

**American Bar Association
Forum on the Construction Industry**

**TAKING ON TOO MUCH WATER: Making Sure Control and Management of
Costs Provide the Survival Kit of Sound Evidence When Needed**

(“Taking on Too Much Water”)

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**October 25 & 26, 2007
Hyatt Regency Newport Hotel & Spa – Newport, RI**

TAKING ON TOO MUCH WATER

I. INTRODUCTION¹

Lawyers in general and construction lawyers in particular, spend considerable time and energy in developing entitlement theories to justify liability. This is what law professors devoted the vast majority of their time in classrooms teaching – what set of facts establishes a breach of contract or duty. The substantial majority of published construction claims literature simply reinforces this focus. “Entitlement” and “fault” are concepts that lawyers, young or seasoned, feel competent, comfortable, and even eager to explore and develop evidence to prove or disprove. What frequently gets lost in the shuffle is the difficult art of proving, with credibility, the theoretical soundness, calculations and support for the damages claimed that are causally connected to the entitlement claim, particularly in the difficult area of disruption and inefficiency claims. Many a construction claim ship has foundered on the lee shore of inadequate damages evidence.

Most lawyers know that in a breach of contract claim, the non-breaching party is entitled to be put in the position it would have been in if the other party had not materially breached the contract. In a similar vein, most lawyers know that only damages that could have been reasonably contemplated between the parties at the time of contracting are recoverable, or in a tort context, the broader foreseeability standard applies. Law school curricula from the time of Hadley v. Baxendale,² have included these generalized damages concepts. Law school did not rig the damages ship as well as it rigged the entitlement ship. To “right” the ship, lawyers representing construction clients, before and during a claim, need to revisit the basic theories of proving damages in

the construction context and counsel their clients to develop the necessary institutional record-keeping to support a rational and well-supported damage claim.

Lawyers representing construction clients obviously play a key role in developing the damages claim in an arbitration or litigation matter. Lawyers should play a key role in helping existing clients develop institutional processes and protocols as part of ongoing work. The continuum of situations is:

1. Teaching clients what the expectations will be if a dispute ever arises and assisting them in developing internal accounting and record keeping systems that will meet those expectations.
2. Taking an active, but behind the scenes role, when a dispute first arises on a project to assist the client in maintaining project records that will support a later damage claim, if necessary.
3. Stepping in when the dispute has reached the arbitration and litigation stage.³

The first of the three situations may not be relevant when the attorney is called in after the dispute has ripened. Likewise, lawyers often find themselves entering the fray after the second situation has come and gone. To a large degree, however, the same general principles of damages remain valuable in all three situations, and the careful employment of what cost and project records exist is crucial to the damages proof.

In the construction industry, some of the largest and most difficult to prove are claims involving so-called “indirect”, or “impact” damages consisting of disruption and inefficiency costs. Most lawyers are comfortable in proving direct damages, such as the cost of segregated additional work, and, in most cases, pure delay damages for extended

field office overhead and equipment associated with a project suspension or delay. One court framed this “entitlement/damages” dichotomy thus:

The proof demonstrates that a large number of overtime hours were in fact worked [and the] testimony also demonstrates generally that the working of overtime hours does adversely affect labor efficiency.

If no more than this was necessary, I would have little difficulty with the claim. In order to address the matter, however, it is also essential that the court have some method of determining what the efficiency loss might have been. It is here that the present claim encounters difficulty.⁴

Proving impact claims for disruption and inefficiency damages not only requires more sophistication but unflinching fidelity to basic damage principles.

II. BASIC RULES OF LAW GOVERNING DAMAGES PROOF

The first step in generating coherent and sustainable damages proof is to review and take to heart the core rules and principles that courts often repeat when reviewing damages proof. The “rules” not only relate to compliance with legal precedent, but they also reflect a large degree of common sense and credibility considerations.

A. The Fundamental Hornbook Concepts.

In a contractor claim, damages are allowed to compensate the contractor for all foreseeable harm caused by the opposing party’s breach. At the same time, any award of damages must be reduced by the savings that the contractor obtained as a result of the breach. As stated in the Restatement (Second) of Law, Contracts, § 347, comment a:

Contract damages are ordinarily based on the injured party’s expectation interest and are intended to give him the benefit of his bargain by awarding him a sum of money that will, to the extent possible, put him in as good a position as he would have been in had the contract been fully performed.

In the construction claims context, § 347 (c) has particular relevance. It provides that an award of damages must be reduced by “any cost or other loss that he has avoided by not having to perform.”

The Restatement (Second) of Contracts also provides a common sense overarching limitation on damages that forms the cornerstone of every defense to a disruption or inefficiency claim.⁵ It provides that “[d]amages are not recoverable for loss beyond an amount that the evidence permits to be established with reasonable certainty.” Every general damages rule and every sustainable damage claim flow from these general principles set forth in the Restatement of Contracts, Second.

