

# Scheduling Best Practices

## To Avoid Changes, Delays, and Claims

For over 30 years, Pinnell/Busch has helped our clients reduce claims, resolve disputes, and improve their scheduling and we have developed Best Practices based on our experience. This spring, we surveyed industry practitioners to determine their experiences and recommendations, and presented the results at the Project Management Institute College of Scheduling Conference in May. The report, a six-page summary, and the raw data are available on our website, [www.pinnellbusch.com/library.html](http://www.pinnellbusch.com/library.html).

### Changes

Project owners and contractors both report that changes averaged 10% of their annual volume of work. Building contractors reported 8%, heavy/highway contractors 10%, and subcontractors 12%. However, individual owners and contractors reported widely varying results:

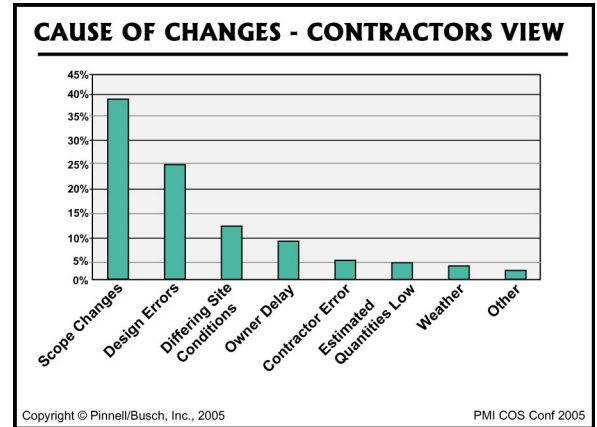
- nearly half of owners averaged 5% or less of annual volume.
- nearly one-fifth reported 15% or more and some reported 50%.

### Reason for Variation

The wide variation is due to more than a difference in type of projects and working conditions. It must be due to a difference in procedures and standards. In other words, some organizations do a better job of limiting change than others. More importantly, major improvements are possible through better practices.

### Cause of Changes

Both contractors and owners reported scope change as the primary cause of changes. Design errors and differing site conditions were the next most frequent causes, followed by owner delays.



### Reducing Changes

Owners have control, or at least influence in the case of design, over 85% of the reasons for change. With better practices, owners could significantly reduce the extent of changes and, therefore, of claims and delays.

We prepared a list of Best Practices to reduce claims, as summarized in the adjacent figure, based on the survey responses and our experience on projects.

### Claims

The percentage of changes that become claims varies widely – from zero to 50%, with an average of 6½%. The wide variance between individual organizations means that major improvements can be made. There is a strong correlation between a higher percent of changes and more of those changes becoming claims.

#### BEST PRACTICES TO REDUCE CHANGES

- 1. Scope Change**
  - ♦ Better scope definition (programming and predesign)
  - ♦ Cost and scope management during design
  - ♦ User groups and operations & maintenance in design reviews
- 2. Design Errors**
  - ♦ Select best qualified designer with project management skills
  - ♦ Don't over-emphasize design fees – pay more, get more
  - ♦ Evaluate performance and use for future selection
  - ♦ Constructability reviews and value engineering
- 3. Differing Site Conditions**
  - ♦ Better as-builts of new projects
  - ♦ Risk analysis of site investigation cost vs. benefits
- 4. Owner Delays**
  - ♦ "If you want it bad, you'll get it bad."

Copyright © Pinnell/Busch, Inc., 2005 PMI COS Conf 2005

Best Practices to reduce claims include: (1) better people skills and attitude/trust, (2) prompt and fair negotiation and payment for changes, (3) fair contract administration, (4) timely notice of change and (5) clear communication. We strongly recommend partnering as the best overall method to avoid claims and help settle those that do occur.

Most claims (85%) are settled in negotiation with the balance by mediation, arbitration, or litigation. Mediation, however, should always be used before arbitration or litigation as it can save time, cost and business relationships.

Project ReAlignment, formerly called Intervention Partnering, is a new means of saving troubled projects midway through construction. It 'wipes the slate clean' with one change order for all delays and claims to date. Project ReAlignment turns around a troubled project in 30 to 45 days using a small team of experts and in-house staff. The cost savings are enormous and, unlike mediation, based upon documented facts. The 'bleeding' is stopped and progress resumes in a positive environment.

## Delays

Half of all projects are delayed, with over 10% by more than 3 months. The variation between organizations is extreme: one-quarter of building contractors finished 95% of their projects on time, while half were 1 month late on 30% of their projects and 3 months late on 10%. Owners had similar records: 30% of municipal owners' projects finish on time, but 25% have frequent or severe delays.

