

# Collaborative Planning: Decision-making and Performance Metrics

Prepared by

Missouri Consortium for Construction Innovation

Research Report



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## Research Summary

Collaborative planning practices in construction projects are considered crucial and influential on project performance and outcomes in the construction industry. This research report presents a holistic view of the research efforts regarding collaborative planning conducted by the research team at Missouri S&T. Research Outlined 50 important factors affecting collaborative planning in construction projects.

These 50 factors have been identified grouped under 6 categories through systematic literature review of previous research studying collaborative planning in the construction industry. Consequently, Industry survey have been distributed to quantify the significance and importance of these factors and categories. Moreover, another industry survey has been distributed to study them as risks and quantify their likelihood, cost and schedule impacts on constructions projects. Lastly, Project Survey has been distributed to quantify the impacts of these risks on project performance through actual implemented case studies.

The research team also collected recommended strategies from previous research and publicly available case studies to improve the effectiveness of collaborative planning practices in construction projects. Building on the data provided through the previously mentioned surveys, the research team developed a comprehensive tool, consisting of two modules, to evaluate the effectiveness of collaborative planning practices implemented in the studied project and assess its impacts on the project's cost and time aspects while also providing tailored recommendations specific to the characteristics of each project studied.

Module 1 of the tool is concerned with evaluating the effectiveness of collaborative planning practices in the studied project by providing (Yes/No) type of questions that address the 50 factors along with weights for the six categories encompassing such factors. The output of this module is a 7-level scale of collaboration in the studied project. On the other hand, module 2 of the tool is concerned with evaluating the risks affecting collaborative planning practices and their cost and time impacts on the studied project. The output of this module is a percentage of the Savings/OVERRUNS for both cost and time

aspects of the studied project according to the level of collaborative planning risks occurring on such project.

The tool was reviewed by industry experts and adjusted accordingly to provide the most beneficial experience for the tool user. Ultimately, this report aims to improve the effectiveness and awareness about collaborative planning practices in construction projects.

If you are interested in more info about this research, you can contact Dr. Islam El-adaway by phone at 573-341-4030 and/or by e-mail at [eladaway@mst.edu](mailto:eladaway@mst.edu)



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