

# Environmental Problems In The Development Of The Master Plan Of Settlements (In The Case Of The City Of Pop, Namangan Region Of The Republic Of Uzbekistan)

**Kholboev Zokirjon Khodievich**

Senior Teacher

Namangan Engineering - Construction Institute

Uzbekistan, Namangan

[zxx7712407@gmail.com](mailto:zxx7712407@gmail.com)

**Annotation:** In this article, in the process of environmental assessment of urban development solutions adopted in the development of the master plan of the city of Pop, the identification of existing environmental problems in the town, the assessment of the adequacy and effectiveness of the proposed solutions and proposals to gradually achieve a favorable ecological situation in the project, and the state of the environment in the case of the implementation of the master plan prediction works are analyzed.

**Key words:** ecological problem, ecological situation, environmental components, water protection, waste water problems, natural conditions.

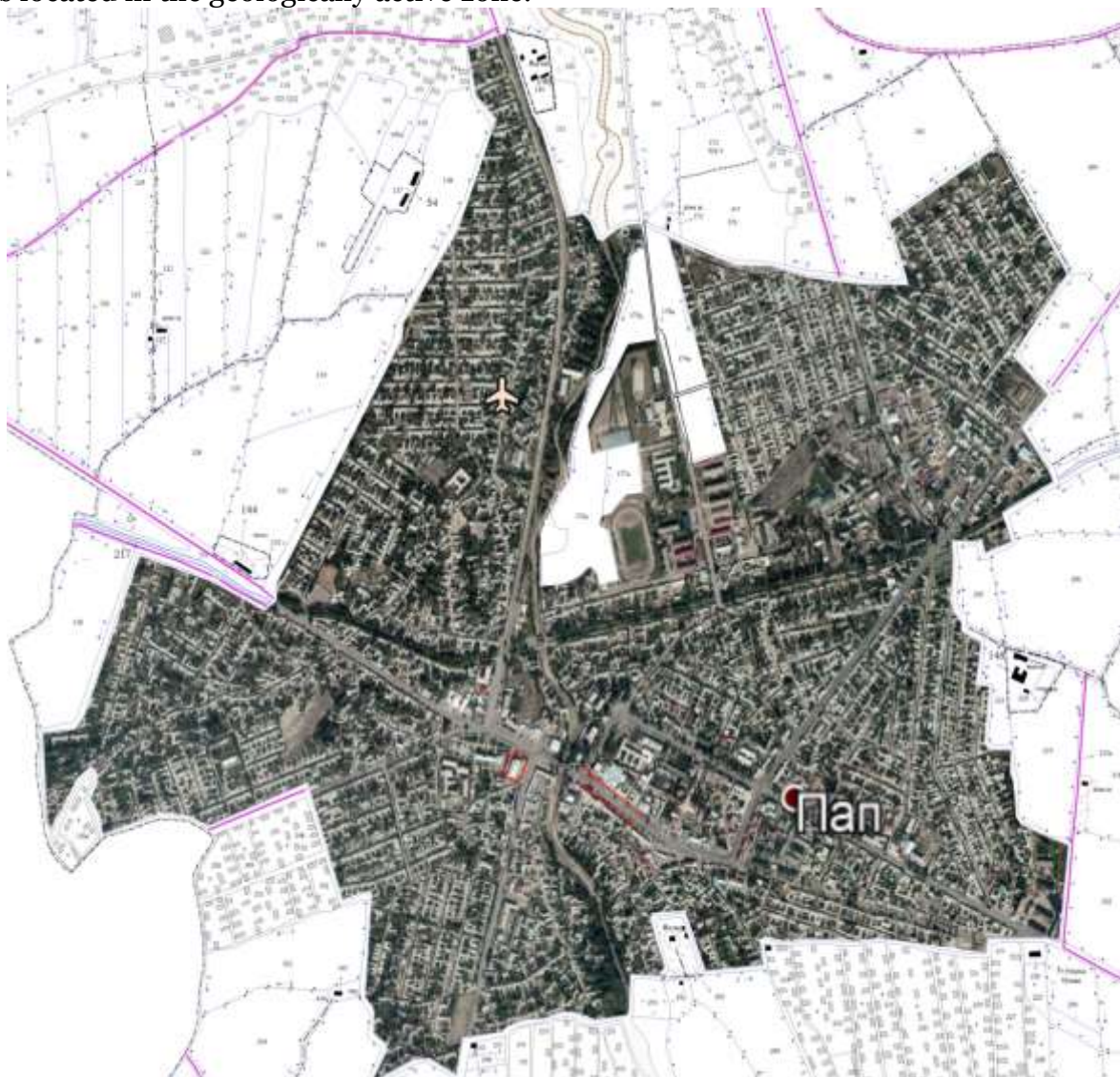
**Introduction:** The preliminary ecological analysis of the implementation of the architectural planning and engineering solutions adopted in the project of the master plan of the district centers, towns and settlements requires to be carried out within the framework of "Environmental impact assessment" carried out based on the requirements of the Regulation on the State Environmental Expertise of the Republic of Uzbekistan. In the environmental assessment of the solutions adopted in the master plan, the identification of existing environmental problems in the area, the assessment of the adequacy and effectiveness of the proposed solutions and proposals in order to gradually achieve a favorable ecological situation in the project, and the prediction of the state of the environment in the case of the implementation of the master plan are carried out. In this work, an environmental assessment of the solutions adopted in the master plan of Pop town, located in the center of Pop district of Namangan region, was carried out.

