

## BANKING, ACCOUNTING AND AUDITING

**Alla Rusnak, ScD in Economics**

**Olena Pulianovych, PhD in Economics**

*Kherson Branch of the Admiral Makarov National University of Shipbuilding,  
Ukraine*

### EVALUATION OF THE EFFICIENCY OF INVESTMENT PROJECTS ON HIGHWAY CONSTRUCTION

The purpose of the work is to evaluate the economic efficiency and to determine the social effect of investment projects of highways. To achieve this purpose, the following main tasks were identified: to make the evaluation of preconditions and analyze the expediency of the investment project of construction of the highway; to determine the economic and social effect from the implementation of the investment project of construction of highways. To achieve the purpose of scientific research were used common scientific and special methods, in particular: logical and dialectical – in defining the nature of the main categories; monographic – in the process of studying literary sources and systematization of methodological approaches to determining the economic efficiency of road construction projects; analysis and synthesis – when assessing the prerequisites and feasibility of implementing an investment project for the construction of a highway; analytical – when comparing the strengths and weaknesses of the development of the road network of the Mykolayiv and Kherson regions and analyzing the opportunities and threats which affecting on it; statistical – at the processing of data, assessment of the effectiveness of the project of highways; graphical – for visual display of research results; abstract-logical – in the process of substantiation of tasks, theoretical generalizations and formulation of conclusions, etc. Scientific novelty of the conducted researches is to conduct a comprehensive assessment of feasibility, economic efficiency and social effect from the implementation of the investment project of construction of highways. The analysis of prerequisites and expediency of realization of investment project for capital construction of the highway was carried out, economic efficiency and social effect from its realization were determined. The forecast of economic efficiency and social effect of construction and reconstruction of the highway up to 2038, taking into account indexation was carried out. The economic, social and environmental impacts of the investment project on the construction of the highway are substantiated and identified.

**Keywords:** economic efficiency, benefits, costs, net present value, investment project.

**Target setting.** Highways are an important component of the country's economic development. The development of highways in Ukraine effects the volume of internal and international road haulage, which contribute to the development of the industrial sphere in the country, cultural relations, tourism and are an essential source of cash receipts. Road keeping is a key factor in the social stability of the regions, and the construction of roads can "liven" the economy of a large number of related industries.

The need to stimulate the development of Ukrainian highways determines the need at the development and implementation of investment projects for the construction of highways. The use of traditional ways the assessment of the economic efficiency of road construction projects is limited, because they are not only economic, but also social and strategic importance.

**Purpose statement.** The purpose of the work is to evaluate the economic efficiency and to determine the social effect of investment projects of highways.

**The statement of basic materials.** The economic justification for the capital construction of the highway should be based on an analysis of the dynamics of cash flows, which contain all project-related benefits and costs for the calculation period. To assess real investment, the analysis of such

performance indicators is used as a measure of net present value, internal rate of return, return on investment index, payback period and discounted payback period of the project. When calculating the benefits of implementing an investment project for the construction of highways it is advisable to use a methodical approach to determining the socio-economic efficiency of the project.

Determination of indicators of economic efficiency of capital construction and repair of highways is carried out in accordance with the Methodical recommendations from development of an investment project, for the implementation of which may be provided state support<sup>1</sup>.

To improve the transport and operational condition of roads requires a system of measures aimed at improving road conditions, organization of movement and legal discipline of drivers. The most common practical measures for improving road conditions are the construction, major repairs and reconstruction of highways.

We investigated the preconditions and conducted an analysis of the feasibility of the investment project of the Road Service of Ukraine in Kherson region "Construction of a highway of general use of the state value M-14 Odesa – Melitopol – Novoazovsk (in Taganrog) on the section Mykolaiv – Kherson".

