

EXECUTIVE SUMMARY

Overview

Pandemics negatively impact construction productivity. To date, no resource existed to aid contractors in quantifying these impacts for the purpose of seeking equitable compensation for lost productivity, adequately pricing upcoming work that will take place under pandemic driven work rules and conditions, and properly formulating financial projections that take into account stress on cash flow due to both decreases in productivity and the associated increases in overhead costs.

In late April 2020, New Horizon's Foundation retained Maxim Consulting Group, LLC to quantify these impacts so that industry contractors have a practical resource useful for mitigating pandemic related productivity losses. The study builds on and correlates to similar work published in ELECTRI International's "Pandemics and Construction Productivity: Quantifying the Impact" study.

Two methods are used to quantify the magnitude of pandemic related productivity losses and are described in detail in Parts I and Part II of this paper.

Part I - Pandemic Mitigation Tracking

A random sample of over 20,000 labor hours collected from Sheet Metal, HVAC and Mechanical contractors to date **indicates 8.7% of hours available on projects to do productive work are lost due to mitigation requirements such as PPE management, cleaning & disinfection, access rules, and extra administration time. Identical sampling methods used in the ELECTRI study indicated similar results for electrical contractors on over 92,000 hours sampled. The combined average loss on mitigation for MEP contractors is 8.8% on over 113,000 hours. It is reasonable to expect that if these hours were available, crews would be putting work in place.**

The combined sample sets of the two studies provide a convincing quantification of losses on mitigation tasks – contractors should prepare change orders to

seek direct financial compensation for these lost hours as well as use this data to adjust scope and pricing for future work under similar conditions.

Part II - Productivity Benchmarking

Our study indicates an overall 9.2% average productivity impact on Sheet Metal, HVAC and Mechanical contractor productivity as a result of the pandemic. These productivity losses are *additive* to the mitigation impact of 8.7%, to produce a total productivity impact of 17.9%. These may occur due to non-mitigation related impacts including, but not limited to: extra mobilizations/demobilizations, work fatigue from anxiety and excess absenteeism, social distancing effects, off-shift work, altered delivery & material receiving, inspection and cleaning requirements, etc. **Based on the current data, there are over 85 minutes of lost productivity per day per employee's 8-hour work period.**

Companies that have trended lower in productivity losses have established, organized, and trained their teams with new pandemic mitigation processes and procedures. Additionally, they have monitored and shifted work activities to accommodate required distance spacing between team members. Leaving pandemic-related productivity losses of this magnitude unaddressed is a significant problem for contractors. For specialty contractors a loss of *10% labor productivity* often results in a *100% loss in project profitability*. **This means that on average in the study results, contractors are losing over 7% on projects.** The magnitude of this issue represents a very real threat to a contractor's ability to remain in business if left unmitigated. Worse, the nature of productivity losses is a lag effect that often goes unnoticed by conventional projection and reporting systems until it is too late. The true financial impact of productivity losses can take as long as 3-6 months to fully play out in a company's finances. Cash flow projections based on assumptions that do not include excess production costs and associated overhead costs can easily foster a false sense of security. This ripple effect is broadened as company resources (labor, equipment and management) assumed to be available to execute