B. Direct and Consequential Damages – Limitations.

The basic rule of law for construction damages – like any breach of contract case – is to restore the innocent party to the same economic position he would have occupied had the other party fully performed. Damages must be reasonably foreseeable. Thus, compensatory damages flowing directly from the contract are compensable, while only consequential damages that were reasonably contemplated at the time of contract formation may be typically awarded.

Foreseeability in a breach of contract context is measured by what the breaching party knew or should have known when he entered into the contract that would likely result from a breach.⁶ For example, universities often set summer completion dates to accommodate a number of practical and financial concerns. A contractor entering into a building contract with such a completion date is usually aware that there will be substantial and foreseeable consequences with a late completion. The university might be required to rent additional space to substitute for the delayed building and incur a number of related costs.

The university’s extra costs to complete the building under the same contract specifications are compensable as direct damages. However, the costs incurred in renting

substitute facilities and moving and storage costs, are consequential damages that are compensable only if the parties reasonably foresaw these costs. The university has a strong argument that, since the contract required a summer completion date in anticipation of the fall semester, these consequential damages were reasonably foreseeable.

C. Indicia of Reasonableness.

In addition to being reasonably foreseeable, the measure of construction damages itself must be reasonable. If the costs to repair a building cause unreasonable economic waste because the end product is out of proportion to any benefit conferred by the repair (for example, if the repair was only for cosmetic qualities not needed to make the building useful for its intended purpose), repair costs may not be recoverable. For example, if a masonry subcontractor improperly mixes brick colors and fails to completely fulfill an architect's aesthetic "diamond" pattern design but otherwise builds a structurally sound wall, the plaintiff owner may only be entitled to recover damages under a diminution in value theory. Tearing down the wall and rebuilding it may well constitute economic waste.⁷ Diminution in value is measured as the difference between the expected value of the work properly completed and the diminished value of the work in its defective state. This usually means a much smaller recovery so plaintiffs prefer repair costs.⁸

The mistake that many attorneys make in this context is to assume that the repair and replacement damages will be awarded given the clear breach of the design specifications. The attorney should recognize that a fact finder may decide the price is

too steep and decline to award the damages sought. In this circumstance, an attorney that has failed to provide evidence of diminution in value is left with no recovery at all.

The need for “reasonableness” also comes into play in the proper calculation of damages. Attorneys must be vigilant in testing damages theories and in insuring that all factors have been considered and included. Many otherwise good cases have failed when the damage calculation has left out a critical factor. For example, in Indian River Colony Club, Inc. v. Schopke Const. & Eng., Inc.,⁹ the contractor sought a lost profits award and twice persuaded the trial court to do so. Unfortunately, the contractor proved its overhead costs from the date of breach forward rather than its overhead costs for the entire contract period – a necessary calculation in the lost profits context. The court stated:

As a result of this court’s prior opinion remanding for a new trial on damages, we note that Schopke has had two opportunities to prove lost profits. Having failed to do so, we hold that Schopke is not entitled to yet another opportunity to prove lost profits.¹⁰

It is fair to say that this particular ship went off course twice and then finally aground.

D. Definite and Logical Connection Between Breaches and Damages Sought.

Every attorney prosecuting a claim should recognize that the opposing attorney will be developing alternative explanations for why the claimant incurred the costs. The classic case is where the contractor claims that the owner’s actions “caused” a delay on the project but the owner’s attorney finds reams of correspondence and daily reports in which the contractor has blamed several subcontractors for the same project delays. The question for a fact finder is “Which party’s actions actually caused the delay?” Many attorneys are satisfied with establishing “bad” acts of the opponent and “throwing” all of

the damages on the table, all without a careful development of the causal connection between the two.

The reasonableness test for proving the amount of damages is usually less onerous than proving causation in fact to a “reasonable certainty.” Reminiscent of the “but for” test in tort claims, the plaintiff must prove that the other party’s breach was a “substantial factor” in causing the damages incurred in order to recover.¹¹ A failure to adequately connect the dots will lead, as courts often point out, to a failure of damages proof despite proof of entitlement. Generally, the costs incurred must bear some time relationship to the breaches claimed. This is a fairly straightforward proposition when the costs immediately follow the alleged breach in a predictable manner. In addition, the costs must be logically related to and result from the alleged breach. When the costs consist of work performed that was not part of the original contract, the proof is not difficult. When the additional costs are related to work similar to the original contract work or a mixture of new and original work, much care must be taken in developing the causation proof.

In addition to the pure “single party” causation problem, the typical construction case involves numerous parties, some or all of which may have contributed to the problem. Here again, attorneys that fail to fashion their proof to adequately apportion damages will find their damages claim scuttled. There must be clear proof apportioning the damages attributable to the acts or omissions of each party – otherwise damages are likely to be denied.¹²

Attorneys must recognize that a fact finder may conclude that not all of the damages presented should be attributed to one party. With this recognition, the adept attorney will provide a level of proof that allows the fact finder to perform an allocation. If the

attorney fails to provide adequate tools to perform such an allocation, the fact finder may conclude that there has been a failure of proof altogether.

