

**Optimization of Construction of the Main Bridge of PT. Wijaya Karya
Proyek Lanjutan Aksesibilitas Bandara Soekarno Hatta During the Covid-19
Pandemic Period 2020-2021**

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Abstract

PT. Wijaya Karya is one of the companies in Indonesia that is engaged in the construction sector. There are several successful developments carried out by PT. Wijaya Karya such as toll roads, MRT, and so on. Improved performance of PT. Wijaya Karya, made this company get various development contracts in Indonesia, especially in the capital city of Jakarta. One of the developments carried out by PT. Wijaya Karya, namely the accessibility of development to Soekarno Hatta Airport

The construction of the Soekarno Hatta-Tangerang Airport Accessibility experienced delays in the construction time, especially in the construction of the main bridge which is the core of the development. Work delays are due to the COVID-19 pandemic. To overcome the increasing delay in processing time, optimization of work is carried out. The optimized main bridge work is the period from February 2019 to November 2021. Due to delays in project work, the owner has a request to accelerate until May 2021 (118 weeks). The method used is the Critical Path Method (CPM) to determine the critical duration and duration, as well as the project crashing method to determine the acceleration duration and duration calculation.

Therefore, there are two optimization alternatives that can be used, namely the alternative of adding working hours (overtime) and the alternative of working shifts. The results showed that the second alternative could crash within 118 weeks. However, there are differences in the direct costs, where by using the alternative of additional work, it requires an additional cost of Rp. 1,455.346.223.78 while using the alternative of work shifts with an additional cost of Rp. 1.562.626.223.78. On the other hand, the value of indirect costs is the same because of the same duration, as well as direct costs that increase because the calculation is on the calculation of time and workers who are in the field. Therefore, optimizing the main bridge work by using the alternative of additional working hours is an alternative that is in accordance with the owner's request, because the cost and duration calculations are in accordance with the owner's calculations.

Keywords: Optimization project, project crashing, Critical Path Method