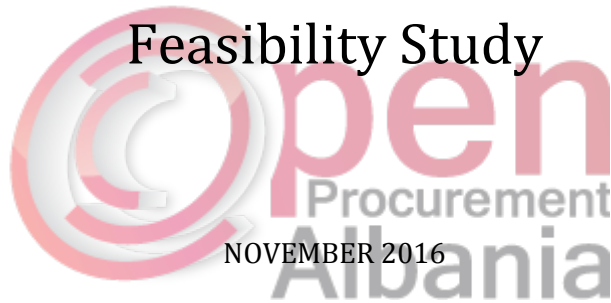




TIRANA MUNICIPALITY

Improvement of Educational Infrastructure in Tirana Municipality

Feasibility Study



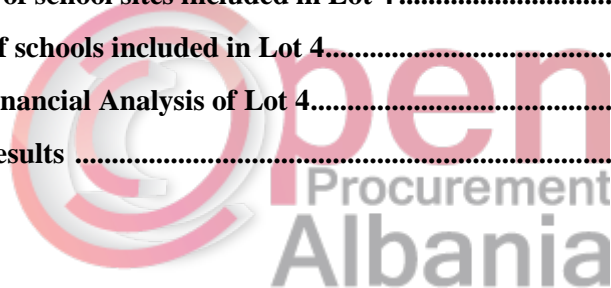
NOVEMBER 2016

1. INTRODUCTION	16
1.1. Definition of terms	16
1.2. General Description	17
2. PROJECT’S KICK-OFF.....	20
2.1. Process of national, regional, sectorial planning.....	21
2.2. Coordination of national and sectorial policies.....	23
2.3. Coordination of long-term policies for development of Tirana.....	24
2.4. Priorities of policies	27
2.5. General Description of existing infrastructure situation.....	28
2.6. Objectives of the project	36
2.7. Potential Strategic and Operational Benefits from the project	37
3. CURRENT SITUATION.....	41
3.1. Legislation.....	41
3.1.1. Pre-university education as a public service	41
3.1.2. Administration of pre-university education institutions	41
3.1.3. Planning and construction of pre-university education institutions	43
3.1.4. Financing of pre-university education institutions.....	49
3.2. Methodology	51
3.3. In-depth analysis of the existing situation	54
3.3.1. Nine-year elementary education	54
3.3.2. High school education	88
3.4. Analysis of existing education infrastructure and necessary infrastructure based on number of population.....	121
3.5. Need for kindergartens.....	122
3.6. Forecast of mid-term and long-term needs for new education infrastructure	123
4. TECHNICAL PROJECT	128
4.1. Location and Lands	128
4.1.1. Location and potential alternatives	128
4.1.2. Total surface to be seized permanently	130
4.1.3. Legal status of selected territories	142
4.2. Local Conditions	166
4.2.1. Topographical and geological harmonization of selected territories	166

4.2.2. Seismicity	172
4.2.3. Underground infrastructure and road service of selected territories	174
4.3. Architectonic, constructive and functional description of the project	194
4.3.1. Parameters of the designing	194
4.3.2. Main civic works to be carried out	198
4.3.3. Construction Methods	200
4.3.4. Technologies and equipments	205
4.3.5. List of respective technical standards to be considered during implementation	206
4.3.6. Calculated construction period	206
4.4. Implementation Costs of the Project.....	206
4.4.1. Costs of designing and construction	206
4.4.2. Costs of furniture and laboratories	212
4.4.3. Maintenance Costs	214
4.4.4. Other Costs.....	216
5. SOCIAL AND ENVIRONMENTAL IMPACT	220
5.1 Environmental Impact	220
5.1.1. Legal Framework	220
5.1.2. Description of flora and fauna of the territories under the study	221
5.2. Evaluation of environmental impact of study areas	222
5.2.1. Environmental impact during the construction phase	222
5.2.2. Environmental impact during operational phase	224
5.3. Measures for a smooth environmental impact during construction and operational phases	224
5.4. Social impact	225
5.4.1. Social benefits of education	225
5.4.2. Expropriation and compensation	226
6. ECONOMIC AND FINANCIAL ANALYSIS	228
6.1. Economic model of Concession/Public-Private Partnership.....	228
6.2. Main Assumptions	230
6.3. Costs Analysis	231
6.3.1. Direct investments costs	233
6.3.2. Direct maintenance costs	239

6.4. Analysis of PPP incomes	242
6.4.1. Tariff of the use of schools	242
6.4.2. Financing source	245
6.5. Financial analysis	247
6.6. Economic accomplishment of the project	248
6.6.1.NPV (Net Present Value)	248
6.6.2. IRR (Internal Rate of Return).....	249
6.6.3. Self-payment period	249
6.6.4. Financial Compatibility.....	250
6.7. Qualitative and Quantitative Analysis of Risks	251
6.7.1. Qualitative Risk Analysis	251
6.7.2. Quantitative Risk Analysis.....	254
6.8. Sensitivity Analysis	257
7. Arguments in favour of PPP Decision	258
7.1 Arguments in favour of the Decision for Concession/Public Private Partnership	258
7.2 Advantages of a Concession/Public-Private Partnership	260
7.3 Allocation of Risks	262
7.4 Recommendations on distribution of project implementation into Lots	263
7.4.1 Technical Professional Capacities for construction of educational objects	263
7.4.2 Financial Capacities of economic operators	265
7.4.3 Union of Operators and Sub-Contracting	266
8. Feasibility of implementation in each Lot	267
8.1. Lot 1	268
8.1.1. Location of sites of schools included in Lot 1	268
8.1.2. Total Surface to be permanently seized in Lot 1.....	268
8.1.3 Legal Status of school sites included in Lot 1	272
8.1.4 Typology of schools included in Lot 1.....	277
8.1.5 Economic-Financial Analysis for Lot 1.....	278
8.2 Lot 2.....	307
8.2.1 Location of sites of schools included in Lot 2	307
8.2.2 Total Surface to be permanently seized by school sites in Lot 2.....	307

8.2.3	Legal Status of school sites included in Lot 2	311
8.2.4	Typology of schools included in Lot 2	316
8.2.5	Economic-Financial Analysis of Lot 2.....	317
8.3	Lot 3	346
8.3.1	Location of sites of schools included in Lot 3	346
8.3.2	Total Surface to be permanently seized in Lot 3	347
8.3.3	Legal Status of school sites included in Lot 3	351
8.3.4	Typology of schools included in Lot 3	355
8.3.5	Economic-Financial Analysis of Lot 3.....	356
8.4	Lot 4	385
8.4.1	Location of sites of schools included in Lot 4	385
8.4.2	Total Surface to be permanently seized in Lot 4	386
8.4.3	Legal Status of school sites included in Lot 4	390
8.4.4	Typologies of schools included in Lot 4.....	393
8.4.5	Economic-Financial Analysis of Lot 4.....	394
9.	Feasibility Study Results	424



INDEX OF TABLES

Table 1 – MoES Standard for number of students per class	42
Table 2 – Types of schools	44
Table 3- Designing Standards for School Type 1	45
Table 4 - Designing Standards for School Type 2	46
Table 5 - Designing Standards for School Type 3	47
Table 6 - Designing Standards for School Type 4	48
Table 7 – Standard for number of students in a teaching class	51
Table 8 – Existing Capacity of elementary education infrastructure toward attending students .	55
Table 9 - Existing Capacity of elementary education infrastructure toward resident students per AU	56
Table 10 –Students’ Residence and Administrative Unit where they attend school (Nine-year Education)	59
Table 11 – Number of necessary schools	87
Table 12 – Existing Capacity of education infrastructure of higher middle education toward attending students	88
Table 13 - Existing Capacity of education infrastructure of higher middle education toward resident students per AU	89
Table 14 – Residence of students and Administrative Unit where students attend school (Higher middle Education)	92
Table 15 – Number of new schools	120
Table 16 – Number of necessary new schools according to standard of population	121
Table 17 – Number of kindergartens in according to years	122
Table 18 – Children ratio per kindergarten	122
Table 19 – Population of Tirana according to age groups in 2016	123
Table 20 – Types of schools	124
Table 21 – Distribution of schools according to typology	124
Table 22- Table of preliminary calculations of properties to be affected by the project	143
Table 23 - Table of preliminary calculations of properties to be affected by the project	145
Table 24- Table of preliminary calculations of properties to be affected by the project	147
Table 25- Table of preliminary calculations of properties to be affected by the project	149
Table 26- Table of preliminary calculations of properties to be affected by the project	151
Table 27- Table of preliminary calculations of properties to be affected by the project	153
Table 28- Table of preliminary calculations of properties to be affected by the project	155
Table 29- Table of preliminary calculations of properties to be affected by the project	157
Table 30- Table of preliminary calculations of properties to be affected by the project	159
Table 31- Table of preliminary calculations of properties to be affected by the project	161
Table 32- Table of preliminary calculations of properties to be affected by the project	163
Table 33- Table of preliminary calculations of properties to be affected by the project	165
Table 34 – Number of students according to types of schools	195
Table 35 – Surface of venues for each school according to number of students per class Basic Education	196

Table 36 – Types of classes and necessary spaces – Middle Education Higher Level	197
Table 37 – Stages of object realization	206
Table 38 - Number of necessary schools to be built	207
Table 39 – Detailed data about the proposed schools	208
Table 40 – Types of schools	208
Table 41 – Kindergarten sites according to types	209
Table 42 – Construction costs of kindergartens according to typology	209
Table 43 – Works Categories with respective shares	210
Table 44 – Total construction cost of teaching objects according to typology	211
Table 45 – Total construction cost	212
Table 46 – Costs of furniture according to typology	212
Table 47 – Costs of Furniture according to typology	213
Table 48 Preliminary Costs of labs according to typology	213
Table 49 Costs of labs according to types of schools	213
Table 50 – Maintenance Category and costs (LEKE) for one year per physical class.....	215
Table 51 – Other Costs	217
Table 52 – Calculation of technical opposition	218
Table 53 – Technical Opposition according to schools typology	218
Table 54 Detailed data for each school	232
Table 55 Summarized data for proposed schools according to typology.....	232
Table 56 Summarized Table of expropriations	234
Table 57 Summarized table of construction costs	235
Table 59 Costs of furniture for schools	236
Table 58 Summarized Table of other costs	236
Table 60 Costs of furniture for kindergarten venues	237
Table 61 Costs for lab equipments	237
Table 62 Costs for lab equipments according to school typology	238
Table 63 Summarized Costs of furniture for schools, kindergarten venues and labs	238
Table 64 Direct investment costs according to categories	239
Table 65 Annual maintenance cost for types of schools	239
Table 66 Seven-year cost of maintenance	240
Table 67 Detailed cost of maintenance for each school	241
Table 68 Results of auctions for seven-year fixed obligations	243
Table 69 Annual tariffs to be paid to the concessionary	243
Table 70 Amount of annual instalment	244
Table 71 General amount of the project	245
Table 72 Amounts to be covered by the municipality and concessionary	245
Table 73 Projection of incomes from Temporary Tax on Education Infrastructure	245
Table 74 Summarized Table of costs and incomes of the project	247
Table 75 Project Cashflow	248
Table 76 Internal Return Norm of the Project	249

Table 77 Summarized table of impact of risks	256
Table 78 Sensitivity analysis if income margin and costs increase and decrease by 5% and 10% ..257	
Table 79 Summarized Table of risks allocation	262
Table 80 Necessary Technical Capacities for construction of 17 schools in parallel	264
Table 81 Table of preliminary calculations of properties to be affected by the project	273
Table 82- Table of preliminary calculations of properties to be affected by the project	275
Table 83 Table of preliminary calculations of properties to be affected by the project	277
Table 84 –Schools Typology	277
Table 85 Detailed data for each school in Lot 1	281
Table 86 Summarized data about schools proposed based on schools typology in Lot 1.....	282
Table 87 Summarized Table of expropriations for Lot 1	283
Table 88 Construction Costs for schools in Lot 1	284
Table 90 Costs of furniture of schools according to their typology	285
Table 89 Direct investment costs for Lot 1.....	285
Table 91 Cost of furniture for kindergarten according to typology	286
Table 92 Costs for lab equipment	286
Table 93 Costs for lab equipment according to schools typology	287
Table 94 Costs of furniture and lab equipments for schools in Lot 1.....	287
Table 95 Direct Investment Costs for Lot 1	288
Table 96 Annual Maintenance Costs for schools in Lot 1.....	288
Table 97 Seven-year maintenance cost for Lot 1.....	288
Table 98 Detailed Maintenance Costs for Lot 1.....	290
Table 99 Income Margin	291
Table 100 Annual Tariff to be paid to the concessionary for Lot 1	292
Table 101 General Value of the Project for Lot 1	294
Table 102 Amount to be covered by Municipality and Concessionary	294
Table 103 Forecast of incomes to be generated from interim tax on education infrastructure	294
Table 104 Summarized Table of costs and incomes of the project	296
Table 105 Project’s cashflow	297
Table 106 Internal Return Norm of the project	298
Table 107 Summarized table of risks impact	305
Table 108 Sensitivity Analysis	306
Table 109 Table of preliminary calculations of properties to be affected by the project	312
Table 110- Table of preliminary calculations of properties to be affected by the project	314
Table 111 Table of preliminary calculations of properties to be affected by the project	315
Table 112 – Types of schools	316
Table 113 Detailed data of each school for Lot 2	320
Table 114 Summarized data for proposed schools according to schools typology for Loti 2	320
Table 115 Summarized table of expropriations for Lot 2.....	322
Table 116 Construction Costs of schools in Lot 2	323
Table 117 Direct investment Costs for Lot 2	323
Table 118 Cost of school furniture according to typology	324
Table 119 Cost of kindergarten furniture according to typology	325
Table 120 Cost of Lab equipments	325

Table 121 Cost of lab equipments according to school typology	325
Table 122 Cost of furniture and lab equipments for schools in Lot 2	326
Table 123 Direct investment cost for Lot 2	327
Table 124 Annual Maintenance Cost for schools in Lot 2	328
Table 125 Seven-year maintenance cost for Lot 2.....	328
Table 126 Detailed maintenance cost for Lot 2.....	329
Table 127 Income Margin	330
Table 128 Annual Tariffs to be paid to concessionary for Lot 2.....	331
Table 129 Amount of Annual Instalment	332
Table 130 General Value of the Project for Lot 2	333
Table 131 Amount to be covered by municipality and concessionary	333
Table 132 Forecast of incomes to be generated by Interim Tax on Education Infrastructure.....	333
Table 133 Summarized table of costs and incomes of the project	335
Table 134 Project's cashflow	336
Table 135 Internal Return Norm of the project.....	337
Table 136 Summarized table of risks impact	344
Table 137 Sensitivity Analysis	345
Table 138 Table of preliminary calculations of properties to be affected by the project	352
Table 139 Table of preliminary calculations of properties to be affected by the project	353
Table 140 Table of preliminary calculations of properties to be affected by the project	355
Table 141 – Types of schools	356
Table 142 Detailed data on each school in Lot 3	360
Table 143 Summarized data on proposed schools according to school typology for Lot 3.....	360
Table 144 Summarized Table of expropriations for Lot 3	361
Table 145 Construction Costs of schools for Lot 3.....	362
Table 147 Cost of school furniture according to typology	363
Table 146 Direct Investments Costs for Lot 3.....	363
Table 148 Cost of kindergarten furniture according to typology.....	364
Table 149 Costs of Laboratory equipments	364
Table 150 Costs of Laboratory equipments according to school typology	365
Table 151 Costs of furniture and lab equipment for schools in Lot 3	365
Table 152 Direct Investment Costs for Lot 3	366
Table 153 Annual Maintenance Costs for schools in Lot 3	366
Table 154 Seven-year maintenance costs for Lot 3	367
Table 155 Detailed maintenance cost for Lot 3.....	368
Table 156 Income margin	369
Table 157 Table of preliminary calculations of properties to be affected by the project	370

Table 158 Amount of Annual Instalment	371
Table 159 General Value of the Project for Lot 3	372
Table 160 Values to be covered by the municipality and concessionary	372
Table 161 Forecast of incomes to be generated by Interim Tax on Education Infrastructure.....	372
Table 162 Summarized table of costs and incomes of the project	374
Table 163 Project's cashflow	375
Table 164 Internal Return Norm of the project.....	376
Table 165 Summarized table of risks impact	383
Table 166 Sensitivity Analysis	384
Table 167 Table of preliminary calculations of properties to be affected by the project	391
Table 168- Table of preliminary calculations of properties to be affected by the project	392
Table 169 Table of preliminary calculations of properties to be affected by the project	393
Table 170 – Schools Typology	394
Table 171 Detailed data for each school in Lot 4.....	398
Table 172 Summarized Data about proposed schools according to schools typology in Lot 4.....	398
Table 173 Summarized table of expropriations for Lot 4.....	399
Table 174 Construction costs of schools in Lot 4.....	400
Table 175 Direct investments costs for Lot 4	401
Table 176 Costs of schools furniture according to typology	401
Table 177 Costs of kindergarten furniture according to typology	402
Table 178 Costs for Lab equipments	402
Table 179 Costs for lab equipments according to school typology	403
Table 180 Costs of furniture for lab equipments in schools of Lot 4.....	403
Table 181 Direct Investments Cost for Lot 4	404
Table 182 Annual Maintenance Costs for schools for Lot 4	404
Table 183 Detailed maintenance Costs for Lot 4.....	406
Table 184 Income Margin	407
Table 185 Annual Tariffs to be paid to the concessionary for Lot 4.....	409
Table 186 Amount of Annual Instalment	410
Table 187 General Amount of the project for Lot 4.....	411
Table 188 Values to be covered by the Municipality and Concessionary	411
Table 189 Forecast of incomes to be generated by Interim Tax on Education Infrastructure.....	412
Table 190 Summarized table of costs and incomes of the project	413
Table 191 Cashflow of the project	414
Table 192 Internal Return Norm of the project.....	415
Table 193 Summarized Table of risks impact	422
Table 194 Sensitivity Analysis	423

INDEX OF PICTURES

Picture 1 – Capital expenditures for education in the last 10 years	23
Picture 2 Main Development pillars of Tirana.....	25
Picture 3 – View from venues of some schools in Medellin, Columbia.....	39
Picture 4 – Teaching rooms	49
Picture 5 – Average class size in education institutions according to education levels (2013)	52
Picture 6 – Orthophoto of the site	130
Picture 7 – Photo of the site 2/3	130
Picture 8- View of Lana River near one of the sites envisaged for construction of a school (Site 6/6, Yzberisht).....	170
Picture 9 Photograph of the site 9/1	269
Picture 10 Photograph of the site 11/1.....	270
Picture 11 Photograph of the site 11/2.....	272
Picture 12 Photograph of the site 6/3	308
Picture 13 Photograph of the site 6/6	310
Picture 14 Photograph of the site 7/2	311
Picture 15 Photograph of the site 2/6	348
Picture 16 Photograph of the site 5/1	349
Picture 17 Photograph of the site F3	350
Picture 18 – Orthophoto of the site.....	386
Picture 19 Photograph of the site 2/3	387
Picture 20 Photograph of the site D2.....	388
Picture 219 - Photograph of the site 8/1	389



INDEX OF MAPS

Map 1- Distribution of proposed nine-year schools in 2013 General Local Plan of Tirana Municipality	26
Map 2 - Distribution of proposed nine-year schools in 2013 General Local Plan of Tirana Municipality	26
Map 3 – Average number of students per physical class according to Administrative Units for nine-year elementary schools	30
Map 4 – Average number of students per physical class in urban areas and surrounding AUs for nine-year schools	31
Map 5 – Average number of students per physical class according to Administrative Units for high schools	32
Map 6 – Average Number of students per physical class in urban areas and surrounding AUs for high School.....	33
Map 7 – Territory Coverage Range of nine-year education schools service	35
Map 8 – Territory Coverage Range of high schools service	35
Map 9 –Need for new classes according to units where students attend studies (9-year cycle).....	57
Map 10 – Need for new classes according to units where students live (9-year cycle).....	58
Map 11 – Percentage of students attending schools non-resident/students resident in each AU	60
Map12 - Mbipopullimi i shkollave dhe vendbanimi i nxënësve – cikli 9-vjeçar (Shenim: vlerat negative tregojnë numrin mbi kapacitet për secilën shkollë)	61
Map 13 – Territory Coverage Range of nine-year schools service in - AU 1	62
Map 14 - Territory Coverage Range of nine-year schools service in - AU 2	63
Map 15 - Territory Coverage Range of nine-year schools service in - AU 3	64
Map 16 - Territory Coverage Range of nine-year schools service in - AU 4	65
Map 17 - Territory Coverage Range of nine-year schools service in - AU 5	66
Map 18 - Territory Coverage Range of nine-year schools service in - AU 6	67
Map 19 - Territory Coverage Range of nine-year schools service in - AU 7	68
Map 20 - Territory Coverage Range of nine-year schools service in - AU 8	69
Map 21 - Territory Coverage Range of nine-year schools service in - AU 9	70
Map 22 - Territory Coverage Range of nine-year schools service in - AU 10	71
Map 23 - Territory Coverage Range of nine-year schools service in - AU 11	72
Map 24 - Territory Coverage Range of nine-year schools service in - AU Kashar	73
Map 25 - Territory Coverage Range of nine-year schools service in - AU Farkë	74
Map 26 - Territory Coverage Range of nine-year schools service in - AU Dajt	75
Map 27 - Territory Coverage Range of nine-year schools service in - AU Vaqarr	76
Map 28 - Territory Coverage Range of nine-year schools service in - AU Ndroq	77
Map 29 - Territory Coverage Range of nine-year schools service in - AU Petrelë.....	78
Map 30 - Territory Coverage Range of nine-year schools service in - AU Pezë.....	79
Map 31 - Territory Coverage Range of nine-year schools service in - AU Baldushk.....	80
Map 32 - Territory Coverage Range of nine-year schools service in - AU Berzhitë	81
Map 33 Territory Coverage Range of nine-year schools service in - AU Krrabë	82
Map 34 - Territory Coverage Range of nine-year schools service in - AU Shëngjergj.....	83
Map 35 - Territory Coverage Range of nine-year schools service in - AU Zall Bastar	84
Map 36 - Territory Coverage Range of nine-year schools service in - Zall Herr	85
Map 37 – Need for new classes according to units where students attend school (Higher Middle	

education)	91
Map 38 – Need for new classes according to units where students live (Higher middle education) 91	
Map 39 – Percentage of students attending schools non-residents / residents per AU	93
Map 40 – Over-crowded schools and residence of students – higher middle education (Note: negative values demonstrate number beyond capacities for each school	94
Map 41 - Territory Coverage Range of middle schools service in AU 1.....	95
Map 42 - Territory Coverage Range of middle schools service in AU - 2.....	96
Map 43 - Territory Coverage Range of middle schools service in AU - 3.....	97
Map 44- Territory Coverage Range of middle schools service in AU 4.....	98
Map 45 - Territory Coverage Range of middle schools service in AU - 5.....	99
Map 46 - Territory Coverage Range of middle schools service in AU - 6.....	100
Map 47- Territory Coverage Range of middle schools service in AU - 7.....	101
Map 48 - Territory Coverage Range of middle schools service in AU - 8.....	102
Map 49 - Territory Coverage Range of middle schools service in AU - 9.....	103
Map 50 - Territory Coverage Range of middle schools service in AU - 10.....	104
Map 51 - Territory Coverage Range of middle schools service in AU - 11.....	105
Map 52 - Territory Coverage Range of middle schools service in AU - Kashar	106
Map 53 - Territory Coverage Range of middle schools service in AU - Farke	107
Map 54 - Territory Coverage Range of middle schools service in AU - Dajt	108
Map 55 - Territory Coverage Range of middle schools service in AU -Vaqarr	109
Map 56 - Territory Coverage Range of middle schools service in AU -Ndroq.....	110
Map 57 - Territory Coverage Range of middle schools service in AU -Peze	111
Map 58 - Territory Coverage Range of middle schools service in AU -Baldushk.....	112
Map 59 - Territory Coverage Range of middle schools service in AU -Berzhite.....	113
Map 60 - Territory Coverage Range of middle schools service in AU -Krrabe	114
Map 61 - Territory Coverage Range of middle schools service in AU -Shengjergj.....	115
Map 62 - Territory Coverage Range of middle schools service in AU -Zall Bastar.....	116
Map 63 - Territory Coverage Range of middle schools service in AU -Zall Herr.....	117
Map 64 - Territory Coverage Range of middle schools service in AU - Petrele.....	118
Map 65 – Territory Coverage Range of existing (red) nine-year education schools and the proposed (brown).....	126
Map 66 – Territory Coverage Range of existing (green) high schools service and the proposed (blue)	127
Map 67 – Selected and alternative sites for location of the proposed schools	129
Map 68- Indicative Map of Properties.....	142
Map 69- Indicative Map of Properties.....	144
Map 70- Indicative Map of Properties.....	146
Map 71- Indicative Map of Properties.....	148
Map 72- Orthophoto of the site.....	150
Map 73- Indicative Map of Properties.....	152
Map 74- Indicative Map of Properties.....	154

Map 75- Indicative Map of Properties	156
Map 76- Indicative Map of Properties	158
Map 77- Indicative Map of Properties	160
Map 78- Orthophoto of the site	162
Map 79- Indicative Map of Properties	164
Map 80 – Hydro-Geological situation (Source : General Local Plan of Tirana Municipality 2014) ..	171
Map 81 – Sysmical Situation (Source : General Local Plan of Tirana Municipality 2014).....	173
Map 82 – Situation regarding sewerage network for the site	174
Map 83 – Situation regarding water supply system for the site	175
Map 84 - Situation regarding sewerage network for the site	176
Map 85 - Situation regarding water supply system for the site.....	176
Map 86 - Situation regarding sewerage network for the site	177
Map 87 - Situation regarding water supply system for the site.....	178
Map 88 - Situation regarding sewerage network for the site	179
Map 89 - Situation regarding water supply system for the site.....	180
Map 90 - Situation regarding sewerage network for the site	181
Map 91 - Situation regarding water supply system for the site.....	182
Map 92 – Map 80 Situation regarding sewerage for the site	183
Map 93 - Situation regarding water supply system for the site.....	184
Map 94 - Situation regarding sewerage network for the site	185
Map 95 - Situation regarding water supply system for the site.....	186
Map 96 - Situation regarding sewerage network for the site	187
Map 97 - Situation regarding water supply system for the site.....	187
Map 98 - Situation regarding sewerage network for the site	188
Map 99 - Situation regarding water supply system for the site.....	188
Map 100 - Situation regarding sewerage network for the site	189
Map 101 - Situation regarding water supply system for the site	190
Map 102 - Situation regarding sewerage network for the site	191
Map 103 - Situation regarding water supply system for the site	192
Map 104 - Situation regarding sewerage network for the site	193
Map 105 - Situation regarding water supply system for the site	194
Map 106 Distribution of schools into Lots	267
Map 107 Location of schools included in Lot 1	268
Map 108 Orthophoto of the site.....	269
Map 109 Orthophoto of the site.....	270
Map 110 Orthophoto of the site.....	271
Map 111 Indicative Map of Properties.....	272
Map 112- Indicative Map of Properties	274
Map 113 Indicative Map of Properties.....	276
Map 114 Location of schools included in Lot 2	307
Map 115 Orthophoto of the site.....	308
Map 116 Orthophoto of the site.....	309
Map 117 Orthophoto of the site.....	310

Map 118 Indicative Map of Properties	311
Map 119 Orthophoto of the site	312
Map 120 Indicative Map of Properties	315
Map 121 Location of schools included in Lot 3	346
Map 122 Orthophoto of the site	347
Map 123 Orthophoto of the site	348
Map 124 Orthophoto of the site	349
Map 125 Indicative Map of Properties	351
Map 126 Indicative Map of Properties	352
Map 127 Indicative Map of Properties	354
Map 128 Location of schools included in Lot 4	385
Map 129 Orthophoto of the site	387
Map 130 Orthophoto of the site	388
Map 131 Indicative Map of Properties	390
Map 132 Orthophoto of the site	392
Map 133 Indicative Map of Properties	39



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-crowded 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 high 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 in 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 education².

- **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 planning 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.

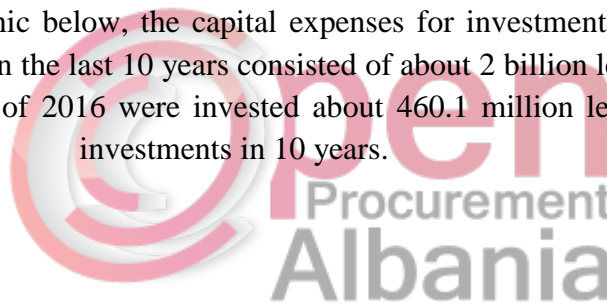
Starting from early '90-ies until today, population of Tirana city has been object of radical changes, as a result of big demographic movements. According to INSTAT data, population of old Tirana Municipality in 1989 was estimated at about 245 thousand inhabitants, whereas according to 2011 Census, it 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.

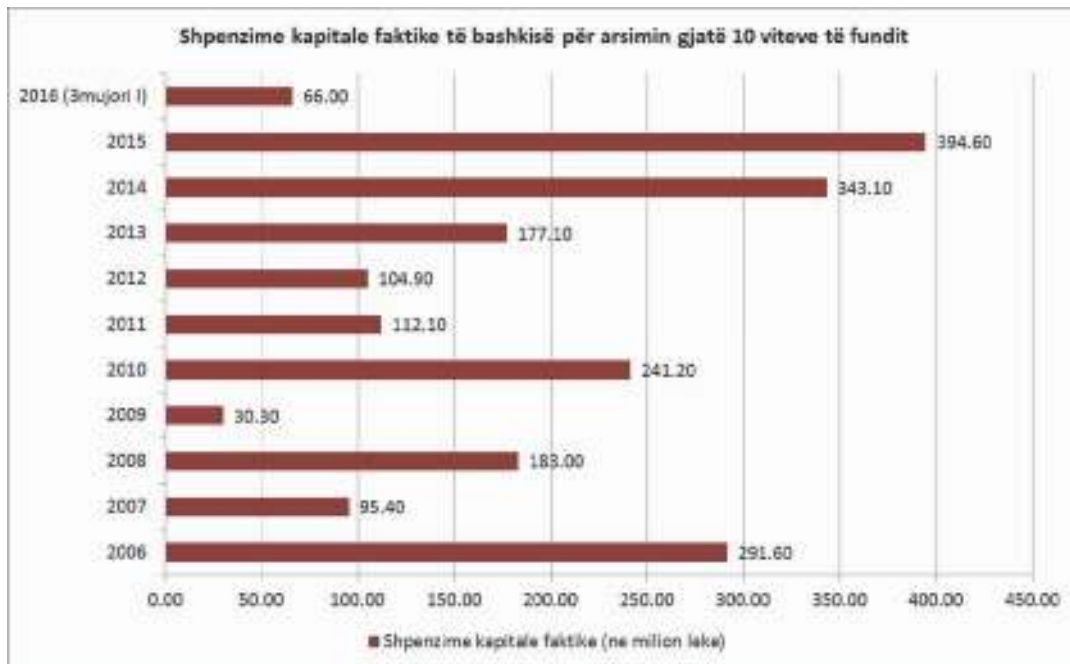
According to the graphic below, the capital expenses for investments in education of Tirana Municipality incomes in the last 10 years consisted of about 2 billion leke, out of which only in 2015 and first quarter of 2016 were invested about 460.1 million leke or 23% of the entire investments in 10 years.



⁴ According to Civic Registry Office in 2016.

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

NSDI⁶ 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

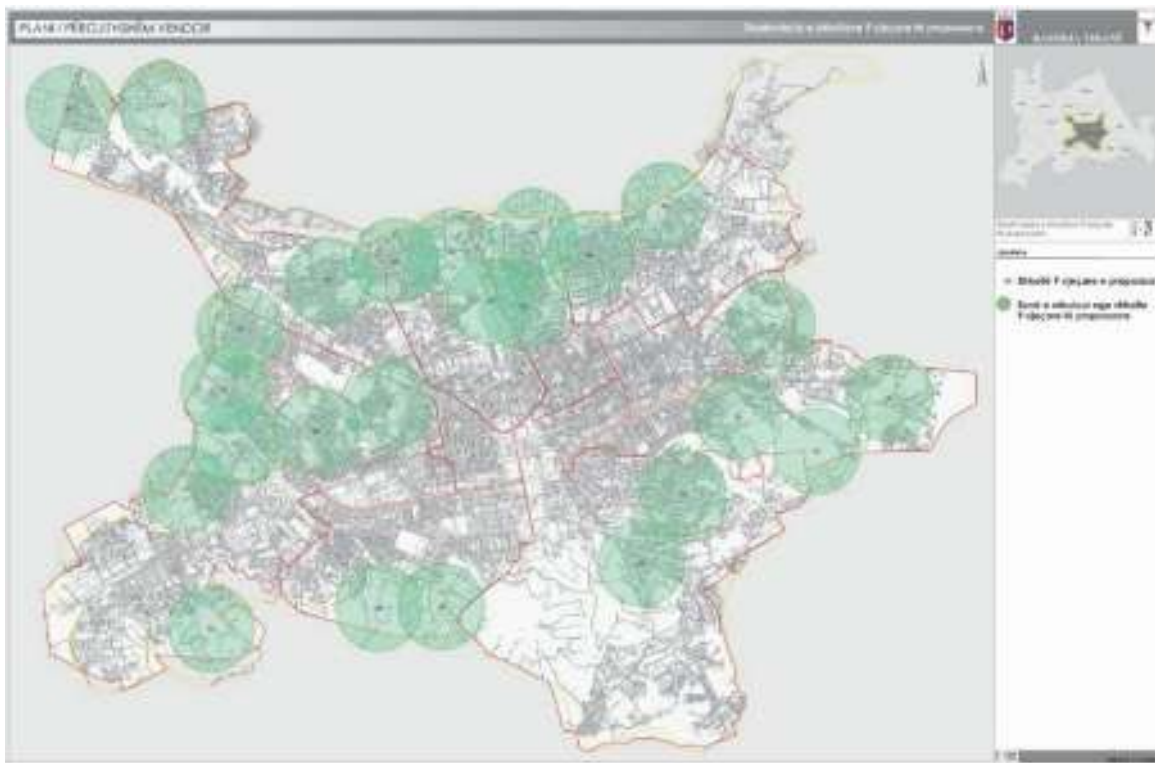


These main pillars are also led by the principle for a sustainable development of the capital, which will orient the investment policies of the municipality in order to meet the above-mentioned vision for development of Tirana. In the framework of the pre-university education, this study is in compliance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

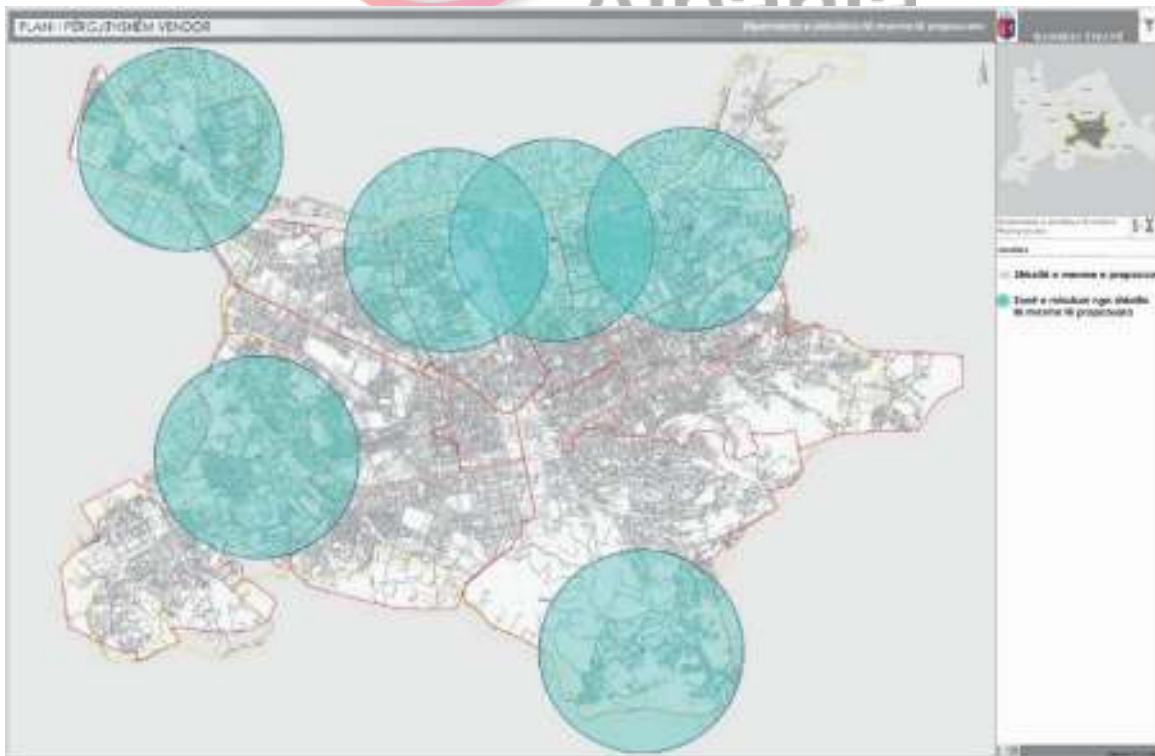
The need for construction of new schools for pre-university education is considered as an important point also in the previous development plans of the older Tirana Municipality. The 2013 General Local Plan (GLP) made evident some problematic areas of the capital, which counted shortcomings in the appropriate 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 leke⁹. 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 governments¹².

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.

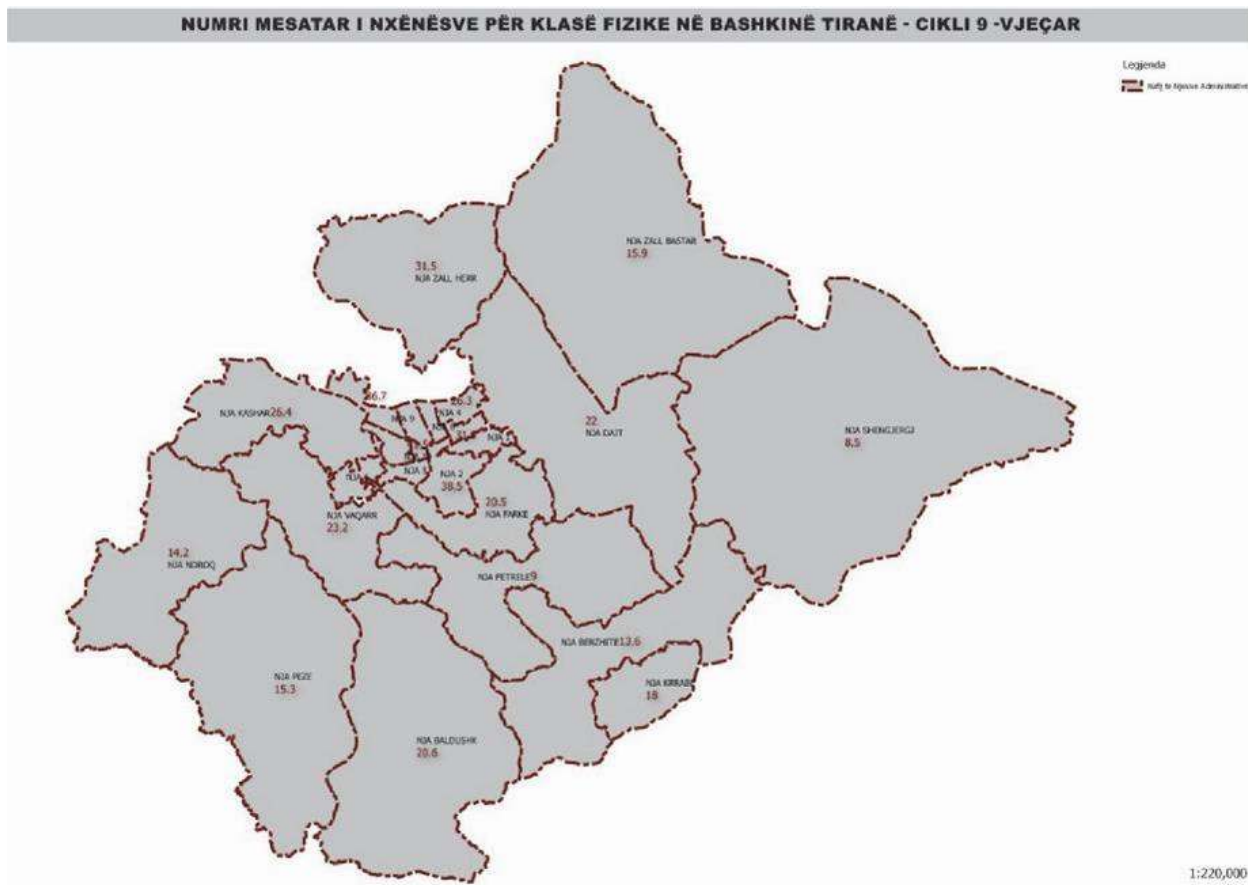
In rural zone of Tirana Municipality (Administrative Units 1-11), over-crowded classes and learning in two shifts remains one of the main concerns of citizens and municipality. The density of classes in most cases is not very optimal: with an average that varies from 36.5 students/physical class in urban 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.

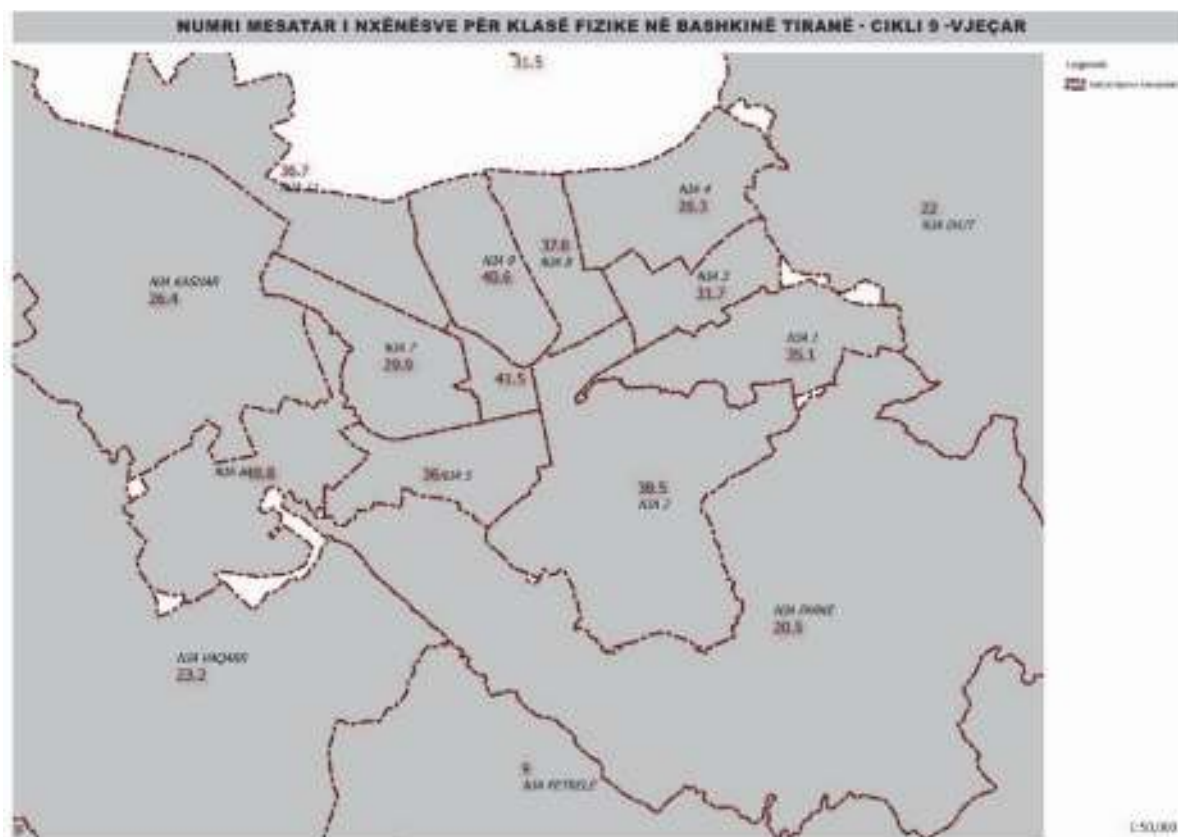


13 OECD 'Education at a Glance' 2011 - Chapter D 'The Learning Environment and Organisation of Schools

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

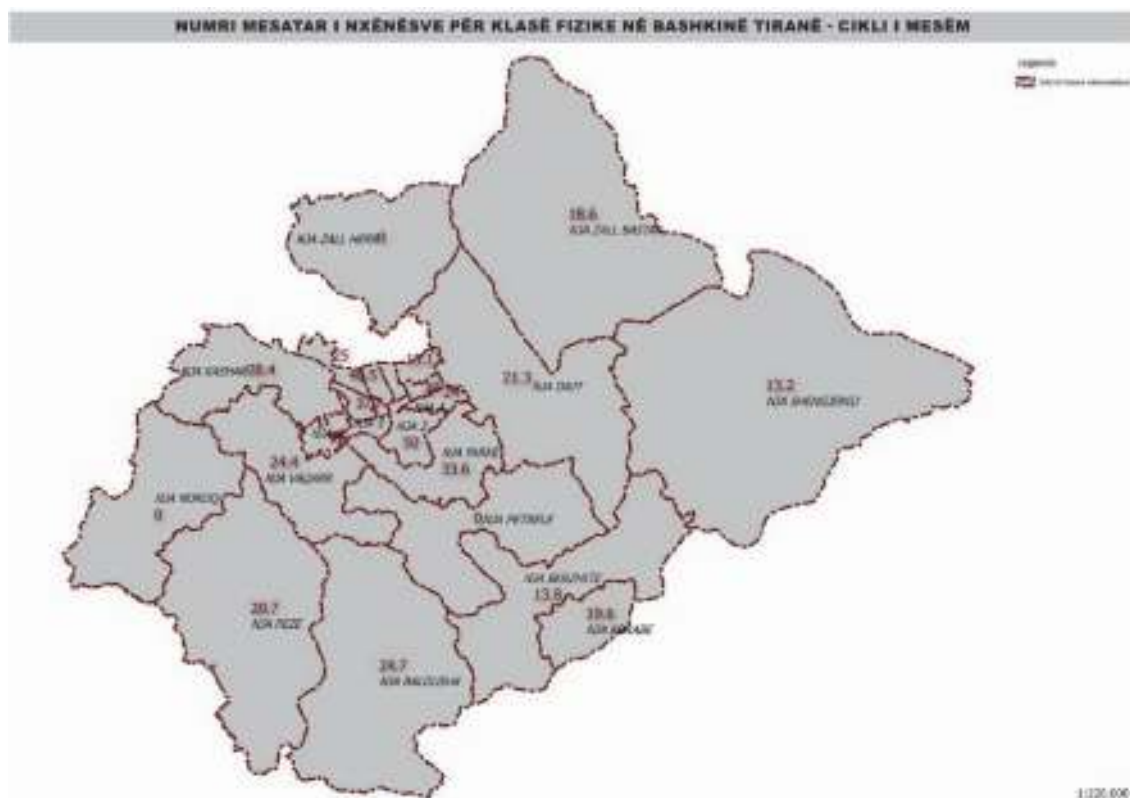


Map 4 – Average number of student per physical class in urban area and AU in nine-year elementary school.

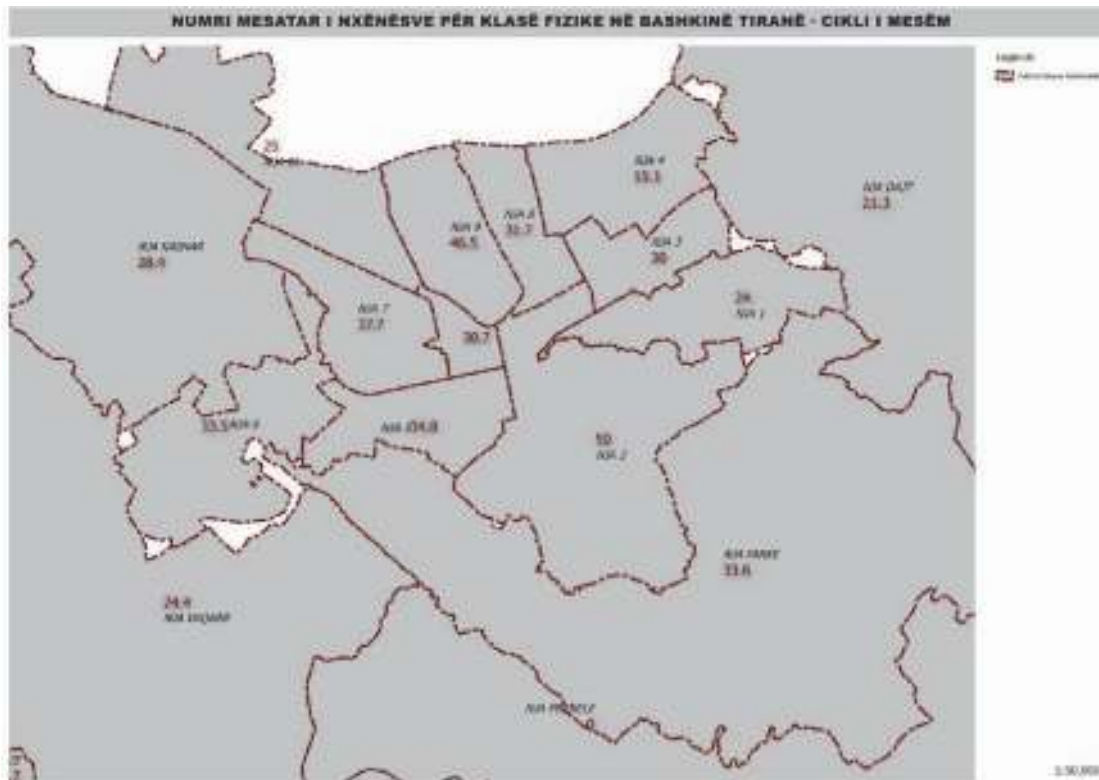


Situation of over-crowded schools is problematic also regarding the number of students per physical class in secondary schools. Administrative Units that suffer this problem the most are Unit no. 2 with a ratio of about 50 students per physical class and unit no. 9 where this ratio is 46.5 students per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

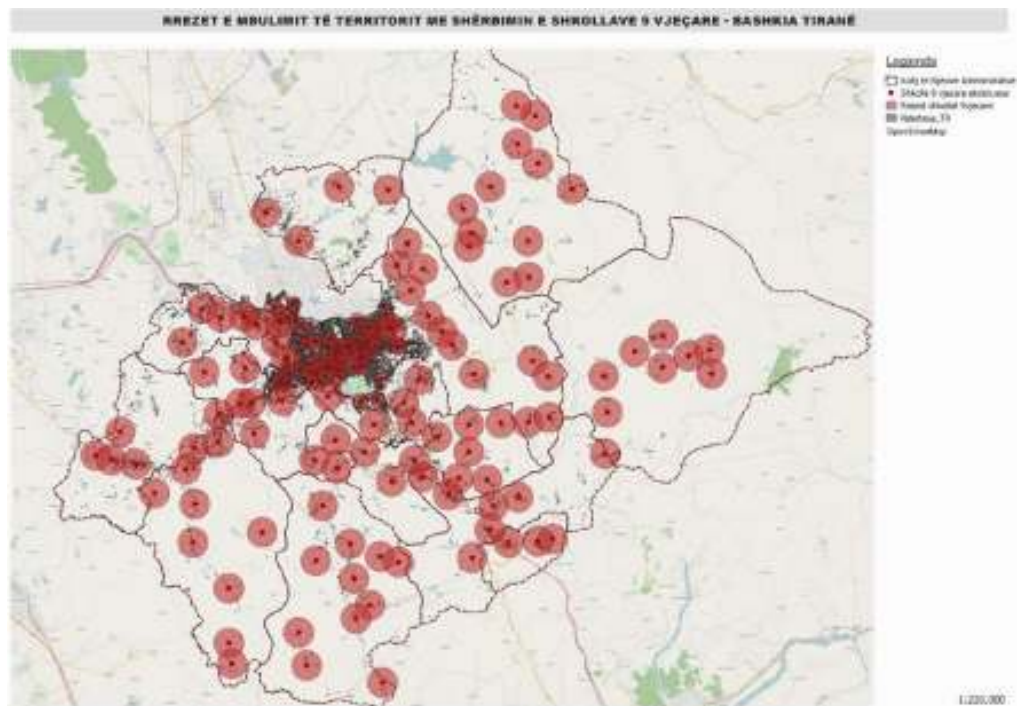
On the other side, situation in rural areas is different. With the exception of some cases, majority of schools in rural areas do not maximally make use of their capacities as a result of low number of students. Therefore, most schools operate with collective classes, according to MoES guideline.

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.

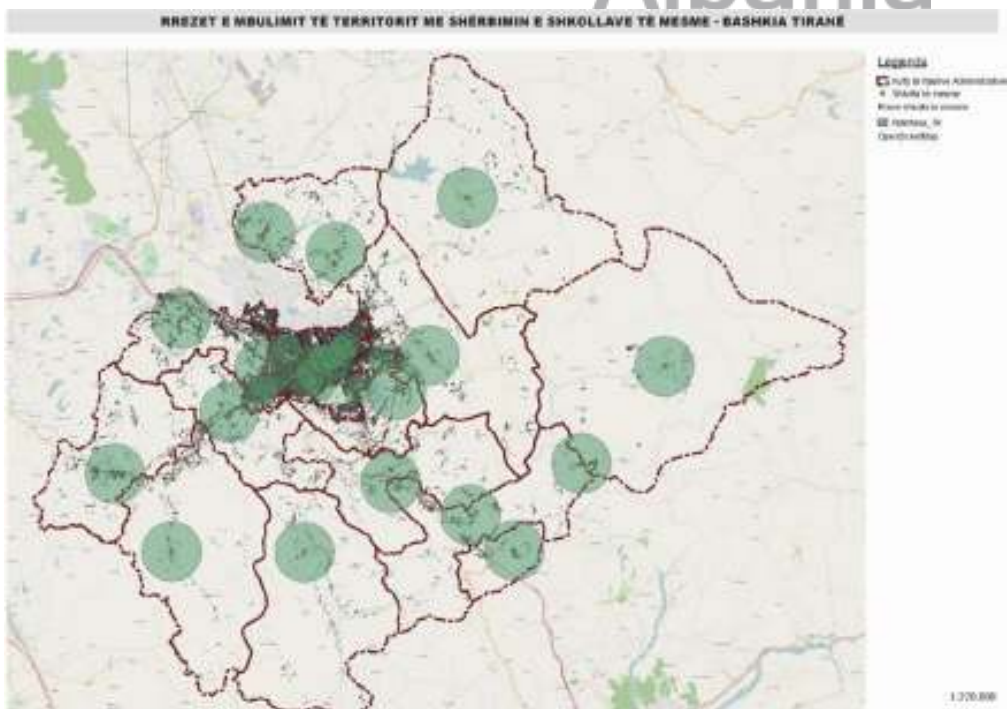
In all the above-mentioned areas, the distance from inhabited areas is much bigger than the allowed standard. As a result, students of these areas are forced to make use of public transport – in case there exists in the vicinity or private transport or walk relatively long distances, also in unfavourable 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** – Some 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 Education. 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 Columbia¹⁵. 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 education 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 higher¹⁷.
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 Units 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 jurisdiction¹⁸.

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. 44¹⁹, 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 over 140 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/student s	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 EDUCATION (30 Classes)	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

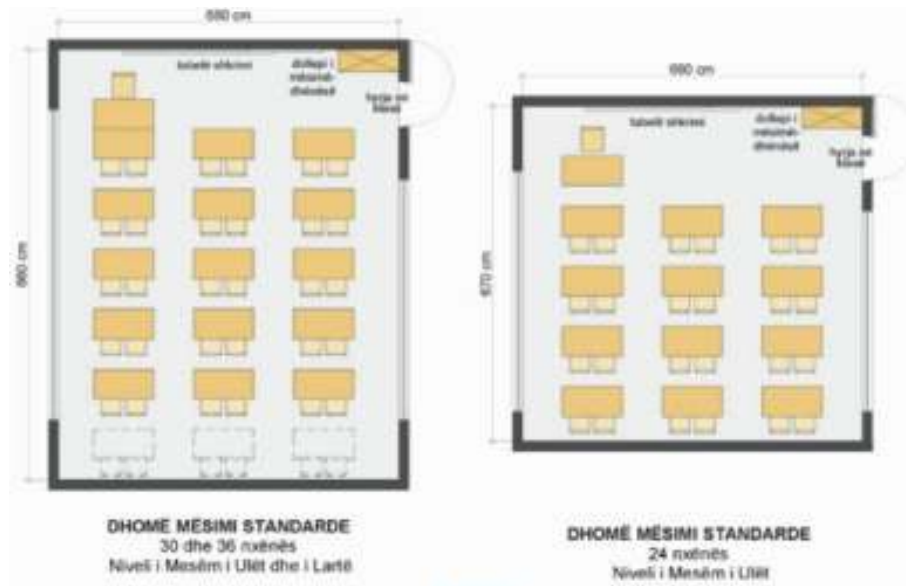
Table 6 - Designing Standards for Type 4 School

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 :

- Spaces determined for recreation space (sports fields) and sports venues ;
- Road Movement zones including the ones for vehicles (roads and parking) and for pedestrians (pavements and alleys);
- 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 m² - 7000 m², whereas for high schools consists of 2000 m² – 7000 m², 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:

- State budget;
- Incomes from local government units ;
- donations and sponsorships;
- 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”, changed²⁰. 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:

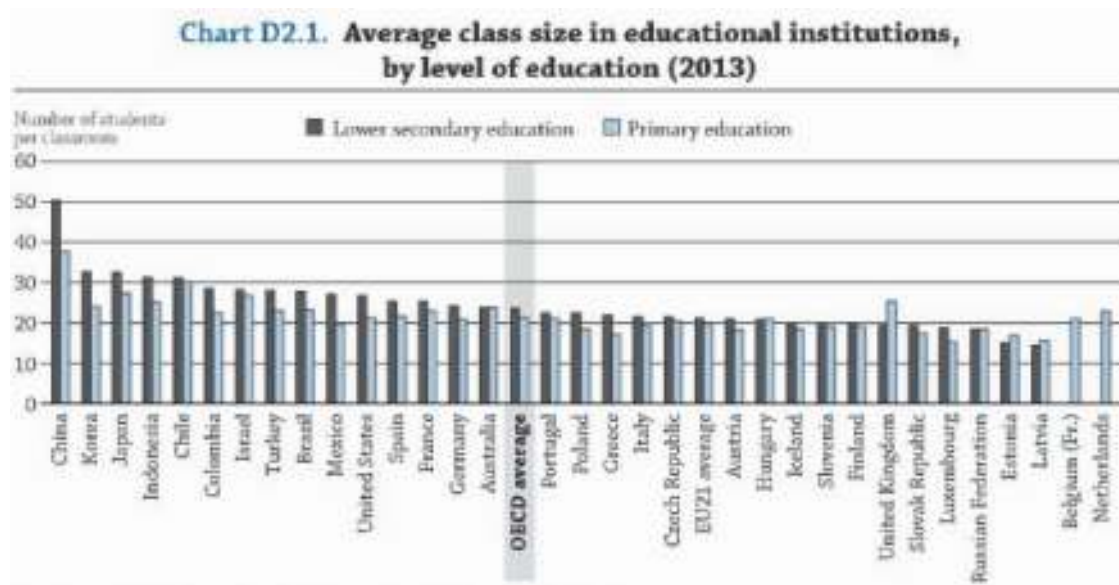
Table 7 – Standard number of students per teaching class

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 territory²²:

- 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 Article 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 basis²³:

- 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 schools⁴, 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 overcrowded 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/C L 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 SHENGJERG J	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	210	2	90	29.8	2700	-9014	-300

Another phenomenon coming across this analysis is over-population of some schools as a result of the attendance of students arriving from 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 is 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-crowded 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 classes on the ground according to both approaches of the analysis:

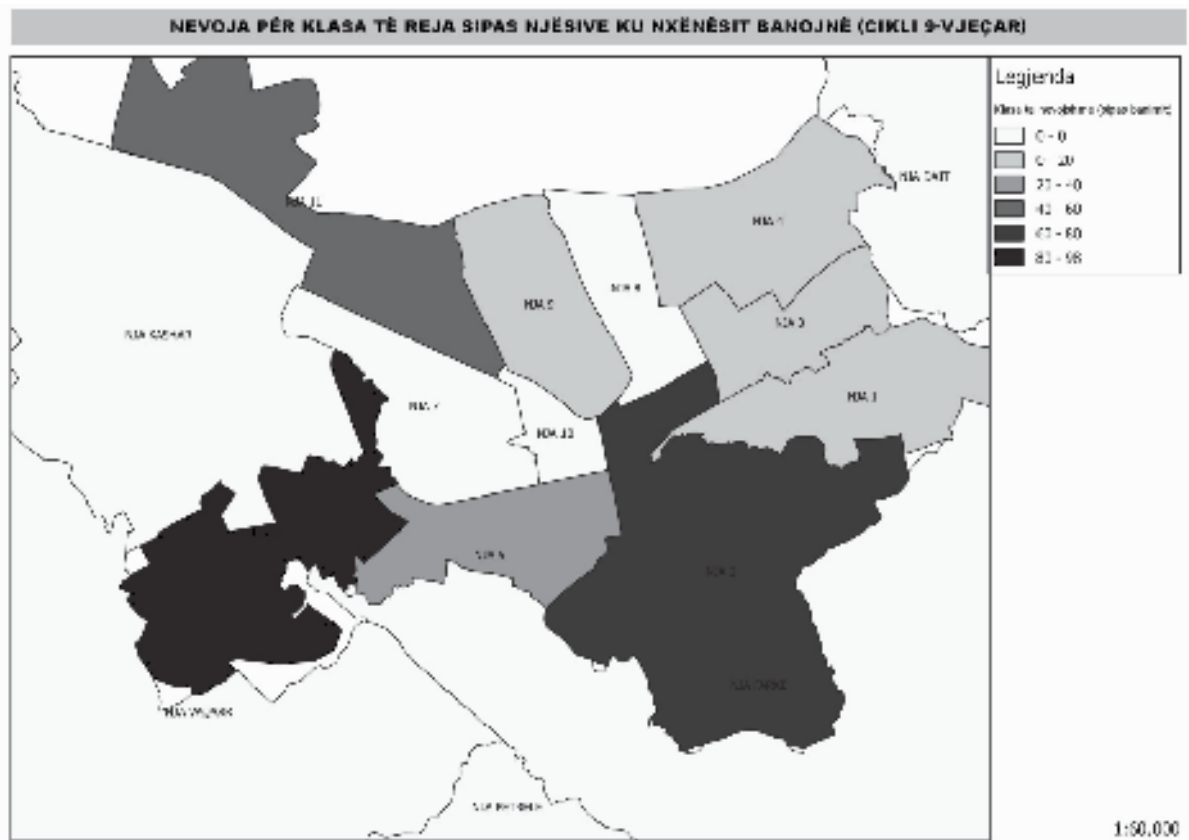


Map 9 –Need for new classes according units where students attend school (nine-year education)

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



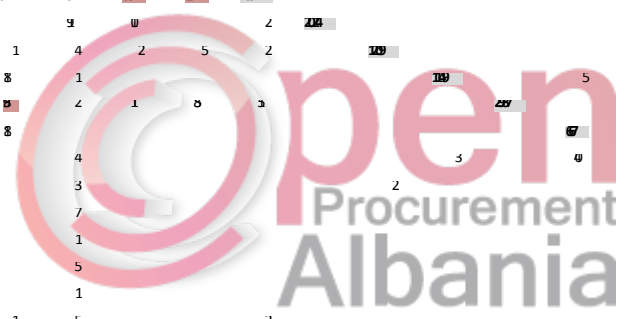
Map 10 – Need for new classes according to units where students live (Nine-year Cycle)



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 have 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.

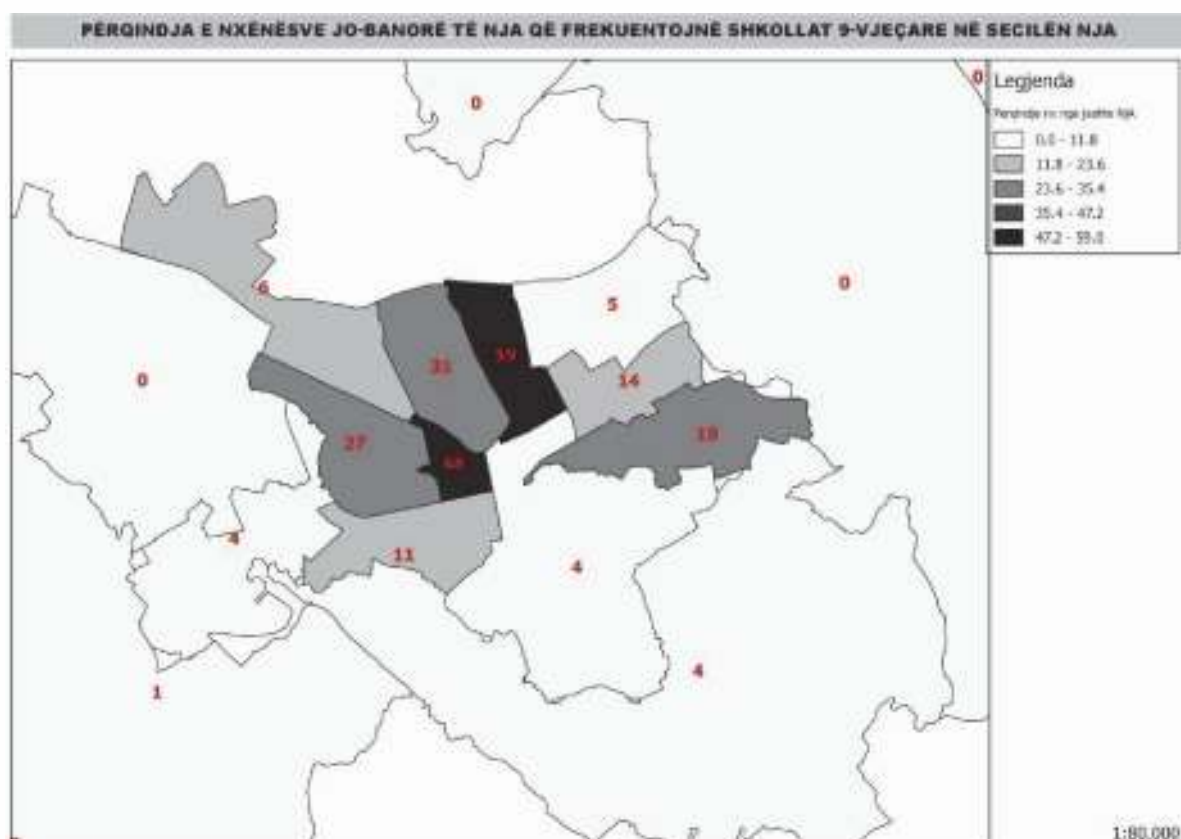
Table 10 – Location of students and Administrative Unit where they attend school nine year cycle)

NUESIA	NUESIA KU FREKUENTOJNE SHKOLLLEN																								TOTAL	TOTAL JASHTE NUESISE	%		
	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	NJA DAJT	NIA	NIA VAQARR	NIA	NIA	NIA PEZE	NIA	NIA BALDUS	NIA BERZHI	NIA SHENGI	NJA ZALL	NJA ZALL HERR						
NIESIA ADM1	302	8	6	1	2		1	3	5	2	3			1			1									366	24	2%	
NIESIA ADM2	32	506	9	5	6		1	26	0	5	8			2												602	55	13%	
NIESIA ADM3	3		206	7	8		7	22	2	5	3														1	236	40	17%	
NIESIA ADM4	0	9	8	304	9		1	91	6	5	6						1									483	159	22%	
NIESIA ADM5	3	0	2	3	521		8	27	11	2	3														1	636	66	10%	
NIESIA ADM6	8	3	5	8	21	501		17	2	2	5			1	4										3	644	88	13%	
NIESIA ADM7	1	9	3	5	8	5		37	2	1	22	25		2													515	88	15%
NIESIA ADM8	0	4	7	5	6		6	10	11	0	2																210	21	22%
NIESIA ADM9	2	4	1		4		5	18	305	11	2			7											1	364	48	11%	
NIESIA ADM10	1	/	0	1	3		6	5	17	104	8																157	23	13%
NIESIA ADM11	2		4		2		12	9	125	52	462																582	120	21%
NIA DAVI	39		4	6	1			9	0		2	203															215	32	12%
NIA FARKE	8	8	1		2		1	4	2	5	2			109					9								130	21	13%
NIA VAQARR			1		4	5	8	1						119			5	1									124	8	6%
NIA KASHFAR	1		2		5		1	2	1	5	3			20													30	2	6%
NIA DROQ							8	8									67	5									83	16	13%
NIA PEZE									4						3		0	3									61	4	6%
NIA PETRELE	3	3			2			3						2				47		3							56	8	11%
NIA BALDUSHK			2					7											68								67	9	13%
NIA BERZHITE	8	8	1		3			1											77		0						78	3	4%
NIA KRABE	1	1			2			5												41							46	9	2%
NIA SHENJERGI	2								1												31						34	3	3%
NIA ZALL BASTAR	4			6				1	5					2													70	8	2%
NIA ZALL HERR	4			5						4	8																117	2	2%
TOTAL	451	538	287	308	624	329	462	306	438	206	439	204	129	116	237	76	56	46	68	72	41	31	78	94					
TOTAL NGA JASHTE NUESISE	79	27	51	31	25	26	115	257	112	92	37	0	9	7	0	9	4	9	0	3	0	0	2	0					
%	13%	4%	11%	4%	11%	4%	25%	33%	13%	11%	6%	0%	4%	6%	0%	6%	6%	13%	0%	2%	0%	0%	0%	0%					

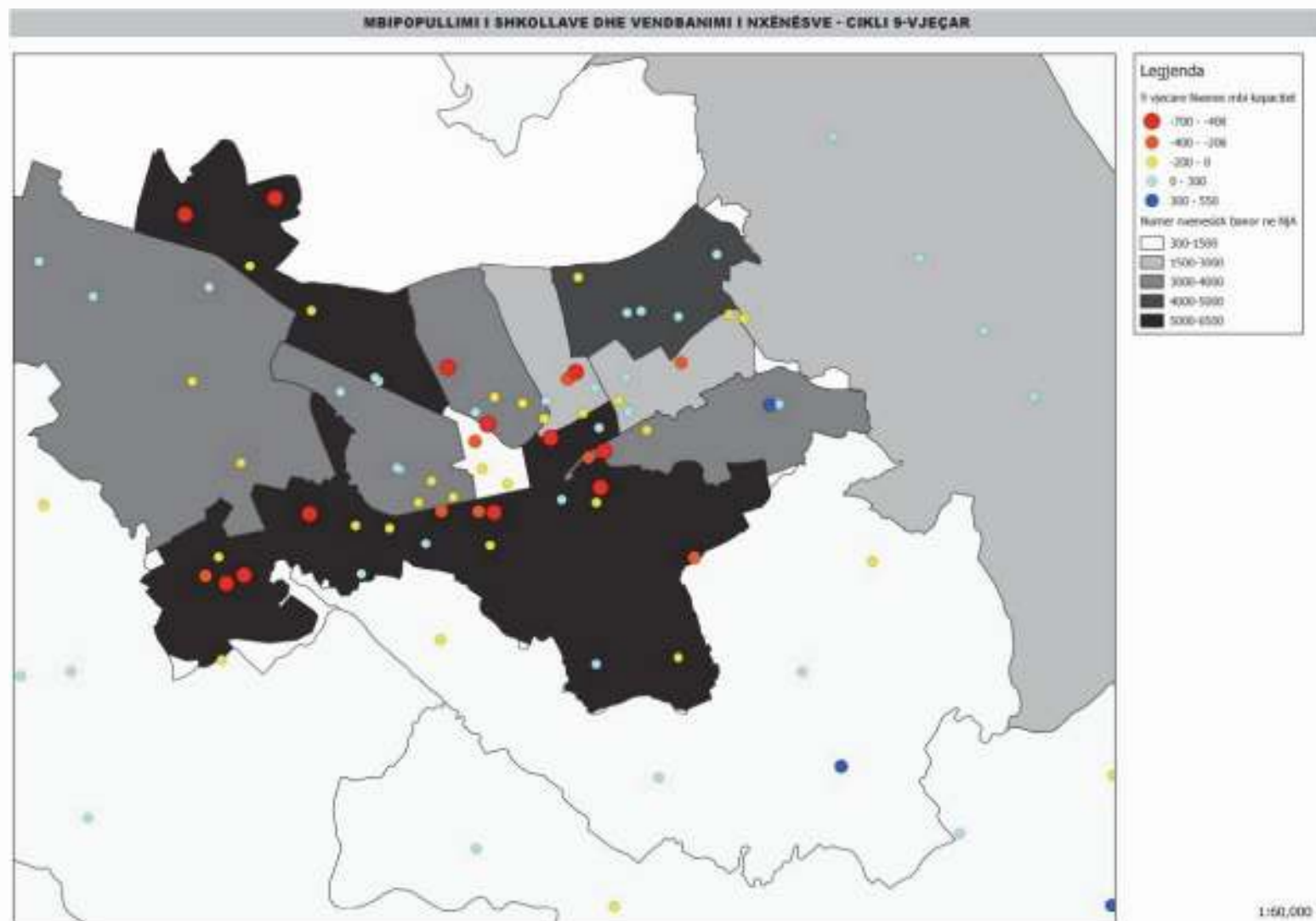


The phenomenon of over-crowded schools due to attendance of non-resident students of the Administrative Units where these schools are situated is presented in the two maps below. Map 11 indicates the percentage of attending students of schools for each Administrative Unit who do not live there. As noted, 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



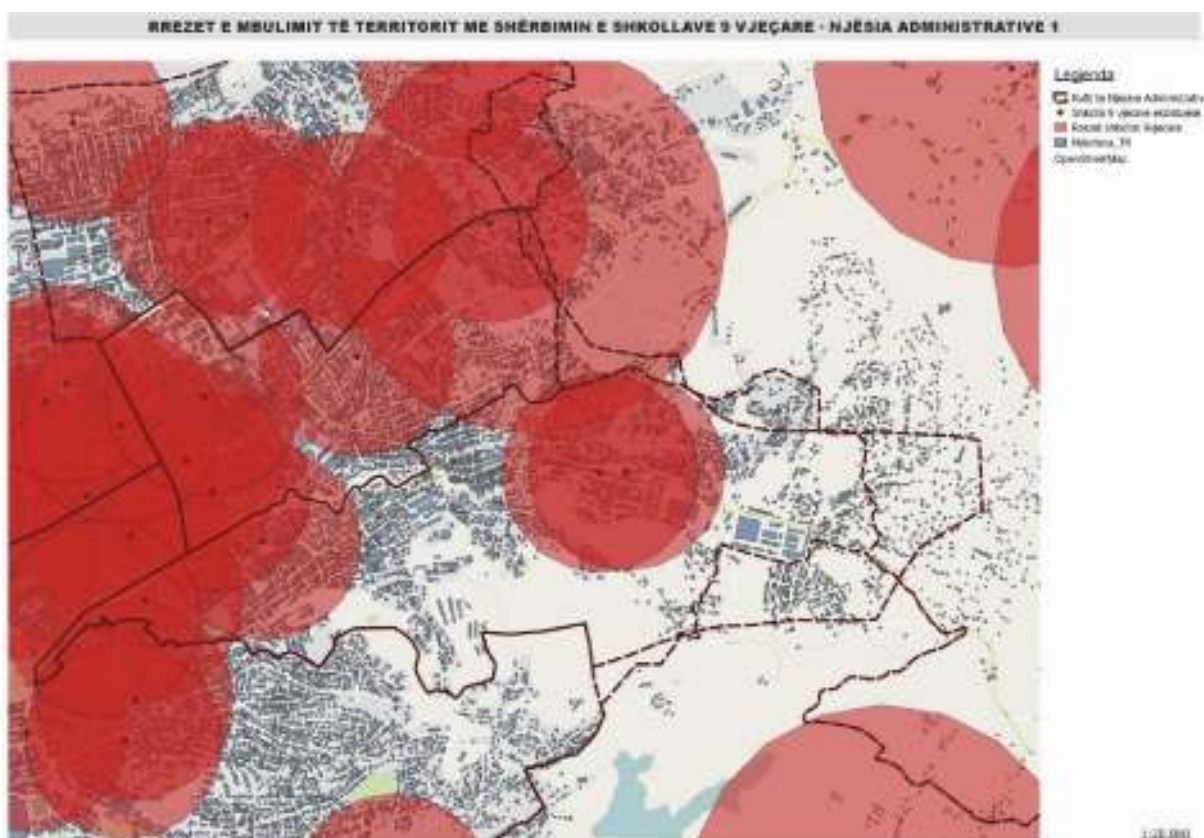
Map 12 – Over-population of schools and students residence – nine-year cycle (Note: negative values indicate number beyond the capacity for school)



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 :

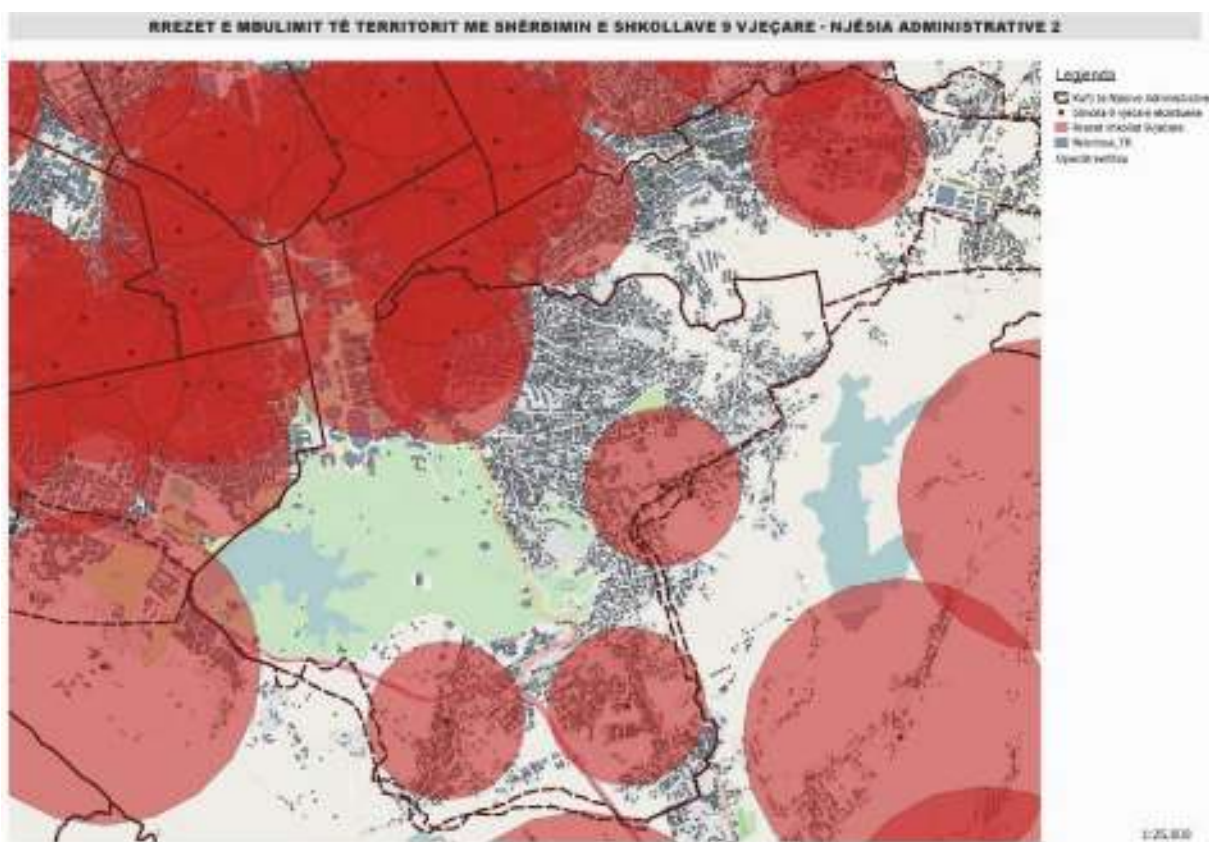
Map 13 – Territory Coverage Range with nine-year schools - AU 1



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 nine-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. Atatürk” and “Mustafa Greblleshi” 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:

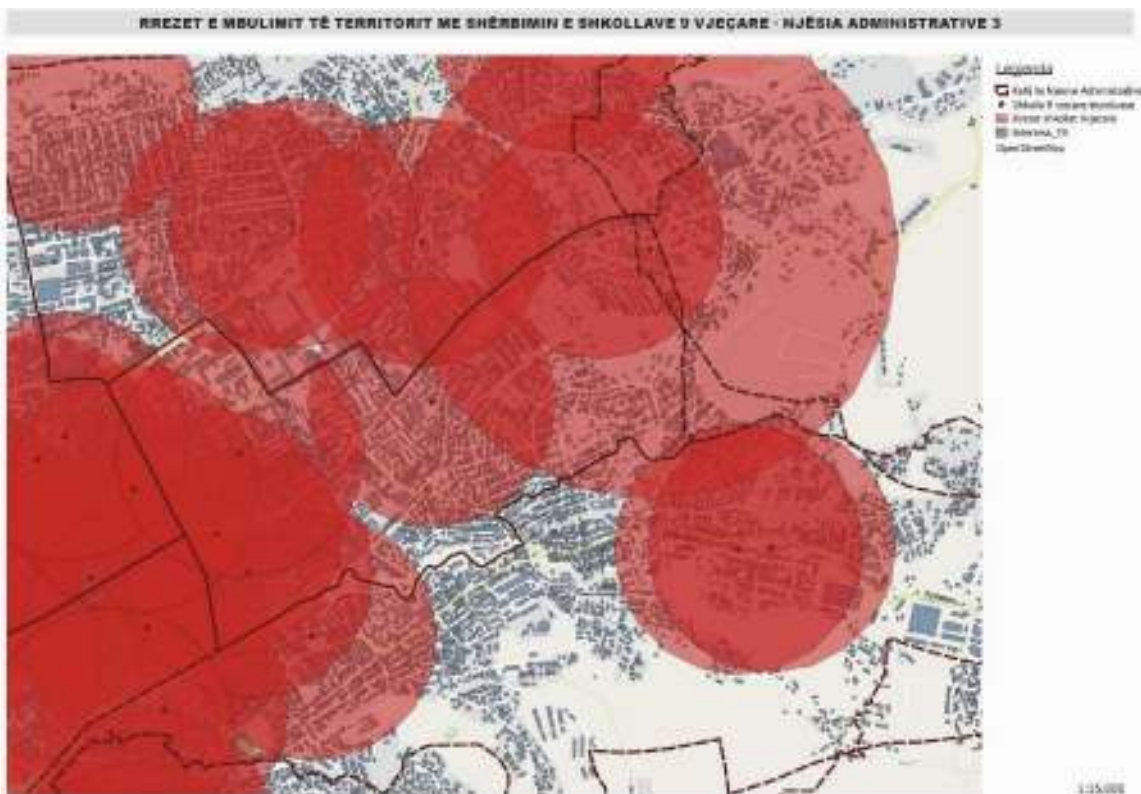
Map 14 – Territory Coverage Range with nine-year school service -AU 2



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 Unit 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 :

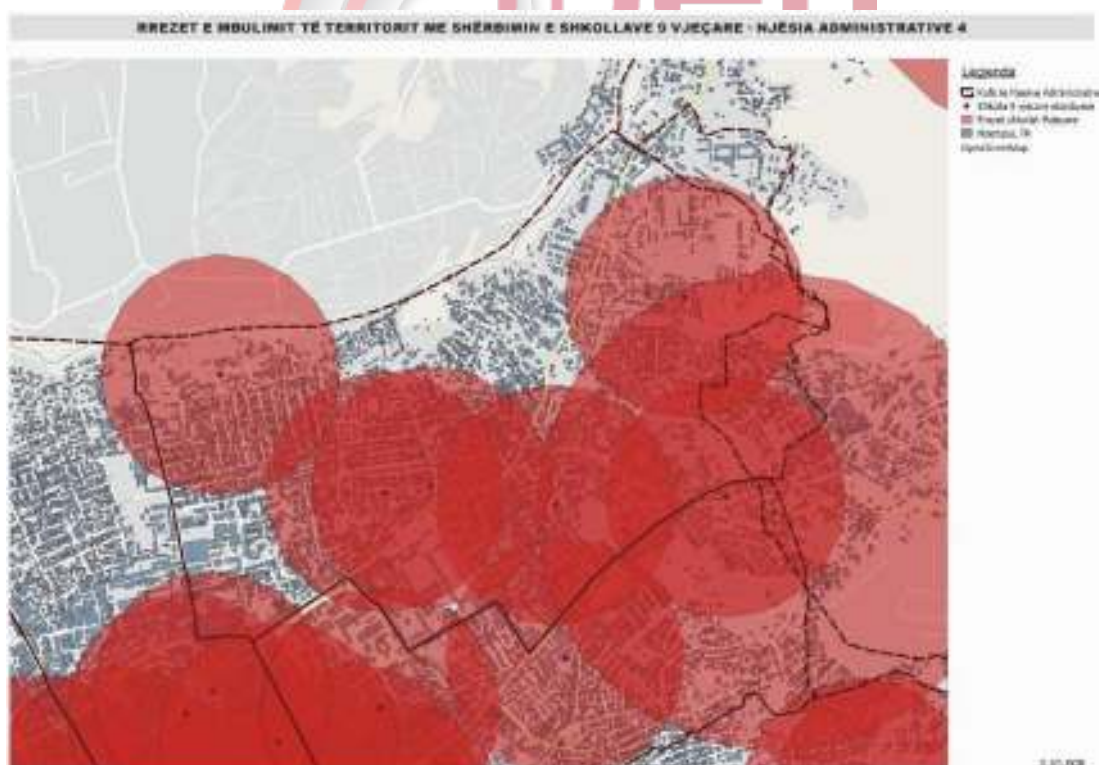
A nine-year school (Selaudin Bekteshi) composed of 20 classes with 30 students, i.e. a total of 600 students, as well as all the respective facilities, such as labs and sports venues.

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.

