



Business Case for CLMA® Utilization on Schedule-Driven Projects

The objectives of a Schedule-Driven Project include a high priority for delivering the project results as quickly as possible with completion based on a fixed target date. The schedule is always the most important factor; therefore, when making project scope and cost decisions the project team always considers the schedule impact first. Frequently, the project team will spend additional funds to complete the project faster or to assure meeting the target completion date.

Companies fund Schedule-Driven Projects for many reasons. Some of the most common business needs that justify these projects are: Beating the competition to market, meeting an unexpected market demand for product, fulfilling a customer’s need, etc. On these projects, the business need for schedule is clearly identified and has higher priority than the cost of the project. However, quality and safety are not to be compromised and have absolute requirement. Quality must be achieved to assure a successful startup and the work must be completed without accidents. Teams only have the flexibility to trade-off cost and schedule options.

To achieve the objective of a Schedule-Driven Project, two main requirements are paramount...

1. The target schedule must be achievable – If there is a risk of missing the target completion date, these need to be known as early as possible so that the risk of potential delays can be minimized and considered in the business funding decision.
2. The project is executed within the target schedule or better – This assumes adequate skilled workers are available and productivity meet the budget and that quality, rework and safety issues are managed efficiently.

The **Construction Labor Market Analyzer®** (CLMA) tools and services can help with both of these requirements for Schedule-Driven Projects by enabling the more realistic outcome by providing reliable data on labor supply and demand during early phases of the project to support realistic scheduling and project planning.

Getting the Schedule Right

The CLMA® provides early project risk intelligence for owners to develop more reliable project Schedules by providing a realistic evaluation of the current construction labor market supply and demand environment.

Empirical research (RT-318) completed in 2015 by the Construction Industry

CRAFT LABOR STAFFING DIFFICULTY	AVERAGE COST CHANGE	AVERAGE SCHEDULE CHANGE	OSHA RECORDABLE INCIDENT CASES (PER 200,000 HOURS)
Moderate - Severe	17.3% (8.4%, 26.2%)	22.5% (11.5%, 33.4%)	0.94 (0, 2.84)
Slight	3.2% (-0.9%, 7.3%)	12.8% (7.7%, 17.9%)	0.43 (0, 1.72)
No Difficulty	-6.2% (-10.7%, -1.8%)	6.4% (1%, 11.8%)	0.26 (0, 1.25)






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Institute (CII), in collaboration with the CLMA®, the [Construction Users Roundtable](#) and [NCCER](#), investigated, documented and reported that skilled labor shortages can dramatically impact project costs and schedules as shown in the table above.

The CLMA® is designed to identify future labor issues in a way similar to how Google Maps or Waze identifies traffic challenges. The CLMA® can't solve the labor problem, in the same way your phone application can't prevent an accident or guarantee you'll get to your travel destination on time and without problems. But when an owner uses the CLMA® early in project planning, they can forecast the potential schedule impact (E.g. inability to staff projects and/or lower productivity), which on average ranges from a 6.4% to 22.5% increase depending on the labor availability severity. The owner can then build these potential delays into their Project Schedule Planning and mitigate this risk. Quantifying schedule impacts is difficult because it requires proving a negative in an environment where the project schedule is assumed to be the optimal timing for the project; however, demonstrating potential schedule impacts during early planning is doable.

If early planning shows the forecasted project schedule will be longer than expected because of labor shortages, it's best to know early and avoid funding projects that may experience unexpected post-funding schedule increases resulting in project failure. In some cases, other alternates can be developed or the risk of a significant delay can be mitigated with thorough planning.

When the potential for expected schedule delay is known early, project teams may be able to identify creative alternate scope or execution approaches to counter-balance the potential delays and deliver better value. Again, this is best completed early in the project before detailed engineering and construction are started. For more on this, refer to the CLMA/CURT white paper on Risk Mitigation during a Labor Shortage.

In some cases, the CLMA® may report sufficient labor availability for the project with little or no risk of schedule impact. This information is also invaluable for developing reliable Project Schedules with confidence and may help avoid committing unnecessary capital by funding higher costs than required.

Project Executed per the Budget

The key to meeting the project schedule is to plan and execute the project efficiently and mitigate the risks of unexpected labor shortage impacts on wages and productivity. For owners this includes using the CLMA® to identify the risks and then planning the execution to mitigate the impact.

When an owner uses the CLMA® and has early knowledge that there is a potential for a labor shortage, they can plan and execute the project so that the risks of project schedule overruns are minimized, if not eliminated, by

- ✓ Selecting contractors with a proven, stable workforce and demonstrated capability to recruit and develop skilled craft workers
- ✓ Planning for appropriate prefabrication and modularization to move work to other areas which have better labor availability

- ✓ Considering alternate locations or project timing, if possible, to avoid specific shortages cause by other projects in the region
- ✓ Planning an appropriate wage, per diem and bonus compensation package with the contractor to attract and retain skilled workers without using excessive overtime and per diems.
- ✓ Working with the contractor to establish the right job conditions to ensure retention of the best workers throughout the project duration.

During project planning and execution, the goal should be to minimize the total schedule impact of the labor shortage. One potential goal would be to achieve better results than predicted in the CII research – E.g., delivering a project during a severe labor shortage for less than the 22% delay reported by CII on past projects and an on-time startup could represent a very successful project outcome.

Conclusion

In Schedule-Driven Projects, the most important objective is to deliver the project results on or before the target startup date. Labor shortages result in a high risk of not achieving this objective.

Using the CLMA® early in project planning to identify the risks of a labor shortage gives an owner the information required to assure the Project Schedule is realistic and achievable and helps effectively plan and execute the project to mitigate labor risks. Using the CLMA® throughout the project duration enables an owner to carefully monitor labor market risk and use leading indicators to anticipate and avoid project labor schedule uncertainty.

Finally, in the process of working to get the project schedule correct and plan the project, there is also the possibility that the project team is able to identify possible further schedule reduction opportunities to deliver the project earlier while successfully delivering on the objectives.

Let us help you avoid the schedule impact of labor uncertainty so you can execute successful projects.