from 480 students in rural zones to 900 students in urban zones.

In a summarized version, for basic education schools we have :

Table 13 – Number of students according to types of schools

Type of school	Education level	Number of cycles	Number of classes	Number of students/class	Total Number of students
Basic education (Urban Zone)	3	3	30	30 (36)	900 (1080)
Basic Education (Urban Zone)	3	2	20	30	600
Basic Education (Rural zone)	3	2	20	24	480

According to MoES standards, the elementary school builings shall have the following spaces:

- primary education schools : Buildings for elementary education level is composed of teaching venues, such as teaching rooms, libraries, venues for multilateral purposes, computers hall, as well as administrative and service zone. In additional, pre-school education level must have also teaching rooms, space for playing and terraces in an open-premise;

- Lower middle education schools: Buildings for lower middle education level shall be composed of main education space, such as teachingrooms, libraries, venues for multilateral purposes, science laboratory (biology, chemistry, physics) information technology laboratory as well as administrative and service zone.

These shall exist also doctors and psychologist rooms, venue for students government.

- higher middle education schools

In this case, we have included :

a) Education level
b) Middle education, Higher, class 10 – 12, mosha 17- 19 year old:
c) Number of cycles (parallels) 7
d) Number of classes 21
e) Number of students/ class 30 (36)
f) Total Number of students 630 (756)

Building for higher middle education shall be composed of the same spaces as lower middle education, except the additional number of special subjects. Teaching process is organized in four key directions: mathematics and information and communication technology, languages, social sciences, natural sciences, gym.

These shall exist also doctors and psychologist rooms, venue for students government.

Data on surfaces of necessary venues for each school, based on the number of students per class are indicated in the following table:

Table 14 – Surfaces of venues for each school according to number of students per class Basic Education