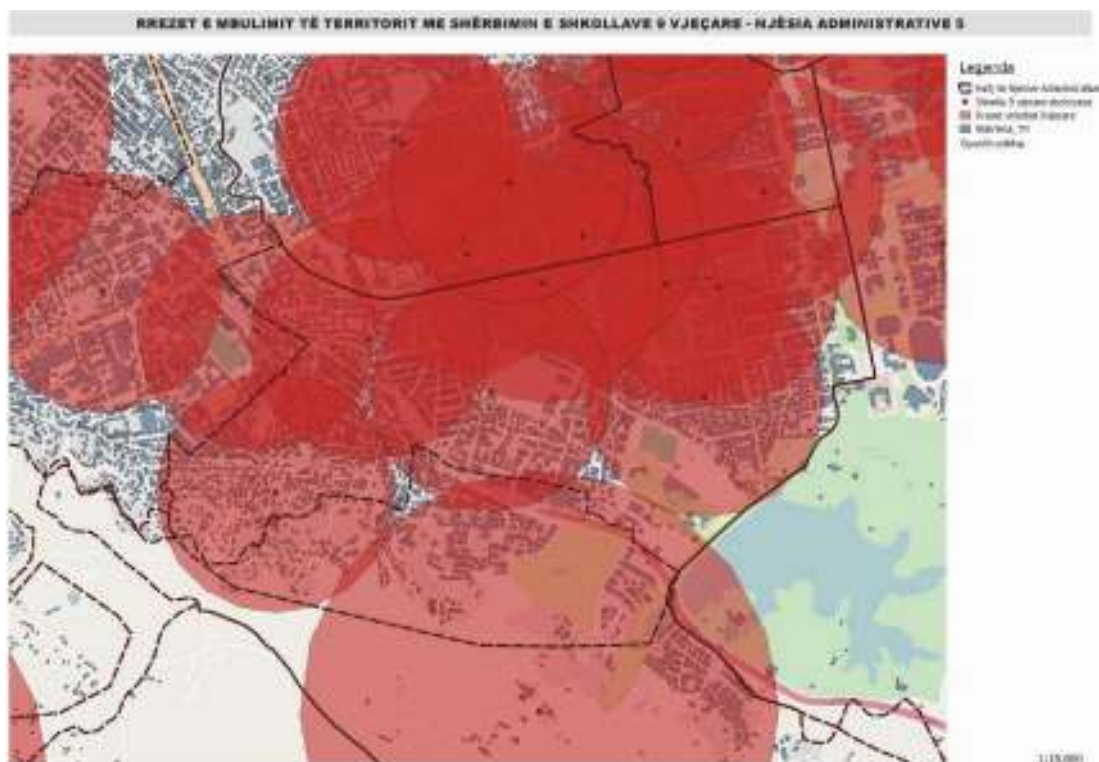
Map 16 – Territory Coverage Range with nine-year schools service - AU 4



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



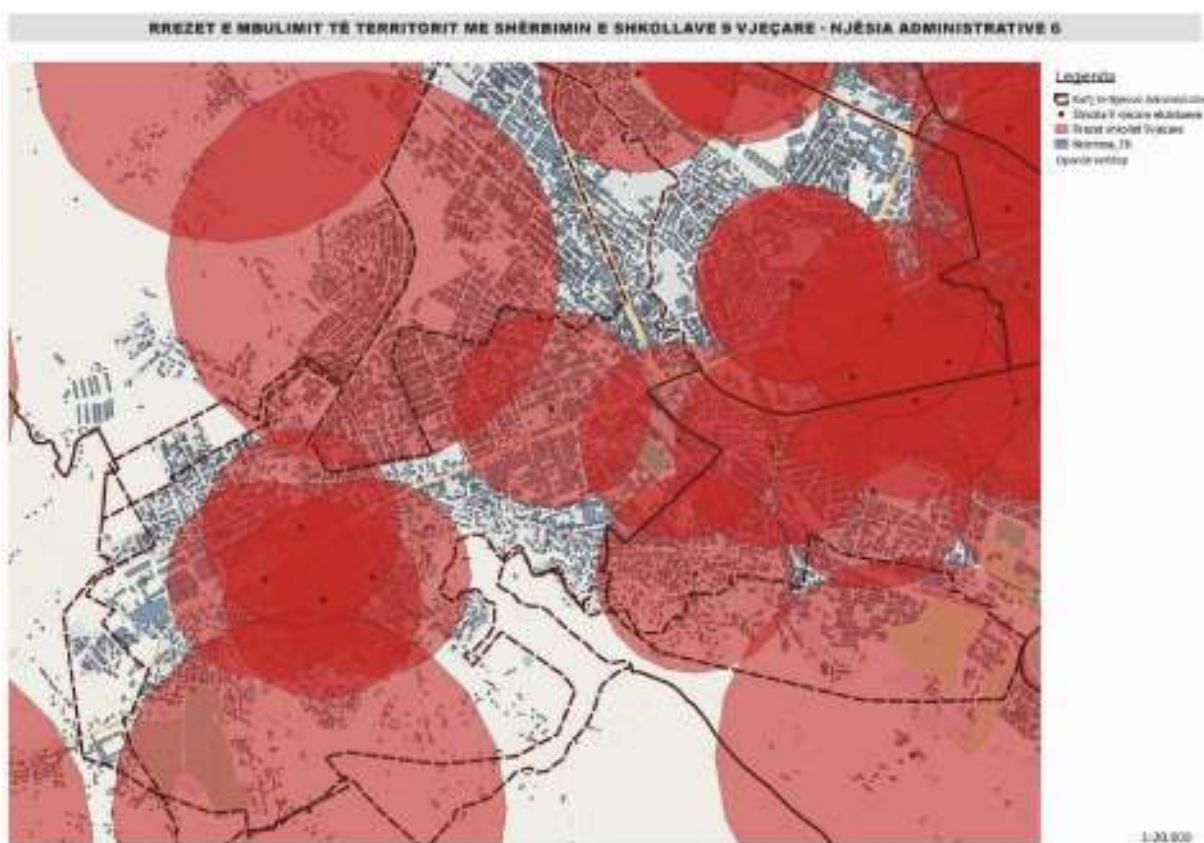
Administrative Unit 6

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 :

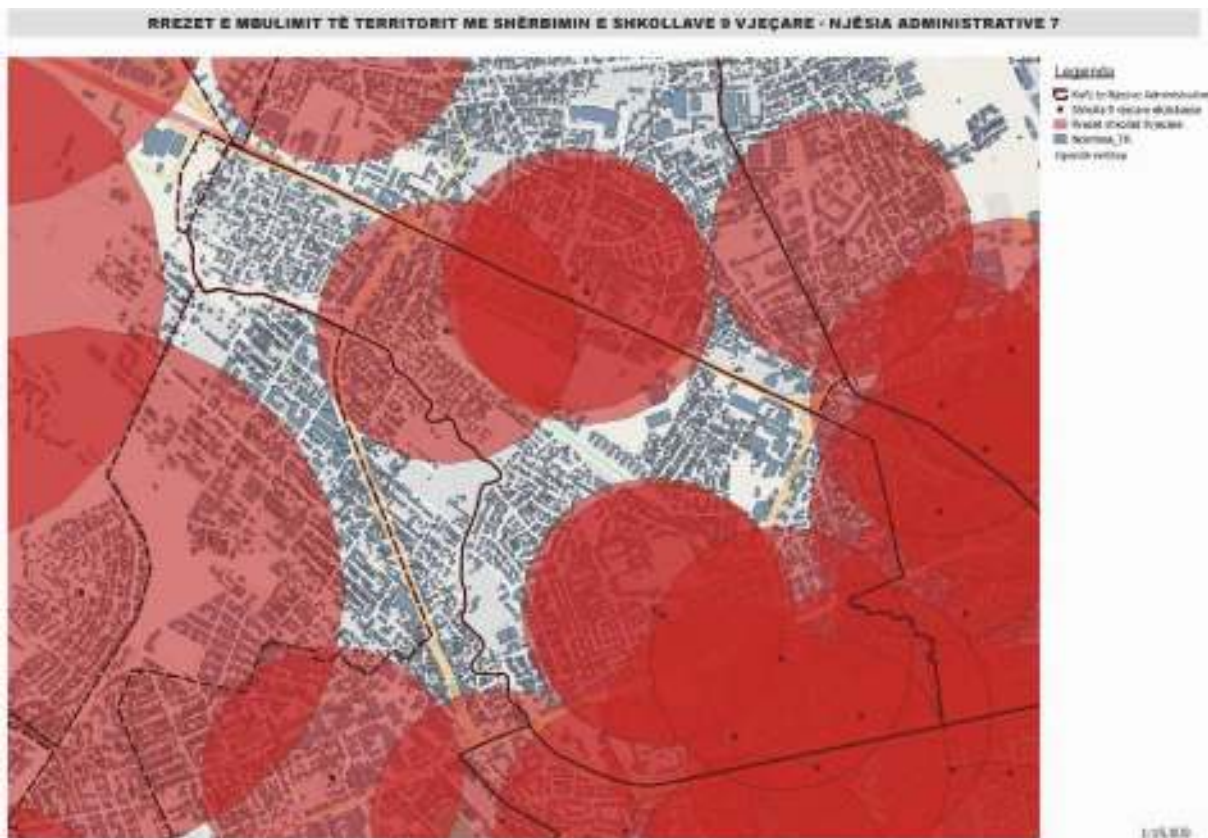
Map 18 – Territoiy coverage range with nine-year schools - AU 6



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 Unit 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:

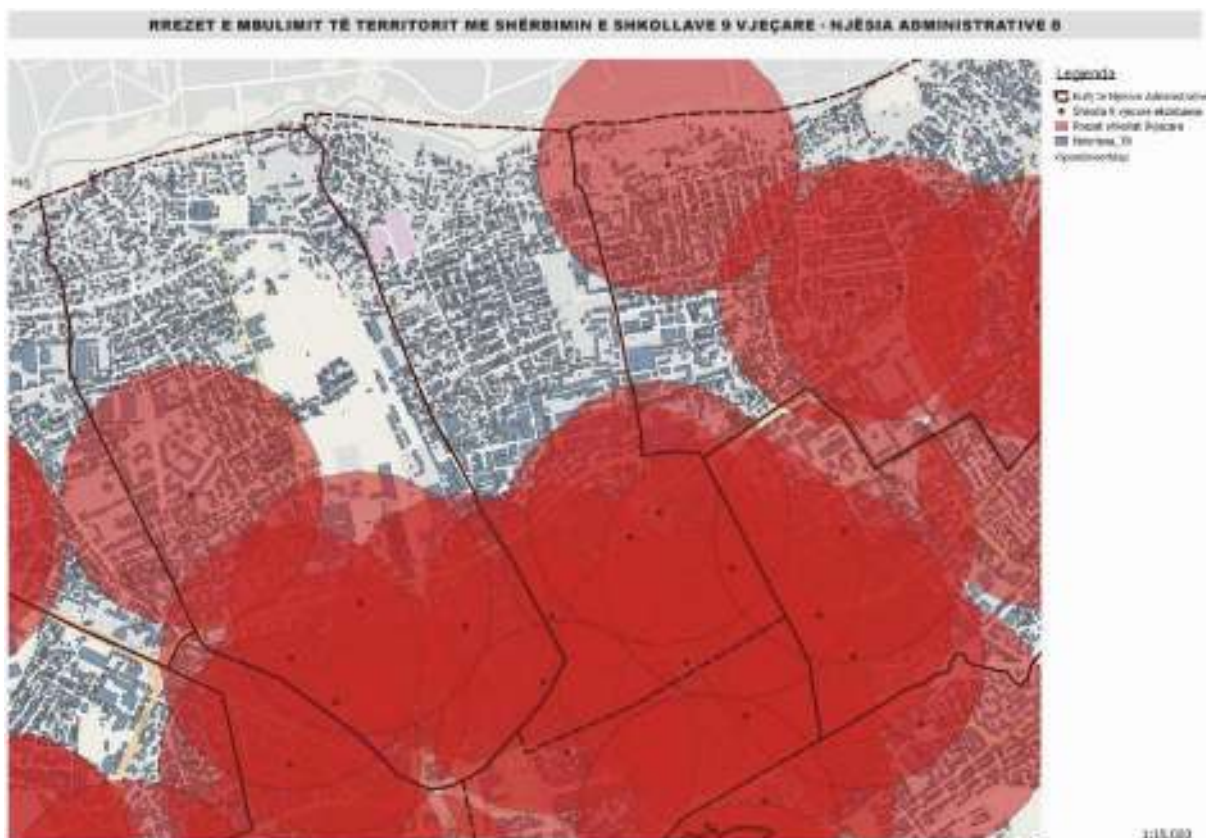
Map 19 – Territory Coverage Range with nine-year schools service -AU 7



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 :

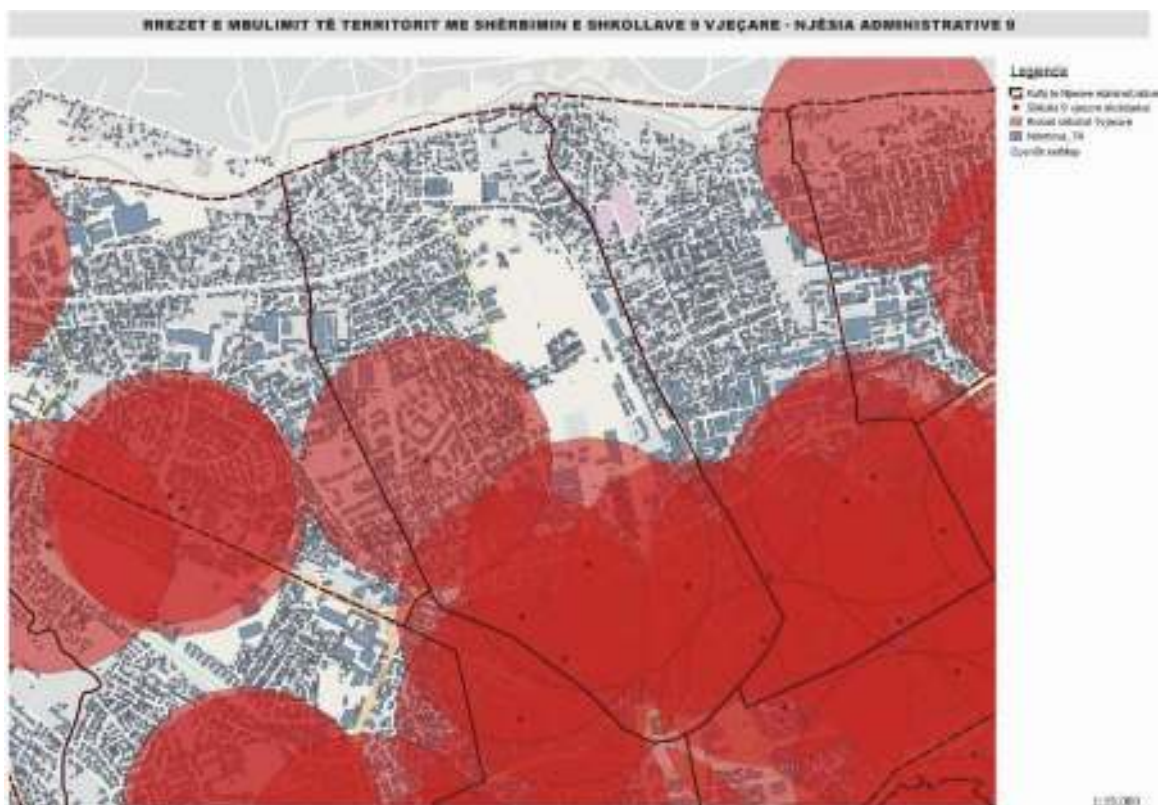
Map 20 – Territory Coverage Range with nine-year schools service - AU 8



Administrative Unit 9

This administrative unit has a total of 3864 resident students and 4992 attending 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:

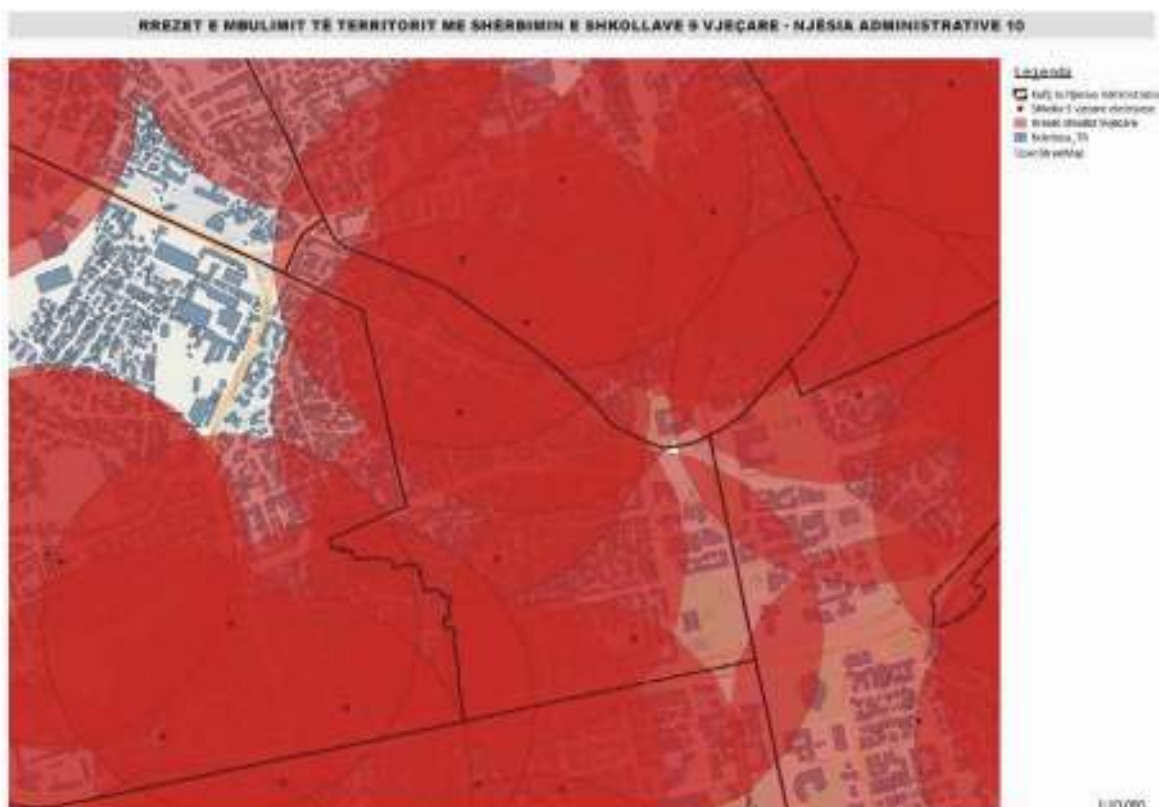
Map 21 – Territory coverage range with nine-year schools - AU 9



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.

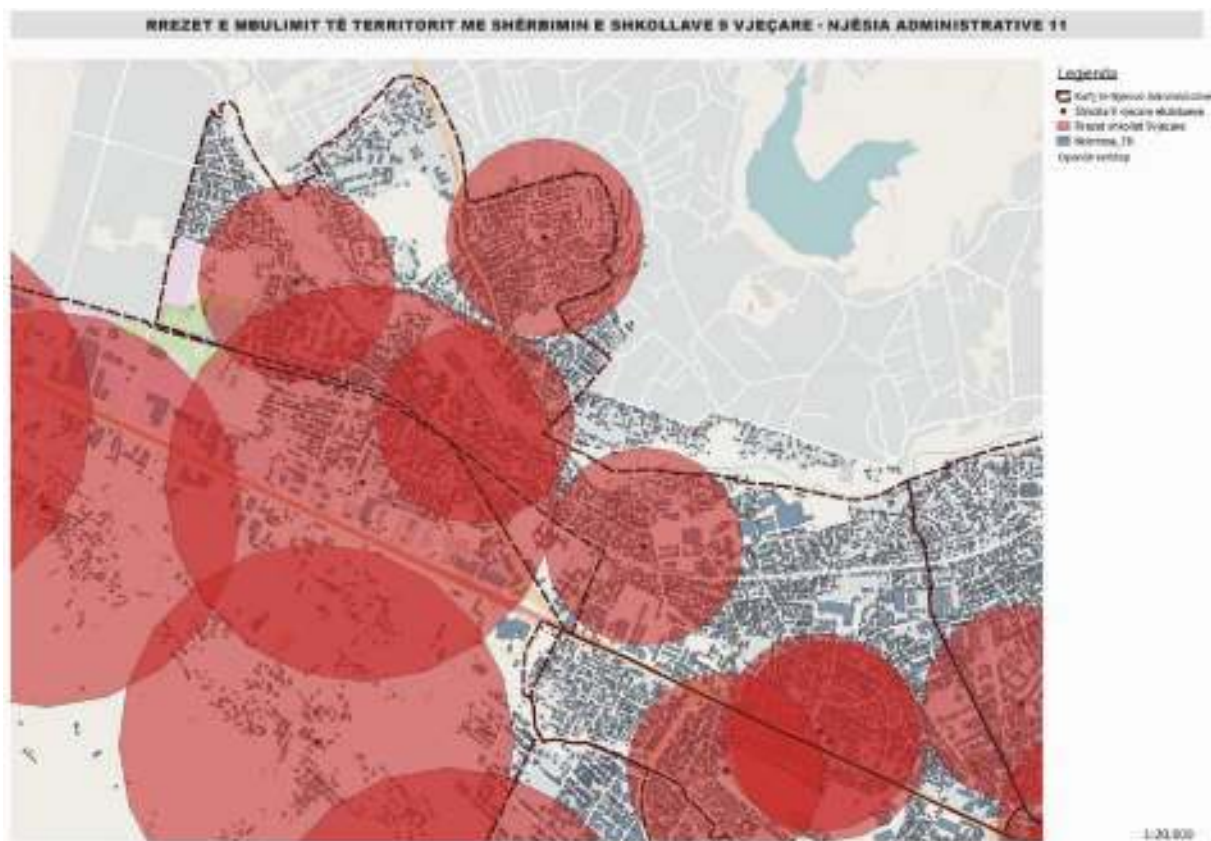
Map 22 – Territory coverage range with nine-year schools -AU 10



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:

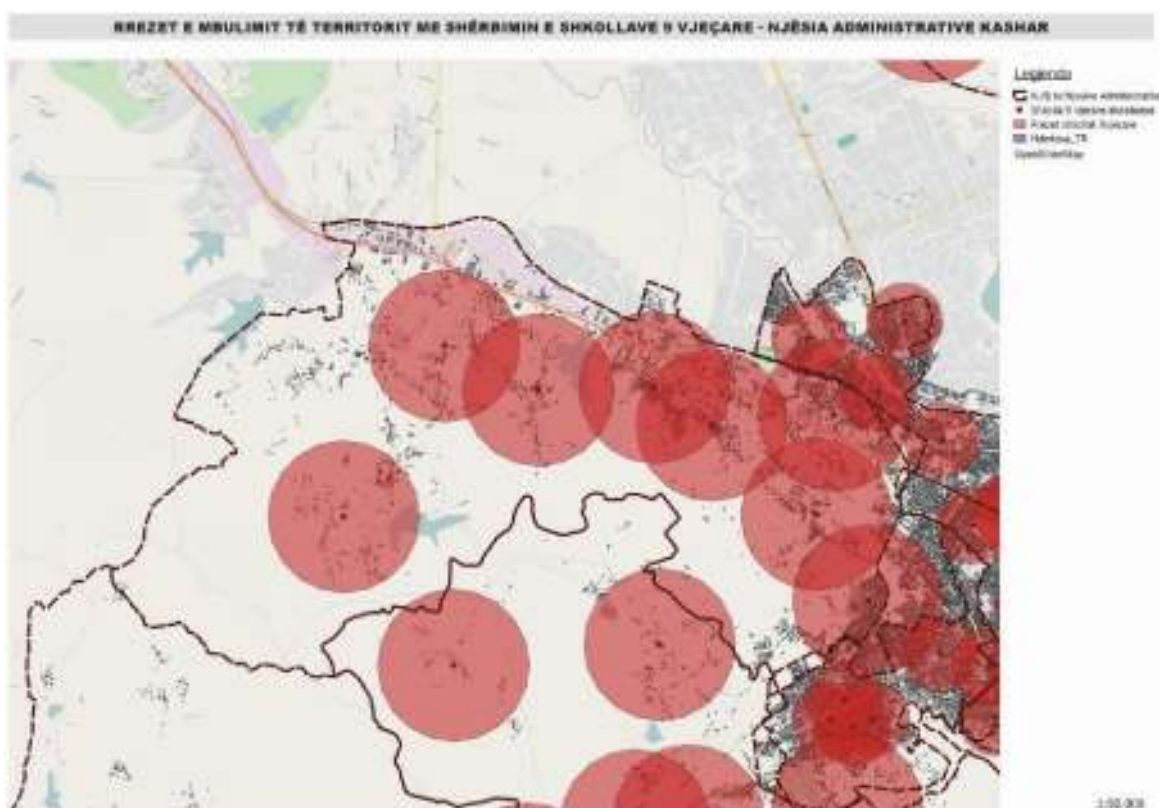
Map 23 – Territory coverage range with nine year schools - AU 11



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 service 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.

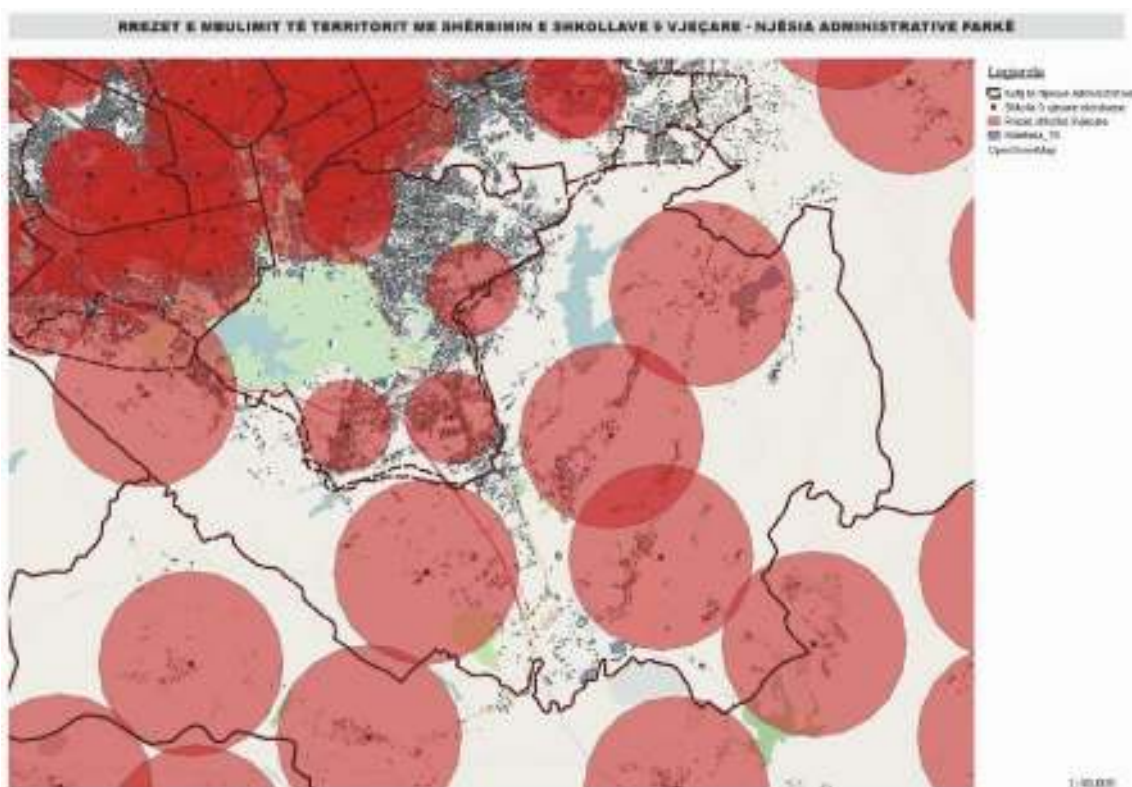
Map 24 – Territory coverage range with nine-year schools - AU Kashar



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 infrastructure. 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.

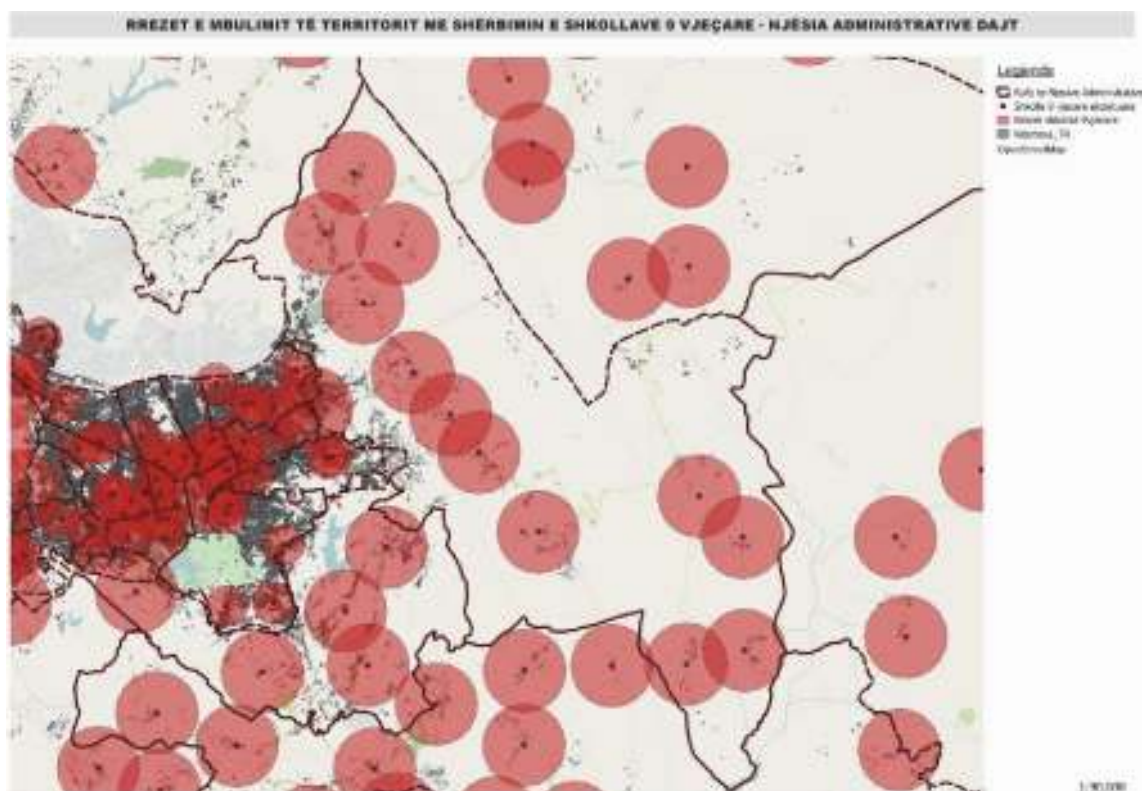
Map 25 – Territory coverage range with nine-year schools AU Farke



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 over the 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.

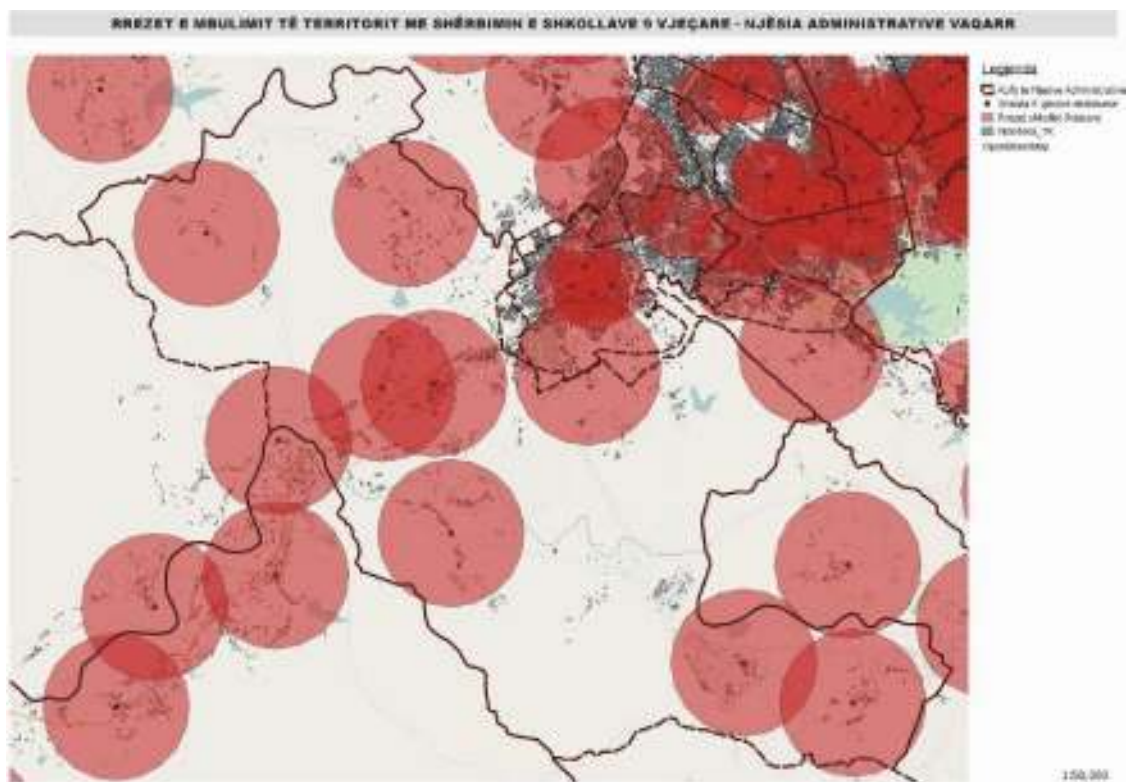
Map 26 – Territory coverage range of nine-year schools - AU Dajt



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.

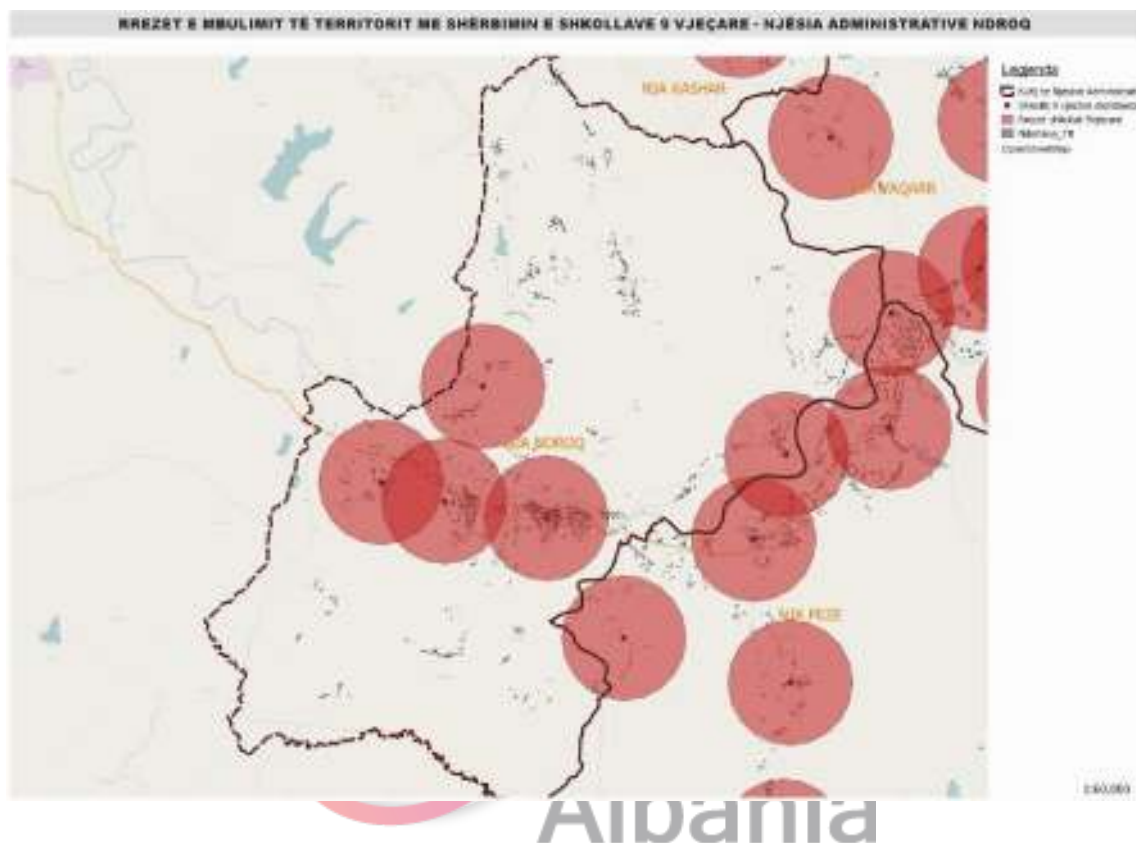
Map 27 – Territory Coverage Range with nine-year schools - AU Vaqarr



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.

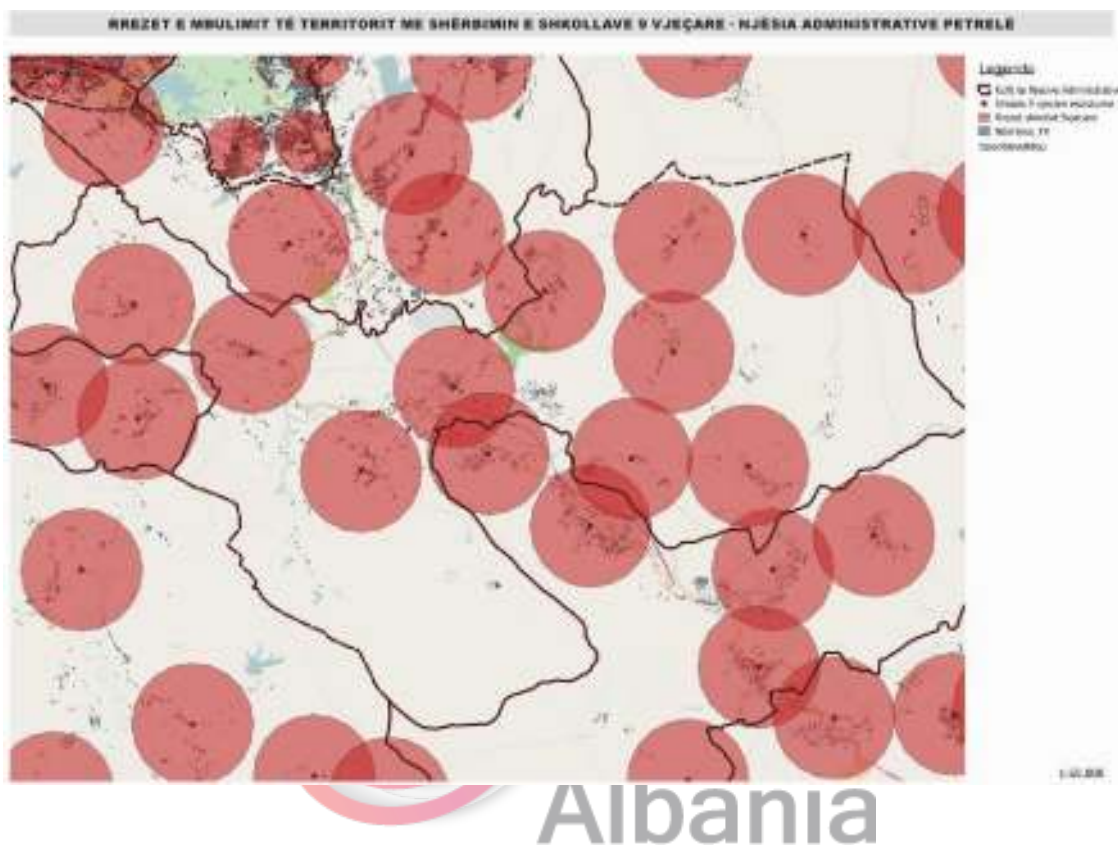
Map 28 – Territory coverage range with nine-year schools service -AU Ndroq



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.

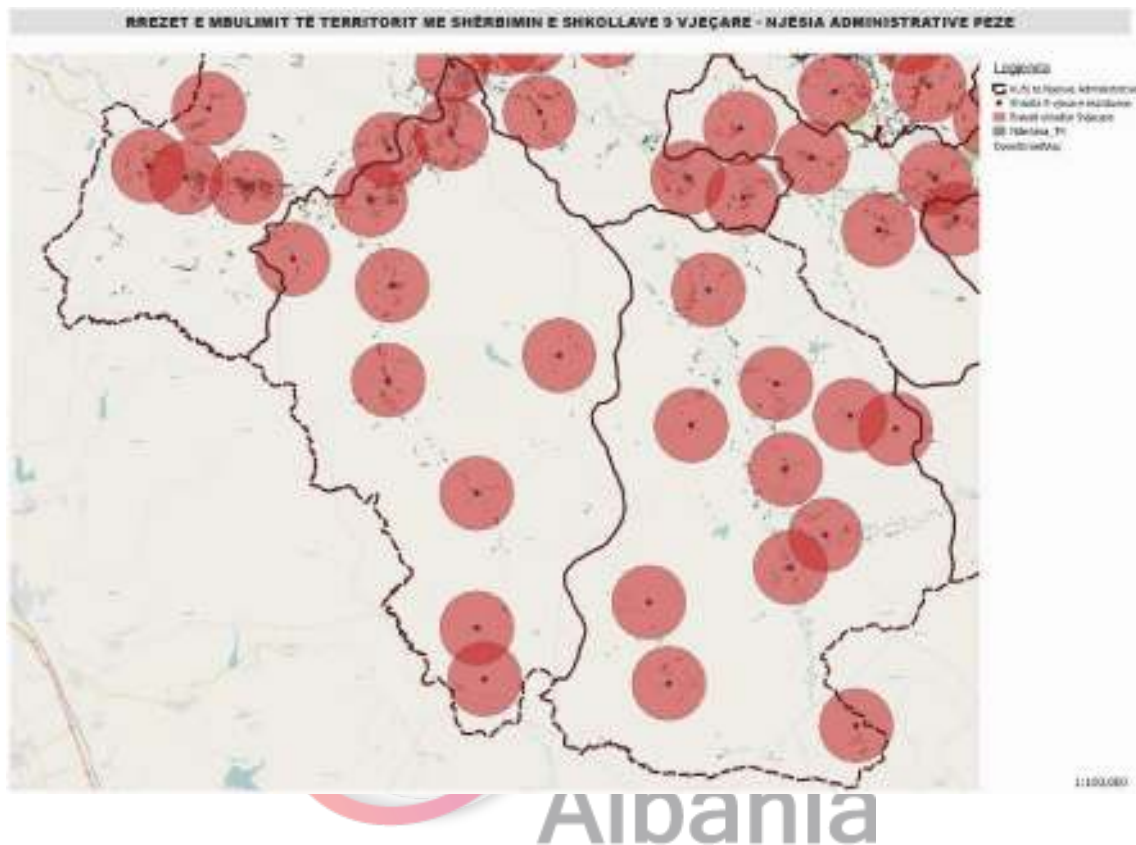
Map 29 – Territory coverage range with nine-year schools - AU Petrelë



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.

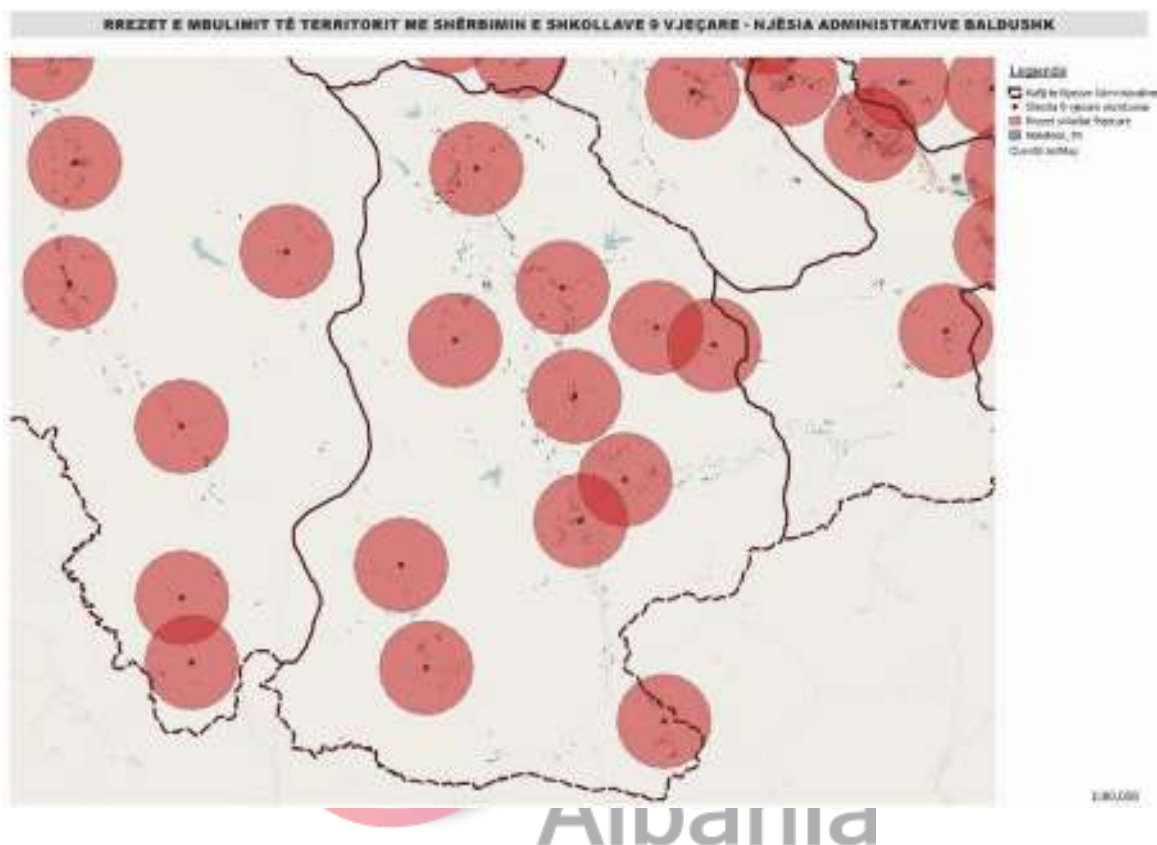
Map 30 – Territory coverage range with nine-year schools service - AU Pezë



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.

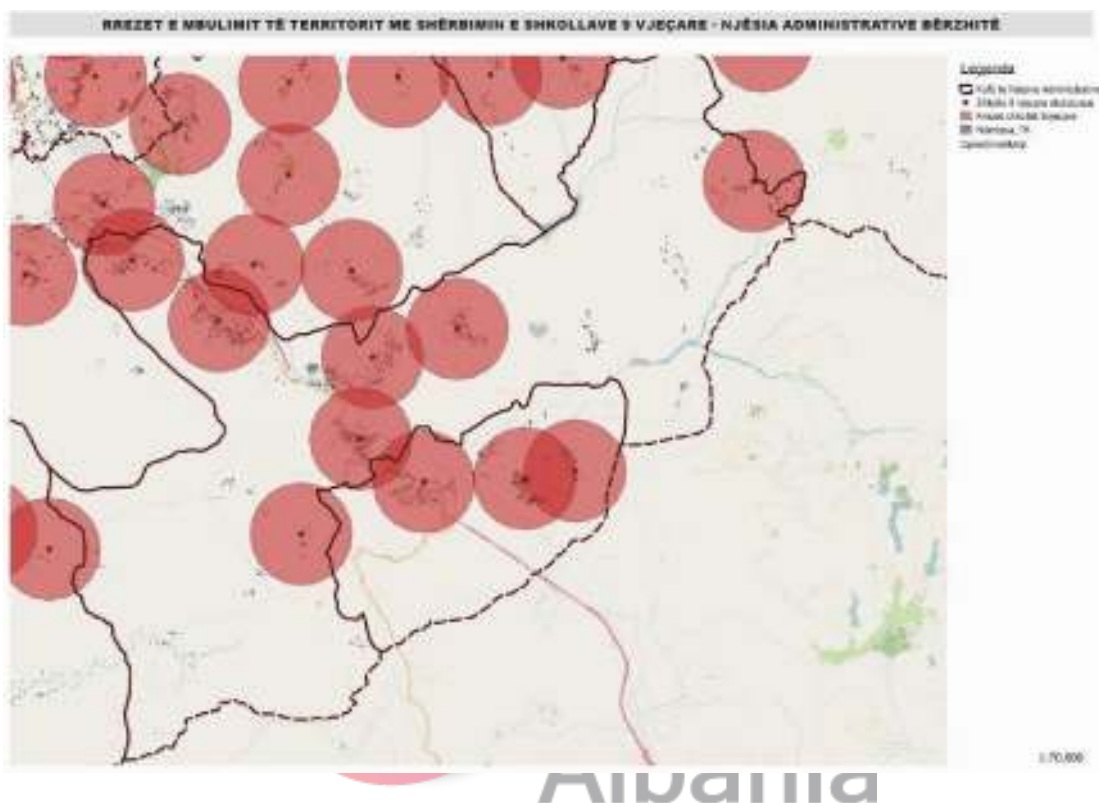
Map 31 – Territory Coverage Range with nine-year schools service – AU Baldushk



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-population, on the contrary the average of students per physical class is 13.6 students.

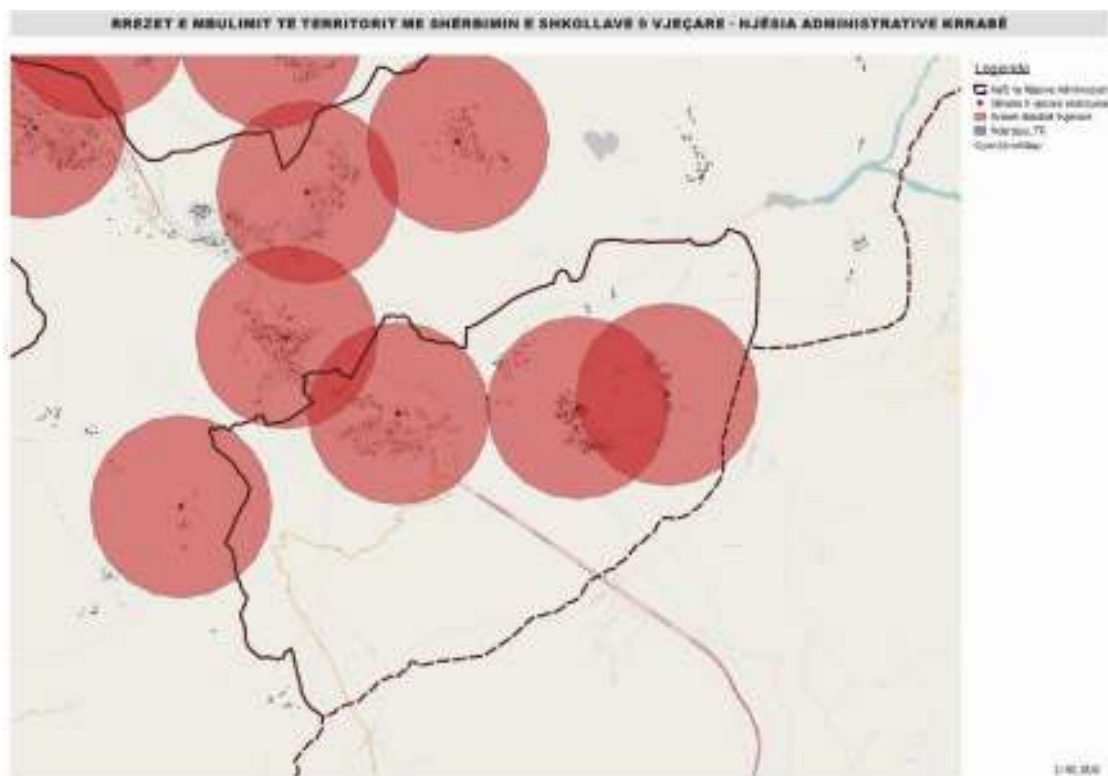
Map 32 – Territory Coverage range with nine-year education service - AU Berzhitë



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

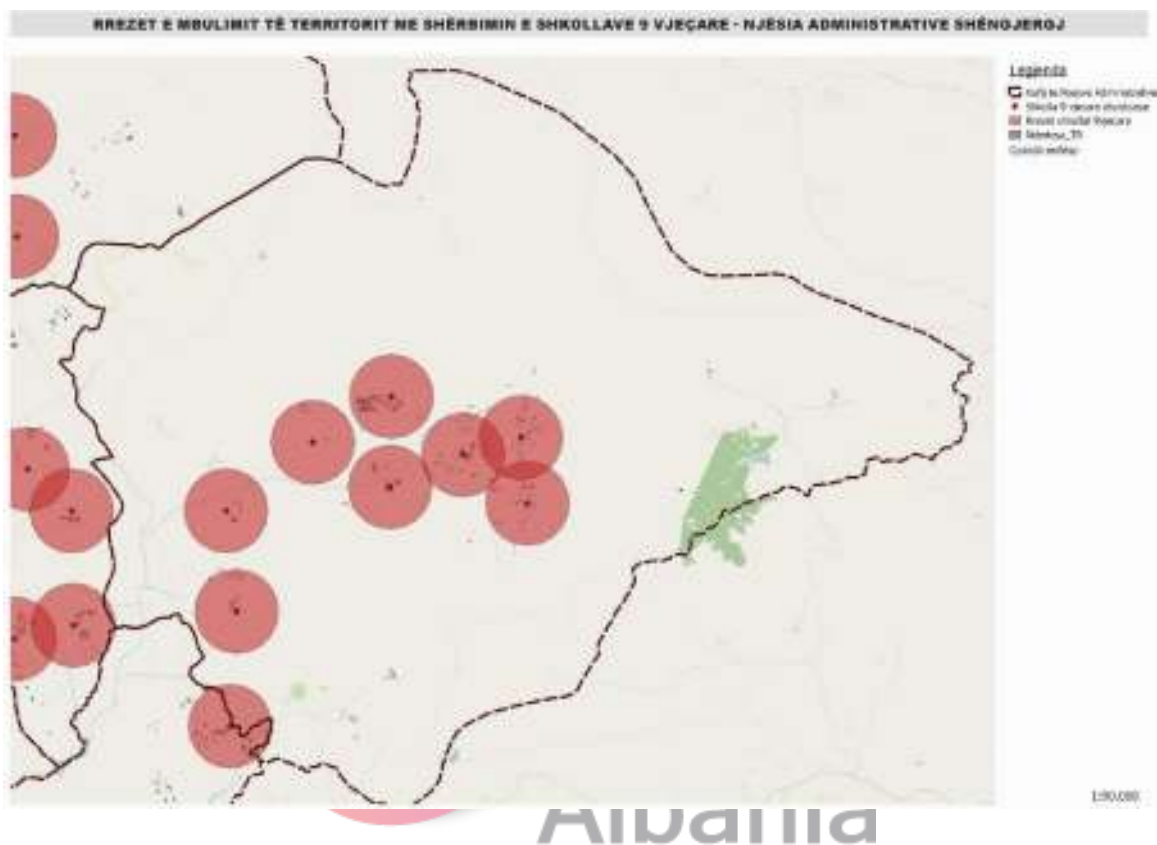


Albania

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

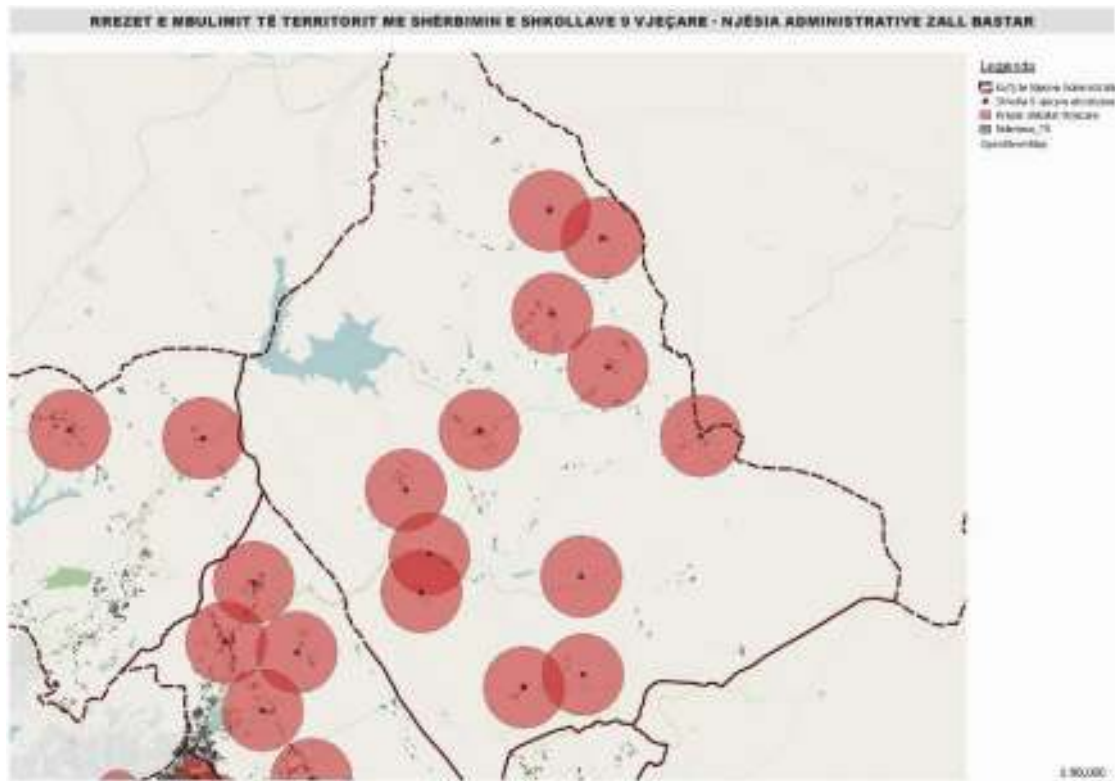
Map 34 – Territory Coverage Range with nine-year schools service - AU Shëngjergj



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 overcrowded 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

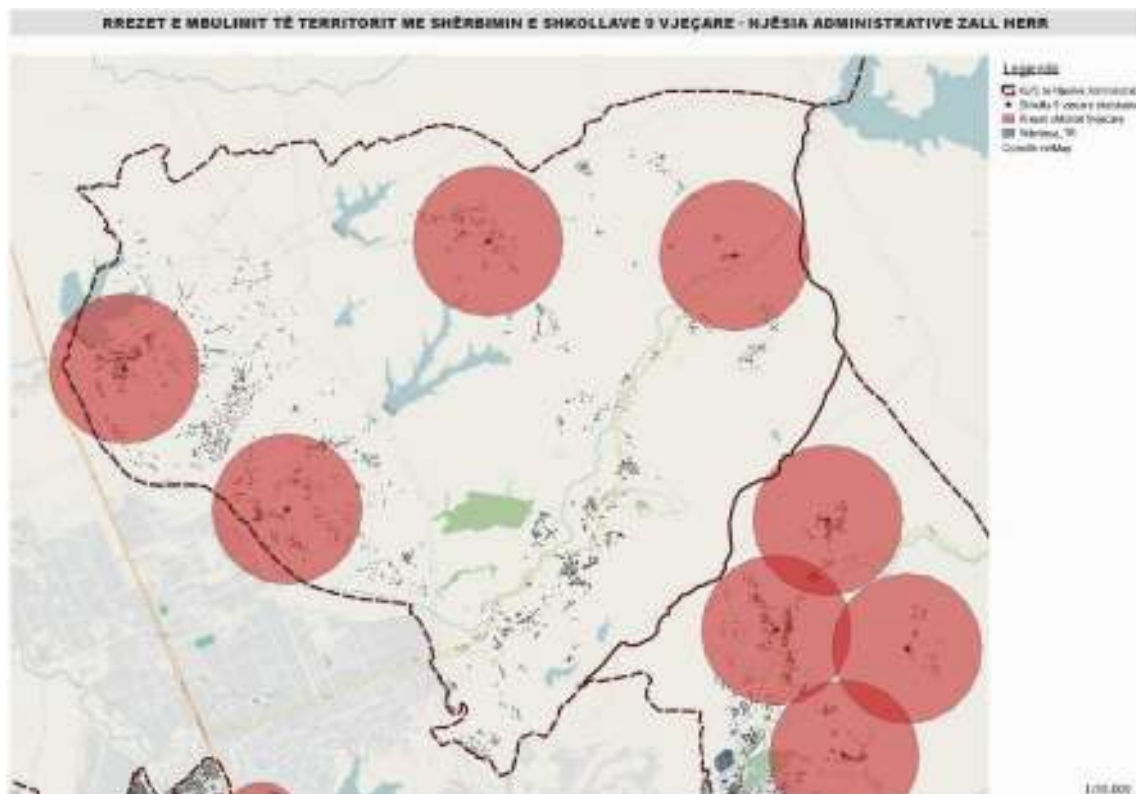


Albania

Administrative Unit of Zall Herr

This administrative unit counts a total of 1967 resident students and 1944 attending students of nine-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 achieve 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 schools²⁵. 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 necessary 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 taken 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

N O	ADMINISTRATIVE UNIT (AU)	NO ST.	TEACHING CLASS	ST/CL L	PHYSICAL CLASS	UNEXPLI TED 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 from 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 secondary system is 96, which shall be envisaged mainly in the over-crowded 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

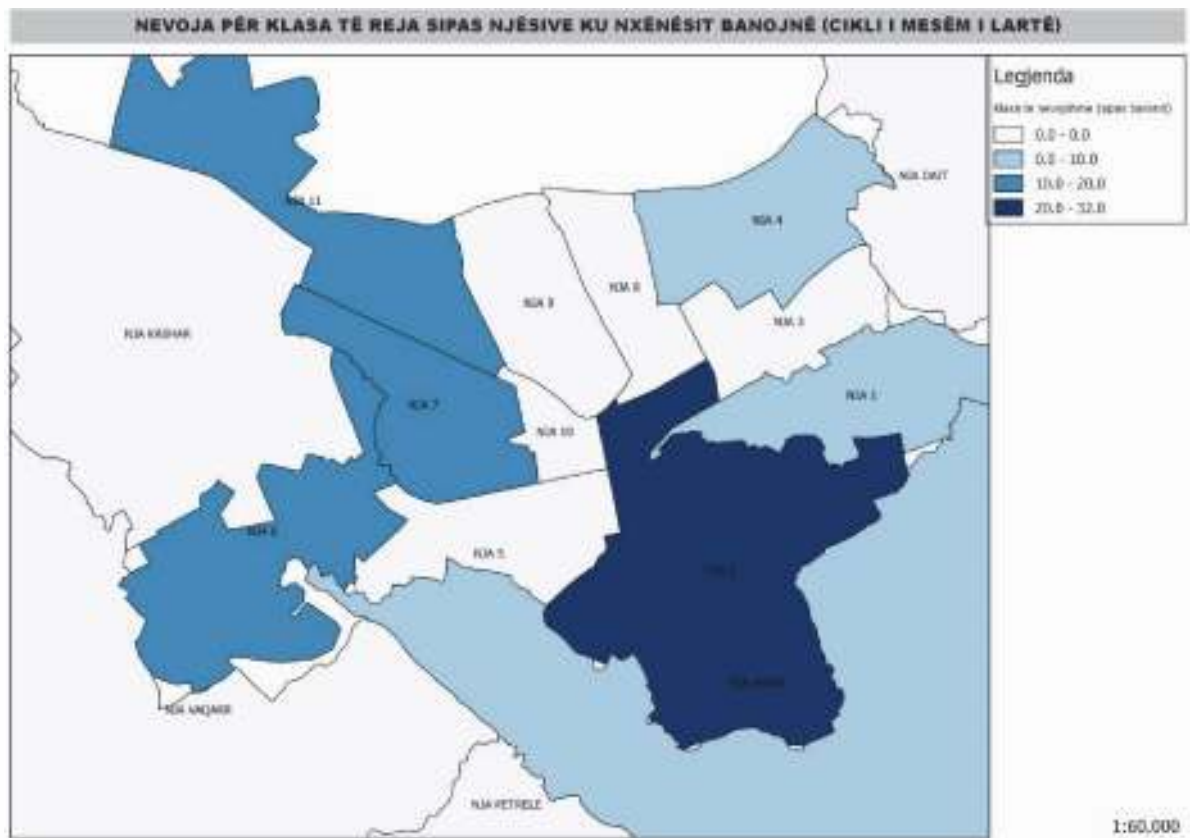
No	ADMINISTRATIVE UNIT (AU)	NO STUDENTS	PHYSICAL CLASSES	UNEXPLOITED CLASSES	ST/CL PHYSICAL	ST IF AVERAGE IS 30 ST/CL	BALANCE FOR EXTRA ST (according to st resident)	BALANCE OF EXTR OR LACKING SCHOOLS (according to st resident)
1	AU 1	360	15	0	24.0	450	-72	-2
2	AU 2	2249	45	1	50.0	1350	-971	-32

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)

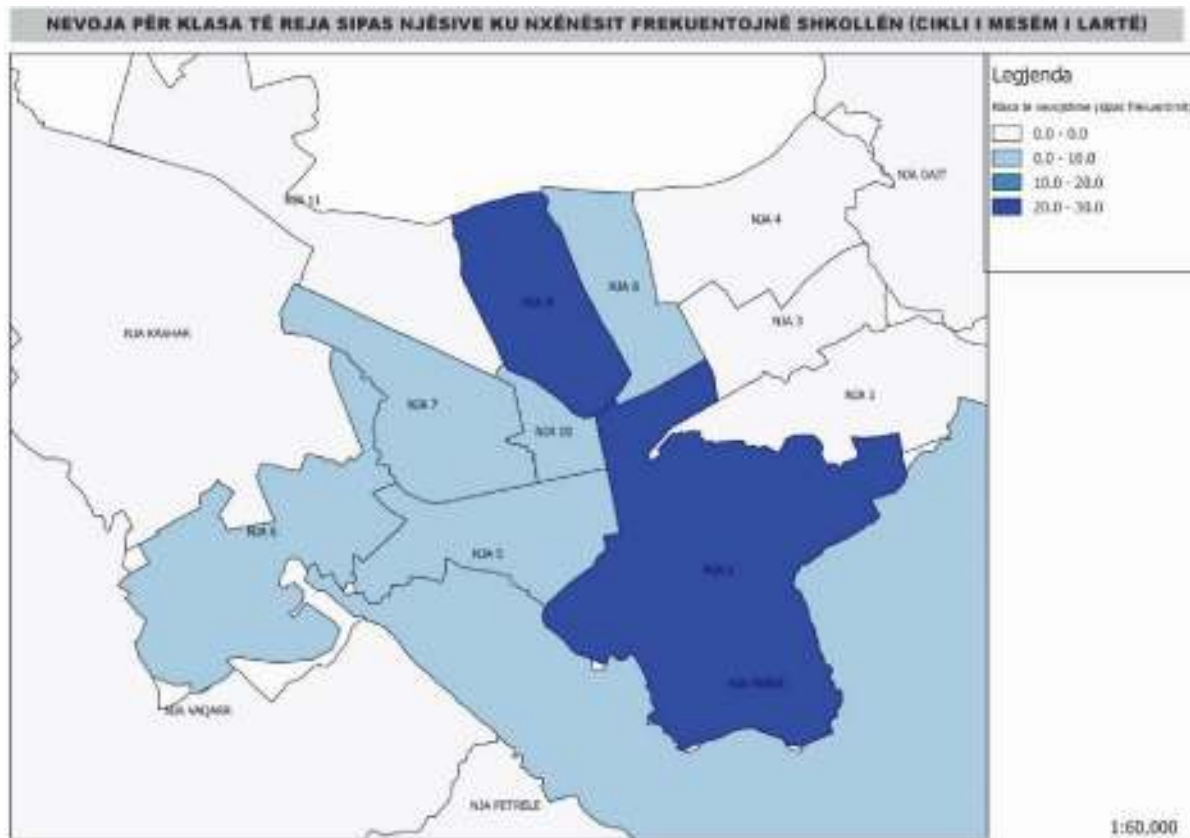
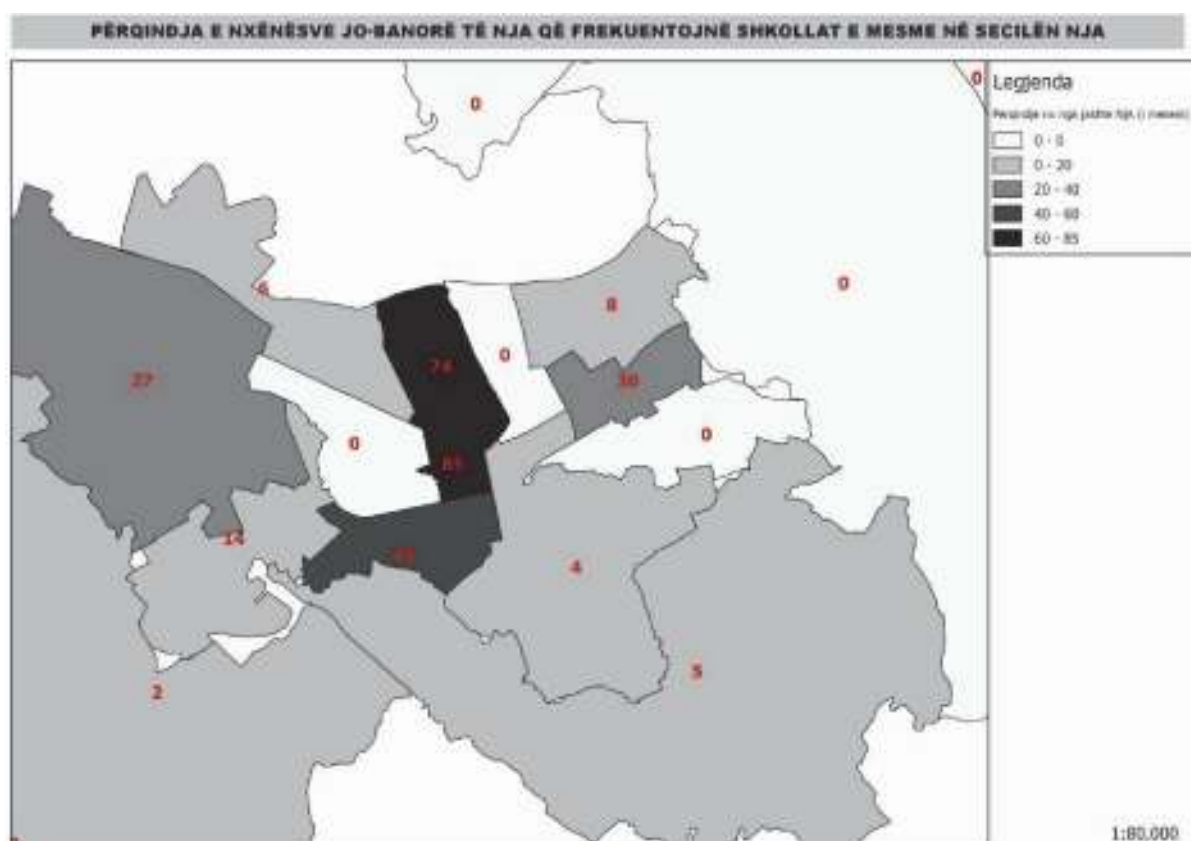


Table 14 – Location of students and Administrative Uni where they attend school (high school cycle)

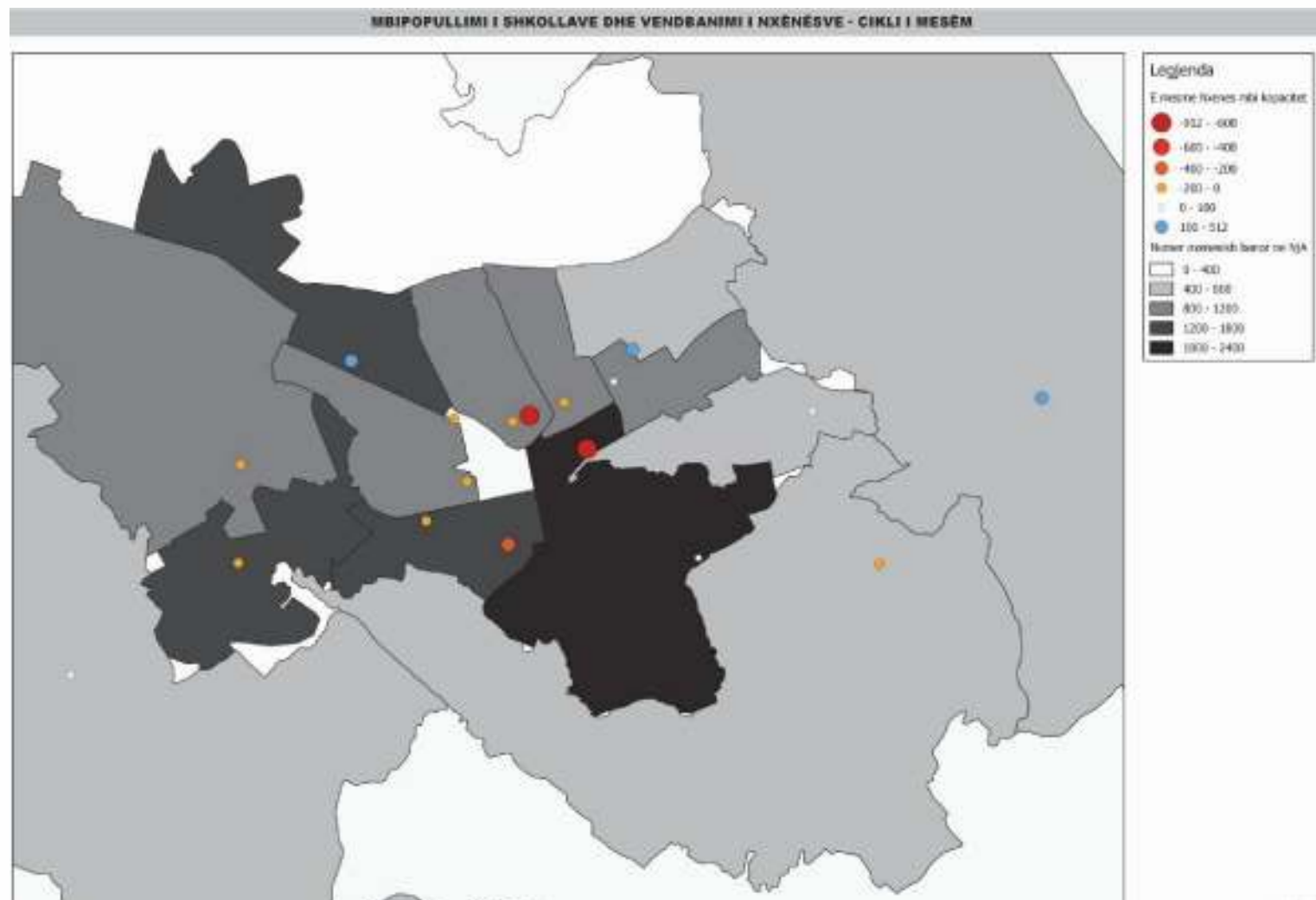
NJESIA ADMINISTRATIVE	NJESIA KU FREKUENTOJNE SHKOLLEN																					TOTAL	TOTAL JASHTE NJESISE	%				
	NIA1	NIA2	NIA3	NIA4	NIA5	NIA6	NIA7	NIA8	NIA9	NIA10	NIA11	NJA DAIT	FAKRE	VAQARR	KASHAR	NDROQ	NIAPEZE	PETRELE	BALDUS	BERZHITE	KRRABE				SHENGJE	NJA ZALL	NJA ZALL HERR	
NJESIA ADM 1 NJESIA	349	2	0		2	3			6	9			2		2											2	2	38%
NJESIA ADM 3 NJESIA		2	3		2	6			5	6					7			1								2	9	19%
NJESIA ADM 5 NJESIA		3			1217	8			3	2					2			3								15	2	9%
NJESIA ADM 7 NJESIA		1			8	7	422		0	0		5			5											12	0	53%
NJESIA ADM 9 NJESIA					8	2			8	0		6			3											0	8	43%
NJESIA ADM 11 NJA DAIT			42	31	8	2			8	317	542		320		8											2	8	55%
NJA FAKRE		35			22				1				574		1											6	2	16%
NJA KASHAR					10	9			42	6	6				8			1								8	93	11.1%
NJA NIAPEZE						15								2	1		180									208	28	13.5%
NJA PETRELE			1												3				321		456		5		2	4	1%	
NJA KRRABE																					369		198			0	0	0%
NJA SHENGJE			31							7															280	257	7	2.4%
TOTAL NGA JASHTE NJESISE	0	73	312	31	8	152	0	0	8	15	35	0	30	9	281	0	6	0	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



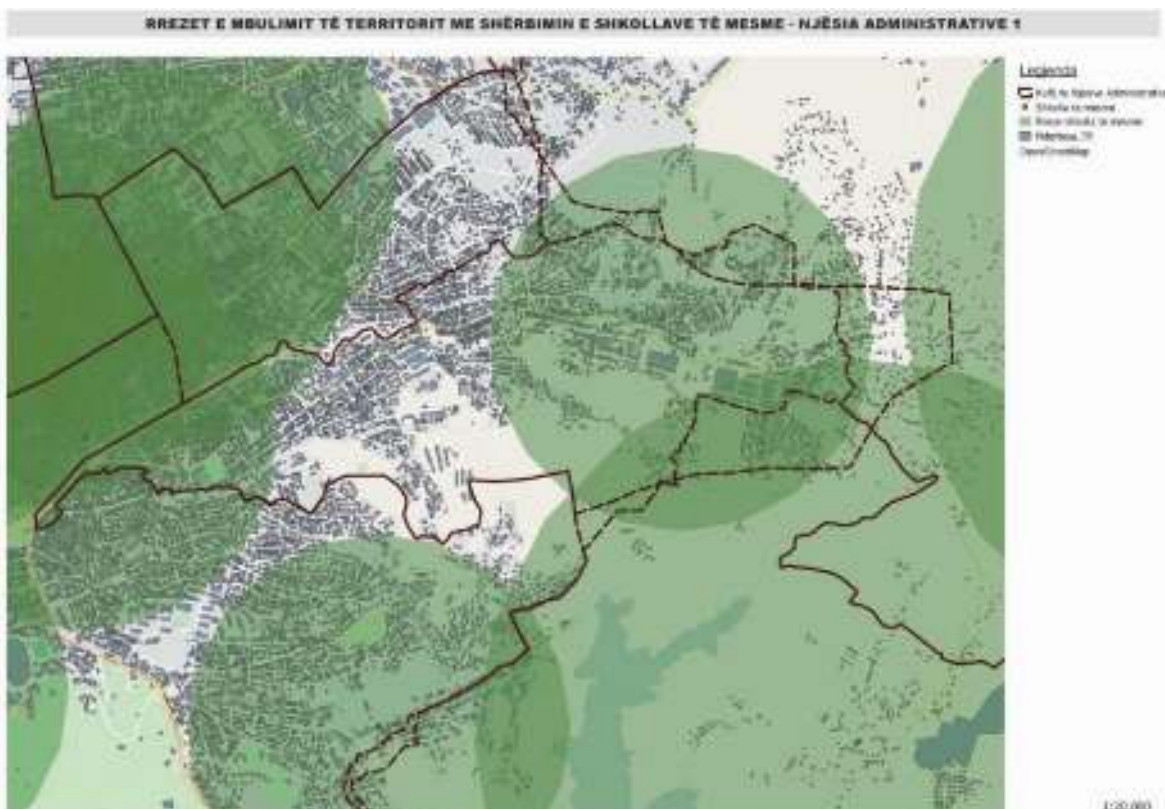
Map 40 – Over-population of schools and residence of students – high school education (Note : negative values show the number beyond capacity each school)



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 average 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:

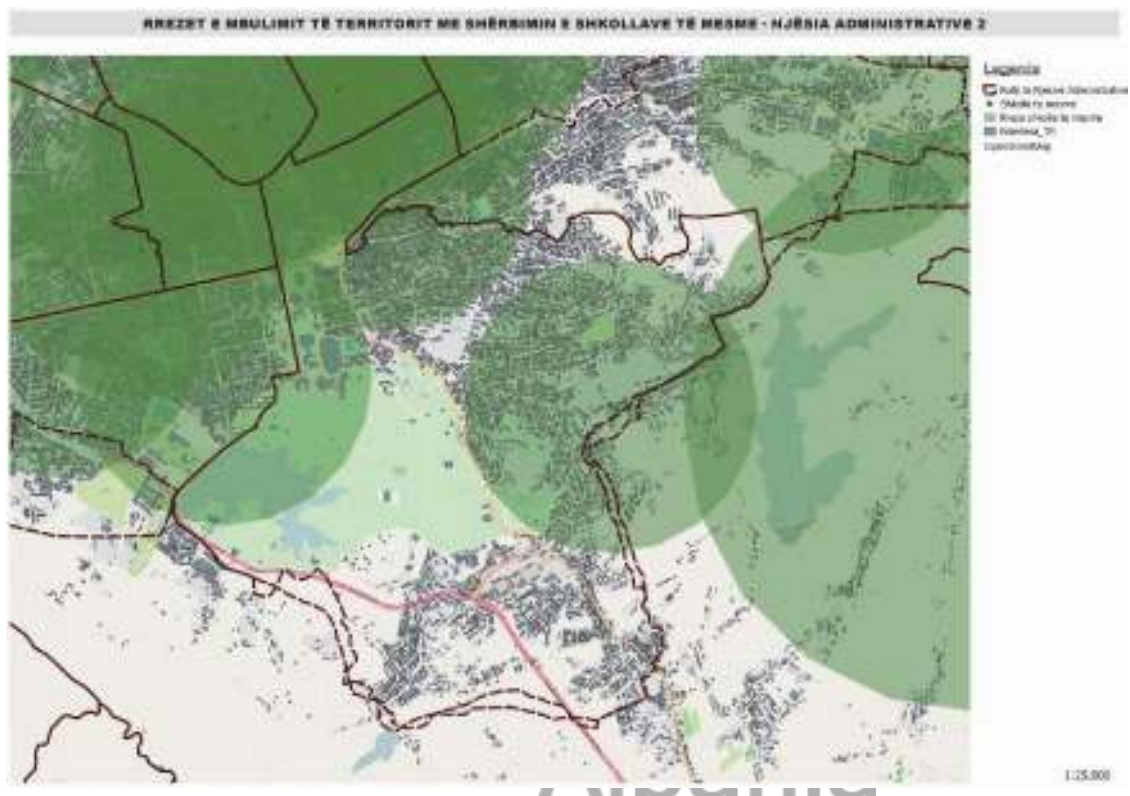
Map 41 – Territory Coverage range with high schools - AU 1



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:

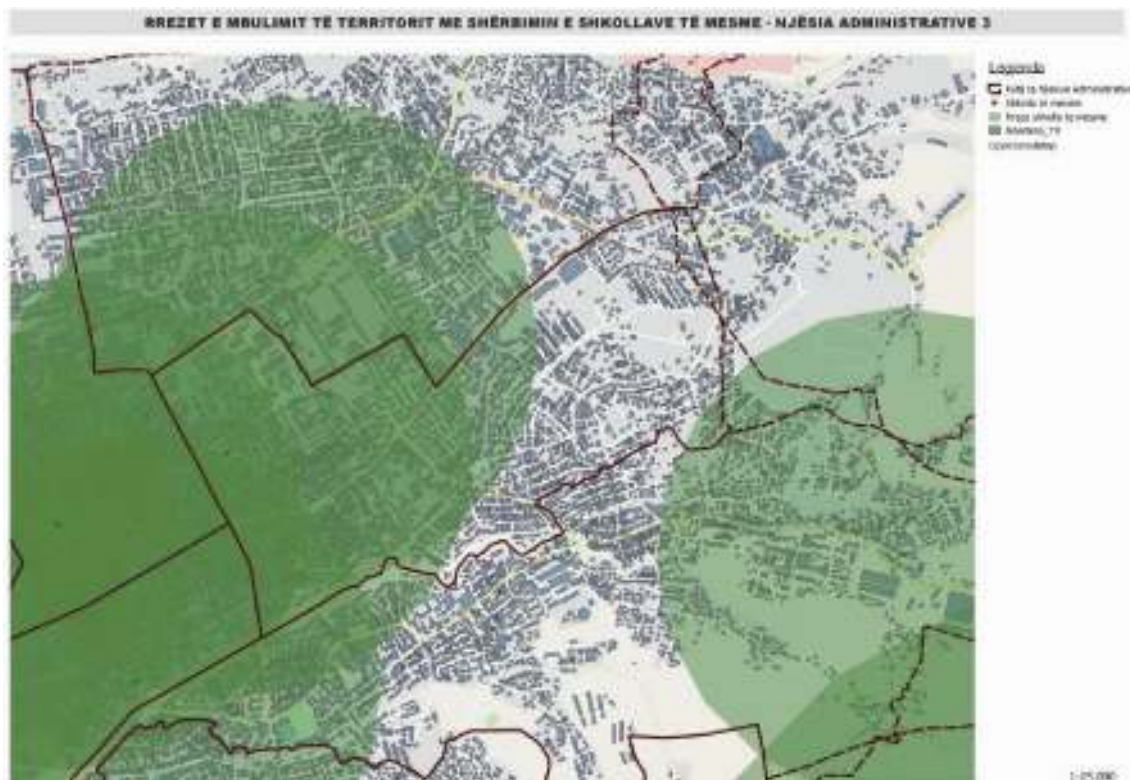
Map 42 – Territory coverage range with high schools -AU 2



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

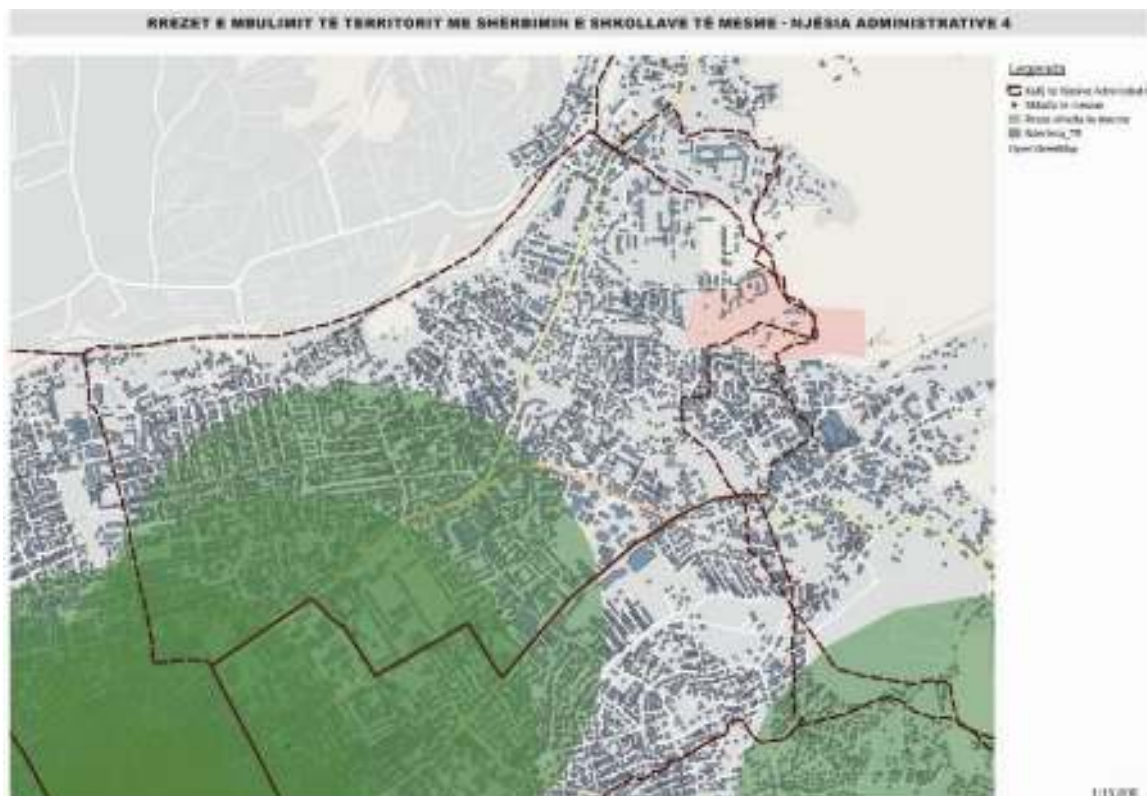


Albania

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:

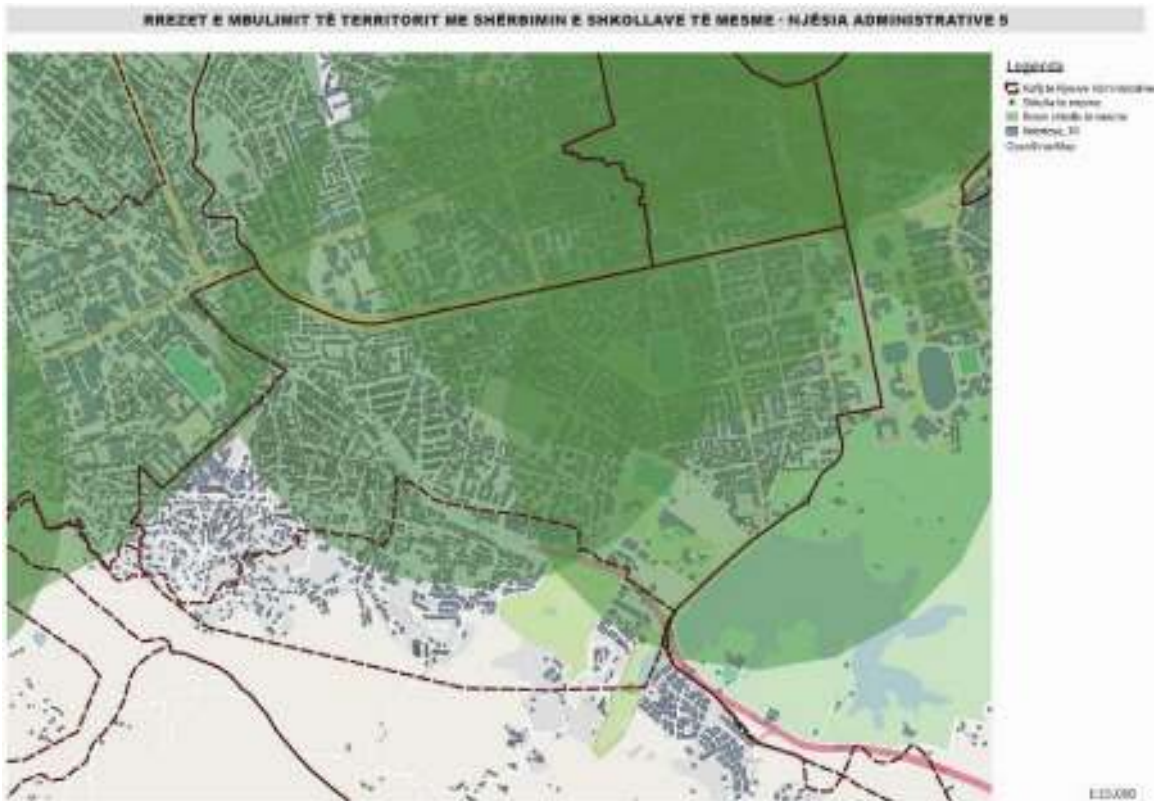
Map 44- Territory Coverage Range of high schools in - AU 4



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 :

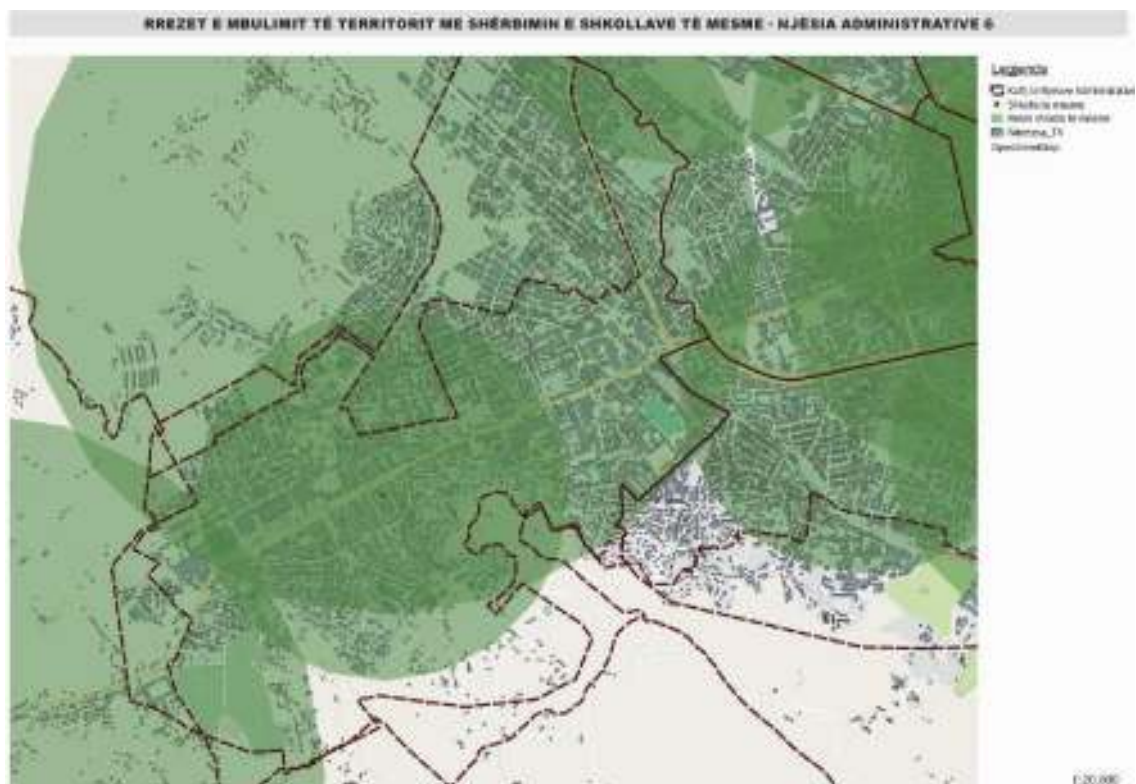
Map 45 – Territory coverage range with high school s -AU 5



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 along 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 range 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 this 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:

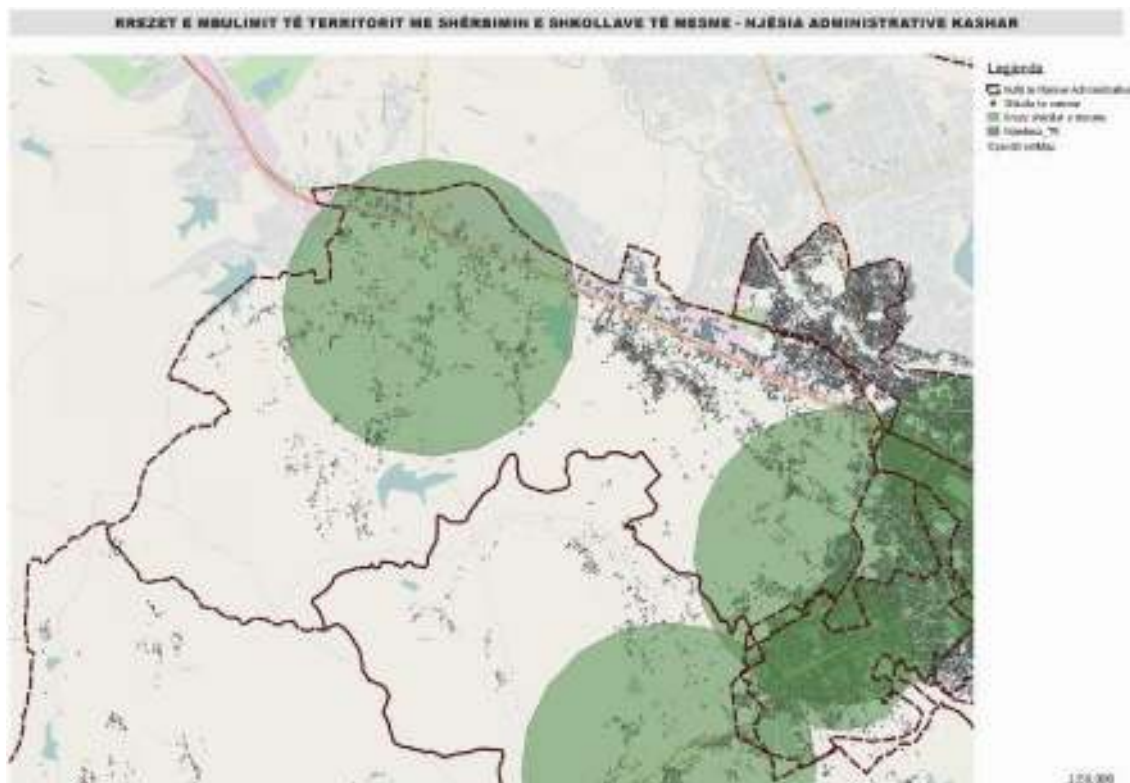
Map 51 – Territory coverage range with high school service -AU 11



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.

