



MUNICIPALITY OF BIHAĆ

**COMMITTEE FOR DEVELOPMENT OF
STRATEGIC PLAN FOR WATER AND
ENVIRONMENTAL SANITATION OF
THE MUNICIPALITY OF BIHAĆ**



**WATER AND ENVIRONMENTAL
SANITATION
STRATEGIC PLAN**

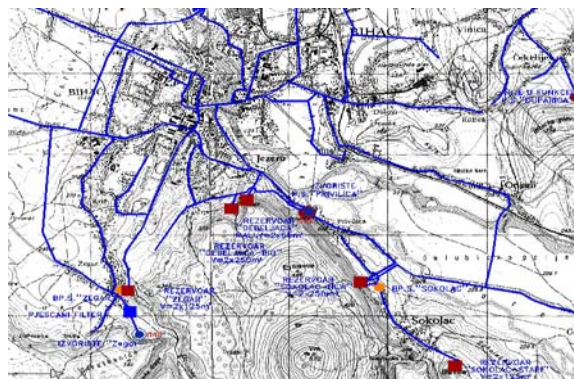


TABLE OF CONTENT:

- 1. FOREWORD**
 - 1.1. SDPWES ELABORATION TEAM**
 - 1.2. STRATEGIC PLANNING**
 - 1.3. SDPWES DESIGNING METHODOLOGY**
 - 1.4. PUBLIC INVOLVEMENT AND INFORMATION-SHARING**
 - 1.5. WES SP ADOPTION AND IMPEMEENTATION**
- 2. GENERAL PART**
 - 2.1. INTRODUCTION**
 - 2.2. GEOGRAPHICAL POSITION AND NATURAL RESOURCES**
 - 2.3. POPULATION AND EMPLOYMENT**
 - 2.4. ECONOMIC SITUATION**
- 3. WATER AND ENVIRONMENTAL SANITATION (WES) – GENERAL PART**
 - 3.1. WATER SUPPLY**
 - 3.1.1. INTRODUCTION**
 - 3.1.2. PUBLIC WATER SUPPLY SYSTEM**
 - 3.1.3. LOCAL WATER SUPPLY SYSTEMS**
 - 3.1.4. QUALITY OF DRINKING WATER**
 - 3.1.5. LACK OF ADEQUATE REGULATIONS**
 - 3.1.6. STUDY-PROJECT DOCUMENTATION**
 - 3.1.7. DEMANDS**
 - 3.1.8. SWOT ANALYSIS**
 - 3.2. WASTE WATER EVACUATION AND TREATMENT**
 - 3.2.1. INTRODUCTION**
 - 3.2.2. EXISTING SEWAGE SYSTEM FACILITIES**
 - 3.2.3. SEPTIC TANKS**
 - 3.2.4. STUDY-PROJECT DOCUMENTATION**
 - 3.2.5. WASTE WATER TREATMENT PLANTS**
 - 3.2.6. POLLUTERS**
 - 3.2.7. RECIPIENTS (UNA RIVER)**
 - 3.2.8. DEMANDS**
 - 3.2.9. SWOT ANALYSIS**
 - 3.3. SOLID WASTE MANAGEMENT**
 - 3.3.1. COMMUNAL WASTE COLLECTION AND REMOVAL**
 - 3.3.2. OTHER SOLID WASTE COLLECTION**
 - 3.3.3. SOLID WASTE DISPOSAL**
 - 3.3.4. WASTE COLLECTION, REMOVAL AND DISPOSAL EQUIPMENT**
 - 3.3.5. WILD WASTE DEPOTS**
 - 3.3.6. SWOT ANALYSIS**
 - 3.4. PROTECTION FROM WATER AND RAINFALL DRAINAGE**
 - 3.4.1. FLOOD CONTROL**
 - 3.4.2. CONDITION OF FLOOD CONTROL FACILITIES**
 - 3.4.3. OTHER IMPACTS TO INCREASE OF FLOODING INCIDENCE**
 - 3.4.4. FLOODS**
 - 3.4.5. SETTLEMENT RAINFALLS**
 - 3.4.6. FLOOD CONTROL ORGANISATION**
 - 3.4.7. REGULATIONS AND THEIR IMPLEMENTATION**
 - 3.4.8. FLOOD CONTROL FINANCING**
 - 3.4.9. DEMANDS**
 - 3.4.10SWOT ANALYSIS**

- 4. LOCAL ADMINISTRATION AND ITS PARTNERS**
 - 4.1 GOVERNANCE ORGANIZATION IN THE WATER AND ENVIRONMENTAL SANITATION SECTOR**
 - 4.2 DEVELOPMENT PRECONDITIONS**
 - 4.3 PREMISES AND TECHNICAL EQUIPMENT**
 - 4.4 HUMAN RESOURCES**
 - 4.5 REGULATIONS AND IMPLEMENTATION**
 - 4.6 CO-OPERATION**
 - 4.7 CO-OPERATION WITH CIVIL SOCIETY REPRESENTATIVES**
 - 4.8 GOVERNANCE'S PARTNERS – PUBLIC COMPANIES AND PUBLIC INSTITUTIONS**
 - 4.8.1 PUBLIC INSTITUTION „URBAN PLANNING INSTITUTE“**
 - 4.8.2 PUBLIC COMPANIES COVERING THE WATER AND ENVIRONMENTAL SANITATION SECTOR**
 - 4.9 SWOT ANALYSIS**
- 5. STATEMENT OF THE VISION**
- 6. STRATEGIC DETERMINATIONS**
- 7. DEVELOPMENT DIRECTIONS IN THE FIELD OF WATER AND ENVIRONMENTAL SANITATION**
- 8. CRITERIA ADOPTED FOR PROGRAMS' EVALUATION**
 - 8.1. OVERVIEW AND RANKING OF ALL PROGRAMS**
 - 8.1.1. WATER SUPPLY**
 - 8.1.2. WASTE WATER DRAINAGE AND TREATMENT**
 - 8.1.3. SOLID WASTE MANAGEMENT**
 - 8.1.4. PROTECTION FROM WATER AND RAINFALL DRAINAGE**
 - 8.1.5. LOCAL GOVERNANCE AND ITS PARTNERS**
- 9. OVERVIEW OF PROJECTS**
 - 9.1. WATER SUPPLY**
 - 9.2. WASTEWATER EVACUATION AND TREATMENT**
 - 9.3. SOLID WASTE MANAGEMENT**
 - 9.4. PROTECTION FROM WATER AND RAINFALL EVACUATION**
 - 9.5. LOCAL ADMINISTRATION AND ITS PARTNERS**
- 10. IMPLEMENTATION, MONITORING AND EVALUATION OF THE WATER AND ENVIRONMENTAL SANITATION STRATEGIC PLAN**
 - 10.1 INTRODUCTION**
 - 10.2 OPERATIONAL PLANS**
 - 10.3 MONITORING**
 - 10.4 EVALUATION**
 - 10.5 WES SP CHANGES AND AMENDMENTS**
 - 10.6 INSTEAD OF CONCLUSION**

1. FOREWORD

Addressing issues related to waters and environmental protection is a main pre-condition for planned use of land and protection of space being exceptionally valuable and limited values. Sustainable development is limited by rational use of land, space and natural values. Nowadays, improving management over water supply, wastewaters, solid waste and rainfalls is made imperative for local governance; significant competences in these fields have been transferred to local governance through the Law on Principles of Local Self-governance in the Federation of Bosnia and Herzegovina.

For that reason, within the Governance Project in Municipal Water and environmental development "GOV-WADE", which is implemented by the Municipality of Bihac with support of the Swiss Agency for Development and Cooperation i.e. Association for Environmental Protection and Improvement "Una-Sana" from Bihac, the Municipality of Bihac has started the elaboration of a Strategic Development Plan for Water and Environmental Sanitation (SDPWES). The Strategic Plan shall be systematized and incorporated into the General Strategic Development Plan of the Municipality of Bihac, which will be finalized during 2007.

1.1. SDPWES ELABORATION TEAM

Aiming at designing the Waters and Environmental Sanitation Strategic Plan, Bihac Municipal Council appointed, in line with Municipal Council's competencies as stipulated in the Article 41 of the Municipality of Bihac Statute, a Waters and Environmental Sanitation Strategic Plan Committee through a decision No. 02-02—8680 from 10 October 2006, which is composed of:

1. Ivan Prsa, President /Municipal Council Speaker – representative of the Municipal Council/
2. Stipe Prsa, Eng., member /Technical Director of the Public Utility "Vodovod" Bihac – representative of the public company/
3. Adem Ibrahimasic, B.Sc. Chem. Eng., member /Municipal Councillor and General Manager of "Bihacka pivovara" ("Bihac Brewery") – representative of the private sector/
4. Vildana Alibabic, Ph.D., member /Professor at the Biotechnology Faculty in Bihac, EKUS Director Executive, representative of education and non-governmental sector/
5. Amir Nefic, B.Sc. Civ. Eng., member /Designer, representative of the private sector/
6. Mehura Selimovic, B.Sc. Eng., member /Technical Director of the Public Utilities "Komrad" Bihac – representative of the public company/
7. Sefik Koricic, Ph.D. Fores. Eng., member /Employee of the "Una-Sana Forestry" Bosanska Krupa, representative of the education sector/
8. Seida Perviz, B.Sc. Agric. Eng., member/Employee of the Una Sana Canton Ministry of Urban Planning, Construction and Environmental Protection, representative of public institutions/
9. Franjo Juric, Prof., member /Professor at the Catholic High School Centre, representative of the Municipal Council and education sector/
10. Hadis Jusic, B.A. Econ., member /civil representative/

11. Mehmedalija Lilic, Prof., member /pensioner, representative of the nongovernmental sector/
12. Dr. Munira Mihelcic, member /Director of the Public Institute "Una Sana Canton Public Health Institute", representative of public institutions/
13. Amir Hadzic, B.Sc. Chem. Eng., member /Head of the Communal Affairs Department within the Urban Planning and Communal Affairs Service, representative of the municipal administration/
14. Milan Smiljanic, B.Sc. Arch. Eng., member /Mayor's Advisor, representative of the municipal administration/
15. Suada Mustafic, B.Sc. Civ. Eng., member /Expert Advisor in the Urban Planning and Communal Affairs Service, representative of the municipal administration/
16. Ljubica Blagovic, B.A. Econ., member /Head of Development Department within the Development, Entrepreneurship and Trade Service, representative of the municipal administration/

Work of the Committee has been co-ordinated by the Steering Group being the Committee's executive working body composed of:

1. Milan Smiljanic,
2. Ljubica Blagovic,
3. Suada Mustafic,
4. Amir Hadžic.

In the course of producing the municipal Waters and Environmental Sanitation Strategic Plan, focus groups within the Committee have been formed for:

- water supply,
- wastewater drainage and treatment,
- solid waste management,
- rainfall drainage, protection from water – flood protection and
- local governance and its partners.

1.2. STRATEGIC PLANNING

Strategy is a comprehensive decision-making process on where to go and how to get there. Development plans will be effective so long as there are properly designed ideas taking only realistic economic priorities of local communities and higher administrative unities and subsequently putting them together with available financial and institutional resources. If the planning and resource management system is not designed, non-selective financing of individual projects leads to dispersing the said resources.

Strategies help governances to thoroughly consider goals to be achieved and how to achieve them. They also ensure governances to be oriented towards issues of real importance at all times and to be able to fund them. Democracy perceives creation of public value i.e. services and results cherished by the public as an ultimate objective. Politics should be developing within the framework of long-term strategy bearing in mind all practical aspects of the implementation.

As one of experiencing practices of good governance, the strategic planning has proved to be unavoidable step for the municipal development given that:

- It provides for participation of all stakeholders in planning and decision-making process (governmental institutions, public institutions and public companies, private sector, non-governmental sector and citizens),
- It ensures permanent orientation for governance development,
- It impinges on improvement of efficiency, effectiveness and cost-effectiveness of governance having strategic development plans and using them i.e. implementing them,
- It impinges on improvement of communication and co-ordination of all stakeholders as well as establishment of partnership amongst the public sector, citizens, private sector and non-governmental sector,
- It ensures strengthening of local governance through education so as to empower it to independently create and supervise strategy-planning activities in municipality in the future,
- It affects public awareness raising on citizens' direct or indirect involvement in democratic processes to create their own future,
- It affects public awareness raising on their responsibility and responsibility of other stakeholders,
- It enables other higher-level governmental institutions (canton, entity, state) to follow up development of the municipality and to plan their contribution to its development (Water Agency – "Water Supply Institute", Eco Funds, ministries, directorates, institutes, etc.),
- It ensures new position of the municipality towards neighbours and towards the surrounding region,
- It ensures donor organisations (European Commission, USAID, SDC, UNDP) and development banks (World Bank, KfW Bank, European Investment Bank, EBRD and others) to follow up and get involved in development of municipality,
- It ensures entirely new image of governance /public management/ that perceives citizens as its clients.

1.3. SDPWES DESIGNING METHODOLOGY

The Strategic Plan for Waters and Environmental Protection has been designed in line with GOPP methodology recommended by the OSCE. To facilitate adoption and implementation of the methodology, the Strategic Plan Committee has undergone two training run by OSCE representatives.

The methodology implies:

- Collection of general information on the municipality,
- Analysing the state of affairs including SWOT analysis for all fields,
- Identification of the development vision,
- Identification of strategic determinations and strategic objectives,
- Prioritisation of projects and
- Identification of methods for implementing and controlling the implementation of the Strategic Plan for Waters and Environmental Protection.

1.4. PUBLIC INVOLVEMENT AND INFORMATION-SHARING

The WES SP designing process has been followed with significant activities aimed at providing information and involving all stakeholders in the WES SP designing process i.e. decision-making process. These activities include: citizens, private sector, municipal administration, public utilities, non-governmental sector, and education and health institutions.

Throughout the public discussion process, which followed adoption of the draft WES SP by the Municipal Council, activities aimed at involving the public and receiving opinion on the Plan from the broader population included:

- meetings with local community representatives,
- public meetings,
- final public discussion,
- providing local communities, public companies and municipal and cantonal institutions with the draft WES SP,
- providing the citizens with the draft WES SP so as to receive their opinion (in the municipal building and on web-page).

This is how all stakeholders are provided with opportunity to see the draft WES SP and to submit their remarks, proposals and suggestions to be considered and subsequently accepted or rejected with explanation by the Commission.

Process of designing and adoption of the Strategic Plan for Waters and Environmental Protection has been all the time followed with very important media activities aimed at better information sharing and encouraging the public to get involved in the process. These activities were:

- call-in radio and TV shows,
- radio and TV jingles,
- articles in informative TV and radio shows,
- articles in printed media,
- press conferences,
- dissemination of printed informative material – posters, leaflets and booklets.

