Pandemics and Construction Productivity: Quantifying the Impact Task Force

This whole effort is to help electrical contractors through these unprecedented times.

We want these resources to help you with your operations.

If you have questions, please reach out to your local chapter Josh Bone at: josh.bone@electri.org
Pandemics and Construction Productivity: Quantifying the Impact
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Our work is far from over...

• We will continue to monitor project impacts over the next 12 months

• We are still actively collecting project data.

• We need more data to measure the impact on Line, Systems and Horizontal Projects

• If you are currently working on federal government projects, please contact Josh Bone.

• Everyone that shares their data with us will receive a special report that compares your project data against the national average.

• Contact Josh Bone if you are willing to share your data: josh.bone@electri.org
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Link to Pandemic & Construction Productivity Report

Pandemics and Construction Productivity Study Overview
This video will provide individuals with an overview of the report findings relating to productivity impacts as a result of new PPE requirements and social distancing guidelines.

Pandemics and Construction Productivity Study
This video will provide further details to help quantify productivity impacts by task as a result of new PPE and social distancing guidelines.

Pandemic Mitigation Tracking Overview
This video will provide an overview of the report findings relating to lost hours on jobsites as a result of new safety requirements.

Pandemic Change Order Calculator
This video will help contractors quantify their own project related impacts by using the change order calculator which can downloaded from the link below.
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Pandemic Business Impacts Overview
This video provides and overview of projects specific impacts that contractors are most frequently facing around the country.

Pandemic Business Impacts Contractor Interviews
This video includes interviews with contractors sharing their personal stories of how their own jobs are being impacted by COVID-19.

Change Order Calculator and Frequently Asked Questions

If you have questions regarding the report or additional support documents
Contact – josh.bone@electri.org

More resources to come to help support our contractors in these unprecedented times.
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Task Force

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Thank you to all our contractors that shared your data!
Pandemics and Construction Productivity: Quantifying the Impact

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Study Objectives

1. Quantify the Impacts on Jobsite Productivity
2. Provide a Tool to Price Change Orders
3. Provide Information for Pricing Future Projects
3 Parts to the Study

• Pandemic Mitigation Tracking
  • Specifically quantifies hours associated with preventative measures such as training, health screenings, cleaning and disinfecting, job site access and administration instituted to minimize exposure.

• Productivity Benchmarking
  • Quantifies the reduction in direct work productivity related to social distancing rules, staggered shifts, reduced crew sizes, increased personal protective equipment requirements and related job site regulations.

• Business and Project Impacts
  • Other impacts experienced contractors who participated in this study.
Preliminary Findings

- The impact of this pandemic suggest that construction productivity has been impacted by nearly 20%.
- A rule of thumb for self-performing contractors is 10% impact on productivity = 100% impact on profitability.
- Contractors need to consider seriously the impact on their profitability and seek equitable adjustments.
20% Significant Impacts on Business

- **7%** labor hours lost on pandemic mitigation activities
- **12.4%** additional overall productivity impact on vertical construction

Many "ripple effect" indirect impacts to the business not yet quantified
Pandemic Mitigation Tracking
Part 1
Objective

- Quantify lost productivity directly associated with jobsite pandemic mitigation requirements such as training, health screenings, cleaning and disinfecting, job site access and administration, all instituted to minimize exposure.
# Collected Mitigation Activity

<table>
<thead>
<tr>
<th></th>
<th>Total Hours</th>
<th>% of Total Hours</th>
<th>% of Mitigation Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Hours Available</td>
<td>77,205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitigation Safety &amp; Training</td>
<td>1,598</td>
<td>2.1%</td>
<td>29.6%</td>
</tr>
<tr>
<td>Mitigation Distancing &amp; Access Rules</td>
<td>1,865</td>
<td>2.4%</td>
<td>34.6%</td>
</tr>
<tr>
<td>Mitigation Cleaning &amp; Disinfecting</td>
<td>1,400</td>
<td>1.8%</td>
<td>25.9%</td>
</tr>
<tr>
<td>Mitigation Administration</td>
<td>532</td>
<td>0.7%</td>
<td>9.9%</td>
</tr>
<tr>
<td><strong>Total Mitigation Hours</strong></td>
<td><strong>5,394</strong></td>
<td><strong>7.0%</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
State Distribution of Mitigation Samples