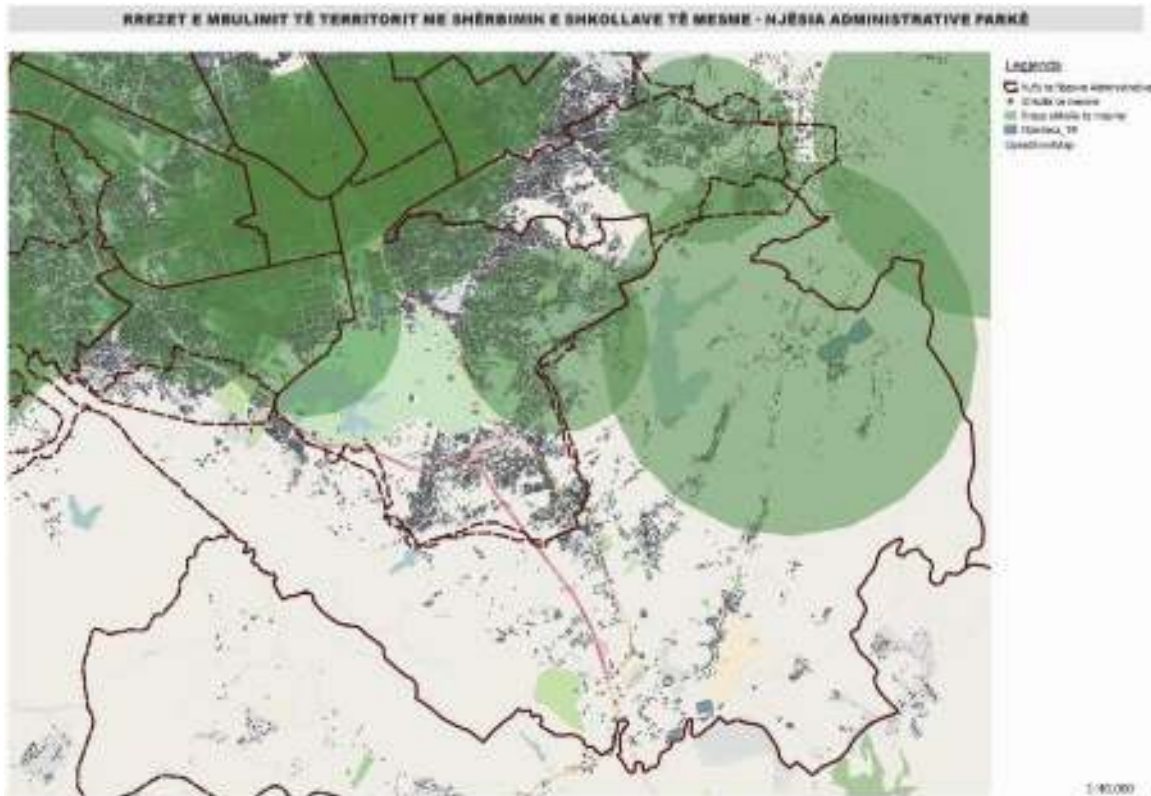
Map 52 – Territory coverage range of high schools – AU Kashar



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 “Farke” 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 :

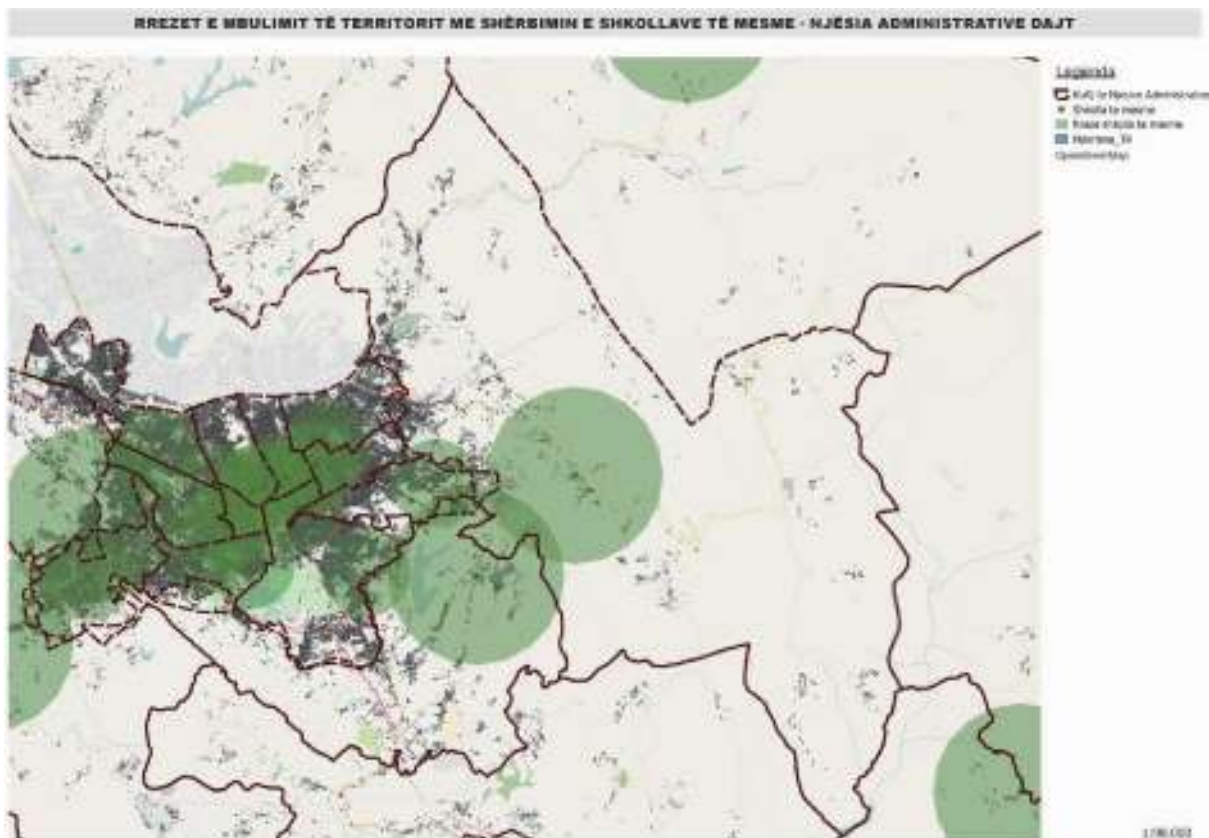
Map 53 – Territory coverage service range of high schools -AU Farke



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.

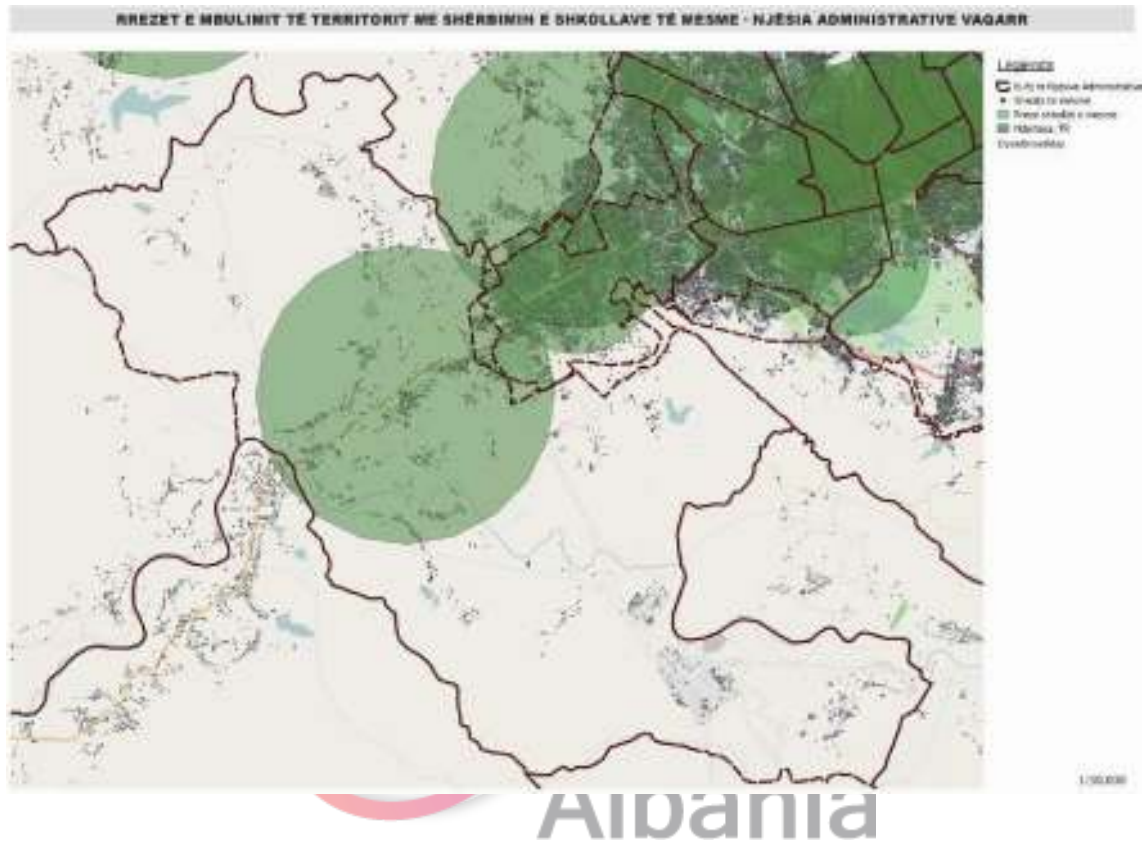
Map 54 – Territory coverage range of high schools - AU Dajt



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 :

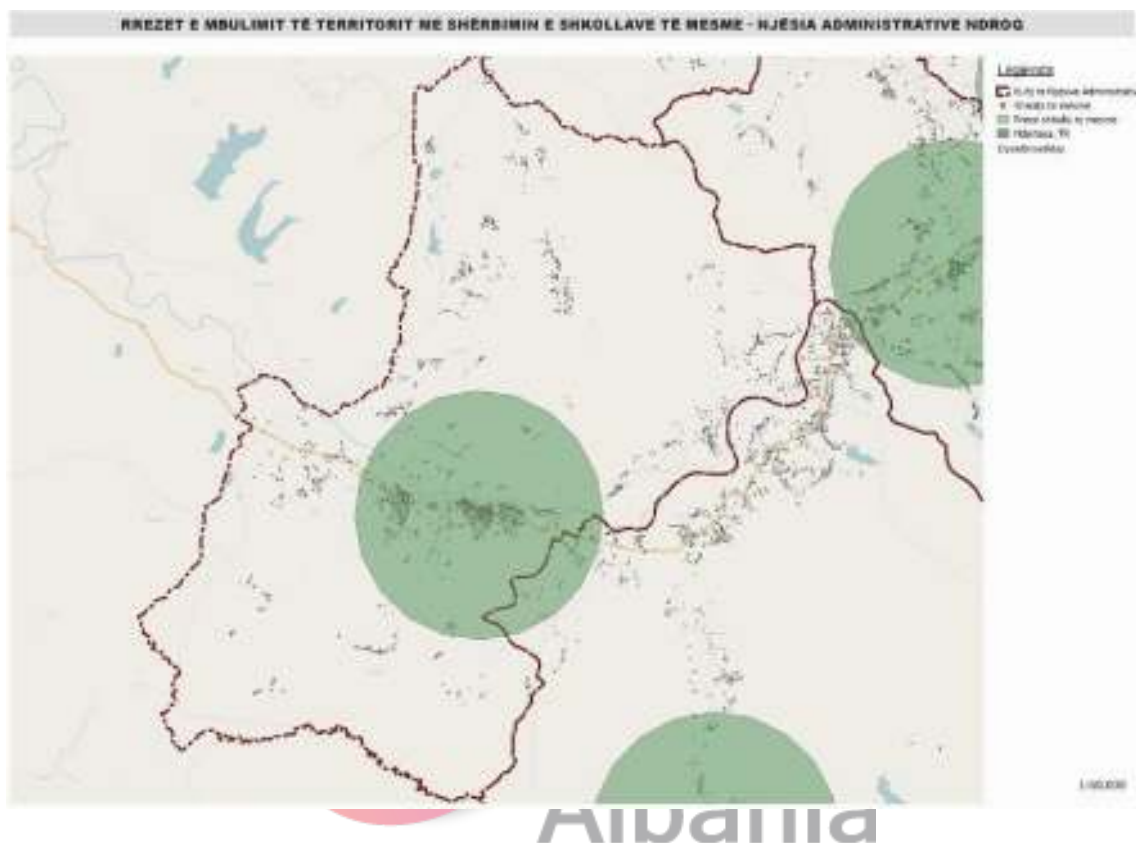
Map 55 – Territory coverage range with high schools - AU Vaqarr



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:

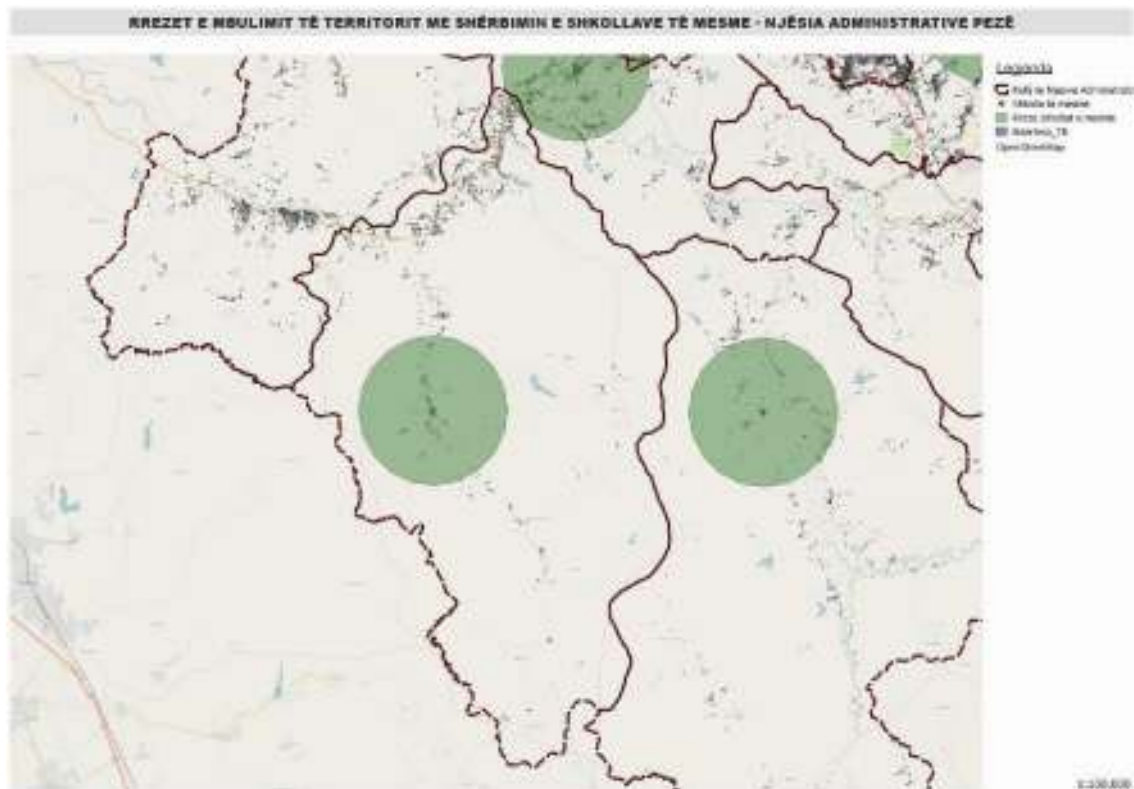
Map 56 – Service Coverage range of territory with highs schools -AU Ndroq



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.

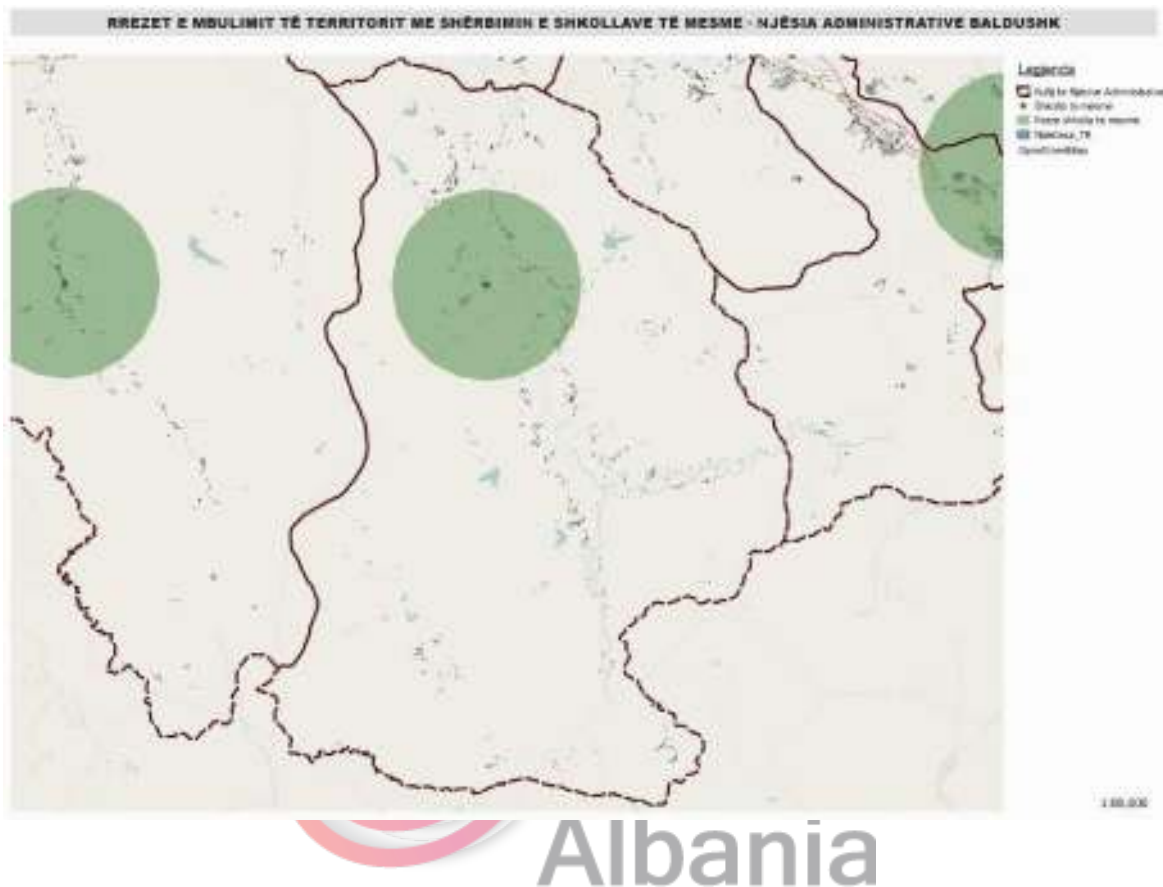
Map 57 – Territory coverage service range of high schools - AU Pezë



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 .

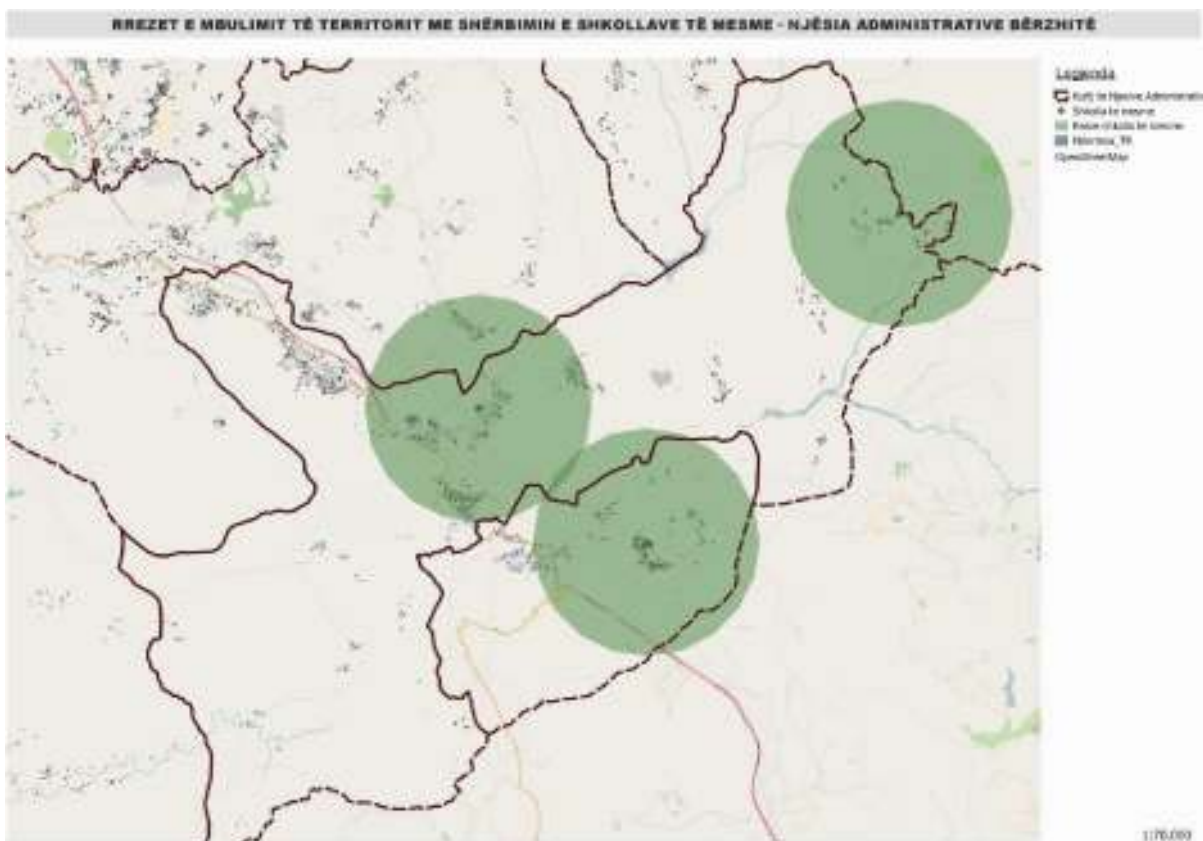
Map 58 – Territory Coverage Range with high school service -AU Baldushk



Administrative Unit of Berzhite

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

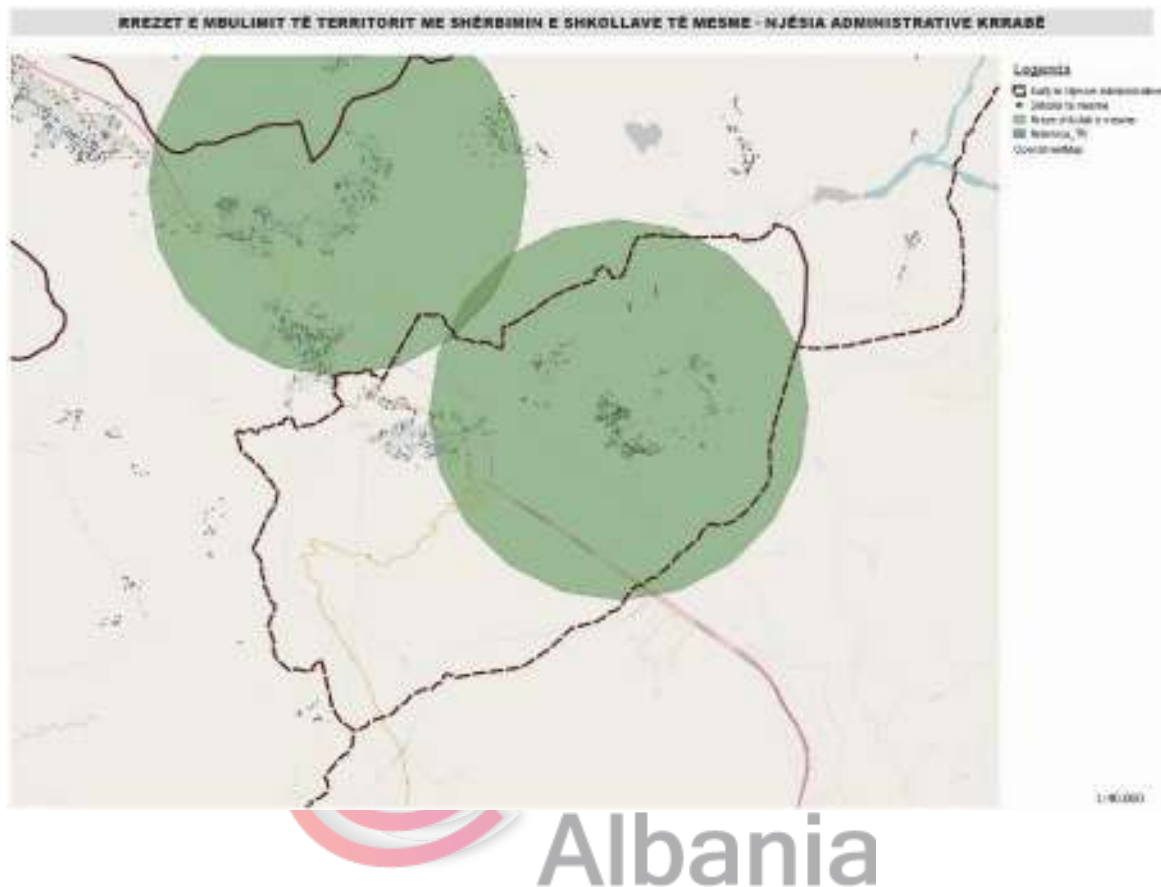
Map 59 – Territory coverage range of high schools service - AU Bërzhitë



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.

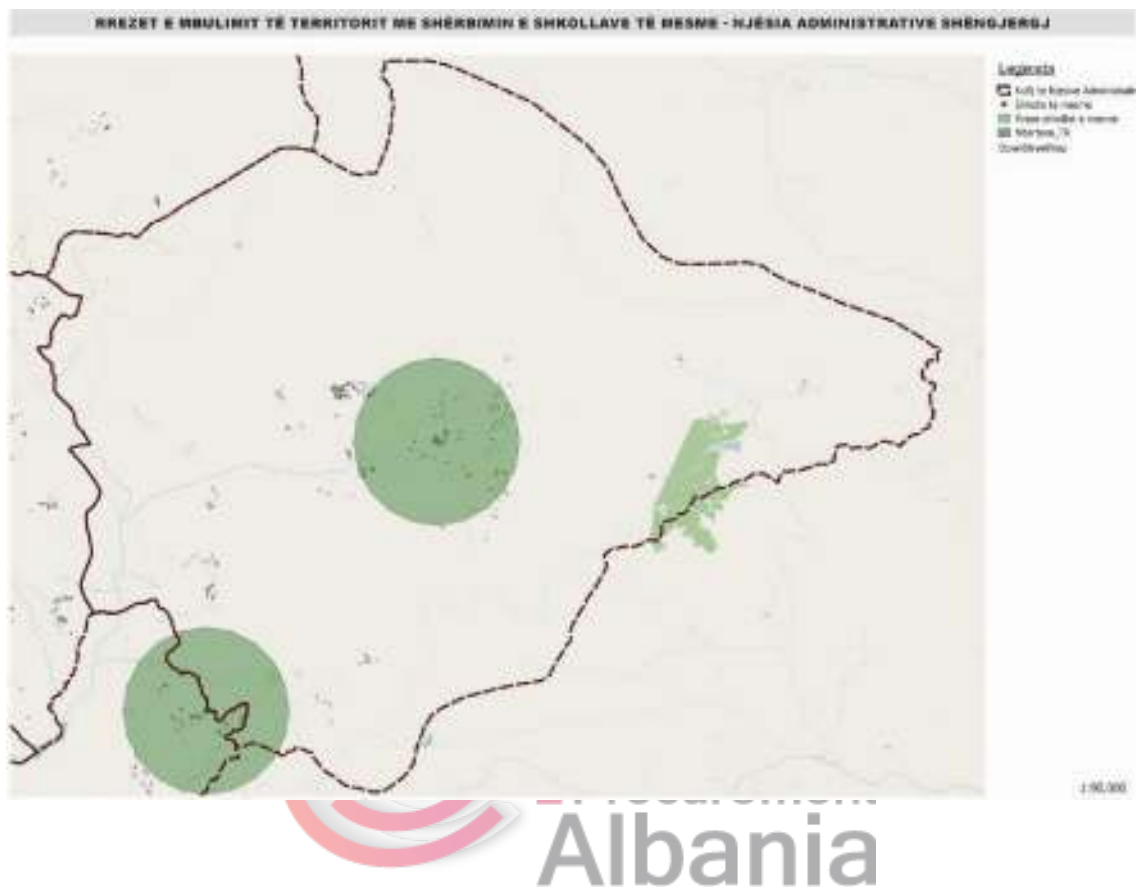
Map 60 – Territory Coverage Range with high schools service -AU Krrabë



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.

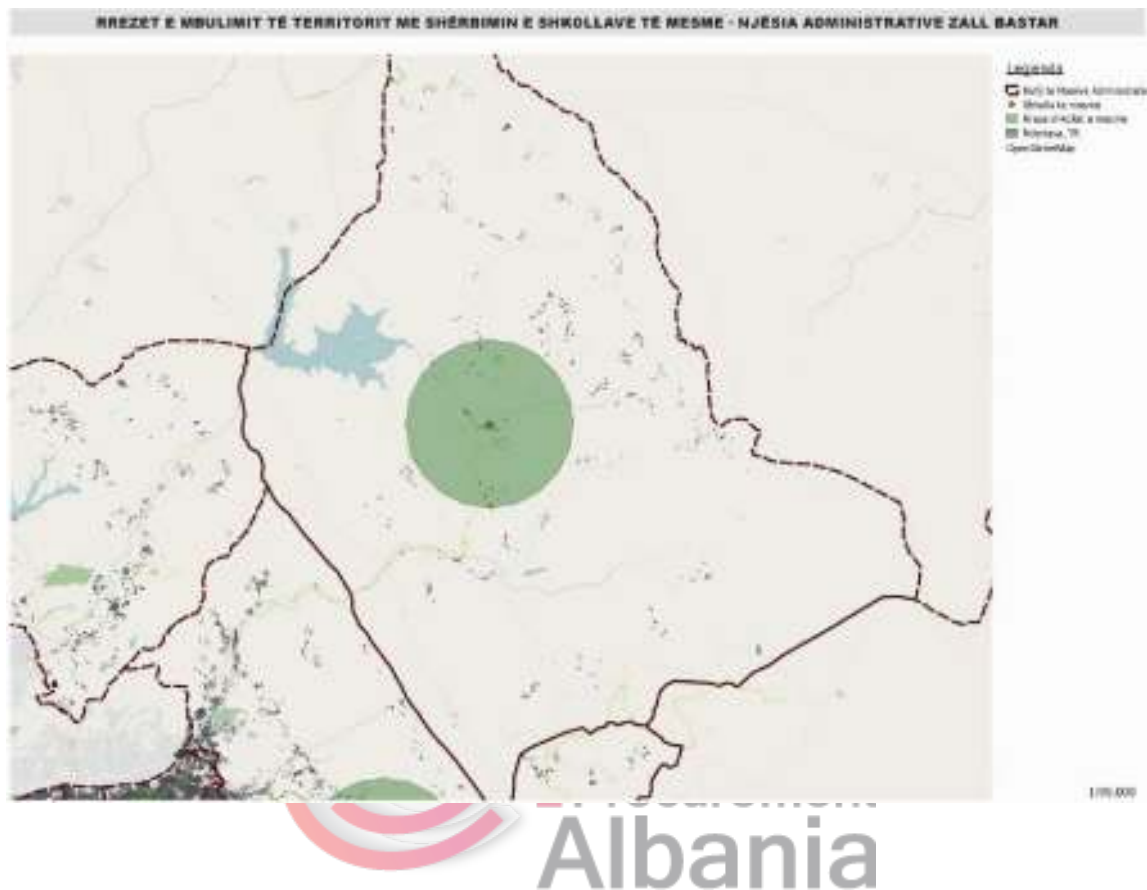
Map 61 – Territory Coverage Range with high school service -AU Shëngjergj



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.

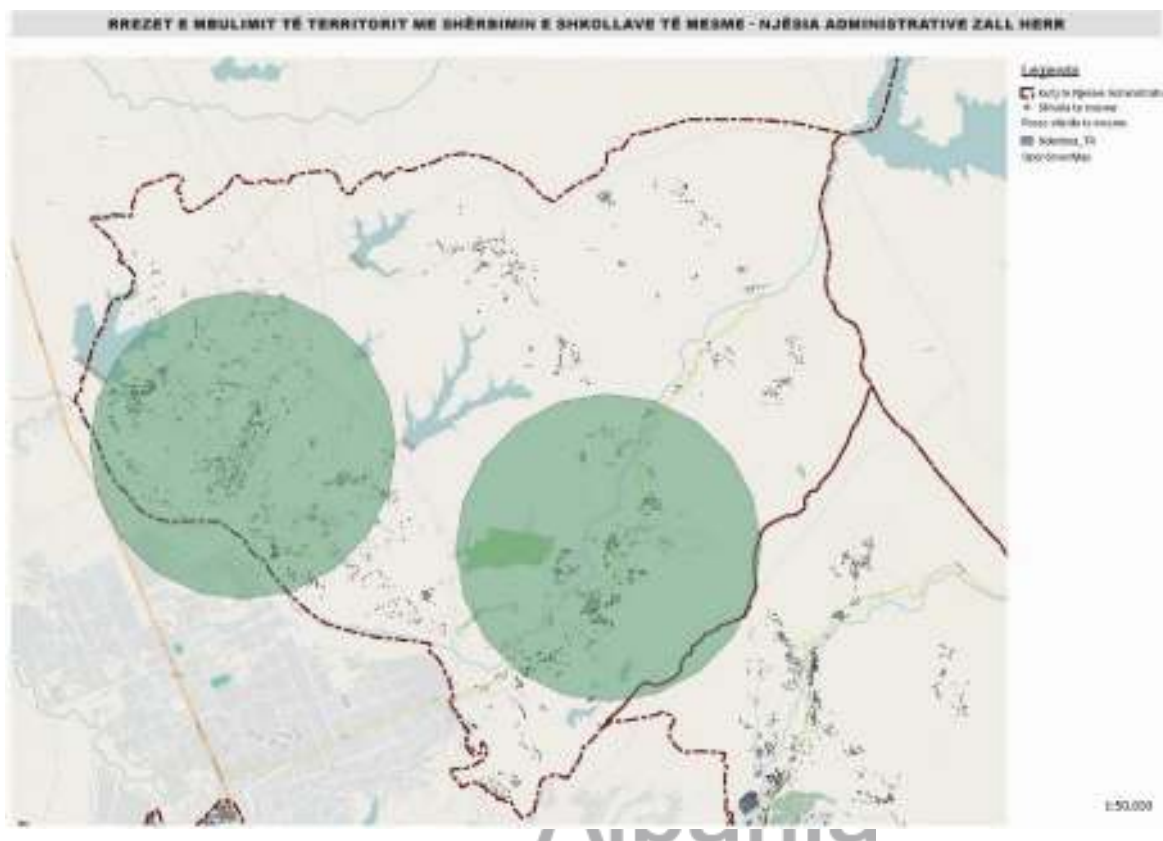
Map 62 – Territory Coverage Range with high schools service - AU Zall Bastar



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.

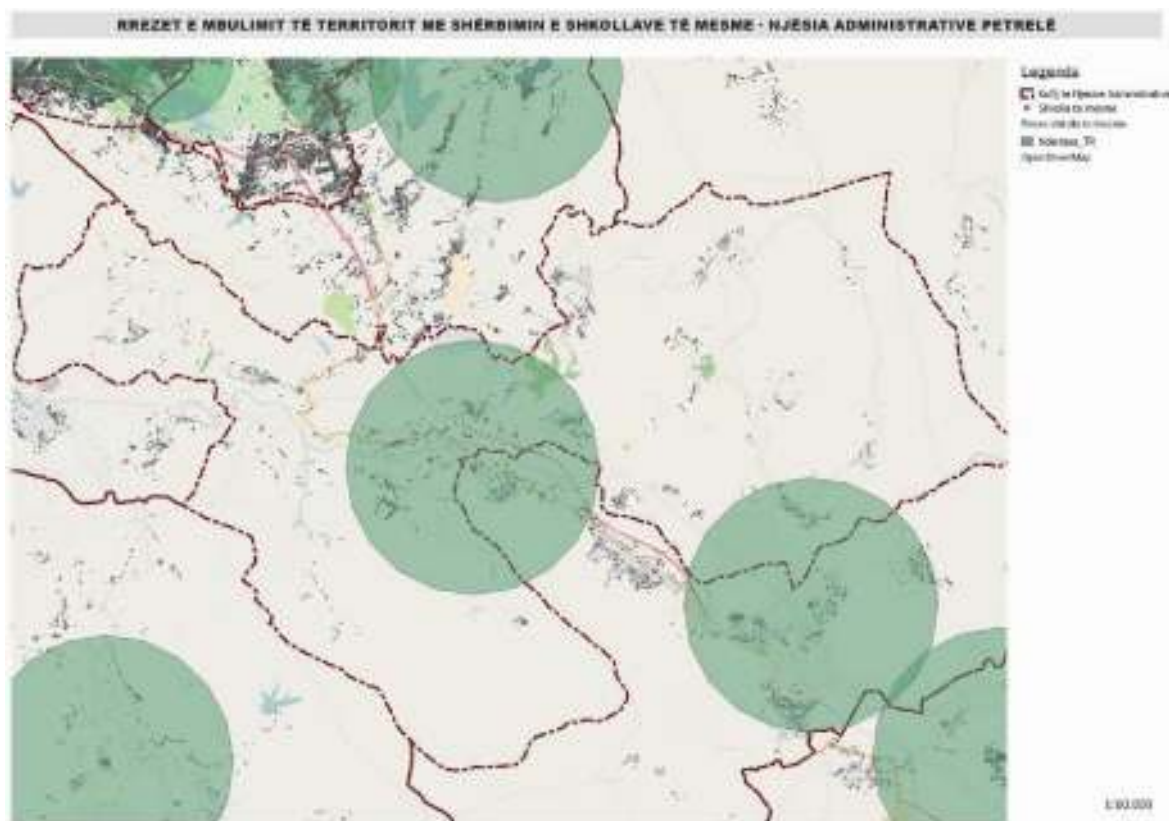
Map 63 – Territory Coverage Range with high school service - AU Zall Herr



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 schools²⁶. 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, project 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 also 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 inhabitants, 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 ranges 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 purposes – 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.	Academic year	'06-'07	'07-'08	'08-'09	'09-'10	'10-'11	'11-'12	'12-'13	'13-'14	'14-'15	'15-'16
Kindergartens	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		Ratio children/kinderga	Ratio children/group
		No kindergartens	No. children		
Kindergartens	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 aiming 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 instruments 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.

Referring 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).

Referring 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). Depending 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		1classes 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		1classes Type 4 - 21	630
ADMINISTRATIVE UNIT 8	1	Type 1 - 20 classes	600		1class Type 4 - 21	630
ADMINISTRATIVE UNIT 9	1	Type 1 - 20 classes	600		1classes Type 4 - 21	630
ADMINISTRATIVE UNIT 10	0	0	0	0	0	0
ADMINISTRATIVE UNIT 11	2	Type 2 - 30 classes	1800		Type 4 - 21 1classes	630
AU DAJT	0	0	0		Type 4 - 21 1classes	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		Type 4 - 21 1classes	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 inhabited 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.

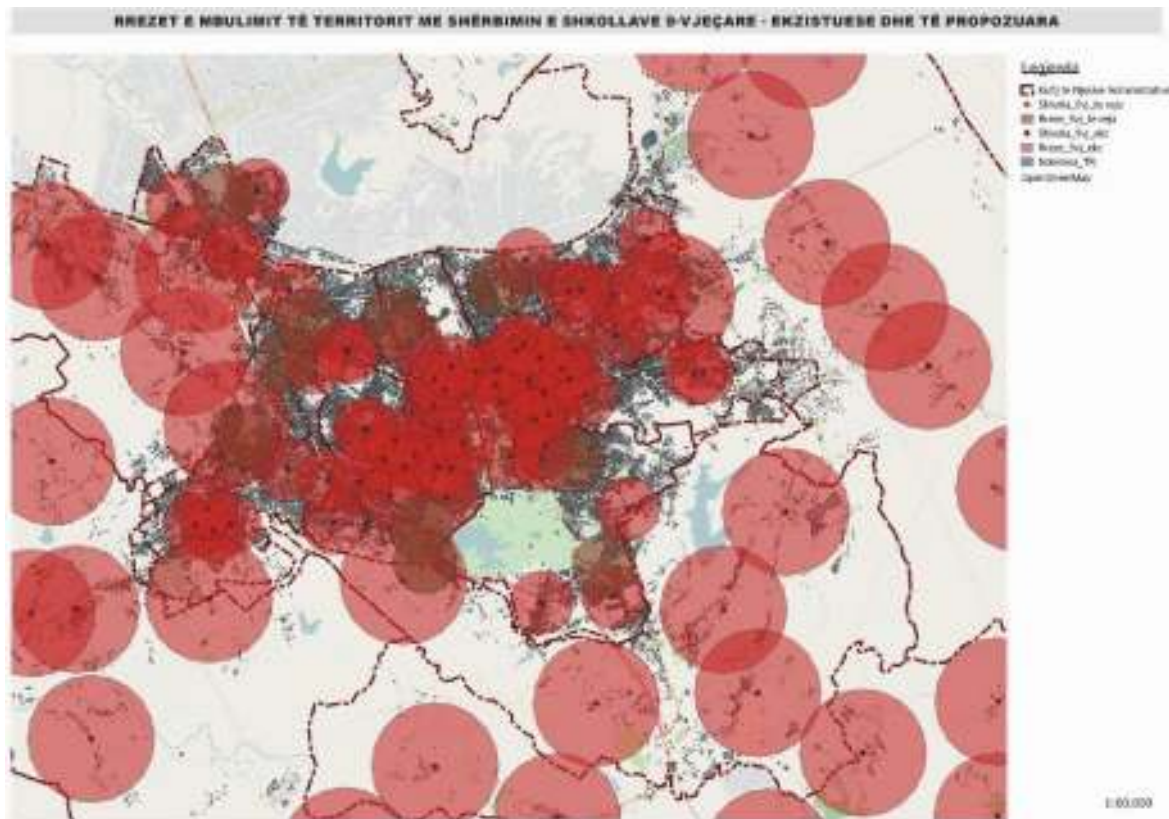
Determination of territories for construction of schools is based on real opportunities of the city with such basic criteria as :

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

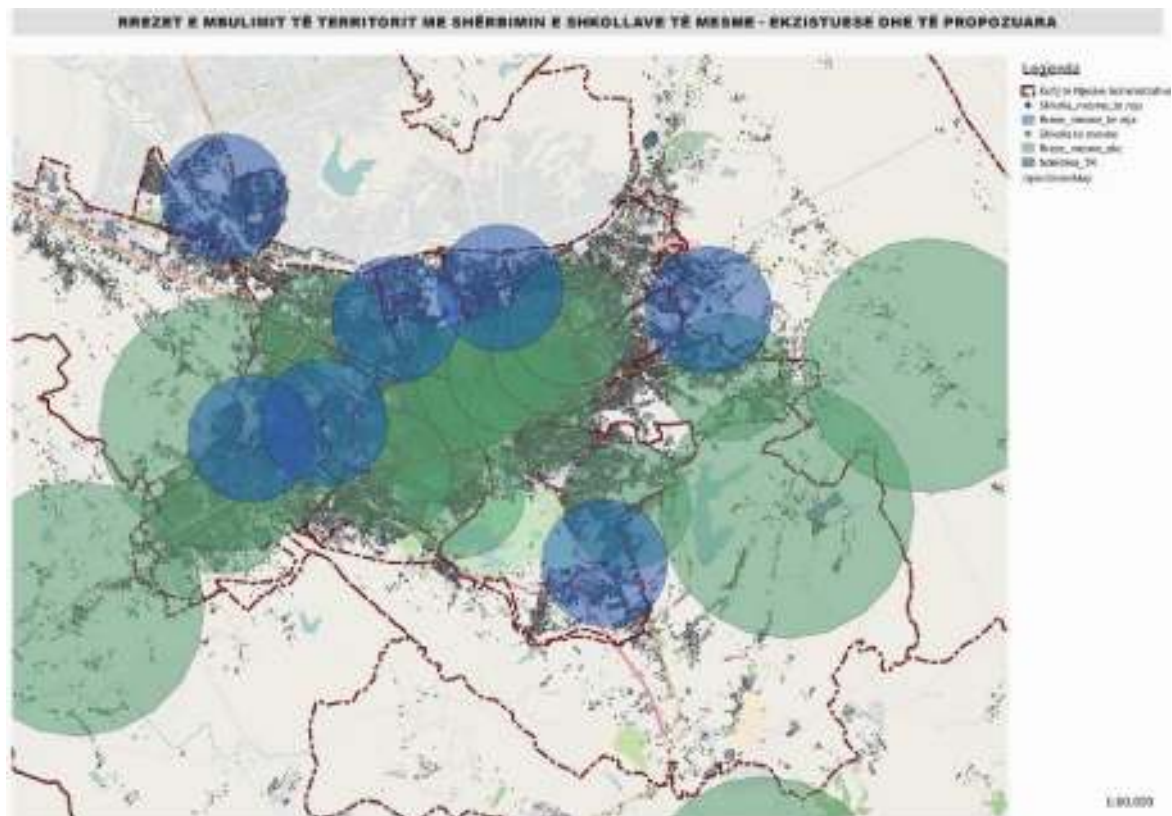
- Management of economic zones (former industrial zones) which have a considerable surface for development mainly located in the suburbs of the city, where it is more necessary to have new education infrastructure
- In cases when it was impossible to identify public territories were identified private properties that will be expropriated.
- In all the cases, identification of territories with a 1500-7000 m² 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

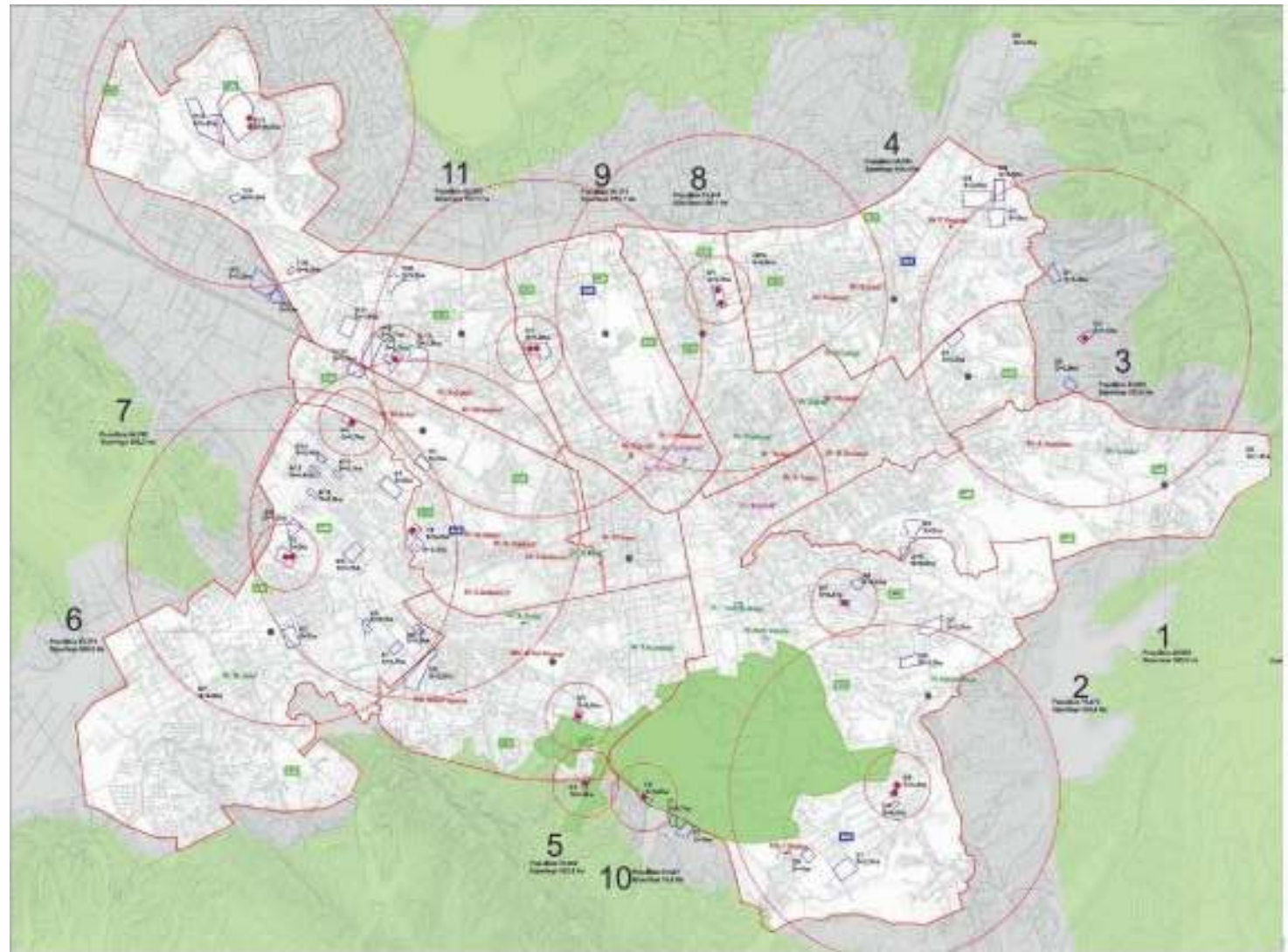
4.1. Location and territory

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 construction 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) inhabited 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 schools, 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.
Accessible 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 m².

CURRENT SITUATION OF THE SITE:

- A relatively calm and easily accessible 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. Accessible from “3 Dëshmorët” 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. Accessible 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. Accessible 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 it 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. Accessible 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 inhabited zone
- Easily accessible

Picture 25 - Photo of site 11/2



SITE D2

Picture 26 – Orthophoto of the site

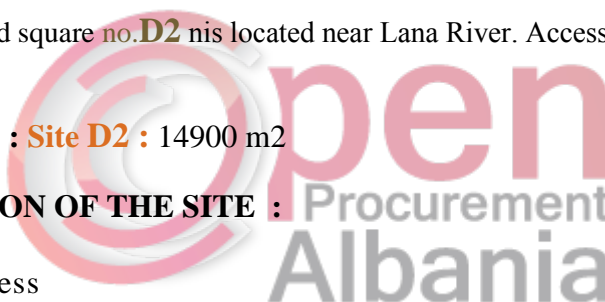


LOCATION : Proposed square no. **D2** is located near Lana River. Accessible from “Dalip Troji” street.

TECHNICAL DATA : Site **D2** : 14900 m²

CURRENT SITUATION OF THE SITE :

- Difficult access
- Site is located near Kinostudio area
- Problematic road infrastructure



Picture 27 - Photo of site D2



SITE F3

Picture 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

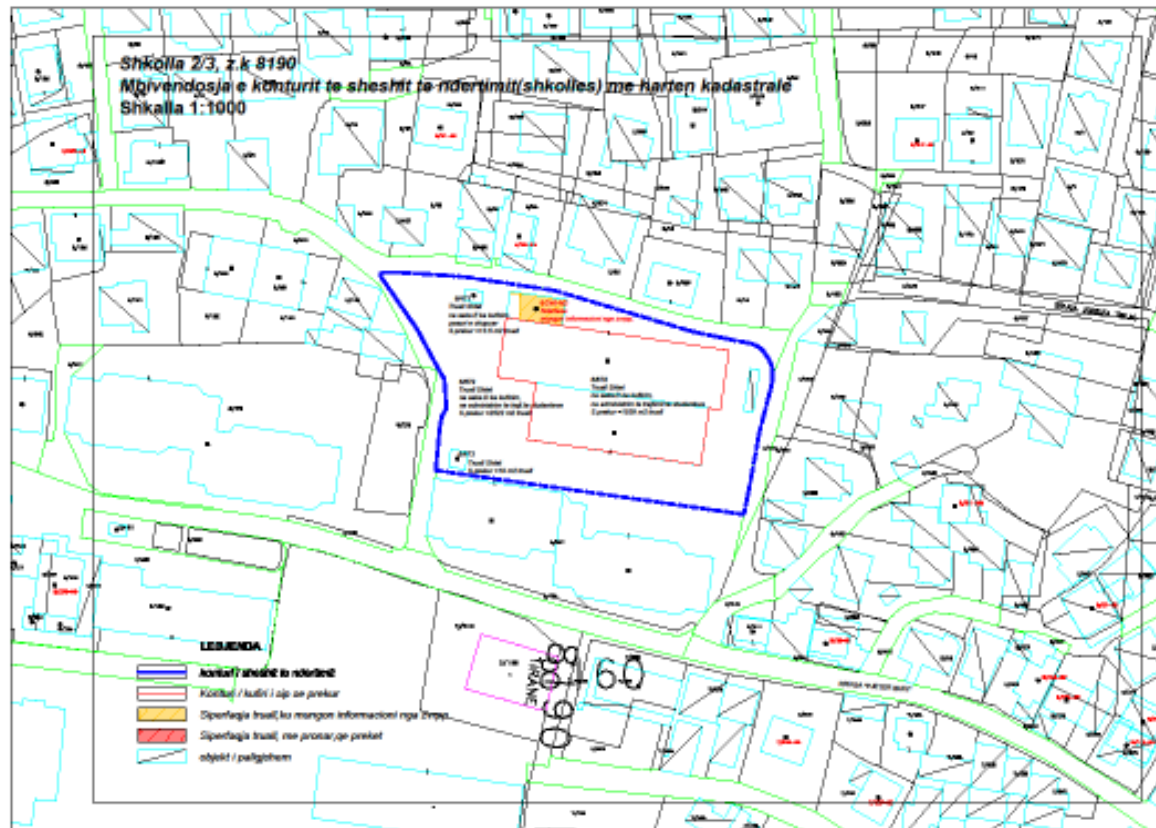


Table 1- Table with preliminary calculations of properties to be affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of affected land (m ²)	Land Price lek/m ²	SIP. Obj. prekur (m ²)	Price of the object lek/m ²	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 (m ²)	Land Price lek/m ²	Surface of affected object (m ²)	Price of the object lek/m ²	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

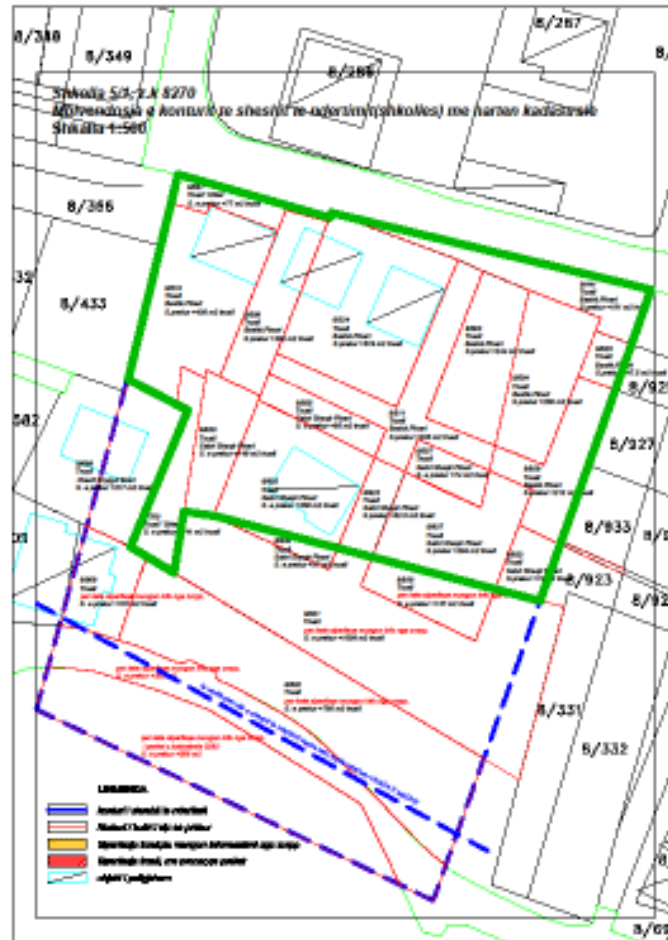


Table 3-Table with preliminary calculations of the selected properties

No	NAME	Father's name	Surname	Cadastral Zone	No. Property	Surface of affected land (m ²)	Land price lek/m ²	Surface of affected object (m ²)	Price Obj.lek/m ²	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

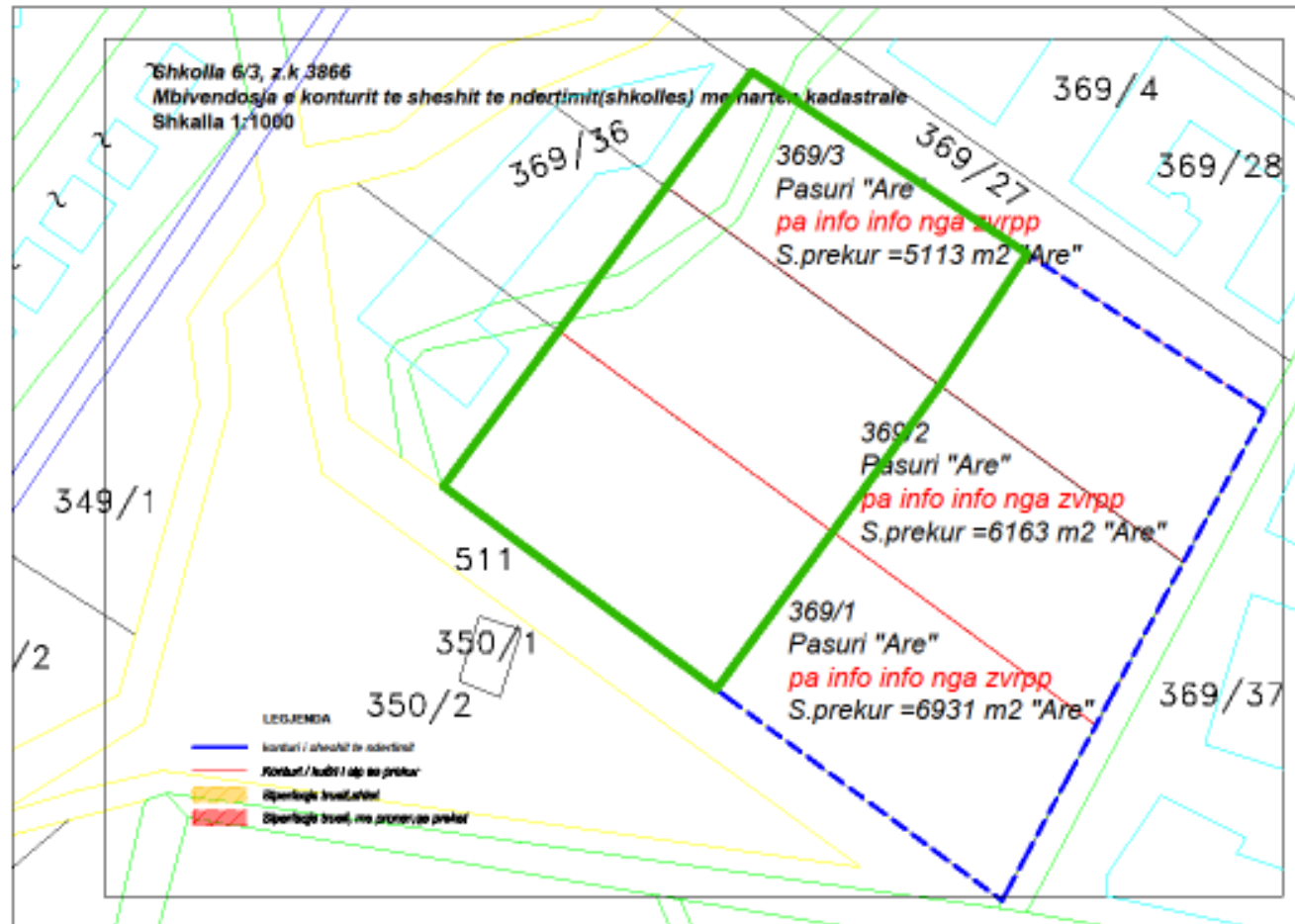
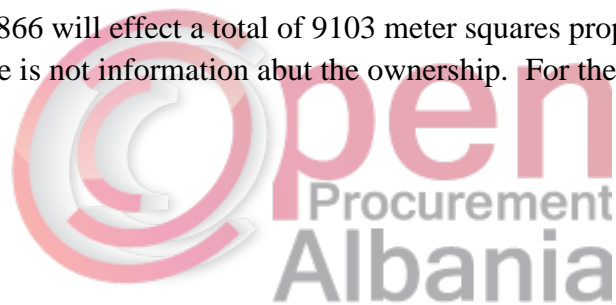


Table 4-Table with preliminary calculation of the selected properties

No	NAME	None in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m ²)	Land Price lek/m ²	Surface of the affected object (m ²)	Price of the object lek/m ²	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 about 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

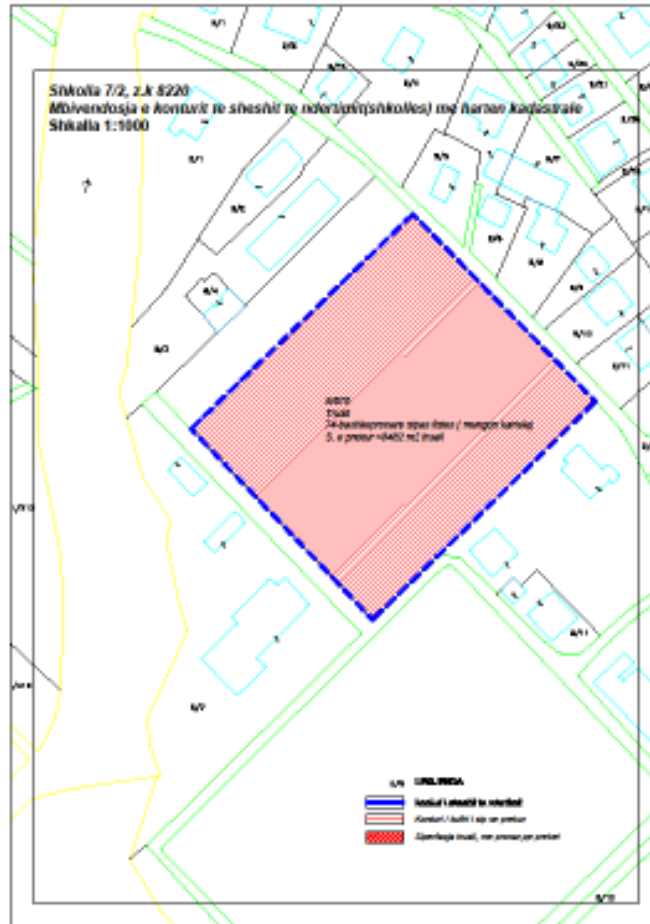
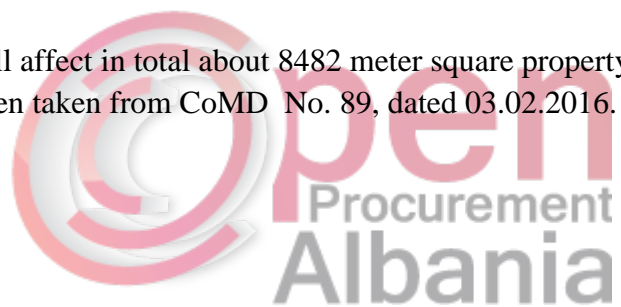


Table 6-Table with preliminary calculations of properties affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of affected land (m ²)	Land Price lek/m ²	Surface of affected project (m ²)	Object Price lek/m ²	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

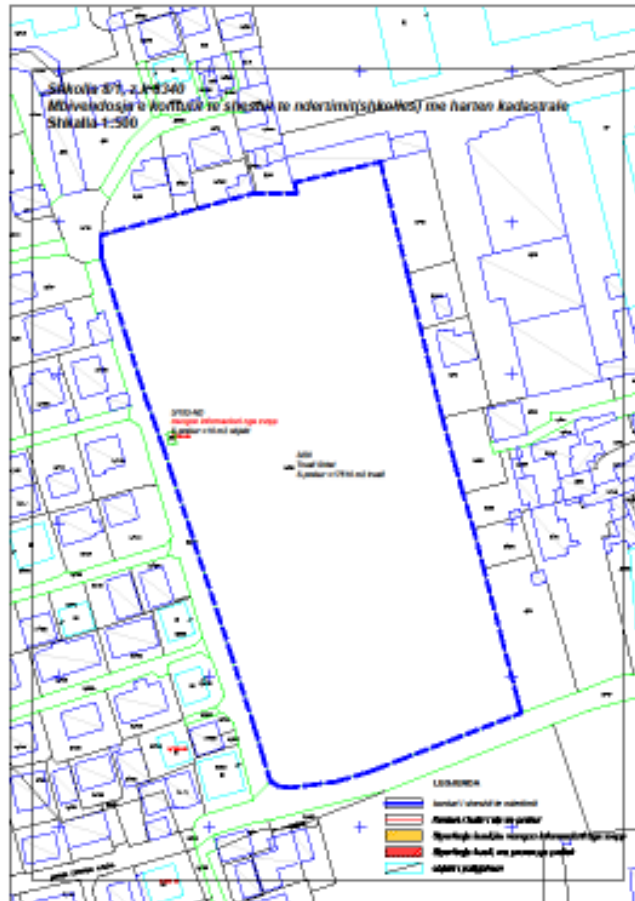


Table 7-Table with preliminary calculations of properties to be affected by the project

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

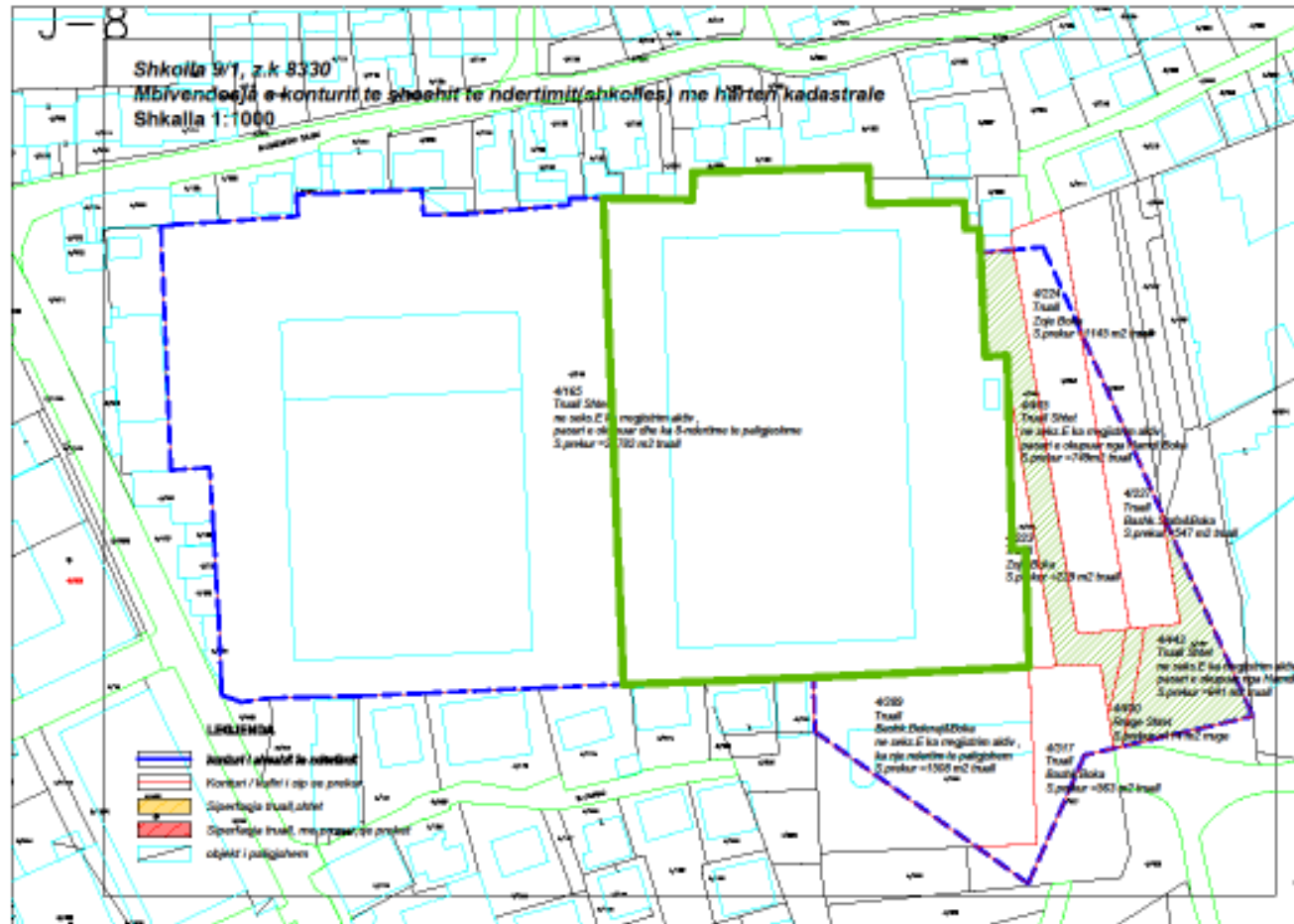


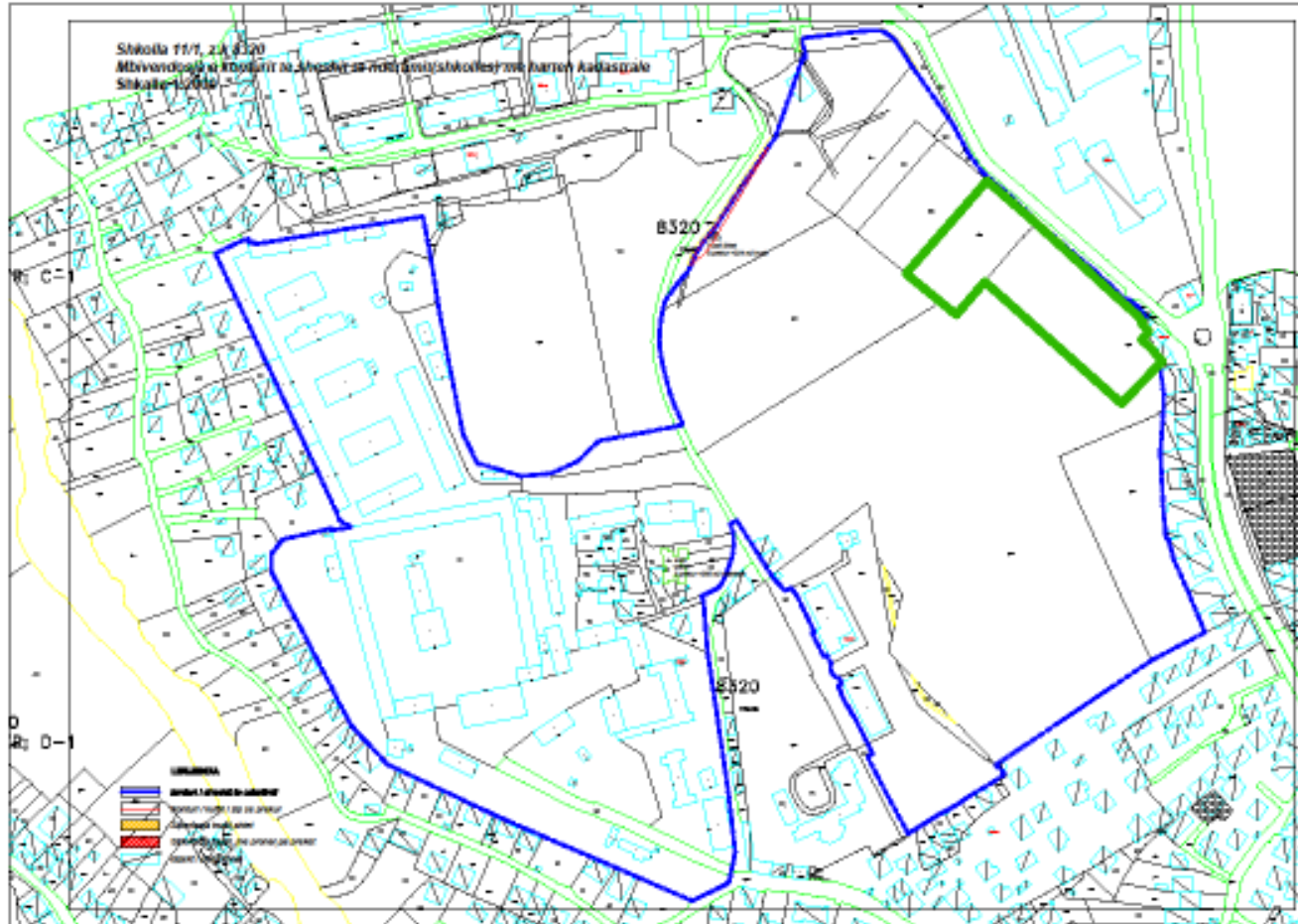
Table 8-Table with preliminary calculation of properties to be affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of affected land (m ²)	Land Price lek/m ²	Surface of affected land (m ²)	Price Obj.lek/m ²	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

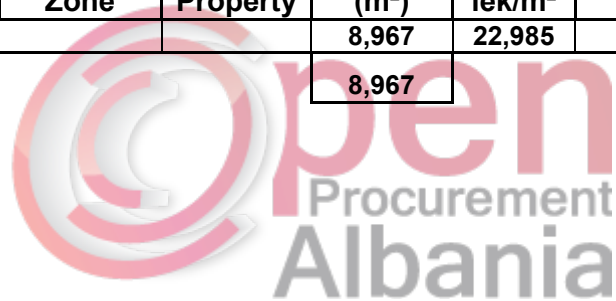
Map 9- Indicative map of properties



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 (m ²)	Land price lek/m ²	Surface of the affected project (m ²)	Price Obj.lek/m ²	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

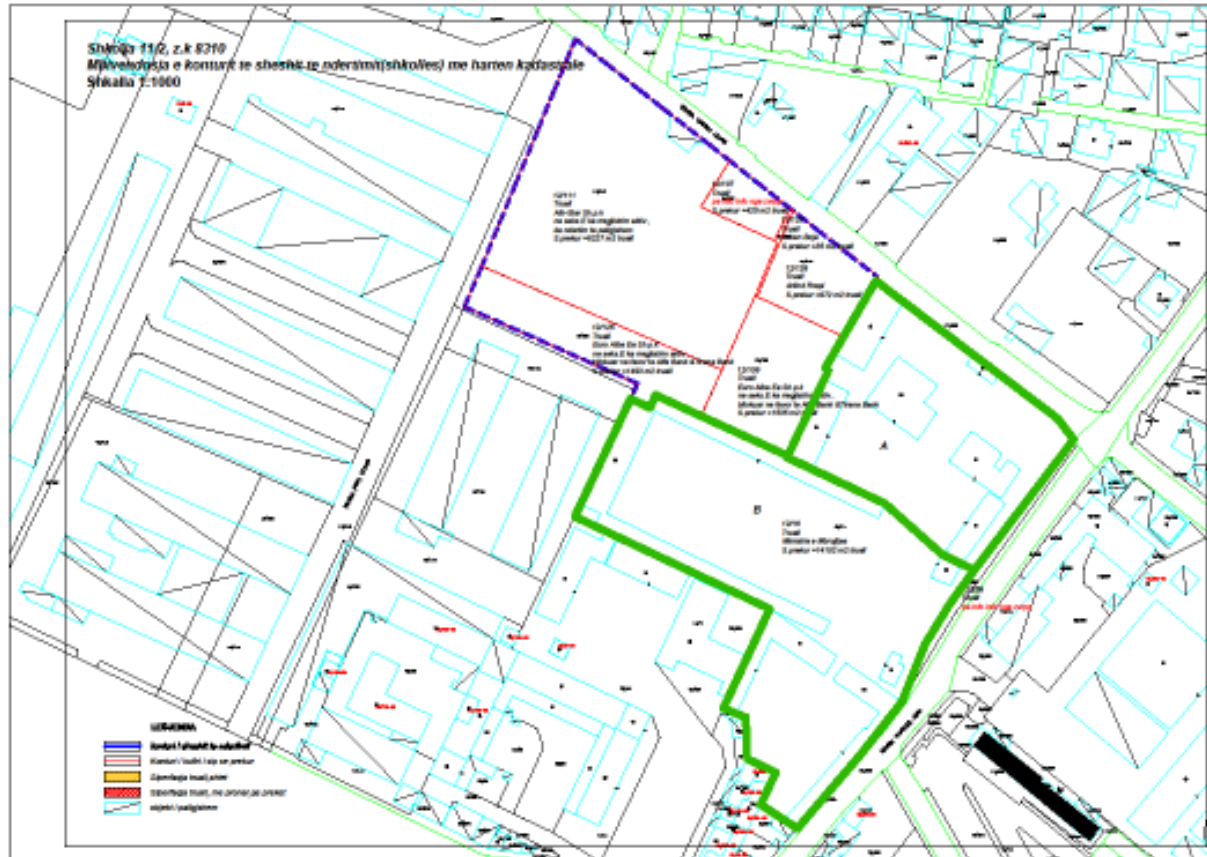
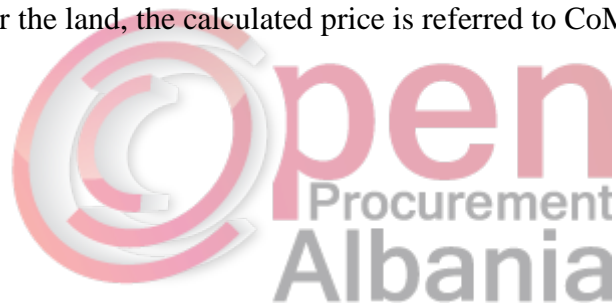


Table 10-Table with preliminary calculations of properties to be affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m ²)	Land price lek/m ²	Surface of the affected object (m ²)	Price Obj.lek/m ²	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

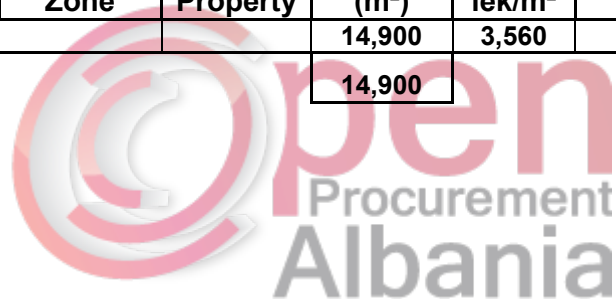
Map 11- Orthophoto of the site



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 (m ²)	Land Price lek/m ²	Surface of the affected Obj. (m ²)	Price Obj.lek/m ²	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

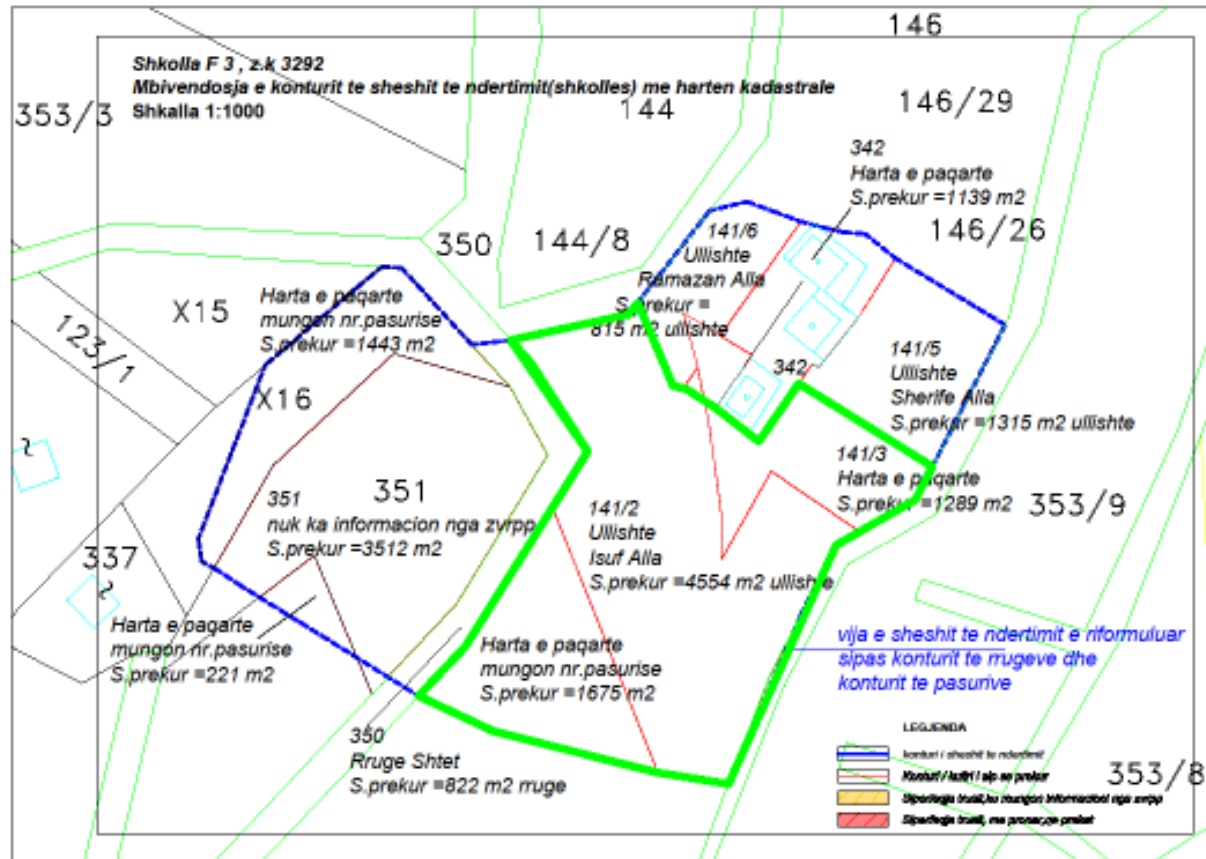
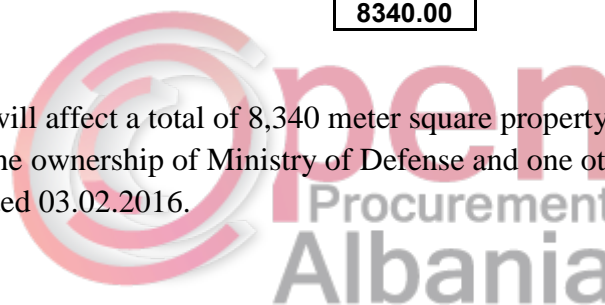


Table 12-Table with preliminary calculations of the assets to be affected by the project

Nr	EMER	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m ²)	Land price lek/m ²	Surface of the affected object (m ²)	Price Obj.lek/m ²	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 lasts 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 deep, 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 rocks are new depositions 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 depositions 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

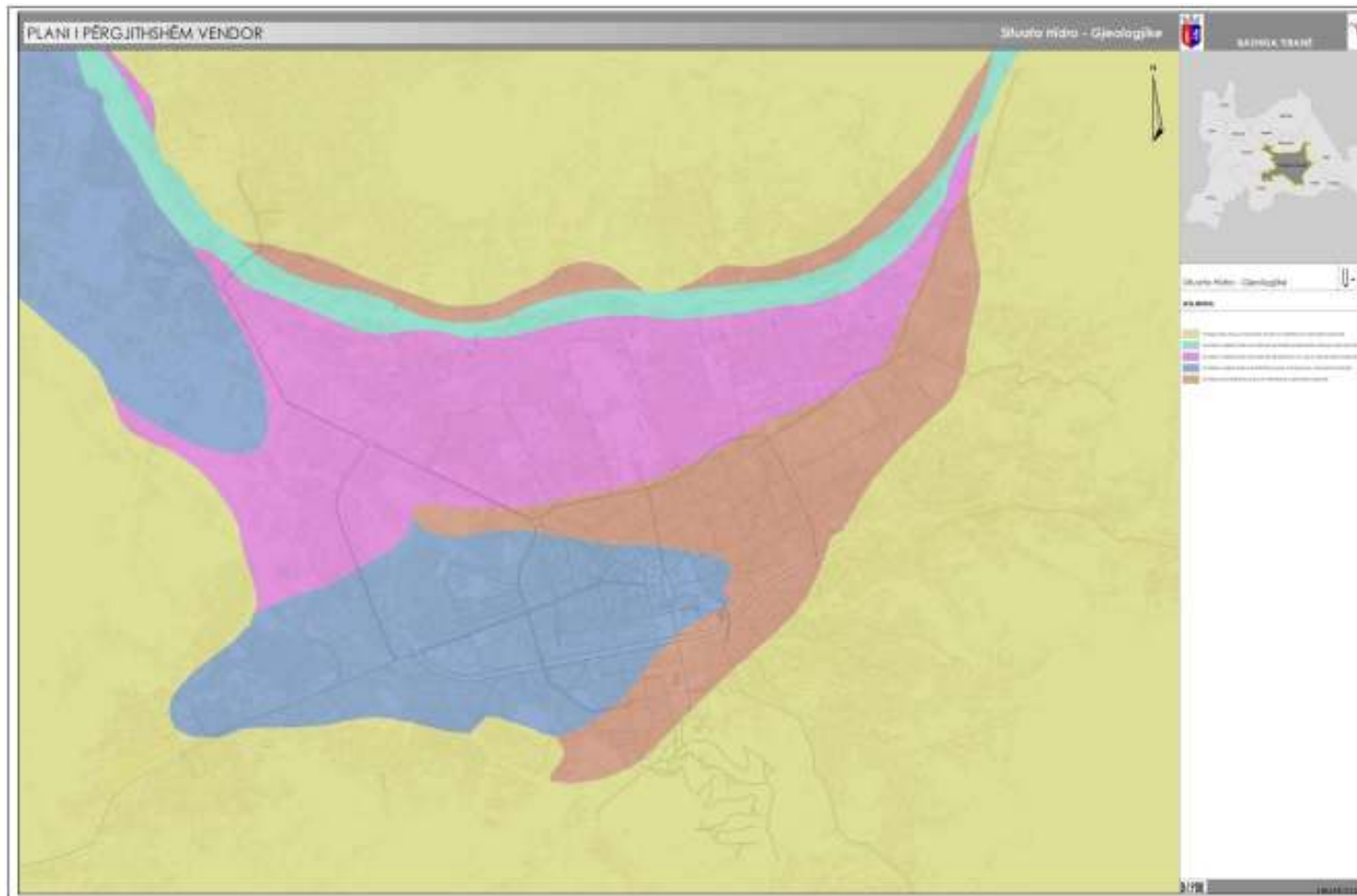
The sites selected for construction of schools objects are mostly located in urban zones that are not crossed by brooks or river networks. With the exclusion of Sites 6/6 and 7/2 that are bordered with Lana River,

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-Geological Situation (Source: 2014 General Local Plan of Tirana Municipality)



1.1.2. Seismicity

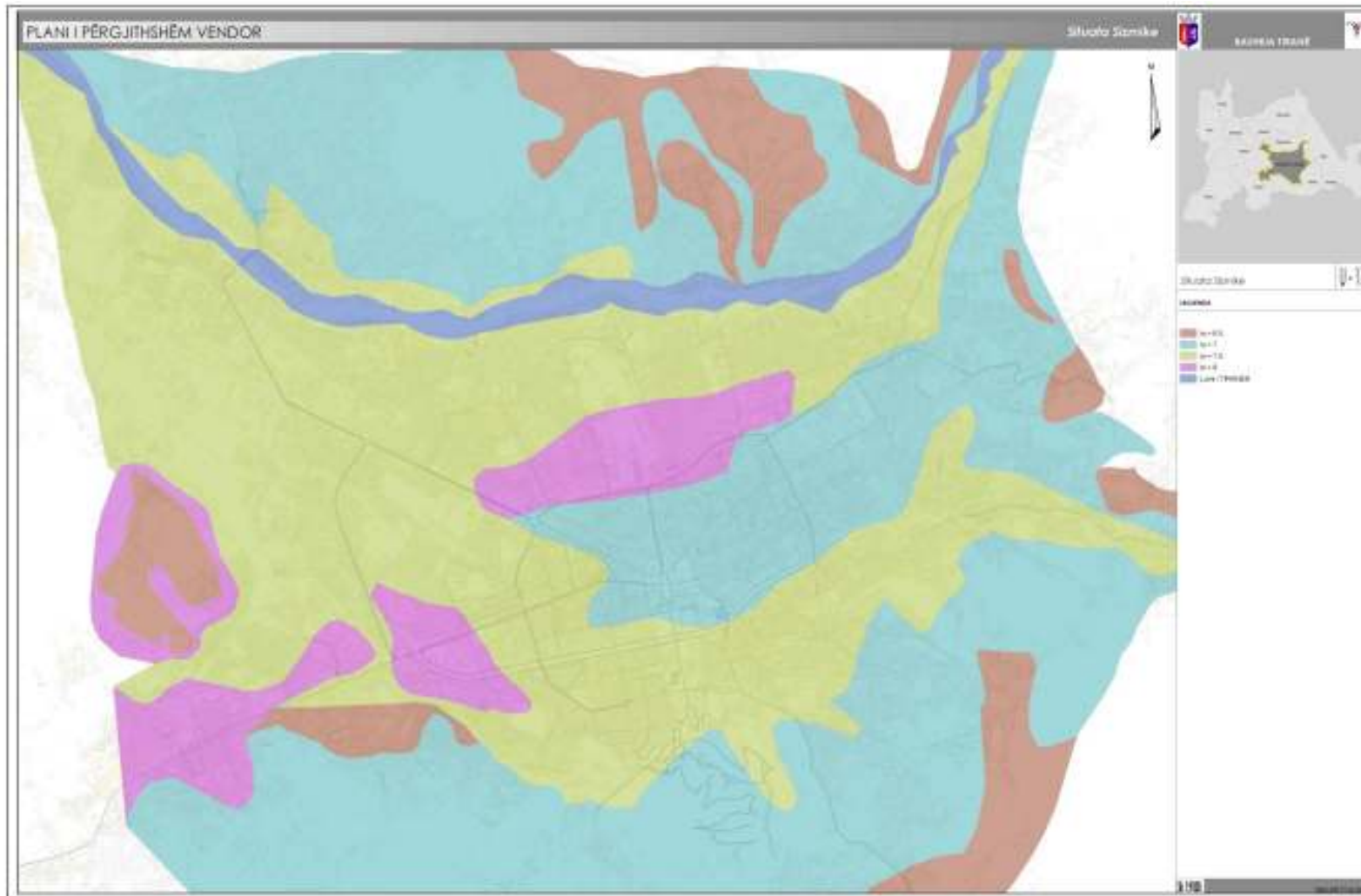
From the geological point of view, Tirana city is part part of the Sinclinal of Tirana. [Aliaj,1988].