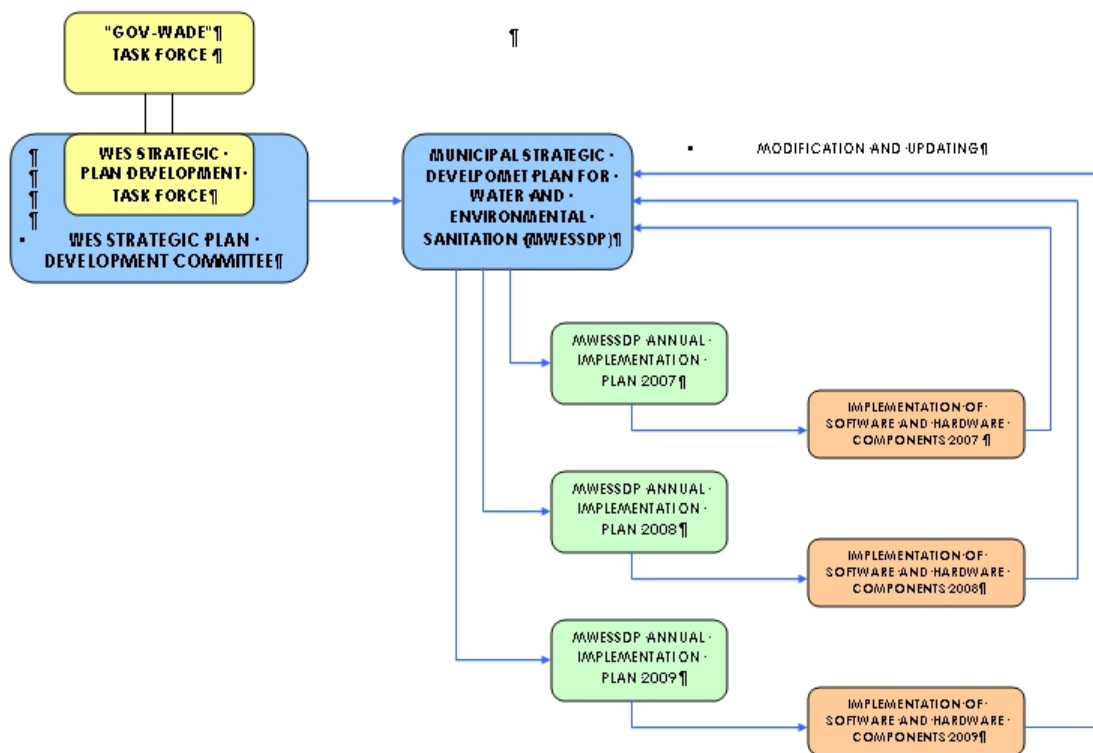
Two inquiries took place during the WES SP designing process. The first inquiry aimed at obtaining public opinion on the existing situation in different fields whilst the second inquiry pointed at the public's opinion on the development vision, strategic objectives and project prioritisation. Results of both inquiries are incorporated in the Strategic Plan for Waters and Environmental Protection.

1.5. WES SP ADOPTION AND IMPLEMENTATION

The Strategic Plan for Waters and Environmental Protection was produced in the period October 2006 – April 2007; it was adopted by the Municipal Council with the decision No. 02-02-8680 taken at the council session on 10 October 2006.

The Strategic Plan for Waters and Environmental Protection is addressing the five-year period (2007 – 2011). The Committee is aware that limited funds and available institutional resources will enable implementation of all programs and projects defined by the Plan during this period.

It is realistically expected that projects will not be funded from the municipal budget only; there is open possibility for using other funding resources (higher authority levels, international development and financial institutions); the municipal administration is undertaking activities necessary to ensure these funds. Also, there will be monitoring of the SP WES implementation for each year as well as its ongoing upgrading. Thus, the Committee decided to keep all projects on the project list to be realised in line with the annual Implementation Operational Plan given the priority and financial capacities.



2. GENERAL PART

2.1. INTRODUCTION

Geographical position and favourable climate have contributed to the settling of the Bihac area from ancient times. Life in this region is dating from the early Stone Age. Bihac is for the first time mentioned under the name Wyhygh in the Charter of King Bela IV that was issued on 26 February 1260. The second time its name emerged was in 1262 in a charter granting the town a status of a "fee royal town".

The Turks conquered Bihac in 1592. They brought new inhabitants, which caused great changes in the population structure, religion and culture. After the Berlin Congress in 1878, the Austro-Hungarian Monarchy was granted the right of occupation of Bosnia and Herzegovina. The Town of Bihac was conquered on 19 September 1878. Bihac, as well as Bosnia and Herzegovina, remained within the Austro-Hungarian Monarchy until 1918 when it became part of the Kingdom of Serbs, Croats and Slovenians. At that time, Bihac was the region centre turning into the county centre of the Vrbaska Banovina in 1929. In the beginning of the World War II, Bihac became part of the Independent State of Croatia and was under German occupation from 13 April 1941 to 28 April 1945.

In the period from 1945 to 1992, Bihac belonged to the Socialist Federal Republic of Yugoslavia (SFRY), i.e. its Socialistic Republic of Bosnia and Herzegovina. It developed into an important economic centre of this part of the state and in particular of then-existing Bihac Region. Referendum on BiH independence and sovereignty, which was held on 29 February/1 March 1992, resulted in Bosnia and Herzegovina becoming the independent state that was internationally recognised on 22 May 1992 when it was admitted in the UN as the 177th member. The Dayton Peace Accord from 1995 and new administrative-political constitution turned Bihac into the seat of the Una Sana Canton and its administrative, economic, cultural, university and sport centre within the Federation of Bosnia and Herzegovina.

2.2 GEOGRAPHICAL POSITION AND NATURAL RESOURCES

The Municipality of Bihac is located in the northwest part of Bosnia and Herzegovina, in the Una Sana Canton. Its surface is 900 km²; the merger of Martin Brod, which used to be part of the Drvar Municipality before the Dayton Peace Accord was signed, enlarged it for 212 km². Bihac is bordering with the Municipality of Cazin, Bosanska Krupa, Bosanski Petrovac and Drvar from the Bosnian side and with the Municipality of Donji Lapac, Korenica and Slunj from the Croatian side. Geo-traffic position of the town is very favourable. There are numerous international and arterial roads passing through Bihac and connecting this area with broader region. The railway line Zagreb-Split is also going through the Municipality of Bihac connecting Dalmatia with the Western Balkans. The transversal railway line Bihac-Bosanski Novi connects the Sava's Development Direction with Bihac and the Una Sana Canton. There are ongoing preparatory activities for the implementation of the diagonal road through Bihac and Sarajevo to connect the Western Europe with the Middle East. It will have a particular positive impact to the present favourable geo-traffic position of the town and municipality.

The relief of Bihac is diversified. It is primarily composed of fields, hills and middle-highland. The altitude is 224 meters; the most of the town territory is located up to 600 meters a.s.l. whilst the minor part is located in the highland and hill-highland zone above 900 meters a.s.l. The major part of the municipality is plentiful with water sources, streams and rivers. Total length of the Una River in the Bihac territory is 80 km.

The Bihac region has a moderate highland-type climate being diversified as a result of air currents coming from neighbouring and distant regions. Summers are warm and dry whilst winters are cold with lots of precipitations. Annual average precipitation is 1 327 l/m² and average temperature is 10.8 °C. In overall, Bihac's climate is advantageous.

Pedologic cover is diversified. Flora is also ample and stratified. Natural resources that serve as a basis for the economic development of the municipality are: forestry resources, mineral and non-metal raw materials, agricultural land, hydro-energy potentials, natural attractions and the Una River phenomenon.

Major mineral resources are gypsum and architectonic-construction stone *Bihacit*. The gypsum sites in Kulen Vakuf were subject of geological researches identifying reserves in amount of 1 million tones of high-quality gypsum and therefore are considered to be one of the major gypsum sites in Europe. Close to the town is the site with 630 000 m³ of the architectonic-construction stone *Bihacit*. The limestone sites located in the settlement of Pritoka belongs to the broad Middle-Cretaceous limestone strata. The researches have identified 8.5 millions m³ of high-quality limestone.

According to the information released by the Municipal Cadastre and Property-Legal Service on 31 December 2005, the surface of forestry, without Drvar's part of the forestry that was annexed to Bihac, is around 36 900 ha out of which around 4 100 ha is privately-owned and 32 800 ha is state-owned forestry. As estimated by the Federal Geodesy Institute, out of 212 000 ha of the Drvar Municipality that was annexed to Bihac, 15 600 ha is covered by forests.

As according to cadastre records, Bihac has 27 320 ha of agricultural land out of which 19 815 ha (or 72.5 %) is privately-owned and 7 805 ha is state-owned land. Out of total agricultural land surface, 45.1% are tilled fields, 1.8% orchards, 32.3% meadows and 20.8% pastures. Large complexes of the state-owned land located in Gornja Gata-Bugar, Lipa, Racic, Hrgar, Ripac, Donja Gata and Cukovi II were given for 25-year concession.

2.3. POPULATION AND EMPLOYMENT

The population in the Bihac Town has been constantly increasing. According to the 1948 census, there were 35 502 inhabitants whilst the 1991 census recorded 70 896 inhabitants, which is almost double the former number. The annual increase rate was dropping off until 1961, but considerably rose in 1971; however, then again it continued to decline. The annual population increase rate in the period 1948-1953 was 17%, in the mid period 1961-1971 2.4% and 0.8% in the period 1981-1991. In comparison with Bosnia and Herzegovina, the increase of the Bihac population was much faster (almost 17%).

According to the 1991 census, there were 70 732 inhabitants living in 44 settlements. There were 18 908 households. Number of persons per a household was 3.7. The average increase rate was 0.8% per year. The biggest portion of the population was working-age population (16-65 years old) making 67.7% of the total population, then the young up to 15 who were making 23.9% of the population and the elderly 8.4% of the population. Gender breakdown: 49.7% men and 50.3% women. Ethnic structure: Bosniaks 66%, Serbs 17.9%, Croats 7.9% and others 8.2%. There were 102.8 inhabitants per km², so Bihac was considered a densely populated town in BiH (source of information: F BiH Official Gazette 05, page 29). Given the urban characteristics, Bihac was classified as a high urbanity level town (64.4% in 1991).

Demographic profile of Bihac significantly changed in the period from 1992 to 1995 as a result of the war and thus migration of the population. In 2005, there were 16 910 households or 60 876 inhabitants living in 59 town settlements (as estimated by the Federation Statistics Bureau). The number of inhabitants per km² was 67.6 and therefore far smaller then before the war. Comparing to 1991, the number of the inhabitants decreased by 10 000. Given the employment and other livelihood opportunities, major return of the pre-war population is not expected. In comparison with 1991, there has been increase in the number of the population older than 65 by 8.4% to 11% as well as the 15-64 population by 67.7% to 69.2% whilst the number of the population in the 0-14 age decreased indicating the birth rate decrease.

Ethnic structure has also changed; the percentage of Bosniaks has increased to 90.6% turning the Municipality of Bihac into almost mono-ethnic town.

In 1991, according to the Republic Statistic Bureau, there were 17 007 employed persons in Bihac, out of which 13 709 worked in production branches (6 855 in industry) and 3 298 in non-production branches. According to the Federation Statistics Bureau, the number of employees in July 2006 was 11 317; the employment rate was 27.3% (of the working age population). As estimated by the Municipal Development, Entrepreneurship and Handicraft Service, the most of the employed work in processing industry (19%), trade (15.1%) and public administration (10.2%). Qualification structure of the employed (according to the Federation Statistic Bureau) is relatively satisfactory: highly qualified, qualified or secondary school degree holders make 57.3%, college or university degree holders make 23.8% and the remaining once are semi-qualified or unqualified employees. As to age structure, 25.4% of the employed are above 45 whilst only 13.6% are less then 35. In comparison with 2000, the number of the employed has

increased for 11.2%. Total number of unemployed persons registered with the Employment Bureau in July 2006 was 8 775; the unemployment rate was 43.5% out of which 40% of the unemployed were semi-qualified or unqualified, 31% were qualified, 22.4% held secondary school degree and 4.4% held college or university degree.

According to the most recent information published in 2006, average monthly net salary was 609 KM. In the same period of 2000, it was 477.73 KM making increase of 32%.

2.4. ECONOMIC SITUATION

Level of the economic development of the Municipality of Bihac before the war was very satisfactory. The core of the development was industry with significant capacities in textile industry ("Kombiteks"), electro industry ("Gorenje Bira"), metal industry ("Krajinametal"), wood industry ("Bina"), chemical industry ("Polietilenka"), food industry ("Zitoprerađada" and "Bihacka Pivovara") as well as other fields of economy that were producing solid results. During the aggression against our country, immense part of economy capacities was destroyed and the production ceased. The efforts of rehabilitation and revival of the capacities in the post-war period have not produced expected results. The privatisation of state-owned property has been mainly unsuccessfully completed, new investments have been minor in particular in the production field.

The post-war period records the registration of huge number of new companies. These are rather small-scale companies with 5-10 employees. In 2005, there were 1 956 active commercial companies and other entities out of which 1 128 were legal persons and 828 were physical persons that carry out various activities. The majority of them are trade (31%), catering industry (13.2%), processing industry (11%) as well as public, social and individual service activities (12.6%).

3. WATER AND ENVIRONMENTAL SANITATION (WES) – GENERAL PART

Water zone of the Una River Basin upstream Bihac includes the area of the Bihac Town and the Municipality of Drvar and Bosanski Petrovac and neighbouring municipalities in the Republic of Croatia in total size of around 2 700 km². Major part of the area is made of geological formations with dominant carbonate rocks component and prominent karstic characteristics. Due to the high soil permeability to water, there is almost no surface water flow. Thus, the hydrographical network is not developed at all, particularly in higher zones, so water rather directly disappears underground and drains towards Una River forming numerous water sources as a result of contact between cretaceous and water-resistible neogenic rocks.

According to information of the Bihac Weather Station, average precipitation in the period 1961-2000 was 1 328 litres/m². Rainfalls are rather evenly distributed throughout the entire year. Average annual internal yield of renewable water resources per person is 5 times higher than in the world, 17 times higher than in Germany, 12.3 higher than in Italy, 94 times than in Israel and 40 times higher than in Egypt.

Una River is the most substantial water course in the area of Bihac Town. It takes surface and underground waters to the Black Sea Basin.

Drinking water is nowadays the most valuable resource springing out under forests and being created as a result of comprehensive relations between habitats within the forest ecosystem. In addition to very important producing function, forests play exceptional role in protection. Forests have great influence to water regime, pure water supply and prevent emerging of excessive water (hydrological function). Water absorption in a plough land is 24 times slower than in forests.

Soil of Bihac is composed of brown limestone deep and loose land that receive and tide with root system around 2 000 m³ of water per hectare. It implies that forests in the Bihac area retain and regulate outflow dynamic of around 120 millions m³ of water.