State Distribution of Mitigation Data

“Heat Map” Distribution of Samples
Mitigation Hours as a % of Total Hours by Week

- **Majority of United States "Shelter In Place" 3/22**
- **Construction Projects Resume with Mitigation 3/30**
- **OSHA Issues Pandemic Interim Enforcement Response Plan 4/13**
- **President Signs Initial $484B Stimulus Package 4/24**

- 2.2% on 22-Mar
- 2.3% on 29-Mar
- 3.0% on 5-Apr
- 5.8% on 12-Apr
- 6.6% on 19-Apr
- 7.0% on 26-Apr
- 9.3% on 3-May

Red line: Mitigation % of Total Hours
Black line: Average of Mitigation Hours
Productivity Benchmarking
Part 2
Objective

- Measure electrical contractor companies’ pre- and post-pandemic direct work productivity
- Measure the impacted tasks by market segment, project/job type and geographic area
- Provide analysis, summary findings and a roadmap to operationalize the results
Project Criteria

1. **Active Projects**
   - Projects that have tasks ongoing during COVID-19.

2. **Capturing Production**
   - Isolating pre-impact production vs. post-impact production by market segment and task code.

3. **Window of Activity**
State Distribution of Productivity Samples

State Distribution of Productivity Data

States Represented by Agreed to Participate+Completed Sample Data

“Heat Map” Distribution of Samples

Powered by Bing
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Vertical Construction Productivity Against Events

- CDC Creates Incident Management and Issues Work Guidance 3/1
- United States Declares Coronavirus a Public Health Emergency 3/1
- United States Declares a National Emergency 3/13
- Majority of United States Shelter in Place 3/22
- Construction Projects resume with Mitigation 3/30
- President Signs Initial $484B Stimulus Package

Graph showing percentage changes:
- 12-Jan: -1.5%
- 19-Jan: -2.7%
- 26-Jan: -1.0%
- 2-Feb: -3.1%
- 9-Feb: -13.1%
- 16-Feb: -14.1%
- 23-Feb: -14.1%
- 1-Mar: -20.5%
- 8-Mar: -16.4%
- 15-Mar: -21.3%
- 22-Mar: -22.8%
- 29-Mar: -21.3%
- 5-Apr: -19.9%
- 12-Apr: -12.4%

Legend:
- Vertical Construction
- Average % Per Hour
Vertical Construction Productivity by Task Against Events

- Activities with close proximity work and had to follow social distancing such as Overhead Rough In were impact most.
Contractor Participation Benefits

- Your own impact numbers and data set compared to national average
- Ability to quantify impacts to on-going work
- Ability to quantify impacts to jobs that re-start but are still required to observe new measures
- Ability to add costs to future estimates
Business Impact of a Pandemic

Part 3
Business Impact Objective

• To develop and identify necessary education and training that would enable Electrical Contractors to better manage their projects and businesses.
• To mitigate the impact of a pandemic on their field and project management staff.
• Focus on three specific areas:
  • Jobsite Impacts
  • Project Management Impacts
  • Business Impacts
Jobsite Impacts

Q1: Weighted Average

- Additional cleaning / greater number of safety (PPE) requirements: 2.4
- Distracted workers (talking about the news): 2.2
- Access issues (limited workers, temperature testing, single access): 2.1

NECA
Project Management Impacts

Q2: Weighted Average

- Less project review (fewer PM visits/less rigorous monthly review meetings)
- Time spent in project re-start planning
- Additional time to track cost impacts (documenting pre-pandemic impacts on project that would be a potential change order) from post-pandemic impacts
Business Operations Impacts

Q3: Weighted Average

- Project cancellations or projects delays
- Understanding rules from various governmental agencies
- Additional meetings: internally, with clients, with vendors, contingency planning, job re-start procedures (leadership having to pay too much attention to the pandemic)
Additional Impacts

Q4: Weighted Average

- Service impacts – reduced volume, limited access, delayed projects
- Pricing future impacts of the pandemic
- Supply chain delays
If you’d like to take the survey

- https://www.surveymonkey.com/r/COV19ELECTRI
Thank You

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