E. Cannot Recover Subjective And Speculative Damages.

In line with the “reasonable certainty” test, damages may not be recovered if they are too speculative or subjective. This issue arises most frequently in the context of lost profits. The evidence offered to prove lost profits, whether in the form of expert testimony or accounting calculations, must provide sufficient data to estimate the amount of damages based on actual facts, rather than mere witness conclusions.¹³ Courts frequently base a rejection of damages claims on this principle. “[T]he law takes cognizance of neither speculative contracts nor speculative damages, but only such as are fixed and definite.”¹⁴ “[A] claim for damages must be supported by a reasonable basis for calculation; mere guess or speculation is not enough.”¹⁵ Evidence of damage for loss of profits “must be reasonably precise so as to provide ... an adequate framework upon which to base a verdict.”¹⁶ “Damages based on surmise, conjecture or speculation cannot be sustained. Damages must be proved with reasonable certainty.”¹⁷

F. Case Examples of Shipwrecks.

As stated above, one of the most common – and fatal – mistakes that construction lawyers make is putting the bulk of their case preparation into proving liability while minimizing proof of damages, and importantly, linking those damages to the party at fault. It would, of course, be possible to cite hundreds of cases where courts denied claims due to insufficient damages calculations. Without belaboring the point, however, two cases provide examples of failure to remember and apply the fundamental damage principles.

In City of Westminster v. Centric-Jones Constructors,¹⁸ the City engaged Centric-Jones to expand a water treatment plant. Centric-Jones employed a subcontractor and separate engineering firm to assist it with the work and design plans. When the project went over budget and beyond schedule, the City terminated Centric-Jones' contract and hired another contractor to redo the work. The City sued Centric-Jones and the other entities for damages incurred in having to redesign and rebuild portions of the system, but lost on a directed verdict at trial for failure to present a reasonable basis to apportion damages. The directed verdict was affirmed on appeal.

At trial, using the total cost method, the City presented evidence of its total costs to remove, redesign, and rebuild the defective construction. The City also presented expert testimony that these costs were reasonable. However, no expert testified that the original work which forced a rebuild could be traced to any act of Centric-Jones. In fact, at the end of the project, the City benefited from a better system that corrected certain deficiencies in the original system for which Centric-Jones was not responsible. The City also failed to offer evidence that apportioning the costs among the parties would be impossible. Moreover, the City was in a better position than any other party (including Centric-Jones) to apportion the costs of redesign and rebuild. For these reasons, the City's entire damages claim was denied at trial.

In Biemann and Rowell Co. v. The Donohue Companies, Inc.,¹⁹ two prime contractors were hired to build the Neuropsychiatric Hospital at the University of North Carolina at Chapel Hill. One was the HVAC contractor, and the other was the general contractor. Extensive delays in the project forced work to be conducted out of sequence.

One contractor sued the other for project delays and resulting damages. Relying on the modified total cost method approach, the plaintiff accepted responsibility for a small portion of the excess costs, attempted to prove its original estimate was reasonable, and then attributed the rest of the cost overrun to the defendant. Even though the plaintiff had kept a daily log book of labor overruns throughout the project, and relied on this logbook at trial, it failed to tie the extra labor costs to any specific delay event or action of the defendant. The court held that damages could not be measured with reasonable certainty and denied any recovery to the plaintiff. The court stated:

Plaintiff also failed to properly establish responsibility for its additional costs, since it did not isolate the nature and extent of specific delays and connect them to an act or omission by defendant. Instead, plaintiff allocated only a narrow set of costs to itself, and then attributed the remainder of the cost overrun entirely to defendant. Plaintiff failed to prove that it sustained damages that can be ascertained and measured with reasonable certainty and consequently we reject this assignment of error.²⁰

III. PROJECT COST AND FIELD RECORDS – GENERAL CONSIDERATIONS

With these general legal principles in mind, focus can now shift to the issue of what project cost and field records are needed to establish the more difficult claims related to disruption and inefficiency. No lawyer or other construction professional would argue with the notion that it is advisable to keep detailed project records regarding costs incurred, quantities completed and in-process, and location of equipment and other project resources. However, when an issue arises on a construction project that will possibly impact the job, and there will be a future need to prove an impact claim, there are some practical considerations that complicate the approach to be taken. Included in these considerations are the costs to maintain such records as a matter of company policy,

and the additional cost to create such records on an individual project, if a system is not already in place to do so. These considerations must be weighed in terms of the ultimate probability of collecting damages and support costs in a particular circumstance if such an effort is undertaken.

For a small company, it is often very difficult to begin to accumulate separate cost codes and information with respect to production of units if the job staff is not adequate to do so. In addition, for both large and small contractors, the immediate concern of completing the work and avoiding any contract assessments for liquidated damages or other owner contract damages often overrides the effort towards cost and productivity documentation.