The investment project corresponds to the directions of development of the state, determined by the strategic and relevant program documents, approved in the established procedure, namely:

- The State Target Economic Program for the Development of Public Roads of State Importance for 2018-2022 years, approved by the Resolution of the Cabinet of Ministers of Ukraine dated March 21, 2018 year No. 382<sup>2</sup>;
- National transport strategy of Ukraine for the period up to 2030 year, approved by the order of the Cabinet of Ministers of Ukraine No. 430-p dated May 30, 2018 year<sup>3</sup>;
- State Strategy for Regional Development for the period up to 2020 year (Objective 1. "Increasing the Competitiveness of Regions")<sup>4</sup>;
- The Program of Activities of the Cabinet of Ministers of Ukraine and the Strategy of Sustainable Development "Ukraine-2020", approved by the Cabinet of Ministers of Ukraine Order No. 213-r of March 4, 2015 year<sup>5</sup>;
- Strategy for the development of Mykolaiv and Kherson regions for the period up to 2020 year<sup>6,7</sup>;
- A Memorandum of Understanding on cooperation with the China Road and Bridge Corporation (CRBC), China, on the implementation of the project for the reconstruction of the M-14 road Odesa – Melitopol – Novoazovsk in the Odesa – Mykolaiv – Kherson region<sup>8</sup>.

<sup>1</sup> Методичні рекомендації з розроблення інвестиційного проекту, для реалізації якого може надаватися державна підтримка, 2012 (Міністерство економічного розвитку і торгівлі України). Офіційний сайт Верховної ради України <<http://zakon.rada.gov.ua/rada/show/v1279731-12>> (2018, November, 20).

<sup>2</sup> Постанова про затвердження Державної цільової економічної програми розвитку автомобільних доріг загального користування державного значення на 2018-2022 роки, 2018 (Кабінет Міністрів України). Офіційний сайт Кабінету Міністрів України <<https://www.kmu.gov.ua/ua/npas/pro-zatverdzhennya-derzhavnoyi-cilovoyi-ekonomichnoyi-programi-rozvitku-avtomobilnih-dorig-zagalnogo-koristuvannya-derzhavnogo-znachennya-na-20182022-roki>> (2019, February, 20).

<sup>3</sup> Розпорядження про схвалення Національної транспортної стратегії України на період до 2030 року, 2018 (Кабінет Міністрів України). Офіційний сайт Кабінету Міністрів України <<https://zakon.rada.gov.ua/laws/show/430-2018-p>> (2019, February, 25).

<sup>4</sup> Постанова про затвердження Державної стратегії регіонального розвитку на період до 2020 року, 2014 (Кабінет Міністрів України). Офіційний сайт Кабінету Міністрів України <<https://www.kmu.gov.ua/ua/npas/247566248>> (2019, March, 15).

<sup>5</sup> Розпорядження про затвердження плану заходів з виконання Програми діяльності Кабінету Міністрів України та Стратегії сталого розвитку «Україна-2020», 2015 (Кабінет Міністрів України). Офіційний сайт Кабінету Міністрів України <<https://zakon.rada.gov.ua/laws/show/213-2015-p>> (2019, March, 16).

<sup>6</sup> Стратегія розвитку Миколаївської області на період до 2020 року, 2015 (Миколаївська обласна державна адміністрація). Офіційний сайт Миколаївської обласної державної адміністрації. <<http://www.mk.gov.ua/ua/economy/strateg>> (2019, February, 22).

<sup>7</sup> Стратегія розвитку Херсонської області на період до 2020 року, 2016 (Херсонська обласна державна адміністрація). Офіційний сайт Херсонської обласної державної адміністрації <<http://khoda.gov.ua/strategiya-rozvitku-2020>> (2019, February, 22).

<sup>8</sup> Агентство общественной журналистики Мост (2017). Укравтодор підписав меморандум про співпрацю із китайською компанією CRBC щодо реконструкції дороги Одеса – Миколаїв – Херсон <[http://most.ks.ua/news/url/ukravtodor\\_pidpisav\\_memorandum\\_pro\\_spivpratsju\\_iz\\_kitajskoj\\_kompanijeju\\_crbc\\_sch\\_odo\\_rekonstruksiji\\_dorogi\\_odesa\\_mikolajiv\\_herson](http://most.ks.ua/news/url/ukravtodor_pidpisav_memorandum_pro_spivpratsju_iz_kitajskoj_kompanijeju_crbc_sch_odo_rekonstruksiji_dorogi_odesa_mikolajiv_herson)> (2019, February, 23).