The causes of delay mirror the causes of change: scope change, design error, and differing site conditions. Other causes were poor schedules, third party delays, and weather. Most delays are under the owner's control.

Best Practices to reduce delays include those for reducing changes plus: (1) training in critical path scheduling, (2) owners writing better scheduling specifications, (3) contractors preparing better schedules, and (4) owner representatives enforcing the scheduling specifications and tracking of progress more closely.

## Scheduling

Scheduling performance by all parties (contractors, owners, and owner representatives) was abysmal.

### Owners' Scheduling Specifications and Enforcement

Most owners (60%) were satisfied with their scheduling specifications, but only half required narrative reports which are essential to understanding schedule logic, tracking progress, and identifying pending delays. Only half required electronic schedules, which are needed for independent progress tracking and delay analysis, or contemporaneous time impact analyses to justify delays.

### Contractors' Scheduling Procedures and Results

Most contractors (75%) were satisfied with their scheduling procedures and results – including many of those with frequent and/or severe delays. Owners reported that only one-third of their contractors were good schedulers, one-third were fair, and one-third were poor.

Subcontractors also had a dim view of general contractors' scheduling practices, which closely matched the owners. Too few general contractors requested sub-contractor input, prepared monthly updates, kept the subs informed, or prepared recovery schedules when delayed. Worst of all, most hid delays and caused trade stacking.

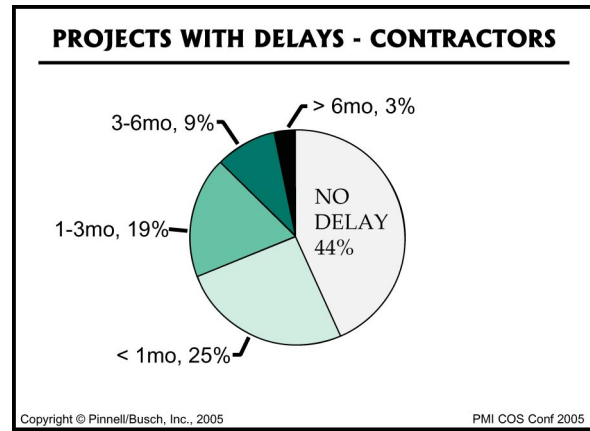
### Owner Representatives Scheduling Skills & Practices

Contractors had a very different opinion than owners of owner representative practices. The most serious shortcoming was untimely and unreasonable responses to RFIs and change order proposals, which was also one of the major causes of claims. The survey showed a clear relationship between timely and fair responses and fewer claims.

## Best Practices

Our recommended best practices include those mentioned above, plus: (1) partnering, (2) achievable schedules, (3) accurate recordkeeping, (4) increased staffing on troubled projects, (5) win/win negotiation and mediation to resolve disputes, (6) training owners and contractors in contract law and scheduling, and (7) more timely submittal and response to notices of change and change order proposals.

For details, call Steve Pinnell or see the full report on our website: [www.pinnellbusch.com/library.html](http://www.pinnellbusch.com/library.html).



**OWNER EVALUATION OF CONTRACTOR SCHEDULING PRACTICES**

	Yes	No
Do your contractors submit monthly updates?	69%	31%
Do you carefully review their schedule updates?	86%	14%
If delayed, do they submit recovery schedule?	59%	41%
Do your contractors generally finish on time?	72%	28%

	Good	Fair	Poor
What is the quality of contractor schedulers?	35%	32%	32%

Copyright © Pinnell/Busch, Inc., 2005 PMI COS Conf 2005

**SUBCONTRACTOR OPINION OF CONTRACTOR SCHEDULING PRACTICES**

	Always	Usually	Sometimes	Seldom
Do they request subcontractor input?	5%	19%	62%	14%
Do they prepare monthly updates?	0%	33%	62%	5%
Do they keep subs informed?	0%	19%	43%	38%
Do they submit recovery schedules?	0%	19%	33%	48%
Do they hide delay and then accelerate the subcontractors?	10%	62%	19%	10%

	Good	Fair	Poor
What is the quality of contractor schedulers?	36%	28%	36%

Copyright © Pinnell/Busch, Inc., 2005 PMI COS Conf 2005

**OWNER REPRESENTATIVE SKILLS AND PRACTICES - CONTRACTORS VIEW**

	Always	Usually	Sometimes	Seldom
Are they well trained in scheduling?	0%	19%	53%	28%
Do they meet to review schedule?	11%	38%	42%	9%
Do they enforce scheduling specs?	2%	33%	40%	25%
Do they keep detailed records?	4%	18%	54%	24%
Do they respond timely to RFIs?	2%	37%	52%	10%

Copyright © Pinnell/Busch, Inc., 2005 PMI COS Conf 2005