One consideration that some contractors do not fully consider is the establishment of cost codes and productivity tracking at the outset of the job as a matter of corporate policy. Obviously, the more complicated the project, the more extensive is the cost recordation set-up and the tracking of cost and productivity. If the contractor has a history of bidding and accounting for costs in detail, there is already a corporate culture established that recognizes the importance of such data. Conversely, if a company has been profitable historically without such data, and is growing by taking on bigger jobs, it often finds itself unable to cope with the large impact claim since the historic corporate philosophy has been to build the job and not the claim. Unfortunately, it normally takes one large problem project without a resulting collection of overruns due to impact to influence the company's decision to make changes in the level of record-keeping.

Given the advances in, and widespread availability of, computer technologies to assist in the capturing of such data, and the importance of actual productivity

information to future bidding, it is difficult to defend a company's decision to forego detailed tracking of actual costs and productivity – especially for large contractors performing large projects. In cases where liability is clear, and assuming damages meet the various reasonableness tests, courts and arbitrators allow some latitude in the methodology used to “prove up” impact damages.

IV. WHAT ARE THE DAMAGES THEORIES AND RECORDS NECESSARY TO SUPPORT RECOVERY?

When the lawyer did not assist the construction client early on in developing workable cost accounting systems, the first contact with the client comes when a major problem is just cropping up. When a lawyer is contacted at that point, he or she frequently tells the client to “keep very good records as to the impact and the costs”. Exactly what this means, however, is not quite so clear. In reality, documenting costs of changes for extra work is not the primary problem. If a contractor is asked, in an orderly fashion, to do some extra work (some excavation or concrete activity, for example) where there are no contract unit prices, most contractors have the ability to track such costs, either as part of its integrated accounting system, or in subsidiary or supplemental records. The more difficult task, however, is in identifying costs of inefficiencies or impacts relating to delays, acceleration actions, or extra work – an “unsegregated” claim. The best evidence to support such a claim is job-specific data, not historical or trade publication data. When faced with an unsegregated claim, courts and arbitrators today are not as willing to credit a contractor's assertion that it had no other way to calculate its actual costs stemming from the breach. A failure to justify, under basic damages principles, the need to use an unsegregated claim methodology can lead to a court

throwing out a damage calculation because it is too speculative or imprecise. Ironically, the increased availability and use of sophisticated computer-based record keeping systems that allow comprehensive tracking of trends and costs has made this showing more difficult.

A. Methodologies.

In determining what records a contractor needs to maintain generally, and when an impact or ripple event occurs on the project, it is helpful to first review what a contractor will eventually need to demonstrate to recover additional compensation due to labor and equipment inefficiencies. When it comes to documenting and proving costs of inefficiencies and impact not subject to direct costing, courts and arbitrators have historically allowed damage claims to proceed under certain unsegregated damages theories. There are several commonly used methodologies, in approximate reverse order of preference:

- Total Cost Approach;
- Jury Verdict Approach;
- Modified Total Cost Approach;
- Use of Inefficiency Percentages from Published Sources (e.g., US Army COE, Business Roundtable, MCA, NICA, etc.);
- Expert or project personnel estimates of inefficiency impact percentages;
- Measured Mile.

Several of these require some explanation.

1. Total Cost Approach

The total cost approach is a simple calculation:

Total Cost = actual cost incurred in performing contract minus contract bid price.

Frequently dubbed the “last resort” method of proving damages, the total cost approach is almost too simple because it makes two assumptions that are rarely true: first, that the contractor was not at fault for any of additional costs incurred, and second, that the additional costs are the sole responsibility of the other party (and no third parties). In order to use this theory, courts require showing four factors:

1. proof of actual, segregated losses with reasonable accuracy is impossible;
2. the contract bid was realistic;
3. the actual costs were reasonable; and
4. the plaintiff is not responsible for the additional losses.²¹

Courts will not hesitate to reject the total cost method if a direct computation of damages was possible,²² or if the contractor fails to allocate responsibility for damages between the contractor and the owner.²³ The total cost approach is rarely applied today.

2. Jury Verdict Approach

The jury verdict approach is a “fair and reasonable approximation” of the damages based on all of the evidence of costs and expenses. Also a disfavored method of proving damages, the jury verdict approach requires showing:

1. clear proof of injury,
2. there is no more reliable method of proving damages, and
3. a fair and reasonable approximation can be made based on expert testimony and other evidence.²⁴

This approach arises in cases where the contractor uses the total cost approach, but the court (or a jury) makes its own reasonable approximation of the damages based on all the evidence presented.²⁵ The key to the jury verdict approach is sufficient evidence to show damages with reasonable certainty.

3. Modified Total Cost Approach

The modified cost approach is one variation of the total cost approach:

Modified Total Cost = actual cost incurred in performing contract minus contract bid price, reduced by the costs attributable to the fault of the contractor or bid errors.