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 Vrapu 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 $M_{max} = 6.1 \pm 0.3$ [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

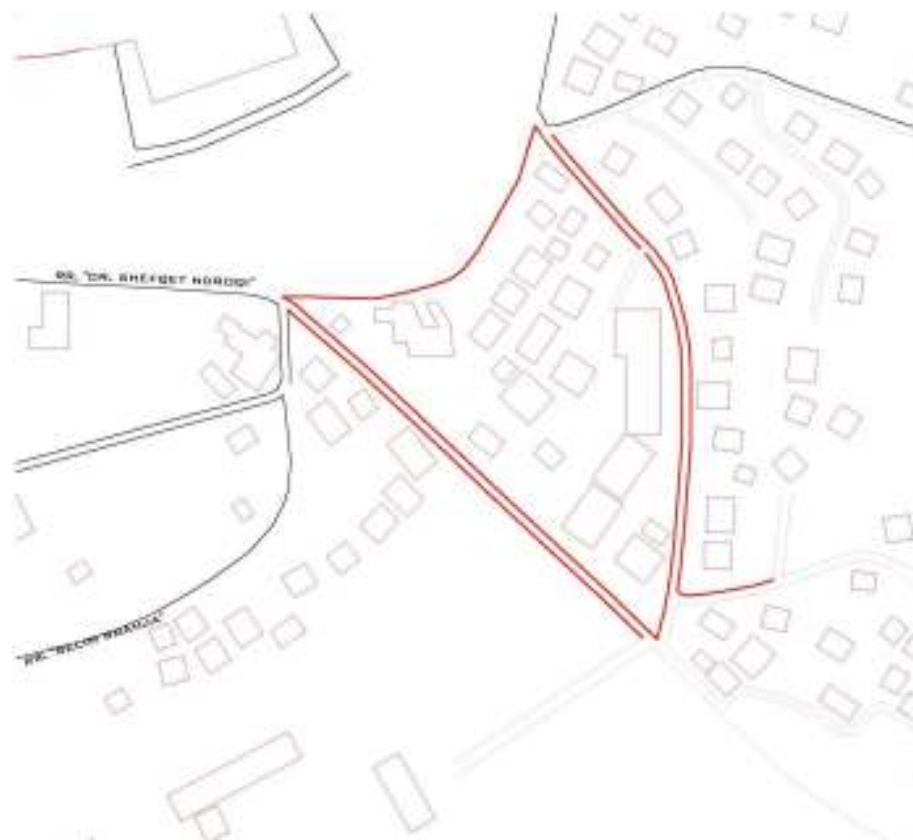
Situation of road service, sewerage and water supply system

- **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 sewerage network of the site



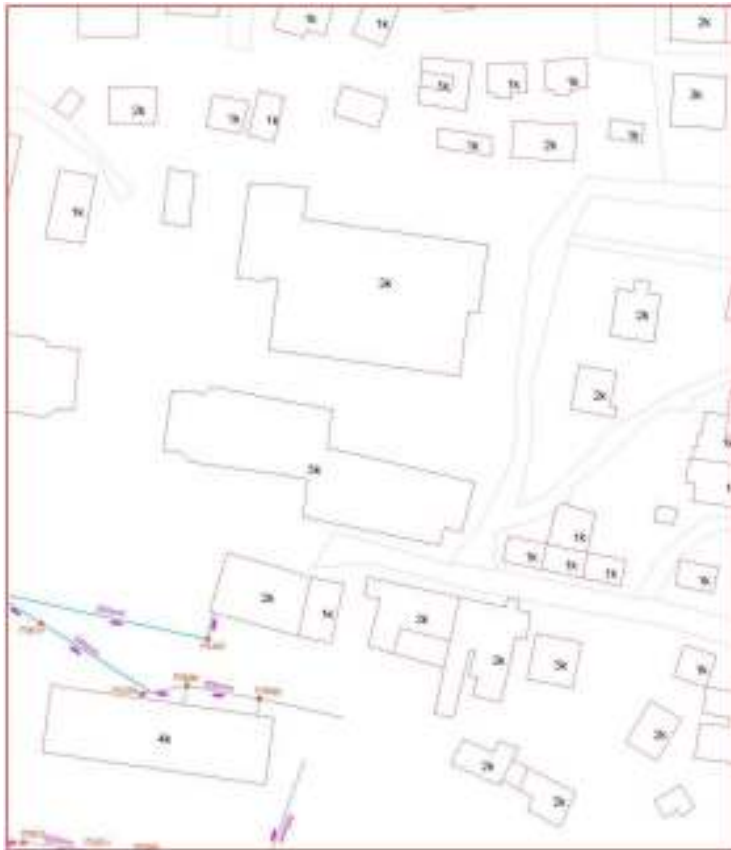
Map 16 – Situation with water supply system of the site



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

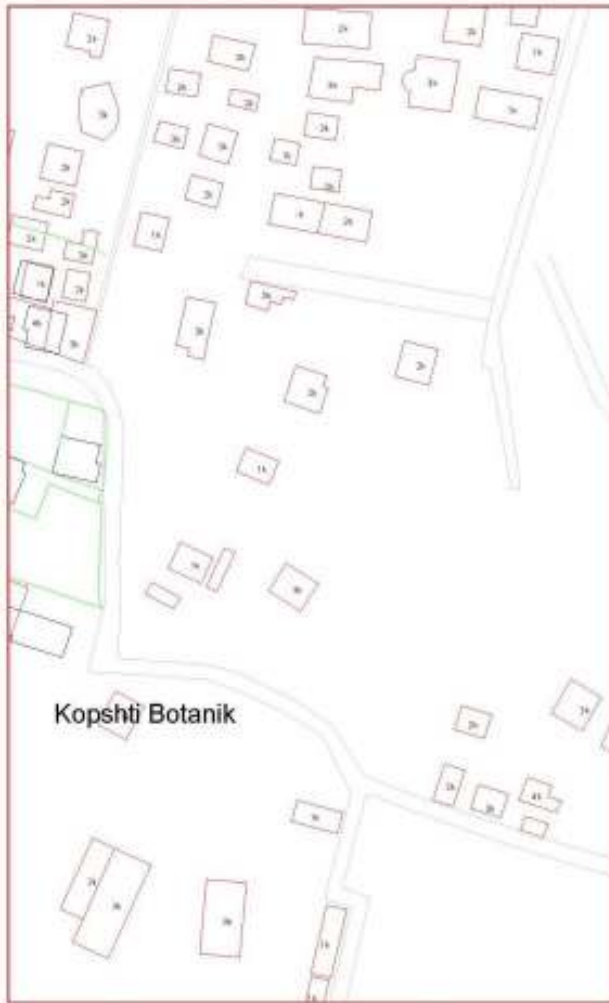


- **Administrative Unit 5**

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 sewerage system and no water supply system connection.

Map 19 – Situation of sewerage network of the site



en
procurement
Ibania

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 sewerage network in the site



en
curement
ania

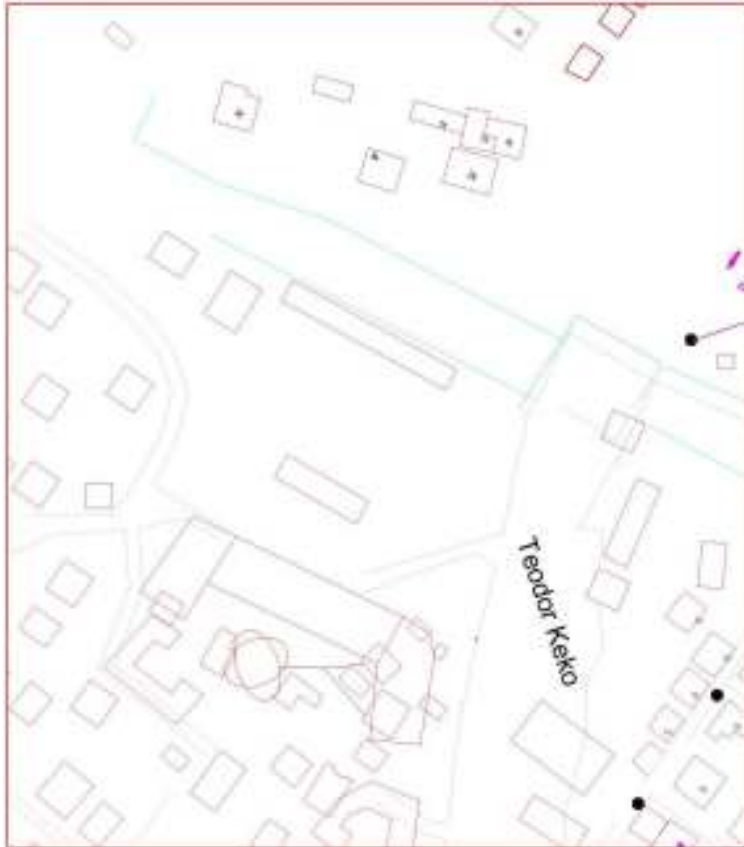
Map 22 – Situation of water supply system in the site



Site of nine year school (Code 6/6)

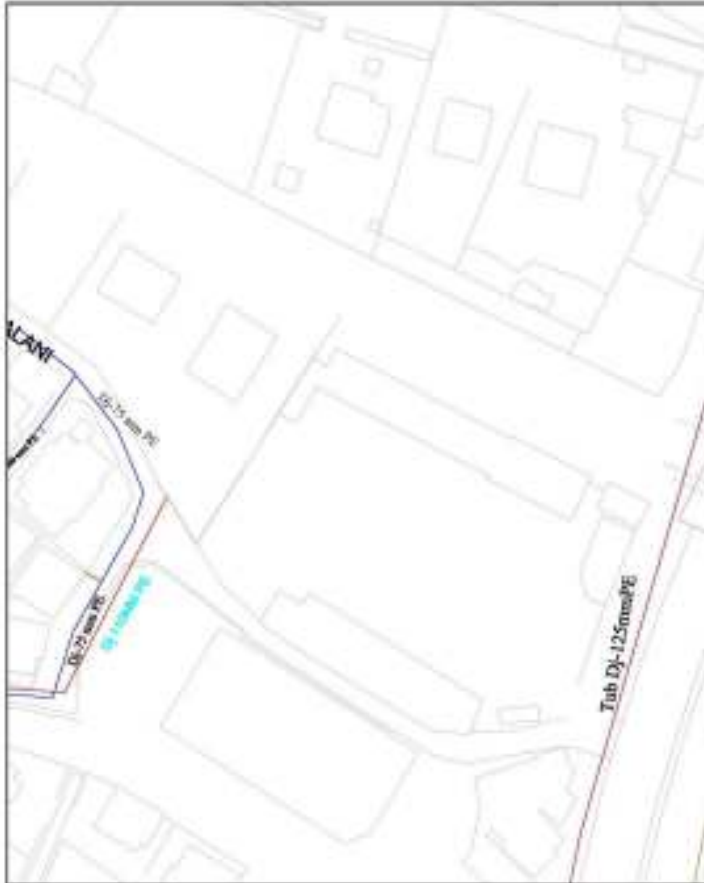
This school is located in Administrative Unit 6, which is connected with the axis of main road ‘Teodor Keko’ and urban secondary road ‘Menduh Zavalani’. This site does not have a sewerage network, whereas regarding water supply system, there is East -Tub 125PE.

Map 23 – Situation regarding sewerage network in the site



ment
nia

Map 24 – Situation of water supply system in the site

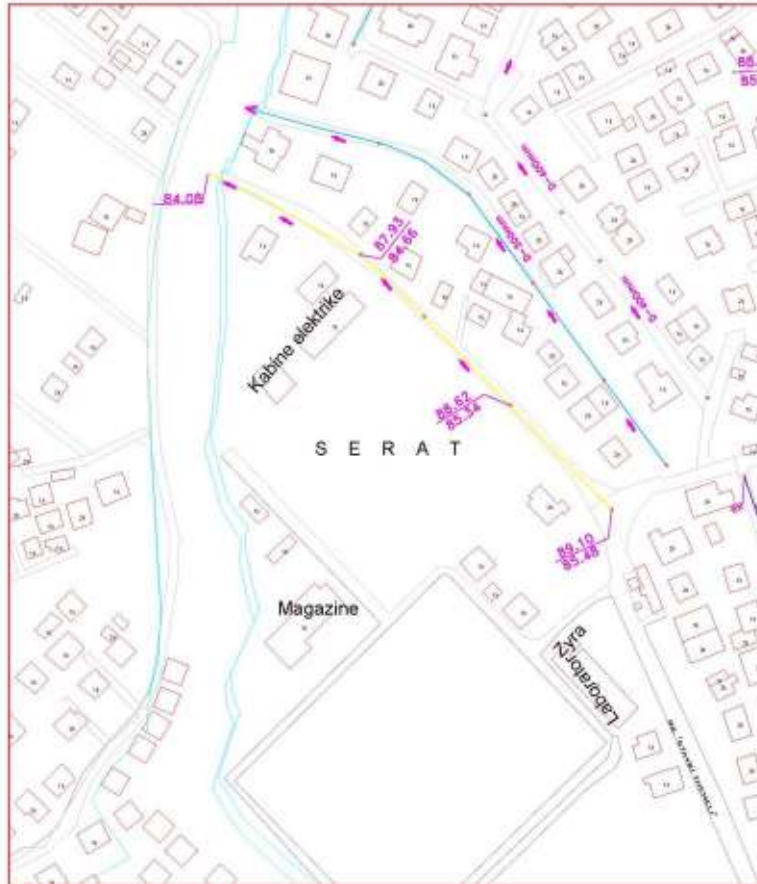


- **Administrative Unit 7**

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 sewerage network in the site



Map 26 – Situation of water supply system in the site

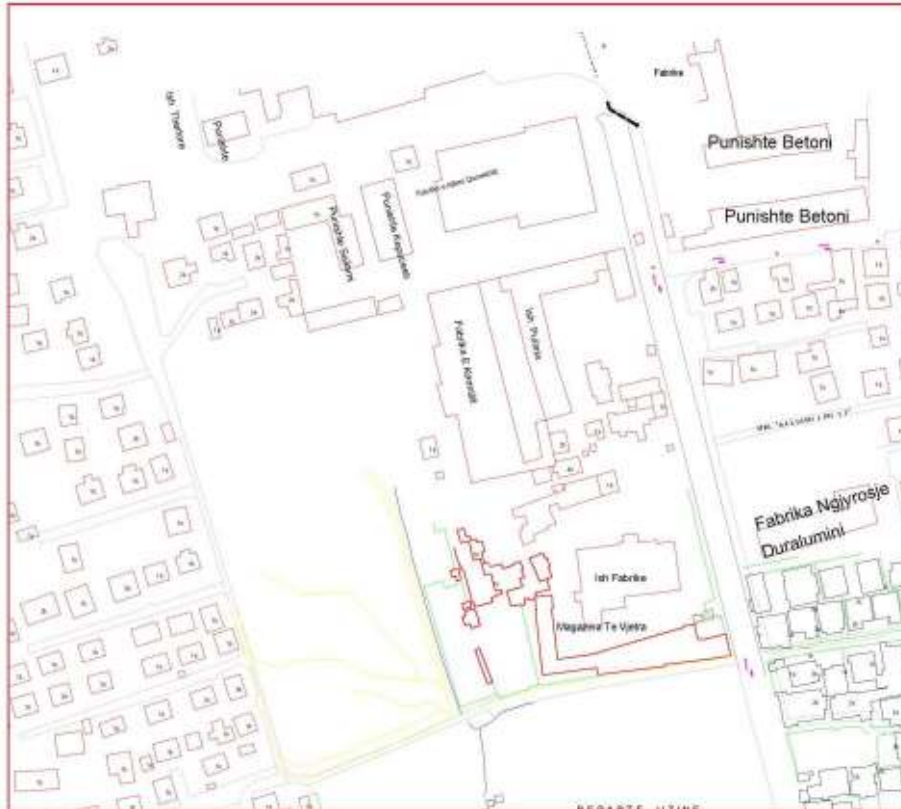


- **Administrative Unit 8**

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 sewerage network in the site



Map 28 – Situation of water supply system in the site

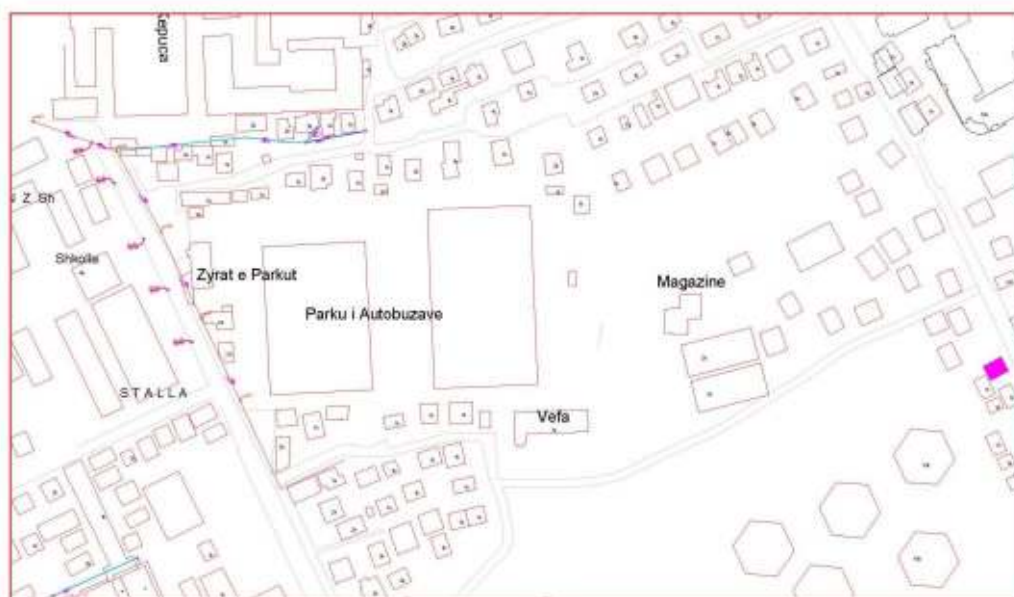


- **Administrative Unit 9**

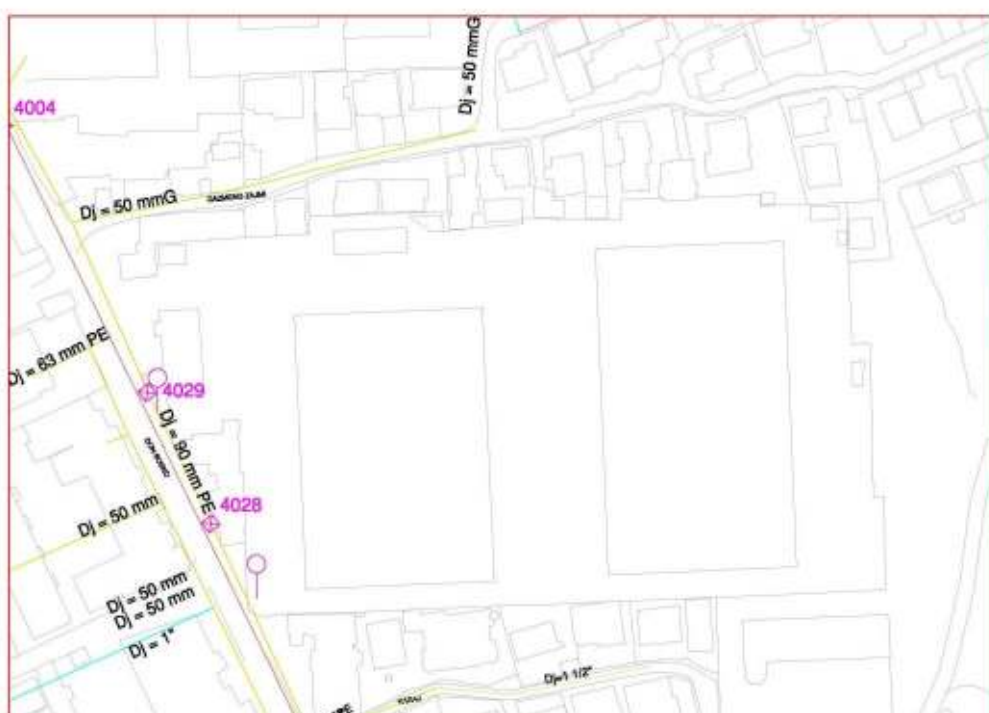
Site of nine-year and secondary school (Kode 9/1)

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

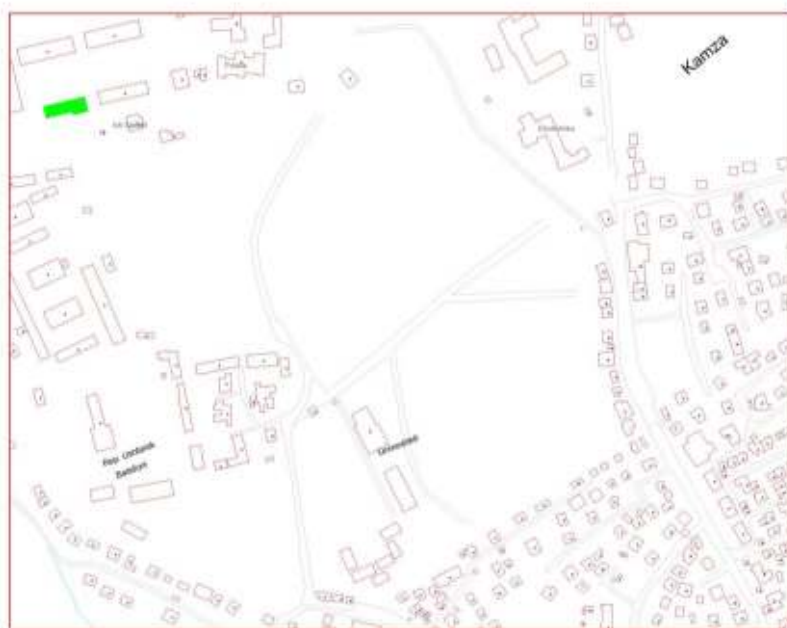


- **Administrative Unit 11**

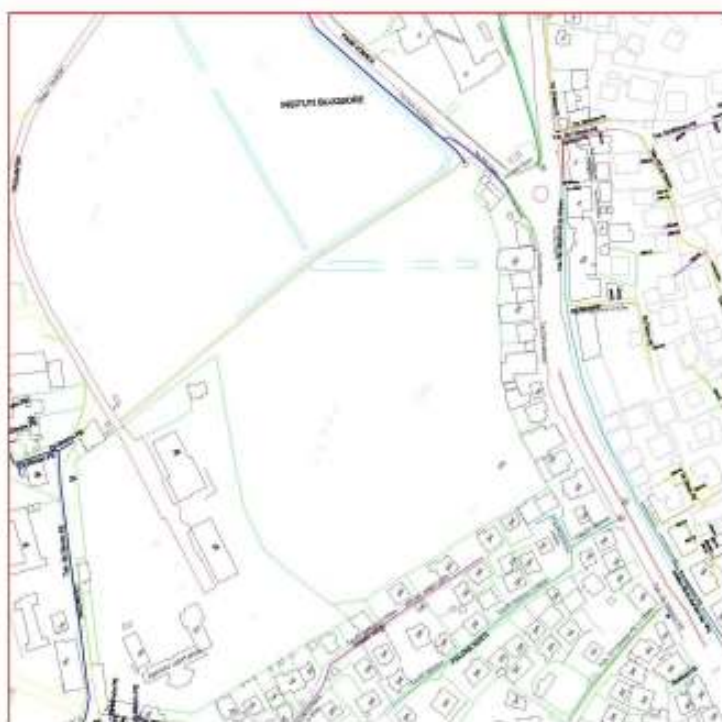
Site of nine-year and secondary school (Code 11/1)

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 sewerage network in the site



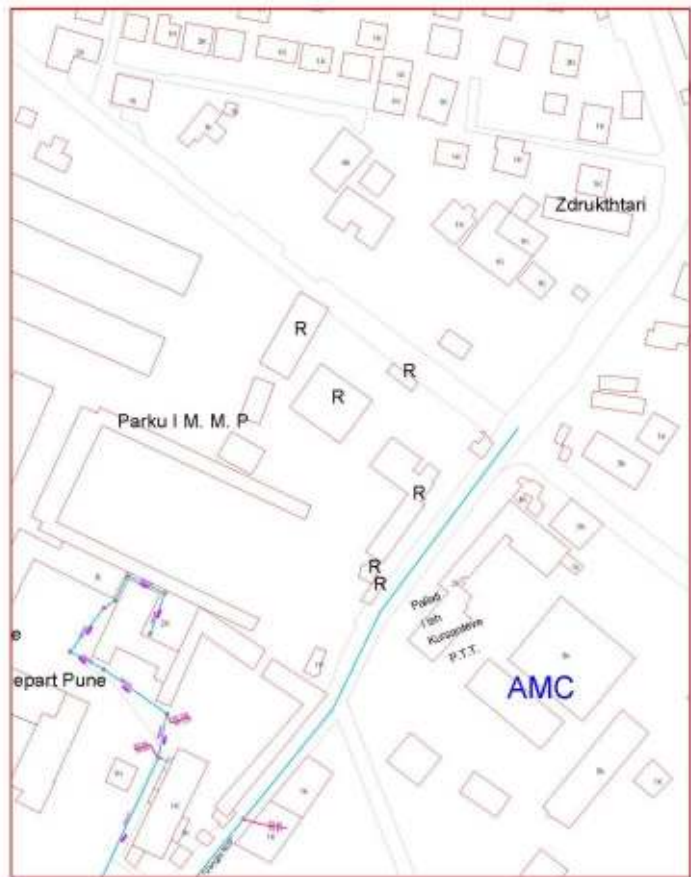
Map 32 – Situation of water supply system in the site



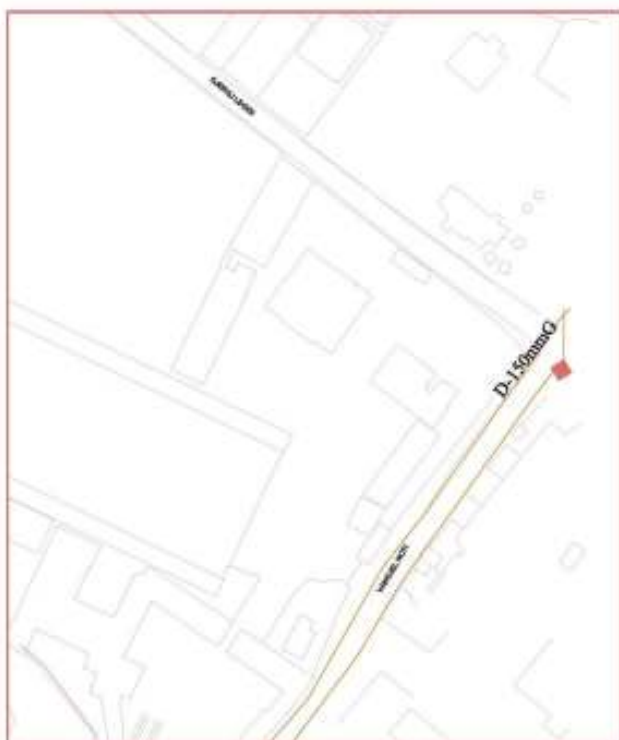
Site of nine-year school (Codi 11/2)

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 sewerage network in the site



Map 34 – Situation of water supply system in the site



- **Administrative Unit of Farke**

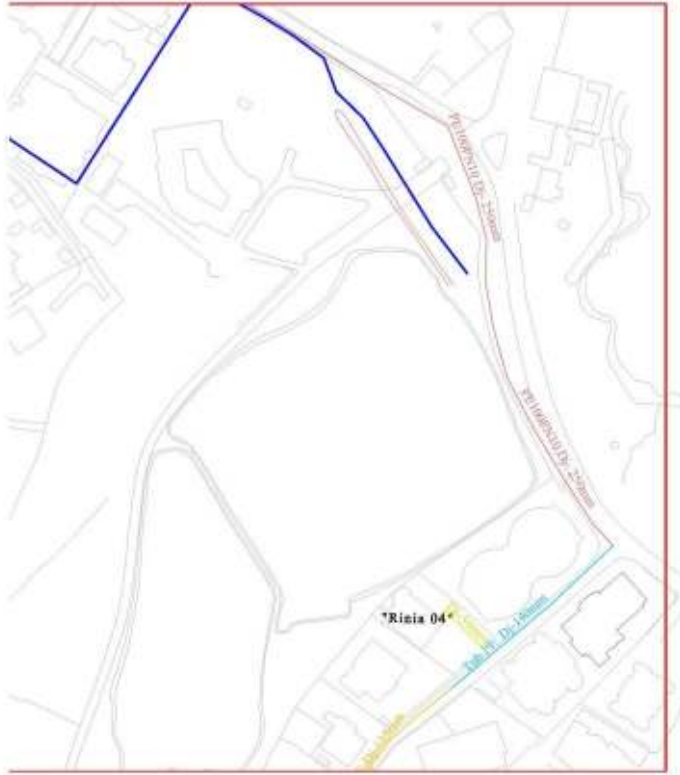
Site of nine-year school (Code F3)

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 sewerage network in the site



Map 36 – Situation of water supply system in the site



- **Administrative Unit of Dajt**

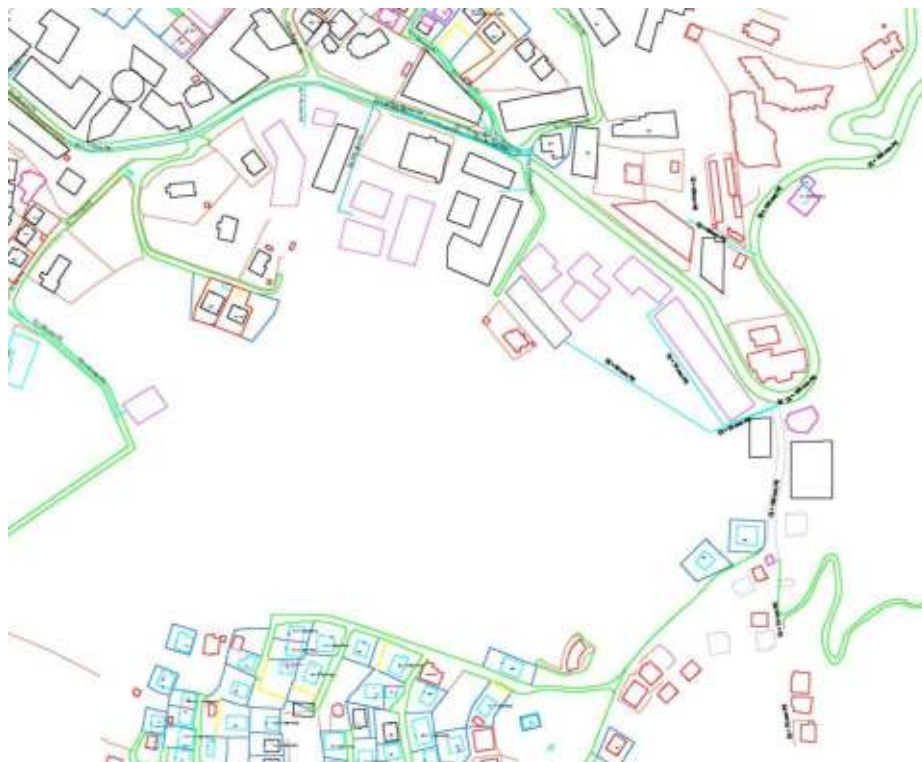
Site of secondary school (Code D2)

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 sewerage 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 buildings 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 addition, 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, moshë 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 HAPËSIRAT E NEVOJSHME - ARSIMI BAZIK					
Ref.	Hapësirat	Sipërfaqe m2	Komentet	Sipërfaqe m2	Komentet
A.	MËSIMDHËNJA DHE MBËSHËTETJA 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 qetë	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 përgatitore për laborator	9,5		9,5	
2.5	Biblioteka	1.4 M2/ulës/20% nr. Total te nxenesve		1.4 M2/ulës/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 përgatitore (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 përgatitore (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/ulës/20% nr. Total te nxenesve		1.4 M2/ulës/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	Billogje me dusha-nga 4 kabina	16		16	
3.19	Zhvishitorja	20		20	
3.20	Dhoma/hapësira e mësimdhënës 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 sipërfaqes së përgjithshme neto (shuma 3.1 - 3.22)	
B.	HAPËSIRAT E PËRBASHKËTA				
4.0	Administrata				
4.1	Drejtori	25		25	
4.2	Zëvendësdrejtori	16		16	
4.3	Kontabilisti	16		16	
4.4	Sekretaria/recepioni	16		16	
4.5	Dhoma/Hapësira për mësimdhënës (niveli i mesëm i ulët)	2,5 m2/mësues		2,5 m2/mësues	
4.6	Dhoma për komunitet	16		16	
4.7	Dhoma/Hapësira për orientim 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, recepioni	21 deri 25% e sipërfaqes së përgjithshme neto (shuma 4.1 - 4.10)		21 deri 25% e sipërfaqes së përgjithshme neto (shuma 4.1 - 4.10)	
5.0	SHËRBIMET E PËRBASHKËTA				
5.1	Dhoma e mjekut	16		16	
5.2	Punëtorja 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	Hapësira e jashtme rekreative të mbuluara	0.6 M2/nxënës		0.6 M2/nxënës	
5.11	Hapësira për ngrohje (kaldata)	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 HAPËSIRAT E NEVOJSHME - ARSIMI I MESEM CIKLI LARTE			
Pwr klasa me 30 (36) nxenes			
Ref.	Hapësirat	Siperfaqe m2	Komentet
A.	MËSIMDHËNJË DHE MBËSHËTETJA 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 sportive	8.0 M2/nx	
1.18	Bllloqe me dusha- 4 kabina secila	16	
1.19	Zhveshtorja	20	
1.20	Zyra e mësimeve 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 sipërfaqes së përgjithshme neto (shuma 1.1 - 1.22)	
2.0	Administrata		
2,1	Drejtori	25	
2,2	Zëvendësdrejtori	16	
2,3	Kontabilisti	16	
2,4	Tavolina e sekretarit/receptionit	16	
2,5	Salla e arsimtarëve	2.5 m2/mësues	
2,6	Dhoma për organizime të komunitetit	16	
2,7	Orientimi profesional	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, receptioni	21 deri 25% e sipërfaqes së përgjithshme neto (shuma 2.1 - 2.10)	
3	SHËRBIMET E PËRBASHKËTA		
3.1	Dhoma e mjekut	16	
3.2	Punëtorja 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 mësime dhe personel	8	4 kabina (x1 ëC blok)
3.8	Bllloku tualeteve për nxënës	44	13 kabina (x2 ëC bllloqe)
3.9	Dhoma e rojes	10	afer 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 sipërfaqes 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

other additional works.

c) Works for metallic constructions

Works for metallic construction are suitable for construction of sports venues and emergency stairs, shelters and different decorative elements.

Likewise, simple metallic constructions are used also in surroundings of sports venues and yards of the buildings.

d) Steel reinforced concrete works

Works for supply and placement of iron in r/c structures.

e) Brick masonry works

Works for realization of dividing and supporting masonry, as well as surrounding venues.

f) Hydro-isolation works

Works for hydro-isolation of foundations, terrace, hydro-sanitary knots and other venues where this intervention is necessary according to technical conditions of the implementation.

g) Layers works

Works for realization of different internal layers (ceiling, terrace), as well as layers for completion of external venues.

h) Ceiling and plastering works

Works for realization of internal, external and ceiling plastering

i) Tile fitting works

Realization of tile fitting of sanitary knots, kitchen venues, etc.

j) Doors and windows mounting. Supply and installation of external and internal doors, as well as windows in the object

k) Painting works - internal and external

l) Different works and demolitions. Different works for realization of external surfaces and demolition of existing objects (if any)

m) Scaffolding and formworks. Scaffolding and formworks for completion of r/c structure and masonry works. n) Electrical works. Realization of internal and external electrical installations, o) Hydro-sanitary works. Works for realization of hydro-sanitary knots and installation of respective equipments.

p) Heating and thermo-isolation works. Works for completion of heating system and installation of respective devices (heating system and respective equipments, radiators), etc.

q) Sewerage works

This works include works in the internal network of waters discharge, pipes in the external network, water supply system, drainage system for the object and sites.

r) Works for technological installations.

Works in this category include surveillance and supervision systems, internet and phone lines, necessary technological equipments for teaching program.

4.3.3. Construction methods

The construction methods and materials used in educational objects shall meet the following characteristics:

- a) resistance and mechanic stability;
- b) security in case of fire;
- c) hygiene, health and environment;

ç) security for use;

- d) protection from noises;
- dh) energy saving and heating protection.

Most suitable construction methods, which must be taken into consideration during drafting of projects for education objects according to categories are:

Excavations for bases and foundations

Excavations for foundations or underground works up to 1,5 m deep underground, in any type of land, nature and composition, dry or wet (clay even compact, sand, gravel, stone, etc.) including cutting and removal of roots, trunks, stones and objects with a volume up to 0.30 m³, completion of obligations related to underground constructions, sewerages, pipes in general, etc.

Fillings

Layer composed of stones and selected brick pieces in well-pressed layers, dust-free, plaster and organic materials resulting from the demolition of above-mentioned items. All the materials deriving from demolitions must be controlled by the Supervisor and their re-use will be authorized by him. All the materials remaining from the demolition will be previously controlled by the Supervisor.

Use of excavated material:

The suitable material and re-filled material from temporary works will be used for re-filling. Any other extra material will be put at disposal to meet requirements of lacking materials.

Filling around the structures

Material shall be placed in simultaneous way on both sides of the supporting wall or column. The later on fillings must be obtained from a material approved by the Supervisor, cast 150 mm thick pressed layers.

- Standard foundations

Concrete foundations

Foundations made of concrete M100 per m³ and cleaned in thick and well-vibrated layers, with dimensions and shape demonstrated in the respective drawings, including the forms, type of work, support and enter requirements to complete the work in a qualitative way.

Foundations and bases of buildings made of buto-concrete

Foundations and bases of buildings made of buto-concrete formed by concrete and limestone less than 20 cm in ratio m³: concrete M 100, 0.77 m³ and stones 0.37 m³, with a dosage of concrete per m³ same as concretes, including formwork, reinforcements and any other necessary obligation for completion of foundations.

Footings for columns

Footings realized and duly reinforced according to instructions in the project, M 200 concrete, cast on the object in thin and well-vibrated layers, with a dosage according to concrete M 200 with inert, including reinforcing steel, forms and reinforcements, as well as any other necessary obligation and masteries for completion of works.

3.6 Supporting works for foundations

Hydro-isolation of footing

Hydro isolation layer for vertical walls of the foundations composed of a bituminous emulsion membrane and two bituminous layers M-3 with a dosage of 3.8 kg / m² and applied hot, including any other obligation for completion of work.

Hydro-isolation of foundations in buildings without basement.

The buildings with basement need the hydro-isolation of horizontal top base of the foundations in the level of upper base with sand cement mortar 1:2. This hydro isolation layer shall be connected to the hydro isolation layer of the ceiling and hydro isolation of external vertical side of the foundations, located in the zone between the pavement and upper base.

Hydro-isolation of foundations in buildings without basement

In the buildings with basement is carried out:

- Hydro-isolation of the horizontal ground of the foundations in the hydro-isolating level of hydro isolation of the basement ceiling.
- hydro-isolation of the external side of the foundation wall. This is connected to the hydro isolation of the horizontal ground and it is raised not less than 10 cm above the pavement level.

Perimetric and superficial drainage

The perimetric drainage is carried out along the foundations, but not on them. This drainage is composed of ring lines with discharge pipes and control manholes.

If under the building's ceiling is found a capillary layer, then there shall be carried out a ring drainage with pipes.

If the drainage must be done under the sub-soil, then it is necessary for the sub-soil of foundations in this area to be deeper.

Pipes will be placed starting from the lower point to the highest in a direct line with an inclination, on a gravel filtering layer 15 cm thick and covered for about 25 cm with the same filtering material. Likewise, we must take into account that the sub-soil of the pipe must be at the minimum 20 cm under the ceiling level, in order to allow the removal of water without problems from the capillary layer.

Beside perimetric drainage, an important role in removal of water from the foundations is played by the superficial drainage, which is realized as following :

Concrete Elements and sub-elements

Lintels cast in-situ

Lintels are realized in the entire width of the masonry with a min. 25 cm bearing on the lateral sides with a different height depending on the light space, duly reinforced and according to the guidelines in the project, prepared from M 200 and M 250 concrete, including service scaffold, forms, reinforcements, iron of the formworks and any other necessary thing completion of the work.

Pre-cast lintels

Supply and installation of the prefabricated arch-beams with a total width up to 40 cm and

different sections created by regularly reinforced concrete according to guidelines in the project, placed in the object with a cement mortar and different sections created by M-200 concrete, duly reinforced according to the guidelines in the project placed on the object with cement mortar M-1:2, including reinforcing steel, rebar works, as well as any other obligation for completion of works.

Cast beams

Concrete beams; Concrete duly reinforced beams according to guidelines of the project, up to the height of 4 m, realized with concrete cast on the object with thin well-vibrated layers, M-200 concrete with dosage of Make 200 with inert, including service scaffold, forms, reinforcements, rebar, as well as any other obligation for completion of works.

Concrete layer

Realization of the layer in the entire width of the masonry below and a height of about 15 to 20 cm, reinforced according to Technical Implementation Conditions (KTZ) and Albanian Standards (STASH), realized with concrete cast in situ, added in thin well-vibrated layers, Concrete M 150 up to M 200 with inert and as indicated in the drawings, including forms, reinforcements, rebar, service scaffold, as well as any other requirement for completion of works.

Columns

Concrete columns, reinforced regularly and according to the guidelines in the project, up to 4 m high, realized with the concrete cast on situ in thin and well-vibrated layers, concrete, concrete m-200 and dosage according to M 200 concrete with inert as indicated in the drawing, including forms, reinforcements, rebar, service scaffold, as well as any other requirement for completion of works.

SAP reinforced slab

Supply and mounting of “SAP” slab, placed on masonry previously leveled with m-1:2, anchored in a connecting layer according to guidelines of the project, duly reinforced with M 200 to M 250, cast on object in thin and well-vibrated layer and according to light space of the campate will need an reinforcement steel and additional slab, including forms, reinforcements, scaffolds and any other requirement to complete the works.

Pre-cast slabs

Pre-cast concrete/reinforced slab, in different heights from 11 cm up to 16 cm, placed on the object above the well-leveled layer, including installation of the slab and respective cast of M 250 or M 300 concrete.

r/c slab

Monolith concrete slab duly reinforced with M 200 concrete according to the project, cast in-site with thin and well-vibrated, including iron, forms, reinforcements, service scaffolds, as well as any other obligation for completion of work.

r/c stairs cast in-site

Stairs for each floor, realized with ramps, respective landings and bearing beams. The treads must be cast in concrete at the same time with the ramp. Concrete Make M 200 to M 250, including forms, reinforcement, scaffolds, excavations for foundations, rebar, as well as any other requirements to complete the works.

Main entrance cover

Beam slab at the building entrance realized with concrete slab/monolith reinforced, which is one with the concrete / reinforced layer of the building corpus and can be cast in concrete in the type of consol or based on consol beam. e be M 200 to M 250. Works are realized including forms, reinforcement, service scaffolds, excavations for foundations, reinforced steel, as well as any other obligation for completion of work.

r/c structures

Part of buildings with reinforced concrete bearing structure, built separately from the masonry, envisaging a technical expansion joint for 40 m length. The concrete/reinforced structure shall be formed with a skeleton with beams, columns, footing, stairs related between them; and realized in a monolith way with concrete M 200 to M 250. These structures are completed starting from the foundations.

Walls and divisions

Wall with complete bricks 25 cm

Masonry with supporting complete bricks up to 3 m high, realized with bastard mortar m-25, according to item 5.1.1 per m³ surface: complete bricks no. 400, bastard mortar m³ 0.25, cement 400, for any wall thickness, including every detail and requirement for connecting bricks, corners, scaffold, as well as any other necessary requirement for completion of masonry works. For ground floor masonry, the upper base surface shall be leveled with a cement mortar layer 1:2 not thicker than 2cm.

Lightweight bricks wall

Masonry with lightweight bricks up to 3 m high, realized with bastard mortar m-25 according to item 1.2, per m³: lightweight bricks no. 205, bastard mortar m³ 0.29, cement 400, for any thickness including every detail and requirement for connecting bricks, corners, openings of windows, service scaffold, as well as any other necessary thing for completion of masonry works. For the masonry of ground floor, the upper base surface shall be leveled at a layer of cement mortar 1:2 with a thickness not less than 2 cm.

Separating Wall 12 cm

Masonry with complete bricks 12 cm wide and bastard mortar m-25 per m³ surfaces: complete bricks 424 pieces, mortar 0.19 m³, cement 400 and water.

Internal wall with full bricks

Masonry with complete bricks 25 cm thick realized with bastard mortar m- 25 per m³ surface: complete bricks no. 400, mortar 0,25 m³, cement 400, 38 kg and water, including every detail of the requirements for connecting bricks, corners, opening of windows, service scaffolds, as well as any other necessary thing for completion of masonry works.. For the

masonry works of ground floor the For the masonry of ground floor, the upper base surface shall be leveled with a cement mortar layer 1:2 not thicker than 2 cm.

Internal wall with hollow bricks 11 cm

Masonry with 6 hole bricks, 11 thick cm and bastard mortar m-25 per m³ surface: bricks with 6 holes 177 pieces, mortar 0,10 m³, cement 400 and water, including every detail of the requirement for connecting bricks, corners, opening in windows, service scaffold, as well as any other necessary thing for completion of masonry works. For masonry of ground floor, the upper base surface shall be leveled with a cement mortar layer 1:2 not thicker than 2 cm.

Internal wall with hollow bricks 20 cm

Masonry with 6-hole bricks, 20 cm realized with bastard mortar m-25 per m³ surface: bricks with 6 holes, 172 pieces, mortar 0,12 m³, cement 400 and water, including every detail of requirements for connecting brick, corners, opening of windows, scaffold as well as any other necessary thing for completion of masonry works. For the masonry of the grand floor, the upper base surface be leveled with a cement mortar layer 1:2 not thicker than 2 cm.

Double wall with bricks

Same as in the cases presented above, whereas the difference is that here there are two rows of bricks attached to each other and bonded between them.

Double wall with lightweight bricks

Same as in the cases presented above, whereas the difference is that here there are two rows of bricks attached to each other and bonded between them.

Concrete block walls

Metallic structures

The designing process of steel constructions shall take into account the requirements reflecting works characteristics of these constructions through respective instructions supporting these technical conditions.

Solidity and stability of steel constructions must be guaranteed during the exploitation process, transport and installation.

4.3.4 Technologies and equipments to be used

Technologies used during the construction will boost energy use efficiency.

Central heating systeme

Heating system pipes may be divided according to the material :

- Iron pipes
- Zinc-plated iron pipes
- Copper pipes
- Plastic pipes

Central heating radiators

- Aluminium

- Steel

Thermo isolation of the object:

- Capot System
- Walls with layers (wall + polystyrene+ wall)
- Slabs thermo-isolation (polystyrene)
- Thermo-isolation of ground floor

Sun panels for heating sanitary water

- Feed-return pipes network
- Sun panels (fixing on terraces of the objects)
- Central Bolier

Fire protection

- Supervision tools
- Smoke alert.
- Automatic fire alert
- Alarm bell

In case of fire, way to put it off are:

- o Fixed types
- o Hydrants inside the building
- o Hydrants outside the building
- o Spraying system
- o Mobile Type
- o Different tanks



Surveillance camera system:

- Installation grid
- Cameras
- Central Surveillance Cameras

4.3.5 List of respective technical standards to be taken into account during the project implementation

Regarding technical implementation standards, we will refer to the Council of Ministers Decision No.68, dated 15.02.2001 “Technical Conditions of Implementation”, as well as EUROCODEs for works and materials that may be used during the project implementation. (Annex no. 5 attached)

4.3.6 Evaluated construction period

Period for realization of the construction will be calculated from the moment of signature of the contract, which will go through the following phases:

- | | |
|---------------------------|----------|
| 1. Signing of contract | |
| 2. Draft- Idea | 2 months |
| 3. Project Implementation | 4 months |

4. Approval of Project Implementation (approval at Institution and technical revision) 1 month
5. Approval of construction permit and other respective permits 1 month
6. Implementation of the construction 12 months

From the moment of signing of contract, the implementation project for objects must be completed within 6 month period.

After drafting of project implementation, for one month should be approved and equipped with respective permits.

After approval of the project and equipment with respective permits, the construction of the object must be completed for one year.

Table 16 – Stages of project realization

Nr.	Etapat e relaizimit të objektit	MUAJ																			
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX
1	Lidhja e kontratës																				
2	Projekt ideja																				
3	Projekt zbatimi																				
4	Miratimi i projektit të zbatimit (miratim në Institucion dhe oponenta)																				
5	Miratimi i lejes së ndërtimit dhe lejeve të tjera përkatëse																				
6	Zbatimi i ndërtimit																				

4.4. Costs of project implementation

4.4.1. Designing and Building Costs

Pursuant to needs for new classes made evident for each Administrative Unit, requests for were coordinated in schools with a number of classes in line with standards specified by MoES through the “Guideline for designing of school buildings”. These school models offer opportunities for fulfilment of needs envisaged for classes of pre-university education, respecting legal requirements for pre-university education classes for determination of parallel classes for each teaching cycle. In the same time, for nine-year schools have been envisaged even venues for pre-schools cycle, as part of nine-year education institution, according to MoES requirements.

Table 17 - No of necessary schools to be built

ADMINISTRATIVE UNIT	Nine-year			High schools		
	New schools	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	Type 4 - 21 class	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	Type 4 - 21 classes	630
ADMINISTRATIVE UNIT 8	1	Type 1 - 20 classes	600	1	Type 4 - 21 classes	630
ADMINISTRATIVE UNIT 9	1	Type 1 - 20 classes	600	1	Type 4 - 21 classes	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 classes	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

Taking into account the need for kindergartens, nine-year and high schools, as well as increase of the efficiency of this investment, during the study were considered even these needs by envisaging the integration of venues for kindergartens in nine-year schools buildings. These may be integrated in the same building, but with separated entrance and yard, as well as by ensuring all the suitable technical parameters guarantying the security of children and well-going of education processes and care for children of this agegroups.

As long as “Guideline for desining of school buildings” (Norms and Standards) does not envisage standards of kindergartens, every cost and construction cost is carried out based on similar projects built in the course of last years by Tirana Municipality, in concrete:

1. New construction kindergarten in Selaudin Bekteshi str
2. New construction Kindergarten no. 21
3. New construction Kindergarten no. 34

Table 18 – Detailed data for the proposed schools

NJESIA ADMINISTRATIVE	SHKOLLA 9-VJEÇARE DHE KOPËSHTE							SHKOLLA TË MESME	
	SHKOLLA TE REJA	NR KLASASH 9-VJEÇARE/SHKOLLË	KLASA PARASHLORE/SHKOLLË (5-6 VJEC)	AMBJENTE KOPËSHTE/SHKOLLË (4-5 VJEC)	AMBJENTE KOPËSHTE/SHKOLLË (3-4 VJEC)	TOTAL KLASA/SHKOLLË	TOTAL KLASA	SHKOLLA TE REJA	NR KL/SHKOLLË
NJESIA ADMINISTRATIVE 1	0							0	0
NJESIA ADMINISTRATIVE 2	3	18	2	2	2	24	72	1	21
NJESIA ADMINISTRATIVE 3	0							0	0
NJESIA ADMINISTRATIVE 4	1	18	2	2	2	24	24	0	0
NJESIA ADMINISTRATIVE 5	1	27	3	3	3	36	36	0	0
NJESIA ADMINISTRATIVE 6	3	27	3	3	3	36	108	1	21
NJESIA ADMINISTRATIVE 7	0							1	21
NJESIA ADMINISTRATIVE 8	0							0	0
NJESIA ADMINISTRATIVE 9	0							0	0
NJESIA ADMINISTRATIVE 10	0							0	0
NJESIA ADMINISTRATIVE 11	2	27	3	3	3	36	72	1	21
NJA DAJT	1	18	2	2	2	24	24	1	21
NJA FARKE	0							0	0
NJA VAQARR	0							0	0
NJA KASHAR	0							0	0
NJA NDROQ	0							0	0
NJA PEZE	0							0	0
NJA PETRELE	0							0	0
NJA BALDUSHK	0							0	0
NJA BERZHITE	1	18	2	2	2	24	24	0	0
NJA KRRABE	0							0	0
NJA SHENGJERGJ	0							0	0
NJA ZALLBASTAR	0							0	0
NJA ZALLHERR	0							0	0
TOTAL	12						360	5	105

Referring to the teaching program and standards set by Ministry of Education and Sports, types of classes, necessary spaces for each level, for nine-year education, will be according to Tables No. 1- No. 4 .

Referring to teaching program and standards set by Ministry of Education and Sports, types of classes, their size, necessary spaces for each level for higher middle education will be according to Table 5. Depending on zone where the school will be built, they are divided into rural and urban zones. As envisaged, average number of students in urban zones will be 30 students/class, whereas in rural zones with a low residential density will be 24 students/class. As long as need for educational institutions in Administrative Unit of Dajt has been calculated in a urban area, in this case, there shall be followed the standards of an urban area.

Same logics is valid also for other similar cases for Administrative Units joining Tirana Municipality following the Administrative Territorial Reform.

In this respect, in total, there are made evident 4 types of schools:

Table 19 – Types of schools

Type	Location	Cycle	No classes	Students/Class	Total No students	M2/students	Total surface
Type1	Urban	Basic education	20	30	600	8.23	4938
Type2	Urban	Basic education	30	30	900	7.32	6588
Type3	Rural	Basic education	20	24	480	8.42	4041.6
Type4	Urban	Higher middle	21	30	630	6.35	4000.5

The construction cost of kindergartens is calculated according to interim payments report prepared by Tirana Municipality in 2012-2013 period. This price includes the construction costs of the educational object together with the open spaces in its function. (yard). As long as interim payment reports of these objects have been drafted by referring to the Technical Manual of Construction Works Prices for 2012 – 2013, there has been an indexation for meter square of price obtained by this interim payment reports.

This indexation is referred to the INSTAT Bulletin “Average Annual Changes of Indexation of Construction Costs (for dwellings) 1994-2015”, where for 2013 – 2015 period, index of increase of average constructions price is 0.55%.

In the end, the average price together with the increase rate is estimated at : 54,381 leke/m² without VAT.

Table 20 - Surfaces of kindergartens according to types

Type	Location	Cycle	No classes	St/class	No. students total	M ² /student	Total surface (m ²)
Type 1	Urban	Kindergarten(3-5 years)	4	24	96	9.1	874
Type 2	Urban	Kindergarten(3-5 years)	6	24	144	9.1	1310
Type 3	Rural	Kindergarten (3-5 years)	4	24	96	9.1	874

Table 21 –Kindergartens’ construction costs according to typology

Type	Cycle	Total surface	Total construction cost (lekë)
Type1	Kindergarten(3-5 years)	874	47,528,848
Type2	Kindergarten(3-5 years)	1310	71,238,892
Type3	Kindergarten(3-5 years)	874	47,528,848

Construction Cost

determination of construction cost of schools is referred to interim payment reports drafted for new construction of education objects in Tirana Municipality, financed by public funds and donors as following :

- New construction – nine year school in “Selaudin Bekteshi” street, financed by EU Delegation in Tirana in framework of IPA 2012;
- New construction of nine-year school “Ahmet Gashi”, public funds financing;
- New construction of nine-year school at “Ish Parku i Autobusave”, public funds financing
- New construction of nine-year school at “Ish Magazinat e Kombinatit tekstil”, public funds financing
- New construction of “ Hoxha Tahsin” high school, public funds financing .

According to interim payment reports analyses for 5 objects, categories of works are as following :

Table 22 – Categories of works

Nr.	TITULLI
1	PUNIME CIVILE
1.1	DEMOLIM DHE PASTRIM I KANTJERIT
1.2	PUNIME GERMIMI DHE MBUSHJE
1.3	PUNIME BETONI
1.4	PUNIME KONSTRUKSIONI METALIKE
1.5	PUNIME HIDROIZOLIMI
1.6	PUNIME MURATURE
1.7	PUNIME TE CATISE
1.8	PUNIME SUVATIMI
1.9	PUNIME SHITESH DHE VESHJESH
1.10	DYER DHE DRITARE
1.11	PUNIME STRUKTUREORE METALIKE
1.12	PUNIME METALIKE
1.13	DEKORACIONE DHE LYERJE
1.14	PUNIME JAShte GODINES
1.15	TE NDRYSHME
2	PUNIMET MEKANIKE
2.1	SISTEME NGROHJE
2.2	SISTEM VENTILIMI
2.3	RRJETI I UJIT TE PIJSHEM
2.4	RRJETI I UJERAVE TE ZEZA DHE UJERAVE TE SHIUT
2.5	SISTEMI KUNDRA ZJARRIT
3	PUNIMET ELEKTRIKE
3.1	SISTEMI I GJENERATOREVE DHE UPS
3.2	SHPERNDARJA E ENERGJISE
3.3	INSTALIMI I KABLOVE, KANALINA DHE KUTI SHPERNDARESE
3.4	PRIZA, CELESA DHE RRJETI I NDRICIMIT
3.5	SISTEMI I DETEKTIMIT TE ZJARRIT
3.6	SISTEMI I THIRRJES SE PUBLIKUT
3.7	RRJETI LOKAL (LAN)
3.8	SISTEMI I TELEVISIONIT (IT)
3.9	SISTEMI I CCTV
3.10	SISTEMI I RRUFEPRITJES
	TOTALI
4	Fondi Rezerv
	TOTALI + Fondi Rezerve

Specifically, heating system includes installation of necessary network for heating system and respective devices. Boiler with all the accessories and necessary equipment, radiators, etc.

Ventilation system is used for the gym of the school

CCTV System, public call, fire detection, includes instalation of necessary grids and respective devices.

Based on the analysis of these interim payment reports, it results that the specific weight of each of these works categories compared to the total cost of the project is as following :

- Civil Works 76% (varies from 71% to 80%)
- Mechanical Works 10% (varies from 9% to 12%)
- Electrical works 10% (varies from 6% to 13.5%)
- Reserve Fund 4% (varies from 3% to 5%)

As long as interim payment reports of these objects have been drafted by referring to the Technical Manual of Construction Works Prices for 2012 – 2013, there has been an indexation for meter square of the price obtained by this interim payment reports.

This indexation is referred to the INSTAT Bulletin “Average Annual Changes of Indexation of Construction Costs (for dwellings) 1994-2015”, where for 2013 – 2015 period, index of increase of average constructions price is 0.55%.

In the end, the average price together with the increase rate is estimated at : 46,332 leke/m² without VAT.

Based on this analysis, the construction cost of these education objects, according to the above-mentioned typology is as following :

Table 23 – Total cost for construction of teaching objects according to typology

Type	Cycle	Total surface (m ²)	Total construction cost VAT (leke)
Type 1	Basic education	4938,0	228,785,770
Type 2	Basic education	6588,0	305,233,020
Type 3	Basic education	4041.6	187,207,732
Type 4	Higher middle	4000.5	185,349,833

The total construction cost of the schools together with the integrated kindergartens is as following:

Table 24 – Total construction cost

Type	Location	Cycle	Kindergarten surface	Basic education surface	Higher middle level surface	Cost/ School (lek)	Cost/ Kindergarten (lek)	Cost
								Total
Type 1	Urban	Basic education + kindergarten	874	4,938	0	228,785,770	47,528,848	276,314,618
Type 2	Urban	Basic education + Kindergarten	1310	6,588	0	305,233,020	71,238,892	376,471,912
Type 3	Rural	Basic education + Kindergarten	874	4,041.6	0	187,207,732	47,528,848	234,736,581
Type 4	Urban	Higher middle		0	4000.5	185,349,833	0	185,349,833

4.4.2. Costs of furniture and laboratories

Furniture of new nine-year and high schools of Tirana Municipality will be realized based on law 69/2012 “On Pre-university education system in the Republic of Albania”, changed, for which Ministry of Education and Sports has prepared the Guideline “On designing of school buildings” (Norms and Standards).

Pursuant to needs for new schools, made evident by you, referring to MoES standard for classes typology and other venues in line with teaching program, there were carried out the respective calculations about the furniture costs per student, which is about 24.167 leke without VAT. This cost includes the amount for furniture without the equipments, computers and other necessary devices for laboratories of physics, chemistry and biology, etc.

For the calculation of furniture price, we considered the offers obtained by 6 economic units for furniture items according to technical specifications of MoES.

Concretelly, according to school typology, the furniture cost is as following :

Table 25 – Furniture costs according to typology

Type of school	No. Classes	St/Class	No st. total	Cost/student	Total cost
Basic Education (Urban Zone)	20	30	600	24.167	14.500.000
Basic Education (Urban Zone)	30	30	900	24.167	21.750.000
Basic education (Rural Zone)	20	24	480	24.167	11.600.000
Higher middle education	21	30	630	24.167	15.225.000

The furniture costs for basic education includes three levels envisaged for these types.

For furniture of new kindergartens, we referred to the previous experience in furniture manner and their necessary quantity. Regarding furniture costs, we referred to the market prices, as well as previous indexed interim payment reports.

Costs for furniture of kindergartens per children is about 27.916 lek without VAT

This furniture cost, beside furniture of children premiee (sitting room, bedroom) includes also the office of director, psychologist and costs for kitchen furniture.

In conclusion, the furniture costs according to kindergarten typology is as following :

Table 26 –Furniture costs according to typology

Type	Location	Cycle	No class	St/Class	No st. total	Cost/child ren	Total cost
Type1	Urban	Kindergarten(3-5years)	4	24	96	27.916	2.680.000
Type2	Urban	Kindergarten(3-5years)	6	24	144	27.916	4.020.000
Type3	Rural	Kindergarten(3-5years)	4	24	96	27.916	2.680.000

							0
--	--	--	--	--	--	--	---

Regarding costs for lab equipments, we referred to the purchase contract “Scientific Laboratories (Chemistry, Physics, Biology) for Pre-University schools” realized by Ministry of Education and Sports during 2016, in which results that the value per laboratory without VAT is as following:

Table 27 Preliminary Costs of laboratories according to typology

I	Basic education school	Amount/ laboratory
1	Natural Sciences Laboratory	186,998
2	Chemistry Laboratory	223,125
3	Physics Laboratory	1,183,602
4	Biology Laboratory	632,467
5	IT Laboratory	3,869,658
II	High school	-
1	Chemistry Laboratory	528,469
2	Physics Laboratory	1,294,500
3	Biology Laboratory	651,657
4	IT Laboratory	3,869,658

Based on schools typology, determined according to designing standards of pre-university education objects, set by Ministry of Education and Sports, in which is defined the quantity of laboratories for each type, we have the following table :

Table 28 Costs of laboratories according to school typology

No	Type of schools	Costs without VAT
1	Basic Education (Type 1)	6,095,850
2	Basic education (Type 2)	7,279,450
3	Basic Education (Type 3)	5,743,950
4	Arsimi i Mesëm i Lartë (Type 4)	13,983,067

Based on all the above-mentioned data, it results that the total furniture and labs cost of 17 schools is 602,378,267 leke without VAT.

4.4.3. Maintenance Costs

To calculate the maintenance cost of pre-university education objects was taken under review a nine-year school with a surface of 3500 m². Based on the calculations, the average surface of a physical class is estimated at 36m². The calculation of cost includes all the maintenance categories realized by General Directorate No. 3 of the city. Likewise, it was taken under consideration also the history of interim payment reports of maintenance (together with the value in leke) that have been carried out for this object in one school year.

The following table presents all the maintenance category and their costs in leke for a one-year period, translated into annual costs for a physical class. According to the table, the annual costs of expenses for a class with an average surface of 36 m² is 422,107 Leke with VAT or 351,755 lek without VAT. Thus, the maintenance cost is estimated at 11,725 leke per m² with VAT or 9,770 leke per m² without VAT .

Table 29 – Categories of maintenance and their costs (LEKE) for a one-year period per physical class

Description of works/repairs	Unit	Total quantity	Price per unit (leke)	Total of monthly expenses	Total of annual expenses (including material+ worker)	Totali shpenzim eve vjetore/ klase fizike (mesatari sht me siperfaqje 36 m2)
Painting						
Hydromat paint	Kg	577	90		38.298	
Plastic Paint	Kg	1.166	187		160.806	
Acrylic Paint	Kg	970	545		389.879	
Oil paint	Kg	13	440		4.219	
Internal Stucco paint	Kg	60	45		1.991	
External Stuko Lyerje e Jashtme	Kg	30	60		664	
Astar	Kg	147	260		14.094	
Pigment	Kg	35	3.850		99.378	
Solvent	Kg	2	200		295	
Total Paint I					709.624	22.891
* Internal paint is calculated once in two years, toilets once a year and external façade is calculated for once in four years						
Plastering repair works	m2	314	670		210.380	
Hydroisolations	m2	420	1.232		517.440	
Total II					727.820	23.478
Repair and maintenance works of the Building						
Hydraulic Maintenance					62.710	
Electrical Maintenance					50.575	
Masonry maintenance					47.617	
Carpentry maintenance					61.723	
Total III					222.624	7.181
Repair of school objects						
Chairs Repair	piece	200	542		159.890	
Tables repair	piece	100	2.476		365.210	
Total IV					525.100	16.939

Structure Maintenance						
Security staff	Employee	2	36.945	73.890	886.680	
Sanitary staff	Employee	6	32.840	197.040	2.364.480	
Secretary	Employee	1	39.466	39.466	473.592	
Total V			109.251	310.396	3.724.752	120.153
Repair PC devices (Total VI)	Lekë				800.000	25.806
Maintenance of technical installations (above-mentioned)						
Cleaning Materials (Total VII)	Lekë				262.500	8.468
Other materials :						
Fuel substances for heating and hot water during the entire year	Litër	16.00 0	162		2.592.000	
Maintenance of heating-cooling plants (air conditioning)	Lekë				1.050.000	
Maintenance of potable and hot water	Lekë				250.000	
MNZSH (maintenance, detection alert system, fixed refilling etc)					40.000	
Totali VIII					3.932.000	126.839
Reserve Fund 5 %	(not valid for maintenance, purchase and paint)					
Total I+II+III+IV+V+VI+VII+VIII					10.904.420	351.755
V.A.T 20%					2.180.884	70.351
TOTAL					13.085.304	422.107

4.4.4. Other costs

Beside construction costs of the school object construction, there are also some other costs and tariffs for :

- Study – Design
- Supervision of works
- Technical Control
- Technical Revision
- Fire protection
- Environmental Permit
- Impact in infrastructure

For definition of tariff for **study, design, supervision and technical control**, we refer to Council of Ministers Decision 354, dated 11.05.2016 “On approval of manual of tariffs for service in Territory Planning, Designing, Supervision and Technical Control”.

For educational objects, referring to Chapter III, Section I “Buildings and their functional typology”, where we obtained the group IV of tariffs and referred to table 6, “Accompanying Table of Tariffs, article 25 – Buildings and their functional typology, as well as structures in external venues”, in compliance with types of educational objects and their amounts, we have the preliminary sums (with VAT) according to the following table :

Table 30 – Other costs

Type	Construction cost	Study-Design	Works supervision	Technical control
Type 1	276,314,618	4,481,127	3,140,921	110,526
Type 2	376,471,912	10,110,384	4,177,904	150,589
Type 3	234,736,581	6,638,188	2,703,942	93,917
Type 4	185,349,833	5,345,868	2,182,239	76,855

Study-Design passes through following phases with respective percentage :

- | | |
|--|------------|
| 1. Analysis of designing tasks | 3% |
| 2. Preliminary Draft-idea | 7% |
| 3. Final Draft-idea | 11% |
| 4. Project for approval of construction permit | 6% |
| 5. Implementation Project | 32% |
| 6. Final IPR | 10% |
| Total | 69% |

Whereas the supervision of works is subject of the following phases :

- | | |
|---|------------|
| 1. Supervision | 25% |
| 2. Preparation of final documents for technical control | 3% |
| Total | 28% |

For the determination of the Technical Control value, we referred to Chapter V “Services for Technical Control”, article 62, of CoMD 354, date 11.05.2016.

Technical Revision

Calculation of technical revision is made referring to CoMD no.1055 dated 22.12.2010 “On definition of technical revision for construction works projects”, where based on the value of the object are determined the coefficients according to the following table :

Table 31 –Calculation of technical opposition

Cost (million leke)	Tariff (in %)
100	6.5
150	6.0
200	5.5
250	5.0
300	4.5
mbi 300	4.0

Technical revision is calculated based on value of project implementation and IPR of project implementation, which take 42% of the estimated value of study-design referring to CoMD 354, dated 11.05.2016 “On approval of manual of tariffs for service in Territory Planning, Designing, Supervision and Technical Control”.

For the types of schools subject of this analysis, the value of technical revision will be as following :

Table 32 – Technical Opposition according to school typology

Type	Construction Cost	Technical Opposition
Type 1	276,314,618	223,183
Type 2	376,471,912	250,675
Type3	234,736,581	208,967
Type 4	185,349,833	184,846

- Fire protection

For the tariff paid for fire protection, we refer to CoMD no. 285, dated 27.06.2002 “On tariffs of series carried out by Fire Protection and Rescue Police for citizens and juridical, physical, local and foreign persons”. For object with a value over 100.000.000 lek, the tariff is 50.000 lek.

- Environmental Permit

Tariff to be paid for obtaining an environmental permit is based on law no. 10448, dated 14.07.2011 “On environmental permits” and CoMD no. 417, dated 25.06.2014 “On approval of tariffs of environmental permits”, for this case, new construction, is 30.000 thousand lek.

- Impact on infrastructure

Tax of impact on infrastructure is defined based on law 107/2014 “On territory planning and development”, article 46, item 4, which envisages that “Local Planning Authority does not pay the tax of impact on infrastructure from new construction of its own developments with public funds”. For schools construction this local tax is 0.



5. ENVIRONMENTAL AND SOCIAL IMPACT

5.1 Environmental impact

This environmental report addresses the forecast of preliminary negative and positive effects of construction of these school objects in Tirana city.

Environmental evaluation of the territory object of the study is focused on making evident physical-natural elements that are of special importance for preservation, as well as assessment of impact on environment of new elements that will be introduced by this project. This evaluation will help in harmonization and urban regulation of these zones aiming to achieve the required parameters.

5.1.1 Legal framework

Albanian legislation regarding Environmental Protection is as following :

- Law no. 10431, dated 09.06.2011, “On Environmental Protection”, changed;
- Law no. 8906, dated 06.06.2002, “On Protected Zones”, changed;
- Law no. 9587, dated 20.07.2006, “On protection of biodiversity”, changed;
- Law no. 9774, dated 12.07.2007, “On assessment and administration of noise in the environment”, changed;
- Law no. 10440, dated 07.07.2011, “On assessment of impact on environment”, changed;
- Law no. 10463, dated 22.09.2011, “On integrated management of wastes”, changed;
- Law no. 162/2014, “On protection of air quality in the environment”;
- Law no.111/2012, “On Integrated Management of water resources”;
- Decision of Council of Ministers no. 13, dated 04.01.2014, “On approval of rules, responsibilities and deadlines for holding of procedures for assessment of impact on the environment”;
- Decision of Council of Ministers no. 247, dated 30.04.2014, “On definition of rules, requests and procedures for information and inclusion of public in environmental decision-making”;
- Decision of Council of Ministers no. 803, dated 4.12. 2003, “On approval of norms of air quality”, changed;

- Decision of Council of Ministers no.177 dated 31.03.2005, “On allowed norms for liquid discharges and zoning criteria of receiving water environments”;
- Decision of Council of Ministers no. 676, dated 20.12.2002, “On proclamation protected zone for the Albanian nature monuments”;
- Decision no. 99, dated 18.02.2005, “On approval of Albanian catalogue about classification of wastes”, changed;
- Regulation no. 1, dated 15.03.2006, “On prevention of negative impacts on health and environment of the construction activities”.

5.1.2 Description of Flora and Fauna in the zone object of this study

Tirana is affected by influences of river micro-basins (Lana, Tirana and Erzen Rivers). The contain several echo-systems that are ecologically different, important for characteristic habitats and their associations, but that are currently violated by discharge of solid and liquid urban wastes.

The zones where is envisaged the construction of school objects may be divided into two major groups. The first group is made of sites located in urban zones, where are built existing objects or cast concrete layers. This group includes sites 2/3 and 2/6 in Administrative Unit no. 2, site 9/1 in Administrative Unit no. 9 and site 11/2 Administrative Unit no. 11. The flora in these sites is very rare and floristic physiognomy includes mediterranean herbs and bushes, falling or ever green leaves.

The second group consists of sites located in urban or sub-urban zones where vegetation is dense. This group includes site 5/1 in Administrative Unit no. 5, site 6/6 in Administrative Unit no. 6, site 7/1 in Administrative Unit no. 7, site 8/1 in Administrative Unit no. 8, site 11/1 in Administrative Unit no. 11, site D2 in Administrative Unit of Dajt and site F3 in Administrative Unit of Farke.

Floristic physiognomy of these zones includes herbs such as hygrophile, heriofile etc., mediterranean bushes such as macchia or bushes salix and in some of the sites are present also tree plants, which are very rare and mainly cultivated. Near sites 7/2 and 6/6, which are situated near Lana River is noted even the banks vegetation, even though Lana banks are organized this vegetation is rare.

Zones affected by the projects, due to their location in urban zones, do not have a rich fauna, despite their variety of animal habitat. Following is a full list of animal species found in this

territory. Some species of snakes, birds, small amphibians and amphibians are determined in the EU Directives on habitats of Flora and Fauna, Annex II and IV and in EU Directive on Birds.

Mammals:

Lutra lutra
Plecotus auritus (long-eared bat)
Nyctalus noctula (bat)

Birds:

Hippolais olivetorum (olive gull)
Sylvia nisoria (gull)

Reptiles:

Emys orbicularis (swamp turtle)
Mauremys caspica (swamp turtle)
Testudo hermanni (mediterranean land turtle)
Natrix tessellata (snake)
Lacerta trilineata (green lizard with three strips)
Lacerta viridis (green lizard)
Podarcis taurica (lizard)

Amphibian :

Rana lessonae (small water frog)
Hyla arborea (tree toad)
Triturus cristatus (salamander)
Bufo viridis (green toad).



5.2 Assessment of impact on environment in zones in the study

Assessment of expected impacts on the environment includes two stages of project's realization. The first stage deals with negative impacts on the environment during construction of schools and second stage is related to negative impact on the environment during their implementation.

5.2.1. Impacts on environment during construction stage

Earth

Construction of school objects will be carried out on land surfaces that may be divided into: non-natural, as long as on them are found existing constructions, organized and paved territory, and natural land surfaces. In these cases, the greatest impact on the environment comes from change of destination of land use. This impact is long-term and permanent.

Use of land and landscape

Construction of schools will fully change the visual aspects of the selected zones. Taking into account the fact that new school objects will be built in populated urban zones, their construction may be easily integrated in the landscape of the territory.

Superficial waters

Superficial waters are not present in majority of selected sites, therefore they cannot have a negative impact on the environment. There is an exclusion only for sites 6/6 and 7/2 that are situated near Lana River. Nevertheless, the river is found outside the potential surroundings of the construction site and as a result, the possibility of pollution of waters from fuel and lubricants of construction machineries is very small.

Air

Air quality may be affected by noises as a result of use of heavy excavation, transportation and auto-concrete machineries that may be used during the construction of the buildings and production of dusts that may accompany the construction since the moment of opening the foundations up to final works. New school objects will be built near residential areas, therefore their impact will be medium. Nevertheless, these two impacts are temporary because they are related only to the construction stage.

Biodiversity

Schools will be built on exploited and unexploited land surfaces which are partly covered by herbs and rare vegetation. This vegetation will be cleaned as a result of the construction, but impact on the environment will be almost zero and none of the species is important for the biodiversity. Regarding fauna, the impacts will be minimal, because the sites are found in urban zones and are not populated by animals.

Wastes and inerts

As a result of excavations, there will be construction debris, such as earth, mortar remaining, bricks, stones, inert, limestones and reinforcing steel, etc. In case these wastes will be re-usable then they will be used for fillings. If they are not useful, they will be deposited in places defined by the terms chosen by Tirana Municipality.

Traffic

As a result of entries and exits of heavy tonnage machineries in the construction site, there might be a momental traffic. This will be temporary - only during the construction phase.

Social-economic environment

Majority of selected zones is situated near residential urban centers, and as a result the above-mentioned impacts will affect the community. Nevertheless, these impacts are temporary - only during the construction phase.

5.2.2 Impact on the environment during operation stage

Waters

Operation of school objects are not expected to have any pollution effects on the superficial or underground waters.

Air

Functioning of new schools may not have any impacts on the air quality, despite noises generated by children's game in the yard, an impact limited within the school yard.

Traffic

During school functioning, there might be generated some traffic in their entrance. Nevertheless, this will be a limited phenomenon before 8 of clock in the morning, when parent take children to school.

Wastes

Urban wastes will be generated during school operation. Management of these wastes will be carried out by Tirana Municipality in line with management plan.

Social-economic environment

The impacts on social-economic environment will have a positive character. At first, children living in zones in the proximity of schools may go to a school near their residence. Second, new schools will revitalize the zones where they will be built and will bring in economic development, because they will favor the creation of nearby economic units that will offer different services.

5.3 Measures for smoothing impact on environment during construction and operation phases

Measures for protection and sustainable development of the environment are part of the work organization plan. The investor will take all necessary measures to minimize the negative impacts on the surrounding construction site.

Environmental Management Plan will aim to implement the environmental standards during the construction and operational phases. This plan is based on recognized and accepted norms and principles for environmental protection. Measures including in the plan aim to eliminate negative above-mentioned impacts on the environment. In concrete, these measures will include:

- Surrounding of the construction site with a tin net in its entire perimeter leaving an entrance for the construction;
- Transportation of necessary materials will be programmed to avoid concerns with the local traffic. There will be orienting tables for movement of vehicles;
- Construction wastes, such as earth, mortar remaining, bricks, stones, inert, limestone, rebar, wood, etc will be deposited in places defined by Tirana Municipality and not outside the construction surrounding;

Discharge of sewage waters will be carried out in respective manholes;

- In case of discovery of archaeological or cultural objects of great importance, then the project shall be changed;
- Water spraying to limit emission of dusts near construction materials;
- Covering of surfaces with plastic layers during storage and transportation of materials;
- Planting of trees near the construction site;
- Periodical clearance of construction site and entry road;
- Efficient use of modern construction machineries to minimize the pollution;
- Protection nets for minimization of dusts that will be used at the end of concrete structure;
- Noisy devices will not be allowed to be used 22⁰⁰-6⁰⁰ every day.