The citizens and industry (town and suburbs) are supplied from the town water supply system and local water supply systems (villages). In general, the present water supply situation is not satisfactory. The Municipality is in possession of sufficient quantity of water (substantial water sources Klokot, Privilica and Ostrovica) and therefore water supply difficulties stem from poor conditions of the water supply network.

The sewage network covers only part of the urban town area collecting and releasing wastewater in Una River without any kind of previous treatment. Construction of the main collector network has not been completed. Industrial plants release waste water directly in watercourses.

In the period from 2000 to 2005, town authorities allocated 3.9 millions KM from the town budget for the construction of communal infrastructure facilities in the water and environmental sanitation sector. Investments went off through the Town Construction Land Regulation Program and Water Supply Program that were implemented by the Public Institution "Urban Planning Institute". As regards this amount, 2.6 millions KM were invested for the construction of water supply facilities and 1.3 millions KM for the construction of waste water drainage facilities i.e. sewage network.

Water is a gift of nature and it is constantly moving under the influence of solar energy. Every minute, one billion tones of water evaporate from the surface of the Earth (oceans, seas, lakes, ponds, icebergs, soil and flora). Water takes 71% of the Earth's surface out of which 97.5% is salt water, oceans and seas. Out of 2.5% of fresh water, 69% is ice, 30% is pure underground water and only 1% are lakes, rivers, swamps and soil humidity.

Insufficient reserves of healthy and drinking water have been and will be the restrictive factor for the global economic development. According to the UN, the shortage of drinking water ("blue gold") is a serious problem encountered by two thirds of the mankind whilst the UNESCO estimates that every year five millions of people die of illnesses resulting from the shortage of water, its pollution or inadequate quality.

3.1. WATER SUPPLY

3.1.1. INTRODUCTION

The Municipality of Bihac and the Town of Bihac are supplied with drinking water from the karstic water sources of Klokot, Privilica, Ostrovica, Toplica and few smaller sources mainly contributing to local water supply systems as well as drilled wells in the Settlement of Gata. Abundance of these sources enables uninterrupted 24-hour drinking water supply for the most of the town population at this moment but also in the future period.

Water supply coverage of the population and public economy subjects (education and health institutions, industry and handcrafters) from the public water supply system is 86%, from local water supply systems is 11% and 1% is not covered.

3.1.2. PUBLIC WATER SUPPLY SYSTEM

The public water supply system, which is managed by the Public Company "Vodovod i kanalizacija", is divided into several supply zones: central town, northern (the Settlement of Brekovica, Spahici, Jezero and Srbaljani), western (the Settlement of Klokot, Kamenica, Izacic, Turija, Vrsta), southern (the Settlement of Privilica, Sokolac, Golubic and Ripac) and eastern (the Settlement of Ruzica, Vinica and Zalozje). In addition to the aforementioned, the Company also manages the local water supply systems in the Settlement of Kulen Vakuf, Orasac and Gata.

Water supply facilities in the most of the water supply zones have been built recently except for the central town zone where the largest water losses occur primarily because of worn-out conditions of the water supply network. Many measuring conducted over the past five years indicate that physical losses occurring in the water supply network of the public water supply system are above 50% whilst administrative losses (flat-rate fee collection, fountains, Company's needs) are approximately 16%, which points at very high percentage of water uncalculated for: 66%. Great problem of the public water supply system is lack of technical acceptance of many system facilities or technical acceptance of incomplete facilities that generate maintenance and management difficulties. The most of construction facilities of the water supply system (pump and transit pump stations, reservoirs) are in good condition and only few of them require more significant investments for sanitation. Reductions in supplying the population with water occur rarely and mostly during low water level years. Also, it is noteworthy that network pressure is not satisfactory in some supply zones due to vast consumption taking place in small-radius water pipes that supply considerable number of users.

3.1.3. LOCAL WATER SUPPLY SYSTEMS

There are 16 registered local water supply systems in the Municipality of Bihac, which do not have the water disinfecting system or any water quality control and almost no regular maintenance. The local water supply systems supply the population in the following settlements i.e. local communities: Dobrenica, Pritoka, Ripac, Lohovo, Cukovi, Mali and Veliki Skocaj, Medjudrazje, Zavalje, Vucijak, Donji Srbaljani, Orasac, Kulen Vakuf and Martin Brod. None of these systems is under supervision of competent institutions.

3.1.4. QUALITY OF DRINKING WATER

Water in the public water supply system managed by the PC "Vodovod i kanalizacija" is permanently disinfected by chloride. Water quality controls are conducted once a month on 34 samples, which is not sufficient given that regulations stipulate 145 samples. There are also occasional semi-annual and annual partial controls of water quality. Water turbidity is notable phenomenon occurring couple of times per year at all karstic water sources due to heavy rainfalls.

Sharing information with the citizens about water quality is irregular i.e. takes place only when the citizens are called through media to inevitably boil water before using it for its increased turbidity.

As to the local water supply systems, there is almost no water disinfecting whilst the water quality control is conducted very rarely, only owing to good will of a local community leadership.

Not a single water source in the Municipality of Bihac is covered by a sanitary protection decision. As a consequence, there was a fairly spread infectious hepatitis epidemics in 2000 in the Settlement of Ruzica, which was at the time supplied by the local supply system.

3.1.5. LACK OF ADEQUATE REGULATIONS

Water source protection projects for four main water sources Klokot, Privilica, Ostrovica and Toplica, which are preconditions for making decisions on their protection, are produced and revised. However, decisions on sanitary protection of the aforementioned water sources have not been endorsed yet due to lack of the Cantonal Law on Water, which is to identify competence of institutions (cantonal, municipal) that are to make sanitary protection decisions.

For the same reason i.e. lack of the Cantonal Law on Water, there is no institution identified as competent for management and supervision over the local water supply systems i.e. for their work, maintenance, water disinfecting, fee collection, water quality control, etc.

Lack of adequate regulations treating delivery of water to collective residence facilities (apartments, joint facilities, business facilities) is seriously hindering work of the PC "Vodovod i kanalizacija", which is in charge of maintaining the town water supply system.

3.1.6. STUDY-PROJECT DOCUMENTATION

Project documentation for constructed water supply system components in the area of Bihac Municipality is incomplete i.e. there are only parts of it whilst the other part was either destroyed or taken away during the war. Some water supply system facilities require project documentation, technical acceptance and hand over to the PC "Vodovod i kanalizacija". Also, there are cartographic data on the water supply network but not completely.

There is study-project documentation for the future development of the public water supply system until 2010 but it is not harmonised with the newly adopted urban-planning documentation. In addition, it is obsolete and, according to PC "Vodovod i kanalizacija" representatives, only partially useable.

At the moment, the Municipality does not hold systematised and updated records on underground water supply installations; however, there is ongoing project to set up the geographical information system and database aimed at collecting and updating water supply information.

3.1.7. DEMANDS

In the forthcoming period, there should be close revision, proper analysis and preparation and implementation prioritisation, in line with expert criteria, of several water supply projects. The following projects should be reviewed so as to improve the water supply situation in the Municipality of Bihac:

- Connection of suburb settlements (Dobrenica and Pritoka), which are not regularly supplied with quality drinking water, to the public water supply system;
- Completion of water supply systems parts that have not been finished;
- Reconstruction of water supply system parts that generate considerable losses including sanitation and construction of facilities at the water source Klokot, pump station Klokot and new town reservoir;
- Installation of water disinfecting devices in the local water supply systems;
- Producing of the long-term water supply master plan for the Municipality;
- Construction of the drinking water treatment system;
- Adoption of the new and updating of the existing regulations.

3.1.8 SWOT ANALYSIS

Sector: WATER SUPPLY	
S (STRENGTHS)	<ul style="list-style-type: none"> • Satisfactory water quantity and quality; • Regular (minimal) water control; • Available water resources; • Available qualified staff; • Institutional system management; • Large water supply coverage in the Municipality; • Projects for protection of drinking water sources are developed; • Achievement of the agreement with the KfW Bank on a loan for the water supply system sanitation and improvement project.
W (WEAKNESSES)	<ul style="list-style-type: none"> • Lack of water settling i.e. conditioning system; • Insufficient water quality control; • Great losses in the water supply system: physical (leakages) and administrative (flat-rate collection); • Undefined management over the water supply system (there are no zones and supervision of measuring and controlling); • Capacity of existing reservoirs is inadequate, water does not get accumulated, the reservoirs are free-flowing; • Incomplete urban water supply system; • Inadequate (low) price of water supply services; • Lacking collection system for collective residence facilities; • Lack of implementation of the Law on Maintenance of Joint Facilities in Collective Residence Facilities; • Lack of enactment of decisions on protection of drinking water sources; • Reductions of water supply for citizens in higher zones during dry periods; • No official handover for many parts of the water supply system; they were actuated with great number of shortages; • Lack of defined system to form prices for waste water removal and refining; • Prices of services do not cover expenses and collection rate is pretty low; • Improper model of management and control over local water supply systems.

O (OPPORTUNITIES)	<ul style="list-style-type: none"> • Introduction of permanent control of water quality supplied to the citizens (monitoring at least once a year – complete analysis of water quality); • Maintenance and upgrading of water quality in water sources including gradual introduction of primary water refining; • Providing the Public Utility “Vodovod” with equipment and vehicles, construction of the telemeter system, introduction of the GIS and database; • Establishment of sanitary protection zones; • Process of planning annual activities in line with priorities and realistic possibilities; • Preparation of necessary study-project documentation; master plan and feasibility study for sanitation and water supply system improvement to be prioritized; • Sanitation and reconstruction of the water supply network and water supply facilities; • Removal of shortcomings in some subsystems, completion of uncompleted water supply systems; • Putting local (village) water supply systems under supervision and control; • Availability of various financial sources; • Ensuring significant funds in the municipal budget for this issue including ensuring funds from higher levels on the basis of collected water fees for use of water; • Sanitation of water supply installations in collective residence facilities; • Enhancing the information flow to the citizens and cooperation with them.
T (THREATS)	<ul style="list-style-type: none"> • Unresolved issue of the water source protection; • Deterioration of water quality at water sources; • Deterioration of hygienic-epidemiologic situation i.e. increase of different type of epidemic risk; • Lack of filters in settlements and industry in water source basins particularly in the Republic of Croatia – polluters from other countries; • The matter is not adequately elaborated in the existing urban planning documentation; • The citizens do not take care of property belonging to the public utilities (manhole cover stealing, manhole valves damaging, etc.); • Insufficient citizens’ interest to address issues of common concern; • Low citizens’ awareness and scarce interest to assist the public utilities in potential improving; • Lack of adequate regulations (Water Law at the cantonal level) as well as irregular update and improvement of existing regulations; • Lacking application of regulations (control and sanctioning) i.e. poor performance of the inspection service; • Upgrading and improvement of the condition of the existing water supply systems requires considerable increase in prices of the service; • Lack of funds; • Revenues collected on the basis of the water supply services are insufficient to enable significant improvement in the sector.

3.2. WASTE WATER EVACUATION AND TREATMENT

3.2.1. INTRODUCTION

Waste (polluted) water from the area of Bihac Municipality are drained mainly by partially constructed sewage system into open recipients – Una River and its confluents. Majority of the Bihac citizens use inadequately built septic tanks whose content infiltrates in underground water or releases, through overflow, into some of open canals and streams that flow into Una River.

Percentage of the population connected to the public sewage system is 36% whilst the other 64% have their own septic tanks or get directly connected to open watercourses and canals that anyway take polluted water into Una River.

Waste water of the existing industrial plants, car wash shops and public institutions are released, without previous treatment, into streams, canals or directly into Una River.

3.2.2. EXISTING SEWAGE SYSTEM FACILITIES

The existing sewage system is of mixed type; it is primarily built of concrete and asbestos-cement pipes with radius of 600 to 2 000 millimetres. It is divided into systems located on the left and on the right side of Una River. The existing sewage system has couple of bottlenecks (small pipe radius or pipeline slope) causing waste water caulking and overflowing through gutters or manhole covers. A part of the pipeline was built incorrectly i.e. it does not meet minimum technical standards and should be replaced.

3.2.3. SEPTIC TANKS

Most of the existing septic tanks do not meet technical standards as majority of waste water infiltrates through them into underground water whilst a minor part overflows over them into surface water. Thus, there is blending of waste water with local water courses that feed the water sources. As such, there are parts of the Municipality where underground and surface water quality is considerably jeopardised putting health of the population at continuous risk. There are no urgent measures to remedy this situation. The competent municipal service does not hold information on the number, zones and locations of septic tanks.

3.2.4. STUDY-PROJECT DOCUMENTATION

The sewage system of the Bihac Town was designed by three pre-war design offices: "Hidroinžiniring" Ljubljana (1978), "IPZ" Zagreb (1985) and "Water Economy Institute" Sarajevo (1989). The latest also made preliminary design for the waste water treatment plant. The designed and partially built sewage system is of mixed type with siphon under Una River connecting the system into one complex.

After the war, there have been several elaboration papers – studies: "Rustva" (Sweden), IBG Ltd. Program Office (Switzerland) and KfW (Germany) aiming at the continuation of sewage system and plant construction.

There is approximately 40% of documentation on the sewage network; subsequent data importing i.e. updating is ongoing.

Notably, the Municipality of Bihac has signed with the European Commission and KfW Bank the Memorandum on Understanding for development of the master plan, feasibility study and preliminary design for construction of the waste water treatment plant and the continuation of sewage system construction.

3.2.5. WASTE WATER TREATMENT PLANT

Proposal for a location of the waste water treatment plant has been put forward in sewage system construction projects. The said location is close to the bridge over Una River in the Settlement of Kralje (downstream). The land where the plant should be built is privately owned. The location is not recorded in the existing Urbanism Plan.

The plant project is designed for the mixed sewage system and therefore is very sizeable and expensive. Given the construction of many housing and business facilities downstream the said location over the last 15 years i.e. in the Settlement of Pokoj, Cavkici, Veliki and Mali Lug, Mujadzici, Midzici and Street of Jablanska, Kladuska, etc., there should be couple of new locations

analysed so that waste water of the mentioned settlements do not get re-pumped back to the location in Kralje.

3.2.6. POLLUTERS

None of industrial plants that are presently operating and producing significant amounts of waste water have any device for the treatment of waste water springing from technological processes except for "Bihacka Pivovara", which has primary treatment device. Registry of polluters that was produced before the war has not been updated i.e. there are no records on present number of polluters or total amount of water being polluted and released in water courses. According to the Cantonal Water Inspection Office, only minor number of industrial polluters conducts regular control of waste water and pays the waste water fee in proportion to the measured pollution quantity (in line with the EBS) as according to the Law on Water. The competent municipal service does not hold information whether owners of industrial facilities and other plants fulfil their legal obligations. Also, there are no records or continuous supervision over other polluters such as gas stations, car wash shops, car mechanics shops, butcher shops, health and veterinarian institutions, etc.