In recent years, there has been a significant increase in the traffic volume of heavy vehicles, passenger vehicles and freight by transporting imported and export cargoes to large cities and ports located on the Black Sea-Azov coast. Due to the fact that the road is built on outdated technical requirements of the last century, it does not meet the modern needs of society in freight and passenger transportation. Improving the conditions of this road is extremely important, as it ensures the maintenance and development of trade and economic, cultural, tourist and other transport links, both on the territory of Ukraine and internationally. A comparison of the socio-economic impact, if implemented, and in case of refusal to implement the project, is given in Table 1.

Table 1

**Expected socio-economic impact from the implementation and refusal to implement the project "Building of the highway M-14 Odesa – Melitopol – Novoazovsk (on Taganrog)"**

In case of implementation	In case of refusal to implement
<ul style="list-style-type: none"> <li>– ensuring the sustainable functioning of the highway on the territory of the Mykolayiv and Kherson regions;</li> <li>– creation of conditions for the development of the network of highways of general use;</li> <li>– improve the quality of transport services in conjunction southern region;</li> <li>– ensuring the development of the highway of general use in accordance with the pace of the country's motorization;</li> <li>– improve the socio-economic development of Mykolayiv and Kherson regions;</li> <li>– enhance traffic safety.</li> </ul>	<ul style="list-style-type: none"> <li>– reduction of the flow of transit vehicles to the Black Sea ports, which in turn will make it impossible to bring in investment capital in the region;</li> <li>– the continuous decrease of traffic flow and growth of social tension of the population, as well as the reorientation of transit traffic to other routes (including bypassing Ukraine), which will lead to losses to the economy of the region and the state as a whole.</li> </ul>

*Source: own invention of the authors*

The analysis of the results of the audit of the sustainable development of the Mykolayiv and Kherson regions, the possibilities of more fully utilizing the territorial resources and the potential of its inhabitants has determined the need to identify the strengths that distinguish it from other territories of the country and determine possible directions for the implementation of sustainable ecological, economic and social development.

The comparison of the strengths and weaknesses of the development of the road network in the regions of Mykolaiv and Kherson and the analysis of the opportunities and threats that affect it are presented in the SWOT-analysis (Table 2).

The aim of the project is to increase the capacity of the highway M-14 Odesa –Melitopol – Novoazovsk (in Taganrog) on the Mykolaiv – Kherson region to promote accelerated socio-economic development of the South of Ukraine and the country as a whole, ensuring the transport and operational status of the highway M-14 the proper transportation of the largest ports – Odesa, Mykolaiv and Kherson regions, which account for 80 % of all cargo of the country.

When calculating the efficiency of investments in the capital construction of highways, a methodological approach is used to determine the coefficient of social and economic efficiency<sup>1</sup>. The indicated coefficient takes into account the following effects: from reducing the number of rolling stock and saving capital investments in road transport; from reduction of expenses for transportation of cargoes and passengers; from reduction of losses from road and transport events; from reducing the negative impact on the environment; from created jobs for the period of major repairs of the highway.

The starting data for determining the indicators of economic efficiency and social consequences during the implementation of the investment project "Building the highway M-14 Odesa – Melitopol – Novoazovsk (in Taganrog)" (within the limits of Mykolaiv and Kherson regions) are:

- the estimated cost of carrying out construction, reconstruction, capital repairs on the road of state importance M-14 is UAH 15,000.0 million;

<sup>1</sup> Минавтодор РСФСР (1985). *Указания по определению экономической эффективности капитальных вложений в строительство и реконструкцию автомобильных дорог: ВСН 21-83.* <<http://gostrf.com/normadata/1/4294849/4294849703.pdf>> (2019, January, 31).