Courts are more likely to accept the modified cost approach, assuming the contractor can prove that a segregated damages measure was impossible.²⁶ However, as with the total cost approach, if the court finds that segregating damages would have been possible, but for the contractor's inadequate recordkeeping, this approach will be rejected.²⁷

4. Inefficiency Percentages Based on Published Studies or Experts

In some situations, contractors attempt to present their damages for inefficiencies and impacts caused by the owner by applying inefficiency percentages to actual costs incurred during a specific period. These percentages are sometimes lifted from published sources (e.g., Business Roundtable, US Army Corps of Engineers, Industry Manuals, etc.) or introduced through experts or job personnel familiar with the project. Although these methods might be preferable to a Total Cost Approach, and be of some value during negotiations, they are not often found to be of strong evidentiary value before a trier-of-fact, as the published sources are typically not scientific 'studies', but merely summarized industry-specific estimates that are often viewed as favorable to the contracting

community. Moreover, by definition, the percentages lifted from published studies are not specific to the job at issue, and typically not even applicable to the type of construction or geographical area of the country being evaluated.

Use of these published studies requires a careful foundation and qualified expert testimony. For example, in Havens Steel Co. v. Randolph Eng. Co.,²⁸ the court accepted the proposition that excess overtime reduces efficiency and is compensable. However, the court rejected the proffered statistics from the Department of Labor, the National Electrical Contractors Association and the Mechanical Contractors Association as unsupported by competent expert testimony.²⁹ As the court remarked: “Lacking the information the chart contains, or any other evidence concerning the inefficiency factor produced by overtime work, I have no method – other than complete, uninformed speculation – of making the calculations necessary for the present claim.”³⁰

5. Measured Mile Approach

The measured mile (“MM”) approach is the most preferred method of proving a specific type of damages that are traditionally impossible to prove – loss of productivity and inefficiency losses. This approach is calculated as:

Measured Mile = contractor’s actual productivity during abnormally disrupted period minus actual productivity during normal (unimpacted) period of work.

The challenge in using this method is comparing two time periods that have nearly identical work activities.³¹ The contractor should be careful to deduct any losses resulting from disruptions which are not compensable, such as bad weather or contractor performance issues that did not occur in the ‘normal’ period of performance. Overall, this is a well-established method of proof that, when appropriate, will be treated with

favor.³² Contractors sometimes do not have an unimpacted period of performance on a project. In these cases, it sometimes refers to other similar projects performed by the company in similar locations with the same or similar supervisory staff to establish the “normal” baseline.

The MM approach, whereby a comparison is made between a period of little or no impact by the owner on the project to other periods on the job where there are alleged inefficiencies due to extra work, lack of access, delays, etc., is generally the preferred method of proving an inefficiency claim, although there are issues even with respect to this approach. As an example, using a MM approach, it might be that a contractor can demonstrate that they accomplished some concrete activities for 2 man-hours (MH) per cubic yard (CY) during a specific period, and then, later, this ballooned to 5 MH per CY, the contractor can not necessarily stop at this point and be comfortable with its claim and the related documentation. The contractor still needs to prove the comparability of the work and the lack of its own issues during some or all of the later period in order to recover the differential. This is often difficult if the work is not segregated by the contractor, in the first instance, into comparable areas of the project, either by location, type of work, or degree of difficulty. The level of detail necessary to properly document an inefficiency/impact claim is often driven by the level of complexity of the project, as well as the number of specific areas of work that are subject to varied levels of impact. Stated another way, if not all areas of direct cost work (e.g., excavation, concrete, steel installation, HVAC/Electric systems, etc.) are impacted equally, it becomes even more important to make sure that costs and productivity are tracked and analyzed separately. As discussed further, this is true even within one specific area of work (e.g., for concrete,

formwork, placement, finish/point and patch, etc.), and adds another level of necessary detailed tracking in order to completely support an inefficiency claim.

B. Necessary Records and Examples of Inadequate Records.

Given the above, some of the considerations that go into the tracking of costs and productivity include:

- Physical location of the work;
- Type of work and sub-categories;
- Timing of the performance of work;
- Perceived differential in the impact on varied sub-categories of work;
- Materiality of the work in each area;
- Cost to accumulate the costs and productivity in question.

Once the areas and types of work are identified for detailed tracking, then it is important to make sure that the contractor maintains timesheets and equipment logs in sufficient detail to track these areas of work. Project personnel must be informed of the importance of keeping these records current and accurate as part of their day to day responsibilities. Consideration should be given to bringing additional administrative/clerical staff to the project, and it is advisable to notify the owner that this additional staffing is necessary as a result of the particular event or issues arising on the job. Project managers and superintendents should also be advised to keep detailed diaries and meeting notes documenting what is happening in the field and what is being discussed in project status meetings. Obviously, notice letters should be sent in accordance with the contract requirements.