3.2.7. RECIPIENT (UNA RIVER)

All waste water released by households and aforesaid polluters end up directly or through the sewage system in Una River downstream the town. As according to the applicable Water Classification Decree, water quality of Una River belongs to the Class I upstream Bihac and to the Class II downstream Bihac. Nevertheless, if there were no inflow of exceedingly clean River Klokot into Una River immediately downstream Bihac, water quality of Una River would have surely fitted the Class III. Water quality monitoring, which has been recently carried out both by governmental and non-governmental organizations, points at the tendency of deterioration of water quality downstream Bihac and in particular during minimal water flows.

In addition, caulking of the Una River water level by the dam in the Settlement of Kostela downstream Bihac results in increase of underground water level i.e. increase of infiltration of underground water through cracks and leakage in the sewage system. This enlarges water quantity to be brought to the treatment plant and thus could considerably increase exploitation costs of the plant to be. Moreover, during the high Una River water level, there is caulking of waste water in the sewage system up to housing facilities located in close vicinity of river banks endangering health of the population.

3.2.8. DEMANDS

In addition to the completion of uncompleted sewage systems and construction of the waste water treatment plant, the improvement of health situation in some settlements demands urgent measures to be taken i.e. construction of sewage system parts of separating type that could be at the later stage properly connected to the new collector system.

The following settlements should be prioritised: Veliki Lug, Pokoj, Ozmice I, Ceravci, Repusine, Jezero-Privilica, Gata, Izacic, Vrstica, Brekovica, Spahici, Vedro Polje, Zegar, Kulen Vakuf, Orasac, Ripac, Lohovo, Golubic and Sokolac.

Moreover, it is necessary to insist on producing of the polluter registry, enhancement of the existing regulations and their implementation.

3.2.9 SWOT ANALYSIS

Sector: WASTEWATER EVACUATION AND TREATMENT	
S (STRENGTHS)	<ul style="list-style-type: none"> • Willingness of the citizens to co-finance construction of sewage system; • Developed ecological awareness and responsibility of some citizens; • Agreement with donors on financing the master plan, feasibility study and preliminary design for construction of a refining plant and continuation of construction of sewage system; • Existence of parts of already constructed main waste water removal collectors (sewage system).
W (WEAKNESSES)	<ul style="list-style-type: none"> • Coverage with the waste water removal system for households is pretty low; • Parts of the waste water removal system (sewage system) are improperly constructed and do not meet applicable technical standards; • Lack of adoption of a sewage system type (separation or mixed); • The most of septic tanks is not built in line with existing regulations; their tankage is directly infiltrated in underground waters or flow into water courses; • There are almost no data on number, position, control and supervision of septic tanks; • Lack of location for disposal of septic tank content after being deflated; • Lack of adoption of a model for recording polluters and quantity of polluted water release as well as payment of pollution fees; • Present model of waste water removal from household and industry jeopardizes quality of underground and surface water sources; • Bad hygienic situation and in particular in some suburb areas (Cavkici, Pokoj, Veliki Lug, Mali Lug, Ružica, Vinica, Hatinac, Midžici, Mujadžici); • Lack of harmonization of the urban planning documentation; location of the waste water refining plant is not marked in the existing urbanism plan; • Location of the waste water refining plant is not marked in the existing urban planning documentation; • Property – legal issues for the location of the waste water refining plant are not resolved (the land is privately owned).
O (OPPORTUNITIES)	<ul style="list-style-type: none"> • Improvement of hygienic-sanitary (health) situation in some settlements; • Improvement of water quality in all watercourses and in particular in the Una River; • Adoption of new regulations and amendments to the existing and their efficient implementation; • Process of planning annual activities in line with priorities and realistic possibilities; • Preparation of necessary study-project documentation; • Availability of various financial sources; • Ensuring significant funds in the municipal budget for this purpose including ensuring funds from higher levels on the basis of collected water fees for use of water; • Empowering human resources (scholarship, education, etc.).

T (THREATS)	<ul style="list-style-type: none"> • Deterioration of water quality i.e. pollution of all watercourses and surface waters; • Deterioration of water quality i.e. pollution of soil and underground waters; • Deterioration of hygienic-epidemiologic situation i.e. increase of different type of epidemic risk; • Lack of filters in industrial companies; • Uncontrolled expansion of construction of new potential polluters (shambles, pump stations, car wash, etc.); • Lack of adequate regulations as well as irregular update and improvement of existing regulations; • Lacking application of regulations (controlling and sanctioning) i.e. poor performance of the inspection service; • Significant increase of prices of the services by constructing the system; • Lack of funds; • Insufficient citizens' interest to address issues of common concern; • Low citizens' awareness and scarce interest to assist the public utilities in potential improving; • Illegal and unplanned construction; • The citizens do not take care of property belonging to the public utilities (manhole cover stealing, manhole valves damaging, etc.) and often connect to the sewage system without approval and permits; • Revenues collected on the basis of the waste water removal services are insufficient to enable significant improvement in the sector; • Upgrading and improvement of the condition of the existing sewage systems requires considerable increase in prices of the service.
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3.3. SOLID WASTE MANAGEMENT

3.3.1. COMMUNAL WASTE COLLECTION AND REMOVAL

Collection, removal and disposal of communal solid waste in the area of the Bihac Municipality is assigned to the Public Utility Company "Komrad". The said services are provided to 13 326 households in individual and collective residence facilities and 1 128 handicraft and handiwork companies, public institutions as well as private and state-owned commercial subjects. Coverage with the collection and removal service is 95%. The collection is carried out with available vehicles in line with daily and weekly dynamic established by the Communal Order Decision. The collection does not cover eight the most remote settlements. Users dispose communal waste in several ways i.e. in PVC (polyvinyl chloride) bags, PVC trashcans and other tanks that are inadequate for the disposal and collection of waste. There is no selection and separation of solid waste by users.

Daily collected waste quantity is 160-170 m³ reaching up to 200 m³ in some periods of the year (spring, autumn). Total amount of collected solid waste per year is estimated to 57 000 m³.

So far, there has not been in-depth analysis of type, quantity and content of waste collected in the Municipality of Bihac. All available information refers to superseded studies and elaboration papers that were rather based on assessments and not on precisely measured values. According to the latest assessments, communal waste structure in the Municipality of Bihac is composed of paper 35%, rubber 15%, wood 10%, vegetables 10%, glass 10%, textile 10%, plastics 5%, metal 2%, leather, dust, ashes and other materials 5%. This information indicates that the introduction of the solid waste selection and separation by users could bring about significant savings in the solid waste management process, and in particular in costs of waste collection and removal, by making earnings from collected secondary raw materials as well as decreasing filled-up state of the existing waste depot.

3.3.2. OTHER SOLID WASTE COLLECTION

Decrease in industrial production has resulted in minimal production of technological waste; however, this waste also ends up with communal waste at the official waste depot Kruskovaca. There are no special industrial waste depots. There is no data on hazard waste; if there is any hazard waste, it is not separated. There is no program for the separation and treatment of rubber and oils. Clinical (contagious) medical waste is not properly treated. There is also problem with waste produced by butcher shops and other organic (animal) waste. There is no separation of secondary raw materials or processing capacities.

3.3.3. SOLID WASTE DISPOSAL

The official communal waste depot for the area of the Bihac Municipality is located in the Settlement of Gorjevac, in Kruskovaca. This depot applies partially controlled disposal procedure without usual sanitary waste disposal technology. Waste is disposed on untreated surface (bottom) of the depot that is occasionally covered with inertia material, wetted and tamped by adequate mechanisation so as to attain needed compactness and to reduce the depot's filled-up state as well as to decrease outflow of strain and surface water. Furthermore, the depot is periodically disinfected and pest controlled and controlled against fire risk. There is no necessary infrastructure built in the depot i.e. there is no protection fence, peripheral canals, strain water treatment plants, gas evacuation ventilation wells, supporting facilities (rooms for staff maintaining the depot, sanitary rooms, scale to measure full and empty vehicles, installations and equipment for veto wash and disinfect vehicles). As to the infrastructure, there is only access country road with gate and container for guard's accommodation i.e. there is no minimal condition for sanitary waste disposal at this waste depot.

The depot has direct environmental effects that are reflected in visually bad sight, bad smell and constant presence of dust substances in air. Long-term effect is reflected in the pollution of surface and underground water by strain water coming from the depot and pollution of atmosphere (the depot's air contains methane and carbon dioxide). There has not been any environmental study produced up to now so there is no precise data on overall pollution. Nonetheless, adverse "rose of winds", which engenders the pollution transmission through air, made inhabitants of some settlements, and Ripac particularly, to demand the closure of the

depot. In addition, there are records on polluted water effects to neighbouring water sources because of sensitive characteristics of karstic media where the depot is located.

The depot's capacity is approximately 500 000 m³. Unofficial estimations say that 70% of the capacity has been filled in i.e. estimations based on quantity of waste disposed so far and quantity of waste currently collected and transported to the depot reveal that the depot could be used for another two to three years when it should be adequately closed. There is no strategy for this process.

It could be concluded that the present method of solid waste disposal in the Municipality of Bihac does not correspond to safe disposal standards and does not ensure minimal protection from hazardous environmental effects. Thus, activities are to be undertaken without delay in order to create necessary conditions for further improvements.

3.3.4. WASTE COLLECTION, REMOVAL AND DISPOSAL EQUIPMENT

Technical capacities (tools, equipment, vehicles) for solid waste collection include: 240 containers (1 100 litres), 40 containers of 5 m³ and 7 m³, 1 press-container, 2 tractors, 2 self-lifters, 5 garbage trucks, 2 tippers, 1 bulldozer and 1 excavator. Two garbage cars are newly purchased whilst the remaining mechanisation is pretty old. The containers are owned by users or are leased. The municipal administration has not yet initiated the procedure for the construction of the reloading station.

3.3.5. WILD WASTE DEPOTS

Unsanitary waste disposal is prevailing in the Municipality of Bihac; there is no waste recycling or treatment technology, legal provisions are inadequate and their implementation is poor. All of this results in a vast number of old wild waste depots. In spite of the fact that the PU "Komrad" is carrying out organised waste removal from almost all populated settlements in the town, the area is full of many wild waste depots. The most jeopardised settlements where such depots are observed are Vedro Polje, Golubic, Srbijani, Brekovica, Bugar, Gata, Pritoka, Ruzica and sub-Grabez settlements. There are almost all types of waste disposed at such depots and mainly organic waste (dead animals and unusable parts of slaughtered animals), construction waste, bulky household waste and glass, which impose a permanent risk of various plagues and pollution.

3.3.6 SWOT ANALYSIS

Sector: SOLID WASTE MANAGEMENT	
S (STRENGTHS)	<ul style="list-style-type: none"> • Existence of satisfactory capacities for solid waste removal, satisfactory level of public utilities' equipment and mechanization; • Waste removal coverage in the Municipality is 95%; • Vast competence of local self-governance in the waste collection sector; • More significant funds could be ensured in the municipal budget; • High citizens' awareness on need for improving the waste management system; • Willingness of the citizens to adequately address solid waste collection and treatment issue; • Existence of capacities for quality-quantity waste analysis.
W (WEAKNESSES)	<ul style="list-style-type: none"> • Limestone area – excessive vulnerability of underground watercourses; • Existence of great number of minor wild waste depots and continuous tendency to opening of new wild depots; • Present waste depot does not meet standards; it is jeopardizing water sources; • Lack of selection of collected waste; • Lack of recycling system, sorting and recycling projects, sorting and recycling capacities (recycling yards); moreover, the citizens are not educated about waste sorting at their homes; • Problems pertaining to disposal of other types of waste (shamble waste, medical waste, building, industrial and hazardous waste such as batteries, oils, etc.); • Inadequate equipment of the Public Utility "Komrad"; • Lack of data on quality-quantity characteristics of waste; • Lack of transshipping station; there is also no location identified for this purpose; • Insufficient frequency of waste removal in some parts of the Municipality; • Prices of the service do not cover expenses and collection rate is pretty low; • Regulations treating this field are obsolete, not updated and lack implementation; • Inadequate equipment and poor performance of the inspection service particularly communal inspection. The institute of a communal monitor has not been introduced yet; • Scarce information of the citizens about sanitary solid waste disposal and advantages of waste sorting and recycling; • Lack of communal culture of consumers, lack of awareness and responsibility; • Low citizens' awareness and scarce interest to assist the public utilities in potential improving;

O (OPPORTUNITIES)	<ul style="list-style-type: none"> • Improvement of the hygienic-sanitary (health) situation; • Process of planning annual activities in line with priorities and realistic possibilities; • Development of the plan and study-project documentation as well as waste registry; • Sanitation of the existing official waste depot with the purpose of ensuring conditions for sanitary disposal; • Sanitation of wild waste depots; • Upgrading of the service quality through improving the waste collection system; • Engagement of the non-governmental sector particularly when working with the citizens; • Systematic approach to address issues by applying the EU concept of waste management; • Application of the waste separation system by modern technology; • Construction and equipment of the recycling yard; • Construction of the regional waste depot in the territory of the Municipality and enforcement of the sanitary waste disposal; • Availability of different fund sources; • Improvement in performance of the communal service and communal monitors; • Education of the citizens on the solid waste management system; • Introduction of the legal framework for environmental protection; • Adoption of new regulations and amendments to the existing and their efficient implementation (monitoring, controlling and sanctioning); • Establishment of better cooperation of the local governance with the citizens; • Interest of the private sector (initiative) for recycling some types of waste.
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T (THREATS)	<ul style="list-style-type: none"> • Deterioration of quality of surface and underground waters; • Deterioration of hygienic-epidemiologic situation i.e. increase of different type of epidemic risk; • Competence over the solid waste management is at the cantonal level; • Lack of regional strategic plan on solid waste management; • Lack of strategy (concept) for solid waste disposal (Canton); • Lack of decision on location, model and conditions for construction of the regional sanitary solid waste depot; • Weak possibility to accelerate the process of establishing the regional sanitary solid waste depot; • Citizens' interest tends to decrease i.e. there is a tendency of building so-called "irresolvable problem"; • Insufficient citizens' interest to address issues of common concern; • The citizens do not take care of property belonging to the public utilities (garbage containers damaging and setting in fire, etc.); • Lack of adequate regulations (particularly at the cantonal level) as well as irregular update and improvement of existing regulations; • Lacking application of regulations (controlling and sanctioning) i.e. poor performance of the inspection service; • Upgrading and improvement of the condition of the existing waste collection, removal and disposal system requires considerable increase in prices of the service; • Lack of funds; • The town waste depot does not meet sanitary depot standards and criteria; • Lack of legally prescribed conditions for sanitary waste disposal enables the Cantonal Inspection Service to close the existing depots as it has been the case in some municipalities in the Canton 1; • Mined areas; • Limestone area characteristics; • Existence of uncontrolled wild waste depots.
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3.4 PROTECTION FROM WATER AND RAINFALL DRAINAGE

3.4.1. FLOOD CONTROL

To facilitate flood control, 13.2 kilometres of primary and secondary drainage canal network were constructed in the Bihac Field until 1992 as well as 5.12 kilometres of defence rampart in the Velhovsko polje; also, *sedra* barrier on Buk downstream Kulen Vakuf was removed. The main system for monitoring high water level and excessive rainfalls, which was destroyed during the war, has been reconstructed and established over the past five years all the way through the Una River Basin (15 automatic hydrological and 10 automatic rainfall stations).