5.4 Social Impact

Education is a powerful mean through which individuals have the opportunity to actively participate in the society. Construction of new school objects, not only offers students the possibility to attend studies in favorable conditions, which has a direct influence in learning, but also favors the development of communities around them.

5.4.1. Social benefits of education

Education offers important benefits to the society expanding abilities, improving social status and as a result creating more employment opportunities or increase of incomes.

Construction of these new school objects will put an even once and forever to the sharp social problem of over-population of classes and performance of teaching process in two shifts. Likewise, it solves also the problem of long distance from schools and residences, which forced children to make long trips to school. Social impact will be important also for parents and family members who due to the distance of school or attendance of studies in the afternoon were obligated to accompany children in unfavorable timetables with the working hours.

Lack of education infrastructure was a serious problems for families in need living in newly developed zones of the capital. This may also be one of the main reasons for abandoning school in these communities. Construction of new schools in these areas will guarantee the access in education as a fundamental right and will offer a precious help in the social integration of inhabitants in these areas.

Construction of these schools will affect the entire surrounding community. Considered as community centers, these venues will be used by the community after official teaching schedule, turning into a incentive for establishment of mutual relations between the community members. The entire zone will be object of a revitalization process that would partly come from the activity of schools, but also from private business interested in opening different activities, such as study centers, library, stationary, etc.

Among indicators provided from Organization for Economic Cooperation and Development, among other things lists that education influences in the health situation of the individuals. According to it, persons with higher education levels, enjoy good health .¹

5.4.2 Expropriation and compensation

Implementation of the construction of school objects may also face the resistance of the community. Based on the current situation, it is pointed to the construction of 17 schools. They will be built in the following zones :

Unit 2 – 3 schools (2 sites)

Unit 5 – 1 school (1 site)

Unit 7 – 1 school (1 site)

Unit 8 – 2 schools (1 site)

Unit 9 – 2 schools (1 site)

¹ Education at a Glance 2014, OECD indicators, OECD Publishing, pg. 172

Unit 11 – 3 schools (2 sites)

Unit Kashar (Yzberisht) – 3 schools (2 site)

Unit Dajt – 1 school (1 site)

Unit of Farke – 1 school (1 site)

One of the social impacts of the construction would be the expropriation of private properties for public interest. Based on the selected locations for schools construction, the expropriation is estimated at about 58, 547 m².

This process will be realized based on law No 8651 “On expropriations and temporary take into use of private properties for public interest”, 22.12.1999.

In case of the construction of school infrastructure, the expropriation right and temporary take into use of private property will be exercised for a public interest that can not be realized or protected in any other way than for causes and in respect of procedures defined in the respective law at the necessary amount for realization of the expropriation purpose and with a fair compensation²

In this respect, Article 8, item ç) of this law envisages that among the expropriation reasons are also the realization of national or local projects and investments, in function of the protection of environment, health, culture and public education, as well as infrastructure in service and public interest.

Regarding, the technical assessment criteria and calculation of compensation for expropriations will refer to Council of Ministers Decision No.138/200 “On Technical Assessment Criteria and Calculation of Compensation of Expropriated Private Properties, Depreciation of Assets and Third Persons Rights for Public Interest”.

This process may be accompanied by land owners residence and may cause delays in deadlines envisaged for completion of schools.

² Law No 8651 “On expropriations and obtaining of private properties of public interest for a temporary use”, 22.12.1999, Article 2, item 2.

6. ECONOMIC AND FINANCIAL ANALYSIS

Economic and financial analysis of this feasibility study, in line with Council of Ministers Decision no. 575, dated 10.07.2013, “On approval of rules for assessment and granting for concession/private-public partnership”, article 7, mainly focuses on determination of value for money of the project, as well as on completion of an evaluation of the investment in total, operative costs and maintenance, as well as any other income expected to be generated during the duration of the project.

6.1 Economic Model of the Concession / Public-Private Partnership

Law no. 125/2013, changed with law no. 88/2014, regulates the competences of contracting authorities in order to sign concessions/public-private partnerships. In this type of relations, the private partner takes the responsibility of financing, designing, building and/or re-building/renewal the public infrastructure object, to operate and maintain the public infrastructure object built and/or rebuilt/newly renewed. Among the fields of implementation of this law is also education.³

Based on the data analysis, it results that to put an end to the over-crowded schools problem and two shifts learning, Tirana Municipality needs to build 17 new schools - 10 nine-year schools and seven high schools. The total cost of construction and furnitures for these schools is calculated at 7.6 billion leke. Such amount of money is financially unaffordable for Tirana Municipality, whose total annual budget is 10 billion leke, whereas investments for construction of new schools in the course of last years has been not more than 500 million leke.

In this respect, in order to settle this problem, Tirana Municipality must implement innovative methods of procurement and financing of the proposed project. To guarantee the realization possibility of the schools construction project, it was chosen a more innovative and cost-efficient approach, combining the designing, financing, construction and maintenance in one and only procurement contract. Due to the considerable dimensions of this project, this methodology will not only offer facilitations during the development process, but will provide more sustainability after its completion.

In the framework of the “Design, Finance, Build and Maintain” (DFBM) model as internationally known “Design, Build, Finance & Operate (DBFO)”, contractors take the responsibility of designing, building, financing and maintaining an object for entire duration of the contract. The contractor who may be one company or a consortium is responsible for

³ Article 4, item dh), Law 125/2013

designing, financing, construction and maintenance of the object for a determined period of time, which is proposed to be 7 years. The payment after the completion of the object is dictated based on completion of some determined performance standards regarding the physical condition of the buildings, capacity, quality, etc. This model which goes beyond the designing and construction phase, naturally encourages the designer/builder to provide since the beginning a qualitative construction plan in order to have less costs during the maintenance phase, as long as the responsibility belongs to their consortium. Likewise, integration of all project's contract in one reduces different transactional costs and boosts project management efficiency.

This PPP model has been widely used for construction of major infrastructure projects, such as construction of highways, hydro power stations, wastes management plants, etc, because the dimensions of such projects required considerable funds, efficient organization of capital and human resources, high designing and construction quality, maximal security and constant maintenance. In this respect, such models have been considered successful for development of projects that guarantee their realization and efficiency of the investment. Nevertheless, the use of this PPP form is not limited only in major public infrastructure works mentioned above. In many OECD countries, mainly in the United Kingdom, this methodology is used also for public service projects, such as construction of new schools.

Following are some examples from different countries that have successfully implemented this model for projects of educational infrastructure:

Canada⁴: “Alberta Schools Alternative Procurement” Program. In 2007, Alberta region in Canada declared the first stage of the program which envisages the construction of 18 new school buildings (kindergartens and nine-year schools), which were completed in 2010. After the completion of works, duration of the contract will continue with the maintenance and it estimated at about 30 years. The second phase of the program envisaged the construction of other 10 nine-year schools according to the same model and 4 high schools through the simple model of Designing-Constructing contract, which were completed in 2013.

Greece⁵: “Macedonia Schools and Attica Schools” Program. With the use of DBFM mechanism, private operators designed construction of 51 schools with a total amount of about 269 million Euro and 25 year contracts.

United Kingdom⁶: “Building Schools for the future” Program. This program is a long-term investments program, which is contributing in the construction of a considerable number of schools in the entire territory of UK. Majority of schools has been built through the Design-

⁴ “Flexible and alternative approaches to providing school infrastructure in Alberta, Canada” – OECD, 2010

⁵ “The role and impact of public-private partnerships in education”, pg. 82 – World Bank, March 2009
http://www.ungei.org/resources/files/Role_Impact_PPP_Education.pdf

⁶ Ibidem (i.e. extracted from same WB document in the above-mentioned reference and same page)

Build-Finance-Maintenance scheme, but in this case often has been included also the element of school management by a private subject of a determined period. In general, total duration of the contract is estimated up to 30 years. The private consortium is regularly paid by public funds based on its performance during the contract period. If the consortium does not achieve the required performance, the payment is reduced. At the end of the contract period, school is given back to government.

New Zealand⁷: The project of New Zealand Ministry of Education for construction of two schools in Hobsonville, Auckland. This project envisages the construction of a new lower cycle school and one lower middle cycle school in the suburb region of Hobsonville in Auckland city. The private sector is partly responsible for designing, building and financing of the objects, together with their constant maintenance and management of common services. Construction of these schools has been successfully completed in 2014.

In this aspect, the project for construction of new schools in Tirana needs the application of the same approach for improvement of education service in the entire territory of the Municipality. Big number of schools that will be built, financial limitations, short period for implementation of the project, as well as need to guarantee the maximal security of buildings point to the necessity of establishment of an efficient and successful public private partnership.

6.2 Main assumptions



In the framework of financial and economic analysis effects of this feasibility study, were made the following assumptions:

- Concessionary will cope with its incomes the entire investment for construction of education objects and their functioning, whereas Tirana Municipality will face with its funds the expropriation of private lands to be used for this purpose.
- Educational objects will be built and functional at maximum 18 months from the signing of the construct.
- After the construction and functioning of schools, concessionary will be accountable for administration and maintenance of the objects for a 7 year period and for every problematic regarding risks of assets for these period.
- After the construction of objects, Tirana Municipality will pay the concessionary a certain annual sum until the full payment of the invested amount. Incomes for this payments will be provided from the annual incomes of Temporary Tax on Education Infrastructure and conditioned transfer from Ministry of Finance.

⁷ "Mayoral Position Paper on Public Private Partnerships" – Ernst and Young, November 2013.

6.3 Costs analysis

Based on technical, it has come to be conclusion that in total will be built 17 schools: 10 nine-year schools and 7 high schools. The new schools will be designed and built according to models in line with standards specified by Ministry of Education and Sports through “Guideline for School Buildings Design”. The school models offer the opportunity to fully meet the needs for pre-university education classes, respecting legal and technical requirements for definition of parallel classes according to each teaching cycle. In the same time, for nine-year schools are envisaged also venues for pre-school education, as part of the nine-year education institution. Referring to above-mentioned standards, there exist 4 main types of schools with the following operational data:

Type 1 of schools includes 20 classes per pre-school and school students with a construction surface of about 4,938 m². Likewise, this schools will included a kindergarten of about 4 classes with a surface of about 874 m². In total, the construction surface for this type of school is 5,812 m². **Type 2** of schools is nine-year education with 30 classes for pre-school and school students with a construction surface of about 6,588 m². Likewise, this school will include a kindergarten with 6 classes with a surface of about 1,310 m². In total, the construction surface for this type of school is 7,898 m². **Type 3** of schools is higher middle for rural zones with 20 classes with a construction surface of about 4,041 m². **Type 4** of schools consists of higher middle schools for urban zones with 21 classes and a construction surface of about 4001 m².

According to quantitative analysis carried out and explained above, there are necessary a total of 17 schools, 2 out of them belonging to Type 1, 7 schools of Type 2, 1 school of Type 3 and 7 high schools of Type 4. Respectively these schools will be built according to following administrative units and data:

Table 33 Detailed data for each school

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	nxënës për klasë	Nxënës për shkollë	Sipërfaqe totale shkolla	Klasa kopësht	Nxënës për klasë kopështi	nxënës për kopësht	Sipërfaqe totale kopësht	Siperfaqe totale ndertimi
1	NJA 02	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
2	NJA 02	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
3	NJA 02	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
4	NJA 05	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
5	NJA 07	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
6	NJA 08	Tipi 1	9-vjeçar	20	30	600	4,938	4	24	96	874	5,812
7	NJA 08	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
8	NJA 09	TIPI 1	9-vjeçar	20	30	600	4,938	4	24	96	874	5,812
9	NJA 09	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
10	NJA 11	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
11	NJA 11	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
12	NJA 11	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
13	NJA Dajt	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
14	NJA Farke	Tipi 3	9-vjeçar	20	24	480	4,041	4	24	96	874	4,915
15	NJA Kasha	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
16	NJA Kasha	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
17	NJA Kasha	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
Totali				417		12,390	88,036	54	240	1,296	11,792	99,828

Summarizing according to schools typology, in total, we have the following operational data :

Table 34 Summarized data for proposed schools according to typology

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Nr nxënës për klasë	Nxënës për shkollë	Nr klasa kopësht për shkollë	Nr nxënës për klasë kopështi	Nxënës për kopësht	Sipërfaqe ndertimi shkolla	Sipërfaqe kopësht	Tot Sipërfaqe ndertimi	Total Nxënës shkolla	Total Nxënës Kopështe	Nr Total i nxënësve
Tipi 1	2	20	30	600	8	24	96	9,876	1,748	11,624	1,200	192	1,392
Tipi 2	7	30	30	900	42	24	144	46,116	9,170	55,286	6,300	1,008	7,308
Tipi 3	1	20	24	480	4	24	96	4,041	874	4,915	480	96	576
Tipi 4	7	21	30	630	-	-	-	28,004	-	28,004	4,410	-	4,410
Grand Total	17	91				72	336	88,036	11,792	99,828	12,390	1,296	13,686

For a better analysis of value for money of the project, we have grouped the expenses in four main categories, based on accounting standards and requirements of CoMD no. 575, dated 10.07.2013, "On approval of rules for assessment and granting of concession/public private partnership", article 7, section 3-6:

Direct costs of investments

Direct costs of maintenance

Due to the effects of the following analysis, all the prices and values will be without VAT, unless is specified otherwise.

6.3.1. Direct Costs of Investments

During the analysis and in line with above-mentioned CoMD, there were identified the following direct costs of investments:

1. Costs of Land Expropriation ;
2. Construction Cost ;
3. Cost of Study and Designing ;
4. Supervision Cost ;
5. Cost of Technical Control;
6. Technical Revision ;
7. Cost for Furniture and Equipment;
8. Cost of lab devices.

6.3.1.1. Cost of Land Expropriation

According to determination of trace where these schools will be built, it results that will be expropriated a total of 58,547.50 m² of private properties, which according to the calculations are estimated at an expropriation value of 814,242,252 leke. On the other side, the state-owned land will be subject of respective procedures in order to take the respective properties under the administration.

With the approval of CoMD in this respect and completion of financial and legal documents in line with the CoMD and normative acts in force, every expropriated subject will be paid by Tirana Municipality through a fund determined for this purpose.

Table 35 Summarized table of expropriations

Nr rendor i tabelës	Adresa	Tipi	Sheshi	Shpronesimi ne Vlere	Siperfaqje ne m2 te shpronesuar	Cmimi mesatar per m2
4	NJA 05	Tipi 2	5/1	218,519,847	3,263	66,969
5	NJA 07	Tipi 4	7/2	261,101,406	8,482	30,783
6	NJA 08	Tipi 1	8/1	150,790	5	30,158
7	NJA 08	Tipi 4	8/1	150,790	5	30,158
8	NJA 09	Tipi 1	9/1	23,404,716	687	34,068
9	NJA 09	Tipi 4	9/1	23,404,716	687	34,068
11	NJA 11	Tipi 2	11/1	103,053,248	4,484	22,985
12	NJA 11	Tipi 4	11/1	103,053,248	4,484	22,985
13	NJA Dajt	Tipi 4	D2	53,044,000	14,900	3,560
14	NJA Farke	Tipi 3	F3	3,368,064	7,518	448
15	NJA Kashar	Tipi 2	6/6	20,913,060	4,930	4,242
16	NJA Kashar	Tipi 2	6/3	2,039,184	4,552	448
17	NJA Kashar	Tipi 4	6/3	2,039,184	4,552	448
Grand Total				814,242,252	58,548	13,907

6.3.1.2. Construction Costs

Based on the report obtained from General Directorate of Public Works No. Prot. 21407/2, dated 09.08.2016, costs for schools construction is 46,331.67 leke/m², whereas the kindergartens costs are 54,380.83 leke/m². From the combination of this data with the total construction surface for each type of school, it results that :

- The construction value of a Type 1 school is 228,785,770 leke and to this amount is added also the construction of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 1 school, including the kindergarten venue is 276,314,618 leke.
- The construction value of a Type 2 is 305,233,020 leke and to this amount is added the construction cost of a kindergarten of about 71,238,892 leke. In total, the general cost of the construction of a Type 2 school, including the kindergarten venue is 376,471,912 leke.
- The construction value of a Type 3 schools is 187,207,732 leke and to this amount is added the construction cost of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 3 schools, including the venues of a kindergarten is 234,736,581 lekë.
- The construction value of a Type 4 school is 185,349,833 leke and these schools do not include kindergarten premises.

Table 36 Summarizing table of construction costs

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Klasa kopëshi për shkollë	Sipërtëmtimi i shkollave	Sipërtëmtimi kopështesht	Tot Sipërfaqe ndërtimi	Cmimi i ndërtimit të shkollave lek/m2	Cmimi i ndërtimit të kopështeshteve lek/m2	Kosto ndërtimi të një shkolle	Kosto e ndërtimit të një kopështi	kosto e ndërtimit të një shkolle + kopesht	Kosto e përgjithshme e ndërtimit
Tipi 1	2	20	4	9,876	1,748	11,624	46,332	54,381	228,785,770	47,528,848	276,314,618	552,629,237
Tipi 2	7	30	6	46,116	9,170	55,286	46,332	54,381	305,233,020	71,238,892	376,471,912	2,635,303,382
Tipi 3	1	20	4	4,041	874	4,915	46,332	54,381	187,207,732	47,528,848	234,736,581	234,736,581
Tipi 4	7	21	-	28,004	-	28,004	46,332	54,381	185,349,833	-	185,349,833	1,297,448,828
Grand Total	17	91	14	88,036	11,792	99,828	185,327	217,523	906,576,355	166,296,588	1,072,872,943	4,720,118,027

In total, there will be built 2 Type 1 schools with a construction cost of 276,414,618 leke per school, 7 Type 2 schools with a construction cost of 376,471,912 leke per school and 1 Type 3 schools with a construction cost of 234,736,581 leke per school and 7 Type 4 schools with a construction cost of 185,349,833 leke per school. As a result, the total construction costs for this project amounts to 4,720,118,027 leke. This cost will be covered by the concenssionary.

6.3.1.3. Other direct investment costs

Based on the report from Public Works General Directorate, in Document No. Prot. 21407/2, date 09.08.2016, other direct investment costs are :

- Study – Design
- Supervision of works
- Technical Control
- Technical Revision
- Fire protection
- Environmental Permit
- Tax of impact in infrastructure

Taking into account the data analyzed in this chapter on costs, it results that the direct investment const is as following :

Table 37 Summarizing table of other costs

Tipi	Nr i shkollave sipas tipit	Tot Sipërfaqe ndërtimi	Kosto Studime Projektim	Kosto Mbikqyrje	Kosto kolaudimi	Oponenca teknike	Zjarrefikes	Leje Mjedisore
Tipi 1	2	11,624	8,962,254	6,281,842	221,052	446,366	100,000	60,000
Tipi 2	7	55,286	70,772,689	29,245,329	1,054,124	1,754,725	350,000	210,000
Tipi 3	1	4,915	6,638,188	2,703,942	93,917	208,967	50,000	30,000
Tipi 4	7	28,004	37,421,081	15,275,677	537,985	1,293,922	350,000	210,000
Grand To	17	99,828	123,794,213	53,506,790	1,907,078	3,703,980	850,000	510,000

Tax of impact on infrastructure for public works is 0.

6.3.1.4. Furniture costs

In order to make schools functional, it is necessary to provide necessary IT equipment and laboratories. Furniture of new nine-year and high schools of Tirana Municipality will be realized based on law 69/2012 “On Pre-university education system in the Republic of Albania”, changed, for which Ministry of Education and Sports has prepared the Guideline “On designing of school buildings” (Norms and Standards).

Pursuant to needs for new schools, made evident by you, referring to MoES standard for classes typology and other venues in line with teaching program, there were carried out the respective calculations about the furniture costs per student, which is about 24.167 leke without VAT. This cost includes the amount for furniture without the equipments, computers and other necessary devices for laboratories of physics, chemistry and biology, etc.

For the calculation of furniture price, we considered the offers obtained by 6 economic units for furniture items according to technical specifications of MoES.

Concretelly, according to school typology, the furniture cost is as following :

Table 38 Cost of school furniture

Type of schools	No of classes	st/classes	Total no of students	Cost/students	Total cost
Type 1	20	30	600	24,167	14,500,000
Type 2	30	30	900	24,167	21,750,000
Type 3	20	24	480	24,167	11,600,000
Type 4	21	30	630	24,167	15,225,000

The furniture cost for basic education have been included three levels which envisage the following types :

For furniture of new kindergartens, we referred to the previous experience in furniture manner and their necessary quantity. Regarding furniture costs, we referred to the market prices, as well as previous indexed interim payment reports.

Costs for furniture of kindergartens per children is about 27.916 lek without VAT

This furniture cost, beside furniture of children premiee (sitting room, bedroom) includes also the office of director, psychologist and costs for kitchen furniture.

In conclusion, the furniture costs according to kindergarten typology is as following :

Table 39 –Furniture costs according to typology

Type	Location	Cycle	No class	St/Class	No st. total	Cost/child ren	Total cost
Type1	Urban	Kindergarten(3-5years)	4	24	96	27.916	2.680.000
Type2	Urban	Kindergarten(3-5years)	6	24	144	27.916	4.020.000
Type3	Rural	Kindergarten(3-5years)	4	24	96	27.916	2.680.000

Regarding costs for lab equipments, we referred to the purchase contract “Scientific Laboratories (Chemistry, Physics, Biology) for Pre-University schools” realized by Ministry of Education and Sports during 2016, in which results that the value per laboratory without VAT is as following:

Table 40 Costs for lab equipment

I	Basic education school	Amount/ laboratory
1	Natural Sciences Laboratory	186,998
2	Chemistry Laboratory	223,125
3	Physics Laboratory	1,183,602
4	Biology Laboratory	632,467
5	IT Laboratory	3,869,658
II	High school	-
1	Chemistry Laboratory	528,469
2	Physics Laboratory	1,294,500
3	Biology Laboratory	651,657
4	IT Laboratory	3,869,658

According to schools typology defined based on the designing standards of pre-university education objects, set by Ministry of Education and Sports, in which is determined the quantity of labs for each type, we have the following table :

Table 41 Costs for lab equipment according to schools typology

No	Tyes of schools	Cost without VAT
1	Basic education (Type 1)	6,095,850
2	Basic education (Type 2)	7,279,450
3	Basic education (Type 3)	5,743,950
4	Higher Middle Education (Type 4)	13,983,067

According to the analysis of all the above-mentioned data, it result that the total cost of furniture and lab equipments of 17 schools is 502,378,267 leke without VAT, according to the following table :

Table 42 Summarizing cost for school furniture, kindergarten venues and laboratories Kosto përmbledhëse për mobilim të shkollave, ambjenteve të kopështëve dhe laboratoreve

Tipi	Nr i shkollave sipas tipit	Kosto e mobilimit te shkollave	Kosto e mobilimit të kopështeve	Total Kosto Mobilimi	Kosto Laboratori	Total kosto pajisje, mobilje dhe orendi
Tipi 1	2	29,000,000	5,360,000	34,360,000	12,191,700	46,551,700
Tipi 2	7	152,250,000	28,140,000	180,390,000	50,956,150	231,346,150
Tipi 3	1	11,600,000	2,680,000	14,280,000	5,743,950	20,023,950
Tipi 4	7	106,575,000	-	106,575,000	97,881,467	204,456,467
Grand To	17	299,425,000	36,180,000	335,605,000	166,773,267	502,378,267

6.3.1.5. Direct Investment Cost

In conclusion, the direct investment cost of this project is estimated at **6,221,010,605 lekë**. About **814,242,252** leke out of them are calculated as necessary funds for expropriation, which will be covered by Tirana Municipality. Whereas, the total cost of the project that will be covered by the concessionary is **5,406,768,353** leke, where the construction cost is **4,720,118,027** leke without VAT, Costs of the Designing, Technical Revision, Supervision, Technical Control, furniture and laboratories is **686,650,327** leke without VAT. In details, the calculated categories are as following :

Table 43 Direct Investment costs according to categories

Viti	Pershkrimi	Grand total
A.	Kostot Direkte te Investimit	6,221,010,605
A.1	Kostot e Truallit	814,242,252
A.2	Kostot e Projektimit	123,794,213
A.3	- Ndertim + instalime	4,720,118,027
A.4	- Oponenca teknike	3,703,980
A.5	- Takse Infrastruktura	-
A.6	- Leje mjedisore	510,000
A.7	- Mbrojtje ndaj Zjarrit	850,000
A.8	- Kosto Supervizimi	53,506,790
A.9	- Kosto Kolaudimi	1,907,078
A.10	- Mobiljet dhe Orendi	335,605,000
A.11	- Investime IT&T dhe Labs	166,773,267

6.3.2. Direct Maintenance Costs

Based on calculations carried out from General Directorate No. 3 of City's Workers, annual maintenance cost per class is 422,107 leke with VAT or 351,755 leke without VAT. Making respective calculations, the annual cost for the general maintenance for each type of school is 8,442,132 leke per one school of Type 1, about 12,663,198 leke per one school of type 2, 8,442,132 leke per one school of type 3 and 7,386,865 per one school of type 4. The total maintenance cost for all schools is 165,676,838 leke per year. The annual cost of maintenance for calculation effects starts from 2018 and pursuant until the completion of PPP period. For more details, see the following tables:

Table 44 Annual cost of maintenance according to type of schools

Tipi i shkollave	Nr i shkollave	Kosto e mirëmbajtjes për shkollë	Kosto e përgjithshme e mirëmbajtjes
Tipi 1	2	8,442,132	16,884,264
Tipi 2	7	12,663,198	88,642,385
Tipi 3	1	8,442,132	8,442,132
Tipi 4	7	7,386,865	51,708,058
Grand Total	17	9,745,696	165,676,838

In total, for 7 years, the general maintenance cost will be 1,159,737,664 leke without VAT. About 763,592,363 leke without VAT out of them is the maintenance costs of assets and 396,145,301 leke without VAT is the cost of maintenance staff. The following table is the analysis of categories of maintenance expenses for each school in one year, without VAT:

Table 45 Seven-year cost of maintenance

B.	Kostot Direkte të Mirëmbajtjes	1,159,737,664
B.1	Kostot e Mirëmbajtjes së Aseteve	763,592,363
B.1.1	- Kostot e Mirëmbajtjes së Ndërtesave	176,556,240
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve	446,105,322
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi	55,846,898
B.1.4	- Mirëmbajtje IT&T (HD+SW)	85,083,903
B.2	Staf Mirembajtje	396,145,301
B.2.1	Staf Roje	58,272,458
B.2.2	Staf Sanitare	251,473,857
B.2.3	Staf Sekretare	50,368,763



Table 46 Detailed cost of maintenance for each school

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	Lyerje per klase	Riparim suvatim + hidroizolim per klase	Riparime dhe mirembajtje e Nderteses	Riparime Orendi shkollore	Riparime Pajisje PC	Materiale Pastrimi	Lëndë djegëse për ngrohje dhe ujë të	Mirembajtje kondicionim , impiante uji dhe	Sherbim roje	Sherbim pastrimi	Sherbim sekretarie	Total kosto mirembajtjes
1	NJA 02	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
2	NJA 02	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
3	NJA 02	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
4	NJA 05	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
5	NJA 07	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
6	NJA 08	Tipi 1	9-vjeçar	24	549,386	563,474	172,354	406,529	619,355	203,226	2,006,710	1,037,419	686,462	1,830,565	366,652	8,442,132
7	NJA 08	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
8	NJA 09	TIPI 1	9-vjeçar	24	549,386	563,474	172,354	406,529	619,355	203,226	2,006,710	1,037,419	686,462	1,830,565	366,652	8,442,132
9	NJA 09	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
10	NJA 11	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
11	NJA 11	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
12	NJA 11	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
13	NJA Dajt	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
14	NJA Farke	Tipi 3	9-vjeçar	24	549,386	563,474	172,354	406,529	619,355	203,226	2,006,710	1,037,419	686,462	1,830,565	366,652	8,442,132
15	NJA Kasha	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
16	NJA Kasha	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
17	NJA Kasha	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
Totali i Mirembajtjes				471	10,781,702	11,058,165	3,382,449	7,978,136	12,154,834	3,988,312	39,381,682	20,359,354	13,471,815	35,924,846	7,195,542	165,676,837

6.4 Analysis of PPP incomes

6.4.1. Tariff for the use of schools

Tariff for use of schools (hereinafter “Tariff”) will be calculated in such way so that could cover the costs of concessionary and guarantee a minimal income margin for the concessionary in order to make this PPP attractive and the best economic solution compared to other potential scenario. The tariff is paid for the entire maintenance and administration period of schools by concessionary, i.e. for 7 years. This tariff is paid to every year by Tirana Municipality through financing resources detailed as following. This scheme provides for the construction of 17 schools in a record time, solving the two-shifts teaching and over-crowded classes, but as long as all the risks for maintenance and careful use of the asset will be under the responsibility of the concessionary and related to the payments, this will enable qualitative constructions in the interest of the community.

As long as the direct investment costs, i.e. construction and functioning of schools is calculated based on interim payment reports, which include the income margin of the contractor, on this category will not be calculated the additional income margin. But on the other side, as long as the invested values of the concessionary in this respect will be covered in a seven-year period, he must be minimally reimbursed for the value in time of the money, as well as for the normal and extraordinary maintenance part for this period.

In this respect, as the income margin has been considered the limit of average norm of Albanian government obligations for a fixed seven year period⁸, respectively the results of seven year obligations from 2015 until 15.09.2016.

⁸ <http://www.financa.gov.al/al/raportime/borxhi/ankandet-e-emetimit-te-letrave-me-vlere-te-qeverise/rezultatet-e-ankandeve/2016>

Table 47 Results of auctions for 7-seven year fixed obligations

ISIN	Dt.Ankandi	Ankandi	Muaji	Datë Emetin ¹	Datë Maturin ¹	Shuma e shpallur (filestare)	Shuma e shpallur (nd. strukture)	Shuma e kërkuar	Shuma e pranuar	Prorata Konkurses	Prorata Jo Konkurse	Yieldi Uniform i Pranuar
AL0017NF7Y23	13.09.2016	7vjeçar/7years(fix)	Shtator	15.09.2016	15.09.2023	3,000,000		2,309,000	2,309,000			4.89%
AL0016NF7Y23	01.06.2016	7vjeçar/7years(fix)Rihapje	Qershor	03.06.2016	16.03.2023	2,000,000		3,141,400	2,000,000	4.40%		4.00%
AL0016NF7Y23	11.03.2016	7vjeçar/7years(fix)	Mars	16.03.2016	16.03.2023	3,000,000		8,247,000	2,999,900	76.48%		4.90%
AL0015NF7Y22	14.12.2015	7vjeçar-fiks	Dhjetor	16.12.2015	16.12.2022	2,500,000		5,288,600	2,500,000	67.70%	100.00%	6.79%
AL0014NF7Y22	14.09.2015	7vjeçar-fiks	Shtator	16.09.2015	16.09.2022	1,000,000		1,430,600	1,000,000	100.00%	100.00%	7.78%
AL0013NF7Y22	12.06.2015	7vjeçar-fiks	Qershor	16.06.2015	16.06.2022	3,000,000		2,953,500	2,953,500	100.00%	100.00%	7.80%
AL0012NF7Y22	12.03.2015	7vjeçar-fiks	Mars	16.03.2015	16.03.2022	2,500,000		2,815,800	2,500,000	80.98%	77.92%	7.81%
Yieldi Mesatar i pranuar											6.28%	

The income margin will be object of bidding procedures of competitors in this PPP, but in the mean time, it is necessary to understand the general value of this PPP. The income margin will be calculated for the remaining value of the direct investment every year and on annual maintenance costs. Thus, the financing scheme is attractive for potential competitors and total cost of the project is not higher than the traditional financing methods.

Based on the calculations, annual tariff to be paid to the concenssionary with a margin of about 6.28% will be as following :

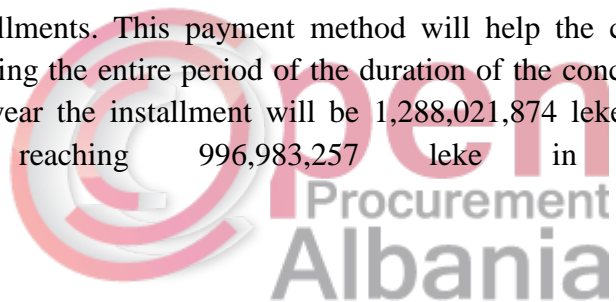
Table 48 Annual tariff to be paid to the concenssionary

A	B	C	D	E	F	G	H	I	J	K	L	M
Nr rendor	Viti	Kosto Direkte e Investimit ne Fillim të Periudhës (pa TVSH) (C3=F2)	marzhi i fitimit	Shlyerja vjetore për Koston Direkte të Investimit (C2/B8)	Vlera e Mbetur e Koston Direkte te Investimit (C-E)	Marzhi i fitimit mbi koston Direkte të investimit (C*D)	pagesa vjetore për koston direkte të investimit Pa TVSH (E+G)	kosto vjetore mirembajtjeje Pa TVSH	Marzhi i fitimit mbi Mirembajtjen (D*I)	pagesa vjetore për koston direkte të investimit Pa TVSH (I+J)	Total Marzhi i Fitimit	Tarifa Vjetore Pa TVSH
1	0	5,406,768,353										
2	1	5,406,768,353	6.28%	772,395,479	4,634,372,874	339,545,053	1,111,940,532	165,676,837	10,404,505	176,081,342	349,949,558	1,288,021,874
3	2	4,634,372,874	6.28%	772,395,479	3,861,977,395	291,038,616	1,063,434,096	165,676,837	10,404,505	176,081,342	301,443,122	1,239,515,438
4	3	3,861,977,395	6.28%	772,395,479	3,089,581,916	242,532,180	1,014,927,659	165,676,837	10,404,505	176,081,342	252,936,686	1,191,009,002
5	4	3,089,581,916	6.28%	772,395,479	2,317,186,437	194,025,744	966,421,223	165,676,837	10,404,505	176,081,342	204,430,250	1,142,502,566
6	5	2,317,186,437	6.28%	772,395,479	1,544,790,958	145,519,308	917,914,787	165,676,837	10,404,505	176,081,342	155,923,814	1,093,996,130
7	6	1,544,790,958	6.28%	772,395,479	772,395,479	97,012,872	869,408,351	165,676,837	10,404,505	176,081,342	107,417,378	1,045,489,694
8	7	772,395,479	6.28%	772,395,479	0	48,506,436	820,901,915	165,676,837	10,404,505	176,081,342	58,910,941	996,983,257
Grand total				5,406,768,353		1,358,180,210	6,764,948,563	1,159,737,859	72,831,538	1,232,569,397	1,431,011,748	7,997,517,960

Table 49 Amount of annual installment

Nr rendo r	Viti	Tarifa Vjetore Pa TVSH
1	0	
2	1	1,288,021,874
3	2	1,239,515,438
4	3	1,191,009,002
5	4	1,142,502,566
6	5	1,093,996,130
7	6	1,045,489,694
8	7	996,983,257
Grand total		7,997,517,960

To guarantee the economic success of the scheme, the concenssionary will be paid with decreasing annual installments. This payment method will help the concenssionary to avoid financial difficulties during the entire period of the duration of the concenssion period contract. Therefore, in the first year the installment will be 1,288,021,874 leke and each year will be decreasing until reaching 996,983,257 leke in the last year.



6.4.2 Financing source

The general amount of this project is 8,811,760,212 leke, about 814,242,252 out of them are expropriations to be paid by Tirana Municipality to the expropriated persons and 7,997,517,960 leke is the amount of the concension:

Table 50 General value of the project

Nr	Vlera e Pergjithshme e Projektit	Çmimi	Sasia	Vlera totale
1	Kostoja e përgjithshme e shpronësimit	814,242,252	1	814,242,252
2	Kosto direkte e Investimit pa TVSH	5,406,768,353	1	5,406,768,353
2.1	Kosto direkte e investimit te koncesionarit Pa TVSH	5,406,768,353	1	5,406,768,353
3	Kosto e mirembajtjes pa TVSH	165,676,837	7	1,159,737,859
3.1	Kosto e mirembajtjes te koncesionarit Pa TVSH	165,676,837	7	1,159,737,859
4	Marzhi i Fitimit	1,431,011,748	1	1,431,011,748
4.1	Marzhi i Fitimit të Koncesionarit	1,431,011,748	1	1,431,011,748
	Total i pergjithshëm i kostos(1+2+3+4+5)			8,811,760,212

Table 51 Amount to be covered by municipality and concensionary

Nga të Cilat:	Bashkia	Koncesionari	Totali
1. Vlera e Përgjithshme e Projektit Pa TVSH	814,242,252	7,997,517,960	8,811,760,212
Totali	814,242,252	7,997,517,960	8,811,760,212

This expenses will be covered by incomes of the Municipality, Conditioned Grants of Ministry of Finance for project.

Incomes of Tirana Municipality for this project will be generated from the Interim Tax on Education Infrastructure, which is applied upon decision of Municipal Council No. 59, dated 30.12.2015, "On taxes and local tariffs system in the city of Tirana".

Table 52 Forecast of incomes from Interim Tax on Education Infrastructure

Description	PLAN YEAR 2016	FORECAST 2017	FORECAST 2018
Interim Tax on Education Infrastructure	870 000 000	940 000 000	1 000 000 000
Families	320 000 000	340 000 000	350 000 000
Trade subject	550 000 000	600 000 000	650 000 000

Incomes from Interim Tax on Education Infrastructure are estimated at 870 million leke in 2016, whereas these incomes are envisaged to increase to 940 million leke in 2017 and 1 billion leke in 2018. This interim tax will be applied for 7 years and for 2019-2022 period, the annual incomes are projected to amount to 1 billion leke. Incomes from specific transfer from Ministry of Finance will be 700 million lek per year. Therefore, the fund at the disposal of Tirana Municipality for completion of periodical payments is estimated at 1 billion and 700 million leke per year.



6.5 Financial Analysis

Table 53 Summarized table of costs and incomes of the project

Viti	Pershkrimi	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
A.	Kostot Direkte te Investimit	6,221,010,605	-	-	-	-	-	-	-	6,221,010,605
A.1	Kostot e Truallit	814,242,252								814,242,252
A.2	Kostot e Projektimit	123,794,213								123,794,213
A.3	- Ndertim + instalime	4,720,118,027	-							4,720,118,027
A.4	- Oponenca teknike	3,703,980								3,703,980
A.5	- Takse Infrastrukture									-
A.6	- Leje mjedisore	510,000								510,000
A.7	- Mbrojtje ndaj Zjarrit	850,000								850,000
A.8	- Kosto Supervizimi	53,506,790								53,506,790
A.9	- Kosto Kolaudimi	1,907,078								1,907,078
A.10	- Mobiljet dhe Orendi	335,605,000	-	-	-	-	-	-	-	335,605,000
A.11	- Investime IT&T dhe Labs	166,773,267								166,773,267
B.	Kostot Direkte të Mirëmbajtjes	-	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	1,159,737,859
B.1	Kostot e Mirëmbajtjes së Aseteve	-	109,084,634	109,084,634	109,084,634	109,084,634	109,084,634	109,084,634	109,084,634	763,592,438
B.1.1	- Kostot e Mirëmbajtjes së Ndërtesave	-	25,222,316	25,222,316	25,222,316	25,222,316	25,222,316	25,222,316	25,222,316	176,556,212
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve dhe Orendi		63,729,348	63,729,348	63,729,348	63,729,348	63,729,348	63,729,348	63,729,348	446,105,436
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi		7,978,136	7,978,136	7,978,136	7,978,136	7,978,136	7,978,136	7,978,136	55,846,952
B.1.4	- Mirëmbajtje IT&T (HD+SW)		12,154,834	12,154,834	12,154,834	12,154,834	12,154,834	12,154,834	12,154,834	85,083,838
B.2	Staf Mirembajtje	-	56,592,203	56,592,203	56,592,203	56,592,203	56,592,203	56,592,203	56,592,203	396,145,421
B.2.1	Staf Roje		13,471,815	11,226,513	9,355,427	7,796,189	6,496,824	5,414,020	4,511,684	58,272,472
B.2.2	Staf Sanitare		35,924,846	35,924,846	35,924,846	35,924,846	35,924,846	35,924,846	35,924,846	251,473,922
B.2.3	Staf Sekretare		7,195,542	7,195,542	7,195,542	7,195,542	7,195,542	7,195,542	7,195,542	50,368,794
A+B	Totali i Kostove (A+B+C)	6,221,010,605	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	7,380,748,464
C.	Të Adhurat	814,242,252	1,288,021,874	1,239,515,438	1,191,009,002	1,142,502,566	1,093,996,130	1,045,489,694	996,983,257	8,811,760,212
C.1	Likuidimet e shpronësimeve	814,242,252								814,242,252
C.2	Tarifa e Shfrytëzimit pa TVSH		1,288,021,874	1,239,515,438	1,191,009,002	1,142,502,566	1,093,996,130	1,045,489,694	996,983,257	7,997,517,960
D	Fitimi (humbja)	(5,406,768,353)	1,122,345,037	1,073,838,601	1,025,332,165	976,825,729	928,319,293	879,812,857	831,306,420	1,431,011,748
E	Fitimi (humbja) progresive	(5,406,768,353)	(4,284,423,316)	(3,210,584,715)	(2,185,252,551)	(1,208,426,822)	(280,107,529)	599,705,327	1,431,011,748	1,431,011,748
F	15% Tatim fitim	0	0	0	0	0	0	(89,955,799)	(124,695,963)	(214,651,762)

Table 54 Cashflow of the project t

Viti	Fluksi i Arkës								Grand total	
	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7		
Flukse dalese nga Investimet	-6,221,010,605	-	-	-	-	-	-	-	-	- 6,221,010,605
Flukse dalese nga Mirëmbajtja	-	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	165,676,837	- 1,159,737,859
Flukse dalese nga Taksat	-	-	-	-	-	-	89,955,799	124,695,963	-	- 214,651,762
Totali i flukseve dalese	-6,221,010,605	- 165,676,837	- 165,676,837	- 165,676,837	- 165,676,837	- 165,676,837	- 165,676,837	- 255,632,636	- 290,372,800	- 7,595,400,226
Flukse hyrese nga Operimet	814,242,252	1,288,021,874	1,239,515,438	1,191,009,002	1,142,502,566	1,093,996,130	1,045,489,694	996,983,257	8,811,760,212	
Gjendja e Arkes ne fund te periudhes	-5,406,768,353	1,122,345,037	1,073,838,601	1,025,332,165	976,825,729	928,319,293	789,857,057	706,610,457	1,216,359,986	
Gjendja e arkes progresive	-5,406,768,353	- 4,284,423,316	- 3,210,584,715	- 2,185,252,551	- 1,208,426,822	- 280,107,529	509,749,528	1,216,359,986	1,216,359,986	

6.6 Economic Profitability of the Project

6.6.1 NPV (Net Present Value)

NPV, as standard method for assessment of long-term projects through analysis of time value of money, presents the discounted amount of cashflow of the project. Every investor, when decides to undertake an investment analyzes the incomes generated by one project compared to the potential incomes of the invested money in another project. In general, these analyses are carried out taking into account the interest rate in case of the investment of the money, e.g. treasury bonds or government obligation, which have almost a zero risk.

Classical formula of NPV calculation, if the investment is made in one year, is :

$$NPV = \sum_{t=1}^T \frac{C_t}{(1+r)^t} - C_0$$

where:

C_0 – presents the money spent for the initial investment

C_t – presents the incomes from the investment ;

t – presents duration of the project ;

r – presents the expected rate of discount .

To see the economic profitability of the project, the financial model has been tested with several potential discount rates. From this analysis, it resulted that the potential concessionaries will be interested in this project only if their opportunity cost is lower than 5.79%. In other words, for every discount rate over 5.79% this project does not consist of any economic profitability for the concessionary.

norma e skontimit e parashikuar NPV	NPV			
	5%	5.79%	6%	7%
	29,884,696	15,136	7,682,796	42,661,484

6.6.2 IRR (Internal Rate of Return)

IRR is a method used to measure the incomes of potential income. IRR is a discount rate that makes the net present value (NPV) of all cashflows of a project equal to zero. According to economic theory, every project with an IRR higher than its capital cost is profitable, as a result investors will be interested to invest in it. Based on the financial analysis, the IRR of this project is estimated at 5.79%.

Table 55 Internal Rate of Return of the project

Viti	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
Gjendja e Arkes ne fund te periudhes	-1,176,772,556	244,264,887	233,707,556	223,150,225	212,592,894	202,035,563	171,909,712	153,782,766	264,671,046
IRR	5.79%								

6.6.3 Payback Period

The payback period presents the necessary time needed for the invested capital to recover the initial investment from the project incomes. In general, the payback period is calculated by dividing of the investment cost by annual incomes. Hence, as long as the annual incomes in this project consist of decreasing installments, the payback period is assessed by analyzing the cashflow to determine the latest year when this flow is negative.

Periudha e Vetëshlyerjes

Viti i fundit i gjendjes se arkës negative		5
Gjendja e arkës kumulative ne vitin e fundit negativ	-	61,021,432
Gjendja e arkës pozitive krijuar ne vitin vijues		171,909,712
PBP (periudha e veteshlyerjes)		5.35

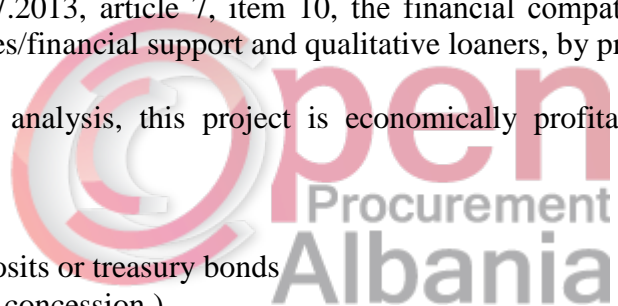
In this respect, the self-payment period for this project is achieved in 5.35 years. Nevertheless, taking into account that payment from Tirana Municipality will be annual, then the self-payment period will not be 5.35 years, but 6 years.

6.6.4 Financial compatibility

According to CoMD no. 575, dated 10.07.2013, article 7, item 10, the financial compatibility of a project “indicates whether the project seems to be able to attract guarantees/financial support and qualitative loaners, by providing a strong and reasonable financial.”

Based on the above-mentioned financial analysis, this project is economically profitable and this profitability is presented as following:

- NPV = 5.79% > 0
- IRR = 5.79% > than interest of deposits or treasury bonds
- PBP = 6 year < 7 years (duration of concession)



6.7 Quantitative and Qualitative Risk Analysis

The main goal of Risk Analysis is to identify and evaluate the gamma of risks that may affect the project. Therefore, a strategy on risk management is carried out in order to guarantee the successful realization of the project. In compliance with Decision of Council of Ministers No. 575, dated 10.07.2013 “On approval of rules for evaluation and issuance of concession/private-public partnership” following is a risk analysis regarding this project.

1.7.1 Qualitative Risk Analysis

Land Risk

Description of the Risk: Lands selected for construction of 17 schools will mostly be owned by the state, whereas the private-owned lands will be expropriated in line with the legislation in force and will be put at disposal of the concessionary. As a result, this risk has a low probability, almost zero, about this project. Regarding the necessary permits, there is no risk, because Tirana Municipality is itself the responsible body to grant these permits. In relation to environmental standards, the selected lands are plots located in areas where the environmental standard is not affected, therefore the risk is considered zero.

Management of risk: This risk is assessed with a zero probability and it is covered by Tirana Municipality. Tirana Municipality will carry out all the procedures for expropriation of private lands out of this PPP scheme, before the beginning of works. If any of the selected lands is in a ownership conflict, turning expropriation impossible, authorities will ask for information at the Immovable Properties Registration Office for alternative sites to be used. Regarding geological conditions and environmental standards, there has been an environmental study part of this feasibility study, which has come to the conclusion that the construction of these objects does not have an impact on the environmental standards. Hence, during the procedures for obtaining a construction permit, there will be also a detailed environmental study by the concessionary.

Risk of design, construction and functioning

Description of the Risk: Calculation of costs for construction and furniture of new schools is based on above-mentioned methodology, which takes into consideration the cost of schools built by Tirana Municipality in the last three years. Therefore, the possibility of a higher construction cost than the calculated cost is almost zero. Construction and functioning of schools depend in a certain scale on the obtaining of construction permit and meeting of preconditions for obtaining of this permit, such as environmental permit, connection with the electrical grid or water supply system, approval of projects for fire protection, etc. The concessionary has the right to draft the designing, prepare the documents for equipment with a construction permit, as well as to build the school objects. From this point of view, the risk of delays in equipment with construction permits, delays in kick-off works, readiness is possible.

Management of risk: This risk belongs to the concessionary. He is accountable for compilation of documents and equipment with construction permit. If the concessionary does not prepare the project on time and will neglect the application for construction permit by not applying on time or having irregularities in documents, or failure to start works on time, then he will be accountable for failure in starting works on time and will compensate the contracting authority according to the requirements in the concessionary contract. Likewise, as long as the concessionary is responsible for drafting and implementing the project, each delay in completion of construction works, excluding the case when the delay comes as a result of a force majeure will be under the concessionary's responsibility and will be forced to compensate the contracting authority according to requirements in the concessionary contract.

Functioning Risk

Description of the Risk: The possibility that the new schools will not be functional after the construction is related to the non-qualitative works by the concessionary, which might make the performance of teaching in new buildings impossible. This risk has a low probability because the completion of works will be carried out by the technical supervisor and financial bill of quantities will be supervised by the contracting authority. Regarding the risk of a higher maintenance cost than expected, the probability is almost zero, because the annual maintenance cost is calculated based on annual expenses of Tirana Municipality for the maintenance of existing schools, which have been constructed long ago. According to engineering standards, the maintenance cost of newly-built objects is lower than that of the objects built before.

Management of risk: The probability of this risk is low and it is considered as a risk transferred to the concessionary. In case the construction quality will make the performance of teaching process impossible, the concessionary will be accountable and will be forced to carry out extra works until the works quality will be in line with the requests of the designing tasks. In case school buildings might have any problems due to construction works, in the course of seven years of the contract duration, which will make the teaching process impossible, the concessionary will be obligated to carry out extra works to make the school functional again. If the maintenance cost is higher than predicted, this would be a result of the inaccuracies in the design or construction. Therefore, the risk belongs to the concessionary, who is accountable for the designing and building of these schools.

Risk of demand and other trade risks

Description of the Risk: This risk is related to the situations when use of the object is different from what is expected or the generated incomes are lower than the forecast. As long as objects to be build are school buildings that will not have a different use and cannot generate incomes, this risk cannot applied on this project.

Management of risk: The possibility that this project can be affected by this risk is zero, because it is not subject of its impact.

Economic and Financial Risks

Description of the Risk: As long as this project includes financial transactions to be implemented in the course of time, there exists the possibility of an impact from economic and financial risks. The unpredicted increase of the norms of interest may increase the financial costs of the project from the concessionary. On the other side, changes in exchange rate course may have a worsening affect in the finances of the concessionary if his incomes and expenses are in a different currency, e.g. the concessionary has been granted a loan in EUR of USD for the financing of the project, while Tirana Municipality makes the annual payments in Leke. In the end, as long as this project includes periodical payments for a seven year period, there exists the possibility of an impact from inflation in the concessionary's incomes.

Management of risk: Due to the fact that Albania is a country with a sustainable macroeconomic situation, the probability that this project may be affected by such risk remains low. The risk of interest rates or exchange rates belongs to the concessionary and shall be calculated in its financial projections. Inflation risk is shared among the concessionary and Tirana Municipality. As long as the Bank of Albania policy is keeping inflation under 3% and duration of the project is only 7 years, the probability of this risk is low. Nevertheless, in the definition of income margin as related to interest rate of 7 year obligations, Tirana Municipality guarantees the concessionary the same protection toward the economic and financial risks as guaranty of Albanian Government for buyer of obligations.

Risks of assets ownership

Description of the Risk: This risk is related to the possibility that technology might get older or if the value of assets might be different at the end of the contract. As long as, the construction consists of school buildings, which will be maintained by the concessionary for seven years, the probability of this risk is low. Nevertheless, the quality and value of assets may be lower than the projection due to non-qualitative maintenance.

Management of risk: This risk is transferred to the concessionary. Maintenance of schools buildings and their furniture will be completed in line with the standards in force and will be supervised by the Contracting Authority. In case the concessionary will not maintain schools in line with the above-mentioned determination, the concessionary contract will envisage provisions obligating him to pay the damage. If at the end of the contract, the value of assets will be different from the predicted, the concessionary contract will define provisions obligating the concessionary to pay the damage.

Political risk

Description of risk: The risk of an impact from political decisions on the project is evident. As long as it is a project initiated from Tirana Municipality, a local government body, the success of the project depends on the coordination with local government. Likewise, there is a potential possibility that the results of next local elections – a potential change of Tirana mayor – may also cause the change of priorities and as a result the project can be blocked.

Management of risk: This risk is transferred on the Contracting Authority - Tirana Municipality. To ensure the consent of central government, with the approval of the feasibility study from the head of Tirana Municipality, will be required also an approval from the Ministry of Finance and Ministry of Education and Sports. Regarding risk of a negative impact of the project as a result of changes in the leadership of Tirana Municipality, the concessionary contract will envisage provisions that obstacle the dismissal of the Contract for non-legal reasons by the Contracting Authority.

Risks deriving from change of legal framework

Description of risk: Potential changes in legislative framework may affect the project positively and negatively. As long as the project is related to the construction of school buildings, the possibility of an affect from legal changes is related only to standards and construction manuals. Therefore, this risk has a low probability. Regarding changes in fiscal laws, the negative or positive influence can be felt only in the finances of concessionary.

Management of risk: This risk falls on the concessionary. In order to have minimal effects, the concessionary contract will include provisions that protect it from discriminating changes in law – always if the discrimination is proved by the court. On the other side, the concessionary will be forced to implement any legal changes coming as a result of governance policies.

Risk from force majeure

Description of risk: Force majeure risks, such natural calamities, civil unrests or wars are transferred to the concessionary and contracting authority. Taking into account the fact that Albania is a member of NATO and with a clear perspective of EU integration, the probability of risks from wars or unrests is almost zero. On the other side, the probability of and impact from earthquakes or other natural disasters on the project is low – How? As a result of the above-mentioned analysis of environmental impact on the project.

Management of risk: Probability of these risks is very low and it is transferred on both parts. The concessionary contract will envisage clauses of force majeure which will guarantee that any negative impact on the project shall be divided between the parties.

6.7.2. Quantitative Analysis of Risks

This analysis aims to prioritize risks that may affect the project by calculating their probability and potential impact on the achievements of project objectives. The quantitative evaluation is based on the probability of occurrence of each risk and potential impact on costs and deadlines of the project.

Impact of risks on project costs is calculated based on the specific weight of each of them in the project's cost. Whereas, the impact on deadline of completion of works is calculated based on legal deadlines for completion of defined procedures that may be necessary for well-going of the project.

Following is a quantitative analysis on the impact of each risk in the costs and deadlines for realization of the project.

Lands risk. Probability of this risk is low, 0-5%. Its impact on the project's cost is zero because expropriations of private lands that will be used for construction of school will be carried out by Tirana Municipality with a special fund out of the financial scheme of this project. The lands selected for construction of the schools are state-owned and private properties. In case use of any of these lands is impossible than will be used an alternative selected land with the necessary information from the Immovable Properties Registration Office. As a result, the impact on the deadline of completion of works is related the handing in of the state-owned land if it is not a property of Tirana Municipality or expropriation of private properties. The impact on deadline of works is calculated at 3 - 6 months.

Risk of designing, construction and functioning. Probability of this risk is low, 5-10%. The costs assessment process of the schools construction is carried out in line with the MoES guidelines manuals and based on the construction of schools by Tirana Municipality in the course of last years and prices have been indexed according to construction prices index of INSTAT. Hence, maximal influence of this risk in costs is less than 5%. On the other side, the deadline of works may not be respected as a result of failure to receiving the construction permit or other permits on time by the concessionary or due to slower completion of works than the calendar of works. In case designing is delayed or documents for equipment with necessary permits are not compiled, the impact on deadline of works is calculated from 3 to 12 months.

Functioning Risk. Probability of this risk is calculated at 0-5%. As long as this project is related to the construction of new schools, there exists the possibility of a low quality of construction. This could require additional works beyond the defined deadline. The impact of this risk in the deadline of works is calculated from 1 to 3 months, whereas the impact on total cost of the project is envisaged at 5-10%. There exists an opportunity that the maintenance cost may result higher than the forecast, but compared to total cost of the project the impact of this cost is almost zero.

Risk of demand and other trade risks. This risk cannot be applied on the project and the possibility of an impact from it on cost or deadlines is zero.

Economical and financial risks. Probability of this risk is low, 0-5%, taking into consideration that it is not a long-term concession where the concessionary generates incomes from the operation of the object of concession. As long as incomes of the concessionary are guaranteed by Tirana Municipality and covered by inflation, impact of risk on total cost of the project is low, 5% - 10%. On the other side, the impact on deadlines of completion of works is not envisaged longer than 12 months.

Risks of assets ownership. Probability of this risk is calculated at 0 - 5%. Its impact on total cost of the project is related to the maintenance costs, in case the latest results higher than forecast and a more rapid amortization of buildings that envisaged in the concession contract. Its impact on project's costs is predicted to be at maximum 5%. Probability of this risk does not affect the deadline for realization of works.

Political risk. Probability of such risk is medium low and is calculated at 10 - 20%. The occurrence of such risk may block works or interrupt the periodical payments for the concessionary by increasing the financing cost of the project and delaying the realization of works. In this respect, a potential influence of this risk on costs is calculated at 20 - 30%, whereas the impact on deadline of realization of works is calculated from 16 to 24 months.

Risk of change of legal framework. This risk has a probability of 5 to 15%. Potential legal changes, such as in standards to be followed for construction of new schools, may considerably boost the project cost. Therefore, the potential risk on costs is medium, varying from 20 to 40%. Likewise, potential legal changes may cause the re-drafting of the project or other delays that may be negatively affect the deadline for realization of works. Therefore, impact on deadline of works is calculated from 12 to 16 months.

Force Majeure Risk. Probability of this risk to happen is very low - 0 to 5%. Nevertheless, in case it happens, the impact on costs or deadline of works will be medium high. Therefore, impact on cost is calculated at 30% to 50%, whereas impact on deadline of works from 12 to 24 months.

Table 77 Summarizing table of impact of risks

No.	Risk	Probabiliy	Impact on cost	Impact on works deadline
1	Risk on land	0% - 5%	0%	3 - 6 months
2	Risk on designing, construction and implementation	5% - 10%	0% -5 %	3 - 12 months
3	Functioning Risk	0% - 5%	5% -10%	1 - 3 months
4	Risk of demand and other commercial risks	-	-	-
5	Economic and Financial Risks	0% - 5%	5% -10%	6 - 12 months

6	Risks of assets ownership	0% - 5%	0% - 1%	-
7	Political Risk	10% - 20%	20% - 30%	16 - 24 months
8	Risk of change of legal framework change	5% - 15%	20% - 40%	12 - 16 months
9	Force majeure	0% - 5%	30% - 50%	12 - 24 months



6.8 Sensitivity Analysis

Main factor that may change during the tender process is the income margin. At the same time, the details of respective costs will be respectively defined based on factual approved projects, depending on the approved projects. The direct cost will be calculated base on the factual realized volumes, which in no way will be higher than the costs envisaged in this project.

Nevertheless, due to the effects of sensitivity analysis, the calculation will made as if the costs have increased and decreased by 5% and 10%, whereas the income margin increases and decreases by 5% and 10%.

Table 78 Sensitivity Analysis if costs and income margin rincrease or decrease by 5 – 10 %

	Incomes and expenses increase by 10%	Incomes and expenses increase by 5%	Basic Model	Incomes and expenses decrease by 5%	Incomes and expenses decrease by 10%
	10%	5%		-5%	-10%
Sensitivity Norm			0		
Outflow from Investments	- 7,267,445,188	- 6,937,106,771 ^F	6,606,768,353	- 6,276,429,936	-5,946,091,518
Outflow from Maintenance Incomes	- 1,275,711,645 10,274,681,048	- 1,217,724,752 9,786,000,321	1,159,737,859 9,197,517,960	- 1,101,750,966 8,713,446,063	-1,043,764,073 8,188,265,320
Income before taxes	1,731,524,215	1,631,168,798	1,431,011,748	1,335,265,161	1,198,409,729
Tax on Income 15%	259,728,632	244,675,320 -	214,651,762	- 200,289,774	- 179,761,459
Nett income	1,471,795,583	1,386,493,478	1,216,359,986	1,134,975,387	1,018,648,270
NPV by 5.79%	110,223,600	81,672,242	170,329	23,634,170	- 68,587,789
IRR	6.38%	6.25%	5.79%	5.64%	5.34%
Self-Payment Norm	5.20	5.28	5.35	5.43	5.51

2. Explanation of PPP Decision

7.1 Explanation of Decision of Concession/Public Private Partnership A

Based on Council of Ministers Decision No. 575, dated 10.07.2013, “On approval of rules for assessment and granting of concession/public private partnership”, the explanation of the decision is carried out based on definition of value for money and total nett costs of the project in case this could be obtained in a traditional procurement method. In this respect, it is used the Public Sector Comparison (PSC) that measures exactly the cost of the project in case it would be financed by the contracting authority through traditional procurement.

In contrary to normal concession/public private partnerships, where the concessionaires build public infrastructure objects with their funds, operate them until they obtain the investment costs plus the incomes and then transfer this object to contracting authority, this concession/public private partnership is characterized by another nature. As long as the object of the concession/public private partnership is the construction of school buildings, its incomes will not come from the use of the concession, but from the annual transfers to be paid by Tirana Municipality to the concessionary calculating an income margin of about 6,28%. Taking into consideration even the fact that for solving the over-population and two-shift learning in schools and meeting the MoES standards, Tirana Municipality needs 17 new schools, then the explanation of the decision deals with the opportunities of the Municipality for financing the construction of these new schools through traditional procurement methods.

Based on the above-mentioned economic analysis, the direct investment cost for construction of 17 new schools is 7,743,692,163 leke. For construction of these schools through traditional procurement methods, Tirana Municipality can use three methods : i) direct immediate procurement of 17 new schools, ii) procurement of 17 new schools expanding it in a three-year period iii) procurement of one or several schools per year according to its financial opportunities.

- 1.** The direct investment cost for construction of 17 new schools is 7,743,692,163 leke. Taking into consideration that 2015 factual budget of Tirana Municipality was 8,730,933,000 leke (including also the conditioned transfer), is easily understandable that financial possibility of the Municipality for procurement of this project is zero. The construction cost of this project consists of about 89% of the municipality’s factual budget and in case it would finance the project itself, the Municipality will not be able to offer any other service, even the payment of the wages for its employees.
- 2.** According to Law no. 9643, dated 20.11.2006, “On public procurement”, changed, a project can be procured according to traditional methods implemented in the course of a three year period. If Tirana Municipality could procure the construction of 17 new schools in the course of three years than the Municipality

will need to spend 2,581,230,721 leke per year. This amount, compared to 2015 factual budget, is equal to 30% of total budget and 51% higher than total of capital expenses for 2015, which were estimated at 1,701,849,000 leke. Hence, if Tirana Municipality would choose this procurement method, it will not be able to offer any other public investment in other sectors for three 3 years, but it would also need to cover the difference of about 879,381,721 leke by reducing operative or staff expenses. Even if they were going to be used for this purpose, the incomes from Interim Tax on Educational Infrastructure, which are estimated at 940,000,000 leke per year, Tirana Municipality would still need to cover each year with its own incomes the difference between the necessary 2,581,230,721 leke and 940,000,000 leke which are the incomes from the interim tax. This difference is 1,641,230,721 leke and still is almost equal to the total of 2015 capital expenses. Thus, even if it would use this possibility, the Municipality will not be able to carry out any public investment in other sectors such as local public services, roads and public transport, housing, social healthcare, etc. that would considerably worsen the life standard of Tirana citizens.

3. If it chooses to procure one or several schools per year, Tirana Municipality could use for financing of this project the investment fund of the pre-university education program and incomes from the Interim Tax on education infrastructure. The average factual investments in the last three years of the pre-university education program were estimated at 262,621,006 leke. It is important to highlight that through this budget program only 10% of the fund has been used for construction of new schools in the last years, and the majority of the fund was used for reconstruction of nurseries, schools and kindergartens. This is because the amortization level of education objects has been high and urgent need was and is focused on their reconstruction in order to enable a normal teaching process. Taking into account even the fact that with the territorial reform, Tirana Municipality is responsible also for nurseries, kindergartens and schools in rural zones, which suffer from even a higher level of amortization, the possibility of the Municipality to finance the construction of new schools through this budget program is minimal. As a result, procurement of new schools would be able only from the Interim Tax on Education Infrastructure. Average annual incomes envisaged from this tax is 940,000,000 leke per year. Taking into account that this tax is collected for a seven year period, in total, the Municipality will collect 6,580,000,000 leke from this tax. If it chooses this type of procurement method, the Municipality would built only 14 new schools out of 17 necessary. And the most important thing is that two new schools could be procured each year, and considering that a works for one school last for an average of 20 months, construction will end 9 years after the kick-off works.

Compared to three possibilities for use of traditional public procurement methods, this concession/public private partnership offers considerable advantage and guarantees the realization of the project in a much shorter period of time and higher efficiency of value for money.

The first two possibilities, immediate procurement of 17 new schools and their procurement for a three year period are clearly beyond the financial possibilities of Tirana Municipality. Therefore, with the use of these traditional procurement methods this project is not feasible and financially impossible. The third above-mentioned possibility does not fully complete the project, because it can enable construction of only 14 out of 17 necessary schools. Likewise, these 14 schools can not be built immediately but in the next nine-years. Hence, this opportunity does not only offer a partial solution to the over-population and two-shift learning problems, but also does not offer a solution in the course of time.

In contrary to three possibilities of traditional procurement of the project, the scheme of proposed concession/public private partnership is not only possible to be realized immediately and with feasibility, but also without an extra cost for Tirana Municipality budget, as long as it does not touch the investment fund for the future. Through this scheme, Tirana Municipality solve the problem the over-population and two-shift learning in two years.

Likewise, an important element is also the fact that the financial costs of this concession/public private partnership scheme are not higher than the government costs to take loans. As long as the direct investment cost, i.e. construction and functioning of schools is calculated based on IPR, which include the income margin of the Contractor, then this category is not calculated as an extra income margin. But, on the other side, as long as the invested values in this respect by the concessionary will be paid in the course of 7 years, they shall be minimally reimbursed for the time value of the money. In this respect, as an income margin is considered the limit average rate of fixed 7-year obligations of the Albanian government.

7.2 Advantages of a Concession/Public Private Partnership Contract

All major infrastructure or construction projects of special importance are subject of several separated development phases, starting from designing and construction, to continue with management and maintenance. For realization of this projects, in general were used the traditional procurement methods, which are divided into phases, where contractors are different entities with different responsibilities and objectives.

This procurement method, widely used for infrastructure projects of small or average dimensions, has many positive aspects, but when it comes to major projects, developed countries have been using new innovative methods, which save time and money and considerably boost efficiency, directly affecting the feasibility of the project. The individual bidding procedure for different phases of complex projects is considered as not a very efficient method because their realization requires more time. Experience shows that in many cases the initial conditions change after the completion of procedures, requiring a change of the project and beginning of new procedures, causing delays in the realization of the project. Likewise, implementation of traditional procurement methods for these projects does not always guarantee the value for money, because the many bureaucratic procedures

considerably increase the project costs. In this respect, such division consists of an obstacle for realization of the project and its further stability after the construction phase.

On the other side, as a result of changes in global economic structure, in order to guarantee the competitiveness, local and central governments worldwide are facing budget problems, which is translated into incapacity to finance their services. This has obligated governments to develop innovative methods for financing and realization of major infrastructure projects.

In this respect, in order to solve this problem Tirana Municipality shall implement innovative procurement and financing of this project. To guarantee the accomplishment of the schools construction project, authorities will use more innovative and cost-efficient approaches combining designing, financing, construction and maintenance in one procurement contract. Exactly due to the considerable amount of the project, this methodology would not only facilitate the development process, but will also provide more sustainability after its completion.

In the **Design, Finance, Build and Maintain** model, concessionaires are accountable for designing, construction, financing and maintenance of a work in the course of period determined in the contract. The payment after the completion of project will be dictated based on fulfillment of some determined standards of the performance, regarding physical condition of the buildings, quality, capacity, etc. This model, which is implemented beyond the designing and construction phase, naturally encourages the designer/builder to provide at the very beginning a qualitative construction plan, in order to reduce costs during the maintenance phase, as long as the responsibility still belongs to their consortium.

In the World Bank publication “Role and Impact of Public and Private Partnership in Education”, it is mentioned that Public Private Partnership for schools construction must be embraced because:

- First, offers to the contracting authority the possibility to attract private investments in those sectors where sources/public funds are not at disposal;
- Second, private partner, in the framework of a contracting condition, is accountable for the constructed infrastructure;
- Third, from the education perspective, Public Private Partnership helps the contracting authority to provide the necessary school infrastructure according to the defined parameters.

This kind of partnership offers facilities to public sector, in case of no funds, by enabling construction of school structures immediately without losing the ownership right. If the partnership would grant the concessionary even the maintenance of school buildings, this will have a positive impact in the education process.

Among other advantages of concession/public private partnership we can mention:

- Potential extra capital;
- Optimization of public property use, alienated with the passing of time;
- A better quality of designing and construction;
- Constructive and efficient organization;
- Use of more qualitative construction materials;
- Integration of innovative technologies;
- General reduced cost (in particular during maintenance process);
- Transfer of risk;
- Elimination of judicial processes deriving from the disputes between contracting parties for different phases of the project;
- Acceleration of project realization compared to traditional method.

7.3 Allocation of risks

According to item 5, article 8 of CoMD no. 575, dated 10.07.2013, “On approval of rules for assessment and granting of concession/public private partnership”, it is necessary to review the allocation of risks in line with the principle that the party responsible about the risk is the one that is in the best position to cope with the risk and minimize its effects. According to the above-mentioned quantitative and qualitative analysis of risks, the allocation of risks is carried out according to the following table:

Table 56 Summarizing table of allocation of risks

Type of risk	Allocation of risk
Risku i trojeve	Kept risk
Risku i projektimit, ndërtimit dhe vënies në punë	Transferred risk
Risku i funksionimit	Transferred risk
Risku i kërkesës dhe risqe të tjera tregtare	N/A
Risqet ekonomike dhe financiare	Common risk
Risqet e pronësisë së aseteve	Transferred risk
Risku politik	Kept risk
Risku i ndryshimit të kuadrit ligjor	Transferred risk
Risku i forcës madhore	Common risk

The item 6, article 8 of CoMD no. 575, dated 10.07.2013, “On approval of rules for assessment and granting of concession/public private partnership”, requires that allocation of risk must be used as a fundamental mean to make sure whether a concession/public private partnership is classified either “inside” or “outside” the balance sheet of contracting authority based on rules of European System of ESA95 Accounts, according to the combination of construction risk allocation, risk of availability and risk of demand.

The ESA95 Manual on Deficit and Government Debt⁹, in Part IV on Leasing, Licenses and Concessions says that in the concessions/public private partnerships where the contracting authority makes regular payments to the concessionary (as in the case of concession/public private partnership) must be distinguished two cases: the case when majority of risks is kept by the contracting authority and the case when the majority of risks has been transferred to the concessionary. Item 6, article 8 of CoMD no. 575, dated 10.07.2013 envisages that this analysis shall take into consideration only three types of risks, construction risk, risk of availability and risk of demand. Based on the abovementioned risks analysis, it results that the construction risks and risk of availability have been transferred to the concessionary, whereas the risk of demand is not applied on this concession/public private partnership.

As a result, in line with ESA 95, “when the concessionary is exposed to the majority of risks during the contract duration, the infrastructure is registered in the financial reports of the concessionary. Hence, in the course of contract duration, the concessionary shall be responsible of the constructed infrastructure and school buildings will be registered in its financial reports. Thus, this concession/public private partnership is classified “outside” the balance sheet of the contracting authority.

According to ESA95 requirements, this concession/public private partnership is classified as an operative leasing agreement and not a financial leasing agreement. Only the regular payments that contracting authority will make to the concessionary will have an impact on the loan-taking and loan-granting abilities of the contracting authority. In the end of the concession contract, when the built education infrastructure will be transferred to the contracting authority, it will be registered in its balance as a value of stable gross active without reduction of the amortization.

Therefore, schools are registered in the name of Tirana Municipality, and are given for administration to the concessionary for seven years, and during this period the concessionary gives them in use to Tirana Municipality, guarantying through SLA, the quality of construction in phase 1, well-administration of assets and normal and extraordinary maintenance, as well as providing for use of the assets in the interest of community for further development of art, culture and sports in the community.

7.4 Recommendation on division of project implementation into Lots

Taking into consideration the high cost of the project and big volume of necessary works to be performed and obligation to complete works on time, there has been carried out another analysis regarding technical and economic capacities of the economic operators in the market for realization of this project.

7.4.1 Technical and professional capacities of education objects construction

⁹ <http://ec.europa.eu/eurostat/documents/3859598/5860213/KS-42-02-585-EN.PDF/34346b49-bc38-4063-a423-74590fdaf8bd>

For the construction of a school+kindergarten building, according to the proposed typology, the complete necessary construction time is 14 months. This period includes the following work processes:

- Organization of the construction site;
- Determination of foundations and their construction
- Construction of the beam-column-slab structure ;
- Electricall Installations;
- Hydraulic installations e;
- Heating system installation;
- Fire protection installations ;
- Internal finishings ;
- External finishing ;
- Installation of devices ;
- External clearance, etc.

During each working process, it is necessary to have one resident engineering, part of the company's staff as following:

- Civil engineer minimum 2 (two)
- Environmental Engineer minimum 1 (one)
- Hydrotechnic engineer minimum 1 (one)
- Topographic engineer minimum 1 (one)
- Electrical engineer minimum 1 (one)
- Mechanical engineer minimum 1 (one)

All the construction works must be followed by a resident civil engineer.

Beside human resources and machineries, the location of the construction site is very important for the organization of works.

In order to be efficient during the object construction and distribution of workers and machineries, it is important for the location of 3-4 construction sites to be in short distances from each other or within an administrative unit.

Taking into account the quantity of machineries necessary to an economic operators to successfully complete an education object (school 4 floors) we will have:

Table 57 Necessary technical capacities for construction of 17 schools at once

Means	Quantity	State
Self-discharging trucks (transporting capacity minimum 10 tons/truck)	Total transporting capacity minimum <u>100 tons</u>	Owned or rented
Auto concrete vehicles	4 pieces	Owned or rented
Moto concrete vehicle	6 pieces	Owned or rented

Scaffolds	3000 m2	Owned or rented
Protection net	3000 m2	Owned or rented
Carrel crane	3 pieces	Owned or rented
Excavation machinery	5 pieces	Owned or rented
Motogenerator	2 pieces	Owned or rented
Auto-crane with a holding capacity 8 tons	1 pieces	Owned or rented
Water deposit (minimal capacity 2000 liters)	2 pieces	Owned or rented
Plastering pump	3 pieces	Owned or rented
Machinery for demolition of concrete structures	2 pieces	Owned or rented
Machineries for demolition of concrete structures	2 pieces	Owned or rented

The economic operators may have the abovementioned machineries at disposal or rented, and shall not be a limitation for the capability of operators to cope with more than 4 objects. A limitation in the case of machiniers is that the operator shall have the necessary respective technical staff to support the activity carried out by these means.

7.4.2 Financial capacity of the economic operators

Regarding technical and professional capability, the Economic Operator shall meet the following minimal requirements:

1. Successful experience in execution of at least:

Similar contracts with works of the same nature as the procurement object, at least amounting at 50% of the calculated value of the procured contract.

2. Similar contracts with works of the same nature as the procurement object, where the total value of work in the last three years is at least two times the value of limit fund.

Based on the report obtained from the General Directorate of Public Works, No. Prot. 21407/2, dated 09.08.2016, the construction cost of the schools is 46,331.67 leke/m², whereas for the construction of kindergartens is 54,380.83 leke/m². From the combination of this data with the total construction surface, it results that :

- Construction value of a Type 1 school is 276,314,618 lekë. (2 schools)
- Construction value of a Type 2 school is 376,471,912 lekë. (7 schools)
- Construction value of a Type 3 school is 234,736,581 lekë. (1 schools)
- Construction value of a Type 4 school is 185,349,833 lekë (7 schools)

(Referring to the Economic Analysis carried out by the Finance Office)

The minimal cost for realization of 17 envisaged schools (construction, furniture, laboratories, maintenance) is 4,720,118,027 leke (construction) + 502,378,267 (cost of furniture+labs) + 1,159,737,664 (maintenance cost for 7 years) = **6,382,233,958 leke without VAT.**

In order to meet the first requirement, the competing Economic Operators must in their portfolio similar Contracts with nature of the procured object at least 50% of the calculated value of procured contract, i.e, 3,191,116,979 leke.

Wheres, to meet the second requirements, the competing Economic Operators must have in their portfolio similar Contracts with the same nature of procurement object, where the total work of the last three years could be at least two times the limit fund, i.e. an amount of 12,764,467,916 leke, or more than 51 schools of the size of the project.

As long as in Albania there have been no such investment in the field of education, the chances of finding experienced Economic Operators in this field with the above-mentioned financial abilities is are few, even inexistent. In any case, if there were Economic Operators with the completion of similar contracts, their number would be very limited, which could limit the competitiveness, therefore harming the procurement process. .

Beside, the PPP financing scheme envisages that the Economic Operator shall serve also as an investor, not only a constructor. This element makes even more difficult finding Economic Operators with capacities for realization the entire project.

Therefore, it is recommended that the project shall be divided into at minimum 4 Lots in order to boost the opportunities for fulfillment of the above-mentioned requirements.

7.4.3 Union of operators and sub-contracting

Referred to Law No. 125/2013, changed to Law No.88/2014 “On concession and public private partnership”

Article 34 Subcontracting 1. The Contracting Authority may : a) ask the concesssionary to offer contracts that consist at minimum of 30 per cent of the total amount of the total concession contract to third parties. Economic operators shall receive in sub-contracting at minimum 30% of total amount of the contract.

In the same time, taking into account Law no. 9643, dated 20.11.2006, changed to Law no. 9800, dated 10.09.2007, Law no. 9855, dated 26.12.2007, Laws no. 10170, dated 22.10.2009, Law no. 10309, dated 22.07.2010, Law no. 22/2012, Law no. 131/2012, and Law no. 182/2014 "On public procurement", article 61, item 2 Sub-contracting: Economic Operator shall not have in sub-contraction more than 40 % of total amount, because in these cases the essence of the contract would be lost, as well as the essence of its implementation.

In this respect, taking into account also the cases when the Economic Operators will sub-contract 30%-40% of total amount of the project, still the remaining part of the project, i.e. at 60% of the project, it is very ambitious to be completed on time by one and only Economic

Operators. The upper limit of sub-contracting considerably limits the technical capacities of operators and their ability of implementing 5 or more objects at once. Therefore, it is recommended that the project shall be divided into minimum 4 Lots, with not more than 5 educational objects in each of the Lot.

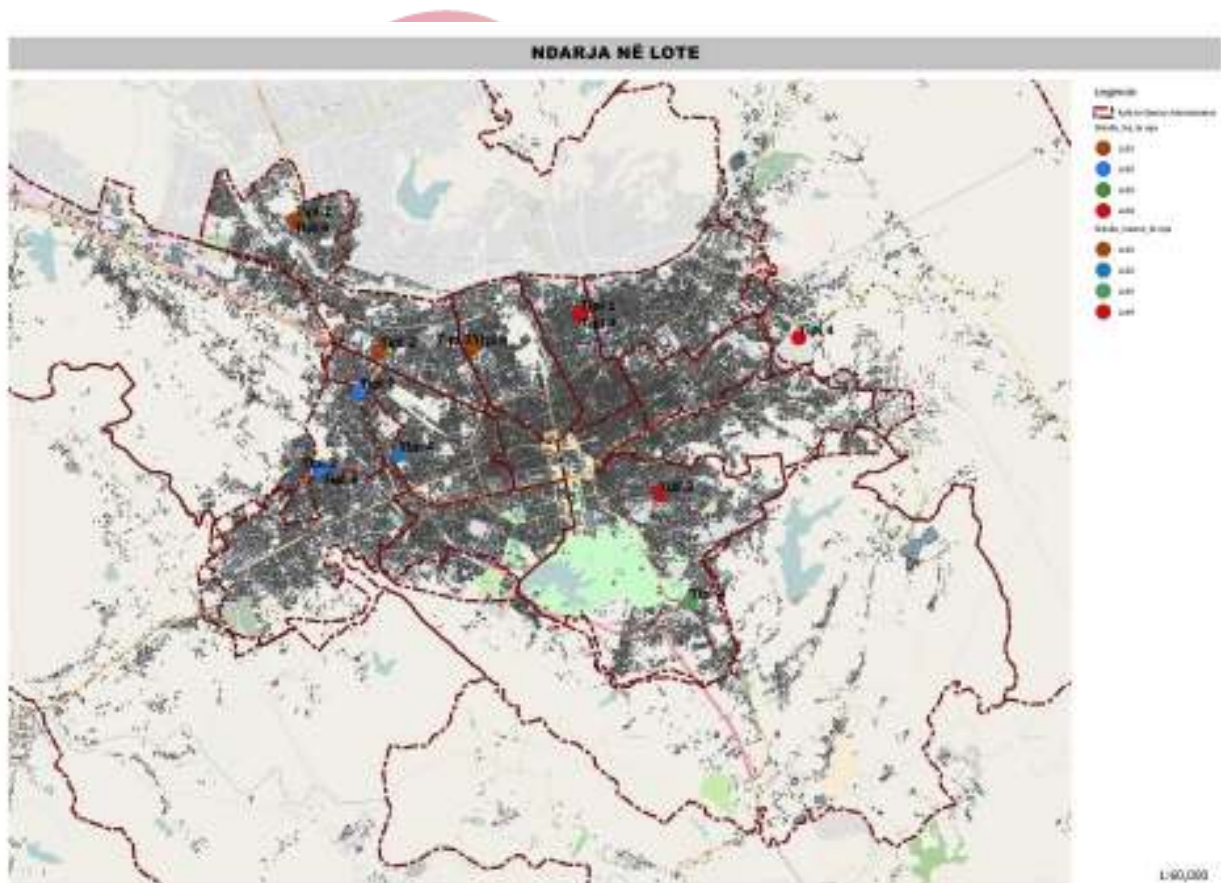
8. Implementation Feasibility of each lot

In this respect, as a result of the analysis of necessary technical and financial capacities for implementation of the project as a whole, it resulted as a more secure alternative the division of project into 4 lots. Distribution into lots aims to guarantee a higher interest by economic operators to participate in this scheme, by increasing the competitiveness, as well as facilitate the project implementation. Distribution into 4 Lots has been carried out taking into consideration two key criteria:

- Schools included in one lot must be physically near each other
- Lots shall have a similar number of schools and similar financial values

In this respect, the proposal for distribution into lots is indicated in the following map :

Map 39 Distribution of schools in lots

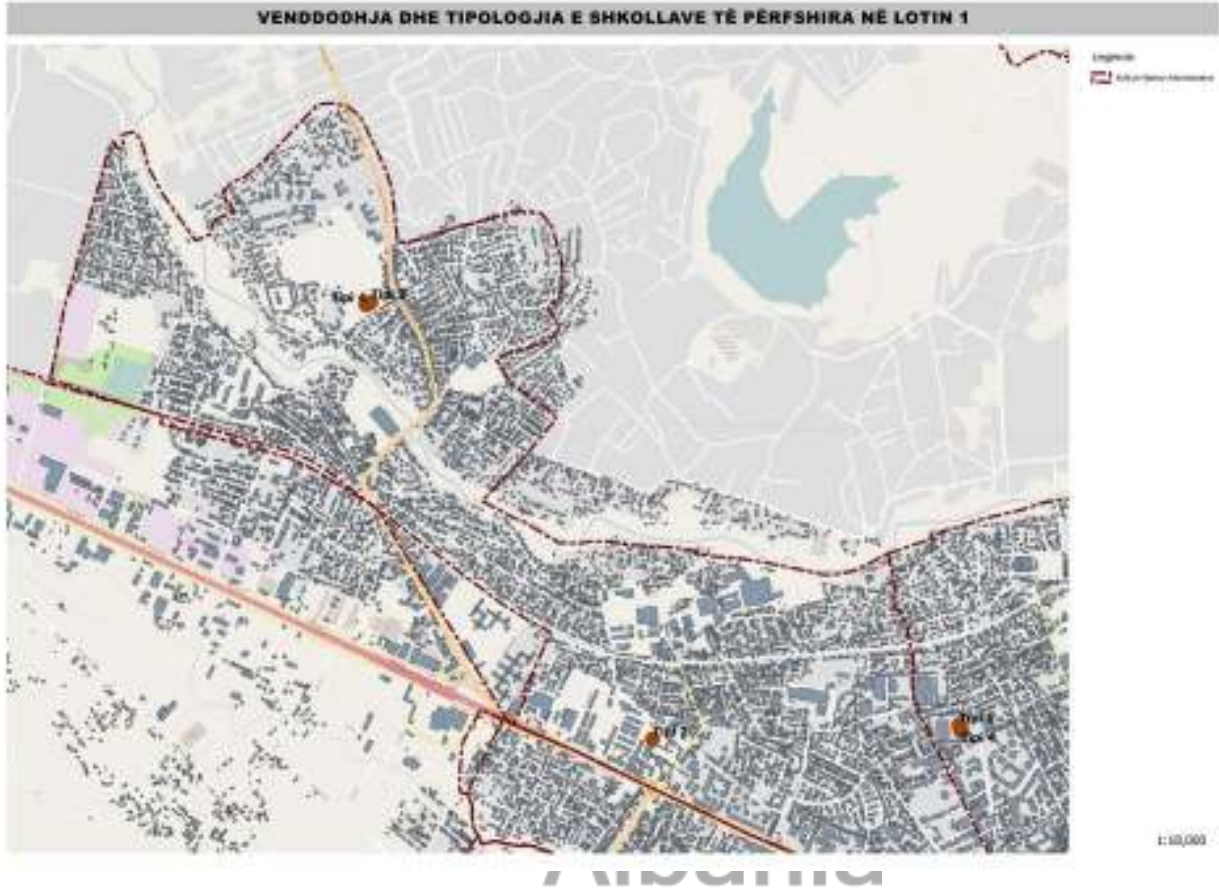


8.1. Lot 1

8.1.1. Location of school sites included in Lot 1

Lot 1 includes 5 schools, 3 out of them in Administrative Unit 11 and 2, Administrative Unit 9. Distribution of schools included in Lot 1 is indicated in the following map :

Map 40 Location of schools included in Lot 1



8.1.2. Total surfaces to be permanently seized by school sites included in Lot 1

Map 41 Orhtophoto of the site



LOCATION : Proposed site No.9/1 is located in “Don Bosko” quarter. It is a developing area where is noted a multiple floors residential buildings and informal low dwellings.

TECHNICAL DATA Site 9/1:Surface – 12989 m²

CURRENT SITUATION OF THE SITE :

- A relatively calm zone.
- Easy access in the site. Road infrastructure may be problematic. There are many positive aspects, because it is situated in a high density populated area.
- No high schools in this area.
- The site includes in its territory an old warehouse, which seems interesting due to its big surface.

Picture 2 Photo of site 9/1



SITE 11/1

Map 42 Orthophoto of the site



LOCATION : The proposed square no. 11/1 is located inside the campus of Agricultural University of Tirana. This site is bordered by “Taulantët” street and “Blue” Boulevard.

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

CURRENT SITUATION OF THE SITE :

- It is an untouched area with a poor green space surface .
- The site has a considerable inclination
- Road infrastructure is problematic
- Access to the site is difficult



Picture 3 Photo of the site 11/1



SITE 11/2

Map 43 Orthophoto of the square



LOCATION : The proposed site no. 11/2 is located near Dogana Roundabout. Accesable from Vangjel Noti street.