Obviously, each project and series of events is unique, and might result in the need for different levels of detail by the contractor in order to adequately document, or ‘prove’ an inefficiency claim. As a result, it is not possible to prescribe exactly what records should be accumulated in all cases, since it will vary considerably. One instructive approach to understanding the availability (or lack thereof) of cost and productivity data is to look at some actual examples of information that was available or accumulated in past cases with which we have been involved. By doing so, the types of records deemed necessary, and the impact of not having such data, becomes clearer. The following are five examples that assist in the understanding of the issue of required cost documentation. In all cases, no references are made to specific contractors or contracts, and the numbers in the Attachments have been changed from the original amounts to protect any confidential information.

- 1- **Boston Big Dig Construction Project** - On one of the Big Dig construction projects, the contractor had a major impact claim for concrete operations. Initially, as many contractors do, the contractor submitted a total cost approach relating to the labor and equipment cost incurred for concrete operations, and asked for the difference. The contractor stated that it had to present its claim in this fashion since there was no period where the job had not been impacted by the owner. Despite this assertion, the owner insisted, as part of a negotiation process, that a MM be put together by the contractor, so that the owner could evaluate the validity of the claim. In Attachment I, we have presented a depiction of the MM analysis that the contractor created. As shown in the chart, the contractor indicated that the MM level, after the period

of initial learning curve, was 2.50 MH/CY. However, the contractor believed that this MM level, which was above its bid level, was still too high to measure against the impact period, since there was some acceleration and overtime in the base MM period. Therefore, some negotiations resulted on this issue. More importantly, however, the owner observed that the MM analysis was based on time only, (i.e., not cost or hours per pour, or structure), so it then became critical to make sure that there were no concrete MH's in the impact period that should have been assigned to units completed in the base MM period. The contractor presented all of the concrete operations together, since it did not track the various elements of the concrete operations (e.g., formwork, placement, point and patch (P&P), etc.) by pour or structure, but merely tracked the costs by these sub-elements of the concrete work. The owner observed that the P&P operations increased over bid at a much higher rate of increase than the rest of the concrete operations, and that the P&P hours for the CY's poured during the base MM period were actually incurred in the impact period and were artificially increasing the differential and the claim (See Attachment I). The owner believed that much of the growth in the P&P hours was due to the poor quality of the finishing operations, and was not, therefore, part of the overall acceleration effort for which the contractor was trying to capture damages from the owner. Therefore, as presented in Attachment II, it became necessary to estimate how much of the impact P&P hours related to base MM poured CY's, and this became a major area of disagreement between the parties, some of which could have been avoided if

the contractor had tracked costs and hours by pour/structure, instead of just by time. Also, since the contractor did not track hours by pour, it could not compare pours during the base MM period with those in the impact period that were of comparable degree of difficulty. Instead, the owner and contractor had to make some adjustments and estimates to the overruns to address the perceived lower level of difficulty of the pours during the base MM period as compared to the impact period. Although there were problems with the contractor's presentation due to the fact that they did not have hours or costs by pour, there was, at least, enough data available (and subsequently compiled) that gave the parties a framework for negotiations and mediation, and the inefficiencies were ultimately settled within the framework of a contract close out. This is often not the case, as demonstrated below.

- 2- **Overseas Embassy Construction Project** – On an overseas construction project, a contractor submitted a claim for inefficiencies. On this case, the contractor had no information accumulated as to what the laborers were working on in the field, so it presented its inefficiency claim in an alternate fashion. Basically, the contractor concluded that, since they believed that they were delayed two years, it was appropriate to look at the last two years of the job, and compare the revenue generated from requisitions per labor MH to the revenue per MH in the first three years of the job, and claim the shortfall of revenue associated with the revenue/hour differential. The presentation was basically as shown in Attachment III. The contractor maintained that it should have been able to realize revenue per MH during the protracted contract

period consistent with the beginning of the job. This approach was presented before a Federal Board of Contract Appeals judge, and was found deficient. No inefficiency damages were awarded, due to the criticisms offered by the owner and its expert, including the facts that the type of work were very different in the two periods; that there were billings for mobilization and materials in the beginning of the job, driving up the revenue per MH as compared to the end of the job; and that there was considerable re-work and punch list in the delay/protracted period which would not generate revenue consistent with normal contract activities, regardless of any delay or impact. Obviously, some additional effort should have been undertaken by the contractor to support the claim contention, since they were awarded no damages.

- 3- **Remediation of Landfill** – In this case, a contractor entered into a subcontract agreement for the subcontractor to provide all labor, supervision, tools, equipment and materials to install a landfill closure and water treatment plant. Delays to the project and the subsequent refusal by the subcontractor to commence contract work caused the subcontract agreement to be terminated and the contractor to self-perform the work.

The contractor hired labor brokers to fulfill its need for craft laborers who submitted weekly invoices for their hours worked. The invoice amounts were recorded as lump sum amounts in the contractor's accounting system, and did not reflect any breakdown of the craft labor amounts by task or area of work. The contractor's job cost reports and labor distribution records basically

reflected only total labor, materials and subcontractor costs, without any breakdown by work activity. Part of the reason for this lack of detail was due to the fact that the contractor originally planned on little or no self-performed work, as it was basically 'brokering' the job.