3.4.2. CONDITION OF FLOOD CONTROL FACILITIES

The existing flood control facilities have not been maintained since 1992; a public company that was in charge of their construction and maintenance before the war was privatised and does not perform this activity anymore. In addition, uncontrolled endeavours in the area, and primarily illegal construction on the facilities in the post-war period, have generated immense damages making their functionality questionable. Illegal construction carried out by the citizens and businessmen have to a great extent destroyed natural and man-made drainage canals. Also, ignorant citizens have used a part of the trench rampart in Velhovsko polje as a construction material mine.

There is almost no project documentation on flood control facilities; the existing one is not updated i.e. it is obsolete so the maintenance of these facilities is unfeasible.

3.4.3. OTHER IMPACTS TO INCREASE OF FLOODING INCIDENCE

Application of inadequate forestry maintenance system through the forest population reduction as well as lack of agricultural land cultivation has seriously affected soil capacity i.e. rendered soil inoperative to keep water. This has increased the number of erosions and fluxes i.e. flooding risk. Poor forestry maintenance and constant compression of agricultural land has resulted in rapid water outflow and in reducing of forest and agricultural land capacity to accumulate rainfalls.

Moreover, the dam located in the Settlement of Kostela also has a great impact to flooding of housing and business facilities and agricultural land. The Kostela Dam has direct impact to bringing about excessive water in the Bihac Field i.e. Velhovsko polje and Ljuljevit bare and especially after the post-war reconstruction and co-construction (flood wave caulking, underground water increasing and accumulation capacity decreasing). Although there is a basis, the Municipality of Bihac is not receiving reimbursement for perpetual flooding e.

3.4.4. FLOODS

The last flood in the Town of Bihac took place on 2 and 3 January 2006. At that time, the Drvar Hydrologic Station recorded that Unac River had the highest water level ever recorded since the beginning of the monitoring process. Such high water level gave rise to a flood wave that caused flooding of around 70 houses in the downstream settlements of Kulen Vakuf and Klisa and 15 houses and over 415 hectare of agricultural land in Bihac. Flooding of large size of agricultural and construction land plots causes loss of development resources (potentials) for the Town of Bihac. Floods of different intensity take place periodically every year causing direct and indirect material damages that often cannot be even estimated. It should be noted that extremely high flood waves did not occur in the Town of Bihac in the past couple of years, such as those recorded in 50s of the last century, which would probably multiply number of endangered housing and business facilities and agricultural land.

3.4.5. SETTLEMENT RAINFALLS

Rainfalls in the settlements, which are collected mostly through asphalt surfaces and roofs, end up without any kind of treatment in the town sewage system of the mixed type and later in the Una River.

3.4.6. FLOOD CONTROL ORGANISATION

There has not been update of flood control plans for the Una River Basin and cantonal flood control plans in the post-war period. Urban planning documentation has not been harmonised with flood control demands i.e. this issue has been almost completely neglected during the development of urban planning documentation. The practice over the past ten years was focused on dealing with consequences instead of addressing causes.

In the last couple of years, work of the Municipal Civil Protection Command Centre has significantly improved as well as co-operation with competent municipal services. Also, there has been improvement in sharing information with the citizens; however, it should be further worked on particularly in the event of high water occurrence.

3.4.7. REGULATIONS AND THEIR IMPLEMENTATION

Neither the previous nor the newly-adopted Water Law has clearly defined competencies in this field between two authority levels. Lack of proper regulations is evident and therefore considerably complicates the organisation and implementation of flood control. Moreover, there has not been adequate supervision by inspectorates in the past period i.e. water inspectors have failed in implementing the applicable regulations and in particular failed to proactively address removal of illegally built facilities.

3.4.8. FLOOD CONTROL FINANCING

There are no records on payment of funds (compensations) for flood control; there are no plans for opening accounts for canal maintenance, regulated streams, banks, outworks and ramparts or for damage reimbursements.

3.4.9. DEMANDS

With the aim of improving the flood control situation, the following activities shall be undertaken in the forthcoming period:

- To introduce the practice of developing mid-term and long-term flood control plans;
- To produce necessary project documentation for the maintenance of the existing and construction of new flood control facilities;
- To merge funds from various financial sources, and especially from the higher authority levels (Canton, Entity), earmarked for the implementation of flood control activities and measures;
- Capacity building of the competent municipal service to properly respond to flood control challenges and demands at the level of the Town of Bihac and to be partner to cantonal and entity institutions on this matter;
- To additionally educate staff of the municipal service, Civil Protection and citizens;
- To continuously work on raising awareness of the citizens and their proactive engagement in the implementation of the flood control system.
- To harmonise urban planning documentation with flood control plans;
- To define natural resource exploitation policy in the Town of Bihac;
- To strengthen the co-operation with cantonal and entity institutions in charge of forestry and agricultural land management;
- To enhance the notification and information system;
- To improve the existing regulations and their implementation.

3.4.10. SWOT ANALYSIS

Sector: PROTECTION FROM WATER AND RAINFALL DRAINAGE	
S (STRENGTHS)	<ul style="list-style-type: none"> • Existence of flood protection system (facilities); • Daily hydrometeorology monitoring system is in place; • Local governance commitment to undertake activities aimed at preventing and reducing flood detrimental impacts; • Improved information-sharing with the citizens when significant quantity of water occurs; • Available maintenance capacities, numerous construction companies; • Good cooperation between the Civil Protection Service and municipal departments;
W (WEAKNESSES)	<ul style="list-style-type: none"> • Lack of maintenance of the existing flood protection facilities; • Rainfall drainage facilities and high water protection facilities are presently in poor condition; • Irresponsible approach of the population towards rainfall drainage facilities and high water protection facilities (canals, regulated streams, bulwarks). Illegal construction undertaken by the population and companies have damaged drainage canals to a great extent; • Existing flood protection facilities are exploited as construction material source; • Uncontrolled endeavors in the region (illegal construction, uncontrolled wood chopping, lack of agricultural works) cause more frequent flooding; • Rainfall collected mainly through asphalt and roofs end up without refinement in the mixed urban sewage system and then in the Una River; • Immense impact of the dam located in the Settlement of Kostela at emerging of high waters in Bihacko Polje (flood wave caulking, underground water rising and underground accumulations reducing to accept rainfalls); • Mismanagement over forestry accelerated water outflow and decreased underground water accumulation; • Lots of housing facilities are jeopardized by high water emerging; • Lack of regional basin flood protection strategy; • Lack of harmonization of urban planning documentation with flood protection needs; • Lack of harmonization of regulations, divided competences and lack of update of some provisions; • Inadequate inspection supervision. The inspection service does not implement regulations i.e. does not work proactively to primarily remove illegally constructed facilities; • Abuse of funds envisaged for flood protection; • Lack of records on allocation of funds for this field (fees), there are no Funds tasked with canal maintenance or damage; • Lack of appropriate monitoring and warning system; • Approach focused on preventing consequences instead of preventing causes.

O (OPPORTUNITIES)	<ul style="list-style-type: none"> • Improvement of existing regulations and adoption of the new; • Harmonization of regulations; • Enforcement of the new Water Law; • Development of basin and cantonal flood protection plan; • Producing of new study-project documentation; • Process of planning annual activities for defense facilities maintenance and protection in line with available funds; • Harmonization of urban planning documentation with flood protection plans; • Consolidation of funds from different sources particularly from higher authority level (Canton, Entity) assigned for flood protection activities and measures; • Establishment of effective system for collection of funds for flood protection field; • Capacity building; • Public awareness raising on common interest for water management; • Education of staff in the municipal departments, Civil Protection Service and citizens; • Removal of illegally constructed facilities; • Control over exploitation of sand and gravel from water courses and filling up banks.
T (THREATS)	<ul style="list-style-type: none"> • Lack of institutional water management at the level of the Federation of BiH and state; • Lack of harmonization of regulations and provisions; • Competences lay with higher authority level while municipalities are faced immense problems and damages; • Competent institutions at the Entity and cantonal level failed to adopt and enact flood protection preventive measures; • Poor cooperation and coordination between institutions in charge of water management in the Una River Basin i.e. between the Federation and local level; • Lack of water economy basis, master plans for rainfall drainage management (flood protection); • Mismanagement over forestry i.e. uncontrolled wood exploitation and increase of erosion process intensity and in particular upstream Bihac (in the area of the Municipality of Drvar, Glamoc and Bosansko Grahovo); • Uncontrolled endeavors in the region (illegal construction, lack of agricultural works); • Long-lasting procedures for removal of illegally constructed facilities, the citizens oppose removal of these facilities; • Local authorities have no influence over dam-gate management as it is always dependable on profit making (electricity production); • Poor interest and awareness of the citizens, lack of responsibility and education; • The public is not well-informed about problems.

4. LOCAL ADMINISTRATION AND ITS PARTNERS

4.1 ADMINISTRATION ORGANISATION IN WATER AND ENVIRONMENTAL TOR

The decision on municipal administration organisation and book of rules on internal organisation and systematisation in the Municipality of Bihac, which were adopted in 2005, envisaged the setting up of the Communal Department within the Urbanism Service. The said book of rules defines job description and qualifications for Communal Department staff whilst relationships towards service users and other performance principles are governed by the F BiH Civil Servants Code of Ethics, which was endorsed by the F BiH Civil Service Agency. In addition, the town inspection office is in charge of urbanism – construction and communal inspection. The establishment of the Communal Department within the municipal administration has considerably contributed to advance process of planning, preparing and implementing activities in the water and environmental sanitation sector.

4.2 DEVELOPMENT PRECONDITIONS

The town administration is inadequately organised and equipped to undertake water and environmental sanitation planning tasks. Strategic development plans for this sector have not been developed in the past ten years. Also, the town of Bihac does not hold the social-economic development strategy. The existing annual plans are not based on mid-term strategic planning documentation but only on current needs and problems. The adopted spatial-planning documentation (urbanism and regulation plans) poorly addresses the issue of water and environmental sanitation and lacks implementation. The main problem in the implementation of regulation plans is failure to address property-legal relations and construction land regulation in the regions covered by the plans so they have turned into being impediment for the urban development. The spatial plan for the town of Bihac is at the design phase whilst the existing urbanism plan is at novelising phase. Moreover, there is no natural resources management policy at the level of Bihac (mineral raw materials, forests, water, agricultural land) or land policy.

4.3 PREMISES AND TECHNICAL EQUIPMENT

The premises of the Communal Department, which is also tasked with water and environmental sanitation activities, are inadequate to accommodate staff and equipment. Technical equipment of the Department is at much depleted level; there are no records on underground installations and the GIS and database have not been operational yet.

4.4 HUMAN RESOURCES

The Department is staffed with highly qualified personnel; however, there is a need for further training and specialisation especially in the field of human resource management, various processes, investments and IT. Also, lack of awareness and skills for preparing and applying projects to international investors is notable. Moreover, there is evident lack of independence of staff working on co-ordination between the municipal services, public companies and institutions. Willingness to admit own mistakes and willingness to undergo changes with tendency of improving the organisation and modernisation of the local administration contributes to increase of service quality provided to the citizens.

4.5 REGULATIONS AND IMPLEMENTATION

There is a need for changing and amending the existing regulations as well as for adopting new regulations particularly to have systematic solutions implemented. Work of communal inspection and communal monitors is inefficient i.e. the implementation of regulations at the local level is very poor. In addition to the improvement of regulations, there is also need for the modernisation of work of communal inspection through providing new equipment and specialisation.

Environmental sanitation issues are partially addressed in the town's Communal Order Decision and Communal Fee Decision. As to water economy sector, there is no decision treating this sector or protection of water. Protection of drinking water is regulated through the definition of protection zones in Klokot, Privilica, Ostrovica and Zegar ("Bihac Official Gazette", No. 12/77). With regard to the applicable Law on Water, there is a study on water source protection but competent institutions have not verified decisions on the water source protection that were produced on the basis of this study.

4.6 CO-OPERATION

Co-operation with water and environmental sanitation institutions at the higher levels is poor and not institutional. It is reflected at funding of water and environmental sanitation projects, which are mostly financed with municipal budget funds and only occasionally with funds provided by other institutions and donors.

4.7 CO-OPERATION WITH CIVIL SOCIETY REPRESENTATIVES

The citizens and non-governmental organisations are involved in planning and decision-making process but it is rather insufficient primarily because of lack of interest. Inadequate communication of the municipal administration with the citizens has resulted in lack of understanding of work of the administration and specifically because of lack of effectively developed mechanisms to foster citizens' involvement in work of the administration (there is lack of attention for the process). Level of citizens' awareness about the obligation to take care of public property, to pay communal services, to dispose and select waste, to rationalise water use, to get involved in municipality-run proposing, planning and decision-making processes is very low. Moreover, there is notable lack of adequate use of NGO services in informing the citizens about work of the administration as well as understanding of the administration for citizens' needs. Growing partnership between the public and private sector at the local level is one of the main preconditions for the water and environmental sanitation development.

The citizens have enabled to raise their water and environmental sanitation needs throughout the year: through inquiry conducted by the General Affairs Service and Commission for Co-ordination and Improvement of Work of Local Communities, through annual local community work programs and local community requests for budget allotments purposing to finance some activities and projects within local communities, through public calls advertised by the Mayor with the purpose of receiving projects from non-profit and non-governmental organisations and associations that are of importance for the development of Bihac Town.

There is readiness and willingness on the part of the citizens to co-finance water and environmental sanitation projects but there are no criteria regulating relations and models of citizens' participation in project funding as it is rather defined on *ad hoc* basis.

Over the past couple of years, citizens' democratic responsiveness has evidently intensified. There has been also development of the NGO sector and beginning of its involvement and capacity utilisation.

4.8 ADMINISTRATION PARTNERS – PUBLIC COMPANIES AND PUBLIC INSTITUTIONS

Aiming at operative execution of water and environmental sanitation activities, the town administration has founded two public companies (PC "Vodovod" and PC "Komrad") and one public institution (PI "Urbanism Planning Institute"). The legal status of the PC "Vodovod" and PC "Komrad" is harmonised with the F BiH Law on Legal Companies ("Bihac Official Gazette", No. 8/05). The founder of the companies is the town of Bihac. In accordance with the public company statute, the founder – the town of Bihac – appoints members of the Assembly, being the highest management body, and carries out procedures for appointment of supervision boards and director. Financing of these public companies is based on income obtained by providing communal services. Nevertheless, mutual relationships and co-ordination between the municipal services and public companies and institutions is still inadequately defined. Inefficient system of control and supervision over work of the public companies and institutions must be changed without delay. In the past few years, the said public companies have operated with financial loss. Besides inadequate organisation and lack of technical equipment and qualified staff, the poor business operation is notably affected by lack of model for defining price of communal services, which do not cover expenses. In addition, fee collection rate is pretty low and should be advanced as soon as possible.