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

CURRENT SITUTATION OF THE SITE :

- It is a zone under the ownership of Ministry of Defense .
- Located near the inhabited area.
- Easy access

Picture 4 Photo of the site 11/2



8.1.3 Legal status of sites of schools included in Lot 1

Site 9/1

Map 44 Indicative map of properties

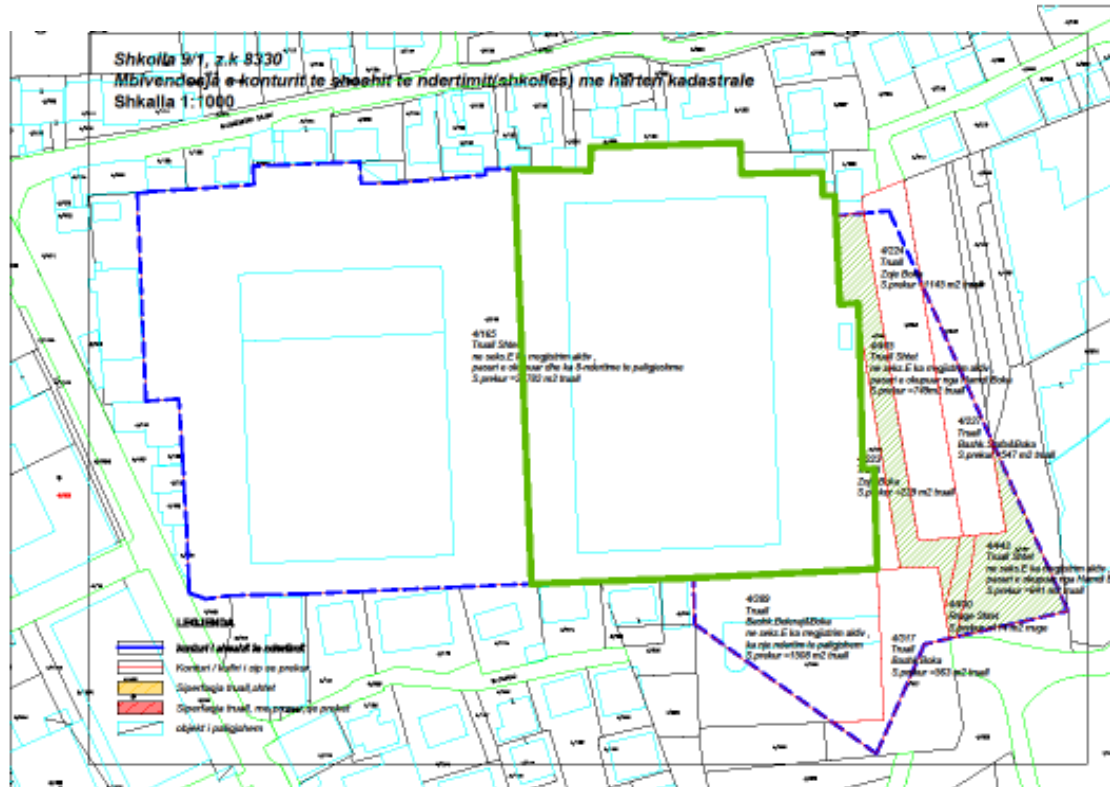


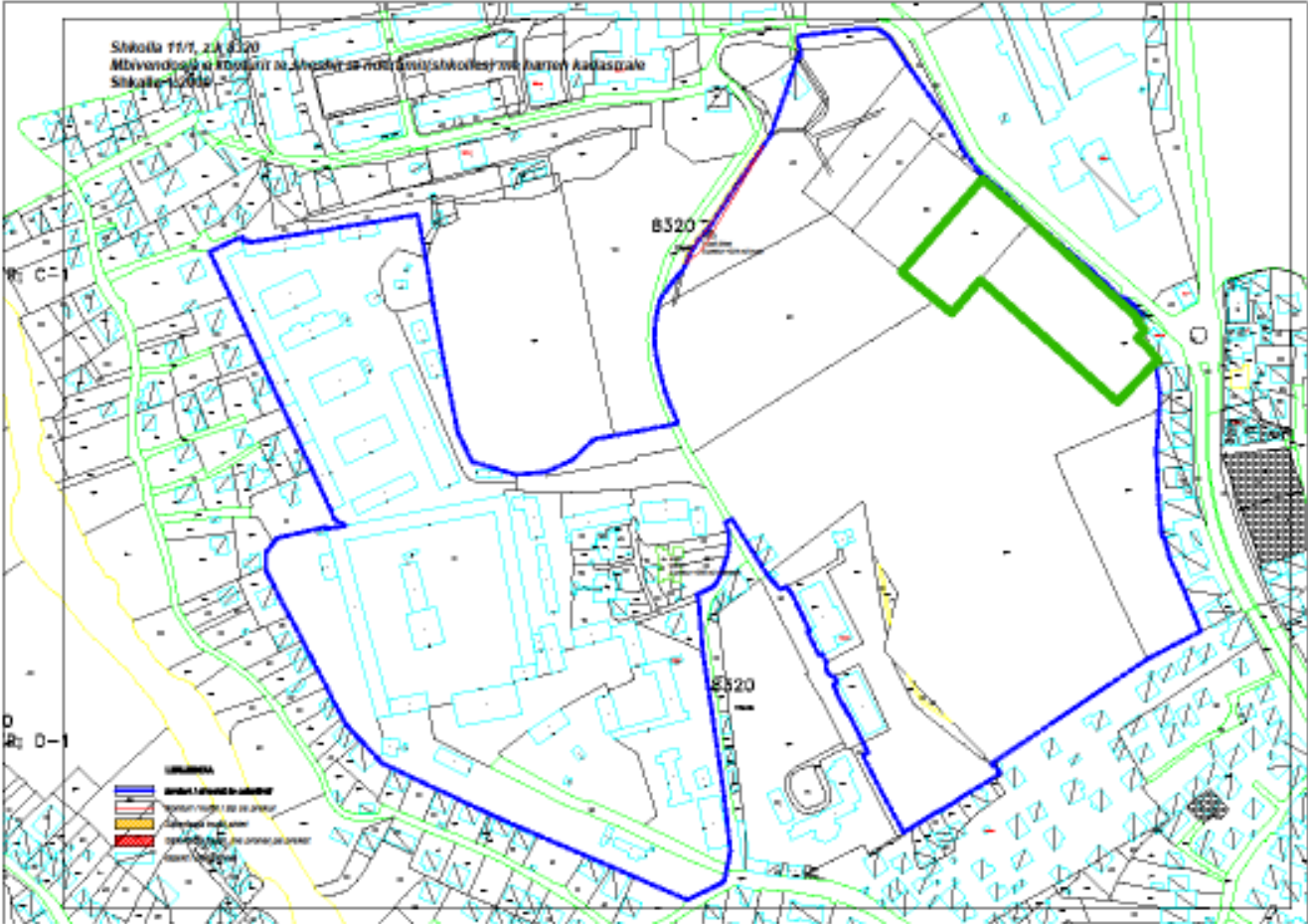
Table 58 Table with preliminary calculation of properties to be affected by the project

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

The school to be built in cadastral zone 8330 will affect a total of about 12,989 meter square property, composed of 6 properties, 4 out of them are state-owned properties and 2 private property objects. For the land, the calculated price is obtained from CoMD No. 89, dated 03.02.2016.

Site 11/1

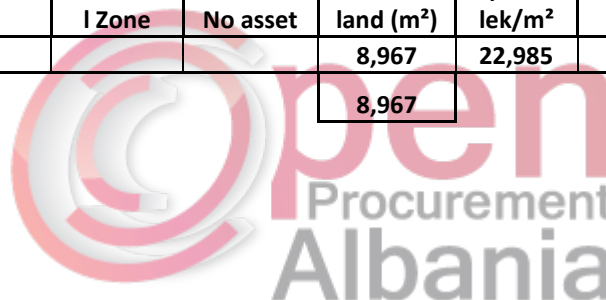
Map 45- Indicative map of properties



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

No	NAME	Note in Sec. E	Cadastral Zone	No asset	Surface of affected land (m ²)	Land price lek/m ²	Surface of the affected object (m ²)	Price Obj.lek/m ²	Amount in leke
1	No information				8,967	22,985			206,106,495
					8,967				206,106,495



Site 11/2

Map 46 Indicative map of properties

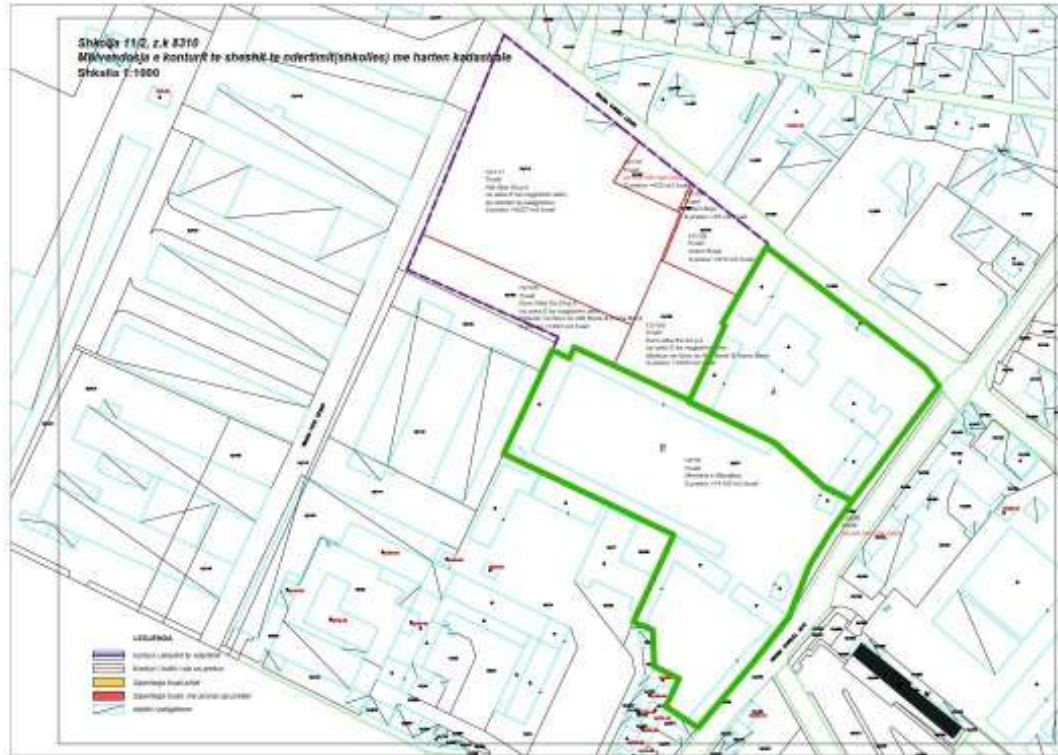


Table 60 Table with preliminary calculation of properties to be affected by the project

Nr	NAME	Note in Sec. E	Cadastral zone	No. Property	Surface of affected land (m ²)	Land price lek/m ²	Surface of affected object (m ²)	PriceObj.lek/m ²	Amount in leke
7	Ministry of Defense		8310	12/16	14,102.00	31219			0.0
					14,102.00				0.0

School to be built in the cadastral zone 8310 will affect a total of 14,102 meter square property, composed of 1 property no 12/16, which is currently under the ownership of Ministry of Defense. For the land, the calculated price is obtained from CoMD No. 89, dated 03.02.2016.

8.1.4 Typology of schools included in Lot 1

The Lot 1 envisages construction of 5 schools, respectively: two new schools in Administrative Unit 9 and three Administrative Unit 11 . In details, AU 9 includes construction of a nine-year school Type 1 and one higher middle education cycle school, Type 4. AU 11 includes the construction of two basic education cycle schools type 2 and one of type 4. The following table indicates in details the typology, location, education cycle, no of classes and no of students for each class, etc.,

Table 61 –School typology

Type	Location	Cycle	No clases	st/class	No st. total	M2/students	Total surface
Type1	Urban	Basic education	20	30	600	8.23	4938
Type2	Urban	Basic education	30	30	900	7.32	6588
Type3	Rural	Basic education	20	24	480	8.42	4041.6
Type4	Urban	Higher middle	21	30	630	6.35	4000.5

8.1.5 ECONOMIC AND FINANCIAL ANALYSIS FOR LOT 1

8.1.5.1 Financial and economic analysis

Economic and financial analysis of this feasibility study, in line with Council of Ministers Decision no. 575, dated 10.07.2013, “On approval of rules for assessment and granting for concession/private-public partnership”, article 7, mainly focuses on determination of value for money of the project, as well as on completion of an evaluation of the investment in total, operative costs and maintenance, as well as any other income expected to be generated during the duration of the project.

1.1. Economic Model of the Concession / Public-Private Partnership

Law no. 125/2013, changed with law no. 88/2014, regulates the competences of contracting authorities in order to sign concessions/public-private partnerships. In this type of relations, the private partner takes the responsibility of financing, designing, building and/or re-building/renewal the public infrastructure object, to operate and maintain the public infrastructure object built and/or rebuilt/newly renewed. Among the fields of implementation of this law is also education.¹⁰

Based on the data analysis, it results that to put an end to the over-crowded schools problem and two shifts learning, Tirana Municipality needs to build 17 new schools - 10 nine-year schools and seven high schools. The total cost of construction and furnitures for these schools is calculated at 7.6 billion leke. Such amount of money is financially unaffordable for Tirana Municipality, whose total annual budget is 10 billion leke, whereas investments for construction of new schools in the course of last years has been not more than 500 million leke.

In this respect, in order to settle this problem, Tirana Municipality must implement innovative methods of procurement and financing of the proposed project. To guarantee the realization possibility of the schools construction project, it was chosen a more innovative and cost-efficient approach, combining the designing, financing, construction and maintenance in one and only procurement contract. Due to the considerable dimensions of this project, this methodology will not only offer facilitations during the development process, but will provide more sustainability after its completion.

In the framework of the “Design, Finance, Build and Maintain” (DFBM) model as internationally known “Design, Build, Finance & Operate (DBFO)”, contractors take the

¹⁰ Article 4, item dh), Law 125/2013

responsibility of designing, building, financing and maintaining an object for entire duration of the contract. The contractor who may be one company or a consortium is responsible for designing, financing, construction and maintenance of the object for a determined period of time, which is proposed to be 7 years. The payment after the completion of the object is dictated based on completion of some determined performance standards regarding the physical condition of the buildings, capacity, quality, etc. This model which goes beyond the designing and construction phase, naturally encourages the designer/builder to provide since the beginning a qualitative construction plan in order to have less costs during the maintenance phase, as long as the responsibility belongs to their consortium. Likewise, integration of all project's contract in one reduces different transactional costs and boosts project management efficiency.

This PPP model has been widely used for construction of major infrastructure projects, such as construction of highways, hydro power stations, wastes management plants, etc, because the dimensions of such projects required considerable funds, efficient organization of capital and human resources, high designing and construction quality, maximal security and constant maintenance. In this respect, such models have been considered successful for development of projects that guarantee their realization and efficiency of the investment. Nevertheless, the use of this PPP form is not limited only in major public infrastructure works mentioned above. In many OECD countries, mainly in the United Kingdom, this methodology is used also for public service projects, such as construction of new schools.

Following are some examples from different countries that have successfully implemented this model for projects of educational infrastructure:

Canada¹¹: “Alberta Schools Alternative Procurement” Program. In 2007, Alberta region in Canada declared the first stage of the program which envisages the construction of 18 new school buildings (kindergartens and nine-year schools), which were completed in 2010. After the completion of works, duration of the contract will continue with the maintenance and it estimated at about 30 years. The second phase of the program envisaged the construction of other 10 nine-year schools according to the same model and 4 high schools through the simple model of Designing-Constructing contract, which were completed in 2013.

Greece¹²: “Macedonia Schools and Attica Schools” Program. With the use of DBFM mechanism, private operators designed construction of 51 schools with a total amount of about 269 million Euro and 25 year contracts.

United Kingdom¹³: “Building Schools for the future” Program. This program is a long-term investments program, which is contributing in the construction of a considerable number of

¹¹ “Flexible and alternative approaches to providing school infrastructure in Alberta, Canada” – OECD, 2010

¹² “The role and impact of public-private partnerships in education”, pg. 82 – World Bank, March 2009

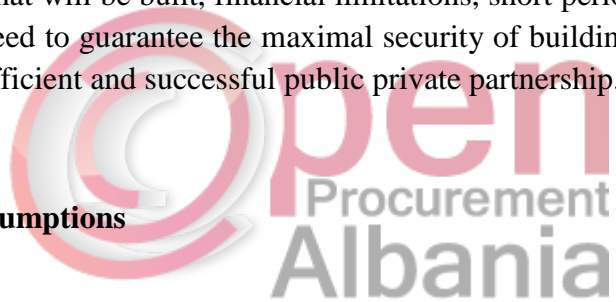
http://www.ungei.org/resources/files/Role_Impact_PPP_Education.pdf

schools in the entire territory of UK. Majority of schools has been built through the Design-Build-Finance-Maintenance scheme, but in this case often has been included also the element of school management by a private subject of a determined period. In general, total duration of the contract is estimated up to 30 years. The private consortium is regularly paid by public funds based on its performance during the contract period. If the consortium does not achieve the required performance, the payment is reduced. At the end of the contract period, school is given back to government.

New Zealand¹⁴: The project of New Zealand Ministry of Education for construction of two schools in Hobsonville, Auckland. This project envisages the construction of a new lower cycle school and one lower middle cycle school in the suburb region of Hobsonville in Auckland city. The private sector is partly responsible for designing, building and financing of the objects, together with their constant maintenance and management of common services. Construction of these schools has been successfully completed in 2014.

In this aspect, the project for construction of new schools in Tirana needs the application of the same approach for improvement of education service in the entire territory of the Municipality. Big number of schools that will be built, financial limitations, short period for implementation of the project, as well as need to guarantee the maximal security of buildings point to the necessity of establishment of an efficient and successful public private partnership.

1.2 Main assumptions



In the framework of financial and economic analysis effects of this feasibility study, were made the following assumptions:

- Concessionary will cope with its incomes the entire investment for construction of education objects and their functioning, whereas Tirana Municipality will face with its funds the expropriation of private lands to be used for this purpose.
- Educational objects will be built and functional at maximum 18 months from the signing of the construct.
- After the construction and functioning of schools, concessionary will be accountable for administration and maintenance of the objects for a 7 year period and for every problematic regarding risks of assets for these period.
- After the construction of objects, Tirana Municipality will pay the concessionary a certain annual sum until the full payment of the invested amount. Incomes for this

¹³ Ibidem (i.e. extracted from same WB document in the above-mentioned reference and same page)

¹⁴ "Mayoral Position Paper on Public Private Partnerships" – Ernst and Young, November 2013.

payments will be provided from the annual incomes of Temporary Tax on Education Infrastructure and conditioned transfer from Ministry of Finance.

a. Costs analysis

Based on technical, it has come to be conclusion that in total will be built 17 schools: 10 nine-year schools and 7 high schools. The new schools will be designed and built according to models in line with standards specified by Ministry of Education and Sports through “Guideline for School Buildings Design”. The school models offer the opportunity to fully meet the needs for pre-university education classes, respecting legal and technical requirements for definition of parallel classes according to each teaching cycle. In the same time, for nine-year schools are envisaged also venues for pre-school education, as part of the nine-year education institution. Referring to above-mentioned standards, there exist 4 main types of schools with the following operational data:

Type 1 of schools includes 20 classes per pre-school and school students with a construction surface of about 4,938 m². Likewise, this schools will included a kindergarten of about 4 classes with a surface of about 874 m². In total, the construction surface for this type of school is 5,812 m². **Type 2** of schools is nine-year education with 30 classes for pre-school and school students with a construction surface of about 6,588 m². Likewise, this school will include a kindergarten with 6 classes with a surface of about 1,310 m². In total, the construction surface for this type of school is 7,898 m². **Type 3** of schools is higher middle for rural zones with 20 classes with a construction surface of about 4,041 m². **Type 4** of schools consists of higher middle schools for urban zones with 21 classes and a construction surface of about 4001 m².

According to quantitative analysis carried out and explained above, there are necessary a total of 17 schools, 2 out of them belonging to Type 1, 7 schools of Type 2, 1 school of Type 3 and 7 high schools of Type 4. Respectively these schools will be built according to following administrative units and data:

Table 62 Detailed data for each school in Lot 1

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	nxënës për klasë	Nxënës për shkollë	Sipërfaqe totale shkolla	Klasa kopësht	Nxënës për klasë kopështi	nxënës për kopësht	Sipërfaqe totale kopësht	Siperfaqe totale ndertimi
1	NJA 09	TIPI 1	9-vjeçar	20	30	600	4,938	4	24	96	874	5,812
2	NJA 09	Tipi 4	i mesëm i lartë	21	30	630	4,001	-	-	-	-	4,001
3	NJA 11	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
4	NJA 11	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
5	NJA 11	Tipi 4	i mesëm i lartë	21	30	630	4,001	-	-	-	-	4,001
Totali				122		3,660	26,115	16	72	384	3,494	29,609

Summarizing according to schools typology, in total, we have the following operational data :

Table 86 Summarized data for proposed schools according to typology for lot 1

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Nr nxënës për klasë shkollë	Nxënës për shkollë	Nr klasa kopësht për shkollë	Nr nxënës për klasë kopështi	Nxënës për kopësht	Sipërdëtim i shkollave	Sipërdëtimi kopësht	Tot Sipërfaqe ndërtimi	Total Nxënës në shkolla	Total Nxënës në Kopështe	Nr Total i nxënësve
TIPI 1	1	20	30	600	4	24	96	4,938	874	5,812	600	96	696
Tipi 2	2	30	30	900	12	24	144	13,176	2,620	15,796	1,800	288	2,088
Tipi 4	2	21	30	630	-	-	-	8,001	-	8,001	1,260	-	1,260
Grand Tot	5	71				48	240	26,115	3,494	29,609	3,660	384	4,044

For a better analysis of value for money of the project, we have grouped the expenses in four main categories, based on accounting standards and requirements of CoMD no. 575, dated 10.07.2013, “On approval of rules for assessment and granting of concession/public private partnership”, article 7, section 3-6:

Direct costs of investments

Direct costs of maintenance

Due to the effects of the following analysis, all the prices and values will be without VAT, unless is specified otherwise.

1.3.1 Direct Costs of Investments

During the analysis and in line with above-mentioned CoMD, there were identified the following direct costs of investments:

9. Costs of Land Expropriation ;
10. Construction Cost ;
11. Cost of Study and Designing ;
12. Supervision Cost ;
13. Cost of Technical Control;
14. Technical Revision ;
15. Cost for Furniture and Equipment;
16. Cost of lab devices.

1.3.1.1 Cost of Land Expropriation

According to determination of trace where these schools will be built, it results that will be expropriated a total of 58,547.50 m² of private properties, which according to the calculations are estimated at an expropriation value of 814,242,252 leke. On the other side, the state-owned

land will be subject of respective procedures in order to take the respective properties under the administration.

With the approval of CoMD in this respect and completion of financial and legal documents in line with the CoMD and normative acts in force, every expropriated subject will be paid by Tirana Municipality through a fund determined for this purpose.

Table 87 Summarized table of expropriations for lot 1

Nr rendori tabelës	Adresa	Tipi	Sheshi	Shpronësimi në Vlerë	Sipërfaqje në m ² të shpronësuar	Cmimi mesatar për m ²
1	NJA 09	TIPI 1	9/1	23,404,716	687	34,068
2	NJA 09	Tipi 4	9/1	23,404,716	687	34,068
4	NJA 11	Tipi 2	11/1	103,053,248	4,484	22,985
5	NJA 11	Tipi 4	11/1	103,053,248	4,484	22,985
Grand Total				252,915,927	10,341	24,458

1.3.1.2 Construction Costs

Based on the report obtained from General Directorate of Public Works No. Prot. 21407/2, dated 09.08.2016, costs for schools construction is 46,331.67 leke/m², whereas the kindergartens costs are 54,380.83 leke/m². From the combination of this data with the total construction surface for each type of school, it results that :

- The construction value of a Type 1 school is 228,785,770 leke and to this amount is added also the construction of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 1 school, including the kindergarten venue is 276,314,618 leke.
- The construction value of a Type 2 is 305,233,020 leke and to this amount is added the construction cost of a kindergarten of about 71,238,892 leke. In total, the general cost of the construction of a Type 2 school, including the kindergarten venue is 376,471,912 leke.
- The construction value of a Type 3 schools is 187,207,732 leke and to this amount is added the construction cost of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 3 schools, including the venues of a kindergarten is 234,736,581 lekë.
- The construction value of a Type 4 school is 185,349,833 leke and these schools do not include kindergarten premises.

Table 63 Construction costs for schools in Lot 1

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Klasa kopësh ti për shkollë	Sipërditimi i shkollave	Sipërditimi kopësht e	Tot Sipërfaqe ndërtimi	Cmimi i ndërtimit të shkollave lek/m2	Cmimi i ndërtimit të kopështeve lek/m2	Kosto ndërtimi të një shkolle	Kosto e ndërtimit të një kopështi	kosto e ndërtimit të një shkolle + kopësht	Kosto e përgjithshme e ndërtimit
Tipi 1	1	20	4	4,938	874	5,812	46,332	54,381	228,785,770	47,528,848	276,314,618	276,314,618
Tipi 2	2	30	6	13,176	2,620	15,796	46,332	54,381	305,233,020	71,238,892	376,471,912	752,943,823
Tipi 4	2	21	-	8,001	-	8,001	46,332	54,381	185,349,833	-	185,349,833	370,699,665
Grand To	5	71	10	26,115	3,494	29,609	138,995	163,143	719,368,623	118,767,740	838,136,363	1,399,958,107

In total, there will be built 2 Type 1 schools with a construction cost of 276,414,618 leke per school, 7 Type 2 schools with a construction cost of 376,471,912 leke per school and 1 Type 3 schools with a construction cost of 234,736,581 leke per school and 7 Type 4 schools with a construction cost of 185,349,833 leke per school. As a result, the total construction costs for this project amounts to 4,720,118,027 leke. This cost will be covered by the concensionary.

1.3.1.4 Other direct investment costs

Based on the report from Public Works General Directorate, in Document No. Prot. 21407/2, date 09.08.2016, other direct investment costs are :

- Study – Design
- Supervision of works
- Technical Control
- Technical Revision
- Fire protection
- Environmental Permit
- Tax of impact in infrastructure



Taking into account the data analyzed in this chapter on costs, it results that the direct investment const is as following :

Tabela 64 Kostot e drejtpërdrejta të investimit për Lotin 1

Tipi	Nr i shkollave sipas tipit	Tot Sipërfaqe ndërtimi	Kosto Studim Projektim	Kosto Mbikqyrje	Kosto kolaudimi	Oponenca teknike	Zjarrefikes	Leje Mjedisore
TiPI 1	1	5,812	4,481,127	3,140,921	110,526	223,183	50,000	30,000
Tipi 2	2	15,796	20,220,768	8,355,808	301,178	501,350	100,000	60,000
Tipi 4	2	8,001	10,691,738	4,364,479	153,710	369,692	100,000	60,000
Grand To	5	29,609	35,393,633	15,861,208	565,414	1,094,225	250,000	150,000

Table 65 Summarizing table of other costs

Tipi	Nr i shkollave sipas tipit	Tot Sipërfaqe ndërtimi	Kosto Studim Projektim	Kosto Mbikqyrje	Kosto kolaudimi	Oponenca teknike	Zjarrefikes	Leje Mjedisore
Tipi 1	2	11,624	8,962,254	6,281,842	221,052	446,366	100,000	60,000
Tipi 2	7	55,286	70,772,689	29,245,329	1,054,124	1,754,725	350,000	210,000
Tipi 3	1	4,915	6,638,188	2,703,942	93,917	208,967	50,000	30,000
Tipi 4	7	28,004	37,421,081	15,275,677	537,985	1,293,922	350,000	210,000
Grand To	17	99,828	123,794,213	53,506,790	1,907,078	3,703,980	850,000	510,000

Tax of impact on infrastructure for public works is 0.

1.3.1.4 Furniture costs

In order to make schools functional, it is necessary to provide necessary IT equipment and laboratories. Furniture of new nine-year and high schools of Tirana Municipality will be realized based on law 69/2012 “On Pre-university education system in the Republic of Albania”, changed, for which Ministry of Education and Sports has prepared the Guideline “On designing of school buildings” (Norms and Standards).

Pursuant to needs for new schools, made evident by you, referring to MoES standard for classes typology and other venues in line with teaching program, there were carried out the respective calculations about the furniture costs per student, which is about 24.167 leke without VAT. This cost includes the amount for furniture without the equipments, computers and other necessary devices for laboratories of physics, chemistry and biology, etc.

For the calculation of furniture price, we considered the offers obtained by 6 economic units for furniture items according to technical specifications of MoES.

Concretelly, according to school typology, the furniture cost is as following :

Table 90 Cost of school furniture

Type of schools	No classes	st/class s	No st. total	Cost/stu dent	Total cost
Type 1	20	30	600	24,167	14,500,000
Type 2	30	30	900	24,167	21,750,000
Type 3	20	24	480	24,167	11,600,000
Type 4	21	30	630	24,167	15,225,000

The furniture cost for basic education have been included three levels which envisage the following types :

For furniture of new kindergartens, we referred to the previous experience in furniture manner and their necessary quantity. Regarding furniture costs, we referred to the market prices, as well as previous indexed interim payment reports.

Costs for furniture of kindergartens per children is about 27.916 lek without VAT

This furniture cost, beside furniture of children premiee (sitting room, bedroom) includes also the office of director, psychologist and costs for kitchen furniture.

In conclusion, the furniture costs according to kindergarten typology is as following :

Table 91 –Furniture costs according to typology

Type	Location	Cycle	No class	St/Class	No st. total	Cost/child ren	Total cost
Type1	Urban	Kindergarten(3-5years)	4	24	96	27.916	2.680.000
Type2	Urban	Kindergarten(3-5years)	6	24	144	27.916	4.020.000
Type3	Rural	Kindergarten(3-5years)	4	24	96	27.916	2.680.000

Regarding costs for lab equipments, we referred to the purchase contract “Scientific Laboratories (Chemistry, Physics, Biology) for Pre-University schools” realized by Ministry of Education and Sports during 2016, in which results that the value per laboratory without VAT is as following:

Table 92 Costs for lab equipment

I	Basic education school	Amount/ laboratory
1	Natural Sciences Laboratory	186,998
2	Chemistry Laboratory	223,125
3	Physics Laboratory	1,183,602

4	Biology Laboratory	632,467
5	IT Laboratory	3,869,658
II	High school	-
1	Chemistry Laboratory	528,469
2	Physics Laboratory	1,294,500
3	Biology Laboratory	651,657
4	IT Laboratory	3,869,658

According to schools typology defined based on the designing standards of pre-university education objects, set by Ministry of Education and Sports, in which is determined the quantity of labs for each type, we have the following table :

Table 94 Costs for lab equipment according to schools typology

No	Tyes of schools	Cost without VAT
1	Basic education (Type 1)	6,095,850
2	Basic education (Type 2)	7,279,450
3	Basic education (Type 3)	5,743,950
4	Higher Middle Education (Type 4)	13,983,067

According to the analysis of all the above-mentioned data, it result that the total cost of furniture and lab equipments of 17 schools is 502,378,267 leke with VAT, according to the following table :

Table 66 Furniture costs and lab equipments for schools in Lot 1

Tipi	Nr i shkollave sipas tipit	Kosto e mobilimit te shkollave	Kosto e mobilimit të kopështeve	Total Kosto Mobilimi	Kosto Laboratori	Total kosto pajisje, mobilje dhe orendi
TIPI 1	1	14,500,000	2,680,000	17,180,000	6,095,850	23,275,850
Tipi 2	2	43,500,000	8,040,000	51,540,000	14,558,900	66,098,900
Tipi 4	2	30,450,000	-	30,450,000	27,966,133	58,416,133
Grand To	5	88,450,000	10,720,000	99,170,000	48,620,883	147,790,883

1.3.1. 5 Direct Investment Cost

In conclusion, the direct investment cost of this project is estimated at **1,853,979,397 lekë**. About **252,915,927** leke out of them are calculated as necessary funds for expropriation, which will be covered by Tirana Municipality. Whereas, the total cost of the project that will be covered by the concessionary is **1,601,063,470** leke, where the construction cost is **1,399,958,107** leke without VAT, Costs of the Designing, Technical Revision, Supervision, Technical Control, furniture and laboratories is **201,105,364** leke without VAT. In details, the calculated categories are as following :

Table 95 Direct Investment costs according to categories forlot 1

Viti	Pershkrimi	Grand total
A.	Kostot Direkte te Investimit	1,853,979,397
A.1	Kostot e Truallit	252,915,927
A.2	Kostot e Projektimit	35,393,633
A.3	- Ndertim + instalime	1,399,958,107
A.4	- Oponenca teknike	1,094,225
A.5	- Takse Infrastruktore	-
A.6	- Leje mjedisore	150,000
A.7	- Mbrojtje ndaj Zjarrit	250,000
A.8	- Kosto Supervizimi	15,861,208
A.9	- Kosto Kolaudimi	565,414
A.10	- Mobiljet dhe Orendi	99,170,000
A.11	- Investime IT&T dhe Labs	48,620,883

1.3.2 Direct cost of maintenance

Based on calculations carried out from General Directorate No. 3 of City's Workers, annual maintenance cost per class is 422,107 leke with VAT or 351,755 leke without VAT. Making respective calculations, the annual cost for the general maintenance for each type of school is 8,442,132 leke per one school of Type 1, about 12,663,198 leke per one school of type 2, and 7,386,865 per one school of type 4. The total maintenance cost for all schools of Lot 1 is **48,542,258** leke per year. The annual cost of maintenance for calculation effects starts from 2018 and pursuant until the completion of PPP period. For more details, see the following tables:

Table 96 Annual cost of maintenance according to type of schools for lot 1

Tipi i shkollave	Nr i shkollave	Kosto e mirëmbajtjes për shkollë	Kosto e përgjithshme e mirëmbajtjes
TIPI 1	1	8,442,132	8,442,132
Tipi 2	2	12,663,198	25,326,396
Tipi 4	2	7,386,865	14,773,731
Grand Total	5	9,708,452	48,542,258

In total, for 7 years, the general maintenance cost will be **339,795,806** leke without vat. About **223,727,721** leke without VAT out of them is the cost of maintenance and **116,068,085** leke without VAT is the cost of maintenance staff. The following table is the analysis of categories of maintenance expenses for each school in one year, without VAT:

Table 67 Maintenance costs for 7 years of Lot 1

B.	Kostot Direkte të Mirëmbajtjes	339,795,806
B.1	Kostot e Mirëmbajtjes së Aseteve	223,727,721
B.1.1	- Kostot e Mirëmbajtjes së Ndërtesave	51,729,846
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve	130,706,051
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi	16,362,801
B.1.4	- Mirëmbajtje IT&T (HD+SW)	24,929,023
B.2	Staf Mirembajtje	116,068,085
B.2.1	Staf Roje	17,073,463
B.2.2	Staf Sanitare	73,680,257
B.2.3	Staf Sekretare	14,757,736

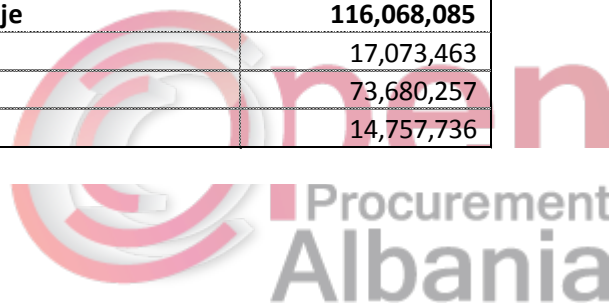


Table 68 Detailed costs of maintenance for Lot 1

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	Lyerje per klase	Riparim suvatim + hidroizolim per klase	Riparime dhe mirembajtje e Nderteses	Riparime Orendi shkollore	Riparime Pajisje PC	Materiale Pastrimi	Lëndë djegëse për ngrohje dhe ujë të ngrohtë	Mirembajtje kondicionim , impiante uji dhe MNZSH	Sherbim roje	Sherbim pastrimi	Sherbim sekretarie	Total kosto mirembajtjeje
1	NJA 09	TIP1 1	9-vjeçar	24	549,386	563,474	172,354	406,529	619,355	203,226	2,006,710	1,037,419	686,462	1,830,565	366,652	8,442,132
2	NJA 09	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
3	NJA 11	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
4	NJA 11	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
5	NJA 11	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
Totali i Mirembajtjes				138	3,158,970	3,239,972	991,036	2,337,543	3,561,289	1,168,550	11,538,582	5,965,161	3,947,156	10,525,751	2,108,248	48,542,258



1.4 Analysis of PPP incomes

1.4.1. Tariff for the use of schools

Tariff for use of schools (hereinafter “Tariff”) will be calculated in such way so that could cover the costs of concessionary and guarantee a minimal income margin for the concessionary in order to make this PPP attractive and the best economic solution compared to other potential scenario. The tariff is paid for the entire maintenance and administration period of schools by concessionary, i.e. for 7 years. This tariff is paid to every year by Tirana Municipality through financing resources detailed as following. This scheme provides for the construction of 17 schools in a record time, solving the two-shifts teaching and over-crowded classes, but as long as all the risks for maintenance and careful use of the asset will be under the responsibility of the concessionary and related to the payments, this will enable qualitative constructions in the interest of the community.

As long as the direct investment costs, i.e. construction and functioning of schools is calculated based on interim payment reports, which include the income margin of the contractor, on this category will not be calculated the additional income margin. But on the other side, as long as the invested values of the concessionary in this respect will be covered in a seven-year period, he must be minimally reimbursed for the value in time of the money, as well as for the normal and extraordinary maintenance part for this period.

In this respect, as the income margin has been considered the limit of average norm of Albanian government obligations for a fixed seven year period¹⁵, respectively the results of seven year obligations from 2015 until 15.09.2016.

¹⁵ <http://www.financa.gov.al/al/raportime/borxhi/ankandet-e-emetimit-te-letrave-me-vlere-te-geverise/rezultatet-e-ankandeve/2016>

Table 69 Income Margin

ISIN	Dt.Ankandi	Ankandi	Muaji	Data Emetim	Data Maturim	Shuma e shpallur (filletare)	Shuma e shpallur (nd. strukture)	Shuma e kerkuar	Shuma e pranuar	Prorata Konkurses	Prorata Jo Konkuresese	Yieldi Uniformi Pranmar
AL0017NF7Y23	13.09.2016	7vjeçar/7years(fix)	Shtator	15.09.2016	15.09.2023	3,000,000		2,309,000	2,309,000			4.89%
AL0016NF7Y23	01.06.2016	7vjeçar/7years(fix)/Rihapje	Qershor	03.06.2016	16.03.2023	2,000,000		3,141,400	2,000,000	4.40%		4.00%
AL0016NF7Y23	11.03.2016	7vjeçar/7years(fix)	Mars	16.03.2016	16.03.2023	3,000,000		8,247,000	2,999,900	76.48%		4.90%
AL0015NF7Y22	14.12.2015	7vjeçar-fiks	Dhjetor	16.12.2015	16.12.2022	2,500,000		5,288,600	2,500,000	67.70%	100.00%	6.79%
AL0014NF7Y22	14.09.2015	7vjeçar-fiks	Shtator	16.09.2015	16.09.2022	1,000,000		1,430,600	1,000,000	100.00%	100.00%	7.78%
AL0013NF7Y22	12.06.2015	7vjeçar-fiks	Qershor	16.06.2015	16.06.2022	3,000,000		2,953,500	2,953,500	100.00%	100.00%	7.80%
AL0012NF7Y22	12.03.2015	7vjeçar-fiks	Mars	16.03.2015	16.03.2022	2,500,000		2,815,800	2,500,000		77.92%	7.81%
Yieldi Mesatar i pranuar											6.28%	

The income margin will be object of bidding procedures of competitors in this PPP, but in the mean time, it is necessary to understand the general value of this PPP. The income margin will be calculated for the remaining value of the direct investment every year and on annual maintenance costs. Thus, the financing scheme is attractive for potential competitors and total cost of the project is not higher than the traditional financing methods.

Based on the calculations, annual tariff to be paid to the concenssionary with a margin of about 6.28% will be as following :

Table 70 Annual Tariff to be paid to the concenssionary for Lot 1

A	B	C	D	E	F	G	H	I	J	K	L	M
Nr rend or	Viti	Kosto Direkte e Investimit ne Fillim të Periudhës (pa TVSH) (C3=F2)	marzhi i fitimit	Shlyerja vjetore për Koston Direkte të Investimit (C2/B8)	Vlera e Mbetur e Koston Direkte te Investimit (C-E)	Marzhi i fitimit mbi koston Direkte të investimit (C*D)	pagesa vjetore për koston direkte të investimit Pa TVSH (E+G)	kosto vjetore mirembajtjeje Pa TVSH	Marzhi i fitimit mbi Mirembajtjen (D*I)	pagesa vjetore për koston direkte të investimit Pa TVSH (I+J)	Total Marzhi i Fitimit	Tarifa Vjetore Pa TVSH
1	0	1,601,063,470										
2	1	1,601,063,470	6.28%	228,723,353	1,372,340,118	100,546,786	329,270,139	48,542,258	3,048,454	51,590,712	103,595,240	380,860,851
3	2	1,372,340,118	6.28%	228,723,353	1,143,616,765	86,182,959	314,906,312	48,542,258	3,048,454	51,590,712	89,231,413	366,497,024
4	3	1,143,616,765	6.28%	228,723,353	914,893,412	71,819,133	300,542,486	48,542,258	3,048,454	51,590,712	74,867,587	352,133,198
5	4	914,893,412	6.28%	228,723,353	686,170,059	57,455,306	286,178,659	48,542,258	3,048,454	51,590,712	60,503,760	337,769,371
6	5	686,170,059	6.28%	228,723,353	457,446,706	43,091,480	271,814,833	48,542,258	3,048,454	51,590,712	46,139,933	323,405,544
7	6	457,446,706	6.28%	228,723,353	228,723,353	28,727,653	257,451,006	48,542,258	3,048,454	51,590,712	31,776,107	309,041,718
8	7	228,723,353	6.28%	228,723,353	(0)	14,363,827	243,087,179	48,542,258	3,048,454	51,590,712	17,412,280	294,677,891
Grand total				1,601,063,470		402,187,144	2,003,250,614	339,795,806	21,339,177	361,134,983	423,526,320	2,364,385,597

Thus, for seven years, Tirana Municipality will pay to the Concenssionary, annual tariffs not more than :

Nr rend or	Viti	Tarifa Vjetore Pa TVSH
1	0	
2	1	380,860,851
3	2	366,497,024
4	3	352,133,198
5	4	337,769,371
6	5	323,405,544
7	6	309,041,718
8	7	294,677,891
Grand total		2,364,385,597



1.4.1 Source of financing

The general amount of this project is **2,617,301,524** leke, about **252,915,927** out of them are expropriations to be paid by Tirana Municipality to the expropriated persons and **2,364,385,597** leke is the amount of the concession:

Table 71 General amount of project for Lot 1

Vlera e Pergjithshme e Projektit	Çmimi	Sasia	Vlera totale
Kostoja e përgjithshme e shpronësimit	252,915,927	1	252,915,927
Kosto direkte e Investimit pa TVSH	1,601,063,470	1	1,601,063,470
Kosto direkte e investimit te koncesionarit Pa TVSH	1,601,063,470	1	1,601,063,470
Kosto e mirembajtjes pa TVSH	48,542,258	7	339,795,806
Kosto e mirembajtjes te koncesionarit Pa TVSH	48,542,258	7	339,795,806
Marzhi i Fitimit	423,526,320	1	423,526,320
Marzhi i Fitimit të Koncesionarit	423,526,320	1	423,526,320
Total i pergjithshëm i kostos(1+2+3+4+5)			2,617,301,524

Table 72 Amount to be covered by the municipality and concessionary

Nga të Cilat:	Bashkia	Koncesionari	Totali
1. Vlera e Përgjithshme e Projektit Pa TVSH	252,915,927	2,364,385,597	2,617,301,524
Totali	252,915,927	2,364,385,597	2,617,301,524

These expenses will be covered by incomes of the Municipality, Conditioned Grants of Ministry of Finance for project.

Incomes of Tirana Municipality for this project will be generated from the Interim Tax on Education Infrastructure, which is applied upon decision of Municipal Council No. 59, dated 30.12.2015, "On taxes and local tariffs system in the city of Tirana".

Table 103 Forecast of incomes from Interim Tax on Education Infrastructure

Description	PLAN YEAR 2016	FORECAST 2017	FORECAST 2018
Interim Tax on Education Infrastructure	870 000 000	940 000 000	1 000 000 000
Families	320 000 000	340 000 000	350 000 000
Trade subject	550 000 000	600 000 000	650 000 000

Incomes from Interim Tax on Education Infrastructure are estimated at 870 million leke in 2016, whereas these incomes are envisaged to increase to 940 million leke in 2017 and 1 billion leke in 2018. This interim tax will be applied for 7 years and for 2019-2022 period, the annual incomes

are projected to amount to 1 billion leke. Incomes from specific transfer from Ministry of Finance will be 700 million lek per year. Therefore, the fund at the disposal of Tirana Municipality for completion of periodical payments is estimated at 1 billion and 700 million leke per year.



1.5. Financial Analysis

Table 73 Summarizing table of costs and incomes of the project

Viti	Pershkrimi	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
A.	Kostot Direkte te Investimit	1,853,979,397	-	-	-	-	-	-	-	1,853,979,397
A.1	Kostot e Truallit	252,915,927								252,915,927
A.2	Kostot e Projektimit	35,393,633								35,393,633
A.3	- Ndertim + instalime	1,399,958,107	-							1,399,958,107
A.4	- Oponenca teknike	1,094,225								1,094,225
A.5	- Takse Infrastruktore									-
A.6	- Leje mjedisore	150,000								150,000
A.7	- Mbrojtje ndaj Zjarrit	250,000								250,000
A.8	- Kosto Supervizimi	15,861,208								15,861,208
A.9	- Kosto Kolaudimi	565,414								565,414
A.10	- Mobiljet dhe Orendi	99,170,000	-	-	-	-	-	-	-	99,170,000
A.11	- Investime IT&T dhe Labs	48,620,883								48,620,883
B.	Kostot Direkte të Mirëmbajtjes	-	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	339,795,806
B.1	Kostot e Mirëmbajtjes së Aseteve	-	31,961,103	31,961,103	31,961,103	31,961,103	31,961,103	31,961,103	31,961,103	223,727,721
B.1.1	- Kostot e Mirëmbajtjes së Ndërtesave	-	7,389,978	7,389,978	7,389,978	7,389,978	7,389,978	7,389,978	7,389,978	51,729,846
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve dhe Orendi		18,672,293	18,672,293	18,672,293	18,672,293	18,672,293	18,672,293	18,672,293	130,706,051
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi		2,337,543	2,337,543	2,337,543	2,337,543	2,337,543	2,337,543	2,337,543	16,362,801
B.1.4	- Mirëmbajtje IT&T (HD+SW)		3,561,289	3,561,289	3,561,289	3,561,289	3,561,289	3,561,289	3,561,289	24,929,023
B.2	Staf Mirembajtje	-	16,581,155	16,581,155	16,581,155	16,581,155	16,581,155	16,581,155	16,581,155	116,068,085
B.2.1	Staf Roje		3,947,156	3,289,297	2,741,081	2,284,234	1,903,528	1,586,273	1,321,895	17,073,463
B.2.2	Staf Sanitare		10,525,751	10,525,751	10,525,751	10,525,751	10,525,751	10,525,751	10,525,751	73,680,257
B.2.3	Staf Sekretare		2,108,248	2,108,248	2,108,248	2,108,248	2,108,248	2,108,248	2,108,248	14,757,736
A+B	Totali i Kostove (A+B+C)	1,853,979,397	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	2,193,775,203
C.	Të Adhurat	252,915,927	380,860,851	366,497,024	352,133,198	337,769,371	323,405,544	309,041,718	294,677,891	2,617,301,524
C.1	Likuidimet e shpronësimeve	252,915,927								252,915,927
C.2	Tarifa e Shfrytezimit pa TVSH		380,860,851	366,497,024	352,133,198	337,769,371	323,405,544	309,041,718	294,677,891	2,364,385,597
D	Fitimi (humbja)	(1,601,063,470)	332,318,593	317,954,766	303,590,940	289,227,113	274,863,286	260,499,460	246,135,633	423,526,320
E	Fitimi (humbja) progresive	(1,601,063,470)	(1,268,744,878)	(950,790,112)	(647,199,172)	(357,972,059)	(83,108,773)	177,390,687	423,526,320	423,526,320
F	15% Tatim fitim	0	0	0	0	0	0	(26,608,603)	(36,920,345)	(63,528,948)

Table 74 Cashflow of the project

Viti	Fluksi i Arkës									
	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total	
Flukse dalese nga Investimet	-1,853,979,397	-	-	-	-	-	-	-	-	-1,853,979,397
Flukse dalese nga Mirëmbajtja	-	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	339,795,806
Flukse dalese nga Taksat	-	-	-	-	-	-	-	26,608,603	36,920,345	63,528,948
Totali i flukseve dalese	-1,853,979,397	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	48,542,258	75,150,861	85,462,603	-2,257,304,151
Flukse hyrese nga Operimet	252,915,927	380,860,851	366,497,024	352,133,198	337,769,371	323,405,544	309,041,718	294,677,891	2,617,301,524	
Gjendja e Arkes ne fund te periudhes	-1,601,063,470	332,318,593	317,954,766	303,590,940	289,227,113	274,863,286	233,890,857	209,215,288		359,997,372
Gjendja e arkes progresive	-1,601,063,470	1,268,744,878	950,790,112	647,199,172	357,972,059	83,108,773	150,782,084	359,997,372		359,997,372

1.6. Economic Profitability of the Project

1.6.1 NPV (Net Present Value)

NPV, as standard method for assessment of long-term projects through analysis of time value of money, presents the discounted amount of cashflow of the project. Every investor, when decides to undertake an investment analyzes the incomes generated by one project compared to the potential incomes of the invested money in another project. In general, these analyses are carried out taking into account the interest rate in case of the investment of the money, e.g. treasury bonds or government obligation, which have almost a zero risk.

Classical formula of NPV calculation, if the investment is made in one year, is :

$$NPV = \sum_{t=1}^T \frac{C_t}{(1+r)^t} - C_0$$

where:

C_0 – presents the money spent for the initial investment

C_t – presents the incomes from the investment ;

t – presents duration of the project ;

r – presents the expected rate of discount .

To see the economic profitability of the project, the financial model has been tested with several potential discount rates. From this analysis, it resulted that the potential concessionaries will be interested in this project only if their opportunity cost is lower than 5.79%. In other words, for every discount rate over 5.79% this project does not consist of any economic profitability for the concessionary.

norma e skontimit e parashikuar NPV	NPV			
	5%	5.79%	6%	7%
	29,884,696	15,136	7,682,796	42,661,484

i. IRR (Internal Rate of Return)

IRR is a method used to measure the incomes of potential income. IRR is a discount rate that makes the net present value (NPV) of all cashflows of a project equal to zero. According to economic theory, every project with an IRR higher than its capital cost is profitable, as a result investors will be interested to invest in it. Based on the financial analysis, the IRR of this project is estimated at 5.79%.

Table 75 Internal Rate of Return of the project

Viti	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
Gjendja e Arkes ne fund te periudhes	-1,176,772,556	244,264,887	233,707,556	223,150,225	212,592,894	202,035,563	171,909,712	153,782,766	264,671,046
IRR	5.79%								

1.6.3. Payback Period

The payback period presents the necessary time needed for the invested capital to recover the initial investment from the project incomes. In general, the payback period is calculated by dividing of the investment cost by annual incomes. Hence, as long as the annual incomes in this project consist of decreasing installments, the payback period is assessed by analyzing the cashflow to determine the latest year when this flow is negative.

Periudha e Vetëshlyerjes

Viti i fundit i gjendjes se arkës negative		5
Gjendja e arkës kumulative në vitin e fundit negativ	-	61,021,432
Gjendja e arkës pozitive krijuar në vitin vijues		171,909,712
PBP (periudha e vetëshlyerjes)		5.35

In this respect, the self-payment period for this project is achieved in 5.35 years. Nevertheless, taking into account that payment from Tirana Municipality will be annual, then the self-payment period will not be 5.35 years, but 6 years.

1.6.4. Financial compatibility

According to CoMD no. 575, dated 10.07.2013, article 7, item 10, the financial compatibility of a project “indicates whether the project seems to be able to attract guarantees/financial support and qualitative loaners, by providing a strong and reasonable financial.”

Based on the above-mentioned financial analysis, this project is economically profitable and this profitability is presented as following:

- NPV = 5.79% > 0
- IRR = 5.79% > than interest of deposits or treasury bonds
- PBP = 6 year < 7 years (duration of concession)

1.7 Quantitative and Qualitative Risk Analysis

The main goal of Risk Analysis is to identify and evaluate the gamma of risks that may affect the project. Therefore, a strategy on risk management is carried out in order to guarantee the successful realization of the project. In compliance with Decision of Council of Ministers No. 575, dated 10.07.2013 “On approval of rules for evaluation and issuance of concession/private-public partnership” following is a risk analysis regarding this project.

1.7.1. Qualitative Risk Analysis

Land Risk

Description of the Risk: Lands selected for construction of 17 schools will mostly be owned by the state, whereas the private-owned lands will be expropriated in line with the legislation in force and will be put at disposal of the concessionary. As a result, this risk has a low probability, almost zero, about this project. Regarding the necessary permits, there is no risk, because Tirana Municipality is itself the responsible body to grant these permits. In relation to environmental standards, the selected lands are plots located in areas where the environmental standard is not affected, therefore the risk is considered zero.

Management of risk: This risk is assessed with a zero probability and it is covered by Tirana Municipality. Tirana Municipality will carry out all the procedures for expropriation of private lands out of this PPP scheme, before the beginning of works. If any of the selected lands is in a ownership conflict, turning expropriation impossible, authorities will ask for information at the Immovable Properties Registration Office for alternative sites to be used. Regarding geological conditions and environmental standards, there has been an environmental study part of this feasibility study, which has come to the conclusion that the construction of these objects does not have an impact on the environmental standards. Hence, during the procedures for obtaining a construction permit, there will be also a detailed environmental study by the concessionary.

Risk of design, construction and functioning

Description of the Risk: Calculation of costs for construction and furniture of new schools is based on above-mentioned methodology, which takes into consideration the cost of schools built by Tirana Municipality in the last three years. Therefore, the possibility of a higher construction cost than the calculated cost is almost zero. Construction and functioning of schools depend in a certain scale on the obtaining of construction permit and meeting of preconditions for obtaining of this permit, such as environmental permit, connection with the electrical grid or water supply system, approval of projects for fire protection, etc. The concessionary has the right to draft the designing, prepare the documents for equipment with a construction permit, as well as to build the school objects. From this point of view, the risk of delays in equipment with construction permits, delays in kick-off works, readiness is possible.

Management of risk: This risk belongs to the concessionary. He is accountable for compilation of documents and equipment with construction permit. If the concessionary does not prepare the project on time and will neglect the application for construction permit by not applying on time or having irregularities in documents, or failure to start works on time, then he will be accountable for failure in starting works on time and will compensate the contracting authority according to the requirements in the concessionary contract. Likewise, as long as the concessionary is responsible for drafting and implementing the project, each delay in completion of construction works, excluding the case when the delay comes as a result of a force majeure will be under the concessionary's responsibility and will be forced to compensate the contracting authority according to requirements in the concessionary contract.

Functioning Risk

Description of the Risk: The possibility that the new schools will not be functional after the construction is related to the non-qualitative works by the concessionary, which might make the performance of teaching in new buildings impossible. This risk has a low probability because the completion of works will be carried out by the technical supervisor and financial bill of quantities will be supervised by the contracting authority. Regarding the risk of a higher maintenance cost than expected, the probability is almost zero, because the annual maintenance cost is calculated based on annual expenses of Tirana Municipality for the maintenance of existing schools, which have been constructed long ago. According to engineering standards, the maintenance cost of newly-built objects is lower than that of the objects built before.

Management of risk: The probability of this risk is low and it is considered as a risk transferred to the concessionary. In case the construction quality will make the performance of teaching process impossible, the concessionary will be accountable and will be forced to carry out extra works until the works quality will be in line with the requests of the designing tasks. In case school buildings might have any problems due to construction works, in the course of seven years of the contract duration, which will make the teaching process impossible, the concessionary will be obligated to carry out extra works to make the school functional again. If the maintenance cost is higher than predicted, this would be a result of the inaccuracies in the design or construction. Therefore, the risk belongs to the concessionary, who is accountable for the designing and building of these schools.

Risk of demand and other trade risks

Description of the Risk: This risk is related to the situations when use of the object is different from what is expected or the generated incomes are lower than the forecast. As long as objects to be build are school buildings that will not have a different use and cannot generate incomes, this risk cannot be applied on this project.

Management of risk: The possibility that this project can be affected by this risk is zero, because it is not subject of its impact.

Economic and Financial Risks

Description of the Risk: As long as this project includes financial transactions to be implemented in the course of time, there exists the possibility of an impact from economic and financial risks. The unpredicted increase of the norms of interest may increase the financial costs of the project from the concessionary. On the other side, changes in exchange rate course may have a worsening affect in the finances of the concessionary if his incomes and expenses are in a different currency, e.g. the concessionary has been granted a loan in EUR or USD for the financing of the project, while Tirana Municipality makes the annual payments in Leke. In the end, as long as this project includes periodical payments for a seven year period, there exists the possibility of an impact from inflation in the concessionary's incomes.

Management of risk: Due to the fact that Albania is a country with a sustainable macroeconomic situation, the probability that this project may be affected by such risk remains low. The risk of interest rates or exchange rates belongs to the concessionary and shall be calculated in its financial

projections. Inflation risk is shared among the concessionary and Tirana Municipality. As long as the Bank of Albania policy is keeping inflation under 3% and duration of the project is only 7 years, the probability of this risk is low. Nevertheless, in the definition of income margin as related to interest rate of 7 year obligations, Tirana Municipality guarantees the concessionary the same protection toward the economic and financial risks as guaranty of Albanian Government for buyer of obligations.

Risks of assets ownership

Description of the Risk: This risk is related to the possibility that technology might get older or if the value of assets might be different at the end of the contract. As long as, the construction consists of school buildings, which will be maintained by the concessionary for seven years, the probability of this risk is low. Nevertheless, the quality and value of assets may be lower than the projection due to non-qualitative maintenance.

Management of risk: This risk is transferred to the concessionary. Maintenance of schools buildings and their furniture will be completed in line with the standards in force and will be supervised by the Contracting Authority. In case the concessionary will not maintain schools in line with the above-mentioned determination, the concessionary contract will envisage provisions obligating him to pay the damage. If at the end of the contract, the value of assets will be different from the predicted, the concessionary contract will define provisions obligating the concessionary to pay the damage.

Political risk

Description of risk: The risk of an impact from political decisions on the project is evident. As long as it is a project initiated from Tirana Municipality, a local government body, the success of the project depends on the coordination with local government. Likewise, there is a potential possibility that the results of next local elections – a potential change of Tirana mayor – may also cause the change of priorities and as a result the project can be blocked.

Management of risk: This risk is transferred on the Contracting Authority - Tirana Municipality. To ensure the consent of central government, with the approval of the feasibility study from the head of Tirana Municipality, will be required also an approval from the Ministry of Finance and Ministry of Education and Sports. Regarding risk of a negative impact of the project as a result of changes in the leadership of Tirana Municipality, the concessionary contract will envisage provisions that obstacle the dismissal of the Contract for non-legal reasons by the Contracting Authority.

Risks deriving from change of legal framework

Description of risk: Potential changes in legislative framework may affect the project positively and negatively. As long as the project is related to the construction of school buildings, the possibility of an affect from legal changes is related only to standards and construction manuals.

Therefore, this risk has a low probability. Regarding changes in fiscal laws, the negative or positive influence can be felt only in the finances of concessionary.

Management of risk: This risk falls on the concessionary. In order to have minimal effects, the concessionary contract will include provisions that protect it from discriminating changes in law – always if the discrimination is proved by the court. On the other side, the concessionary will be forced to implement any legal changes coming as a result of governance policies.

Risk from force majeure

Description of risk: Force majeure risks, such natural calamities, civil unrests or wars are transferred to the concessionary and contracting authority. Taking into account the fact that Albania is a member of NATO and with a clear perspective of EU integration, the probability of risks from wars or unrests is almost zero. On the other side, the probability of and impact from earthquakes or other natural disasters on the project is low – How? As a result of the above-mentioned analysis of environmental impact on the project.

Management of risk: Probability of these risks is very low and it is transferred on both parts. The concessionary contract will envisage clauses of force majeure which will guarantee that any negative impact on the project shall be divided between the parties.

1.7.2. Quantitative Analysis of Risks

This analysis aims to prioritize risks that may affect the project by calculating their probability and potential impact on the achievements of project objectives. The quantitative evaluation is based on the probability of occurrence of each risk and potential impact on costs and deadlines of the project.

Impact of risks on project costs is calculated based on the specific weight of each of them in the project's cost. Whereas, the impact on deadline of completion of works is calculated based on legal deadlines for completion of defined procedures that may be necessary for well-going of the project.

Following is a quantitative analysis on the impact of each risk in the costs and deadlines for realization of the project.

Lands risk. Probability of this risk is low, 0-5%. Its impact on the project' cost is zero because expropriations of private lands that will be used for construction of school will be carried out by Tirana Municipality with a special fund out of the financial scheme of this project. The lands selected for construction of the schools are state-owned and private properties. In case use of any of these lands is impossible than will be used an alternative selected land with the necessary information from the Immovable Properties Registration Office. As a result, the impact on the deadline

of completion of works is related the handing in of the state-owned land if it is not a property of Tirana Municipality or expropriation of private properties. The impact on deadline of works is calculated at 3 - 6 months.

Risk of designing, construction and functioning. Probability of this risk is low, 5-10%. The costs assessment process of the schools construction is carried out in line with the MoES guidelines manuals and based on the construction of schools by Tirana Municipality in the course of last years and prices have been indexed according to construction prices index of INSTAT. Hence, maximal influence of this risk in costs is less than 5%. On the other side, the deadline of works may not be respected as a result of failure to receiving the construction permit or other permits on time by the concessionary or due to slower completion of works than the calendar of works. In case designing is delayed or documents for equipment with necessary permits are not compiled, the impact on deadline of works is calculated from 3 to 12 months.

Functioning Risk. Probability of this risk is calculated at 0-5%. As long as this project is related to the construction of new schools, there exists the possibility of a low quality of construction. This could require additional works beyond the defined deadline. The impact of this risk in the deadline of works is calculated from 1 to 3 months, whereas the impact on total cost of the project is envisaged at 5-10%. There exists an opportunity that the maintenance cost may result higher than the forecast, but compared to total cost of the project the impact of this cost is almost zero.

Risk of demand and other trade risks. This risk cannot be applied on the project and the possibility of an impact from it on cost or deadlines is zero.

Economical and financial risks. Probability of this risk is low, 0-5%, taking into consideration that it is not a long-term concession where the concessionary generates incomes from the operation of the object of concession. As long as incomes of the concessionary are guaranteed by Tirana Municipality and covered by inflation, impact of risk on total cost of the project is low, 5% - 10%. On the other side, the impact on deadlines of completion of works is not envisaged longer than 12 months.

Risks of assets ownership. Probability of this risk is calculated at 0 - 5%. Its impact on total cost of the project is related to the maintenance costs, in case the latest results higher than forecast and a more rapid amortization of buildings that envisaged in the concession contract. Its impact on project's costs is predicted to be at maximum 5%. Probability of this risk does not affect the deadline for realization of works.

Political risk. Probability of such risk is medium low and is calculated at 10 - 20%. The occurrence of such risk may block works or interrupt the periodical payments for the concessionary by increasing the financing cost of the project and delaying the realization of works. In this respect, a potential influence of this risk on costs is calculated at 20 - 30%, whereas the impact on deadline of realization of works is calculated from 16 to 24 months.

Risk of change of legal framework. This risk has a probability of 5 to 15%. Potential legal changes, such as in standards to be followed for construction of new schools, may considerably boost the project cost. Therefore, the potential risk on costs is medium, varying from 20 to 40%. Likewise, potential legal changes may cause the re-drafting of the project or other delays that may be negatively affect the deadline for realization of works. Therefore, impact on deadline of works is calculated from 12 to 16 months.

Force Majeure Risk. Probability of this risk to happen is very low - 0 to 5%. Nevertheless, in case it happens, the impact on costs or deadline of works will be medium high. Therefore, impact on cost is calculated at 30% to 50%, whereas impact on deadline of works from 12 to 24 months.

Table 107 Summarizing table of impact of risks

No.	Risk	Probabiliy	Impact on cost	Impact on works deadline
1	Risk on land	0% - 5%	0%	3 - 6 months
2	Risk on designing, construction and implementation	5% - 10%	0% -5 %	3 - 12 months
3	Functioning Risk	0% - 5%	5% -10%	1 - 3 months
4	Risk of demand and other commercial risks	-	-	-
5	Economic and Financial Risks	0% - 5%	5% -10%	6 - 12 months
6	Risks of assets ownership	0% - 5%	0% - 1%	-
7	Political Risk	10% - 20%	20% - 30%	16 - 24 months
8	Risk of change of legal framework change	5% - 15%	20% - 40%	12 - 16 months
9	Force majeure	0% - 5%	30% - 50%	12 - 24 months

1.8 Sensitivity Analysis

Main factor that may change during the tender process is the income margin. At the same time, the details of respective costs will be respectively defined based on factual approved projects, depending on the approved projects. The direct cost will be calculated base on the factual realized volumes, which in no way will be higher than the costs envisaged in this project.

Nevertheless, due to the effects of sensitivity analysis, the calculation will made as if the costs have increased and decreased by 5% and 10%, whereas the income margin increases and decreases by 5% and 10%.

Table 78 Sensitivity Analysis if costs rincrease or decreasedby 5 – 10 %

	Incomes and expenses increase by 10%	Incomes and expenses increase by 5%	Basic Model	Incomes and expenses decrease by 5%	Incomes and expenses decrease by 10%
Sensitivity Norm	10%	5%	0	-5%	-10%
Outflow from Investments	- 7,267,445,188	- 6,937,106,771 ^F	6,606,768,353	- 6,276,429,936	-5,946,091,518
Outflow from Maintenance Incomes	- 1,275,711,645 10,274,681,048	- 1,217,724,752 9,786,000,321	1,159,737,859 9,197,517,960	- 1,101,750,966 8,713,446,063	-1,043,764,073 8,188,265,320
Income before taxes	1,731,524,215	1,631,168,798	1,431,011,748	1,335,265,161	1,198,409,729
Tax on Income 15%	259,728,632	244,675,320	214,651,762	- 200,289,774	- 179,761,459
Nett income	1,471,795,583	1,386,493,478	1,216,359,986	1,134,975,387	1,018,648,270
NPV by 5.79%	110,223,600	81,672,242	170,329	23,634,170	- 68,587,789
IRR	6.38%	6.25%	5.79%	5.64%	5.34%
Self-Payment Norm	5.20	5.28	5.35	5.43	5.51

8.2 Lot 2

8.2.1 Location of sites in schools included in Lot 2

Lot 2 includes 4 schools, 3 in Unit of Kashar (Yzberisht), one in Administrative Unit 7. Distribution of schools included in Lot 2 are indicated in the following map :

Map 47 Location of schools included in Lot 2



8.2.2 Total surface to be seized permanently by sites of schools included in Lot 2

SITE 6/3

Map 48 Orhtophoto of the site



LOCATION : The proposed site no. **6/3**, for nine-year and secondary school is located near “Kombinati i Mishit”, Yzberisht. Accessable from “3 Dëshmorët” street.

TECHNICAL DATA : Site **6/3** : 9103 m²

CURRENT SITUATION OF THE SITE :

- Easy access .
- There are no secondary schools in this area
- The surrounding zone is organized and with green spaces, consisting of a suitable zone for construction of a new school.

Picture 5 Photo of site 6/3



SITE 6/6

Map 49 Orthophoto of the site



LOCATION :

The proposed site no. **6/6**, for a nine-year school is located near the Dogana round about. It is accessible from Teodor Keko street and it near Lana River.

TECHNICAL DATA : **Site6/6** :4930 m2

CURRENT SITUATION OF THE SITE :

- It is a zone in ownership of private subject, surrounded.
- It is located near the inhabited zone with a high intensity.
- Easy access from two roads .
- No secondary schools in this zone
- Road infrastructure may be problematic.

Picture 6 Photo from site 6/6



SITE 7/2

Map 50 Orthophoto of the site



LOCATION :

Proposed site no. **7/2** is located near Lana River. Accessed by “Javer Malo” and “Stavri Themeli” street.

TECHNICAL DATA : Site **7/2** : 8482 m²

CURRENT SITUATION OF THE SITE :

- No high schools in this area, but there is an increase of density of population .
- Road infrastructure may be a problem

Picture 7 Photo from site 7/2



8.2.3 Legal status of sites of schools included in Lot 2

Site 6/3

Map 51 Indicative map of properties

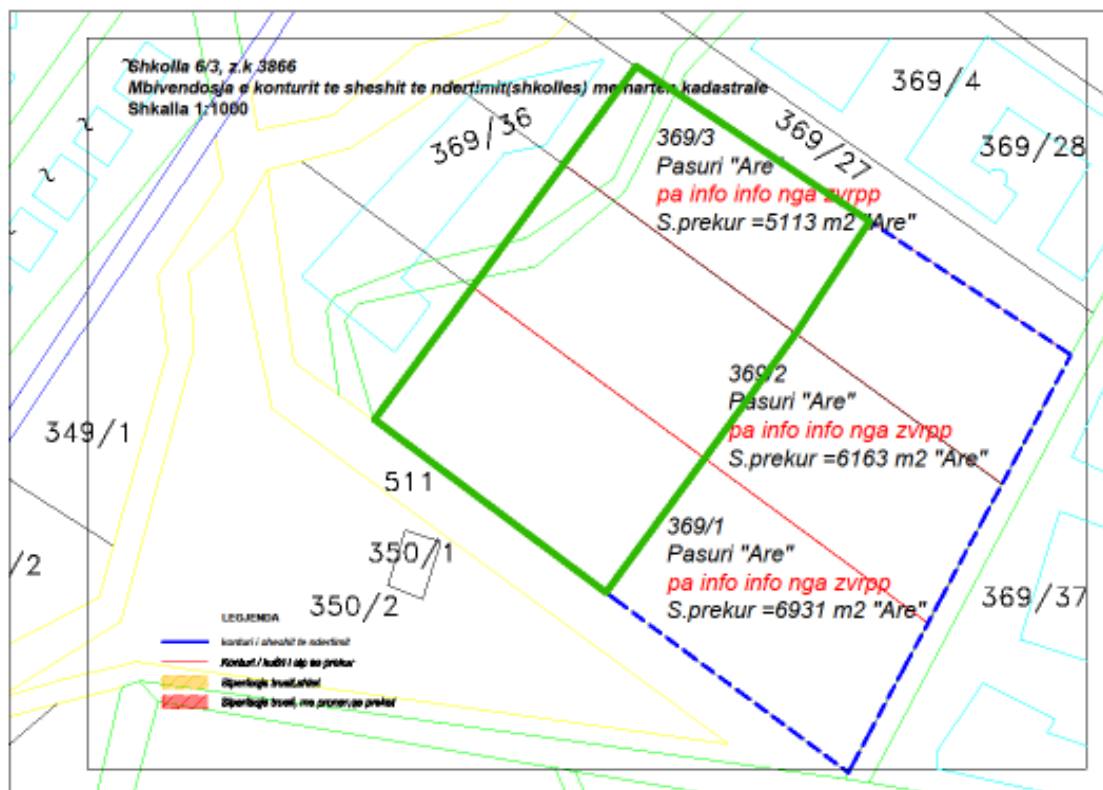


Table 76 Table with preliminary calculations of properties affect by this project

No	Name	Note in Sec. E	Cadastral Zone	No of property	Surface of affected land (m ²)	Land price lek/m ²	Surface of affected land (m ²)	Price Obj.lek/m ²	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 built in Cadastral Zone 3866 will affect a total of 9103 meter square property, composed of three properties. These three properties are arable lands. Currently, there is no information of their ownership. For the land, the calculated price is obtained 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 52- Orthophoto of the site



Table 77-Table with preliminary calculations of properties to be affected by the project

No	Name	Note in Sec. E	Cadastral zone	Property No	Surface of affected land (m ²)	Land price lek/m ²	Surface of affected object (m ²)	Price Obj.lek/m ²	Amount in leke
1	No information				4930	4242			20,913,060
					4930				20,913,060



Site 7/2

Map 53 Indicative map of properties

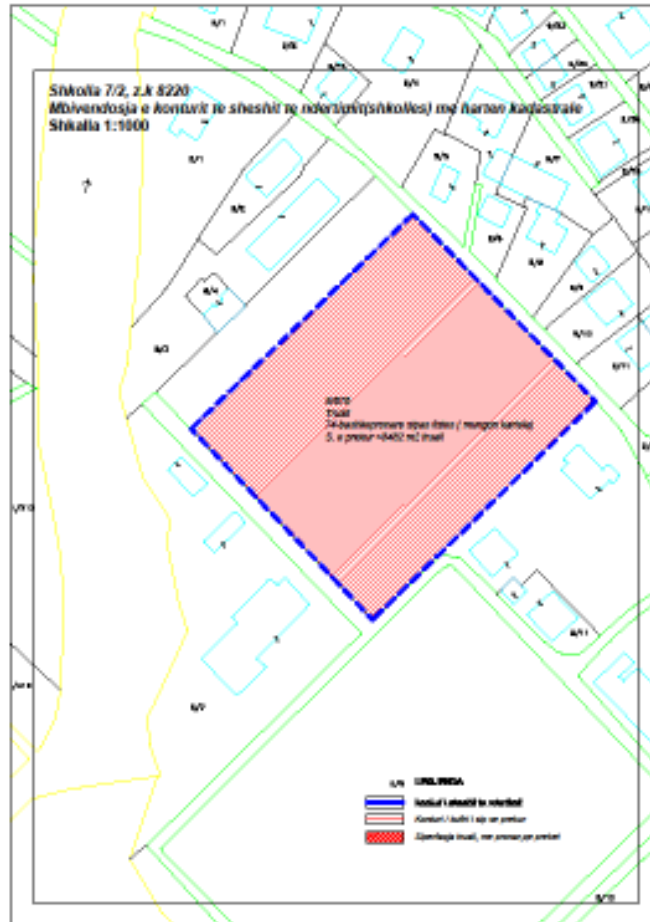


Table 78 Table with preliminary calculations of properties to be affected by the project

No	NAME	Note in Sek . E	Cadastral zone	No property	Surface of affected land (m ²)	Land price lek/m ²	Surface of the affected property (m ²)	Price Obj.lek/m ²	Amount in leke
1	74 Co-owners	List missing	8220	8/676	8482.00	30783			261,101,406.0
					8482.00				261,101,406.0

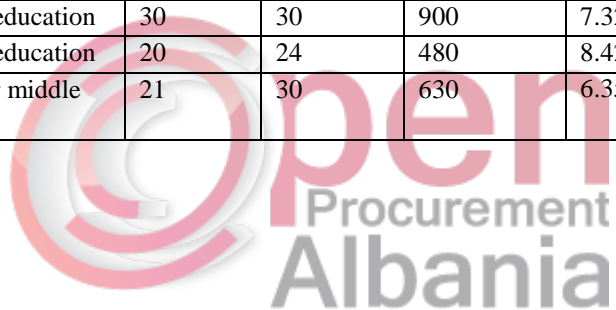
School to be built in cadastral zone 8220 will affect a total of 8482 meter square property, composed of one property no. 8/676, owned by co-owners. For the land, the calculated price is obtained from CoMD No.89, dated 03.02.2016.

8.2.4. Typology of schools included in lot 2

Lot 2 envisages the construction of 4 new schools, three in Administrative Unit of Kashar and one in Administrative Unit 7. In details, in AU Kashar is envisaged the construction of two basic education cycle schools of type 2 and one high school type 4. Whereas in AU 7 is envisaged the construction of one type 4 school, i.e. lower middle cycle. The following table indicates these data:

Table 79 – Schools typology

Type	Location	Cycle	No classes	St/class	No st. total	M2/students	Total surface
Type1	Urban	Basic education	20	30	600	8.23	4938
Type2	Urban	Basic education	30	30	900	7.32	6588
Type3	Rural	Basic education	20	24	480	8.42	4041.6
Type4	Urban	Higher middle	21	30	630	6.35	4000.5



8.2.5. ECONOMIC AND FINANCIAL ANALYSIS FOR LOT 2

2. Economic and financial analysis

Economic and financial analysis of this feasibility study, in line with Council of Ministers Decision no. 575, dated 10.07.2013, “On approval of rules for assessment and granting for concession/private-public partnership”, article 7, mainly focuses on determination of value for money of the project, as well as on completion of an evaluation of the investment in total, operative costs and maintenance, as well as any other income expected to be generated during the duration of the project.

2.1 Economic Model of the Concession / Public-Private Partnership

Law no. 125/2013, changed with law no. 88/2014, regulates the competences of contracting authorities in order to sign concessions/public-private partnerships. In this type of relations, the private partner takes the responsibility of financing, designing, building and/or re-building/renewal the public infrastructure object, to operate and maintain the public infrastructure object built and/or rebuilt/newly renewed. Among the fields of implementation of this law is also education.¹⁶

Based on the data analysis, it results that to put an end to the over-crowded schools problem and two shifts learning, Tirana Municipality needs to build 17 new schools - 10 nine-year schools and seven high schools. The total cost of construction and furnitures for these schools is calculated at 7.6 billion leke. Such amount of money is financially unaffordable for Tirana Municipality, whose total annual budget is 10 billion leke, whereas investments for construction of new schools in the course of last years has been not more than 500 million leke.

In this respect, in order to settle this problem, Tirana Municipality must implement innovative methods of procurement and financing of the proposed project. To guarantee the realization possibility of the schools construction project, it was chosen a more innovative and cost-efficient approach, combining the designing, financing, construction and maintenance in one and only procurement contract. Due to the considerable dimensions of this project, this methodology will not only offer facilitations during the development process, but will provide more sustainability after its completion.

¹⁶ Article 4, item dh), Law 125/2013

In the framework of the “Design, Finance, Build and Maintain” (DFBM) model as internationally known “Design, Build, Finance & Operate (DBFO)”, contractors take the responsibility of designing, building, financing and maintaining an object for entire duration of the contract. The contractor who may be one company or a consortium is responsible for designing, financing, construction and maintenance of the object for a determined period of time, which is proposed to be 7 years. The payment after the completion of the object is dictated based on completion of some determined performance standards regarding the physical condition of the buildings, capacity, quality, etc. This model which goes beyond the designing and construction phase, naturally encourages the designer/builder to provide since the beginning a qualitative construction plan in order to have less costs during the maintenance phase, as long as the responsibility belongs to their consortium. Likewise, integration of all project’s contract in one reduces different transactional costs and boosts project management efficiency.

This PPP model has been widely used for construction of major infrastructure projects, such as construction of highways, hydro power stations, wastes management plants, etc, because the dimensions of such projects required considerable funds, efficient organization of capital and human resources, high designing and construction quality, maximal security and constant maintenance. In this respect, such models have been considered successful for development of projects that guarantee their realization and efficiency of the investment. Nevertheless, the use of this PPP form is not limited only in major public infrastructure works mentioned above. In many OECD countries, mainly in the United Kingdom, this methodology is used also for public service projects, such as construction of new schools.

Following are some examples from different countries that have successfully implemented this model for projects of educational infrastructure:

Canada¹⁷: “Alberta Schools Alternative Procurement” Program. In 2007, Alberta region in Canada declared the first stage of the program which envisages the construction of 18 new school buildings (kindergartens and nine-year schools), which were completed in 2010. After the completion of works, duration of the contract will continue with the maintenance and it estimated at about 30 years. The second phase of the program envisaged the construction of other 10 nine-year schools according to the same model and 4 high schools through the simple model of Designing-Constructing contract, which were completed in 2013.

Greece¹⁸: “Macedonia Schools and Attica Schools” Program. With the use of DBFM mechanism, private operators designed construction of 51 schools with a total amount of about 269 million Euro and 25 year contracts.

¹⁷ “Flexible and alternative approaches to providing school infrastructure in Alberta, Canada” – OECD, 2010

¹⁸ “The role and impact of public-private partnerships in education”, pg. 82 – World Bank, March 2009

http://www.ungei.org/resources/files/Role_Impact_PPP_Education.pdf

United Kingdom¹⁹: “Building Schools for the future” Program. This program is a long-term investments program, which is contributing in the construction of a considerable number of schools in the entire territory of UK. Majority of schools has been built through the Design-Build-Finance-Maintenance scheme, but in this case often has been included also the element of school management by a private subject of a determined period. In general, total duration of the contract is estimated up to 30 years. The private consortium is regularly paid by public funds based on its performance during the contract period. If the consortium does not achieve the required performance, the payment is reduced. At the end of the contract period, school is given back to government.

New Zealand²⁰: The project of New Zealand Ministry of Education for construction of two schools in Hobsonville, Auckland. This project envisages the construction of a new lower cycle school and one lower middle cycle school in the suburb region of Hobsonville in Auckland city. The private sector is partly responsible for designing, building and financing of the objects, together with their constant maintenance and management of common services. Construction of these schools has been successfully completed in 2014.

In this aspect, the project for construction of new schools in Tirana needs the application of the same approach for improvement of education service in the entire territory of the Municipality. Big number of schools that will be built, financial limitations, short period for implementation of the project, as well as need to guarantee the maximal security of buildings point to the necessity of establishment of an efficient and successful public private partnership.

1.9 Main assumptions

In the framework of financial and economic analysis effects of this feasibility study, were made the following assumptions:

- Concessionary will cope with its incomes the entire investment for construction of education objects and their functioning, whereas Tirana Municipality will face with its funds the expropriation of private lands to be used for this purpose.
- Educational objects will be built and functional at maximum 18 months from the signing of the construct.
- After the construction and functioning of schools, concessionary will be accountable for administration and maintenance of the objects for a 7 year period and for every problematic regarding risks of assets for these period.

¹⁹ Ibidem (i.e. extracted from same WB document in the above-mentioned reference and same page)

²⁰ “Mayoral Position Paper on Public Private Partnerships” – Ernst and Young, November 2013.

- After the construction of objects, Tirana Municipality will pay the concessionary a certain annual sum until the full payment of the invested amount. Incomes for this payments will be provided from the annual incomes of Temporary Tax on Education Infrastructure and conditioned transfer from Ministry of Finance.

1.10 Costs analysis

Based on technical, it has come to be conclusion that in total will be built 17 schools: 10 nine-year schools and 7 high schools. The new schools will be designed and built according to models in line with standards specified by Ministry of Education and Sports through “Guideline for School Buildings Design”. The school models offer the opportunity to fully meet the needs for pre-university education classes, respecting legal and technical requirements for definition of parallel classes according to each teaching cycle. In the same time, for nine-year schools are envisaged also venues for pre-school education, as part of the nine-year education institution. Referring to above-mentioned standards, there exist 4 main types of schools with the following operational data:

Type 1 of schools includes 20 classes per pre-school and school students with a construction surface of about 4,938 m². Likewise, this schools will included a kindergarten of about 4 classes with a surface of about 874 m². In total, the construction surface for this type of school is 5,812 m². **Type 2** of schools is nine-year education with 30 classes for pre-school and school students with a construction surface of about 6,588 m². Likewise, this school will include a kindergarten with 6 classes with a surface of about 1,310 m². In total, the construction surface for this type of school is 7,898 m². **Type 3** of schools is higher middle for rural zones with 20 classes with a construction surface of about 4,041 m². **Type 4** of schools consists of higher middle schools for urban zones with 21 classes and a construction surface of about 4001 m².

According to quantitative analysis carried out and explained above, there are necessary a total of 17 schools, 2 out of them belonging to Type 1, 7 schools of Type 2, 1 school of Type 3 and 7 high schools of Type 4. Respectively these schools will be built according to following administrative units and data:

Table 80 Detailed data for each school of Lot 2

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	nxënës për klasë	Nxënës për shkolle	Sipërfaqe totale shkolle	Klasa kopësh ti	Nxënës për klasë kopështi	nxënës për kopësht	Sipërfaqe totale kopësht	Siperfaqe totale ndertimi
1	NJA 07	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
2	NJA Kasha	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
3	NJA Kasha	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
4	NJA Kasha	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
Totali				102		3,060	21,177	12	48	288	2,620	23,797

Summarizing according to schools typology, in total, we have the following operational data :

Table 104 Summarized data for proposed schools according to typology for lot 2

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Nr nxënës për klasë shkollë	Nxënës për klasë shkollë	Nr klasa kopësht për klasë shkollë	Nr nxënës për klasë kopësht	Nxënës për klasë kopësht	Sip ndërtim i shkollave	Sip ndërtim i kopështve	Tot Sipërfaqe ndërtimi	Total Nxënës në shkolla	Total Nxënës në Kopështe	Nr Total i nxënësve
Tipi 2	2	30	30	900	12	24	144	13,176	2,620	15,796	1,800	288	2,088
Tipi 4	2	21	30	630	-	-	-	8,001	-	8,001	1,260	-	1,260
Grand Tot	4	51				24	144	21,177	2,620	23,797	3,060	288	3,348

For a better analysis of value for money of the project, we have grouped the expenses in four main categories, based on accounting standards and requirements of CoMD no. 575, dated 10.07.2013, “On approval of rules for assessment and granting of concession/public private partnership”, article 7, section 3-6:

Direct costs of investments

Direct costs of maintenance

Due to the effects of the following analysis, all the prices and values will be without VAT, unless is specified otherwise.

1.10.1 Direct investment costs

6.3.3. Direct Costs of Investments

During the analysis and in line with above-mentioned CoMD, there were identified the following direct costs of investments:

17. Costs of Land Expropriation ;
18. Construction Cost ;
19. Cost of Study and Designing ;
20. Supervision Cost ;
21. Cost of Technical Control;
22. Technical Revision ;
23. Cost for Furniture and Equipment;
24. Cost of lab devices.

1.10.1.1 Land expropriation costs

Table 115 Summarized table of expropriations

Nr rendor i tabeles	Adresa	Tipi	Sheshi	Shpronesimi ne Vlere	Siperfaqje ne m2 te shpronesuar	Cmimi mesatar per m2
1	NJA 07	Tipi 4	7/2	261,101,406	8,482	30,783
2	NJA Kashar	Tipi 2	6/6	20,913,060	4,930	4,242
3	NJA Kashar	Tipi 2	6/3	2,039,184	4,552	448
4	NJA Kashar	Tipi 4	6/3	2,039,184	4,552	448
Grand Total				286,092,834	22,516	12,706

According to determination of trace where these schools will be built, it results that will be expropriated a total of **12,706 m²** of private properties, which according to the calculations are estimated at an expropriation value of **286,092,834** leke. On the other side, the state-owned land will be subject of respective procedures in order to take the respective properties under the administration.

With the approval of CoMD in this respect and completion of financial and legal documents in line with the CoMD and normative acts in force, every expropriated subject will be paid by Tirana Municipality through a fund determined for this purpose.

1.10.1.2 Construction costs

Based on the report obtained from General Directorate of Public Works No. Prot. 21407/2, dated 09.08.2016, costs for schools construction is 46,331.67 leke/m², whereas the kindergartens costs are 54,380.83 leke/m². From the combination of this data with the total construction surface for each type of school, it results that :

- The construction value of a Type 1 school is 228,785,770 leke and to this amount is added also the construction of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 1 school, including the kindergarten venue is 276,314,618 leke.
- The construction value of a Type 2 is 305,233,020 leke and to this amount is added the construction cost of a kindergarten of about 71,238,892 leke. In total, the general cost of the construction of a Type 2 school, including the kindergarten venue is 376,471,912 leke.
- The construction value of a Type 3 schools is 187,207,732 leke and to this amount is added the construction cost of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 3 schools, including the venues of a kindergarten is 234,736,581 lekë.
- The construction value of a Type 4 school is 185,349,833 leke and these schools do not include kindergarten premises.