A review of the timesheets, however, did reflect that the Contractor's Project engineer had identified hours to general tasks (e.g., backfill, concrete, etc.), but the information was only on the timesheets and was not contemporaneously entered into any summary or detailed job costing reports during the course of the project. Further, it did not delineate the areas where the work was being performed (e.g., drains, piping, various slope areas, individual pump installation areas, etc.) This created a problem at the end of the job, when the contractor was faced with enormous overruns, and filed a claim approaching \$50M for cost impacts, of which approximately \$15M was for loss of productivity related to craft labor.

The contractor, in order to calculate and prove its damages, created a craft labor database to segregate hours worked by planned contract activities, change orders, extra work and back-charges. The original timesheets were reviewed by outside claims consultants, and compared to other available contemporaneous documentation (i.e. daily logs, QA/QC reports, photographs, interviews with personnel, daily force reports, etc.). Based on this analysis, the consultants coded hours and labor dollars to specific work activities after the work was already completed. Needless to say, this was a huge effort on the part of the contractor (time and money) and the recoding of

timesheets met with limited success, due partially to the lack of involvement in the re-coding process by project personnel familiar with the work. During discovery, the owner and its counsel and consultants termed this database as the contractor's "second set of books." This is a situation where the contractor would have been in a much better position in terms of proving its claim if it had, at the time of the withdrawal by the subcontractor, instituted a detailed job costing system consistent with other projects where they self perform some or all of the work. In hindsight, there is no doubt that the contractor would have spent less money to document its actual cost, and would have had a more persuasive set of books as a basis for its claim foundation, if it had initiated some type of job costing system at the outset.

- 4 - **Highway Bridge Construction** – A general contractor performing a bridge contract for a State Government ended up in a dispute with a steel subcontractor relating to the subcontractor's failure to deliver steel in accordance with the contract drawings (fabrication errors) and for delivery of the steel to a staging area on land rather than "to the hook" on a barge as required by the contract. The general contractor suffered inefficiencies both in its land and water operations, and developed a very detailed analysis of productivity based on a re-capitulation of the labor effort incurred and progress achieved by pier structure on the bridges. As shown in Attachment IV, the contractor was required to estimate the percentage of labor effort associated with three stages of the structural steel installation – erection of steel girders, erection of cross beams, and installation of anchor bolts (i.e.,

bolting). Since the contractor did not track the labor costs by pier structure (or stage of installation) during the project, they had to estimate the labor associated with the various bridges during a specific period of time by estimating the percent of completion of each pier/bridge and develop a method of assigning relative values for completion of the three steel erection stages of construction..

To prepare this estimate, the contractor used the ratio of the original bid costs for each of the three structural steel activities to arrive at effective percentages for each. (See Attachment IV.) These percentages were used to spread the total pier weight across the three activities (weight was used as a calculus for spreading to the three activities in order to measure some benchmark of completion for each activity). This allocation was necessary since the contractor was often simultaneously performing one or more of the installation activities at multiple locations (i.e., pier structures) on the bridges.

In addition, since the contractor did not segregate costs by bridge or pier, they had to estimate the level of effort performed to time periods to calculate any inefficiencies using a measured mile approach. Therefore, the contractor needed to determine the percentage completed, by period and installation activity, and apply this percentage to the allocated weights referenced above.

If the contractor had initially (or at least, once the problems arose) segregated costs by installation activity and pier structure, the general contractor would not have had to estimate the amounts and effort, and this

would have eliminated this area of uncertainty in the presentation to the jury and judge.

- 5- **Another Big Dig Contract** - On another Big Dig contract, the contractor also had claims relating to its concrete operations similar to the example identified above. The contractor developed a MM analysis (See Attachment V) identifying the differential between the impact period and the base MM period in terms of MH/CY. In that case, there was no Point and Patch issue as described above, as the P&P hours were close to budget. However, the structures of the tunnel and operations were very different from each other on this contract. As such, it was important to analyze MH by structure and try to compare that to the bid. The problem with this analysis was that the contractor once again did not track costs by structure, so the owner and contractor had to develop a methodology whereby they developed weighted factors by structure and applied those factors to the overall differential in hours between the impact period and the base MM period. The factors not only estimated the relative weight of contribution to the impact for various issues (e.g., access, changes, acceleration, contractor issues, etc.), but also weighted the scoring by the percentage of CY in each structure³³. (See Attachments VI and VII.) If the contractor had tracked costs and hours by structure, the estimating and weighting of CY's by structure would not have been necessary, and the comparison of actual and bid/MM hours by structure would have been more helpful to the settlement process.

As seen from the above examples, the situations that arise on individual projects drive the need for documentation, productivity, and cost tracking. The general conclusion that can be drawn from the above is that it is important to address the possible cost and productivity requirements either at the outset of the project, including the bidding process, or when a major change or impact occurs. In our experience, and as supported by the above examples, the out-of-pocket professional and administrative costs, and the potential for a negative outcome if the claim needs to be tried, both increase dramatically if a contractor does not address those issues up-front.