**Statement of the problem:** In order to determine the existing environmental problems in the city of Pop, a complex research was conducted on the factors affecting the natural environment, engineering networks, transport system, emissions from anthropogenic sources that affect all components of the environment, effluents and production, consumer waste.

The master plan of the town's development has determined the amount of the town's territory expansion based on the estimated population of the area. At the same time, taking into account that the principles of the placement of construction objects have changed in the master plan of the town, it is necessary to reshape the transport

network, to improve the ecological situation in the area through the reconstruction of irrigation and collector and drainage systems, and to improve the service of engineering facilities to the population.

**Background:** Pop District was founded on June 10, 1931. Pop district of Namangan region is located in the northern part of Fergana valley, in the north-western part of Namangan region, on the southern slope of Kurama mountain ranges and Sirdarya oasis, the area is 2910 square meters. km. The length of the border is 333.6 km. from north to south, it occupies the latitudes from the Chotkal and Kurama mountain ranges to the central Fergana plains, borders Jalalabad region of the Kyrgyz Republic from the north, Chust and Mingbulok districts from the east, Buvida and Dangara of the Fergana region, Asht district of the Republic of Tajikistan from the west, Ohangaron and Bostonliq districts of the Tashkent region. The territory of the district is located in the geologically active zone.



**Figure 1. Schematic map of the location of Pop city**

The population is mainly engaged in agriculture and animal husbandry, processing of agricultural raw materials, repair of agricultural machinery, production of raw materials, finished products, other goods and food products.

According to the direction of activity, existing enterprises belong to category 3 and 4 in terms of the risk of environmental impact. Administrative and economic organizations in the territory of the town are intended to provide services not only for the town, but also for the Pop district. The town is provided with 100% electricity supply, cellular communication network, and wastewater disposal networks are not fully developed.

The city of Pop, the center of the district, has a compact-planned structure, and its development is the national and local highways that directly cross the town.

Highways are of great importance in the development of the town of Pop, increasing their capacity to ensure traffic safety and reducing the amount of emissions from vehicles through the development of the adjacent street network.

Irregular location of individual dump sites, shortness of internal neighborhood roads, non-compliance with a certain order in the zonal-planning structure of the area led to inefficient use of land in the area.

The irrigation-drainage system in the internal roads of the neighborhood is not very developed, the sewage network is connected only to the social sector objects, and the main reason for the problems in the soil condition and underground groundwater. Due to the insufficient irrigation system, it shows that certain areas are not developed according to the plan. At the same time, the streets in the town, sports facilities and recreation facilities, green areas in the town are insufficient.

Optimizing transport, household and residential zones and improving the transport system within the new boundaries of the town are planned.

The project of the master plan envisages beautification of the area, expansion of green areas, engineering and utility development through the reconstruction of the irrigation-drainage system, improvement of the drinking water supply system and wastewater systems. The future master plan of the town envisages the sources of providing the population with basic and reserve drinking water.

