Executive Summary:

Bridging the Future – a Policy Paper on Ukraine's Bridge Sector

Viktor Zagreba (viktor@zagreba.com), 30.06.2025

The Policy Paper *«Bridges in Ukraine: Crisis, Problems, Solutions»* was prepared in 2024–2025 by Viktor Zagreba, a Ukrainian transport policy researcher and chairman of the NGO *Vision Zero*. The paper provides a comprehensive review of Ukraine's bridge infrastructure and analyzes the public policies governing its planning, design, construction, and maintenance. It reveals a critical and worsening situation in the country's bridge sector, rooted in long-standing systemic issues in public policy and asset management. The study highlights structural deficiencies in Ukraine's policies, which lead to poorly planned and overengineered bridges. This, in turn, results in excessive use of carbon-intensive materials and higher costs compared to EU practices.

1. Current State of Bridges in Ukraine

Ukraine possesses approximately **28,500 bridges,** split among various owners. A significant proportion of these structures are in severe disrepair:

- **Age and Wear:** Nearly half (47%) of all bridges were built before 1964, having exceeded the typical 60-year lifespan after which critical wear usually begins. Only about 15% of bridges have been built or reconstructed since 1991.
- **Operational Condition:** As of early 2025, approximately 25% of all surveyed bridges are in emergency or near-emergency state. Critically, information on the condition is missing for 35% of all bridges.
- **"Mostopad" (Bridge Collapses):** The phenomenon of sudden structural collapses, dubbed "mostopad," has been observed since 2017, with at least 8 high-profile incidents across Ukraine.

2. Rapid Reconstruction (2022-2023) and Lessons Learned

By June 2023, **346 bridges and overpasses — including 157 on state roads — had been damaged or destroyed** due to Russia's war against Ukraine. A political decision prioritized their rapid reconstruction, often bypassing standard procurement and design procedures. A detailed analysis of reconstructed bridges in the Kyiv and Chernihiv oblasts, compared with a sample of recent projects in Poland, reveals that:

- Bridges in Ukraine are **on average 47.9% more expensive than in Poland** (4949 EUR per square meter in Ukraine vs. 3345 EUR/sq.m in Poland).
- Ukrainian bridges often **have excessive dimensions and more lanes than necessary**, compared to EU practices. For example, a two new bridges near Chernihiv (direction to Belarusian border) feature 2+2 lanes, while the recently constructed Pelješac Bridge in tourism hotspot Croatia has just 1+1 lanes.

These rapid reconstruction projects reflect systemic issues in Ukrainian public policy, resulting in questionable decision-making, increased material consumption, and higher costs compared to EU standards.

3. Key Policy Problems (Findings)

1. **Inadequate Operational Maintenance resulting in shorter live cycle.** Bridges are serving significantly less than their intended lifespan, with defects accumulating until major capital repairs or reconstruction become the only (and more expensive) options. Some of strategic bridges in Ukraine come into despair after 30-40 years of service and require reconstruction.
2. **Lack of Priorities:** Ukraine lacks a formal distinction between strategically vital and ordinary bridges based on transport importance. This results in a misallocation of limited resources, with funds being spent on construction of unnecessary urban interchanges while crucial strategic bridges over the Dnipro river continue to deteriorate.
3. **Insufficient or Flawed Planning:** Decision-making on bridge projects often stems from political directives rather than comprehensive planning and analysis.
    - **Feasibility Study (in Ukraine called TEO) as a formality:** The TEO is often characterized by **low-quality and formal nature** in order to justify the option favored by decision makers instead of a proper study and comparison.
    - **Excessive capacity and load. Bridges often have excessive number of lanes and their width is also larger than in the EU practices.** Also an extra load coefficient of 1.25 is added to structural calculations as “precaution”. This leads to excessive material consumption and inflated costs.
4. **Conflict of Interest due to Corruption:** The paper notes the presence of corruption in Ukraine's infrastructure sector, evidenced by public investigations and scandals involving high-ranking officials and large sums. Corruption creates perverse incentives, such as favoring overly complex projects for illicit gains, or neglecting maintenance to justify expensive capital repairs.
5. **Incomplete Transition to European Standards:** Despite a political commitment to EU integration and the official translation and approval of EU Standards (Eurocodes), the EU norms are not applied in bridge design. Ukrainian market is isolated and ruled fully by national norms based on local technological traditions.
6. **Excessive Climate Impacts:** Ukraine’s current “business as usual” practices in bridge construction significantly contribute to greenhouse gas emissions due to:

- **Overconsumption of cement and steel** (large global sources of CO_2 emissions) especially as thousands of bridges will need rebuilding in the coming decades;
- **Shorter bridge lifespans** (30–70 years) compared to 100+ years in the EU or U.S., requiring more frequent reconstruction.