Table 81 Summarizing table of construction costs

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Klasa kopëshi për shkollë	Sipërdëtimi i shkollave	Sipërdëtimi kopështes	Tot Sipërfaqe ndërtimi	Cmimi i ndërtimit të shkollave lek/m2	Cmimi i ndërtimit të kopështesve lek/m2	Kosto e ndërtimit të një shkollë	Kosto e ndërtimit të një kopështi	kosto e ndërtimit të një shkollë + kopësht	Kosto e përgjithshme e ndërtimit
Tipi 2	2	30	6	13,176	2,620	15,796	46,332	54,381	305,233,020	71,238,892	376,471,912	752,943,823
Tipi 4	2	21	-	8,001	-	8,001	46,332	54,381	185,349,833	-	185,349,833	370,699,665
Grand To	4	51	6	21,177	2,620	23,797	92,663	108,762	490,582,853	71,238,892	561,821,744	1,123,643,488

In total, there will be built **2 Type 2 schools** with a construction cost of 376,471,912 leke per school, **2 Type 4 schools** with a construction cost of 185,349,833 leke per school. As a result, the total construction costs for lot 2 amounts to **1,123,643,488** leke. This cost will be covered by the concessionary.

1.10.1.3 Other direct investment costs

Based on the report from Public Works General Directorate, in Document No. Prot. 21407/2, date 09.08.2016, other direct investment costs are :

- Study – Design
- Supervision of works
- Technical Control
- Technical Revision
- Fire protection
- Environmental Permit
- Tax of impact in infrastructure

Taking into account the data analyzed in this chapter on costs, it results that the direct investment cost is as following :

Table 82 Direct investment costs for lot 2

Tipi	Nr i shkollave sipas tipit	Tot							
		Sipërfaqe ndërtimi	Kosto Studim Projektim	Kosto Mbikqyrje	Kosto kolaudimi	Oponenca teknike	Zjarrefikes	Leje Mjedisore	
Tipi 2	2	15,796	20,220,768	8,355,808	301,178	501,350	100,000	60,000	
Tipi 4	2	8,001	10,691,738	4,364,479	153,710	369,692	100,000	60,000	
Grand To	4	23,797	30,912,506	12,720,288	454,888	871,042	200,000	120,000	

Tax on impact in infrastructure for public works is 0.

1.10.1.4 Furniture costs

In order to make schools functional, it is necessary to provide necessary IT equipment and laboratories. Furniture of new nine-year and high schools of Tirana Municipality will be realized based on law 69/2012 “On Pre-university education system in the Republic of Albania”, changed, for which Ministry of Education and Sports has prepared the Guideline “On designing of school buildings” (Norms and Standards).

Pursuant to needs for new schools, made evident by you, referring to MoES standard for classes typology and other venues in line with teaching program, there were carried out the respective calculations about the furniture costs per student, which is about 24.167 leke without VAT. This cost includes the amount for furniture without the equipments, computers and other necessary devices for laboratories of physics, chemistry and biology, etc.

For the calculation of furniture price, we considered the offers obtained by 6 economic units for furniture items according to technical specifications of MoES.

Concretelly, according to school typology, the furniture cost is as following :

Table 83 Furniture cost according to typology

Type of schools	No classes	st/class	No st. total	Cost/student	Total cost
Type 1	20	30	600	24,167	14,500,000
Type 2	30	30	900	24,167	21,750,000
Type 3	20	24	480	24,167	11,600,000
Type 4	21	30	630	24,167	15,225,000

The furniture cost for basic education have been included three levels which envisage the following types :

For furniture of new kindergartens, we referred to the previous experience in furniture manner and their necessary quantity. Regarding furniture costs, we referred to the market prices, as well as previous indexed interim payment reports.

Costs for furniture of kindergartens per children is about 27.916 lek without VAT

This furniture cost, beside furniture of children premiee (sitting room, bedroom) includes also the office of director, psychologist and costs for kitchen furniture.

In conclusion, the furniture costs according to kindergarten typology is as following :

Table 119 –Furniture costs according to typology

Type	Location	Cycle	No class	St/Class	No st. total	Cost/child ren	Total cost
Type1	Urban	Kindergarten(3-5years)	4	24	96	27.916	2.680.000
Type2	Urban	Kindergarten(3-5years)	6	24	144	27.916	4.020.000
Type3	Rural	Kindergarten(3-5years)	4	24	96	27.916	2.680.000

Regarding costs for lab equipments, we referred to the purchase contract “Scientific Laboratories (Chemistry, Physics, Biology) for Pre-University schools” realized by Ministry of Education and Sports during 2016, in which results that the value per laboratory without VAT is as following:

Table 120 Costs for lab equipment

I	Basic education school	Amount/ laboratory
1	Natural Sciences Laboratory	186,998
2	Chemistry Laboratory	223,125
3	Physics Laboratory	1,183,602
4	Biology Laboratory	632,467
5	IT Laboratory	3,869,658
II	High school	-
1	Chemistry Laboratory	528,469
2	Physics Laboratory	1,294,500
3	Biology Laboratory	651,657
4	IT Laboratory	3,869,658

According to schools typology defined based on the designing standards of pre-university education objects, set by Ministry of Education and Sports, in which is determined the quantity of labs for each type, we have the following table :

Table 121 Costs for lab equipment according to schools typology

No	Tyes of schools	Cost without VAT
1	Basic education (Type 1)	6,095,850
2	Basic education (Type 2)	7,279,450
3	Basic education (Type 3)	5,743,950
4	Higher Middle Education (Type 4)	13,983,067

According to the analysis of all the above-mentioned data, it result that the total cost of furniture and lab equipments of 4 schools is **124,515,033** leke with VAT, according to the following table:

Table 84 Furniture Costs and laboratory equipments for schools of Lot 2

Tipi	Nr i shkollave sipas tipit	Kosto e mobilimit te shkollave	Kosto e mobilimit të kopështeve	Total Kosto Mobilimi	Kosto Laboratori	Total kosto pajisje, mobilje dhe orendi
Tipi 2	2	43,500,000	8,040,000	51,540,000	14,558,900	66,098,900
Tipi 4	2	30,450,000		30,450,000	27,966,133	58,416,133
Grand To	4	73,950,000	8,040,000	81,990,000	42,525,033	124,515,033

1.10.1.5 Direct investment cost

In conclusion, the direct investment cost of this project is estimated at **1,579,530,079 lekë**. About **286,092,834** leke out of them are calculated as necessary funds for expropriation, which will be covered by Tirana Municipality. Whereas, the total cost of the project that will be covered by the concessionary is **1,293,437,245** leke, where the construction cost is **1,123,643,488** leke without VAT, Costs of the Designing, Technical Revision, Supervision, Technical Control, furniture and laboratories is **169,793,757** leke without VAT. In details, the calculated categories are as following :

Table 123 Direct Investment costs for lot 2

Viti	Pershkrimi	Grand total
A.	Kostot Direkte te Investimit	1,579,530,079
A.1	Kostot e Truallit	286,092,834
A.2	Kostot e Projektimit	30,912,506
A.3	- Ndertim + instalime	1,123,643,488
A.4	- Oponenca teknike	871,042
A.5	- Takse Infrastruktore	-
A.6	- Leje mjedisore	120,000
A.7	- Mbrojtje ndaj Zjarrit	200,000
A.8	- Kosto Supervizimi	12,720,288
A.9	- Kosto Kolaudimi	454,888
A.10	- Mobiljet dhe Orendi	81,990,000
A.11	- Investime IT&T dhe Labs	42,525,033

1.10.2 Direct investment costs

Duke kryer përlllogaritjet përkatëse kosto mesatare vjetore për mirëmbajtjen e përgjithshme për secilin tip shkollash është 12,663,198 lekë për një shkollë të tipit 2 dhe 7,386,865 për një shkollë të tipit 4. Kosto totale e mirëmbajtjes për të gjitha shkollat për **Loti 2** është **40,100,126** lekë në vit. Kosto vjetore e mirëmbajtjes për efekt llogaritjesh fillon nga viti 2018 dhe në vijim deri në përfundim të periudhës së PPP. Për më shumë detaje, shih tabelat më poshtë.

Based on calculations carried out from General Directorate No. 3 of City's Workers, annual maintenance cost per class is 422,107 leke with VAT or 351,755 leke without VAT. Making respective calculations, the annual cost for the general maintenance for each type of school is 12,663,198 leke per one school of Type 2, about 7,386,865 leke per one school of type 4. The total maintenance cost for all schools in **Lot 2** is **40,100,126** lekë në vit. The annual cost of maintenance for calculation effects starts from 2018 and pursuant until the completion of PPP period. For more details, see the following tables:

Table 124 Annual cost of maintenance for schools of lot 2

Tipi i shkollave	Nr i shkollave	Kosto e mirëmbajtjes për shkollë	Kosto e përgjithshme e mirëmbajtjes
Tipi 2	2	12,663,198	25,326,396
Tipi 4	2	7,386,865	14,773,731
Grand Total	4	10,025,032	40,100,126

In total, for 7 years, the general maintenance cost will be **280,700,882** leke without VAT. About **184,818,550** leke without VAT out of them is the maintenance costs of assets and **95,882,332** leke without VAT is the cost of maintenance staff. The following table is the analysis of categories of maintenance expenses for each school in one year, without VAT:

Table 85 7 year maintenance cost for Lot 2

B.	Kostot Direkte të Mirëmbajtjes	280,700,882
B.1	Kostot e Mirëmbajtjes së Aseteve	184,818,550
B.1.1	- Kostot e Mirëmbajtjes së Ndërtesave	42,733,348
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve	107,974,566
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi	13,517,098
B.1.4	- Mirëmbajtje IT&T (HD+SW)	20,593,538
B.2	Staf Mirembajtje	95,882,332
B.2.1	Staf Roje	14,104,165
B.2.2	Staf Sanitare	60,866,302
B.2.3	Staf Sekretare	12,191,172

Table 86 Detailed costs of maintenance for Lot 2

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	Lyerje per klase	Riparim suvatim + hidroizolim per klase	Riparime dhe mirembajtje e Nderteses	Riparime Orendi shkollore	Riparime Pajisje PC	Materiale Pastrimi	Lëndë djegëse për ngrohje dhe ujë të ngruhtë	Mirembajtje kondicionim , impiante uji dhe MNZSH	Sherbim roje	Sherbim pastrimi	Sherbim sekretarie	Total kosto mirembajtjeje
1	NJA 07	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
2	NJA Kasha	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
3	NJA Kasha	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
4	NJA Kasha	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
Totali i Mirembajtjes				114	2,609,584	2,676,498	818,682	1,931,014	2,941,934	965,324	9,531,872	4,927,742	3,260,694	8,695,186	1,741,596	40,100,126



1.1 Analysis of PPP incomes

1.11.1. Tariff for the use of schools

Tariff for use of schools (hereinafter “Tariff”) will be calculated in such way so that could cover the costs of concessionary and guarantee a minimal income margin for the concessionary in order to make this PPP attractive and the best economic solution compared to other potential scenario. The tariff is paid for the entire maintenance and administration period of schools by concessionary, i.e. for 7 years. This tariff is paid to every year by Tirana Municipality through financing resources detailed as following. This scheme provides for the construction of 17 schools in a record time, solving the two-shifts teaching and over-crowded classes, but as long as all the risks for maintenance and careful use of the asset will be under the responsibility of the concessionary and related to the payments, this will enable qualitative constructions in the interest of the community.

As long as the direct investment costs, i.e. construction and functioning of schools is calculated based on interim payment reports, which include the income margin of the contractor, on this category will not be calculated the additional income margin. But on the other side, as long as the invested values of the concessionary in this respect will be covered in a seven-year period, he must be minimally reimbursed for the value in time of the money, as well as for the normal and extraordinary maintenance part for this period.

In this respect, as the income margin has been considered the limit of average norm of Albanian government obligations for a fixed seven year period²¹, respectively the results of seven year obligations from 2015 until 15.09.2016.

In this respect, as the income margin has been considered the limit of average norm of Albanian government obligations for a fixed seven year period²², respectively the results of seven year obligations from 2015 until 15.09.2016.

²¹ <http://www.financa.gov.al/al/raportime/borxhi/ankandet-e-emetimit-te-letrave-me-vlere-te-geverise/rezultatet-e-ankandeve/2016>

²² <http://www.financa.gov.al/al/raportime/borxhi/ankandet-e-emetimit-te-letrave-me-vlere-te-geverise/rezultatet-e-ankandeve/2016>

Table 87 Income Margin

ISIN	Dt.Ankandi	Ankandi	Muaji	Data Emetitimi	Data Maturimi	Shuma e shpallur (fillstare)	Shuma e shpallur (nd. strukture)	Shuma e kërkuar	Shuma e pranuar	Prorata Konkurses	Prorata Jo Konkurses	Yieldi Uniformi Pranuar
AL0017NF7Y23	13.09.2016	7vjeçar/7years(fix)	Shtator	15.09.2016	15.09.2023	3,000,000		2,309,000	2,309,000			4.89%
AL0016NF7Y23	01.06.2016	7vjeçar/7years(fix)/Rihapje	Qershor	03.06.2016	16.03.2023	2,000,000		3,141,400	2,000,000	4.40%		4.00%
AL0016NF7Y23	11.03.2016	7vjeçar/7years(fix)	Mars	16.03.2016	16.03.2023	3,000,000		8,247,000	2,999,900	76.48%		4.90%
AL0015NF7Y22	14.12.2015	7vjeçar-fiks	Dhjetor	16.12.2015	16.12.2022	2,500,000		5,288,600	2,500,000	67.70%	100.00%	6.79%
AL0014NF7Y22	14.09.2015	7vjeçar-fiks	Shtator	16.09.2015	16.09.2022	1,000,000		1,430,600	1,000,000	100.00%	100.00%	7.78%
AL0013NF7Y22	12.06.2015	7vjeçar-fiks	Qershor	16.06.2015	16.06.2022	3,000,000		2,953,500	2,953,500	100.00%	100.00%	7.80%
AL0012NF7Y22	12.03.2015	7vjeçar-fiks	Mars	16.03.2015	16.03.2022	2,500,000		2,815,800	2,500,000	80.98%	77.92%	7.81%
Yieldi Mesatar i pranuar												6.28%

The income margin will be object of bidding procedures of competitors in this PPP, but in the mean time, it is necessary to understand the general value of this PPP. The income margin will be calculated for the remaining value of the direct investment every year and on annual maintenance costs. Thus, the financing scheme is attractive for potential competitors and total cost of the project is not higher than the traditional financing methods.

Based on the calculations, annual tariff to be paid to the concenssionary with a margin of about 6.28% will be as following :

Table 88 Annual tariff to be paid to the concenssionary for Lot 2

A	B	C	D	E	F	G	H	I	J	K	L	M
Nr rendor	Viti	Kosto Direkte e Investimit ne Fillim të Periudhës (pa TVSH) (C3=F2)	marzhi i fitimit	Shlyerja vjetore për Koston Direkte të Investimit (C2/B8)	Vlera e Mbetur e Kostos Direkte te Investimit (C-E)	Marzhi i fitimit mbi koston Direkte të investimit (C*D)	pagesa vjetore për koston direkte të investimit Pa TVSH (E+G)	kosto vjetore mirembajtjeje Pa TVSH	Marzhi i fitimit mbi Mirembajtjen (D*I)	pagesa vjetore për koston direkte të investimit Pa TVSH (I+J)	Total Marzhi i Fitimit	Tarifa Vjetore Pa TVSH
1	0	1,293,437,245										
2	1	1,293,437,245	6.28%	184,776,749	1,108,660,496	81,227,859	266,004,608	40,100,126	2,518,288	42,618,414	83,746,147	308,623,022
3	2	1,108,660,496	6.28%	184,776,749	923,883,747	69,623,879	254,400,628	40,100,126	2,518,288	42,618,414	72,142,167	297,019,042
4	3	923,883,747	6.28%	184,776,749	739,106,997	58,019,899	242,796,649	40,100,126	2,518,288	42,618,414	60,538,187	285,415,063
5	4	739,106,997	6.28%	184,776,749	554,330,248	46,415,919	231,192,669	40,100,126	2,518,288	42,618,414	48,934,207	273,811,083
6	5	554,330,248	6.28%	184,776,749	369,553,499	34,811,940	219,588,689	40,100,126	2,518,288	42,618,414	37,330,227	262,207,103
7	6	369,553,499	6.28%	184,776,749	184,776,749	23,207,960	207,984,709	40,100,126	2,518,288	42,618,414	25,726,248	250,603,123
8	7	184,776,749	6.28%	184,776,749	0	11,603,980	196,380,729	40,100,126	2,518,288	42,618,414	14,122,268	238,999,143
Grand total				1,293,437,245		324,911,436	1,618,348,681	280,700,882	17,628,015	298,328,897	342,539,451	1,916,677,579

To guarantee the economic success of the scheme, the concessionary will be paid with decreasing annual installments. This payment method will help the concessionary to avoid financial difficulties during the entire period of the duration of the concession period contract. Therefore, in the first year the installment will be 1,288,021,874 leke and each year will be decreasing until reaching 996,983,257 leke in the last year.

Table 89 Amount of annual installment

Nr rend or	Viti	Tarifa Vjetore Pa TVSH
1	0	
2	1	308,623,022
3	2	297,019,042
4	3	285,415,063
5	4	273,811,083
6	5	262,207,103
7	6	250,603,123
8	7	238,999,143
Grand total		1,916,677,579



1.11.2 Source of financing

The general amount of this project for **Lot 2** is **2,202,770,413** leke out of them, **286,092,834** are for the expropriations, which will be paid directly by Tirana Municipality to the expropriated and **1,916,677,579** leke is the amount of concession:

Table 90 Annual amount of project for Lot 2

Nr	Vlera e Pergjithshme e Projektit	Çmimi	Sasia	Vlera totale
1	Kostoja e përgjithshme e shpronësimit	286,092,834	1	286,092,834
2	Kosto direkte e Investimit pa TVSH	1,293,437,245	1	1,293,437,245
2.1	Kosto direkte e investimit të koncesionarit Pa TVSH	1,293,437,245	1	1,293,437,245
3	Kosto e mirembajtjes pa TVSH	40,100,126	7	280,700,882
3.1	Kosto e mirembajtjes të koncesionarit Pa TVSH	40,100,126	7	280,700,882
4	Marzhi i Fitimit	342,539,451	1	342,539,451
4.1	Marzhi i Fitimit të Koncesionarit	342,539,451	1	342,539,451
	Total i përgjithshëm i kostos(1+2+3+4+5)			2,202,770,413

Table 91 Amount to be covered by municipality and concessionary

Nga të Cilat:	Bashkia	Koncesionari	Totali
1. Vlera e Përgjithshme e Projektit Pa TVSH	286,092,834	1,916,677,579	2,202,770,413
Totali	286,092,834	1,916,677,579	2,202,770,413

These expenses will be covered by incomes of the Municipality, Conditioned Grants of Ministry of Finance for project.

Incomes of Tirana Municipality for this project will be generated from the Interim Tax on Education Infrastructure, which is applied upon decision of Municipal Council No. 59, dated 30.12.2015, "On taxes and local tariffs system in the city of Tirana".

Table 132 Forecast of incomes from Interim Tax on Education Infrastructure

Description	PLAN YEAR 2016	FORECAST 2017	FORECAST 2018
Interim Tax on Education Infrastructure	870 000 000	940 000 000	1 000 000 000
Families	320 000 000	340 000 000	350 000 000
Trade subject	550 000 000	600 000 000	650 000 000

Incomes from Interim Tax on Education Infrastructure are estimated at 870 million leke in 2016, whereas these incomes are envisaged to increase to 940 million leke in 2017 and 1 billion leke in 2018. This interim tax will be applied for 7 years and for 2019-2022 period, the annual incomes are projected to amount to 1 billion leke. Incomes from specific transfer from Ministry of

Finance will be 700 million lek per year. Therefore, the fund at the disposal of Tirana Municipality for completion of periodical payments is estimated at 1 billion and 700 million leke per year.



1.12 Financial Analysis

Table 92 Summarizing table of costs and incomes of the project

Viti	Pershkrimi	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
A.	Kostot Direkte te Investimit	1,579,530,079	-	-	-	-	-	-	-	1,579,530,079
A.1	Kostot e Truallit	286,092,834								286,092,834
A.2	Kostot e Projektimit	30,912,506								30,912,506
A.3	- Nderitim + instalime	1,123,643,488	-							1,123,643,488
A.4	- Oponenca teknike	871,042								871,042
A.5	- Takse Infrastrukture									-
A.6	- Leje mjedisore	120,000								120,000
A.7	- Mbrojtje ndaj Zjarrit	200,000								200,000
A.8	- Kosto Supervizimi	12,720,288								12,720,288
A.9	- Kosto Kolaudimi	454,888								454,888
A.10	- Mobiljet dhe Orendi	81,990,000	-	-	-	-	-	-	-	81,990,000
A.11	- Investime IT&T dhe Labs	42,525,033								42,525,033
B.	Kostot Direkte të Mirëmbajtjes	-	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	280,700,882
B.1	Kostot e Mirëmbajtjes së Aseteve	-	26,402,650	26,402,650	26,402,650	26,402,650	26,402,650	26,402,650	26,402,650	184,818,550
	- Kostot e Mirëmbajtjes së Ndërtesave	-	6,104,764	6,104,764	6,104,764	6,104,764	6,104,764	6,104,764	6,104,764	42,733,348
B.1.1			6,104,764	6,104,764	6,104,764	6,104,764	6,104,764	6,104,764	6,104,764	42,733,348
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve dhe Orendi		15,424,938	15,424,938	15,424,938	15,424,938	15,424,938	15,424,938	15,424,938	107,974,566
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi		1,931,014	1,931,014	1,931,014	1,931,014	1,931,014	1,931,014	1,931,014	13,517,098
B.1.4	- Mirëmbajtje IT&T (HD+SW)		2,941,934	2,941,934	2,941,934	2,941,934	2,941,934	2,941,934	2,941,934	20,593,538
B.2	Staf Mirembajtje	-	13,697,476	13,697,476	13,697,476	13,697,476	13,697,476	13,697,476	13,697,476	95,882,332
B.2.1	Staf Roje		3,260,694	2,717,245	2,264,371	1,886,976	1,572,480	1,310,400	1,092,000	14,104,165
B.2.2	Staf Sanitare		8,695,186	8,695,186	8,695,186	8,695,186	8,695,186	8,695,186	8,695,186	60,866,302
B.2.3	Staf Sekretare		1,741,596	1,741,596	1,741,596	1,741,596	1,741,596	1,741,596	1,741,596	12,191,172
A+B	Totali i Kostove (A+B+C)	1,579,530,079	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	1,860,230,961
C.	Të Adhurat	286,092,834	308,623,022	297,019,042	285,415,063	273,811,083	262,207,103	250,603,123	238,999,143	2,202,770,413
C.1	Likujdimet e shpronësimeve	286,092,834								286,092,834
C.2	Tarifa e Shfrytëzimit pa TVSH		308,623,022	297,019,042	285,415,063	273,811,083	262,207,103	250,603,123	238,999,143	1,916,677,579
D	Fitimi (humbja)	(1,293,437,245)	268,522,896	256,918,916	245,314,937	233,710,957	222,106,977	210,502,997	198,899,017	342,539,451
E	Fitimi (humbja) progresive	(1,293,437,245)	(1,024,914,349)	(767,995,433)	(522,680,496)	(288,969,539)	(66,862,563)	143,640,434	342,539,451	342,539,451
F	15% Tatim fitim	0	0	0	0	0	0	(21,546,065)	(29,834,853)	(51,380,918)

Table 93 Cashflow of the project

Fluksi i Arkës									
Viti	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
Flukse dalese nga Investimet	-1,579,530,079	-	-	-	-	-	-	-	-1,579,530,079
Flukse dalese nga Mirëmbajtja	-	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	280,700,882
Flukse dalese nga Taksat	-	-	-	-	-	-	21,546,065	29,834,853	51,380,918
Totali i flukseve dalese	-1,579,530,079	40,100,126	40,100,126	40,100,126	40,100,126	40,100,126	61,646,191	69,934,979	-1,911,611,879
Flukse hyrese nga Operimet	286,092,834	308,623,022	297,019,042	285,415,063	273,811,083	262,207,103	250,603,123	238,999,143	2,202,770,413
Gjendja e Arkes ne fund te periudhes	-1,293,437,245	268,522,896	256,918,916	245,314,937	233,710,957	222,106,977	188,956,932	169,064,165	291,158,534
Gjendja e arkes progresive	-1,293,437,245	1,024,914,349	767,995,433	522,680,496	288,969,539	66,862,563	122,094,369	291,158,534	291,158,534

1.13 Economic Profitability of the Project

1.13.1 NPV (Net Present Value)

NPV, as standard method for assessment of long-term projects through analysis of time value of money, presents the discounted amount of cashflow of the project. Every investor, when decides to undertake an investment analyzes the incomes generated by one project compared to the potential incomes of the invested money in another project. In general, these analyses are carried out taking into account the interest rate in case of the investment of the money, e.g. treasury bonds or government obligation, which have almost a zero risk.

Classical formula of NPV calculation, if the investment is made in one year, is :

$$NPV = \sum_{t=1}^T \frac{C_t}{(1+r)^t} - C_0$$

where:

C_0 – presents the money spent for the initial investment

C_t – presents the incomes from the investment ;

t – presents duration of the project ;

r – presents the expected rate of discount .

To see the economic profitability of the project, the financial model has been tested with several potential discount rates. From this analysis, it resulted that the potential concessionaries will be interested in this project only if their opportunity cost is lower than 5.79%. In other words, for every discount rate over 5.79% this project does not consist of any economic profitability for the concessionary.

norma e skontimit e parashikuar NPV	NPV			
	5%	5.79%	6%	7%
	29,884,696	15,136	7,682,796	42,661,484

1.13.2 IRR (Internal Rate of Return)

IRR is a method used to measure the incomes of potential income. IRR is a discount rate that makes the net present value (NPV) of all cashflows of a project equal to zero. According to economic theory, every project with an IRR higher than its capital cost is profitable, as a result investors will be interested to invest in it. Based on the financial analysis, the IRR of this project is estimated at 5.79%.

Table 94 Internal Rate of Return of the project

Viti	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
Gjendja e Arkes ne fund te periudhes	-1,176,772,556	244,264,887	233,707,556	223,150,225	212,592,894	202,035,563	171,909,712	153,782,766	264,671,046
IRR	5.79%								

1.13.3 Payback Period

The payback period presents the necessary time needed for the invested capital to recover the initial investment from the project incomes. In general, the payback period is calculated by dividing of the investment cost by annual incomes. Hence, as long as the annual incomes in this project consist of decreasing installments, the payback period is assessed by analyzing the cashflow to determine the latest year when this flow is negative.

Periudha e Vetëshlyerjes

Viti i fundit i gjendjes se arkës negative		5
Gjendja e arkës kumulative në vitin e fundit negativ	-	61,021,432
Gjendja e arkës pozitive krijuar në vitin vijues		171,909,712
PBP (periudha e vetëshlyerjes)		5.35

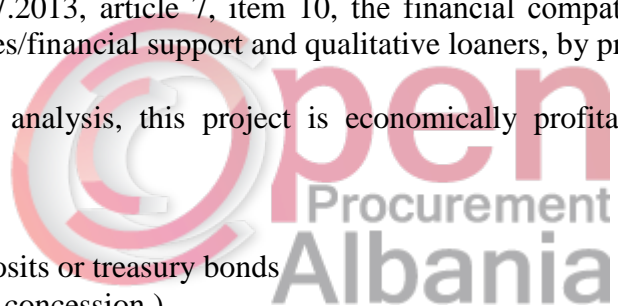
In this respect, the self-payment period for this project is achieved in 5.35 years. Nevertheless, taking into account that payment from Tirana Municipality will be annual, then the self-payment period will not be 5.35 years, but 6 years.

1.13.4 Financial compatibility

According to CoMD no. 575, dated 10.07.2013, article 7, item 10, the financial compatibility of a project “indicates whether the project seems to be able to attract guarantees/financial support and qualitative loaners, by providing a strong and reasonable financial.”

Based on the above-mentioned financial analysis, this project is economically profitable and this profitability is presented as following:

- NPV = 5.79% > 0
- IRR = 5.79% > than interest of deposits or treasury bonds
- PBP = 6 year < 7 years (duration of concession)



1.14 Quantitative and Qualitative Risk Analysis

The main goal of Risk Analysis is to identify and evaluate the gamma of risks that may affect the project. Therefore, a strategy on risk management is carried out in order to guarantee the successful realization of the project. In compliance with Decision of Council of Ministers No. 575, dated 10.07.2013 “On approval of rules for evaluation and issuance of concession/private-public partnership” following is a risk analysis regarding this project.

1.14.1 Qualitative Risk Analysis

Land Risk

Description of the Risk: Lands selected for construction of 17 schools will mostly be owned by the state, whereas the private-owned lands will be expropriated in line with the legislation in force and will be put at disposal of the concessionary. As a result, this risk has a low probability, almost zero, about this project. Regarding the necessary permits, there is no risk, because Tirana Municipality is itself the responsible body to grant these permits. In relation to environmental standards, the selected lands are plots located in areas where the environmental standard is not affected, therefore the risk is considered zero.

Management of risk: This risk is assessed with a zero probability and it is covered by Tirana Municipality. Tirana Municipality will carry out all the procedures for expropriation of private lands out of this PPP scheme, before the beginning of works. If any of the selected lands is in a ownership conflict, turning expropriation impossible, authorities will ask for information at the Immovable Properties Registration Office for alternative sites to be used. Regarding geological conditions and environmental standards, there has been an environmental study part of this feasibility study, which has come to the conclusion that the construction of these objects does not have an impact on the environmental standards. Hence, during the procedures for obtaining a construction permit, there will be also a detailed environmental study by the concessionary.

Risk of design, construction and functioning

Description of the Risk: Calculation of costs for construction and furniture of new schools is based on above-mentioned methodology, which takes into consideration the cost of schools built by Tirana Municipality in the last three years. Therefore, the possibility of a higher construction cost than the calculated cost is almost zero. Construction and functioning of schools depend in a certain scale on the obtaining of construction permit and meeting of preconditions for obtaining of this permit, such as environmental permit, connection with the electrical grid or water supply system, approval of projects for fire protection, etc. The concessionary has the right to draft the designing, prepare the documents for equipment with a construction permit, as well as to build the school objects. From this point of view, the risk of delays in equipment with construction permits, delays in kick-off works, readiness is possible.

Management of risk: This risk belongs to the concessionary. He is accountable for compilation of documents and equipment with construction permit. If the concessionary does not prepare the project on time and will neglect the application for construction permit by not applying on time or having irregularities in documents, or failure to start works on time, then he will be accountable for failure in starting works on time and will compensate the contracting authority according to the requirements in the concessionary contract. Likewise, as long as the concessionary is responsible for drafting and implementing the project, each delay in completion of construction works, excluding the case when the delay comes as a result of a force majeure will be under the concessionary's responsibility and will be forced to compensate the contracting authority according to requirements in the concessionary contract.

Functioning Risk

Description of the Risk: The possibility that the new schools will not be functional after the construction is related to the non-qualitative works by the concessionary, which might make the performance of teaching in new buildings impossible. This risk has a low probability because the completion of works will be carried out by the technical supervisor and financial bill of quantities will be supervised by the contracting authority. Regarding the risk of a higher maintenance cost than expected, the probability is almost zero, because the annual maintenance cost is calculated based on annual expenses of Tirana Municipality for the maintenance of existing schools, which have been constructed long ago. According to engineering standards, the maintenance cost of newly-built objects is lower than that of the objects built before.

Management of risk: The probability of this risk is low and it is considered as a risk transferred to the concessionary. In case the construction quality will make the performance of teaching process impossible, the concessionary will be accountable and will be forced to carry out extra works until the works quality will be in line with the requests of the designing tasks. In case school buildings might have any problems due to construction works, in the course of seven years of the contract duration, which will make the teaching process impossible, the concessionary will be obligated to carry out extra works to make the school functional again. If the maintenance cost is higher than predicted, this would be a result of the inaccuracies in the design or construction. Therefore, the risk belongs to the concessionary, who is accountable for the designing and building of these schools.

Risk of demand and other trade risks

Description of the Risk: This risk is related to the situations when use of the object is different from what is expected or the generated incomes are lower than the forecast. As long as objects to be build are school buildings that will not have a different use and cannot generate incomes, this risk cannot applied on this project.

Management of risk: The possibility that this project can be affected by this risk is zero, because it is not subject of its impact.

Economic and Financial Risks

Description of the Risk: As long as this project includes financial transactions to be implemented in the course of time, there exists the possibility of an impact from economic and financial risks. The unpredicted increase of the norms of interest may increase the financial costs of the project from the concessionary. On the other side, changes in exchange rate course may have a worsening affect in the finances of the concessionary if his incomes and expenses are in a different currency, e.g. the concessionary has been granted a loan in EUR of USD for the financing of the project, while Tirana Municipality makes the annual payments in Leke. In the end, as long as this project includes periodical payments for a seven year period, there exists the possibility of an impact from inflation in the concessionary's incomes.

Management of risk: Due to the fact that Albania is a country with a sustainable macroeconomic situation, the probability that this project may be affected by such risk remains low. The risk of interest rates or exchange rates belongs to the concessionary and shall be calculated in its financial projections. Inflation risk is shared among the concessionary and Tirana Municipality. As long as the Bank of Albania policy is keeping infection under 3% and duration of the project is only 7 years, the probability of this risk is low. Nevertheless, in the definition of income margin as related to interest rate of 7 year obligations, Tirana Municipality guarantees the concessionary the same protection toward the economic and financial risks as guaranty of Albanian Government for buyer of obligations.

Risks of assets ownership

Description of the Risk: This risk is related to the possibility that technology might get older or if the value of assets might be different at the end of the contract. As long as, the construction consists of school buildings, which will be maintained by the concessionary for seven years, the probability of this risk is low. Nevertheless, the quality and value of assets may be lower than the projection due to non-qualitative maintenance.

Management of risk: This risk is transferred to the concessionary. Maintenance of schools buildings and their furniture will be completed in line with the standards in force and will be supervised by the Contracting Authority. In case the concessionary will not maintain schools in line with the above-mentioned determination, the concessionary contract will envisage provisions obligating him to pay the damage. If at the end of the contract, the value of assets will be different from the predicted, the concessionary contract will define provisions obligating the concessionary to pay the damage.

Political risk

Description of risk: The risk of an impact from political decisions on the project is evident. As long as it is a project initiated from Tirana Municipality, a local government body, the success of the project depends on the coordination with local government. Likewise, there is a potential possibility that the results of next local elections – a potential change of Tirana mayor – may also cause the change of priorities and as a result the project can be blocked.

Management of risk: This risk is transferred on the Contracting Authority - Tirana Municipality. To ensure the consent of central government, with the approval of the feasibility study from the head of Tirana Municipality, will be required also an approval from the Ministry of Finance and Ministry of Education and Sports. Regarding risk of a negative impact of the project as a result of changes in the leadership of Tirana Municipality, the concessionary contract will envisage provisions that obstacle the dismissal of the Contract for non-legal reasons by the Contracting Authority.

Risks deriving from change of legal framework

Description of risk: Potential changes in legislative framework may affect the project positively and negatively. As long as the project is related to the construction of school buildings, the possibility of an affect from legal changes is related only to standards and construction manuals. Therefore, this risk has a low probability. Regarding changes in fiscal laws, the negative or positive influence can be felt only in the finances of concessionary.

Management of risk: This risk falls on the concessionary. In order to have minimal effects, the concessionary contract will include provisions that protect it from discriminating changes in law – always if the discrimination is proved by the court. On the other side, the concessionary will be forced to implement any legal changes coming as a result of governance policies.

Risk from force majeure

Description of risk: Force majeure risks, such natural calamities, civil unrests or wars are transferred to the concessionary and contracting authority. Taking into account the fact that Albania is a member of NATO and with a clear perspective of EU integration, the probability of risks from wars or unrests is almost zero. On the other side, the probability of and impact from earthquakes or other natural disasters on the project is low – How? As a result of the above-mentioned analysis of environmental impact on the project.

Management of risk: Probability of these risks is very low and it is transferred on both parts. The concessionary contract will envisage clauses of force majeure which will guarantee that any negative impact on the project shall be divided between the parties.

1.14.2 Quantitative Analysis of Risks

This analysis aims to prioritize risks that may affect the project by calculating their probability and potential impact on the achievements of project objectives. The quantitative evaluation is based on the probability of occurrence of each risk and potential impact on costs and deadlines of the project.

Impact of risks on project costs is calculated based on the specific weight of each of them in the project's cost. Whereas, the impact on deadline of completion of works is calculated based on legal deadlines for completion of defined procedures that may be necessary for well-going of the project.

Following is a quantitative analysis on the impact of each risk in the costs and deadlines for realization of the project.

Lands risk. Probability of this risk is low, 0-5%. Its impact on the project's cost is zero because expropriations of private lands that will be used for construction of school will be carried out by Tirana Municipality with a special fund out of the financial scheme of this project. The lands selected for construction of the schools are state-owned and private properties. In case use of any of these lands is impossible than will be used an alternative selected land with the necessary information from the Immovable Properties Registration Office. As a result, the impact on the deadline of completion of works is related the handing in of the state-owned land if it is not a property of Tirana Municipality or expropriation of private properties. The impact on deadline of works is calculated at 3 - 6 months.

Risk of designing, construction and functioning. Probability of this risk is low, 5-10%. The costs assessment process of the schools construction is carried out in line with the MoES guidelines manuals and based on the construction of schools by Tirana Municipality in the course of last years and prices have been indexed according to construction prices index of INSTAT. Hence, maximal influence of this risk in costs is less than 5%. On the other side, the deadline of works may not be respected as a result of failure to receiving the construction permit or other permits on time by the concessionary or due to slower completion of works than the calendar of works. In case designing is delayed or documents for equipment with necessary permits are not compiled, the impact on deadline of works is calculated from 3 to 12 months.

Functioning Risk. Probability of this risk is calculated at 0-5%. As long as this project is related to the construction of new schools, there exists the possibility of a low quality of construction. This could require additional works beyond the defined deadline. The impact of this risk in the deadline of works is calculated from 1 to 3 months, whereas the impact on total cost of the project is envisaged at 5-10%. There exists an opportunity that the maintenance cost may result higher than the forecast, but compared to total cost of the project the impact of this cost is almost zero.

Risk of demand and other trade risks. This risk cannot be applied on the project and the possibility of an impact from it on cost or deadlines is zero.

Economical and financial risks. Probability of this risk is low, 0-5%, taking into consideration that it is not a long-term concession where the concessionary generates incomes from the operation of the object of concession. As long as incomes of the concessionary are guaranteed by Tirana Municipality and covered by inflation, impact of risk on total cost of the project is low, 5% - 10%. On the other side, the impact on deadlines of completion of works is not envisaged longer than 12 months.

Risks of assets ownership. Probability of this risk is calculated at 0 - 5%. Its impact on total cost of the project is related to the maintenance costs, in case the latest results higher than forecast and a more rapid amortization of buildings that envisaged in the concession contract. Its impact on project's costs is predicted to be at maximum 5%. Probability of this risk does not affect the deadline for realization of works.

Political risk. Probability of such risk is medium low and is calculated at 10 - 20%. The occurrence of such risk may block works or interrupt the periodical payments for the concessionary by increasing the financing cost of the project and delaying the realization of works. In this respect, a potential influence of this risk on costs is calculated at 20 - 30%, whereas the impact on deadline of realization of works is calculated from 16 to 24 months.

Risk of change of legal framework. This risk has a probability of 5 to 15%. Potential legal changes, such as in standards to be followed for construction of new schools, may considerably boost the project cost. Therefore, the potential risk on costs is medium, varying from 20 to 40%. Likewise, potential legal changes may cause the re-drafting of the project or other delays that may be negatively affect the deadline for realization of works. Therefore, impact on deadline of works is calculated from 12 to 16 months.

Force Majeure Risk. Probability of this risk to happen is very low - 0 to 5%. Nevertheless, in case it happens, the impact on costs or deadline of works will be medium high. Therefore, impact on cost is calculated at 30% to 50%, whereas impact on deadline of works from 12 to 24 months.

Table 136 Summarizing table of impact of risks

No.	Risk	Probabiliy	Impact on cost	Impact on works deadline
1	Risk on land	0% - 5%	0%	3 - 6 months
2	Risk on designing, construction and implementation	5% - 10%	0% -5 %	3 - 12 months
3	Functioning Risk	0% - 5%	5% -10%	1 - 3 months

4	Risk of demand and other commercial risks	-	-	-
5	Economic and Financial Risks	0% - 5%	5% -10%	6 - 12 months
6	Risks of assets ownership	0% - 5%	0% - 1%	-
7	Political Risk	10% - 20%	20% - 30%	16 - 24 months
8	Risk of change of legal framework change	5% - 15%	20% - 40%	12 - 16 months
9	Force majeure	0% - 5%	30% - 50%	12 - 24 months



1.15 Sensitivity Analysis

Main factor that may change during the tender process is the income margin. At the same time, the details of respective costs will be respectively defined based on factual approved projects, depending on the approved projects. The direct cost will be calculated base on the factual realized volumes, which in no way will be higher than the costs envisaged in this project.

Nevertheless, due to the effects of sensitivity analysis, the calculation will made as if the costs have increased and decreased by 5% and 10%, whereas the income margin increases and decreases by 5% and 10%.

Table 137 Sensitivity Analysis

	Incomes and expenses increase by 10%	Incomes and expenses increase by 5%	Basic Model	Incomes and expenses decrease by 5%	Incomes and expenses decrease by 10%
Sensitivity Norm	10%	5%	0	-5%	-10%
Outflow from Investments	- 7,267,445,188	- 6,937,106,771 ^F	6,606,768,353	- 6,276,429,936	-5,946,091,518
Outflow from Maintenance Incomes	- 1,275,711,645 10,274,681,048	- 1,217,724,752 9,786,000,321	1,159,737,859 9,197,517,960	- 1,101,750,966 8,713,446,063	-1,043,764,073 8,188,265,320
Income before taxes	1,731,524,215	1,631,168,798	1,431,011,748	1,335,265,161	1,198,409,729
Tax on Income 15%	259,728,632	244,675,320 -	214,651,762	- 200,289,774	- 179,761,459
Nett income	1,471,795,583	1,386,493,478	1,216,359,986	1,134,975,387	1,018,648,270
NPV by 5.79%	110,223,600	81,672,242	170,329	23,634,170	- 68,587,789
IRR	6.38%	6.25%	5.79%	5.64%	5.34%
Self-Payment Norm	5.20	5.28	5.35	5.43	5.51

8.3 Lot 3

8.3.1 Location of sites of schools included in Lot 3

Lot 3 includes 4 schools, 2 in the Administrative Unit 2 , one in Administrative Unit 5 and one in Administrative Unit of Farke. Distribution of schools included in Lot 3 is indicated in the following map:

Map 54 Location of schools included in Lot 3



8.3.2 Total surface to be permanently seized by the sites of schools included in Lot 3

SITE 2/6

Map 55 Orthophoto of the site



LOCATION:

The proposed site no. 2/6 for construction of a nine-year school and high school is located in the southern side of Tirana, in the Administrative Unit no 2. It is accessible from “Elbasani” street and “ Haxhi Aliaj” street.

TECHNICAL DATA : Site has a surface of about 5425 m².

CURRENT SITUATION OF THE SITE :

- It is a relatively calm and easily accessible area.
- it is a developing area with low buildings 2-3 floors.
- Road infrastructure is good.

Picture 8 Photo of site 2/6



SITE 5/1

Map 56 Orthophoto of site



LOCATION : The proposed site no. **5/1** for a nine-year school is located near the lake area. It is accessed from Hasan Alla street and Tiranë-Elbasan highway.

TECHNICAL DATA : **Site 5/1 :** 3269 m²

CURRENT SITUATION OF THE SITE :

- It is located near the botanic garden in a high density area
- Easy access .

Picture 9 Photo of the site 5/1



SITE F3

Map 57 Orthophoto of the site



LOCATION : Proposed site no. **F3**

TECHNICAL DATA : **Site F3 :** 8340 m²

CURRENT SITUATION OF THE SITE :

- Difficult access
- Relatively sloppy site
- Road infrastructure may be problematic

Picture 10 Photo of site F3



8.3.3 Legal Status of shoals sites included in Lot 3

Site 2/6

Map 58 Indicative map of properties



Table 95 Table with preliminary calculations of properties affected by this project

Nr	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m ²)	Land price lek/m ²	Surface of the affected object (m ²)	Price Obj.lek/m ²	Amount in money
1	State owned land	Illegal 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 area will affect a total of 5425 meter square property, consisting of 2 state owned properties. For the land, the calculated price is obtained from CoMD No. 89, dated 03.02.2016.

Site 5/1



Map 59 Indicative map of properties

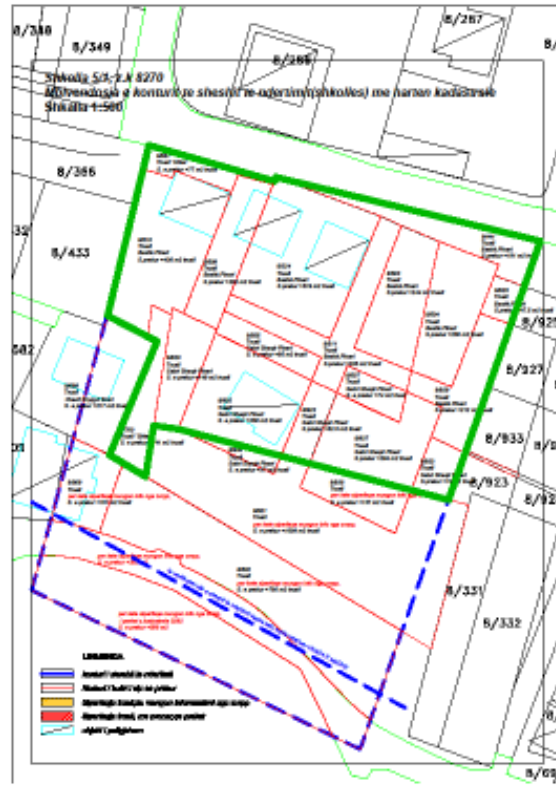


Table 96 Table with preliminary calculations of properties affected by the project

Nr	NAME	Fathes's name	Surname	Cadastral zone	No. Pro	Surface of the land (m ²)	Land price lek/m ²	Surface of objectm ²)	Price Obj.lek/m ²	Amount in leke
4	State owned			8270	8/700	141.00	66969			9,442,629.0
8	Sabri	Shaqir	Pinari	8270	8/935	358.00	66969			23,974,902.0
9	Sabri	Shaqir	Pinari	8270	8/920	149.00	66969			9,978,381.0
10	Sabri	Shaqir	Pinari	8270	8/922	82.50	66969			5,524,942.5
11	Sabri	Shaqir	Pinari	8270	8/937	294.00	66969			19,688,886.0
12	Sabri	Shaqir	Pinari	8270	8/923	74.00	66969			4,955,706.0
13	Co-owners		Pinari	8270	8/510	436.00	66969			29,198,484.0
14	State owned			8270	8/667	77.00	66969			5,156,613.0
15	Co-owners		Pinari	8270	8/509	202.00	66969			13,527,738.0
16	Co-owners		Pinari	8270	8/224	519.00	66969			34,756,911.0
17	Sabri	Shaqir	Pinari	8270	8/505	95.00	66969			6,362,055.0
18	Co-owners		Pinari	8270	8/511	285.00	66969			19,086,165.0
19	Co-owners		Pinari	8270	8/503	244.00	66969			16,340,436.0
20	Sabri	Shaqir	Pinari	8270	8/507	74.00	66969			4,955,706.0
21	Co-owners		Pinari	8270	8/441	191.00	66969			12,791,079.0
22	Co-owners		Pinari	8270	8/925	47.50	66969			3,181,027.5
23	Co-owners		Pinari	8270	8/929	212.00	66969			14,197,428.0
						3269.00				218,921,661.0

The school to be built in cadastral zone 8270 will affect a total of 3269 meter square property, composed of 23 properties, 22 out of them private properties and 1 state owned. Property no. 8/667 is state owned. For the land, the calculated price is obtained from CoMD No. 89, dt.03.02.2016.



Site F3

Map 60 Indicative map of properties

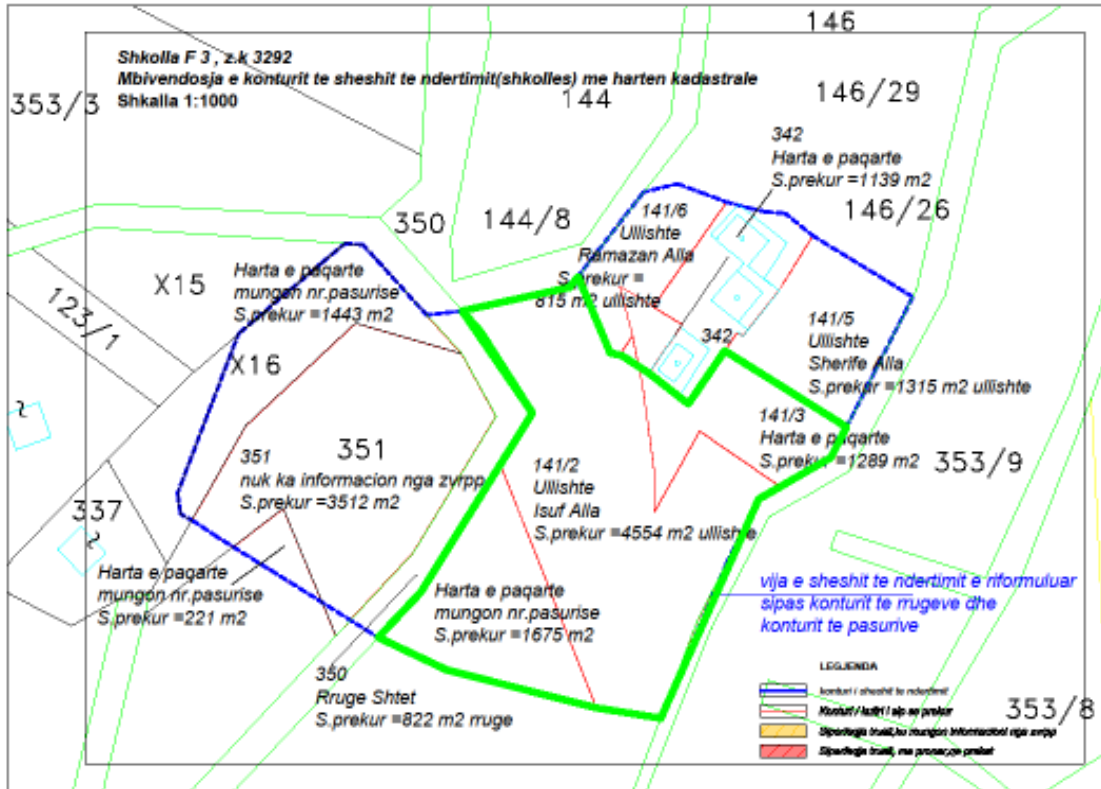


Table 97 Table with preliminary calculations of properties affected by project

Nr	NAME	Note in Sek. E	Cadastral zone	No. Prop	Sur affected land (m ²)	Land price lek/m ²	Sur affected Obj. (m ²)	Price Obj.lek/m ²	Amount in leke
1	Stateowned 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

School to be built in cadastral zone 8292 will affect a total of 8,340 meter square property composed of 4 properties, 8 object in private ownership and 1 object, no. 12/16 owned by ministry of defense and for another one there is no information For the land, the calculated price is obtained from CoMD No. 89, dt.03.02.2016.

8.3.4 Tipologjitë e shkollave të përfshira në Lotin 3

Lot 3 envisages the construction of 4 schools. Respectively, in Unit 2, Unit 5 and Unit of Farke. In details, in AU 5 is envisaged the construction of one basic education cycle school of Type 2. In AU 2 is envisaged the construction of a basic education cycle school of type 2 and another higher middle school of type 4. In AU Farke is envisaged the construction of a basic education cycle school of type 1. The following data indicates these detailed data:

Table 98 – Schools typology

Type	Location	Cycle	No class	st/class	No st. total	M2/students	Sur.total
Type1	Urban	Basic education	20	30	600	8.23	4938
Type2	Urban	Basic education	30	30	900	7.32	6588
Type3	Rural	Basic education	20	24	480	8.42	4041.6
Type4	Urban	Higher middle	21	30	630	6.35	4000.5

8.3.5. ECONOMIC AND FINANCIAL ANALYSIS FOR LOT 1

2. Economic and financial analysis

Economic and financial analysis of this feasibility study, in line with Council of Ministers Decision no. 575, dated 10.07.2013, “On approval of rules for assessment and granting for concession/private-public partnership”, article 7, mainly focuses on determination of value for money of the project, as well as on completion of an evaluation of the investment in total, operative costs and maintenance, as well as any other income expected to be generated during the duration of the project.

2.1 Economic Model of the Concession / Public-Private Partnership

Law no. 125/2013, changed with law no. 88/2014, regulates the competences of contracting authorities in order to sign concessions/public-private partnerships. In this type of relations, the private partner takes the responsibility of financing, designing, building and/or re-building/renewal the public infrastructure object, to operate and maintain the public infrastructure object built and/or rebuilt/newly renewed. Among the fields of implementation of this law is also education.²³

Based on the data analysis, it results that to put an end to the over-crowded schools problem and two shifts learning, Tirana Municipality needs to build 17 new schools - 10 nine-year schools and seven high schools. The total cost of construction and furnitures for these schools is calculated at 7.6 billion leke. Such amount of money is financially unaffordable for Tirana Municipality, whose total annual budget is 10 billion leke, whereas investments for construction of new schools in the course of last years has been not more than 500 million leke.

²³ Article 4, item dh), Law 125/2013

In this respect, in order to settle this problem, Tirana Municipality must implement innovative methods of procurement and financing of the proposed project. To guarantee the realization possibility of the schools construction project, it was chosen a more innovative and cost-efficient approach, combining the designing, financing, construction and maintenance in one and only procurement contract. Due to the considerable dimensions of this project, this methodology will not only offer facilitations during the development process, but will provide more sustainability after its completion.

In the framework of the “Design, Finance, Build and Maintain” (DFBM) model as internationally known “Design, Build, Finance & Operate (DBFO)”, contractors take the responsibility of designing, building, financing and maintaining an object for entire duration of the contract. The contractor who may be one company or a consortium is responsible for designing, financing, construction and maintenance of the object for a determined period of time, which is proposed to be 7 years. The payment after the completion of the object is dictated based on completion of some determined performance standards regarding the physical condition of the buildings, capacity, quality, etc. This model which goes beyond the designing and construction phase, naturally encourages the designer/builder to provide since the beginning a qualitative construction plan in order to have less costs during the maintenance phase, as long as the responsibility belongs to their consortium. Likewise, integration of all project’s contract in one reduces different transactional costs and boosts project management efficiency.

This PPP model has been widely used for construction of major infrastructure projects, such as construction of highways, hydro power stations, wastes management plants, etc, because the dimensions of such projects required considerable funds, efficient organization of capital and human resources, high designing and construction quality, maximal security and constant maintenance. In this respect, such models have been considered successful for development of projects that guarantee their realization and efficiency of the investment. Nevertheless, the use of this PPP form is not limited only in major public infrastructure works mentioned above. In many OECD countries, mainly in the United Kingdom, this methodology is used also for public service projects, such as construction of new schools.

Following are some examples from different countries that have successfully implemented this model for projects of educational infrastructure:

Canada²⁴: “Alberta Schools Alternative Procurement” Program. In 2007, Alberta region in Canada declared the first stage of the program which envisages the construction of 18 new school buildings (kindergartens and nine-year schools), which were completed in 2010. After the completion of works, duration of the contract will continue with the maintenance and it estimated at about 30 years. The second phase of the program envisaged the construction of other

²⁴ “Flexible and alternative approaches to providing school infrastructure in Alberta, Canada” – OECD, 2010

10 nine-year schools according to the same model and 4 high schools through the simple model of Designing-Constructing contract, which were completed in 2013.

Greece²⁵: “Macedonia Schools and Attica Schools” Program. With the use of DBFM mechanism, private operators designed construction of 51 schools with a total amount of about 269 million Euro and 25 year contracts.

United Kingdom²⁶: “Building Schools for the future” Program. This program is a long-term investments program, which is contributing in the construction of a considerable number of schools in the entire territory of UK. Majority of schools has been built through the Design-Build-Finance-Maintenance scheme, but in this case often has been included also the element of school management by a private subject of a determined period. In general, total duration of the contract is estimated up to 30 years. The private consortium is regularly paid by public funds based on its performance during the contract period. If the consortium does not achieve the required performance, the payment is reduced. At the end of the contract period, school is given back to government.

New Zealand²⁷: The project of New Zealand Ministry of Education for construction of two schools in Hobsonville, Auckland. This project envisages the construction of a new lower cycle school and one lower middle cycle school in the suburb region of Hobsonville in Auckland city. The private sector is partly responsible for designing, building and financing of the objects, together with their constant maintenance and management of common services. Construction of these schools has been successfully completed in 2014.

In this aspect, the project for construction of new schools in Tirana needs the application of the same approach for improvement of education service in the entire territory of the Municipality. Big number of schools that will be built, financial limitations, short period for implementation of the project, as well as need to guarantee the maximal security of buildings point to the necessity of establishment of an efficient and successful public private partnership.

2.2 Main assumptions

In the framework of financial and economic analysis effects of this feasibility study, were made the following assumptions:

²⁵ “The role and impact of public-private partnerships in education”, pg. 82 – World Bank, March 2009
http://www.ungei.org/resources/files/Role_Impact_PPP_Education.pdf

²⁶ Ibidem (i.e. extracted from same WB document in the above-mentioned reference and same page)

²⁷ “Mayoral Position Paper on Public Private Partnerships” – Ernst and Young, November 2013.

- Concessionary will cope with its incomes the entire investment for construction of education objects and their functioning, whereas Tirana Municipality will face with its funds the expropriation of private lands to be used for this purpose.
- Educational objects will be built and functional at maximum 18 months from the signing of the construct.
- After the construction and functioning of schools, concessionary will be accountable for administration and maintenance of the objects for a 7 year period and for every problematic regarding risks of assets for these period.
- After the construction of objects, Tirana Municipality will pay the concessionary a certain annual sum until the full payment of the invested amount. Incomes for this payments will be provided from the annual incomes of Temporary Tax on Education Infrastructure and conditioned transfer from Ministry of Finance.

2.3.Costs analysis

Based on technical, it has come to be conclusion that in total will be built 17 schools: 10 nine-year schools and 7 high schools. The new schools will be designed and built according to models in line with standards specified by Ministry of Education and Sports through “Guideline for School Buildings Design”. The school models offer the opportunity to fully meet the needs for pre-university education classes, respecting legal and technical requirements for definition of parallel classes according to each teaching cycle. In the same time, for nine-year schools are envisaged also venues for pre-school education, as part of the nine-year education institution. Referring to above-mentioned standards, there exist 4 main types of schools with the following operational data:

Type 1 of schools includes 20 classes per pre-school and school students with a construction surface of about 4,938 m². Likewise, this schools will included a kindergarten of about 4 classes with a surface of about 874 m². In total, the construction surface for this type of school is 5,812 m². **Type 2** of schools is nine-year education with 30 classes for pre-school and school students with a construction surface of about 6,588 m². Likewise, this school will include a kindergarten with 6 classes with a surface of about 1,310 m². In total, the construction surface for this type of school is 7,898 m². **Type 3** of schools is higher middle for rural zones with 20 classes with a construction surface of about 4,041 m². **Type 4** of schools consists of higher middle schools for urban zones with 21 classes and a construction surface of about 4001 m².

According to quantitative analysis carried out and explained above, there are necessary a total of 17 schools, 2 out of them belonging to Type 1, 7 schools of Type 2, 1 school of Type 3 and 7 high schools of Type 4. Respectively these schools will be built according to following administrative units and data:

Table 99 Detailed data on each school for Lot 3

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	nxënës për klasë	Nxënës për shkolle	Sipërfaqe totale shkolle	Klasa kopështi	Nxënës për klasë kopështi	nxënës për kopësht	Sipërfaqe totale kopësht	Siperfaqe totale ndertimi
1	NJA 02	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
2	NJA 02	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
3	NJA 05	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
4	NJA Farke	Tipi 3	9-vjeçar	20	24	480	4,041	4	24	96	874	4,915
Totali				101		2,910	21,217	16	72	384	3,494	24,711

Summarizing according to schools typology, in total, we have the following operational data :

Table 100 Data on proposed schools according to typology for lot 3

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Nr nxënës për klasë	Nxënës për shkolle	Nr klasa kopështi për shkolle	Nr nxënës për klasë kopështi	Nxënës për kopësht	Sipërfaqe ndërtimi shkolle	Sipërfaqe ndërtimi kopësht	Tot Sipërfaqe ndërtimi	Total Nxënës në shkolle	Total Nxënës në Kopështe	Nr Total i nxënësve
Tipi 2	2	30	30	900	12	24	144	13,176	2,620	15,796	1,800	288	2,088
Tipi 3	1	20	24	480	4	24	96	4,041	874	4,915	480	96	576
Tipi 4	1	21	30	630	-	-	-	4,001	-	4,001	630	-	630
Grand Total	4	71				48	240	21,217	3,494	24,711	2,910	384	3,294

For a better analysis of value for money of the project, we have grouped the expenses in four main categories, based on accounting standards and requirements of CoMD no. 575, dated 10.07.2013, "On approval of rules for assessment and granting of concession/public private partnership", article 7, section 3-6:

Direct costs of investments

Direct costs of maintenance

Due to the effects of the following analysis, all the prices and values will be without VAT, unless is specified otherwise.

2.3.1 Direct investments costs

During the analysis and in line with above-mentioned CoMD, there were identified the following direct costs of investments:

1. Costs of Land Expropriation ;
2. Construction Cost ;
3. Cost of Study and Designing ;
4. Supervision Cost ;
5. Cost of Technical Control;

6. Technical Revision ;
7. Cost for Furniture and Equipment;
8. Cost of lab devices.

2.3.1.1.Land Expropriation Costs

According to determination of trace where these schools will be built, it results that will be expropriated a total of **10,781 m²** of private properties, which according to the calculations are estimated at an expropriation value of **221,887,911** leke. On the other side, the state-owned land will be subject of respective procedures in order to take the respective properties under the administration.

Table 101 Summarizing table of expropriation for Lot 3

Nr rendori tabelës	Adresa	Tipi	Sheshi	Shpronësime Vlere	m ² te shpronësuar	mesatar per m ²
3	NJA 05	Tipi 2	5/1	218,519,847	3,263	66,969
4	NJA Farke	Tipi 3	F3	3,368,064	7,518	448
Grand Total				221,887,911	10,781	20,581

With the approval of CoMD in this respect and completion of financial and legal documents in line with the CoMD and normative acts in force, every expropriated subject will be paid by Tirana Municipality through a fund determined for this purpose.

2.3.1.2.Construction Costs

Based on the report obtained from General Directorate of Public Works No. Prot. 21407/2, dated 09.08.2016, costs for schools construction is 46,331.67 leke/m², whereas the kindergartens costs are 54,380.83 leke/m². From the combination of this data with the total construction surface for each type of school, it results that :

- The construction value of a Type 1 school is 228,785,770 leke and to this amount is added also the construction of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 1 school, including the kindergarten venue is 276,314,618 leke.
- The construction value of a Type 2 is 305,233,020 leke and to this amount is added the construction cost of a kindergarten of about 71,238,892 leke. In total, the general cost of

the construction of a Type 2 school, including the kindergarten venue is 376,471,912 leke.

- The construction value of a Type 3 schools is 187,207,732 leke and to this amount is added the construction cost of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 3 schools, including the venues of a kindergarten is 234,736,581 lekë.
- The construction value of a Type 4 school is 185,349,833 leke and these schools do not include kindergarten premises.

Table 102 Construction costs for schools in lot 3

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Klasa kopësh ti për shkollë	Sipërditimi i shkollave	Sipërditimi kopësht e	Tot Sipërfaqe ndërtimi	Cmimi i ndërtimit të shkollave lek/m2	Cmimi i ndërtimit të kopështeve lek/m2	Kosto e ndërtimit të një shkolle	Kosto e ndërtimit të një kopështi	kosto e ndërtimit të një shkolle + kopesht	Kosto e përgjithshme e ndërtimit
Tipi 2	2	30	6	13,176	2,620	15,796	46,332	54,381	305,233,020	71,238,892	376,471,912	752,943,823
Tipi 3	1	20	4	4,041	874	4,915	46,332	54,381	187,207,732	47,528,848	234,736,581	234,736,581
Tipi 4	1	21	-	4,001	-	4,001	46,332	54,381	185,349,833	-	185,349,833	185,349,833
Grand To	4	71	10	21,217	3,494	24,711	138,995	163,143	677,790,585	118,767,740	796,558,325	1,173,030,237

In total, there will be built **2 Type 2 schools** with a construction cost of 376,471,912 leke per school, **1 Type 3 school** with a construction cost of 234,736,581 leke per school and **1 Type 4 school** with a construction cost of 185,349,833 leke per school. As a result, the total construction costs for lot 3 amounts to **,173,030,237** leke. This cost will be covered by the concessionary.

2.3.1.3. Other direct investment costs

Based on the report from Public Works General Directorate, in Document No. Prot. 21407/2, date 09.08.2016, other direct investment costs are :

- Study – Design
- Supervision of works
- Technical Control
- Technical Revision
- Fire protection
- Environmental Permit
- Tax of impact in infrastructure

Taking into account the data analyzed in this chapter on costs, it results that the direct investment cost is as following :

Tax of impact on infrastructure for Public Works is 0.

Table 103 Direct investment costs for lot 3

Tipi	Nr i shkollave sipas tipit	Tot Sipërfaqe ndërtimi	Kosto Studim Projektim	Kosto Mbikqyrje	Kosto kolaudimi	Oponenca teknike	Zjarrefikes	Leje Mjedisore
Tipi 2	2	15,796	20,220,768	8,355,808	301,178	501,350	100,000	60,000
Tipi 3	1	4,915	6,638,188	2,703,942	93,917	208,967	50,000	30,000
Tipi 4	1	4,001	5,345,869	2,182,240	76,855	184,846	50,000	30,000
Grand To	4	24,711	32,204,825	13,241,990	471,950	895,163	200,000	120,000

2.3.1.4. Furniture Costs

In order to make schools functional, it is necessary to provide necessary IT equipment and laboratories. Furniture of new nine-year and high schools of Tirana Municipality will be realized based on law 69/2012 “On Pre-university education system in the Republic of Albania”, changed, for which Ministry of Education and Sports has prepared the Guideline “On designing of school buildings” (Norms and Standards).

Pursuant to needs for new schools, made evident by you, referring to MoES standard for classes typology and other venues in line with teaching program, there were carried out the respective calculations about the furniture costs per student, which is about 24.167 leke without VAT. This cost includes the amount for furniture without the equipments, computers and other necessary devices for laboratories of physics, chemistry and biology, etc.

For the calculation of furniture price, we considered the offers obtained by 6 economic units for furniture items according to technical specifications of MoES.

Concretelly, according to school typology, the furniture cost is as following :

Table 104 Furniture costs for schools typology

Type of school	No class	st/class	No st total	Cost/students	Total cost
Type 1	20	30	600	24,167	14,500,000
Type 2	30	30	900	24,167	21,750,000
Type 3	20	24	480	24,167	11,600,000
Type 4	21	30	630	24,167	15,225,000

The furniture cost for basic education have been included three levels which envisage the following types :

For furniture of new kindergartens, we referred to the previous experience in furniture manner and their necessary quantity. Regarding furniture costs, we referred to the market prices, as well as previous indexed interim payment reports.

Costs for furniture of kindergartens per children is about 27.916 lek without VAT

This furniture cost, beside furniture of children premiee (sitting room, bedroom) includes also the office of director, psychologist and costs for kitchen furniture.

In conclusion, the furniture costs according to kindergarten typology is as following :

Table 148–Furniture costs according to typology

Type	Location	Cycle	No class	St/Class	No st. total	Cost/child ren	Total cost
Type1	Urban	Kindergarten(3-5years)	4	24	96	27.916	2.680.000
Type2	Urban	Kindergarten(3-5years)	6	24	144	27.916	4.020.000
Type3	Rural	Kindergarten(3-5years)	4	24	96	27.916	2.680.000

Regarding costs for lab equipments, we referred to the purchase contract “Scientific Laboratories (Chemistry, Physics, Biology) for Pre-University schools” realized by Ministry of Education and Sports during 2016, in which results that the value per laboratory without VAT is as following:

Table 149 Costs for lab equipment

I	Basic education school	Amount/ laboratory
1	Natural Sciences Laboratory	186,998
2	Chemistry Laboratory	223,125
3	Physics Laboratory	1,183,602
4	Biology Laboratory	632,467
5	IT Laboratory	3,869,658
II	High school	-
1	Chemistry Laboratory	528,469
2	Physics Laboratory	1,294,500
3	Biology Laboratory	651,657
4	IT Laboratory	3,869,658

According to schools typology defined based on the designing standards of pre-university education objects, set by Ministry of Education and Sports, in which is determined the quantity of labs for each type, we have the following table :

Table 150 Costs for lab equipment according to schools typology

No	Tyes of schools	Cost without VAT
1	Basic education (Type 1)	6,095,850
2	Basic education (Type 2)	7,279,450
3	Basic education (Type 3)	5,743,950
4	Higher Middle Education (Type 4)	13,983,067

According to the analysis of all the above-mentioned data, it results that the total cost of furniture and lab equipments of 4 schools is **115,330,917** leke without VAT, according to the following table :

Table 105 Furniture cost and lab equipments for schools of lot 3

Tipi	Nr i shkollave sipas tipit	Kosto e mobilimit te shkollave	Kosto e mobilimit të kopështeve	Total Kosto Mobilimi	Kosto Laboratori	Total kosto pajisje, mobilje dhe orendi
Tipi 2	2	43,500,000	8,040,000	51,540,000	14,558,900	66,098,900
Tipi 3	1	11,600,000	2,680,000	14,280,000	5,743,950	20,023,950
Tipi 4	1	15,225,000	-	15,225,000	13,983,067	29,208,067
Grand To	4	70,325,000	10,720,000	81,045,000	34,285,917	115,330,917

2.3.1.5. Direct investments cost

In conclusion, the direct investment cost of this project is estimated at **1,557,382,992 leke**. About **221,887,911** leke out of them are calculated as necessary funds for expropriation, which will be covered by Tirana Municipality. Whereas, the total cost of the project that will be covered by the concessionary is **1,335,495,081** leke, where the construction cost is **1,173,030,237** leke without VAT, Costs of the Designing, Technical Revision, Supervision, Technical Control, furniture and laboratories is **162,464,845** leke without VAT. In details, the calculated categories are as following :

Table 106 Direct investment costs for Lot 3

Viti	Pershkrimi	Grand total
A.	Kostot Direkte te Investimit	1,557,382,992
A.1	Kostot e Truallit	221,887,911
A.2	Kostot e Projektimit	32,204,825
A.3	- Ndertim + instalime	1,173,030,237
A.4	- Oponenca teknike	895,163
A.5	- Takse Infrastruktura	-
A.6	- Leje mjedisore	120,000
A.7	- Mbrojtje ndaj Zjarrit	200,000
A.8	- Kosto Supervizimi	13,241,990
A.9	- Kosto Kolaudimi	471,950
A.10	- Mobiljet dhe Orendi	81,045,000
A.11	- Investime IT&T dhe Labs	34,285,917

2.3.2 Direct maintenance costs

Based on calculations carried out from General Directorate No. 3 of City's Workers, annual maintenance cost per class is 422,107 leke with VAT or 351,755 leke without VAT. Making respective calculations, the annual cost for the general maintenance for each type of school is 12,663,198 leke per one school of Type 2, and about 7,386,865 leke per one school of type 4. Total maintenance cost for all schools of **Lot 3** is **41,155,393** leke per year. The annual cost of maintenance for calculation effects starts from 2018 and pursuant until the completion of PPP period. For more details, see the following tables:

Table 107 Annual maintenance costs for schools of lot 3

Tipi i shkollave	Nr i shkollave	Kosto e mirëmbajtjes për shkollë	Kosto e përgjithshme e mirëmbajtjes
Tipi 2	2	12,663,198	25,326,396
Tipi 3	1	8,442,132	8,442,132
Tipi 4	1	7,386,865	7,386,865
Grand Total	4	10,288,848	41,155,393

In total, for 7 years, the general maintenance cost will be **288,087,751** leke without VAT. About **189,682,199** leke without VAT out of them is the maintenance costs of assets and **98,405,552**

leke without VAT is the cost of maintenance staff. The following table is the analysis of categories of maintenance expenses for each school in one year, without VAT:

Table 108 Maintenance costs for seven years in Lot 3

B.	Kostot Direkte të Mirëmbajtjes	288,087,751
B.1	Kostot e Mirëmbajtjes së Aseteve	189,682,199
B.1.1	- Kostot e Mirëmbajtjes së Ndërtesave	43,857,912
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve	110,815,999
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi	13,872,810
B.1.4	- Mirëmbajtje IT&T (HD+SW)	21,135,478
B.2	Staf Mirembajtje	98,405,552
B.2.1	Staf Roje	14,475,328
B.2.2	Staf Sanitare	62,468,042
B.2.3	Staf Sekretare	12,511,996

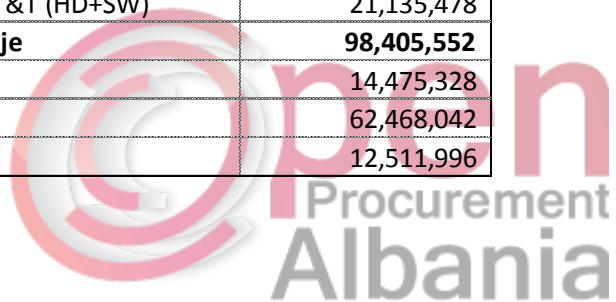


Table 109 Detailed cost of maintenance for Lot 3

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	Lyerje per klase	Riparim suvatim + hidroizolim per klase	Riparime dhe mirembajtje e Nderteses	Riparime Orendi shkollore	Riparime Pajisje PC	Materiale Pastrimi	Lëndë djegëse për ngrohje dhe ujë të ngruhtë	Mirembajtje kondicionim , impiante uji dhe MNZSH	Sherbim roje	Sherbim pastrimi	Sherbim sekretarie	Total kosto mirembajtjeje
1	NJA 02	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
2	NJA 02	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
3	NJA 05	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
4	NJA Farke	Tipi 3	9-vjeçar	24	549,386	563,474	172,354	406,529	619,355	203,226	2,006,710	1,037,419	686,462	1,830,565	366,652	8,442,132
Totali i Mirembajtjes				117	2,678,257	2,746,933	840,226	1,981,830	3,019,354	990,727	9,782,711	5,057,419	3,346,502	8,924,006	1,787,428	41,155,393



2.4 Analysis of PPP incomes

2.4.1 Tariff for the use of schools

Tariff for use of schools (hereinafter “Tariff”) will be calculated in such way so that could cover the costs of concessionary and guarantee a minimal income margin for the concessionary in order to make this PPP attractive and the best economic solution compared to other potential scenario. The tariff is paid for the entire maintenance and administration period of schools by concessionary, i.e. for 7 years. This tariff is paid to every year by Tirana Municipality through financing resources detailed as following. This scheme provides for the construction of 17 schools in a record time, solving the two-shifts teaching and over-crowded classes, but as long as all the risks for maintenance and careful use of the asset will be under the responsibility of the concessionary and related to the payments, this will enable qualitative constructions in the interest of the community.

As long as the direct investment costs, i.e. construction and functioning of schools is calculated based on interim payment reports, which include the income margin of the contractor, on this category will not be calculated the additional income margin. But on the other side, as long as the invested values of the concessionary in this respect will be covered in a seven-year period, he must be minimally reimbursed for the value in time of the money, as well as for the normal and extraordinary maintenance part for this period.

In this respect, as the income margin has been considered the limit of average norm of Albanian government obligations for a fixed seven year period²⁸, respectively the results of seven year obligations from 2015 until 15.09.2016.

Table 110 Income Margin

ISIN	Dt.Ankandë	Ankandë	Musj	Datë Emetim ¹	Datë Maturim ¹	Shuma e shpallur (filestare)	Shuma e shpallur (nd. strukture)	Shuma e kërkuar	Shuma e pranuar	Prorata Konkurses	Prorata Jo Konkurses	Yieldi Uniformi Pranuar
AL0017NF7Y23	13.09.2016	7 vjeçar/7 years (fix)	Shtator	15.09.2016	15.09.2023	3,000,000		2,309,000	2,309,000			4.89%
AL0016NF7Y23	01.06.2016	7 vjeçar/7 years (fix) Rihapje	Qershor	03.06.2016	16.03.2023	2,000,000		3,141,400	2,000,000	4.40%		4.00%
AL0016NF7Y23	11.03.2016	7 vjeçar/7 years (fix)	Mars	16.03.2016	16.03.2023	3,000,000		8,247,000	2,999,900	76.48%		4.90%
AL0015NF7Y22	14.12.2015	7 vjeçar-fiks	Dhjetor	16.12.2015	16.12.2022	2,500,000		5,288,600	2,500,000	67.70%	100.00%	6.79%
AL0014NF7Y22	14.09.2015	7 vjeçar-fiks	Shtator	16.09.2015	16.09.2022	1,000,000		1,430,600	1,000,000	100.00%	100.00%	7.78%
AL0013NF7Y22	12.06.2015	7 vjeçar-fiks	Qershor	16.06.2015	16.06.2022	3,000,000		2,953,500	2,953,500	100.00%	100.00%	7.80%
AL0012NF7Y22	12.03.2015	7 vjeçar-fiks	Mars	16.03.2015	16.03.2022	2,500,000		2,815,800	2,500,000	80.98%	77.92%	7.81%
Yieldi Mesatar i pranuar											6.28%	

²⁸ <http://www.financa.gov.al/al/raportime/borxhi/ankandet-e-emetimit-te-letrave-me-vlere-te-geverise/rezultatet-e-ankandeve/2016>

The income margin will be object of bidding procedures of competitors in this PPP, but in the mean time, it is necessary to understand the general value of this PPP. The income margin will be calculated for the remaining value of the direct investment every year and on annual maintenance costs. Thus, the financing scheme is attractive for potential competitors and total cost of the project is not higher than the traditional financing methods.

Based on the calculations, annual tariff to be paid to the concenssionary with a margin of about 6.28% will be as following :

Table 111 Table with preliminary calculations of the properties affected by the project

A	B	C	D	E	F	G	H	I	J	K	L	M
Nr rendor	Viti	Kosto Direkte e Investimit ne Fillim të Periudhës (pa TVSH) (C3=F2)	marzhi i fitimit	Shlyerja vjetore për Koston Direkte të Investimit (C2/B8)	Vlera e Mbetur e Koston Direkte te Investimit (C-E)	Marzhi i fitimit mbi koston Direkte të investimit (C*D)	pagesa vjetore për koston direkte të investimit Pa TVSH (E+G)	kosto vjetore mirembajtjeje Pa TVSH	Marzhi i fitimit mbi Mirembajtjen (D*I)	pagesa vjetore për koston direkte të investimit Pa TVSH (I+J)	Total Marzhi i Fitimit	Tarifa Vjetore Pa TVSH
1	0	1,335,495,081										
2	1	1,335,495,081	6.28%	190,785,012	1,144,710,070	83,869,091	274,654,103	41,155,393	2,584,559	43,739,952	86,453,650	318,394,054
3	2	1,144,710,070	6.28%	190,785,012	953,925,058	71,887,792	262,672,804	41,155,393	2,584,559	43,739,952	74,472,351	306,412,756
4	3	953,925,058	6.28%	190,785,012	763,140,046	59,906,494	250,691,505	41,155,393	2,584,559	43,739,952	62,491,052	294,431,457
5	4	763,140,046	6.28%	190,785,012	572,355,035	47,925,195	238,710,207	41,155,393	2,584,559	43,739,952	50,509,754	282,450,158
6	5	572,355,035	6.28%	190,785,012	381,570,023	35,943,896	226,728,908	41,155,393	2,584,559	43,739,952	38,528,455	270,468,859
7	6	381,570,023	6.28%	190,785,012	190,785,012	23,962,597	214,747,609	41,155,393	2,584,559	43,739,952	26,547,156	258,487,561
8	7	190,785,012	6.28%	190,785,012	-	11,981,299	202,766,310	41,155,393	2,584,559	43,739,952	14,565,857	246,506,262
Grand total				1,335,495,081		335,476,364	1,670,971,446	288,087,751	18,091,911	306,179,662	353,568,275	1,977,151,107

To guarantee the economic success of the scheme, the concessionary will be paid with decreasing annual installments. This payment method will help the concessionary to avoid financial difficulties during the entire period of the duration of the concession period contract. Therefore, in the first year the installment will be **318,394,054** leke and each year will be decreasing until reaching **1,977,151,107** leke in the last year.

Table 112 Amount of annual installment

Nr rend or	Viti	Tarifa Vjetore Pa TVSH
1	0	
2	1	318,394,054
3	2	306,412,756
4	3	294,431,457
5	4	282,450,158
6	5	270,468,859
7	6	258,487,561
8	7	246,506,262
Grand total		1,977,151,107



2.4.2 Source of financing

The general amount of this project for **Lot 3** is **2,199,039,018** leke, about **221,887,911** out of them are expropriations to be paid by Tirana Municipality to the expropriated persons and **1,977,151,107** leke is the amount of the concession:

Table 113 General amount of the project for Lot 3

Nr	Vlera e Pergjithshme e Projektit	Çmimi	Sasia	Vlera totale
1	Kostoja e përgjithshme e shpronësimit	221,887,911	1	221,887,911
2	Kosto direkte e Investimit pa TVSH	1,335,495,081	1	1,335,495,081
2.1	Kosto direkte e investimit te koncesionarit Pa TVSH	1,335,495,081	1	1,335,495,081
3	Kosto e mirembajtjes pa TVSH	41,155,393	7	288,087,751
3.1	Kosto e mirembajtjes te koncesionarit Pa TVSH	41,155,393	7	288,087,751
4	Marzhi i Fitimit	353,568,275	1	353,568,275
4.1	Marzhi i Fitimit të Koncesionarit	353,568,275	1	353,568,275
	Total i pergjithshëm i kostos(1+2+3+4+5)			2,199,039,018

Table 160 Amount to be covered by municipality and concessionary

Nga të Cilat:	Bashkia	Koncesionari	Totali
1. Vlera e Përgjithshme e Projektit Pa TVSH	814,242,252	7,997,517,960	8,811,760,212
Totali	814,242,252	7,997,517,960	8,811,760,212

These expenses will be covered by incomes of the Municipality, Conditioned Grants of Ministry of Finance for project.

Incomes of Tirana Municipality for this project will be generated from the Interim Tax on Education Infrastructure, which is applied upon decision of Municipal Council No. 59, dated 30.12.2015, "On taxes and local tariffs system in the city of Tirana".

Table 161 Forecast of incomes from Interim Tax on Education Infrastructure

Description	PLAN YEAR 2016	FORECAST 2017	FORECAST 2018

Interim Tax on Education Infrastructure	870 000 000	940 000 000	1 000 000 000
Families	320 000 000	340 000 000	350 000 000
Trade subject	550 000 000	600 000 000	650 000 000

Incomes from Interim Tax on Education Infrastructure are estimated at 870 million leke in 2016, whereas these incomes are envisaged to increase to 940 million leke in 2017 and 1 billion leke in 2018. This interim tax will be applied for 7 years and for 2019-2022 period, the annual incomes are projected to amount to 1 billion leke. Incomes from specific transfer from Ministry of Finance will be 700 million lek per year. Therefore, the fund at the disposal of Tirana Municipality for completion of periodical payments is estimated at 1 billion and 700 million leke per year.



2.5.Financial Analysis

Table 114 Summarizing table of costs and incomes of the project

Viti	Pershkrimi	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
A.	Kostot Direkte te Investimit	1,557,382,992	-	-	-	-	-	-	-	1,557,382,992
A.1	Kostot e Truallit	221,887,911								221,887,911
A.2	Kostot e Projektimit	32,204,825								32,204,825
A.3	- Nderitim + instalime	1,173,030,237	-							1,173,030,237
A.4	- Oponenca teknike	895,163								895,163
A.5	- Takse Infrastrukture									-
A.6	- Leje mjedisore	120,000								120,000
A.7	- Mbrojtje ndaj Zjarrit	200,000								200,000
A.8	- Kosto Supervizimi	13,241,990								13,241,990
A.9	- Kosto Kolaudimi	471,950								471,950
A.10	- Mobiljet dhe Orendi	81,045,000								81,045,000
A.11	- Investime IT&T dhe Labs	34,285,917								34,285,917
B.	Kostot Direkte të Mirëmbajtjes	-	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	288,087,751
B.1	Kostot e Mirëmbajtjes së Aseteve	-	27,097,457	27,097,457	27,097,457	27,097,457	27,097,457	27,097,457	27,097,457	189,682,199
B.1.1	- Kostot e Mirëmbajtjes së Ndërtesave	-	6,265,416	6,265,416	6,265,416	6,265,416	6,265,416	6,265,416	6,265,416	43,857,912
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve dhe Orendi	-	15,830,857	15,830,857	15,830,857	15,830,857	15,830,857	15,830,857	15,830,857	110,815,999
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi	-	1,981,830	1,981,830	1,981,830	1,981,830	1,981,830	1,981,830	1,981,830	13,872,810
B.1.4	- Mirëmbajtje IT&T (HD+SW)	-	3,019,354	3,019,354	3,019,354	3,019,354	3,019,354	3,019,354	3,019,354	21,135,478
B.2	Staf Mirembajtje	-	14,057,936	14,057,936	14,057,936	14,057,936	14,057,936	14,057,936	14,057,936	98,405,552
B.2.1	Staf Roje		3,346,502	2,788,752	2,323,960	1,936,633	1,613,861	1,344,884	1,120,737	14,475,328
B.2.2	Staf Sanitare		8,924,006	8,924,006	8,924,006	8,924,006	8,924,006	8,924,006	8,924,006	62,468,042
B.2.3	Staf Sekretare		1,787,428	1,787,428	1,787,428	1,787,428	1,787,428	1,787,428	1,787,428	12,511,996
A+B	Totali i Kostove (A+B+C)	1,557,382,992	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	1,845,470,743
C.	Të Adhurat	221,887,911	318,394,054	306,412,756	294,431,457	282,450,158	270,468,859	258,487,561	246,506,262	2,199,039,018
C.1	Likuidimet e shpronësimeve	221,887,911								221,887,911
C.2	Tarifa e Shfrytëzimit pa TVSH		318,394,054	306,412,756	294,431,457	282,450,158	270,468,859	258,487,561	246,506,262	1,977,151,107
D	Fitimi (humbja)	(1,335,495,081)	277,238,661	265,257,363	253,276,064	241,294,765	229,313,466	217,332,168	205,350,869	353,568,275
E	Fitimi (humbja) progresive	(1,335,495,081)	(1,058,256,420)	(792,999,057)	(539,722,993)	(298,428,228)	(69,114,762)	148,217,406	353,568,275	353,568,275
F	15% Tatim fitim	0	0	0	0	0	0	(22,232,611)	(30,802,630)	(53,035,241)

Table 115 Cashflow of the project

Fluksi i Arkës									
Viti	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
Flukse dalese nga Investimet	-1,557,382,992	-	-	-	-	-	-	-	-1,557,382,992
Flukse dalese nga Mirëmbajtja	-	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	288,087,751
Flukse dalese nga Taksat	-	-	-	-	-	-	22,232,611	30,802,630	53,035,241
Totali i flukseve dalese	-1,557,382,992	41,155,393	41,155,393	41,155,393	41,155,393	41,155,393	63,388,004	71,958,023	-1,898,505,984
Flukse hyrese nga Operimet	221,887,911	318,394,054	306,412,756	294,431,457	282,450,158	270,468,859	258,487,561	246,506,262	2,199,039,018
Gjendja e Arkes ne fund te periudhes	-1,335,495,081	277,238,661	265,257,363	253,276,064	241,294,765	229,313,466	195,099,557	174,548,239	300,533,034
Gjendja e arkes progresive	-1,335,495,081	1,058,256,420	792,999,057	539,722,993	298,428,228	69,114,762	125,984,795	300,533,034	300,533,034

2.6. Economic Profitability of the Project

2.6.1. NPV (Net Present Value)

NPV, as standard method for assessment of long-term projects through analysis of time value of money, presents the discounted amount of cashflow of the project. Every investor, when decides to undertake an investment analyzes the incomes generated by one project compared to the potential incomes of the invested money in another project. In general, these analyses are carried out taking into account the interest rate in case of the investment of the money, e.g. treasury bonds or government obligation, which have almost a zero risk.