Table 2

**SWOT-analysis of highway network development of Mykolaiv and Kherson regions**

<b>Strengths sides</b>	<b>Weak sides</b>
<ul style="list-style-type: none"> <li>– geographical location;</li> <li>– high level of NTP development;</li> <li>– recreational potential, the presence of highly skilled labor;</li> <li>– development of marine economical complex;</li> <li>– close location to the EU borders;</li> <li>– developed industrial infrastructure;</li> <li>– availability of skilled labor resources, scientific personnel and scientific developments;</li> <li>– availability of renewable and alternative energy sources;</li> <li>– significant tourist and recreational potential;</li> <li>– investment attractiveness of the region;</li> <li>– the possibility of delivery of building materials and equipment to the facility by rail and water transport (availability of loading and unloading stations and ports), road transport.</li> </ul>	<ul style="list-style-type: none"> <li>– satisfactory state of the transport network;</li> <li>– technological backwardness of the industry, including high energy intensity, low capitalization of intellectual property objects;</li> <li>– insufficient development of highway and engineering infrastructure;</li> <li>– low level of ecological consciousness;</li> <li>– bad ecology of separate territories;</li> <li>– adverse climatic conditions – a zone of risky agriculture (arid climate, dryland, dust storms, fogs on the seaside);</li> <li>– insufficient supply of water resources (fresh water);</li> <li>– a small forest.</li> <li>– a limit mineral resource base.</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>– intensification of cross-border cooperation with the states of the Black Sea region;</li> <li>– development of ecotourism;</li> <li>– revitalization of the investment environment and attraction of foreign investments into the regional economy;</li> <li>– development of renewable and alternative energy sources;</li> <li>– the revival of export-import relations with the EU and other countries through sea ports, the emergence of new markets for products;</li> <li>– development of infrastructure, first of all, road and housing and communal services;</li> <li>– decentralization of power, administrative reform and the growth of budgetary autonomy of communities and active position of local authorities in improving innovation and investment climate.</li> </ul>	<ul style="list-style-type: none"> <li>– unstable situation in the country, including through military operations;</li> <li>– increase of labor migration and loss of labor resources;</li> <li>– dependence on the supply of mineral resources;</li> <li>– energy dependence on external power supply sources;</li> <li>– poor awareness of potential partners about the possibilities of the region;</li> <li>– availability of many ecologically potentially dangerous objects.</li> </ul>

*Source: own invention of the author*

– intensity as of 2017, and with the help of an increase in intensity is given in the corresponding year. The intensity increase on these road sections is 2.5 % and 5 %.

When implementing an investment project for the development of highways, the cost price of the final product is the cost of transportation of passengers and freight. Total annual reductions in transportation costs for this investment project amount to UAH 1,194.72 million, including UAH 1,029.1 million in Mykolayiv region, UAH 165.62 million in Kherson region (at prices in 2018).

The calculation of indicators of the socio-economic effect of construction and reconstruction of the highway M-14 Odesa-Melitopol-Novozovsk (in Taganrog) is shown in the Table 3 according to the Highway Service in the Kherson region.

Table 3

**Calculation of indicators of socio-economic effect of construction and reconstruction  
of highway M-14 Odesa – Melitopol – Novoazovsk**

No. by rank	Indicator	Unit of measurement	Value indicator
1.	Reduction of the base quantity of trucks for transportation of necessary volumes of cargos during the day by a section of a highway with an improved transport and operational condition of road surface ( $\Delta N_T$ )	unit	31.77
2.	Reduction of the basic number of buses necessary for transportation of the required number of passengers during the day by the section of the highway with an improved transport-operational condition of the road surface ( $\Delta N_B$ )	unit	17.3
3.	Reduction of investments in cargo transport ( $\Delta K_T$ )	million UAH	73.49
4.	Reduction of investments in public passenger transport (bus fleet) ( $\Delta K_B$ )	million UAH	47,09
5.	The effect of reducing the number of rolling stock and saving capital investments in a highway transport ( $E_{HT}$ )	million UAH	120.58
6.	The effect of reducing the cost of transportation of goods by trucks ( $\Delta E_T$ )	million UAH	83.77
7.	The effect of reducing the cost of transportation of passengers by bus ( $\Delta E_{BBP}$ )	million UAH	77.30
8.	The effect of reducing the cost of passenger transportation by cars ( $\Delta E_C$ )	million UAH	157.70
9.	The effect of reducing the losses of the country's economy by reducing unproductive losses of working time by bus passengers ( $\Delta E_{BP}$ )	million UAH	96.47
10.	The effect of reducing the losses of the country's economy by reducing unproductive losses of working time by passenger cars ( $\Delta E_{PC}$ )	million UAH	33.03
11.	The overall effect of reducing the cost of transportation of goods and passengers ( $E_{TGP}$ )	million UAH	448.27
12.	The effect of reducing losses from road accidents ( $E_{RA}$ )	million UAH	1.67
13.	Reduction of the concentration of carbon monoxide (in mg / m <sup>3</sup> ) at an altitude of 1.5 m above the edge of the traffic section of the straight horizontal section of the highway ( $\Delta Q_{co}$ )	mg / m <sup>3</sup>	0.41
14.	The effect of reducing the negative impact on the environment ( $E_{ecol}$ )	million UAH	29.75
15.	Total number of jobs created for the period of major repairs of the highway ( $K_j$ )	unit	136
16.	Labor costs for construction workers ( $W_{LC}$ )	Thousand UAH	10431.22
17.	The effect of the created jobs for the period of capital construction of the highway ( $E_j$ )	million UAH	4.38
18.	The general socio-economic effect of capital construction of highway ( $\Sigma E_{nc}$ )	million UAH	530.04
19.	Net present value (NPV)	million UAH	21245.18
20.	Internal rate of return (IRR)	%	19.51
21.	Discounted payback period (DPP)	years	11.48
22.	Profitability index (PI)		3.0