4. Conclusions and Recommendations

The paper presents five policy conclusions, each accompanied by three targeted recommendations. Collectively, these are aimed at moving Ukraine away from the current "business as usual" approach toward an alternative scenario that would lead to:

- Avoiding the construction of unnecessary bridges, viaducts, and interchanges.
- Extending the life cycle of bridges through proper maintenance and timely repairs.
- Redirecting political and managerial attention to strategically important bridges.
- Aligning with European standards and integrating into the European market by adopting practices common in EU member states.
- Significantly reducing material consumption, costs, and climate impact compared to the "business as usual" scenario.

Conclusion 1. Maintenance and preservation of existing bridges must take precedence over new construction

- **Recommendation 1.1.** Implement asset management, beginning with the inventory and inspection of all bridges.
- **Recommendation 1.2.** Secure targeted funding from state and international sources to establish an effective asset management system.
- **Recommendation 1.3.** Introduce a state-level moratorium on new bridge and overpass construction if a balance-holder has bridges in critical (4th or 5th) condition or of unknown status, with rare exceptions.

Conclusion 2. It is necessary to define strategically important bridges from a transport perspective and prioritize them over other projects.

- **Recommendation 2.1.** Implement criteria and practices for identifying strategic bridges, including transport flows and alternative route costs.
- **Recommendation 2.2.** Prioritize expenditures from all budget levels, focusing first on maintenance, then on repairs of strategic existing bridges, and finally on new strategic constructions.
- **Recommendation 2.3.** Implement a ban on designing and building new multi-level road interchanges, overpasses, and pedestrian crossings where traffic can be efficiently managed at a single level (signals, roundabouts).

Conclusion 3. Planning and feasibility studies should be a distinct pre-project stage for investment preparation before the development of detailed project documentation.

- **Recommendation 3.1.** Discontinue Technical-Economic Justification (TEO) and Technical-Economic Calculation (TER) as detailed design stages, replacing them with feasibility and pre-feasibility studies as a part of investment planning.
- **Recommendation 3.2.** For planning stages, apply parametric and objective normalization methods instead of the directive method, and use international guidelines and practices as reference.
- **Recommendation 3.3.** Abolish the outdated practice of calculating perpetual traffic growth, transitioning to EU-prevalent traffic forecasting and modeling.

Conclusion 4. Ukraine should complete its European integration commitments in the construction sector by adopting European approaches and normative regulation (European Standards -- Eurocodes).

- **Recommendation 4.1.** Mandate the exclusive application of Eurocodes for structural calculations in bridge design for all projects starting January 1, 2027.
- **Recommendation 4.2.** Transition from the directive to the parametric method in bridge construction norming to encourage innovative design solutions.
- **Recommendation 4.3.** In the absence of Ukrainian normative regulation for preparatory, survey, or design works, legally permit the application of national norms from best-practice EU member states.

Conclusion 5. Ukraine should integrate into the European single market for bridge planning, design, and construction. Ukraine's national bridge industry standards **isolate its market**, forming a barrier for EU companies seeking to participate in services and works in Ukraine, and hinders Ukrainian engineers and companies from working on international projects due to a lack of experience with Eurocode design.

- **Recommendation 5.1.** Initiate an annual international conference on Ukraine's bridge sector, involving international partners and key stakeholders.
- **Recommendation 5.2.** Under the political leadership of the Ministry for Communities and Territories Development, implement a dedicated "track" for bridge projects planned and executed under EU standards and with European approaches, inviting EU-Ukraine consortia.
- **Recommendation 5.3.** Secure international financing from partner governments and support funds for initial international tenders and project implementation by Ukrainian or international construction companies.

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