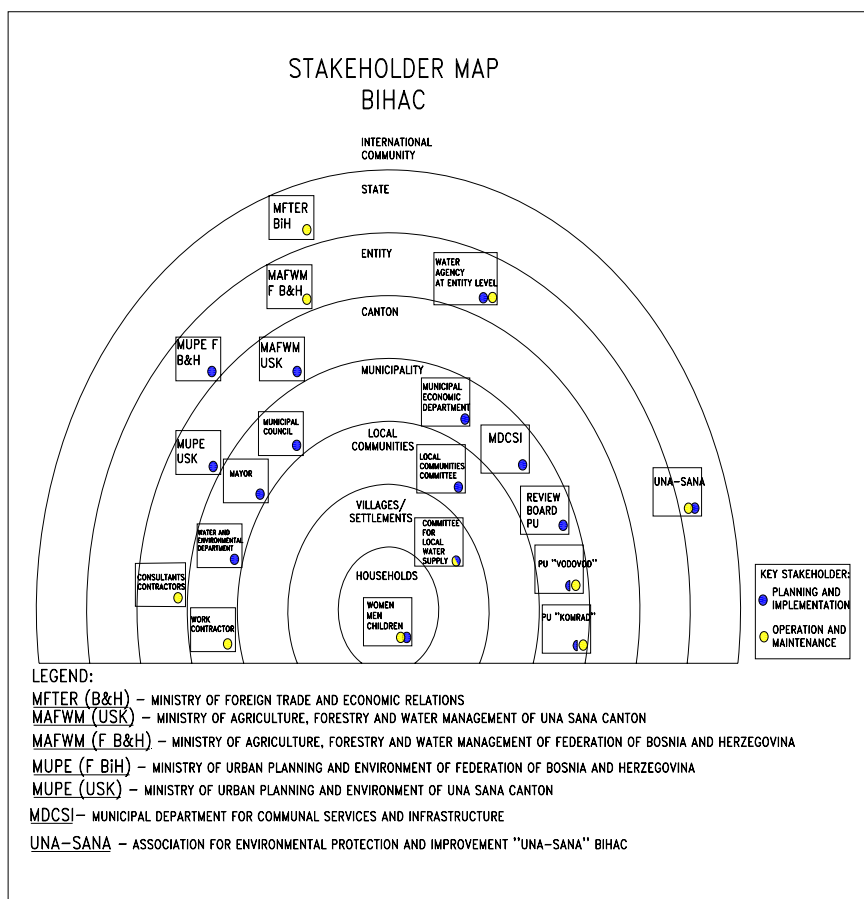
4.9. PUBLIC INSTITUTION "URBAN PLANNING INSTITUTE"

The set up of the Public Institution "Urban Planning Institute" Bihac has not been fully harmonised with the municipal decision on its establishment although it commenced operating on 5 June 2006. The town and Institute have not yet concluded a contract governing how tasks assigned to the Institute shall be carried out (town construction land regulation; communal activities; joint communal consumption; use, maintenance, protection, reconstruction and construction of town streets, local roads and uncategorised roads). Qualification structure of Institute's employees, who were overtaken from the "closed" Communal Activities and Infrastructure Fund, does not fully meets conditions and requirements for advanced performance of assigned tasks particularly in the water and environmental sanitation field. The Institute has not adopted mid-term working plans; it has not developed database nor has it defined relations with the citizens and local communities. As it is in the transformation period, its development has only begun. Performance of the Institute is co-ordinated through the Urbanism Planning Service i.e. Communal Department. Procedure for project selection, preparation and implementation to be financed at the level of the Town is defined only through the endorsement of the water and environmental sanitation program within the framework of other-field programs adopted on annual basis by the Municipal Council and through their implementation by the "Urban Planning Institute".

4.10. PUBLIC COMPANIES COVERING THE WATER AND ENVIRONMENTAL SANITATION SECTOR

Public company "Vodovod" Bihac maintains the water supply and sewage system in the entire town encountering difficulties that rise from lack of equipment. Distinctive difficulty faced with in the past period was the obligation to overtake uncompleted water supply systems that were not subjected to technical acceptance and official handover. Namely, the Company has overtaken from the Public Institution "Urbanism Planning Institute" several uncompleted water supply systems that generate immense maintenance costs due to incompleteness.

The Public company "Komrad" Bihac is tasked, in addition to series of other activities entrusted by the Municipal Council (graveyard and green surface maintenance, parking lot and market management, etc.) with communal waste collection, removal and disposal to the "Kruskovaca" town waste depot nearby the Settlement of Gorjevac.



4.9 SWOT ANALYSIS

Sector: local governance and its partners	
S (STRENGTHS)	<ul style="list-style-type: none"> • Human resources; • Willingness to improve planning processes; • Support of the citizens, local communities and Municipal Council; • Tendency of citizens' democracy awareness growth and development of the NGO sector; • Readiness to admit own mistakes and to make changes; • Achieved level of local governance organization and modernization; • Increasing partnership amongst public and private sector at the local level; • Active engagement and use of NGO potentials; • Capacity of the municipal budget to finance water and environmental sanitation projects; • Existence of the Communal and Environmental Department; • Existence of willingness for professional and technical capacity building.
W (WEAKNESSES)	<ul style="list-style-type: none"> • Inadequate organization and capacity level of the municipal services and their partners for planning processes (particularly in the water and environmental sanitation filed); • Lack of strategic local development plans in all fields; • Annual programs and plans are not based on mid-term strategic-plan documentation but exclusively on present needs and problems; • Lack of land management policy; • Lack of implementation of the adopted urban planning documentation; • Newly developed urban planning documentation poorly addresses WES sector; • Lack of natural resources management policy (minerals, forests, waters, agricultural land); • Inadequately and insufficiently equipped municipal service offices and especially the office of the Department in charge of the WES; • Poor technical equipment; • Lack of water and environmental sanitation database; • Lack of highly qualified staff specialized for planning processes; • Lack of independence in performance of staff working on coordination amongst the municipal services, public companies and institutions; • Unsatisfactory level of management over the staff, processes and investments; • Inadequately regulated mutual relationships and inadequate coordination amongst the municipal services, public companies and institutions; • Inefficient system of control and supervision over performance of public companies and institutions; • Insufficient use of services provided by NGOs; • Low information level of the administration and low education level of its staff to apply for projects with different international investment funds; • Lack of new regulations and update of the existing; • Lack of implementation of systematic solutions within the framework of legal and municipal regulations; • Inefficient performance of the communal inspection service and communal monitors i.e. low level of the implementation of relevant provisions; • Lacking communication of the governance with the citizens has resulted in lack of citizens' understanding of governance performance; • Lack of properly developed mechanisms for increasing the citizens' engagement in work of the governance; • Lack of defined system to form prices for communal services; • Prices of services do not cover expenses and collection rate is pretty low; • Water pollution fees are not collected well and even if collected are not spent accordingly; • Inadequate IT knowledge and use; • Frequently inactive approach towards potential investors.

O (OPPORTUNITIES)

- Functional division on principle of dividing regulatory, service and supervisory administrative organs;
- Internal reorganization of the municipal services and its partners' services with special accent on analytic-planning services and planning activities in all fields (separation of administrative activities from expert-analytical and operative-technical activities);
- Intra-service division (organization and physical) of planning services from administrative services that conduct administrative procedures upon client's claims;
- Improvement of book of rules on workplace organization and systematization (workplace description, job description) in the administration, public companies and public institutions;
- Introduction of new procedures for undertaking duties and services' performance programming;
- Increase of efficiency and effectiveness in administration performance;
- Increase of management capacities and skills of administration, public companies and public institutions staff;
- Human resource strengthening through education and specialization of highly-qualified staff and particularly for planning and managing activities (staff, processes, investments);
- Scholarships for deficient-profession students (public companies, public institutions);
- Upgrading computer equipment and skills of expert associates in relevant municipal departments – purchase of better equipment and tools (software) to set up the GIS and database in the field of waters and environmental sanitation including appropriate office accommodation of the department in charge of waters and environmental sanitation;
- Improvement of communication and coordination between the municipal services and public companies and institutions;
- Intensified interest of foreign investors to invest in infrastructure projects and large infrastructure investments in the region;
- Availability of various investment funds (domestic and foreign);
- Capacity of the municipal budget to finance capital projects;
- Establishment of proper assessment (calculations) of prices for the communal services and communal fees;
- Adoption of new regulations and update of the existing as well as their effective enforcement;
- Full implementation of the new Law on Principles of Local Self-governance;
- Improvement of communal inspection and communal monitors performance;
- Engagement of the citizens, and in particular educated young persons, in planning, consulting and decision-making processes and project implementation;
- Conduction of various campaigns with the citizens i.e. service users so as to improve their understanding of work of administration, public companies and public institutions as well as to understand needs of the citizens and private companies;
- Introduction of regular annual survey amongst the citizens on the subject of waters and environmental sanitation;
- Improvement of administration's work with local communities;
- Establishment of models for cooperation with neighboring municipalities;
- Improvement of mutual relationships and improvement of coordination of institutions in charge of waters and environmental sanitation (public companies, public institutions, Municipality, Canton, Entity, Water Agency);
- Introduction of procedures and mechanisms for better supervision and control over business-doing of public companies and public institutions;
- Improvement of relationships between the Public Utility "Vodovod" and Public Institution "Urban Planning Institute" with regard to handover of constructed water supply systems to the PU "Vodovod";
- Adoption of the new price policy aimed at making work of public companies sustainable;
- Putting records in order and increasing number of communal service users;
- Public companies strengthening to make them sustainable i.e. to have positive business performance;

T (THREATS)	<ul style="list-style-type: none"> • Lack of understanding of service users (citizens' habits); • Lack of roof urban planning and development documents at all authority levels (social-economical development strategy, urbanism plans); • Vast investments needed for service improvement; • Slow reform process in all segments of the society that do not produce adequate results; • Problems related to higher legislative level (state, federal, cantonal, municipal) including administrative and regulative barriers at all authority levels; • Inadequate participation of the Municipality in strategic development projects at the cantonal and federal levels; • Inappropriate, mainly negative approach, of the Canton towards the Municipality; • Lack of development funds at all authority levels; • Frequent civil disobedience generated by economic crisis, lack of understanding of service users (citizens' habits); • Inability of local governance to influence changes in exploitation of natural resources particularly forests and minerals; • Detrimental impact of forestry and minerals exploitation to environmental resources; • Undefined status of development-bearers in some segments of social life; • Giving preference to local and individual interests instead of to community's interests; • Adverse legal framework (lack of laws and lack of implementation); • Frequent changes particularly in the legislation field; • Outflow of highly-educated young people; • Low life standard of the citizens.
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5. STATEMENT OF THE VISION

Developed, modernized and quality-staffed town administration empowered to provide services to citizens in flexible, transparent and quality manner, and to ensure homogenised development and improvement of water and environmental sanitation sector in the territory of the Town of Bihac on the principles of partnership among public, private and non-governmental sector.

6. STRATEGIC DETERMINATIONS

Strategic and operative objectives of development in the water and environmental protection sector have been defined in view of all elements of the survey analysis and particularly considering weaknesses and opportunities cited down in the SWOT analysis as well as including the vision statement. Although some objectives may be characterised as sanitation objectives, they are oriented towards creating preconditions for sustainable development in the respective field. Programs and projects are proposed so as to foster implementation of strategic objectives and to enable sooner implementation of operative objectives. Justification, feasibility and sustainability of projects were taken into account.

Improvements planned in the water supply field (reduction of losses i.e. water unaccounted for through sanitation and reconstruction of existing water supply systems, improvement of relations with consumers, improvement of fee collection rate and in particular application of measures for long-term supply of quality water to all citizens in the municipality) are focused to increasing the general standard and community development. They are prerequisite for development and funding of the wastewater drainage and refinement system. Moreover, donor organisations and development banks look up to the same principles and pose the similar conditions.

The focus of the wastewater drainage and refinement field is to reduce pollution of the Una and Sana River and their side rivers with urban and industrial wastewaters and to establish supervision and control over wastewater outflow. In addition, increase in number of service users as well as collection rate is expected.

Development of the solid waste management system is focused on reduction of waste quantity at its originating location i.e. on introduction of the waste separation process for households and waste recycling. Introduction of this process will lead to considerable decrease of waste transport and disposal costs and will generate income from sale of separated secondary raw materials. Furthermore, it will have an effect on reduction of pollution, risk against human health and will facilitate upgrading of man's environment.

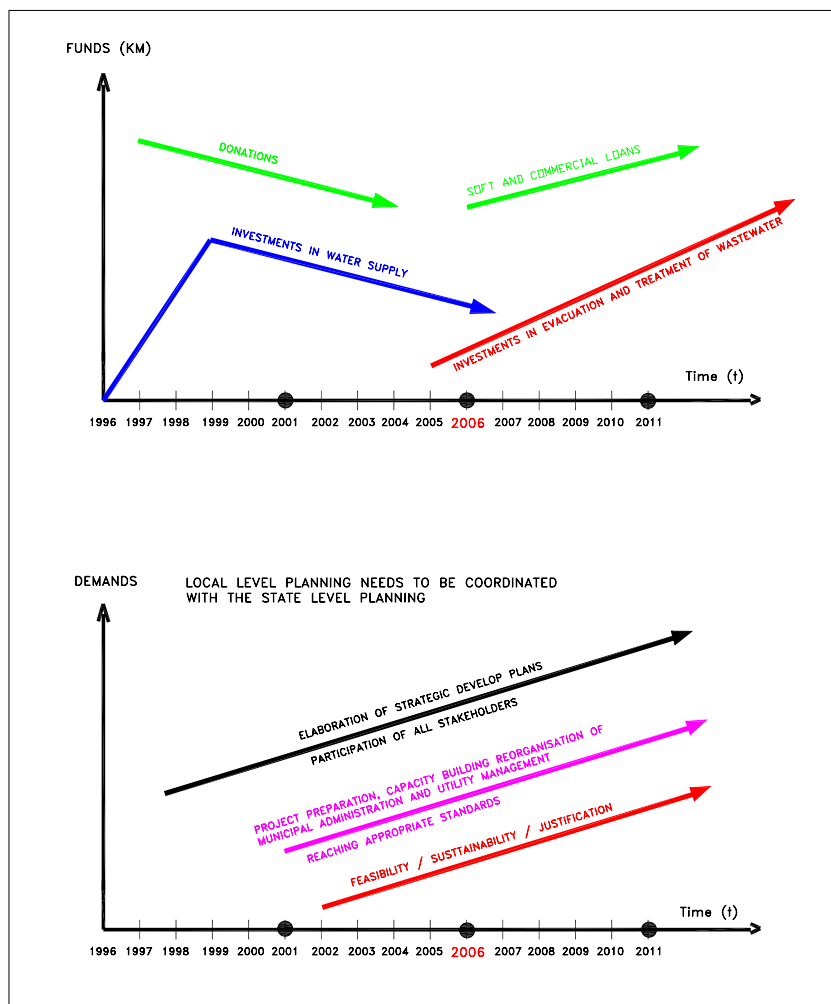
Introduction of the rainfall water drainage i.e. flood defence will ensure reduction of risk against population, housing and industrial facilities, agricultural lands; it will also create preconditions for using flooding and swamp land for other purposes i.e. for municipal development.