*Source: calculated according to the Highway Service in the Kherson region*

On the basis of comparison of benefits and expenses, the indicators of economic efficiency of the project are calculated, namely: the net present value is UAH 21245.18 million; the internal rate of return – 19.51%; discounted payback period 11.48 years (Table 4).

Table 4

**Forecast indicators of economic efficiency of the investment project "Building a highway of general use of state importance M-14 Odesa – Melitopol – Novoazovsk (in Taganrog) in the region of Mykolaiv – Kherson"**

Year	Costs for capital construction and maintenance, UAH million			Economic effect (NCF), UAH million
	Capital construction	Maintenance	Total	
2018	-	-	-	-
2019	-31.14	-5.634	-36.772	9.01
2020	-189.23	-8.754	-197.981	11.72
2021	-2065.94	-9.127	-2075.068	14.70
2022	-3111.40	-10.912	-3122.308	20.73
2023	-3216.42	-11.304	-3227.725	114.19
2024	-2376.10	-8.343	-2384.446	883.37
2025	-1509.77	-7.405	-1517.178	1335.02
2026	-	-4.191	-4.191	2480.04
2027	-	-4.191	-4.191	2708.96
2028	-	-4.191	-4.191	2954.94
2029	-	-103.317	-103.317	3233.51
2030	-	-38.284	-38.284	3534.63
2031	-	-38.947	-38.947	3867.44
2032	-	-42.719	-42.719	4228.57
2033	-	-4.191	-4.191	4631.45
2034	-	-368.256	-368.256	5065.82
2035	-	-136.385	-136.385	5541.17
2036	-	-280.836	-280.836	6065.42
2037	-	-4.191	-4.191	6625.61
2038	-	-4.191	-4.191	7244.04
Total	-12500.0	-1095.37	-13595.37	60570.3

*Source: calculated according to the Highway Service in the Kherson region*

Social and environmental consequences of the project:

- 1) promotion of socio-economic development of the region;
- 2) ensuring high transport-operational qualities of the highway and increase of comfort of movement;
- 3) increase of road safety (reducing the number of traffic accidents and reducing the severity of their consequences);

4) increase of average speeds of vehicles on

Road category:

- for trucks from 52,35 km / h to 65,36 km / h;
- for buses from 55.70 km / h to 68.96 km / h;
- for cars from 65,98 km / h to 84,06 km / h.