	Tabela 1: TIPET E KLASAVE DHE HAPESIRAT E NEVOJSHME - ARSIMI BAZIK				
Ref.	Hapësirat	Siperfaqe m2	Komentet	Siperfaqe m2	Komentet
A.	MËSIMDHËNJA DHE MBËSHTETJA PEDAGOGJIKE		Pwr klasa me 30 (36) nxenes		Pwr klasa me 24 nxenes
1.0	Niveli Parafillor				
1.1	Dhoma për parafillor	64,8	2.2 (1.80) M2/nxënës	45,6	1.90 M2/nxënës
1.2	Veranda	25,025		23,5	
1.3	Dhoma/hapësira e getë	25		25	
1.4	Tualetet për parafillor	4		4	
1.5	Hapësirat për qarkullim	23% e sipërfaqes së përgjithshme (shuma 1.1 - 1.4)		23% e sipërfaqes së përgjithshme (shuma 1.1 - 1.4)	
2.0	Niveli Fillor				
2.1	Dhoma e mësimit	58,48	1.94 (1.62) M2/nxënës	45,56	1.90 M2/nxënës
2.2	Depo	10		10	
2.3	Laboratori për demonstrime (shkencat natyrore)	58,48	1.94 (1.62) M2/nxënës	51,35	2.14 M2/nxënës
2.4	Dhoma pergatitore per laborator	9,5		9,5	
2.5	Biblioteka	1.4 M2/ulëse	20% nr. Total te nxenesve	1.4 M2/ulëse	20% nr. Total te nxenesve
2.6	Hapësira për shumë qëllime	0.5 M2/nx	Total	0.5 M2/nx	Total
2.7	Dhoma/Hapësira për mësimdhënës	2.5 M2/mësimdhënës		2.5 M2/mësimdhënës	
2.8	Tualete për nxënës (për njësi)	3,5		3,5	
2.9	Tualete për mësimdhënës (për njësi)	10		5	
2.10	Tualete për nxënës me aftësi të kufizuara	4,5		4,5	
2.11	Shkallët	20			
2.12	Hapësirat për qarkullim	23% e sipërfaqes së përgjithshme (shuma 2.1 - 2.11)		23% e sipërfaqes së përgjithshme (shuma 2.1 - 2.11)	
3.0	Niveli i mesëm i ulët				
3.1	Dhoma e zakonshme e mësimit	58,48	1.94 (1.62) M2/nxënës	45,56	1.90 M2/nxënës
3.2	Dhoma e specializuar e mësimit	58,48	Me dollap	52,36	Me dollap
3.3	Depoja (dhoma të specializuara)	25,0		25,0	
3.4	Laboratori i gjuhës	65,28		52,36	
3.5	Laboratori i fizikës	74,82	1 bankë për demonstrim dhe 2 rende bankash anash	53,6	1 bankë për demonstrim dhe 2 rende bankash anash
3.6	Dhomë përgaditore (për 2 laboratorë)	35	në mes të 2 laboratorve, 1 bankë me lavaman	35	në mes të 2 laboratorve, 1 bankë me lavaman
3.7	Laboratori i kimisë	74,82	1 bankë për demonstrim dhe 2 rende bankash anash	53,6	1 bankë për demonstrim dhe 2 rende bankash anash
3.8	Laboratori i biologjisë	74,82	1 bankë për demonstrim dhe 2 rende bankash anash	53,6	1 bankë për demonstrim dhe 2 rende bankash anash
3.9	Dhoma përgaditore (1 laborator)	25		25	
3.10	Dhoma/hapësira e artit figurativ	75	Së bashku/ndahet me dhomën e muzikës	53,6	Së bashku/ndahet me dhomën e muzikës
3.11	Dhoma/hapësira e muzikës	0	Në Dhomën/hapësirën për art figurativ	0	Në Dhomën/hapësirën për art figurativ
3.12	Dhoma/hapësira e kompjuterëve	40	15 (18) kompjuterët	40	12 kompjuterët
3.13	Biblioteka.Dhoma e leximit (me nivelin fillor)	1.4 M2/ulëse	20% nr. Total te nxenesve	1.4 M2/ulëse	20% nr. Total te nxenesve
3.14	Depo e librave	25		25	
3.15	Zyra/hapësira e bibliotekistit	16		16	
3.16	Hapësira për shumë qëllime (me nivelin fillor)	0.5 M2/nx	(total)	0.5 M2/nx	(total)
3.17	Salla e sporteve (me nivelin fillor)	8.0 M2/nx		8.0 M2/nx	
3.18	Blloqe me dusha-nga 4 kabina	16		16	
3.19	Zhveshtorja	20		20	
3.20	Dhoma/hapësira e mësimdhënësit të E.fizike	18		18	
3.21	Depo e pajisjeve sportive	20		20	
3.22	Holli hyrës	120		120	
3.23	Hapësirat për qarkullim dhe shkallët	21 deri 25% e sipërfaqes së përgjithshme neto (shuma 3.1 - 3.22)		21 deri 25% e sipëraqes së përgjithshme neto (shuma 3.1 - 3.22)	
B.	HAPËSIRAT E PËRBASHKËTA				
4.0	Administrata				
4.1	Drejtori	25		25	
4.2	Zëvëndëdrejtori	16		16	
4.3	Kontabilisti	16		16	
4.4	Sekretaria/recepsioni	16		16	
4.5	Dhoma/Hapësira për mësimdhënës (niveli i mesëm i u	2,5 m2/mësues		2,5 m2/mësues	
4.6	Dhoma për komunitet	16		16	
4.7	Dhoma/Hapësira përorientim profesional	16		16	
4.8	Dhoma e pajisjeve/materialit shpenzues	10		10	
4.9	Arkiva	8		8	
4.10	Tualetet e Stafit	8		8	
4.11	Hapësirat për qarkullim / holli, recepsioni	21 deri 25% e sipëraqes së përgjithshme neto (shuma 4.1 - 4.10)		21 deri 25% e sipëraqes së përgjithshme neto (shuma 4.1 - 4.10)	
5.0	SHËRBIMET E PËRBASHKËTA				
5.1	Dhoma e mjekut	16		16	
5.2	Punëtoria për mirëmbajtje	18		18	
5.3	Kantina	1.1 M2/nxënës		1.1 M2/ nxënës	
5.4	Kuzhina	40		40	
5.5	Depo e ushqimit	8		8	
5.6	Depo për vegla dhe pajisje	12		12	
5.7	Tualetet për mësimdhënës dhe personel	8	2 cubicles (x 1 WC block)	8	2 cubicles (x 1 WC block)
5.8	Tualete për nxënës	14	4 cubicles (x 2 WC blocks)	14	4 cubicles (x 2 WC blocks)
5.9	Dhoma e rojtarit	10	afër hyrjes kryesore	10	afër hyrjes kryesore
5.10	Hapësirat e jashtme rekreative të mbuluara	0.6 M2/nxënës		0.6 M2/nxënës	
5.11	Hapësira për ngrohje (kaldaja)	25		25	
5.12	Depo për lëndë djegëse (opcionale)	30	Zëvendësohet me cisternë të naftës	30	Zëvendësohet me cisternë të naftës
5.13	Shtëpia e rojtarit (opcionale)	40		40	
5.14	Hapësirat për qarkullim / korridoret	21 to 25% e sipërfaqes së përgjithshme neto (shuma 5.1 - 5.13)		21 to 25% e sipërfaqes së përgjithshme neto (shuma 5.1 - 5.13)	

Table 15 – Types of classes and necessary spaces - Secondary education – high cycle