C. Conclusion.

Often, one challenge an attorney faces with a construction claim client is explaining that the rules of evidence and damages will not allow proof of the client's damages without substantial and expensive work. Perhaps a bigger challenge is prosecuting (or defending) a claim for impact damages based on either an insufficient or incoherent foundation. Of course, the biggest challenge is explaining to the client why, with entitlement clear, no damages were awarded by the court or arbitrator.

In every stage of today's dispute construction industry resolution process, from client-to-client negotiations, through mediation to arbitration and litigation, carefully developed and supported damage claims are critical. They are critical to the confidence of the attorney pressing the claim but also critical to persuading the opponent of the validity of the dollars behind the entitlement.

When it comes to damages, an attorney must be proactive and detail-oriented at every step in the process. In the best of all worlds, it begins with working with a client on a proper record keeping system before any dispute arises. When a dispute does arise,

the attorney must concurrently analyze and develop the damages and entitlement theories supporting the case – one informs the other. In the difficult “impact” claim area, the attorney’s input is critical. To be sure, consultants are important to the process, but it is the attorney who must remain mindful of the general principles governing recovery of damages and marry the hard data to those principles, particularly causation. If the attorney does not, the claim boat will take on too much water and sink.

¹ The authors extend their thanks to Laura J. Bottaro, Esq. who provided valuable assistance in preparing this paper.

² 9 Exch. 341, 156 Eng. Rep. 145 (1854).

³ Careful attention to damages proof is critical in negotiation and mediation as well, so the comments made apply equally in those contexts.

⁴ Havens Steel Co. v. Randolph Eng. Co., 613 F. Supp. 514, 539 (W.D. Mo. 1985)

⁵ Restatement (Second) of Contracts, § 352.

⁶ Bruner & O’Connor, Construction Law, § 19:17 (2002).

⁷ South Union, Ltd. v. George Parker & Assoc., 504 N.E. 1131, 1143 (Oh. App. 1985).

⁸ Bruner & O’Connor, *supra* note 5, at §§ 19:57-19:58.

⁹ 619 So.2d 6 (Fla. Dist. Ct. App. 1993).

¹⁰ Id.

¹¹ Bruner & O’Connor, *supra* note 5, at § 19:15.

¹² Biemann and Rowell Co. v. The Donohue Companies, Inc., 556 S.E.2d 1, 5-6 (2001).

¹³ See, e.g., Geolar Inc. v. Gilbert/Commonwealth Inc. of Mich., 874 P.2d 937, 946-47 (Ala. 1994)

(reversing jury verdict for lost profits because expert testimony was too conclusory and speculative).

¹⁴ Highway Express Lines, Inc. v. Winter, 200 A.2d 300, 303 (1964).

¹⁵ Stevenson v. Economy Bank of Ambridge, 197 A.2d 721, 727 (1964).

¹⁶ Nakles v. Union Real Estate Co. of Pittsburgh, 415 Pa. 407, 411, 204 A.2d 50, 52 (1964).

¹⁷ Mascarenas v. Jaramillo, 806 P.2d 59, 64 (N.M. 1991).

¹⁸ 100 P.2d 472 (Colo. App. 2003).

¹⁹ Biemann and Rowell Co., *supra* note 11.

²⁰ Id., at 246.

²¹ Acret, James, Construction Litigation Handbook, § 11:9 (2d ed. 2003); City of Westminster v. Centric-Jones Constructors, 100 P.3d 472, 478 (Colo. Ct. App. Sep. 11, 2003).

²² Highland Const. Co. v. Union Pacific R. Co., 683 P.2d 1042 (Utah 1984).

²³ City of Westminster, *supra* note 20, at 479-80.

²⁴ Bruner & O’Connor, *supra* note 5, at § 19:96.

²⁵ Municipality of Anchorage v. Frank Collucio Constr. Co., 826 P.2d 316, 327 (Ala. 1992).

²⁶ Seattle Western Industries, Inc. v. David A. Mowat Co., 750 P.2d 245, 249 (Wash. 1988).

²⁷ Biemann and Rowell Co., *supra* note 11.

²⁸ 613 F. Supp. 514 (W.D. Mo. 1985).

²⁹ Id. at 540.

³⁰ Id.

³¹ P.W. Const., Inc. v. U.S., 53 Fed. Appx. 555, at **2-3 (Fed. Cir. 2002) (rejecting measured mile calculation because of incomparable work periods).

³² U.S. Indus. v. Blake Constr. Co., 671 F.2d 539, 547 (D.C. Cir. 1982).

³³ The parties in this case used an approach referred to as the Weighted Factors tool to assign the causes of the impact and responsibility between the owner and the contractor. (See *The Weighted Factors- A New Tool for Resolving Impact Claims*, by Patrick A. McGeehin and Richard P. Martone, copyright 2005.