5) increase of average speeds of vehicles on II categories of highways:

- for trucks from 52,35 km / h to 63,26 km / h;

- for buses from 55.70 km / h to 66.66 km / h;
- for cars from 65,98 km / h to 77,06 km / h.
- 6) reduction of personal expenses of drivers and passengers;
- 7) promotion of tourism sector development;
- 8) assistance in the development of transport traffic, which will increase the demand for transportation of goods and passengers;
- 9) reduction of the amount of harmful emissions into the atmosphere due to the movement of vehicles without abrupt changes in modes of movement (braking, acceleration);
- 10) reduction of dust formation by fixing the edge with grass seed;
- 11) the removal of atmospheric waters from the road pavement by means of longitudinal and transverse slopes;
- 12) reduction and minimization of the negative impact of the highway on the environment:
  - rational and efficient use of land in the process of carrying out road works;
  - reclamation of disturbed lands;
  - taking into account modern environmental requirements when using road materials and carrying out works.

The feasibility of implementing an investment project is grounded in its relevance to the strategic directions of development of the country and in particular the region. Implementation of the project will facilitate the intensification of cross-border cooperation with the Black Sea region states, increase of transport and transit capacities of the country. In addition, the project is aimed at solving the problem of improving the transport and operational condition of the M-14 highway M-14 Odesa – Melitopol – Novoazovsk (in Taganrog), improving the economic performance of motor transport, reducing the accident rate and reducing the negative impact of road transport on the environment.

**Conclusions.** Realization of the investment project "Building of the highway M-14 Odesa – Melitopol – Novoazovsk (on Taganrog)":

- provide reliable transport links and high-quality transport links between Mykolaiv and Kherson regions;
- provide adequate transport links with the largest ports of the Black Sea coast, which will enable to increase cargo turnover;
- develop transport infrastructure and bring the logistics and transport potential of the region into line with European standards;
- will give impetus to the development of the country's agro-industrial complex and increase investment attractiveness and capacity for the placement of industrial production and industrial parks, which in turn will provide employment for residents of the two regions;
- significantly improve the safety of road users;
- increase the speed of transportation of vehicles;
- improve the ecological status of the lanes and adjacent road areas;
- reduce traffic of transit vehicles, including freight, through the city of Mykolaiv;
- reduce the cost of transportation;
- reduce costs of maintenance of the highway;
- increase tourism, historical, cultural and nature-recreational potentials of the Black Sea coast;
- increase the traffic flow of motor transport;
- during the period of the work, practically all branches of the economy will be involved.

## References:

1. *Metodychni rekomendatsii z rozroblennia investytsiinoho proektu, dlia realizatsii yakoho mozhe nadavatysia derzhavna pidtrymka, 2012* (Ministerstvo ekonomichnogo rozvytku i torhivli Ukrainy) [Methodical recommendations for the development of an investment project for the implementation of which may be granted state support, 2012 (Ministry of Economic Development and Trade of Ukraine)]. *Ofitsiinyi sait Verkhovnoi rady Ukrainy* [The official website of the Verkhovna Rada of Ukraine] <<http://zakon.rada.gov.ua/rada/show/v1279731-12>> (2018, November, 20). [in Ukrainian].
2. *Postanova pro zatverdzhennia Derzhavnoi tsilovoi ekonomichnoi prohramy rozvytku avtomobilnykh dorih zahalnogo korystuvannia derzhavnogo znachennia na 2018-2022 roky, 2018* (Kabinet Ministriv Ukrainy). [Resolution on approval of the State Target Economic Program for the development of highways of state importance for 2018-2022, 2018 (Cabinet of Ministers of Ukraine)]. *Ofitsiinyi sait Kabinetu Ministriv Ukrainy* [The official website of the Cabinet of Ministers of Ukraine] <<https://www.kmu.gov.ua/ua/npas/pro->