	Tabela : TIPET E KLASAVE DHE HAPESIRAT E NEVOJSHME - ARSIMI I MESEM CIKLI LARTE		
	Pwr klasa me 30 (36) nxenes		
Ref.	**Hapësirat**	**Siperfaqe m2**	**Komentet**
A.	**MËSIMDHËNJA DHE MBËSHTETJA PEDAGOGJIKE**		**Pwr klasa me 30 (36) nxenes**
1.1	Dhoma e zakonshme e mësimit	58,48	1.9 (1.62) M2/nxënës
1.2	Dhoma e specializuar e mësimit	62,28	
1.3	Depoja (dhoma te specializuara)	25,00	
1.4	Laboratori i fizikës	65,28	
1.5	Laboratori i gjuhës	68,80	1 bankë për demonstrim dhe 2 rende bankash anash
1.6	Dhomë përgaditore (për 2 laboratorë)	35,00	në mes të 2 laboratorve, 1 bankë me lavaman
1.7	Laboratori i kimisë	68,80	1 bankë për demonstrim dhe 2 rende bankash anash
1.8	Laboratori i biologjisë	68,80	1 bankë për demonstrim dhe 2 rende bankash anash
1.9	Dhoma përgaditore (1 laborator)	25,00	
1.10	Salla e artit dhe projektimit	68,80	
1.11	Salla e muzikes	0,00	Së bashku/ndahet me dhomën e muzikës
1.12	Salla e kompjuterëve	58,48	15 (18) kompjutera
1.13	Biblioteka.Dhoma e leximit	1.4 M2/ules	per 20% nr. Total te nxenesve
1.14	Depo e librave	25	
1.15	Zyra e bibliotekistit	16	
1.16	Salla qe perdoret per shume qellime	0.5 M2/nx	(total)
1.17	Salla e sporteve	8.0 M2/nx	
1.18	Blloqe me dusha- 4 kabina secila	16	
1.19	Zhveshtorja	20	
1.20	Zyra e mësimdhënësit të sportit	18	
1.21	Depo e pajisjeve sportive	20	
1.22	Koridori hyrës	120	
1.23	Hapësirat për qarkullim dhe shkallët	21 deri 25% e sipëraqes së përgjithshme neto (shuma 1.1 - 1.22)	
2.0	**Administrata**		
2,1	Drejtori	25	
2,2	Zëvëndëdrejtori	16	
2,3	Kontabilisti	16	
2,4	Tavolina e sekretarit/recepsionit	16	
2,5	Salla e arsimtarëve	2.5 m2/mësues	
2,6	Dhoma për organizimie të komunitetit	16	
2,7	Orientimi prfesional	16	
2,8	Depoja e pajisjeve/materialit shpenzues	10	
2,9	Arkivat	8	
2,10	Tualetet e stafit administrativ	8	2 Kabina
2,11	zona për qarkullim / holli, recepsioni	21 deri 25% e sipëraqes së përgjithshme neto (shuma 2.1 - 2.10)	
3	**SHËRBIMET E PËRBASHKËTA**		
3.1	Dhoma e mjekut	16	
3.2	Punëtoria për mirëmbajtje	18	
3.3	Kantina	1.1 M2/student	
3.4	Kuzhina	40	
3.5	Depo e ushqimit	8	
3.6	Depo për mjete dhe pajisje	10	
3.7	Tualetet për mësimdhënës dhe personel	8	4 kabina (x1 ëC blok)
3.8	Blloku tualeteve për nxënës	44	13 kabina (x2 ëC blloqe)
3.9	Dhoma e rojes	10	afër hyrjes kryesore
3.10	Hapësirat e jashtme rekreative të mbuluara	0.6 M2/nxënës	
3.11	Hapësira për ngrohjen qendrore (kaldaja)	35	
3.12	Depoja per thëngjill (opcionale)	30	Zëvendësohet me cisternë të naftës
3.13	Shtëpia e rojtarit (opcionale)	40	
3.14	Hapësirat për qarkullim / korridoret	21 deri 25% e sipëraqes së përgjithshme neto (shuma 3.1 - 3.13)	

- For kindergartens

Based on standards and approved by MoES is recommended that:

The kindergarten shall accommodate up to 100 children depending on the groups and physical spaces of the kindergarten building (1-2 or some groups). It is recommended that the kindergarten should not be designed for more than 125 children.

- First Group (children 3-year old) consisting of 15 children;
- Second Group (children 4-year old) consisting of 20 children;
- Third group (children 5-year old) consisting of 25-30 children.

The kindergartens must include the block (group) of the kindergarten, staff room and kitchen and sometimes the washing room. The block (group) of the kindergarten with and without food service must have:

- Reception - Wardrobe;
- Group room ;
- Sleeping room ;
- Veranda and hydro-sanitary knots.

External venue must contain:

- Water and sand corner;
- Vital corner ;
- Theater corner;
- Outdoor games corner,
- Green space and benches, sun tents, etc.

Regarding functional division and type of functions you should refer to :

Standards of norms and criteria of designing for kindergarten/nurseries compiled by Ministry of Education and Science (chapter "Children´s Kindergarten);

Hygiene-Sanitary Regulation for construction and functioning of children´s kindergartens, Ministry of Health and environment protection No. 105 dated 17.05.1995, as well as no. 2370 dated 09.06.1998;

During the project, you should refer to "Standards of norms and criteria of designing for kindergartens/nurseries, issued by Ministry of Education and Science.

4.3.2 Main civic works to be completed

For construction of educational objects (nine-year and high schools), as well as pre-schools (kindergartens), will be completed the following works:

a) Earth works

Excavation works for realization of foundations and other underground structures, clearance of external venues.

b) Concrete works and r/c

Works for realization of foundations, r/c structures, (columns, beams, slabs, staircase, etc) and