Preparation of the necessary study – project documentation is a strategic prerequisite for the development of all fields relating to waters and environmental sanitation. Also, introduction of gradual price adjustment to cover for service costs will ensure sustainable operation for public companies being a strategic task identified for the future mid-term period. In strategic terms, there are plans to improve public companies' orientation towards users (clients) i.e. citizens.

Creation of partnership amongst the public sector and civil society through educative activities and involvement of the public in the joint planning and decision-making process is one of strategic priorities in the WES SP.

In addition, creation of the regional intra-municipality co-operation model and co-operation of municipalities with higher authority levels is strategic determinations for good management over water resources and environmental protection.

Modernisation, re-organisation and staff qualifications upgrade of local administration in the field of waters and environmental sanitation including its public companies and public institutions has been embraced as one of the most important strategic determinations. Investments in the municipal administration are necessary given the scope of work and tasks as well as challenges in terms of waters and environmental sanitation that are awaiting the municipality in the forthcoming period so that it could enhance its service providing level to citizens and follow trends in terms of sustainable development.



7. DEVELOPMENT DIRECTIONS IN THE FIELD OF WATER AND ENVIRONMENTAL SANITATION

8. CRITERIA ADOPTED FOR PROGRAMS' EVALUATION

The Commission members have adopted the criteria for valuation of all programs. Subsequently, the Commission members have individually made ranking of each program which was then incorporated into the single ranking list.

8.1. CRITERIA ADOPTED FOR PROGRAMS' EVALUATION

	Criteria	Criteria scale	Valuation guidelines	Points (2x3)
0	1	2	3	4
1.	Impact of the program to improvement of administration performance	3	1 – minor 3 – middle 5 – major	
2.	Citizens' need for the program	4	1 – minor 3 – middle 5 – major	
3.	Percentage of the population to feel impact of the program	5	1 – minor 3 – middle 5 – major	
4.	Sustainability	4	1 – minor 3 – middle 5 – major	
5.	Long-term benefit for the community	5	1 – minor 3 – middle 5 – major	
6.	Impact to environment and citizens' health	5	1 – minor 3 – middle 5 – major	
7.	Interaction with other programs	4	1 – minor 3 – middle 5 – major	
8.	Feasibility	4	1 – minor 3 – middle 5 – major	
9.	Local self-governance competence	4	1 – minor 3 – middle 5 – major	
UKUPNO BODOVA:				

Remark: Maximal number of the points is 190.

Member of the Commission:

Submitted on:

8.1. overview and ranking of all programs**8.1.1. water supply**

No.	Ranking	Code	Description of the Program	Number of points
1.	3	1.1.	Producing a study-project documentation	149
2.	7	1.2.	Removal of water supply system breakdowns (Izacic, Gata-Krnja-Bugar, Turija-Vrsta, Založje-Cekrlje-Vinca, Sokolac-Golubic-Ripac, Orašac)	117
3.	6	1.3.	Completion and handover of uncompleted water supply systems and their parts (Donji Sribljani, Ružica-Vinca, Ripac-Pritoka-Lohovo-Dobrenica, Orašac phase three)	121
4.	9	1.4.	Planning, project-making and construction of new water supply systems (Kulen Vakuf-Martin Brod, Skocaj-Međudražje-Zavalje-Vucjak, Gorjevac-Lipa) including handover to the PU "Vodovod" Bihac	109
5.	5	2.1.	Sanitation and reconstruction of the existing water supply network and facilities	141
6.	8	2.2.	Sanitation and reconstruction of the existing water supply network construction facilities and collective residence facilities	110
7.	10	2.3.	Sanitation and reconstruction of the existing water supply network construction facilities and collective residence facilities	100
8.	11	2.4.	Sanitation of water supply network installations in collective residence	98
9.	2	3.1.	Establishment of sanitary protection zones for drinking water sources	152
10.	4	3.2.	Introduction of adequate drinking water treatments i.e. construction of a system for drinking water refinement	146
11.	1	3.3.	Introduction of permanent control of drinking water quality	155

8.1.2. WASTE WATER DRAINAGE AND REFINEMENT

No.	Ranking	Code	Description of the Program	Number of points
1.	1	1.1.	Preparation activities for construction of the waste water drainage and refinement system in the Town of Bihac	151
2.	6	1.2.	Completion of all waste water drainage and refinement systems and their handover to the Public Utility "Vodovod"	123
3.	2	1.3.	Construction of the waste water drainage and refinement system of Bihac agglomeration	145
4.	7	1.4.	Construction of local waste water drainage and refinement systems (Martin Brod, Kulen Vakuf, Orašac-Cukovi, Gata, Jezero, Spahici-Sribljani)	120
5.	8	2.1.	Maintenance of the existing waste water drainage system	118
6.	4	2.2.	Establishment of supervision and control in areas without public waste water drainage system (septic tanks)	128
7.	3	2.3.	Establishment of supervision and control over outflow of waste water by industrial polluters, craftsmen and public institutions	131
8	5	2.4.	Introduction of control over waste water quality poured in open watercourses	127

8.1.3. SOLID WASTE MANAGEMENT

No.	Ranking	Code	Description of the Program	Number of points
1.	2	1.1.	Introduction of the sustainable solid waste management system	162
2.	5	1.2.	Sanitation of the existing solid waste depot "Kruškovac" Gorjevac	152
3.	7	1.3.	Wild depot sanitation program	142
4.	3	1.4.	Improvement of waste collection and disposal systems	159
5.	4	2.1.	Provision of necessary urban-technical capacities for waste selection and recycling	157
6.	1	2.2.	Introduction of sustainable system for solid waste selection and recycling in the entire territory of the town	164
7.	6	2.3.	Program of measures for reducing waste quantity	142

8.1.4. PROTECTION FROM WATERS AND RAINFALL DRAINAGE

No.	Ranking	Code	Description of the Program	Number of points
1.	2	1.1.	Maintenance of constructed drainage watercourses and other rainfall protection facilities	150
2.	3	1.1.	Construction of new rainfall protection facilities	138
3.	1	2.1.	Sanitation of the rainfall and surface water acceptance and drainage system in the town and suburbs	155
4.	4	2.2.	Construction of new parts of rainfall and surface water drainage systems in parts of the town and suburbs where not constructed	125

8.1.5. LOCAL GOVERNANCE AND ITS PARTNERS

No.	Ranking	Code	Description of the Program	Number of points
1.	1	A.1.1	Producing a development-study documentation	164
2.	2	A.1.2	Definition of natural resources management policy	162
3.	4	A.1.3	Definition of a model for undertaking activities that are of common public interest in the water and environmental sanitation field	154
4.	3	B.1.1	Optimal organization and systematization of duties in the field of waters and environmental sanitation	156
5.	5	B.1.2	Ensuring office and technical capacities for undertaking activities in the field of waters and environmental sanitation	152
6.	10	B.1.3	Human resource capacity building with reference to competencies and duties of local governance in the field of waters and environmental sanitation	144
7.	9	B.1.4	Creating the legal and financial framework for optimal functioning of activities in the field of waters and environmental sanitation (water supply, waste water drainage, solid waste management, rainfall drainage)	145
8.	13	B.1.5	Enhancement of cooperation with cantonal/regional, entity and state institutions competent for the field of waters and environmental sanitation including improvement of coordination and communication within municipal administration	130
9.	7	B.1.6	Establishment of permanent cooperation (model of cooperation) of municipal administration with civil society representatives, NGOs and private sector	148
10.	8	C.1.1	Introduction of optimal organization and systematization of activities from the competence of public companies and public institutions	146
11.	11	C.1.2	Ensuring office and technical capacities for undertaking activities in the field of waters and environmental sanitation	142
12.	15	C.1.3	Human resource capacity building in relation to competencies and duties of public companies and public institutions in the field of waters and environmental sanitation	126

13.	12	C.1.4	Enhancement of cooperation with cantonal/regional, entity and state institutions competent for the field of waters and environmental sanitation including improvement of coordination and communication with municipal administration and its services	134
14.	6	C.1.5	Establishment of permanent cooperation (model) of public companies and public institutions with service users	149
15.	14	C.1.6	Sustainable business-doing of public companies and public institutions	129

9. OVERVIEW OF PROJECTS

9.1. WATER SUPPLY

No.	Ranking	Code	Description of the Project	Number of points
1.		A.1.1.1.	Analysis of the present water supply situation in the area of the Municipality of Bihać and development of terms of reference.	
2.		A.1.1.2.	Master water supply plan.	
3.		A.1.1.3.	Feasibility study for water supply system sanitation and improvement.	
4.		A.1.1.4.	Water supply design.	
5.		A.1.2.1.	Producing a study on present water supply system breakdowns in comparison with the designed state including proposals of measures aimed at achieving the technical acceptance level.	
6.		A.1.2.2.	Removal of identified breakdowns and handover of completed water supply systems to be managed by the PU "Vodovod".	
7.		A.1.3.1.	Producing a study on the present state of incompleteness of water supply systems i.e. completed phases.	
8.		A.1.3.2.	Continuation of water supply system construction until fully completed and operational.	
9.		A.1.3.3.	Conducting the technical acceptance and handover of completed water supply systems to the PU "Vodovod"	
10.		A.1.4.1.	Producing a study on forms and conditions for handover of local water supply systems to the PU "Vodovod".	
11.		A.1.4.2.	Developing a project documentation for reconstruction and construction of water supply systems (Kulen Vakuf-Martin Brod, Skočaj-Međudražje- Zavalje-Vučjak, Gorjevac-Lipa).	
12.		A.1.4.3.	Construction of water supply systems (Kulen Vakuf-Martin Brod, Skočaj-Međudražje- Zavalje-Vučjak, Gorjevac-Lipa) and making them operational.	
13.		A.1.4.4.	Conducting the technical acceptance and handover of completed water supply systems to the PU "Vodovod".	
14.		B.2.1.1.	Water supply network mapping.	
15.		B.2.1.2.	Water supply network analysis and zoning (sub-system establishment).	
16.		B.2.1.3.	Development of a leak detection and repair plan.	
17.		B.2.1.4.	Urgent repair works.	
18.		B.2.1.5.	Identification of regions (zones) where water pressure does not meet standards.	
19.		B.2.1.6.	Identification of water supply network bottlenecks.	
20.		B.2.1.7.	Producing a necessary project documentation in order to remove shortcomings causing decrease of water supply network pressure or water supply reduction (water supply network reconstruction).	
21.		B.2.2.1.	Development of a study on the present state of water supply systems facilities managed by the Public Utility "Vodovod" (water tanks, pump stations, booster pump stations, etc.).	
22.		B.2.2.2.	Producing a necessary project documentation for rehabilitation and reconstruction of construction facilities.	
23.		B.2.2.3.	Rehabilitation of water supply system construction facilities including machinery and electricity.	
24.		B.2.2.4.	Producing necessary project documentation for construction of water supply system facilities.	
25.		B.2.2.5.	Construction of additional water storage.	
26.		B.2.3.1.	Producing a project documentation for construction of a remote control system.	
27.		B.2.3.2.	Construction of the remote control system, replacement and installation of water meters.	
28.		B.2.4.1.	Development of a study on the present state of water supply network installations in collective residence and producing necessary project documentation for their rehabilitation.	

29.		B.2.4.2.	Rehabilitation of water supply network installations in collective residence.	
30.		C.3.1.1.	Endorsement of decisions on protection of drinking water sources.	
31.		C.3.1.2.	Enforcement of protection measures for drinking water sources that have protection programs developed.	
32.		C.3.1.3.	Establishment of monitoring of protection of drinking water .	
33.		C.3.2.1.	Development of a study on occasional pollution impact to quality of drinking water sources.	
34.		C.3.2.2.	Development of feasibility study for a water treatment plant at the "Klokot" water source.	
35.		C.3.2.3.	Producing a project documentation for construction of water treatment plant at the "Klokot" water source (phase construction).	
36.		C.3.2.4.	Phase One of the water treatment plant construction.	
37.		C.3.3.1.	Development of a study on drinking water quality permanent control in line with applicable regulations.	
38.		C.3.3.2.	Construction of appropriate laboratory within the Public Utility "Vodovod".	
39.		C.3.3.3.	Setting up database on drinking water quality and change monitoring.	

9.2. EVACUATION AND TREATMENT OF WASTE WATER

No.	Ranking	Code	Description of the Project	Number of points
1.		D.1.1.1.	Development of a master plan.	
2.		D.1.1.2.	Development of feasibility study for rehabilitation and improvement of the wastewater drainage and treatment system.	
3		D.1.1.3.	Producing a preliminary design for the wastewater drainage and treatment system including identification of location for the treatment plant.	
4.		D.1.2.1.	Development of a study on the present condition of uncompleted wastewater drainage and treatment systems.	
5.		D.1.2.2.	Conduction of technical acceptance and handover procedures for completed waste water drainage and treatment systems to the PU "Vodovod".	
7.		D.1.3.1.	Completion of the existing waste water drainage and treatment system of Bihać agglomeration.	
8.		D.1.3.2.	Extension of existing system of wastewater evacuation of Bihać agglomeration.	
9.		D.1.3.3.	Phasal construction of wastewater treatment plant of Bihać agglomeration.	
10.		D.1.4.1.	Development of project documentation.	
11.		D.1.4.2.	Construction of local wastewater drainage systems.	
12.		E.2.1.1.	Development of a project on rehabilitation and reconstruction of existing parts of wastewater drainage systems.	
13.		E.2.1.2.	Implementation of urgent measures (Čavkići, Mujadžići, Hatinac, Vinica) and repair of "bottlenecks" and leaks at the existing wastewater drainage system.	
14.		E.2.1.3.	Cleaning of shabby parts of the waste water drainage system.	
15.		E.2.1.4.	Rehabilitation of manhole covers of the existing waste water drainage system (sewage network).	
16.		E.2.2.1.	Establishment of detailed records on owners (users) of septic tanks and conditions of septic tank facilities.	
17.		E.2.2.2.	Control of water-tightness of septic tank facilities.	
18.		E.2.2.3.	Development of a septic tank rehabilitation program.	
19.		E.2.2.4.	Implementation of the septic tank rehabilitation program.	
20.		E.2.3.1.	Introduction of database on all polluters in the Municipality of Bihać.	
21.		E.2.3.2.	Producing a cadastre record on polluters in the Municipality of Bihać.	
22.		E.2.3.3.	Undertaking activities to gradually introduce waste water treatment by industrial polluters.	
23.		E.2.4.1.	Development of a plan to control quality of water in watercourses.	
24.		E.2.4.2.	Development of a study (elaborate) on impact of waste water pollution at condition of watercourses in the Municipality of Bihać and in particular at locations utilized for swimming and recreation.	