In the course of the impact assessment of the planned project solutions, the scale, intensity and level of changes in the existing natural environment in the existing area and newly added areas were determined. In this, the main attention was paid to the effective use of the land areas added to the territory of the town, the condition of ground and underground groundwater during the reconstruction of the collector-drainage systems, the changes in the atmospheric air in the residential areas located near the production enterprises and near the highways.

The nature-planning structure of the town was analyzed for ecological assessment. In this, indicators such as the type of land use and priority sources affecting environmental elements were taken into account.

The main industrial enterprises are located in the industrial zone of Khalqabad settlement, which is located to the east of the city, and the majority of the population works in these industrial enterprises.

A number of food industries, construction materials production enterprises and motor transport enterprises are located in the settlement zone.

The center of the district has a compact planning structure in relation to the location of highways, and is located at the intersection of a number of highways of national and local importance, which intersect with the Northern Fergana Canal and the Olmossoy valley flowing through the city.

The national highway 4R112 (Shabboda street) connects the city with the regional center, it is located in the north-eastern direction and goes through the city

(along Istiqlal street) to the southwest. In the geometric plan of the city, the city center is formed along this direction and between Oybek and Dostlik streets.

Olmossoy and the Northern Fergana canal flow through the city in the meridional direction from the southeast to the north. Coastal protection zones are not provided around the existing highway of ShFK, individual residential buildings along Olmossoy in the central part of the city are located too close to the stream bed.

An urban-type settlement does not have the clear boundaries of the seliteb and industrial zone that are characteristic of many small towns. Facilities such as industrial production facilities and communal facilities are located in areas adjacent to residential areas.

A number of cemeteries are located in the areas within the neighborhood, surrounded by individual houses.

In SanQM No. 350-17 "Atmospheric air protection in populated areas in the Republic of Uzbekistan", the requirement that the sanitary protection zone of cemeteries with an area of up to 10 hectares should be 100 m and the sanitary protection zone of cemeteries with an area of up to 2 hectares should be 50 m has not been fulfilled in many places.

During the implementation of the master plan, the land area for the new cemetery will be allocated, its sanitary protection zone will be provided, and the old ones will be closed in stages.

Among the environmental problems caused by the location of the town of Pop, the following can be noted:

- the permeability of existing highways does not meet current requirements;
- non-implementation of the residential zone plan;
- lack of a blue lane on the roadsides, residential houses located close to the roadsides;
- that the capacity of highways does not meet the requirements of current development, the intensity of vehicles on them is high;
- The city of Pop is not fully covered by the sewage network;
- Coastal protection zones of Olmossoy and North Fergana canals are not fully provided.

One of the main shortcomings in the effective use of the Seliteb zone is the insufficient number of green areas, parks and recreation parks, sports facilities and recreational facilities in relation to the population.

The issues of planned collection and disposal of daily household waste within the neighborhood have not been sufficiently resolved within the massif of the individual population. There are collection points in multi-storey buildings, enterprises and institutions.

Sanitary cleaning is a complex sanitary-hygienic process related to cleaning of all types of waste, their collection, temporary storage, neutralization and disposal. This process is considered a systematic mechanism that covers all areas of the city, regardless of the type of ownership, and ShNK 2.07.01-03 i UzR SanPiN No. 0297-11. is developed and operates in accordance with the requirements.

Sanitation of the town is carried out as follows:

- removal of solid household waste to the waste collection area located in the northern part of Pop district in the direction of Uygursoi. It is recommended to build a small factory near the waste site, suitable for sorting waste into metal,

- polyethylene, plastic, paper, glass, textiles. As a result, the amount of waste buried in the ground will decrease, reducing the harmful impact on the environment;
- organization of the decontamination of dead animals in the territory of the waste field in "Bekkari" in accordance with veterinary and sanitary requirements;
  - to increase the number of waste collection, sorting and temporary storage areas in the city area to 34 in special areas equipped with at least 5 metal containers;
  - mechanical cleaning, road and street washing;
  - full supply of district utility service offices serving the city with special machines and mechanisms adapted to collection, removal and street washing of solid and liquid waste;
  - providing landfills with machinery and equipment adapted to waste sorting, pressing, packing and packaging;
  - provision of the waste area with all engineering networks and landscaping around the area 5-8 meters wide;
  - providing residential areas that are not provided with sewage networks with a special collection facility and organizing their removal.