- zatverdzhennya-derzhavnoi-cilovoi-ekonomichnoi-programi-rozvitku-avtomobilnih-dorig-zagalnogo-koristuvannya-derzhavnogo-znachennya-na-20182022-roki> (2019, February, 20). [in Ukrainian].
3. *Rozporiadzhennia pro skhvalennia Natsionalnoi transportnoi stratehii Ukrainy na period do 2030 roku, 2018* (Kabinet Ministriv Ukrainy). [Order on approval of the National Transport Strategy of Ukraine for the period up to 2030, 2018 (Cabinet of Ministers of Ukraine)]. *Ofitsiyni sait Kabinetu Ministriv Ukrainy*. [The official website of the Cabinet of Ministers of Ukraine] <<https://zakon.rada.gov.ua/laws/show/430-2018-p>> (2019, February, 25). [in Ukrainian].
  4. *Postanova pro zatverdzhennia Derzhavnoi stratehii rehionalnoho rozvytku na period do 2020 roku, 2014* (Kabinet Ministriv Ukrainy). [Resolution on approval of the State Strategy for Regional Development for the period up to 2020: of the Cabinet of Ministers of Ukraine, 2014 (Cabinet of Ministers of Ukraine)]. *Ofitsiyni sait Kabinetu Ministriv Ukrainy*. [The official website of the Cabinet of Ministers of Ukraine] <<https://www.kmu.gov.ua/ua/npas/247566248>> (2019, March, 15). [in Ukrainian].
  5. *Rozporiadzhennia pro zatverdzhennia planu zakhodiv z vykonannia Prohramy diialnosti Kabinetu Ministriv Ukrainy ta Stratehii staloho rozvytku «Ukraina-2020», 2015* (Kabinet Ministriv Ukrainy). [Order On approval of the plan of measures for implementation of the Program of Action of the Cabinet of Ministers of Ukraine and the Strategy of Sustainable Development "Ukraine-2020", 2015 (Cabinet of Ministers of Ukraine)]. *Ofitsiyni sait Verkhovnoi rady Ukrainy* [The official website of the Verkhovna Rada of Ukraine] <<https://zakon.rada.gov.ua/laws/show/213-2015-p>> (2019, March, 16). [in Ukrainian].
  6. *Stratehiia rozvytku Mykolaivskoi oblasti na period do 2020 roku, 2015* (Mykolaivska oblasna derzhavna administratsiia) [Strategy of development of Mykolaiv region for the period till 2020, 2015 (Mykolaiv Regional State Administration)]. *Ofitsiyni sait Mykolaivskoi oblasnoi derzhavnoi administratsii*. [The official website of the Mykolaiv Regional State Administration] <[www.mk.gov.ua/ua/economy/strateg](http://www.mk.gov.ua/ua/economy/strateg)>. (2019, February, 22). [in Ukrainian].
  7. *Stratehiia rozvytku Khersonskoi oblasti na period do 2020 roku, 2016* (Khersonska oblasna derzhavna administratsiia). [Strategy for development of the Kherson region for the period till 2020, 2016 (Kherson Regional State Administration)]. *Ofitsiyni sait Khersonskoi oblasnoi derzhavnoi administratsii*. [The official website of the Kherson Regional State Administration] <<http://khoda.gov.ua/strategiya-rozvitku-2020>> (2019, February, 22). [in Ukrainian].
  8. Ahenstvo obshchestvennoy zhurnalistyky Most (2017) [Public Journalism Agency Most (2017)]. *Ukravtodor pidpysav memorandum pro spivpratsyu iz kytayskoyu kompaniyeyu CRBC shchodo rekonstruktsiyi dorohy Odesa-Mykolayiv-Kherson* [Ukravtodor signs memorandum of cooperation with Chinese company CRBC on reconstruction of Odessa – Mykolaiv – Kherson road] <[http://most.ks.ua/news/url/ukravtodor\\_pidpisav\\_memorandum\\_pro\\_spivpratsju\\_iz\\_kitajskoju\\_kompanijeju\\_crbc\\_schodo\\_rekonstruktsiji\\_dorogi\\_odesa\\_mikolajiv\\_herson](http://most.ks.ua/news/url/ukravtodor_pidpisav_memorandum_pro_spivpratsju_iz_kitajskoju_kompanijeju_crbc_schodo_rekonstruktsiji_dorogi_odesa_mikolajiv_herson)> (2019, February, 23). [in Ukrainian].
  9. Minavtodor RSFSR (1985). *Ukazaniya po opredeleniju jekonomicheskoy jeffektivnosti kapitalnyh vlozhenij v stroitelstvo i rekonstrukciju avtomobilnyh dorog: VSN 21-83*. [Guidelines for determining the economic efficiency of capital investments in the construction and reconstruction of highways: VSN 21-83]. <<http://gostrf.com/normadata/1/4294849/4294849703.pdf>> (2019, January, 31). [in Russian].