9.3. SOLID WASTE MANAGEMENT

No.	Ranking	Code	Description of the Project	Number of points
1.		F.1.1.1.	Development of a study-project documentation on types, quantity and place of origin of solid waste in the Municipality of Bihac.	
2.		F.1.1.2.	Development of a plan of solid waste management in the Municipality of Bihac.	
3.		F.1.1.3.	Implementation of the solid waste management plan.	
4.		F.1.2.1.	Development of necessary project documentation for sanitation of the existing landfill..	
5.		F.1.2.2.	Sanitation of the existing landfill depot for its utilization as the sanitary landfill until establishment of the regional landfill.	
6.		F.1.2.3.	Development of a strategy for closure of the existing landfill.	
7.		F.1.3.1.	Analysis of the state of illegal disposal sites	
8.		F.1.3.2.	Development of necessary study-project documentation for sanitation of illegal disposal sites and removal of solid waste from all river-beds.	
9.		F.1.3.3.	Sanitation of illegal disposal sites	
10.		F.1.3.4.	Removal of solid waste from the Una river-bed.	
11.		F.1.3.5.	Removal of solid waste from tributaries, channels and streams.	
12.		F.1.4.1.	Establishing bulky waste removal program.	
13.		F.1.4.2.	Analysis of the existing relations between the public utility and consumers.	
14.		F.1.4.3.	Ensuring coverage of all inhabitants with the service.	
15.		F.1.4.4.	Increasing frequency of solid waste collection and transportation.	
16.		F.1.4.5.	Increasing the number of containers for waste discarding and collecting.	
17.		F.1.4.6.	Ensuring more fee collection options	
18.		G.2.1.1.	Development of study-project documentation for pilot project on selective waste collection.	
19.		G.2.1.2.	Providing urban-technical capacities for selective waste collection.	
20.		G.2.1.3.	Development of study-project documentation for the recycling yard.	
21.		G.2.1.4.	Purchase of special vehicles for transport of selected waste..	
22.		G.2.1.5.	Analysis of waste trends at pilot locations, assessment of quantity and type of waste and assessment of waste not belonging to the pilot system.	
23.		G.2.1.6.	Development of a study on waste disposal models with economic indicators.	
24.		G.2.2.1.	Development of a book of rules for treatment of packaging, construction, electrical and electronic, bulky, car and other specific types of waste.	
25.		G.2.2.2.	Development of study-project documentation for waste separation project in the entire territory of the Municipality of Bihac.	
26.		G.2.2.3.	Providing urban technical capacities for selective waste collection for the entire Municipality of Bihac.	
27.		G.2.2.4.	Development and introduction of the waste disposal payment system calculated on the basis of waste quantity.	
28.		G.2.2.5.	Development of the modern information system to ensure reliable and timely information needed for regular reporting on the situation in the field of waste with developed and harmonized indicators at the state level so as to enable monitoring of the situation in this field.	
29.		G.2.3.1.	Education of the population, professionals and administrative bodies to address the waste management issue.	

30.		G.2.3.2.	Development of a project and implementation of the practice of cleaner production, avoiding and reduction of waste production and emissions in industry and service industry.	
31.		G.2.3.3.	Application of special protection measures in protected regions and karst.	
32.		G.2.3.4.	Acceptance and implementation of the Directive on Integrated Pollution Prevention and Control (IPPC).	

9.4. PROTECTION FROM WATER AND EVACUATION OF RAINFALL

No.	Ranking	Code	Description of the Project	Number of points
1.		H.1.1.1.	Survey of the present situation of water resources, existing facilities, their analysis and development of in-depth database.	
2.		H.1.1.2.	Deevelopment of a plan of rehabilitation and reconstruction of existing evacuation channels and other water protection facilities.	
3.		H.1.1.3.	Rehabilitation and reconstruction of existing evacuation channels and other water protection facilities.	
4.		H.1.1.4.	Rehabilitation and removal of facilities illegally built on flood protection facilities and natural watercourses.	
5.		H.1.2.1.	Development of a study on impact of the water-gate to be put up by the "Slapovi na Uni" at the formation of flooding area in Velhovsko polje and Ljuljevite bare.	
6.		H.1.2.2.	Development of new project documentation for construction of new flood control facilities.	
7.		H.1.2.3.	Construction of new flood control facilities.	
8.		H.1.2.4.	Development of a project design for irrigation of Velhovsko polje and Ljuljevite bare.	
9.		I.2.1.1.	Survey of the present situation of collection channels, gullies and side ditches for rainfall and surface waters in the town and suburbs and development of in-depth database.u i prigradskim naseljima i izrada detaljne baze podataka.	
10.		I.2.1.2.	Cleaning and repair of the existing channel and gully network for rainfall and surface waters in the town and suburbs.	
11.		I.2.1.3.	Improvement of collection and evacuation channels, sedimentation pools belonging to the rainfall and surface water sewerage network.	
12.		I.2.2.1.	Development of a study-project documentation for construction of rainfall and surface water sewerage network.	
13.		I.2.2.2.	Construction of a new network of evacuation pipelines and gullies in parts of the town and suburbs where not constructed.	

9.5. LOCAL ADMINISTRATION AND ITS PARTNERS

No.	Ranking	Code	Description of the Project	Number of points
1.		J.1.1.1.	Strategy of the social-economic development of the Municipality of Bihac.	
2.		J.1.1.2.	Strategy of management, utilization, protection and regulation of land in the Municipality of Bihac.	
3.		J.1.1.3.	Physical plan of the Municipality of Bihac (revision and novelties).	
4.		J.1.1.4.	Urban development plan of the Municipality of Bihac (review and update).	
5.		J.1.2.1.	Producing documents (strategies, plans, programs) for natural resource management (forests, waters, agricultural land, minerals) in the Municipality of Bihac.	
6.		J.1.2.2.	Development of a study on identifying protected forests, forest land and facilities in the Municipality of Bihac. <i>ma, šumskih zemljišta i objekata na području općine Bihać.</i>	
7.		J.1.2.3.	Enforcement of special measures for managing forests in protected zones and watercourse banks.	
8.		J.1.2.4.	Rehabilitation of existing erosion areas including implementation of preventive measures.	
9.		J.1.3.1.	Producing a strategic document (plan) for privatization of public companies.	
10.		K.1.1.1.	Analysis of the present municipal service organization and systematization in the aspect related to water and environmental sanitation.	
11.		K.1.1.2.	Changing and upgrading the present municipal service organization and systematization so as to achieve optimal conditions for effective and efficient undertaking of activities in the field of water and environmental sanitation.	
12.		K.1.1.3.	Setting up a new municipal service organization and systematization in the aspect related to water and environmental sanitation.	
13.		K.1.2.1.	Ensuring and equipping appropriate office for undertaking activities related to water and environmental sanitation.	
14.		K.1.2.2.	Establishing the GIS and database in the field of water and environmental sanitation (resources, facilities, devices and consumers).	
15.		K.1.2.3.	Purchase of proper equipment and vehicles for staff working in the field of water and environmental sanitation (office equipment, furniture, computers, software, digital camera, vehicles, etc.).	
16.		K.1.3.1.	Continuous conduction of thematic training for staff working in the field of water and environmental sanitation (resources, systems, etc.).	
17.		K.1.3.2.	Training on improvement of management skills for staff working in the field of water and environmental sanitation.	
18..		K.1.3.3.	Training on preparation and management of investments (projects).	
19.		K.1.4.1.	Changing and amending currently applicable regulations in the field of water and environmental sanitation.	
20.		K.1.4.2.	Endorsement of new regulation in the field of water and environmental sanitation.	
21.		K.1.4.3.	Improvement in enforcement of regulations in the field of water and environmental sanitation i.e. modernization and enhancement of communal inspection and communal monitors performance (purchase of equipment and vehicles).	
22.		K.1.4.4.	Definition of tariffs for services in the field of water and environmental sanitation.	
23.		K.1.4.5.	Definition of price of communal fees and taxes in the field of water and environmental sanitation. <i>i okolišne sanitacije.</i>	

24.		K.1.5.1.	Definition and application of corporate identity of municipal administration, public companies and public institutions founded by the Municipality of Bihać.	
25.		K.1.5.2.	Establishment of appropriate model of cooperation (procedures, mechanisms, responsible persons) with cantonal/regional, entity and state institutions competent for the field of waters and environmental sanitation.	
26.		K.1.5.3.	Establishment of appropriate model of cooperation of the Water and Environmental Sanitation Department with other municipal administration departments (civil protection, inspectorate, development, local communities and the Public Institution "Stanouprava").	
27.		K.1.5.4.	Proactive participation in the process of establishing the regional sanitary landfill.	
28.		K.1.6.1.	Uvođenje stalnog upoznavanja (informisanja) javnosti sa aktivnostima i projektima uprave i kvalitetu provedenih usluga (kvalitet vode za piće).	
29.		K.1.6.2.	Conduction of periodic awareness raising campaigns and education activities in the field of water and environmental sanitation.	
30.		K.1.6.3.	Preparation and conduction of surveys in the field of water and environmental sanitation.	
31.		K.1.6.4.	Implementation of projects in the field of water and environmental sanitation in cooperation with NGOs including definition of cooperation models.	
32.		K.1.6.5.	Establishment of a cooperation model between the Department of Physical Planning and Communal Affairs with representatives of local communities and NGOs.	
33.		L.1.1.1.	Analysis of the existing organization and systematization of public companies and public institutions.	
34.		L.1.1.2.	Changing and upgrading the present organization and systematization so as to achieve optimal conditions for effective and efficient undertaking of activities from the competence of public companies and public institutions.	
35.		L.1.1.3.	Establishment of a new organization and systematization of public companies and public institutions.	
36.		L.1.2.1.	Ensuring and equipping appropriate office for undertaking activities from the competence of public companies and public institutions.	
37.		L.1.2.2.	Establishing the GIS and database in the field of the competence of public companies and public institutions (resources, facilities, devices and consumers).	
38.		L.1.2.3.	Purchase of proper equipment and vehicles for staff working in public companies and public institutions (office equipment, furniture, computers, software, digital camera, vehicles, etc.).	
39.		L.1.3.1.	Continuous conduction of thematic training in the field of water and environmental sanitation (resources, systems, etc.).	
40.		L.1.3.2.	Training on improvement of management skills.	
41.		L.1.3.3.	Providing scholarships for staff working in the field of water and environmental sanitation.	
42.		L.1.4.1.	Definition of corporate identity of public companies.	
43.		L.1.4.2.	Establishment of appropriate model of cooperation (procedures, mechanisms, responsible persons) with cantonal/regional, entity and state institutions in charge of water and environmental sanitation.	
44.		L.1.4.3.	Establishment of appropriate model of cooperation of public companies and public institutions with municipal administration services and Public Institution "Stanouprava".	
45.		L.1.4.4.	Establishment of model of cooperation with local communities.	
46.		L.1.5.1.	Putting records of service users and in particular those living in collective residence in order.	

47.		L.1.5.2.	Introduction of permanent information-sharing with the public about activities and projects undertaken by public companies and public institutions and quality of provided services (quality of drinking water).	
48.		L.1.5.3.	Conduction of periodic awareness raising campaigns and education about activities undertaken by public companies and public institutions.	
49.		L.1.6.1.	Increase of the collection rate particularly in collective residence facilities.	
50.		L.1.6.2.	Analysis of costs and income and establishment of assessment of prices for services.	
51.		L.1.6.3.	Reduction of liabilities and claims.	
52.		L.1.6.4.	Reduction of percentage of unaccounted for water.	
53.		L.1.6.5.	Putting records of assets of public companies and public institutions in order.	
54.		L.1.6.6.	Establishment of mechanisms and procedures for better supervision over performance of public companies and public institutions by municipal administration.	

10. IMPLEMENTATION, MONITORING AND EVALUATION OF THE WATER AND ENVIRONMENTAL SANITATION STRATEGIC PLAN

10.1 INTRODUCTION

The Strategic Plan implementation shall be conducted on the basis of the annual Implementation Operational Plan that will include: planned activities and projects to be realised, bearers of activity and project realisation, assessment of funds needed for project realisation and completion deadlines. Proposals of projects that are planned through the annual Operational Plan shall be feasible, rational, cost-effective and sustainable, shall support realisation of interests of most stakeholders and support local community determinations and commitments in the field of waters and environmental sanitation that are identified in the Strategic Plan.

10.2 OPERATIONAL PLANS

Annual Operational Plans shall be prepared by the Urban Planning and Communal Affairs Service in co-operation with the Waters and Environmental Sanitation Strategic Plan Committee and submitted to the Mayor by the end of September for the next year. The Mayor shall define a proposal of the Operational Plan and forward it to be adopted by the Municipal Council. Annual Operational Plan adopted by the Bihać Municipal Council shall be a basis for programming and producing action plans for the municipal services, public companies and public institutions founded by the Municipality of Bihać.

10.3 MONITORING

The Urban Planning and Communal Affairs Service shall monitor implementation of the Operational Plan, collect data, information and reports on its implementation, analyse its implementation and propose to the Mayor measures for its implementation.

The Urban Planning and Communal Affairs Service shall quarterly provide the Waters and Environmental Sanitation Strategic Plan Committee with reports and analyses on the level of Operational Plan implementation. The Waters and Environmental Sanitation Strategic Plan Committee shall quarterly review implementation of the Waters and Environmental Sanitation Strategic Plan on the basis of submitted information, reports and analyses and shall assess the level of the Strategic and Operational Plan implementation.

10.4 EVALUATION

On the basis of conducted analyses, the Waters and Environmental Sanitation Strategic Plan Committee shall produce a report on the level of the Strategic and Operational Plan implementation and submit it to the Mayor and Municipal Council prior to the adoption of the annual Operational Plan.

10.5 WES SP CHANGES AND AMENDMENTS

Should the Waters and Environmental Sanitation Strategic Plan Committee assess on the basis of conducted analyses that the Waters and Environmental Sanitation Strategic Plan shall be changed and amended, proposals for these modifications and supporting explanation shall be submitted to the Municipal Council and Mayor for their consideration and adoption.

10.6 INSTEAD OF CONCLUSION

Strategic planning, as a continuing process, is not meant to accomplish ambitious goals aimed at resolving all problems on the area of the municipality; instead, it is the first step in re-directing the municipality from the sanitation to the development period with particular accent on capacity building of local stakeholders to independently take over, conduct and improve the process.