The second factor causing negative consequences is the irrational use of land as a result of the chaotic arrangement of houses on the border of residential areas, insufficient provision of institutions of collective importance and insufficient supply of street and road networks, poorly developed drainage systems for the organized release of surface water.

Sources of atmospheric air pollution in the town are scattered. In this case, low and low sources of harmful emissions to the atmosphere have priority. Only the pipes of heating boilers of social sphere objects have a height of 18-21 m.

There is no separate industrial zone in the town. The scattered location of the existing production enterprises in the area of the town causes a number of problems in terms of providing them with infrastructure. The construction of electricity networks, drinking water and wastewater networks necessary for every production has its negative effects on the environment and the soil.

Industrial enterprises operating in the city area include small enterprises of food, light industry, repair and construction industry. The master plan envisages the partial expansion of existing enterprises, the main goal of which is to meet the needs of the population and create new jobs. Production enterprises that are expected to expand are mainly small enterprises of food, light industry, repair and construction industry.

The main reason for not planning to expand production in the city center is the planned location and expansion of industrial enterprises in the Khalkabad industrial site, which is not far from the city.

The low level of ecological danger of the existing production enterprises, their small production capacity, and their distance from each other cannot be grounds for saying that the town does not pollute the atmospheric air. Harmful substances released into the atmosphere from most production enterprises are emitted from low-level sources, which, in turn, creates the possibility of exceeding the concentration of harmful substances in the atmospheric air.

One of the main components of atmospheric air pollution is vehicles in motion.

The increase of vehicles in the society, mainly the increase of the private transport and the increase of the vehicles of production enterprises is a natural phenomenon, which brings great benefits to the society. However, the increase in the number of vehicles brings negative consequences along with its achievements, i.e. the

increase in traffic accidents, the harmful effects of vehicles on the environment and people: exhaust gases, noise, and vibrations that have a negative effect on human health.

In residential areas and water protection zones, it is required to discharge rainwater and melted snow water generated on the road to irrigation networks through treatment facilities. In this case, the design of the treatment facility is set based on specific conditions and depending on the amount of rainwater. It is recommended to use chamber treatment facilities for the treatment of rainwater generated on highways.

Depending on the width of the road, the absence of a 1-2 m wide blue strip in residential areas increases the harm of harmful substances to the people living on the roadside. For this reason, it is planned to create a blue lane and plant trees on the lane that do not spoil the general appearance of the road.

**Conclusion:** Thus, the main causes of the identified problems regarding the state of environmental elements in the town are characterized by the insufficient organization of the planning structure of the area and insufficient engineering support, so the environmental situation in the town can be conditionally assessed as unfavorable. To improve the ecological situation in the town, organize planning activities for the development of the transportation scheme, increase the area of green areas, reconstruction of the irrigation and collector-drainage system, organization of large-scale works on the reconstruction of engineering communications, in particular, drinking water and wastewater networks, sewage treatment plant to envisage reconstruction with increased capacity.

According to the above analysis of the current environmental situation, the following tasks are defined in the development of the master plan of the town of Pop to ensure environmental protection and improve the ecological situation in the town:

- designing the master plan of the town taking into account the position of the district center in the Pop district population location system;
- the expansion of the territory of the town center is carried out at the expense of the surrounding territories, which are added taking into account the natural growth of the population;
- creating favorable living conditions for residents based on regional planning;
- convenient organization of transport and pedestrian traffic between the main and functional zones of the town;
- in the planning of the master plan of the town, taking into account the natural conditions and the existing planning situation, and in accordance with the master plan developed in 2015 for the Khalkabad settlement located on the eastern side of the city of Pop, to organize a single national economy complex;
- to gradually develop the city center based on the plan in order to complete the urban planning complexes envisaged at each stage.

According to the results of the impact assessment of the adopted urban planning solutions on the components of the environment, the implementation of the adopted solutions in the project will not lead to negative consequences. Many adopted urban planning solutions are aimed at improving the environmental condition, and their implementation leads to improvement of the condition of each component of the environment. Implementation of additional nature protection measures will lead to further improvement of the natural environment of the town and its surroundings.

On the basis of measures aimed at protecting the environment envisaged in the project, it will be possible to divide the territory of Pop city into areas with a positive ecological situation, conditionally positive ecological situation, and areas with a satisfactory ecological situation.

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