Classical formula of NPV calculation, if the investment is made in one year, is :

$$NPV = \sum_{t=1}^T \frac{C_t}{(1+r)^t} - C_0$$

where:

C_0 – presents the money spent for the initial investment

C_t – presents the incomes from the investment ;

t – presents duration of the project ;

r – presents the expected rate of discount .

To see the economic profitability of the project, the financial model has been tested with several potential discount rates. From this analysis, it resulted that the potential concessionaries will be interested in this project only if their opportunity cost is lower than 5.79%. In other words, for every discount rate over 5.79% this project does not consist of any economic profitability for the concessionary.

norma e skontimit e parashikuar NPV	NPV			
	5%	5.79%	6%	7%
	29,884,696	15,136	7,682,796	42,661,484

2.6.2. IRR (Internal Rate of Return)

IRR is a method used to measure the incomes of potential income. IRR is a discount rate that makes the nett present value (NPV) of all cashflows of a project equal to zero. According to economic theory, every project with an IRR higher than its capital cost is profitable, as a result investors will be interested to invest in it. Based on the financial analysis, the IRR of this project is estimated at 5.79%.

Table 116 Internal Rate of Return of the project

Viti	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
Gjendja e Arkes ne fund te periudhes	-1,176,772,556	244,264,887	233,707,556	223,150,225	212,592,894	202,035,563	171,909,712	153,782,766	264,671,046
IRR	5.79%								

2.6.3. Payback Period

The payback period presents the necessary time needed for the invested capital to recover the initial investment from the project incomes. In general, the payback period is calculated by dividing of the investment cost by annual incomes. Hence, as long as the annual incomes in this project consist of decreasing installments, the payback period is assessed by analyzing the cashflow to determine the latest year when this flow is negative.

Periudha e Vetëshlyerjes

Viti i fundit i gjendjes se arkës negative		5
Gjendja e arkës kumulative në vitin e fundit negativ	-	61,021,432
Gjendja e arkës pozitive krijuar në vitin vijues		171,909,712
PBP (periudha e vetëshlyerjes)		5.35

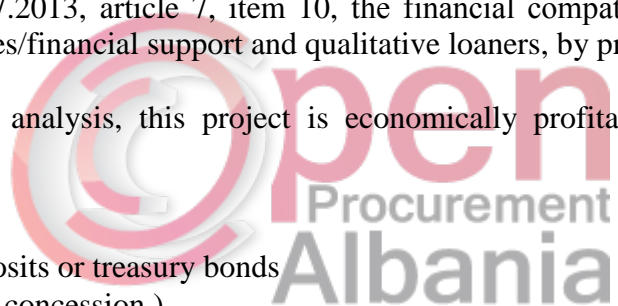
In this respect, the self-payment period for this project is achieved in 5.35 years. Nevertheless, taking into account that payment from Tirana Municipality will be annual, then the self-payment period will not be 5.35 years, but 6 years.

2.6.4. Financial compatibility

According to CoMD no. 575, dated 10.07.2013, article 7, item 10, the financial compatibility of a project “indicates whether the project seems to be able to attract guarantees/financial support and qualitative loaners, by providing a strong and reasonable financial.”

Based on the above-mentioned financial analysis, this project is economically profitable and this profitability is presented as following:

- NPV = 5.79% > 0
- IRR = 5.79% > than interest of deposits or treasury bonds
- PBP = 6 year < 7 years (duration of concession)



2.7 Quantitative and Qualitative Risk Analysis

The main goal of Risk Analysis is to identify and evaluate the gamma of risks that may affect the project. Therefore, a strategy on risk management is carried out in order to guarantee the successful realization of the project. In compliance with Decision of Council of Ministers No. 575, dated 10.07.2013 “On approval of rules for evaluation and issuance of concession/private-public partnership” following is a risk analysis regarding this project.

2.7.1 Qualitative Risk Analysis

Land Risk

Description of the Risk: Lands selected for construction of 17 schools will mostly be owned by the state, whereas the private-owned lands will be expropriated in line with the legislation in force and will be put at disposal of the concessionary. As a result, this risk has a low probability, almost zero, about this project. Regarding the necessary permits, there is no risk, because Tirana Municipality is itself the responsible body to grant these permits. In relation to environmental standards, the selected lands are plots located in areas where the environmental standard is not affected, therefore the risk is considered zero.

Management of risk: This risk is assessed with a zero probability and it is covered by Tirana Municipality. Tirana Municipality will carry out all the procedures for expropriation of private lands out of this PPP scheme, before the beginning of works. If any of the selected lands is in a ownership conflict, turning expropriation impossible, authorities will ask for information at the Immovable Properties Registration Office for alternative sites to be used. Regarding geological conditions and environmental standards, there has been an environmental study part of this feasibility study, which has come to the conclusion that the construction of these objects does not have an impact on the environmental standards. Hence, during the procedures for obtaining a construction permit, there will be also a detailed environmental study by the concessionary.

Risk of design, construction and functioning

Description of the Risk: Calculation of costs for construction and furniture of new schools is based on above-mentioned methodology, which takes into consideration the cost of schools built by Tirana Municipality in the last three years. Therefore, the possibility of a higher construction cost than the calculated cost is almost zero. Construction and functioning of schools depend in a certain scale on the obtaining of construction permit and meeting of preconditions for obtaining of this permit, such as environmental permit, connection with the electrical grid or water supply system, approval of projects for fire protection, etc. The concessionary has the right to draft the designing, prepare the documents for equipment with a construction permit, as well as to build the school objects. From this point of view, the risk of delays in equipment with construction permits, delays in kick-off works, readiness is possible.

Management of risk: This risk belongs to the concessionary. He is accountable for compilation of documents and equipment with construction permit. If the concessionary does not prepare the project on time and will neglect the application for construction permit by not applying on time or having irregularities in documents, or failure to start works on time, then he will be accountable for failure in starting works on time and will compensate the contracting authority according to the requirements in the concessionary contract. Likewise, as long as the concessionary is responsible for drafting and implementing the project, each delay in completion of construction works, excluding the case when the delay comes as a result of a force majeure will be under the concessionary's responsibility and will be forced to compensate the contracting authority according to requirements in the concessionary contract.

Functioning Risk

Description of the Risk: The possibility that the new schools will not be functional after the construction is related to the non-qualitative works by the concessionary, which might make the performance of teaching in new buildings impossible. This risk has a low probability because the completion of works will be carried out by the technical supervisor and financial bill of quantities will be supervised by the contracting authority. Regarding the risk of a higher maintenance cost than expected, the probability is almost zero, because the annual maintenance cost is calculated based on annual expenses of Tirana Municipality for the maintenance of existing schools, which have been constructed long ago. According to engineering standards, the maintenance cost of newly-built objects is lower than that of the objects built before.

Management of risk: The probability of this risk is low and it is considered as a risk transferred to the concessionary. In case the construction quality will make the performance of teaching process impossible, the concessionary will be accountable and will be forced to carry out extra works until the works quality will be in line with the requests of the designing tasks. In case school buildings might have any problems due to construction works, in the course of seven years of the contract duration, which will make the teaching process impossible, the concessionary will be obligated to carry out extra works to make the school functional again. If the maintenance cost is higher than predicted, this would be a result of the inaccuracies in the design or construction. Therefore, the risk belongs to the concessionary, who is accountable for the designing and building of these schools.

Risk of demand and other trade risks

Description of the Risk: This risk is related to the situations when use of the object is different from what is expected or the generated incomes are lower than the forecast. As long as objects to be build are school buildings that will not have a different use and cannot generate incomes, this risk cannot applied on this project.

Management of risk: The possibility that this project can be affected by this risk is zero, because it is not subject of its impact.

Economic and Financial Risks

Description of the Risk: As long as this project includes financial transactions to be implemented in the course of time, there exists the possibility of an impact from economic and financial risks. The unpredicted increase of the norms of interest may increase the financial costs of the project from the concessionary. On the other side, changes in exchange rate course may have a worsening affect in the finances of the concessionary if his incomes and expenses are in a different currency, e.g. the concessionary has been granted a loan in EUR of USD for the financing of the project, while Tirana Municipality makes the annual payments in Leke. In the end, as long as this project includes periodical payments for a seven year period, there exists the possibility of an impact from inflation in the concessionary's incomes.

Management of risk: Due to the fact that Albania is a country with a sustainable macroeconomic situation, the probability that this project may be affected by such risk remains low. The risk of interest rates or exchange rates belongs to the concessionary and shall be calculated in its financial projections. Inflation risk is shared among the concessionary and Tirana Municipality. As long as the Bank of Albania policy is keeping infection under 3% and duration of the project is only 7 years, the probability of this risk is low. Nevertheless, in the definition of income margin as related to interest rate of 7 year obligations, Tirana Municipality guarantees the concessionary the same protection toward the economic and financial risks as guaranty of Albanian Government for buyer of obligations.

Risks of assets ownership

Description of the Risk: This risk is related to the possibility that technology might get older or if the value of assets might be different at the end of the contract. As long as, the construction consists of school buildings, which will be maintained by the concessionary for seven years, the probability of this risk is low. Nevertheless, the quality and value of assets may be lower than the projection due to non-qualitative maintenance.

Management of risk: This risk is transferred to the concessionary. Maintenance of schools buildings and their furniture will be completed in line with the standards in force and will be supervised by the Contracting Authority. In case the concessionary will not maintain schools in line with the above-mentioned determination, the concessionary contract will envisage provisions obligating him to pay the damage. If at the end of the contract, the value of assets will be different from the predicted, the concessionary contract will define provisions obligating the concessionary to pay the damage.

Political risk

Description of risk: The risk of an impact from political decisions on the project is evident. As long as it is a project initiated from Tirana Municipality, a local government body, the success of the project depends on the coordination with local government. Likewise, there is a potential possibility that the results of next local elections – a potential change of Tirana mayor – may also cause the change of priorities and as a result the project can be blocked.

Management of risk: This risk is transferred on the Contracting Authority - Tirana Municipality. To ensure the consent of central government, with the approval of the feasibility study from the head of Tirana Municipality, will be required also an approval from the Ministry of Finance and Ministry of Education and Sports. Regarding risk of a negative impact of the project as a result of changes in the leadership of Tirana Municipality, the concessionary contract will envisage provisions that obstacle the dismissal of the Contract for non-legal reasons by the Contracting Authority.

Risks deriving from change of legal framework

Description of risk: Potential changes in legislative framework may affect the project positively and negatively. As long as the project is related to the construction of school buildings, the possibility of an affect from legal changes is related only to standards and construction manuals. Therefore, this risk has a low probability. Regarding changes in fiscal laws, the negative or positive influence can be felt only in the finances of concessionary.

Management of risk: This risk falls on the concessionary. In order to have minimal effects, the concessionary contract will include provisions that protect it from discriminating changes in law – always if the discrimination is proved by the court. On the other side, the concessionary will be forced to implement any legal changes coming as a result of governance policies.

Risk from force majeure

Description of risk: Force majeure risks, such natural calamities, civil unrests or wars are transferred to the concessionary and contracting authority. Taking into account the fact that Albania is a member of NATO and with a clear perspective of EU integration, the probability of risks from wars or unrests is almost zero. On the other side, the probability of and impact from earthquakes or other natural disasters on the project is low – How? As a result of the above-mentioned analysis of environmental impact on the project.

Management of risk: Probability of these risks is very low and it is transferred on both parts. The concessionary contract will envisage clauses of force majeure which will guarantee that any negative impact on the project shall be divided between the parties.

2.7.2. Quantitative Analysis of Risks

This analysis aims to prioritize risks that may affect the project by calculating their probability and potential impact on the achievements of project objectives. The quantitative evaluation is based on the probability of occurrence of each risk and potential impact on costs and deadlines of the project.

Impact of risks on project costs is calculated based on the specific weight of each of them in the project's cost. Whereas, the impact on deadline of completion of works is calculated based on legal deadlines for completion of defined procedures that may be necessary for well-going of the project.

Following is a quantitative analysis on the impact of each risk in the costs and deadlines for realization of the project.

Lands risk. Probability of this risk is low, 0-5%. Its impact on the project's cost is zero because expropriations of private lands that will be used for construction of school will be carried out by Tirana Municipality with a special fund out of the financial scheme of this project. The lands selected for construction of the schools are state-owned and private properties. In case use of any of these lands is impossible than will be used an alternative selected land with the necessary information from the Immovable Properties Registration Office. As a result, the impact on the deadline of completion of works is related the handing in of the state-owned land if it is not a property of Tirana Municipality or expropriation of private properties. The impact on deadline of works is calculated at 3 - 6 months.

Risk of designing, construction and functioning. Probability of this risk is low, 5-10%. The costs assessment process of the schools construction is carried out in line with the MoES guidelines manuals and based on the construction of schools by Tirana Municipality in the course of last years and prices have been indexed according to construction prices index of INSTAT. Hence, maximal influence of this risk in costs is less than 5%. On the other side, the deadline of works may not be respected as a result of failure to receiving the construction permit or other permits on time by the concessionary or due to slower completion of works than the calendar of works. In case designing is delayed or documents for equipment with necessary permits are not compiled, the impact on deadline of works is calculated from 3 to 12 months.

Functioning Risk. Probability of this risk is calculated at 0-5%. As long as this project is related to the construction of new schools, there exists the possibility of a low quality of construction. This could require additional works beyond the defined deadline. The impact of this risk in the deadline of works is calculated from 1 to 3 months, whereas the impact on total cost of the project is envisaged at 5-10%. There exists an opportunity that the maintenance cost may result higher than the forecast, but compared to total cost of the project the impact of this cost is almost zero.

Risk of demand and other trade risks. This risk cannot be applied on the project and the possibility of an impact from it on cost or deadlines is zero.

Economical and financial risks. Probability of this risk is low, 0-5%, taking into consideration that it is not a long-term concession where the concessionary generates incomes from the operation of the object of concession. As long as incomes of the concessionary are guaranteed by Tirana Municipality and covered by inflation, impact of risk on total cost of the project is low, 5% - 10%. On the other side, the impact on deadlines of completion of works is not envisaged longer than 12 months.

Risks of assets ownership. Probability of this risk is calculated at 0 - 5%. Its impact on total cost of the project is related to the maintenance costs, in case the latest results higher than forecast and a more rapid amortization of buildings that envisaged in the concession contract. Its impact on project's costs is predicted to be at maximum 5%. Probability of this risk does not affect the deadline for realization of works.

Political risk. Probability of such risk is medium low and is calculated at 10 - 20%. The occurrence of such risk may block works or interrupt the periodical payments for the concessionary by increasing the financing cost of the project and delaying the realization of works. In this respect, a potential influence of this risk on costs is calculated at 20 - 30%, whereas the impact on deadline of realization of works is calculated from 16 to 24 months.

Risk of change of legal framework. This risk has a probability of 5 to 15%. Potential legal changes, such as in standards to be followed for construction of new schools, may considerably boost the project cost. Therefore, the potential risk on costs is medium, varying from 20 to 40%. Likewise, potential legal changes may cause the re-drafting of the project or other delays that may be negatively affect the deadline for realization of works. Therefore, impact on deadline of works is calculated from 12 to 16 months.

Force Majeure Risk. Probability of this risk to happen is very low - 0 to 5%. Nevertheless, in case it happens, the impact on costs or deadline of works will be medium high. Therefore, impact on cost is calculated at 30% to 50%, whereas impact on deadline of works from 12 to 24 months.

Table 165 Summarizing table of impact of risks

No.	Risk	Probabiliy	Impact on cost	Impact on works deadline
1	Risk on land	0% - 5%	0%	3 - 6 months
2	Risk on designing, construction and implementation	5% - 10%	0% -5 %	3 - 12 months
3	Functioning Risk	0% - 5%	5% -10%	1 - 3 months

4	Risk of demand and other commercial risks	-	-	-
5	Economic and Financial Risks	0% - 5%	5% -10%	6 - 12 months
6	Risks of assets ownership	0% - 5%	0% - 1%	-
7	Political Risk	10% - 20%	20% - 30%	16 - 24 months
8	Risk of change of legal framework change	5% - 15%	20% - 40%	12 - 16 months
9	Force majeure	0% - 5%	30% - 50%	12 - 24 months




2.8 Sensitivity Analysis

Main factor that may change during the tender process is the income margin. At the same time, the details of respective costs will be respectively defined based on factual approved projects, depending on the approved projects. The direct cost will be calculated base on the factual realized volumes, which in no way will be higher than the costs envisaged in this project.

Nevertheless, due to the effects of sensitivity analysis, the calculation will made as if the costs have increased and decreased by 5% and 10%, whereas the income margin increases and decreases by 5% and 10%.

Table 78 Sensitivity Analysis if costs rincrease or decreasedby 5 – 10 %



	Incomes and expenses		Basic Model	Incomes and expenses	
	increase by 10%	increase by 5%		expenses decrease by 5%	expenses decrease by 10%
Sensitivity Norm	10%	5%	0	-5%	-10%
Outflow from Investments	- 7,267,445,188	- 6,937,106,771 ^F	6,606,768,353	- 6,276,429,936	-5,946,091,518
Outflow from Maintenance Incomes	- 1,275,711,645 10,274,681,048	- 1,217,724,752 9,786,000,321	1,159,737,859 9,197,517,960	- 1,101,750,966 8,713,446,063	-1,043,764,073 8,188,265,320
Income before taxes	1,731,524,215	1,631,168,798	1,431,011,748	1,335,265,161	1,198,409,729
Tax on Income 15%	259,728,632	244,675,320	214,651,762	- 200,289,774	- 179,761,459
Nett income	1,471,795,583	1,386,493,478	1,216,359,986	1,134,975,387	1,018,648,270
NPV by 5.79%	110,223,600	81,672,242	170,329	23,634,170	- 68,587,789
IRR	6.38%	6.25%	5.79%	5.64%	5.34%
Self-Payment Norm	5.20	5.28	5.35	5.43	5.51

8.4 Lot 4

8.4.1 Location of sites of schools included in Lot 4

Loti 1 includes 4 schools, 2 in Unit 8, 1 in Unit 2 and 1 in Administrative Unit of Dajt. Distribution of schools included in Lot 4 are indicated in the following map :

Map 61 Location of schools in Lot 4



8.4.2 Total surfaces to be permanently seized from sites of schools included in Lot 4

SITE 2/3

Picture 11 – Orhtophoto of the site



LOCATION :

Proposed site no. **2/3** for a nine-year school is near Hygiene Directorate. Accessable from Mihal Grameno str.

TECHNICAL DATA : Site **2/3** : 4093 m²

CURRENT SITUATION OF THE SITE :

- It is in an area owned by private subjects, surrounded.
- Considerably sloppy
- High density area.
- No high schools in this zone
- Road infrastructure may be a problem.

Picture 12 Photo of site 2/3



SITE D2

Map 62 Orthophoto of the site



LOCATION : Proposed site no. **D2** is located near Lana River. Accessed from “Dalip Troji” str.

TECHNICAL DATA : Site **D2** : 14900 m²

CURRENT SITUATION OF THE SITE :

- Difficult access
- The site is located near Kinostudio zone
- Road infrastructure is problematic

Picture 13 Photo of the site D2



SITE 8/1

Map 63 Orhtophoto of the site



LOCATION : Proposed site no. **8.1** is located near “5 Maji” street in Unit 8.

TECHNICAL DATA : Site **8.1** Surface – 17520 m²

CURRENT SITUATION OF THE SITE :

- Relatively calm zone.
- Easy access to the site. Road infrastructure may be a problem. Many positive aspect because it is located in a high density area.

Picture 14 – Photo from site 8/1



8.4.3 Legal Status of schools sites included in Lot 4

Site 2/3

Map 64 Indicative Map of properties

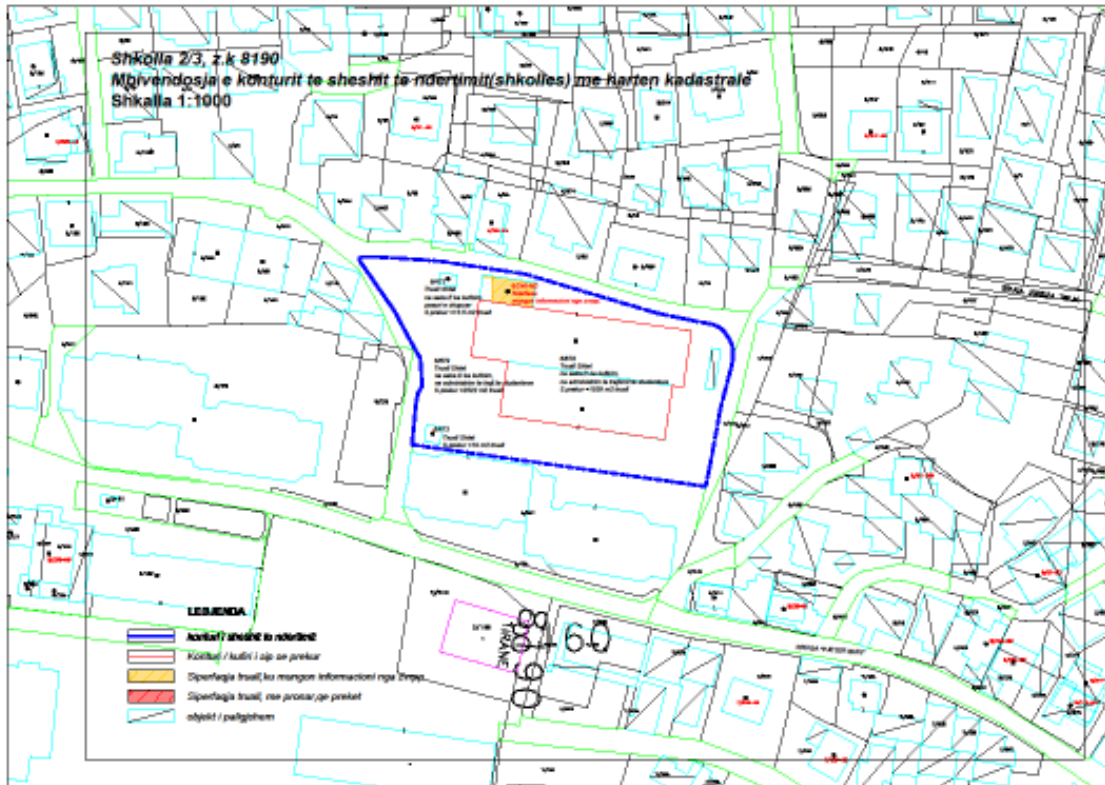


Table 117 Table with preliminary calculation of properties to be affected by the project

Nr	NAME	Note in Sec. E	Castral zone	No. Property	Sur. Affect land (m ²)	Land price lek/m ²	Sur. affected Obj. (m ²)	Price Obj.lek/m ²	Amount in lekë
1	State-owned	Occupied property	8190	6/471	13.50	66969			0.0
2	No information	Building	8190	6/246 - ND	0.00	66969		32113	0.0
3	State	Sec.D limit in students treatment administration	8190	6/678	1539.00	66969			0.0
4	State	Sec.D limit. in students treatment administration	8190	6/679	2522.00	66969			0.0
5	State		8190	6/473	19.00	66969			0.0
					4093.50				0.0

Schools to be built in cadastral zone 8190 will affect a total of 4093.5 meter square property composed of 5 properties. 4 of them are state-owned properties, whereas for property no. 6/246 there is no information on its legal status, but depending on the zone the price of the object will be 32,113 per meter square. Price of the land is referred to CoMD No. 89, dt.03.02.2016.

Site D2

Map 65 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 118- Table with preliminary calculations affected by the project

No	NAME	Note in Sec. E	Cadastral Zone	No. Property	Surface of the affected land (m ²)	Land price lek/m ²	Surface of the affected price (m ²)	Price Obj.lek/m ²	Amount in leke
1	No information				14,900	3,560			53,044,000
					14,900				53,044,000

Site 8/1



Map 66 Indicative map of properties

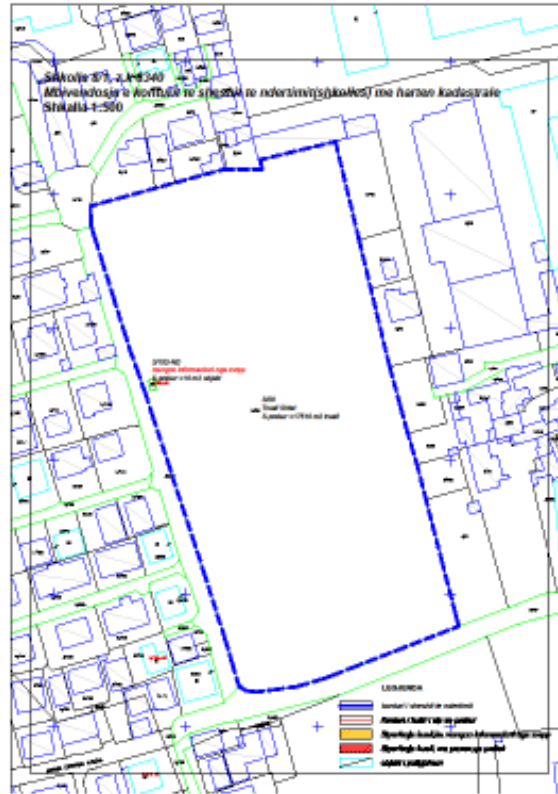


Table 119 Table with preliminary calculations of properties affected by the project

Nr	NAME	Note in Sek. E	Cadastral zone	No. Property	Sur affected land (m ²)	Land price lek/m ²	Sur of the affected land (m ²)	Price Obj.lek/m ²	Amount in leke
1	State owned land		8340	3/20	17.510	30158			0.0
3	No information	Object	8340	3/152 - ND	10.00	30158			301,580.0
					17.520				301,580.0

School to be built in cadastral zone 8340 will affect a total of 17,520 meter square property, composed of 2 properties, 1 is a state-owned object, no. 3/20 and 1 is a property with no information no 3/152. For the land, the

calculated price is obtained from CoMD no.89, dt.03.02.2016.

8.4.4 Typology of schools included in Lot 4

Lot 4 envisages construction of 4 schools. Respectively, in administrative unit no. 2, administrative unit of Dajt and Administrative Unit No. 8. In concrete, in Au 2 is envisaged the construction of a basic education cycle school of type 2. In AU Dajt is envisaged the construction of a type 4 school of higher middle education. Whereas in Unit 8 is envisaged the construction of 2 schools - 1 of the basic education cycle of type 1 and one of higher middle education, type 4. The following table indicates detained data:

Table 120 – Schools typology e

Type	Location	Cycle	No classes	st/class	No st total	M2/students	Total surface
Type1	Urban	Basic education	20	30	600	8.23	4938
Tipi 2	Urban	Basic education	30	30	900	7.32	6588
Tipi 3	Rural	Basic education	20	24	480	8.42	4041.6
Tipi 4	Urban	Higher middle	21	30	630	6.35	4000.5

8.4.5. ECONOMIC AND FINANCIAL ANALYSIS FOR LOT 4

1. Economic and financial analysis

Economic and financial analysis of this feasibility study, in line with Council of Ministers Decision no. 575, dated 10.07.2013, “On approval of rules for assessment and granting for concession/private-public partnership”, article 7, mainly focuses on determination of value for money of the project, as well as on completion of an evaluation of the investment in total, operative costs and maintenance, as well as any other income expected to be generated during the duration of the project.

1.1 Economic Model of the Concession / Public-Private Partnership

Law no. 125/2013, changed with law no. 88/2014, regulates the competences of contracting authorities in order to sign concessions/public-private partnerships. In this type of relations, the private partner takes the responsibility of financing, designing, building and/or re-building/ renewal the public infrastructure object, to operate and maintain the public infrastructure object built and/or rebuilt/newly renewed. Among the fields of implementation of this law is also education.²⁹

Based on the data analysis, it results that to put an end to the over-crowded schools problem and two shifts learning, Tirana Municipality needs to build 17 new schools - 10 nine-year schools and seven high schools. The total cost of construction and furnitures for these schools is calculated at 7.6 billion leke. Such amount of money is financially unaffordable for Tirana Municipality, whose total annual budget is 10 billion leke, whereas investments for construction of new schools in the course of last years has been not more than 500 million leke.

In this respect, in order to settle this problem, Tirana Municipality must implement innovative methods of procurement and financing of the proposed project. To guarantee the realization possibility of the schools construction project, it was chosen a more innovative and cost-efficient approach, combining the designing, financing, construction and maintenance in one and only procurement contract. Due to the considerable dimensions of this project, this methodology will not only offer facilitations during the development process, but will provide more sustainability after its completion.

In the framework of the “Design, Finance, Build and Maintain” (DFBM) model as internationally known “Design, Build, Finance & Operate (DBFO)”, contractors take the responsibility of designing, building, financing and maintaining an object for entire duration of

²⁹ Article 4, item dh), Law 125/2013

the contract. The contractor who may be one company or a consortium is responsible for designing, financing, construction and maintenance of the object for a determined period of time, which is proposed to be 7 years. The payment after the completion of the object is dictated based on completion of some determined performance standards regarding the physical condition of the buildings, capacity, quality, etc. This model which goes beyond the designing and construction phase, naturally encourages the designer/builder to provide since the beginning a qualitative construction plan in order to have less costs during the maintenance phase, as long as the responsibility belongs to their consortium. Likewise, integration of all project's contract in one reduces different transactional costs and boosts project management efficiency.

This PPP model has been widely used for construction of major infrastructure projects, such as construction of highways, hydro power stations, wastes management plants, etc, because the dimensions of such projects required considerable funds, efficient organization of capital and human resources, high designing and construction quality, maximal security and constant maintenance. In this respect, such models have been considered successful for development of projects that guarantee their realization and efficiency of the investment. Nevertheless, the use of this PPP form is not limited only in major public infrastructure works mentioned above. In many OECD countries, mainly in the United Kingdom, this methodology is used also for public service projects, such as construction of new schools.

Following are some examples from different countries that have successfully implemented this model for projects of educational infrastructure:

Canada³⁰: “Alberta Schools Alternative Procurement” Program. In 2007, Alberta region in Canada declared the first stage of the program which envisages the construction of 18 new school buildings (kindergartens and nine-year schools), which were completed in 2010. After the completion of works, duration of the contract will continue with the maintenance and it estimated at about 30 years. The second phase of the program envisaged the construction of other 10 nine-year schools according to the same model and 4 high schools through the simple model of Designing-Constructing contract, which were completed in 2013.

³⁰ “Flexible and alternative approaches to providing school infrastructure in Alberta, Canada” – OECD, 2010

Greece³¹: “Macedonia Schools and Attica Schools” Program. With the use of DBFM mechanism, private operators designed construction of 51 schools with a total amount of about 269 million Euro and 25 year contracts.

United Kingdom³²: “Building Schools for the future” Program. This program is a long-term investments program, which is contributing in the construction of a considerable number of schools in the entire territory of UK. Majority of schools has been built through the Design-Build-Finance-Maintenance scheme, but in this case often has been included also the element of school management by a private subject of a determined period. In general, total duration of the contract is estimated up to 30 years. The private consortium is regularly paid by public funds based on its performance during the contract period. If the consortium does not achieve the required performance, the payment is reduced. At the end of the contract period, school is given back to government.

New Zealand³³: The project of New Zealand Ministry of Education for construction of two schools in Hobsonville, Auckland. This project envisages the construction of a new lower cycle school and one lower middle cycle school in the suburb region of Hobsonville in Auckland city. The private sector is partly responsible for designing, building and financing of the objects, together with their constant maintenance and management of common services. Construction of these schools has been successfully completed in 2014.

In this aspect, the project for construction of new schools in Tirana needs the application of the same approach for improvement of education service in the entire territory of the Municipality. Big number of schools that will be built, financial limitations, short period for implementation of the project, as well as need to guarantee the maximal security of buildings point to the necessity of establishment of an efficient and successful public private partnership.

1.2 Main assumptions

In the framework of financial and economic analysis effects of this feasibility study, were made the following assumptions:

³¹ “The role and impact of public-private partnerships in education”, pg. 82 – World Bank, March 2009
http://www.ungei.org/resources/files/Role_Impact_PPP_Education.pdf

³² Ibidem (i.e. extracted from same WB document in the above-mentioned reference and same page)

³³ “Mayoral Position Paper on Public Private Partnerships” – Ernst and Young, November 2013.

- Concessionary will cope with its incomes the entire investment for construction of education objects and their functioning, whereas Tirana Municipality will face with its funds the expropriation of private lands to be used for this purpose.
- Educational objects will be built and functional at maximum 18 months from the signing of the construct.
- After the construction and functioning of schools, concessionary will be accountable for administration and maintenance of the objects for a 7 year period and for every problematic regarding risks of assets for these period.
- After the construction of objects, Tirana Municipality will pay the concessionary a certain annual sum until the full payment of the invested amount. Incomes for this payments will be provided from the annual incomes of Temporary Tax on Education Infrastructure and conditioned transfer from Ministry of Finance.

1.3 Costs analysis

Based on technical, it has come to be conclusion that in total will be built 17 schools: 10 nine-year schools and 7 high schools. The new schools will be designed and built according to models in line with standards specified by Ministry of Education and Sports through “Guideline for School Buildings Design”. The school models offer the opportunity to fully meet the needs for pre-university education classes, respecting legal and technical requirements for definition of parallel classes according to each teaching cycle. In the same time, for nine-year schools are envisaged also venues for pre-school education, as part of the nine-year education institution. Referring to above-mentioned standards, there exist 4 main types of schools with the following operational data:

Type 1 of schools includes 20 classes per pre-school and school students with a construction surface of about 4,938 m². Likewise, this schools will included a kindergarten of about 4 classes with a surface of about 874 m². In total, the construction surface for this type of school is 5,812 m². **Type 2** of schools is nine-year education with 30 classes for pre-school and school students with a construction surface of about 6,588 m². Likewise, this school will include a kindergarten with 6 classes with a surface of about 1,310 m². In total, the construction surface for this type of school is 7,898 m². **Type 3** of schools is higher middle for rural zones with 20 classes with a construction surface of about 4,041 m². **Type 4** of schools consists of higher middle schools for urban zones with 21 classes and a construction surface of about 4001 m².

According to quantitative analysis carried out and explained above, there are necessary a total of 17 schools, 2 out of them belonging to Type 1, 7 schools of Type 2, 1 school of Type 3 and 7 high schools of Type 4. Respectively these schools will be built according to following administrative units and data:

Table 121 Detailed data on each school for Lot 4

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	nxënës për klasë	Nxënës për shkollë	Sipërfaqe totale shkolla	Klasa kopësh ti	Nxënës për klasë kopështi	nxënës për kopësht	Sipërfaqe totale kopësht	Siperfaqe totale ndertimi
1	NJA 02	Tipi 2	9-vjeçar	30	30	900	6,588	6	24	144	1,310	7,898
2	NJA 08	Tipi 1	9-vjeçar	20	30	600	4,938	4	24	96	874	5,812
3	NJA 08	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
4	NJA Dajt	Tipi 4	i mesëm i lartë	21	30	630	4,001	0	0	0	0	4,001
Totali				92		2,760	19,527	10	48	240	2,184	21,711

Summarizing according to schools typology, in total, we have the following operational data :

Table 122 Data on proposed schools according to typology for Lot 4

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Nr nxënës për klasë	Nxënës për shkollë	Nr klasa kopësht i për shkollë	Nr nxënës për klasë kopështi	Nxënës për kopësht	Sipërfaqe ndërtimi shkolla	Sipërfaqe ndërtimi kopësht e	Tot Sipërfaqe ndërtimi	Total Nxënës në shkolla	Total Nxënës në Kopështe	Nr Total i nxënësve
Tipi 1	1	20	30	600	4	24	96	4,938	874	5,812	600	96	696
Tipi 2	1	30	30	900	6	24	144	6,588	1,310	7,898	900	144	1,044
Tipi 4	2	21	30	630	-	-	-	8,001	-	8,001	1,260	-	1,260
Grand Tot	4	71				48	240	19,527	2,184	21,711	2,760	240	3,000

For a better analysis of value for money of the project, we have grouped the expenses in four main categories, based on accounting standards and requirements of CoMD no. 575, dated 10.07.2013, “On approval of rules for assessment and granting of concession/public private partnership”, article 7, section 3-6:

Direct costs of investments

Direct costs of maintenance

Due to the effects of the following analysis, all the prices and values will be without VAT, unless is specified otherwise.

1.3.1 Direct costs of investment

During the analysis and in line with above-mentioned CoMD, there were identified the following direct costs of investments:

1. Costs of Land Expropriation ;
2. Construction Cost ;
3. Cost of Study and Designing ;
4. Supervision Cost ;
5. Cost of Technical Control;
6. Technical Revision ;
7. Cost for Furniture and Equipment;
8. Cost of lab devices.

1.3.1.1 Land Expropriation Cost



According to determination of trace where these schools will be built, it results that will be expropriated a total of **14,910 m²** of private properties, which according to the calculations are estimated at an expropriation value of **53,345,580** leke. On the other side, the state-owned land will be subject of respective procedures in order to take the respective properties under the administration.

With the approval of CoMD in this respect and completion of financial and legal documents in line with the CoMD and normative acts in force, every expropriated subject will be paid by

Tirana Municipality through a fund determined for this purpose.

Table 123 Table on expropriations for Lot 4

Nr rendor i tabeles	Adresa	Tipi	Sheshi	Shpronesimi ne Vlere	Siperfaqje ne m2 te shpronesuar	Cmimi mesatar per m2
2	NJA 08	Tipi 1	8/1	150,790	5	30,158
3	NJA 08	Tipi 4	8/1	150,790	5	30,158
4	NJA Dajt	Tipi 4	D2	53,044,000	14,900	3,560
Grand Total				53,345,580	14,910	3,578

1.3.1.2 Construction costs

Based on the report obtained from General Directorate of Public Works No. Prot. 21407/2, dated 09.08.2016, costs for schools construction is 46,331.67 leke/m², whereas the kindergartens costs are 54,380.83 leke/m². From the combination of this data with the total construction surface for each type of school, it results that :

- The construction value of a Type 1 school is 228,785,770 leke and to this amount is added also the construction of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 1 school, including the kindergarten venue is 276,314,618 leke.
- The construction value of a Type 2 is 305,233,020 leke and to this amount is added the construction cost of a kindergarten of about 71,238,892 leke. In total, the general cost of the construction of a Type 2 school, including the kindergarten venue is 376,471,912 leke.
- The construction value of a Type 3 schools is 187,207,732 leke and to this amount is added the construction cost of a kindergarten of about 47,528,848 leke. In total, the general cost of the construction of a Type 3 schools, including the venues of a kindergarten is 234,736,581 lekë.
- The construction value of a Type 4 school is 185,349,833 leke and these schools do not include kindergarten premises.

Table 124 Construction costs of schools for Lot 4

Tipi	Nr i shkollave sipas tipit	Nr klasash për shkollë	Klasa kopëshi për shkollë	Sipërditimi i shkollave	Sipërditimi i kopështes	Tot Sipërfaqe ndërtimi	Cmimi i ndërtimit të shkollave lek/m2	Cmimi i ndërtimit të kopështesve lek/m2	Kosto e ndërtimit të një shkollë	Kosto e ndërtimit të një kopështi	kosto e ndërtimit të një shkollë + kopesht	Kosto e përgjithshme e ndërtimit
Tipi 1	1	20	4	4,938	874	5,812	46,332	54,381	228,785,770	47,528,848	276,314,618	276,314,618
Tipi 2	1	30	6	6,588	1,310	7,898	46,332	54,381	305,233,020	71,238,892	376,471,912	376,471,912
Tipi 4	2	21	-	8,001	-	8,001	46,332	54,381	185,349,833	-	185,349,833	370,699,665
Grand Tot	4	71	10	19,527	2,184	21,711	138,995	163,143	719,368,623	118,767,740	838,136,363	1,023,486,195

In total, there will be built **1 Type 1 school** with a construction cost of 276,414,618 leke per school, 1 Type 2 school with a construction cost of 376,471,912 leke per school and 1 Type 4 schools with a construction cost of 185,349,833 leke per school. As a result, the total construction costs for this project amounts to **1,023,486,195** leke. This cost will be covered by the concessionary.

1.3.1.3 Other direct investment costs

Based on the report from Public Works General Directorate, in Document No. Prot. 21407/2, date 09.08.2016, other direct investment costs are :

- Study – Design
- Supervision of works
- Technical Control
- Technical Revision
- Fire protection
- Environmental Permit
- Tax of impact in infrastructure

Taking into account the data analyzed in this chapter on costs, it results that the direct investment const is as following :



Table 125 Direct investments costs for Lot 4

Tipi	Nr i shkollave sipas tipit	Tot Sipërfaqe ndërtimi	Kosto Studim Projektim	Kosto Mbikqyrje	Kosto kolaudimi	Oponenca teknike	Zjarrefikes	Leje Mjedisore
Tipi 1	1	5,812	4,481,127	3,140,921	110,526	223,183	50,000	30,000
Tipi 2	1	7,898	10,110,384	4,177,904	150,589	250,675	50,000	30,000
Tipi 4	2	8,001	10,691,738	4,364,479	153,710	369,692	100,000	60,000
Grand To	4	21,711	25,283,249	11,683,304	414,825	843,550	200,000	120,000

Tax of impact on infrastructure for Public Works is 0.

1.3.1.4 Cost of furniture

In order to make schools functional, it is necessary to provide necessary IT equipment and laboratories. Furniture of new nine-year and high schools of Tirana Municipality will be realized based on law 69/2012 “On Pre-university education system in the Republic of Albania”, changed, for which Ministry of Education and Sports has prepared the Guideline “On designing of school buildings” (Norms and Standards).

Pursuant to needs for new schools, made evident by you, referring to MoES standard for classes typology and other venues in line with teaching program, there were carried out the respective calculations about the furniture costs per student, which is about 24.167 leke without VAT. This cost includes the amount for furniture without the equipments, computers and other necessary devices for laboratories of physics, chemistry and biology, etc.

For the calculation of furniture price, we considered the offers obtained by 6 economic units for furniture items according to technical specifications of MoES.

Concretelly, according to school typology, the furniture cost is as following :

Table 176 Cost of school furniture

Type of schools	No	st/clas	No st.	Cost/stu	Total cost
-----------------	----	---------	--------	----------	------------

	classes	s	total	dent	
Type 1	20	30	600	24,167	14,500,000
Type 2	30	30	900	24,167	21,750,000
Type 3	20	24	480	24,167	11,600,000
Type 4	21	30	630	24,167	15,225,000

The furniture cost for basic education have been included three levels which envisage the following types :

For furniture of new kindergartens, we referred to the previous experience in furniture manner and their necessary quantity. Regarding furniture costs, we referred to the market prices, as well as previous indexed interim payment reports.

Costs for furniture of kindergartens per children is about 27.916 lek without VAT

This furniture cost, beside furniture of children premiee (sitting room, bedroom) includes also the office of director, psychologist and costs for kitchen furniture.

In conclusion, the furniture costs according to kindergarten typology is as following :

Table 177 –Furniture costs according to typology

Type	Location	Cycle	No class	St/Class	No st. total	Cost/child ren	Total cost
Type1	Urban	Kindergarten(3-5years)	4	24	96	27.916	2.680.000
Type2	Urban	Kindergarten(3-5years)	6	24	144	27.916	4.020.000
Type3	Rural	Kindergarten(3-5years)	4	24	96	27.916	2.680.000

Regarding costs for lab equipments, we referred to the purchase contract “Scientific Laboratories (Chemistry, Physics, Biology) for Pre-University schools” realized by Ministry of Education and Sports during 2016, in which results that the value per laboratory without VAT is as following:

Table 126 Costs for lab equipment

I	Basic education school	Amount/ laboratory
1	Natural Sciences Laboratory	186,998
2	Chemistry Laboratory	223,125
3	Physics Laboratory	1,183,602
4	Biology Laboratory	632,467
5	IT Laboratory	3,869,658
II	High school	-
1	Chemistry Laboratory	528,469
2	Physics Laboratory	1,294,500
3	Biology Laboratory	651,657
4	IT Laboratory	3,869,658

According to schools typology defined based on the designing standards of pre-university education objects, set by Ministry of Education and Sports, in which is determined the quantity of labs for each type, we have the following table :

Table 179 Costs for lab equipment according to schools typology

No	Tyes of schools	Cost without VAT
1	Basic education (Type 1)	6,095,850
2	Basic education (Type 2)	7,279,450
3	Basic education (Type 3)	5,743,950
4	Higher Middle Education (Type 4)	13,983,067

According to the analysis of all the above-mentioned data, it results that the total cost of furniture and lab equipments of 4 schools is **114,741,433** leke without VAT, according to the following table :

Table 127 Furniture Costs and lab equipments for school of Lot 4

Tipi	Nr i shkollave sipas tipit	Kosto e mobilimit te shkollave	Kosto e mobilimit të kopështeve	Total Kosto Mobilimi	Kosto Laboratori	Total kosto pajisje, mobilje dhe orendi
Tipi 1	1	14,500,000	2,680,000	17,180,000	6,095,850	23,275,850
Tipi 2	1	21,750,000	4,020,000	25,770,000	7,279,450	33,049,450
Tipi 4	2	30,450,000	-	30,450,000	27,966,133	58,416,133
Grand To	4	66,700,000	6,700,000	73,400,000	41,341,433	114,741,433

1.3.1.5 Direct investment costs

In conclusion, the direct investment cost of this project is estimated at **1,230,118,136 lekë**. About **53,345,580** leke out of them are calculated as necessary funds for expropriation, which will be covered by Tirana Municipality. Whereas, the total cost of the project that will be covered by the concessionary is **1,176,772,556** leke, where the construction cost is **1,023,486,195** leke without VAT, Costs of the Designing, Technical Revision, Supervision, Technical Control, furniture and laboratories is **153,286,361** leke without VAT. In details, the calculated categories are as following :

Table 128 Direct cost of investment for Lot 4

Viti	Pershkrimi	Grand total
A.	Kostot Direkte te Investimit	1,230,118,136
A.1	Kostot e Truallit	53,345,580
A.2	Kostot e Projektimit	25,283,249
A.3	- Ndertim + instalime	1,023,486,195
A.4	- Oponenca teknike	843,550
A.5	- Takse Infrastruktore	-
A.6	- Leje mjedisore	120,000
A.7	- Mbrojtje ndaj Zjarrit	200,000
A.8	- Kosto Supervizimi	11,683,304
A.9	- Kosto Kolaudimi	414,825
A.10	- Mobiljet dhe Orendi	73,400,000
A.11	- Investime IT&T dhe Labs	41,341,433

1.3.2 Maintenance costs

Based on calculations carried out from General Directorate No. 3 of City's Workers, annual maintenance cost per class is 422,107 leke with VAT or 351,755 leke without VAT. Making respective calculations, the annual cost for the general maintenance for each type of school is. The total maintenance cost for all schools of **Lot 4** is **35,879,060** leke per year. The annual cost of maintenance for calculation effects starts from 2018 and pursuant until the completion of PPP period. For more details, see the following tables:

Table 129 Annual maintenance costs for schools of lot 4

Tipi i shkollave	Nr i shkollave	Kosto e mirëmbajtjes për shkollë	Kosto e përgjithshme e mirëmbajtjes
Tipi 1	1	8,442,132	8,442,132
Tipi 2	1	12,663,198	12,663,198
Tipi 4	2	7,386,865	14,773,731
Grand Total	4	8,969,765	35,879,060

In total, for 7 years, the general maintenance cost will be **251,153,420** leke without VAT. About **165,363,968** leke without VAT out of them is the maintenance costs of assets and **85,789,452** leke without VAT is the cost of maintenance staff. The following table is the analysis of categories of maintenance expenses for each school in one year, without VAT:



Table 130 Detailed cost of maintenance for Lot 4

Nr i shkollave	Adresa	Tipi	Cikli	nr klasash për shkollë	Lyerje per klase	Riparim suvatim + hidroizolim per klase	Riparime dhe mirembajtje e Nderteses	Riparime Orendi shkollore	Riparime Pajisje PC	Materiale Pastrimi	Lëndë djegëse për ngrohje dhe ujë të ngrohtë	Mirembajtje kondicionim , impiante uji dhe MNZSH	Sherbim roje	Sherbim pastrimi	Sherbim sekretarie	Total kosto mirembajtjeje
1	NJA 02	Tipi 2	9-vjeçar	36	824,079	845,210	258,531	609,794	929,032	304,839	3,010,065	1,556,129	1,029,693	2,745,848	549,978	12,663,198
2	NJA 08	Tipi 1	9-vjeçar	24	549,386	563,474	172,354	406,529	619,355	203,226	2,006,710	1,037,419	686,462	1,830,565	366,652	8,442,132
3	NJA 08	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
4	NJA Dajt	Tipi 4	i mesëm i	21	480,713	493,039	150,810	355,713	541,935	177,823	1,755,871	907,742	600,654	1,601,745	320,820	7,386,865
Totali i Mirembajtjes				102	2,334,891	2,394,762	732,505	1,727,749	2,632,257	863,711	8,528,517	4,409,032	2,917,463	7,779,903	1,558,270	35,879,060

1.4 Analysis of PPP incomes

1.4.1. Tariff for the use of schools

Tariff for use of schools (hereinafter “Tariff”) will be calculated in such way so that could cover the costs of concessionary and guarantee a minimal income margin for the concessionary in order to make this PPP attractive and the best economic solution compared to other potential scenario. The tariff is paid for the entire maintenance and administration period of schools by concessionary, i.e. for 7 years. This tariff is paid to every year by Tirana Municipality through financing resources detailed as following. This scheme provides for the construction of 17 schools in a record time, solving the two-shifts teaching and over-crowded classes, but as long as all the risks for maintenance and careful use of the asset will be under the responsibility of the concessionary and related to the payments, this will enable qualitative constructions in the interest of the community.

As long as the direct investment costs, i.e. construction and functioning of schools is calculated based on interim payment reports, which include the income margin of the contractor, on this category will not be calculated the additional income margin. But on the other side, as long as the invested values of the concessionary in this respect will be covered in a seven-year period, he must be minimally reimbursed for the value in time of the money, as well as for the normal and extraordinary maintenance part for this period.

In this respect, as the income margin has been considered the limit of average norm of Albanian government obligations for a fixed seven year period[1], respectively the results of seven year obligations from 2015 until 15.09.2016.

In this respect, as the income margin has been considered the limit of average norm of Albanian government obligations for a fixed seven year period³⁴, respectively the results of seven year obligations from 2015 until 15.09.2016.

Table 131 Income Margin

³⁴ <http://www.financa.gov.al/al/raportime/borxhi/ankandet-e-emetimit-te-letrave-me-vlere-te-geverise/rezultatet-e-ankandeve/2016>

ISIN	Dt.Ankamit	Ankamit	Muaji	Datë Emetim	Datë Maturim	Shuma e shpallur (filestare)	Shuma e shpallur (nd. strukture)	Shuma e kërkuar	Shuma e pramar	Prorata Konkurses	Prorata Jo Konkurse	Yieldi Uniform i Pramar
AL0017NF7Y23	13.09.2016	7vjeçar/7years(fix)	Shtator	15.09.2016	15.09.2023	3,000,000		2,309,000	2,309,000			4.89%
AL0016NF7Y23	01.06.2016	7vjeçar/7years(fix)/Rihapje	Qershor	03.06.2016	16.03.2023	2,000,000		3,141,400	2,000,000	4.40%		4.00%
AL0016NF7Y23	11.03.2016	7vjeçar/7years(fix)	Mars	16.03.2016	16.03.2023	3,000,000		8,247,000	2,999,900	76.48%		4.90%
AL0015NF7Y22	14.12.2015	7vjeçar-fiks	Dhjetor	16.12.2015	16.12.2022	2,500,000		5,288,600	2,500,000	67.70%	100.00%	6.79%
AL0014NF7Y22	14.09.2015	7vjeçar-fiks	Shtator	16.09.2015	16.09.2022	1,000,000		1,430,600	1,000,000	100.00%	100.00%	7.78%
AL0013NF7Y22	12.06.2015	7vjeçar-fiks	Qershor	16.06.2015	16.06.2022	3,000,000		2,953,500	2,953,500	100.00%	100.00%	7.80%
AL0012NF7Y22	12.03.2015	7vjeçar-fiks	Mars	16.03.2015	16.03.2022	2,500,000		2,815,800	2,500,000	80.98%	77.92%	7.81%
Yieldi Mesatar i pranuar												6.28%

The income margin will be object of bidding procedures of competitors in this PPP, but in the mean time, it is necessary to understand the general value of this PPP. The income margin will be calculated for the remaining value of the direct investment every year and on annual maintenance costs. Thus, the financing scheme is attractive for potential competitors and total cost of the project is not higher than the traditional financing methods.

Based on the calculations, annual tariff to be paid to the concessionary with a margin of about 6.28% will be as following :

Table 132 Annual tariff to be paid to concessionary for Lot 4

A	B	C	D	E	F	G	H	I	J	K	L	M
Nr rend or	Viti	Kosto Direkte e Investimit ne Fillim të Periudhës (pa TVSH) (C3=F2)	marzhi i fitimit	Shlyerja vjetore për Koston Direkte të Investimit (C2/B8)	Vlera e Mbetur e Koston Direkte te Investimit (C-E)	Marzhi i fitimit mbi koston Direkte të investimit (C*D)	pagesa vjetore për koston direkte të investimit Pa TVSH (E+G)	kosto vjetore mirembajtjeje Pa TVSH	Marzhi i fitimit mbi Mirembajtjen (D*I)	pagesa vjetore për koston direkte të investimit Pa TVSH (I+J)	Total Marzhi i Fitimit	Tarifa Vjetore Pa TVSH
1	0	1,176,772,556										
2	1	1,176,772,556	6.28%	168,110,365	1,008,662,191	73,901,317	242,011,682	35,879,060	2,253,205	38,132,265	76,154,522	280,143,947
3	2	1,008,662,191	6.28%	168,110,365	840,551,826	63,343,986	231,454,351	35,879,060	2,253,205	38,132,265	65,597,191	269,586,616
4	3	840,551,826	6.28%	168,110,365	672,441,461	52,786,655	220,897,020	35,879,060	2,253,205	38,132,265	55,039,860	259,029,285
5	4	672,441,461	6.28%	168,110,365	504,331,096	42,229,324	210,339,689	35,879,060	2,253,205	38,132,265	44,482,529	248,471,954
6	5	504,331,096	6.28%	168,110,365	336,220,730	31,671,993	199,782,358	35,879,060	2,253,205	38,132,265	33,925,198	237,914,623
7	6	336,220,730	6.28%	168,110,365	168,110,365	21,114,662	189,225,027	35,879,060	2,253,205	38,132,265	23,367,867	227,357,292
8	7	168,110,365	6.28%	168,110,365	-	10,557,331	178,667,696	35,879,060	2,253,205	38,132,265	12,810,536	216,799,961
Grand total					1,176,772,556	295,605,266	1,472,377,822	251,153,420	15,772,435	266,925,855	311,377,701	1,739,303,677

To guarantee the economic success of the scheme, the concessionary will be paid with decreasing annual installments. This payment method will help the concessionary to avoid financial difficulties during the entire period of the duration of the concession period contract. Therefore, in the first year the installment will be **280,143,947** leke and each year will be decreasing until reaching **1,739,303,677** leke in the last year.

Table 133 Annual installment amount

Nr rend or	Viti	Tarifa Vjetore Pa TVSH
1	0	
2	1	280,143,947
3	2	269,586,616
4	3	259,029,285
5	4	248,471,954
6	5	237,914,623
7	6	227,357,292
8	7	216,799,961
Grand total		1,739,303,677



1.4.2 Financing source.

Vlera e përgjithshme e këtij projekti për **Loti 4** është **1,792,649,257** lekë nga të cilat, **53,345,580** janë shpronësime që do të paguhen direkt nga Bashkia Tiranë të të shpronësuarit dhe **1,739,303,677** lekë është vlera e koncesionit:

The general amount of this project for lot 4 is **1,792,649,257** leke, about **53,345,580** out of them are expropriations to be paid by Tirana Municipality to the expropriated persons and **1,739,303,677** leke is the amount of the concession:

Table 134 General amount of the project for Lot 4

Nr	Vlera e Përgjithshme e Projektit	Çmimi	Sasia	Vlera totale
1	Kostoja e përgjithshme e shpronësimit	53,345,580	1	53,345,580
2	Kosto direkte e Investimit pa TVSH	1,176,772,556	1	1,176,772,556
2.1	Kosto direkte e investimit të koncesionarit Pa TVSH	1,176,772,556	1	1,176,772,556
3	Kosto e mirëmbajtjes pa TVSH	35,879,060	7	251,153,420
3.1	Kosto e mirëmbajtjes të koncesionarit Pa TVSH	35,879,060	7	251,153,420
4	Marzhi i Fitimit	311,377,701	1	311,377,701
4.1	Marzhi i Fitimit të Koncesionarit	311,377,701	1	311,377,701
	Total i përgjithshëm i kostos(1+2+3+4+5)			1,792,649,257

Table 135 Amount to be covered by municipality and concessionary

Nga të Cilat:	Bashkia	Koncesionari	Totali
1. Vlera e Përgjithshme e Projektit Pa TVSH	53,345,580	1,739,303,677	1,792,649,257
Totali	53,345,580	1,739,303,677	1,792,649,257

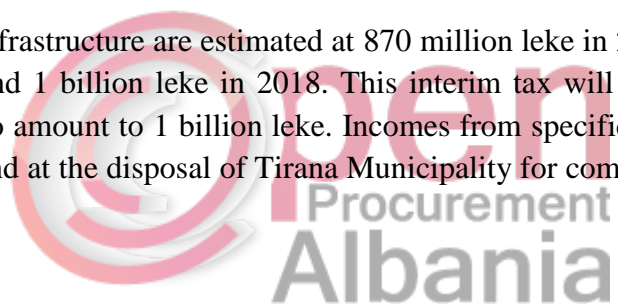
These expenses will be covered by incomes of the Municipality, Conditioned Grants of Ministry of Finance for project.

Incomes of Tirana Municipality for this project will be generated from the Interim Tax on Education Infrastructure, which is applied upon decision of Municipal Council No. 59, dated 30.12.2015, “On taxes and local tariffs system in the city of Tirana”.

Table 189 Forecast of incomes from Interim Tax on Education Infrastructure

Description	PLAN YEAR 2016	FORECAST 2017	FORECAST 2018
Interim Tax on Education Infrastructure	870 000 000	940 000 000	1 000 000 000
Families	320 000 000	340 000 000	350 000 000
Trade subject	550 000 000	600 000 000	650 000 000

Incomes from Interim Tax on Education Infrastructure are estimated at 870 million leke in 2016, whereas these incomes are envisaged to increase to 940 million leke in 2017 and 1 billion leke in 2018. This interim tax will be applied for 7 years and for 2019-2022 period, the annual incomes are projected to amount to 1 billion leke. Incomes from specific transfer from Ministry of Finance will be 700 million lek per year. Therefore, the fund at the disposal of Tirana Municipality for completion of periodical payments is estimated at 1 billion and 700 million leke per year.



1.5 Financial Analysis

Table 136 Summarizing table of costs and incomes of the project

Viti	Pershkrimi	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
A.	Kostot Direkte te Investimit	1,230,118,136	-	-	-	-	-	-	-	1,230,118,136
A.1	Kostot e Truallit	53,345,580								53,345,580
A.2	Kostot e Projektimit	25,283,249								25,283,249
A.3	- Ndertim + instalime	1,023,486,195	-							1,023,486,195
A.4	- Oponenca teknike	843,550								843,550
A.5	- Takse Infrastrukture									-
A.6	- Leje mjedisore	120,000								120,000
A.7	- Mbrojtje ndaj Zjarrit	200,000								200,000
A.8	- Kosto Supervizimi	11,683,304								11,683,304
A.9	- Kosto Kolaudimi	414,825								414,825
A.10	- Mobiljet dhe Orendi	73,400,000	-	-	-	-	-	-	-	73,400,000
A.11	- Investime IT&T dhe Labs	41,341,433								41,341,433
B.	Kostot Direkte të Mirëmbajtjes	-	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	251,153,420
B.1	Kostot e Mirëmbajtjes së Aseteve	-	23,623,424	23,623,424	23,623,424	23,623,424	23,623,424	23,623,424	23,623,424	165,363,968
B.1.1	- Kostot e Mirëmbajtjes së Ndërtesave	-	5,462,158	5,462,158	5,462,158	5,462,158	5,462,158	5,462,158	5,462,158	38,235,106
B.1.2	- Kostot e Mirëmbajtjes së Pajisjeve		13,801,260	13,801,260	13,801,260	13,801,260	13,801,260	13,801,260	13,801,260	96,608,820
B.1.3	- Kostot e mirëmbajtjes Mobiljet dhe Orendi		1,727,749	1,727,749	1,727,749	1,727,749	1,727,749	1,727,749	1,727,749	12,094,243
B.1.4	- Mirëmbajtje IT&T (HD+SW)		2,632,257	2,632,257	2,632,257	2,632,257	2,632,257	2,632,257	2,632,257	18,425,799
B.2	Staf Mirembajtje	-	12,255,636	12,255,636	12,255,636	12,255,636	12,255,636	12,255,636	12,255,636	85,789,452
B.2.1	Staf Roje		2,917,463	2,431,219	2,026,016	1,688,347	1,406,956	1,172,463	977,052	12,619,516
B.2.2	Staf Sanitare		7,779,903	7,779,903	7,779,903	7,779,903	7,779,903	7,779,903	7,779,903	54,459,321
B.2.3	Staf Sekretare		1,558,270	1,558,270	1,558,270	1,558,270	1,558,270	1,558,270	1,558,270	10,907,890
A+B	Totali i Kostove (A+B+C)	1,230,118,136	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	1,481,271,556
C.	Të Adhurat	53,345,580	280,143,947	269,586,616	259,029,285	248,471,954	237,914,623	227,357,292	216,799,961	1,792,649,257
C.1	Likuidimet e shpronësimeve	53,345,580								53,345,580
C.2	Tarifa e Shfrytezimit pa TVSH		280,143,947	269,586,616	259,029,285	248,471,954	237,914,623	227,357,292	216,799,961	1,739,303,677
D	Fitimi (humbja)	(1,176,772,556)	244,264,887	233,707,556	223,150,225	212,592,894	202,035,563	191,478,232	180,920,901	311,377,701
E	Fitimi (humbja) progresive	(1,176,772,556)	(932,507,670)	(698,800,114)	(475,649,889)	(263,056,995)	(61,021,432)	130,456,800	311,377,701	311,377,701
F	15% Tatim fitim	0	0	0	0	0	0	(19,568,520)	(27,138,135)	(46,706,655)

Table 137 Cashflow of the project

Fluksi i Arkës									
Viti	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
Flukse dalese nga Investimet	-1,230,118,136	-	-	-	-	-	-	-	-1,230,118,136
Flukse dalese nga Mirëmbajtja	-	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	251,153,420
Flukse dalese nga Taksat	-	-	-	-	-	-	19,568,520	27,138,135	46,706,655
Totali i flukseve dalese	-1,230,118,136	35,879,060	35,879,060	35,879,060	35,879,060	35,879,060	55,447,580	63,017,195	-1,527,978,211
Flukse hyrese nga Operimet	53,345,580	280,143,947	269,586,616	259,029,285	248,471,954	237,914,623	227,357,292	216,799,961	1,792,649,257
Gjendja e Arkes ne fund te periudhes	-1,176,772,556	244,264,887	233,707,556	223,150,225	212,592,894	202,035,563	171,909,712	153,782,766	264,671,046
Gjendja e arkes progresive	-1,176,772,556	932,507,670	698,800,114	475,649,889	263,056,995	61,021,432	110,888,280	264,671,046	264,671,046

1.6 Economic Profitability of the Project

1.6.1. NPV (Net Present Value)

NPV, as standard method for assessment of long-term projects through analysis of time value of money, presents the discounted amount of cashflow of the project. Every investor, when decides to undertake an investment analyzes the incomes generated by one project compared to the potential incomes of the invested money in another project. In general, these analyses are carried out taking into account the interest rate in case of the investment of the money, e.g. treasury bonds or government obligation, which have almost a zero risk.

Classical formula of NPV calculation, if the investment is made in one year, is :

$$NPV = \sum_{t=1}^T \frac{C_t}{(1+r)^t} - C_0$$

where:

C_0 – presents the money spent for the initial investment

C_t – presents the incomes from the investment ;

t – presents duration of the project ;

r – presents the expected rate of discount .

To see the economic profitability of the project, the financial model has been tested with several potential discount rates. From this analysis, it resulted that the potential concessionaries will be interested in this project only if their opportunity cost is lower than 5.79%. In other words, for every discount rate over 5.79% this project does not consist of any economic profitability for the concessionary.

norma e skontimit e parashikuar NPV	NPV			
	5%	5.79%	6%	7%
	29,884,696	15,136	7,682,796	42,661,484

1.6.2. IRR (Internal Rate of Return)

IRR is a method used to measure the incomes of potential income. IRR is a discount rate that makes the net present value (NPV) of all cashflows of a project equal to zero. According to economic theory, every project with an IRR higher than its capital cost is profitable, as a result investors will be interested to invest in it. Based on the financial analysis, the IRR of this project is estimated at 5.79%.

Table 138 Internal Rate of Return of the project

Viti	Viti 0	Viti 1	Viti 2	Viti 3	Viti 4	Viti 5	Viti 6	Viti 7	Grand total
Gjendja e Arkes ne fund te periudhes	-1,176,772,556	244,264,887	233,707,556	223,150,225	212,592,894	202,035,563	171,909,712	153,782,766	264,671,046
IRR	5.79%								

1.6.3 Payback Period

The payback period presents the necessary time needed for the invested capital to recover the initial investment from the project incomes. In general, the payback period is calculated by dividing of the investment cost by annual incomes. Hence, as long as the annual incomes in this project consist of decreasing installments, the payback period is assessed by analyzing the cashflow to determine the latest year when this flow is negative.

Periudha e Vetëshlyerjes

Viti i fundit i gjendjes se arkës negative		5
Gjendja e arkës kumulative në vitin e fundit negativ	-	61,021,432
Gjendja e arkës pozitive krijuar në vitin vijues		171,909,712
PBP (periudha e vetëshlyerjes)		5.35

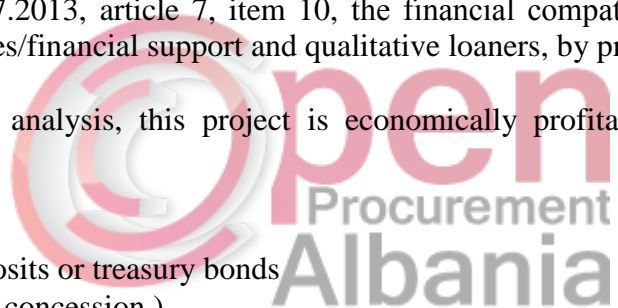
In this respect, the self-payment period for this project is achieved in 5.35 years. Nevertheless, taking into account that payment from Tirana Municipality will be annual, then the self-payment period will not be 5.35 years, but 6 years.

1.6.4 Financial compatibility

According to CoMD no. 575, dated 10.07.2013, article 7, item 10, the financial compatibility of a project “indicates whether the project seems to be able to attract guarantees/financial support and qualitative loaners, by providing a strong and reasonable financial.”

Based on the above-mentioned financial analysis, this project is economically profitable and this profitability is presented as following:

- NPV = 5.79% > 0
- IRR = 5.79% > than interest of deposits or treasury bonds
- PBP = 6 year < 7 years (duration of concession)



1.7 Quantitative and Qualitative Risk Analysis

The main goal of Risk Analysis is to identify and evaluate the gamma of risks that may affect the project. Therefore, a strategy on risk management is carried out in order to guarantee the successful realization of the project. In compliance with Decision of Council of Ministers No. 575, dated 10.07.2013 “On approval of rules for evaluation and issuance of concession/private-public partnership” following is a risk analysis regarding this project.

1.7.1. Qualitative Risk Analysis

Land Risk

Description of the Risk: Lands selected for construction of 17 schools will mostly be owned by the state, whereas the private-owned lands will be expropriated in line with the legislation in force and will be put at disposal of the concessionary. As a result, this risk has a low probability, almost zero, about this project. Regarding the necessary permits, there is no risk, because Tirana Municipality is itself the responsible body to grant these permits. In relation to environmental standards, the selected lands are plots located in areas where the environmental standard is not affected, therefore the risk is considered zero.

Management of risk: This risk is assessed with a zero probability and it is covered by Tirana Municipality. Tirana Municipality will carry out all the procedures for expropriation of private lands out of this PPP scheme, before the beginning of works. If any of the selected lands is in a ownership conflict, turning expropriation impossible, authorities will ask for information at the Immovable Properties Registration Office for alternative sites to be used. Regarding geological conditions and environmental standards, there has been an environmental study part of this feasibility study, which has come to the conclusion that the construction of these objects does not have an impact on the environmental standards. Hence, during the procedures for obtaining a construction permit, there will be also a detailed environmental study by the concessionary.

Risk of design, construction and functioning

Description of the Risk: Calculation of costs for construction and furniture of new schools is based on above-mentioned methodology, which takes into consideration the cost of schools built by Tirana Municipality in the last three years. Therefore, the possibility of a higher construction cost than the calculated cost is almost zero. Construction and functioning of schools depend in a certain scale on the obtaining of construction permit and meeting of preconditions for obtaining of this permit, such as environmental permit, connection with the electrical grid or water supply system, approval of projects for fire protection, etc. The concessionary has the right to draft the designing, prepare the documents for equipment with a construction permit, as well as to build the school objects. From this point of view, the risk of delays in equipment with construction permits, delays in kick-off works, readiness is possible.

Management of risk: This risk belongs to the concessionary. He is accountable for compilation of documents and equipment with construction permit. If the concessionary does not prepare the project on time and will neglect the application for construction permit by not applying on time or having irregularities in documents, or failure to start works on time, then he will be accountable for failure in starting works on time and will compensate the contracting authority according to the requirements in the concessionary contract. Likewise, as long as the concessionary is responsible for drafting and implementing the project, each delay in completion of construction works, excluding the case when the delay comes as a result of a force majeure will be under the concessionary's responsibility and will be forced to compensate the contracting authority according to requirements in the concessionary contract.

Functioning Risk

Description of the Risk: The possibility that the new schools will not be functional after the construction is related to the non-qualitative works by the concessionary, which might make the performance of teaching in new buildings impossible. This risk has a low probability because the completion of works will be carried out by the technical supervisor and financial bill of quantities will be supervised by the contracting authority. Regarding the risk of a higher maintenance cost than expected, the probability is almost zero, because the annual maintenance cost is calculated based on annual expenses of Tirana Municipality for the maintenance of existing schools, which have been constructed long ago. According to engineering standards, the maintenance cost of newly-built objects is lower than that of the objects built before.

Management of risk: The probability of this risk is low and it is considered as a risk transferred to the concessionary. In case the construction quality will make the performance of teaching process impossible, the concessionary will be accountable and will be forced to carry out extra works until the works quality will be in line with the requests of the designing tasks. In case school buildings might have any problems due to construction works, in the course of seven years of the contract duration, which will make the teaching process impossible, the concessionary will be obligated to carry out extra works to make the school functional again. If the maintenance cost is higher than predicted, this would be a result of the inaccuracies in the design or construction. Therefore, the risk belongs to the concessionary, who is accountable for the designing and building of these schools.

Risk of demand and other trade risks

Description of the Risk: This risk is related to the situations when use of the object is different from what is expected or the generated incomes are lower than the forecast. As long as objects to be build are school buildings that will not have a different use and cannot generate incomes, this risk cannot applied on this project.

Management of risk: The possibility that this project can be affected by this risk is zero, because it is not subject of its impact.

Economic and Financial Risks

Description of the Risk: As long as this project includes financial transactions to be implemented in the course of time, there exists the possibility of an impact from economic and financial risks. The unpredicted increase of the norms of interest may increase the financial costs of the project from the concessionary. On the other side, changes in exchange rate course may have a worsening affect in the finances of the concessionary if his incomes and expenses are in a different currency, e.g. the concessionary has been granted a loan in EUR of USD for the financing of the project, while Tirana Municipality makes the annual payments in Leke. In the end, as long as this project includes periodical payments for a seven year period, there exists the possibility of an impact from inflation in the concessionary's incomes.

Management of risk: Due to the fact that Albania is a country with a sustainable macroeconomic situation, the probability that this project may be affected by such risk remains low. The risk of interest rates or exchange rates belongs to the concessionary and shall be calculated in its financial projections. Inflation risk is shared among the concessionary and Tirana Municipality. As long as the Bank of Albania policy is keeping infection under 3% and duration of the project is only 7 years, the probability of this risk is low. Nevertheless, in the definition of income margin as related to interest rate of 7 year obligations, Tirana Municipality guarantees the concessionary the same protection toward the economic and financial risks as guaranty of Albanian Government for buyer of obligations.

Risks of assets ownership

Description of the Risk: This risk is related to the possibility that technology might get older or if the value of assets might be different at the end of the contract. As long as, the construction consists of school buildings, which will be maintained by the concessionary for seven years, the probability of this risk is low. Nevertheless, the quality and value of assets may be lower than the projection due to non-qualitative maintenance.

Management of risk: This risk is transferred to the concessionary. Maintenance of schools buildings and their furniture will be completed in line with the standards in force and will be supervised by the Contracting Authority. In case the concessionary will not maintain schools in line with the above-mentioned determination, the concessionary contract will envisage provisions obligating him to pay the damage. If at the end of the contract, the value of assets will be different from the predicted, the concessionary contract will define provisions obligating the concessionary to pay the damage.

Political risk

Description of risk: The risk of an impact from political decisions on the project is evident. As long as it is a project initiated from Tirana Municipality, a local government body, the success of the project depends on the coordination with local government. Likewise, there is a potential possibility that the results of next local elections – a potential change of Tirana mayor – may also cause the change of priorities and as a result the project can be blocked.

Management of risk: This risk is transferred on the Contracting Authority - Tirana Municipality. To ensure the consent of central government, with the approval of the feasibility study from the head of Tirana Municipality, will be required also an approval from the Ministry of Finance and Ministry of Education and Sports. Regarding risk of a negative impact of the project as a result of changes in the leadership of Tirana Municipality, the concessionary contract will envisage provisions that obstacle the dismissal of the Contract for non-legal reasons by the Contracting Authority.

Risks deriving from change of legal framework

Description of risk: Potential changes in legislative framework may affect the project positively and negatively. As long as the project is related to the construction of school buildings, the possibility of an affect from legal changes is related only to standards and construction manuals. Therefore, this risk has a low probability. Regarding changes in fiscal laws, the negative or positive influence can be felt only in the finances of concessionary.

Management of risk: This risk falls on the concessionary. In order to have minimal effects, the concessionary contract will include provisions that protect it from discriminating changes in law – always if the discrimination is proved by the court. On the other side, the concessionary will be forced to implement any legal changes coming as a result of governance policies.

Risk from force majeure

Description of risk: Force majeure risks, such natural calamities, civil unrests or wars are transferred to the concessionary and contracting authority. Taking into account the fact that Albania is a member of NATO and with a clear perspective of EU integration, the probability of risks from wars or unrests is almost zero. On the other side, the probability of and impact from earthquakes or other natural disasters on the project is low – How? As a result of the above-mentioned analysis of environmental impact on the project.

Management of risk: Probability of these risks is very low and it is transferred on both parts. The concessionary contract will envisage clauses of force majeure which will guarantee that any negative impact on the project shall be divided between the parties.

1.7.2. Quantitative Analysis of Risks

This analysis aims to prioritize risks that may affect the project by calculating their probability and potential impact on the achievements of project objectives. The quantitative evaluation is based on the probability of occurrence of each risk and potential impact on costs and deadlines of the project.

Impact of risks on project costs is calculated based on the specific weight of each of them in the project's cost. Whereas, the impact on deadline of completion of works is calculated based on legal deadlines for completion of defined procedures that may be necessary for well-going of the project.

Following is a quantitative analysis on the impact of each risk in the costs and deadlines for realization of the project.

Lands risk. Probability of this risk is low, 0-5%. Its impact on the project's cost is zero because expropriations of private lands that will be used for construction of school will be carried out by Tirana Municipality with a special fund out of the financial scheme of this project. The lands selected for construction of the schools are state-owned and private properties. In case use of any of these lands is impossible than will be used an alternative selected land with the necessary information from the Immovable Properties Registration Office. As a result, the impact on the deadline of completion of works is related the handing in of the state-owned land if it is not a property of Tirana Municipality or expropriation of private properties. The impact on deadline of works is calculated at 3 - 6 months.

Risk of designing, construction and functioning. Probability of this risk is low, 5-10%. The costs assessment process of the schools construction is carried out in line with the MoES guidelines manuals and based on the construction of schools by Tirana Municipality in the course of last years and prices have been indexed according to construction prices index of INSTAT. Hence, maximal influence of this risk in costs is less than 5%. On the other side, the deadline of works may not be respected as a result of failure to receiving the construction permit or other permits on time by the concessionary or due to slower completion of works than the calendar of works. In case designing is delayed or documents for equipment with necessary permits are not compiled, the impact on deadline of works is calculated from 3 to 12 months.

Functioning Risk. Probability of this risk is calculated at 0-5%. As long as this project is related to the construction of new schools, there exists the possibility of a low quality of construction. This could require additional works beyond the defined deadline. The impact of this risk in the deadline of works is calculated from 1 to 3 months, whereas the impact on total cost of the project is envisaged at 5-10%. There exists an opportunity that the maintenance cost may result higher than the forecast, but compared to total cost of the project the impact of this cost is almost zero.

Risk of demand and other trade risks. This risk cannot be applied on the project and the possibility of an impact from it on cost or deadlines is zero.

Economical and financial risks. Probability of this risk is low, 0-5%, taking into consideration that it is not a long-term concession where the concessionary generates incomes from the operation of the object of concession. As long as incomes of the concessionary are guaranteed by Tirana Municipality and covered by inflation, impact of risk on total cost of the project is low, 5% - 10%. On the other side, the impact on deadlines of completion of works is not envisaged longer than 12 months.

Risks of assets ownership. Probability of this risk is calculated at 0 - 5%. Its impact on total cost of the project is related to the maintenance costs, in case the latest results higher than forecast and a more rapid amortization of buildings that envisaged in the concession contract. Its impact on project's costs is predicted to be at maximum 5%. Probability of this risk does not affect the deadline for realization of works.

Political risk. Probability of such risk is medium low and is calculated at 10 - 20%. The occurrence of such risk may block works or interrupt the periodical payments for the concessionary by increasing the financing cost of the project and delaying the realization of works. In this respect, a potential influence of this risk on costs is calculated at 20 - 30%, whereas the impact on deadline of realization of works is calculated from 16 to 24 months.

Risk of change of legal framework. This risk has a probability of 5 to 15%. Potential legal changes, such as in standards to be followed for construction of new schools, may considerably boost the project cost. Therefore, the potential risk on costs is medium, varying from 20 to 40%. Likewise, potential legal changes may cause the re-drafting of the project or other delays that may be negatively affect the deadline for realization of works. Therefore, impact on deadline of works is calculated from 12 to 16 months.

Force Majeure Risk. Probability of this risk to happen is very low - 0 to 5%. Nevertheless, in case it happens, the impact on costs or deadline of works will be medium high. Therefore, impact on cost is calculated at 30% to 50%, whereas impact on deadline of works from 12 to 24 months.

Table 193 Summarizing table of impact of risks

No.	Risk	Probabiliy	Impact on cost	Impact on works deadline
1	Risk on land	0% - 5%	0%	3 - 6 months
2	Risk on designing, construction and implementation	5% - 10%	0% -5 %	3 - 12 months
3	Functioning Risk	0% - 5%	5% -10%	1 - 3 months

4	Risk of demand and other commercial risks	-	-	-
5	Economic and Financial Risks	0% - 5%	5% -10%	6 - 12 months
6	Risks of assets ownership	0% - 5%	0% - 1%	-
7	Political Risk	10% - 20%	20% - 30%	16 - 24 months
8	Risk of change of legal framework change	5% - 15%	20% - 40%	12 - 16 months
9	Force majeure	0% - 5%	30% - 50%	12 - 24 months



1.8 Sensitivity Analysis

Main factor that may change during the tender process is the income margin. At the same time, the details of respective costs will be respectively defined based on factual approved projects, depending on the approved projects. The direct cost will be calculated base on the factual realized volumes, which in no way will be higher than the costs envisaged in this project.

Nevertheless, due to the effects of sensitivity analysis, the calculation will made as if the costs have increased and decreased by 5% and 10%, whereas the income margin increases and decreases by 5% and 10%.

Table 194 Sensitivity Analysis

	Incomes and expenses increase by 10%	Incomes and expenses increase by 5%	Basic Model	Incomes and expenses decrease by 5%	Incomes and expenses decrease by 10%
Sensitivity Norm	10%	5%	0	-5%	-10%
Outflow from Investments	- 7,267,445,188	- 6,937,106,771 ^F	6,606,768,353	- 6,276,429,936	-5,946,091,518
Outflow from Maintenance Incomes	- 1,275,711,645 10,274,681,048	- 1,217,724,752 9,786,000,321	1,159,737,859 9,197,517,960	- 1,101,750,966 8,713,446,063	-1,043,764,073 8,188,265,320
Income before taxes	1,731,524,215	1,631,168,798	1,431,011,748	1,335,265,161	1,198,409,729
Tax on Income 15%	259,728,632	244,675,320 -	214,651,762	- 200,289,774	- 179,761,459
Nett income	1,471,795,583	1,386,493,478	1,216,359,986	1,134,975,387	1,018,648,270
NPV by 5.79%	110,223,600	81,672,242	170,329	23,634,170	- 68,587,789
IRR	6.38%	6.25%	5.79%	5.64%	5.34%
Self-Payment Norm	5.20	5.28	5.35	5.43	5.51

9. Results of the Feasibility Study

Tirana Municipality counts in total about 191 public schools. According to the calculations, it results that 61 schools count more students than their maximal capacity and 57 school perform classes in two shifts. In total, Tirana Municipality counts about 14,292 students beyond the maximal capacity of the education infrastructure and 14,919 students holding classes during the second shift. This situation creates three major problems faced by Tirana students and their families: attendance of teaching process in two shifts, big number of students per class and difficulty of access in schools, in particular in newly created quarters with a high density in whose territory there is no school.

The solution of these problems and guaranty of the possibility that students can attend a normal teaching process is not only necessary but also a necessity. This project aims at solving the above-mentioned problems with the construction of 17 new schools, 10 out of them will be nine-year schools and 7 high schools. The construction of these schools will put an end to over-crowded schools or teaching in two shifts. As a result, this project, does not only solve a problem of the present, but also guarantees the sustainable development of future generations, which may benefit a public qualitative education.

The drafting and implementation of this project is an important element of the political program of head of Tirana Municipality for 2015-2019 term. This political engagement is reflected in the 2016-2018 Midterm Budget Program, where it is highlighted that one of the key priorities of this MBP is elimination of two-shift teaching. For implementation of this priority, upon Decision of Municipal Council No. 59, dated 30.12.2015, was applied also the Interim Tax on Educational Infrastructure. The report accompanying this Decision of Municipal Council clearly says that incomes generated from this tax will be only for putting an end to the two-shift teaching through construction of new schools.

Likewise, this project is in line with the national and sectoral planing process, as well as long-term policies for development of Tirana, such as 2013 General Local Plan or 2016 General Plan Tirana 030. It is in line with the 2015-2020 National Strategy for Development and Integration and 2014-2020 Strategy for Pre-University Education, which have determined as an important objective of Government policies regarding pre-university education the improvement of service “Qualitative Education for All”, through update and establishment of infrastructure in the new and existing kindergartens, schools, in line European standards, including access for the disabled children.

Construction of these 17 new schools through a concession/public private partnership scheme, where new schools are designed, financed, built and maintained by the concessionary for a 7 year period is technically possible to realize, financial suitable. The location of new schools is determined in line with general rules of urban planning respecting the Ministry of Education standards regarding the coverage range of educational objects. Selection of sites for construction of schools has been by giving priority to public property. If there have been no public properties, there were found private

properties, but always keeping in mind that these land must not have residences or other economic activities, in order to keep the social impact or economic expropriation at minimum.

The total cost of the project is calculated in a way that schools can be built in line with the highest contemporary standards, at the same time, in order that the project could generate sufficient incomes according to legislation in force to become attractive for the private sector.

The construction cost of schools and kindergartens is defined through interim pre-payment reports of projects completed by Tirana Municipality in the course of last years, which have been indexed with “Annual Average Changes of the Construction Costs (for residences), 1994-2015” of INSTAT. Based on the report of General Directorate of Public Works, No. Prot. 21407/2, dated 09.08.2016, the cost of schools construction is 46,331.67 leke/m², whereas for construction of kindergartens is 54,380.83 leke/m², calculating also other project’s costs, such as furniture costs, maintenance costs, designing study, supervision of works, technical control, technical opposition and fire protection and environmental permit.

In total, the direct investments costs for construction of 17 new schools is estimated at 5,406,768,353 leke. As long as the concessionary will be paid with annual installments by Tirana Municipality for a seven year period, then he shall be reimbursed for the value of money in time. In this respect, as income margin was considered the average rate of Albania government obligations, for fixed seven year obligations was calculated at 6,28%. After 7 years, with the completion of the contract, together with the maintenance costs, the total cost of concession/private public partnership scheme will be about 7,997,517,960 leke.

This project is not only fruitful, but also attractive for private sector, as well as easily accessible within the budget ability of Tirana Municipality. The annual installments that will be paid to the concessionary will be covered from the incomes from Interim Tax on Education Infrastructure and conditioned transfer from Ministry of Finance. This concession/private public partnership does not create difficulties for the financial capacities of Tirana Municipality, therefore preserving the investments fund and other budget categories. Hence, Tirana Municipality may invest without any financial obstacle in other sectors, such as road infrastructure, public services, housing, social care, etc.

On the other side, the analysis on environmental and social impact of the project showed that there is no negative influence neither on the environment nor society. The location of the zones selected for the implementation of these projects enjoy a rich flora and fauna. They are divided into two major groups. The first group consists of sites located in urban areas, where have been built existing objects or were placed concrete layers. The second group consists of sites located in urban or sub-urbane areas where plants are present, but they remain in the level of grass and rare bushes. As a result, this project does not have negative impacts on the environment, despite air pollution and noises during the working phases.

Regarding social impact, the project present no negative aspect, but on the contrary, it represents a

series of positive impacts in solving some sharp social problems. Construction of this new school objects will put an end once and forever to the sharp social problem of over-crowded classes and performance of teaching process in two shifts. It is also a solution to the distances of schools from residences, which forces students to walk long distances to school. Construction of these schools may affect the entire surrounding community. Considered as community centers, these venues will be used by community also after the official teaching deadline by turning into an incentive in establishment of mutual relations between the community members.

In the end, the realization of this project through the granting of a concession/PPP contract is fruitful compared to the opportunity of granting a public procurement contract. For the construction of 17 new schools with the help of traditional procurement methods, Tirana Municipality can use three way: direct immediate procurement of 17 new schools, procurement of 17 new schools spread in a three year period and procurement of one or some schools per year according to its financial possibilities.

Taking into account the total cost of the project, the first two opportunities are considerably out of the financial opportunities of Tirana Municipality. Therefore, the project is financially impossible to be completed through two traditional procurement methods. The third above-mentioned opportunity does not fully complete the project because it can only support construction of 14 out of 17 necessary schools. Likewise, even the 14 schools cannot be build immediately but only in the course of next nine years.

In contrary to three traditional opportunities of procurement of the project, the proposed scheme of concession/public private partnership, the project can be realized immediately and with a feasibility study, but also without additional costs for Tirana Municipality budget, as long as it does not touches the investments fund for the next years. Through this scheme, Tirana Municipality does not solves in two years the problem of over-crowded classes and learning with two shifts.

In conclusion, this project is necessary because it will bring in an important improvement in quality of education in Tirana and it is technically implementable, and what is more important is financially suitable. Likewise, taking into account the budget capability and financial capacity of Tirana Municipality, the project can be realized only with a concession/public private partnership, because through traditional procurement methods this project cannot be realized, or can be completed partially or for a long-term period.