

# ENTERPRISE SOLUTION BULLETIN

## Ask, Track, and Manage (ATM) Schedule Risk Management Process

- Proposed Process to Manage Construction Schedule Risks by General Contractors

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It is a philosophy that Baseline schedule development is a process of apportioning activities through out the entire project according to scope and schedule risks with the consideration of installed material quantities. The essence of the schedule is activity durations and sequences (i.e. logics). Duration is not just a result of mathematic calculation. Instead, it is an apportioned and targeted duration resulting from the carefully developed schedule trickling down to individual activity. For example, similar amount of site excavation activities at an open field versus at a site in the middle of waste water treatment plant definitely bear different risks. Therefore, different durations are to be used. After finalizing, contractors can then plan their resources accordingly, not the other way around.

Once agreeing upon the above philosophy, we need to ask ourselves what can go wrong through out the project so that we can allocate appropriate durations for schedule activities accordingly. However, since most GCs contract out most work, the majority of schedule risks are originated from Subcontractors (Subs). In other words, if Subs don't do their jobs right, GCs will definitely suffer from them. Therefore, the first thing GC Project Management Team (GCPMT) needs to do is to identify those potential schedule risks. How? By asking! It is important for the GCPMT to have major or relevant Subs' input, and not just work alone behind closed doors.

Note that it is not recommended for GCPMT to gather major or relevant Subs in one room to discuss the schedule risks in the beginning of the project. Subs may copy from each other and provide GCs with many bogus items just to cover themselves. Also, whether Subs are considered major or relevant in this article is not measured by contract amounts; it is measured by the relativity of the schedule risks they bear on.

By going through this process, GCPMT also helps Subs to manage their risks assessment process and purge as many potential issues as possible ahead of time. We can then track them and prevent them from happening as the project progresses. However, if those schedule risks do surface, we then need to manage (up or down) and mitigate them. At the end, GCPMT can therefore make sure that GC will not assume the risks due to negligence of Subs, Owners, or Architects/Engineers (A/E), while risks can also be originated from the Owner or A/E, GCs can prepare themselves ahead of time to "manage up" and hopefully be compensated for their efforts.

I therefore call this process as

**Ask, Track, and Manage (ATM) schedule risk management process:**

- **Ask to identify,**
- **Track to prevent,**
- **Manage to mitigate!**

To facilitate ATM process, it is important to include the following two documents in the contract with Subs.

- **"Approved" Baseline Schedule.**

- **Final Version of Schedule Risks Assessment Turnaround Document (SRA form).**

During the process of Baseline schedule development, once the preliminary schedule is complete, the schedule needs to be transmitted to major subs for review and feedback. Note that a preliminary schedule is a complete schedule based on GCPMT's best knowledge and ongoing input from major Subs. There is no point in sending an incomplete schedule to Subs for review. Once major Subs' input is reflected in the schedule and the Baseline schedule is approved by Owner, this version of schedule will need to be included in the contracts with each Sub, especially major Subs. If the Baseline schedule has not been approved by the Owner before the execution of subcontracts, the latest version of "Baseline" schedule should be included and states that it can be superseded by the Owner's Approved Baseline schedule.

Please see below for the sample format of SRA form. Note the followings:

1. Proposed SRA forms simply asks three questions:
  - **What can go wrong with your schedule activities?**
  - **Who could contribute to the risks?**
  - **How contributing parties can help you to mitigate the risks?**

When Subs specify the Potential Schedule Risks, they need to:

- **Be specific about origins of the risks by providing facts, drawing number, details, etc.**
  - **Provide best estimate of the impacts of the risks with quantities of measurement.**
  - **Generic answers are not acceptable.**
2. After this document is submitted, GCPMT will need to meet with major Subs to discuss and finalize the document to be included in the contract.
  3. After this document is finalized, GCPMT and major Subs will be required to update the risk status every month or when risk status has changed. The update will be in the format similar to the table in the sample form. Subs may add additional risk items as the project progresses. However, if GCPMT and Subs planned well in the beginning, there should not be too many more. With the recent advanced technology of the cloud-based database custom application building providers, Schedule Risks Assessment (SRA) can be easily programmed and posted on the cloud. GCPMT and Subs can then update and monitor the status easily so that data is not just shelved away like paper files. A management dashboard for executives can also be set up and posted on the cloud to show the SRA status along with other project controls status indicators.
  4. If Subs have contracts with other sub-tiers such as supplier, vendors, etc. and are not sure about their risks, Subs should send this form to their sub-tiers to fill it out and return the documents to GC along with Subs'. Subs are responsible for clarifying and finalizing the documents with their sub-tiers as GC has no contracts with them. If Subs are certain about the risks of sub-tiers, Subs can incorporate sub-tiers' risks to their own documents.
  5. If the Sub does not return SRA form, GCs will deem that Subs foresee no potential schedule risks on this project.

**Attachment:**

Sample Form for Schedule Risks Assessment Turnaround Document (SRA form)

**Final Words**

- This article only addresses the perspective of managing the schedule risks from GCs to Subs. Nevertheless, Owners can adopt the same practices to manage GCs.
- Effectively managing inherent risks by GCs will not only earn them greater respect from Owners and Subs, but has also been proven to bring in more profits. On the other hand, neglecting schedule risk management by GCPMT is always the largest risk of the project!
- There are other types of risks on the project such as cost (change orders, scope creep, etc.), safety, budget (shortage of funds), users (cardinal changes), quality or political, etc. They all can be managed in a similar process.

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<Sample Form>

**Schedule Risks Assessment Turnaround Document (SRA Form)**

Project Name			
Company Name			
Role (Subs or Suppliers, etc.)			
By (Print Name)		Title	
Version	Preliminary	Date Submitted	
Version	In-progress      Final	Date Submitted	

**What can go wrong with your schedule activities? Who could contribute to the risks? How contributing parties can help you to mitigate the risks?**

<b>Potential Schedule Risks</b> <ul style="list-style-type: none"> <li>• Be specific about the origins of risks by providing facts, drawing number, details, etc.</li> <li>• Provide best estimate of the impacts of the risks with quantities of measurement</li> <li>• Generic answers are not acceptable.</li> </ul>	<b>Who could contribute to the risks? (Such as Owner, A/E, GC, or other Subs, or your own company.</b>	<b>How contributing parties can help you to mitigate the risks?</b>

**Notes:**

1. The Potential Schedule Risks can be the following (not in any order):
  - Long Lead Procurement Items
  - Lengthy Special Agent Submittal Approval
  - Shortage of Materials
  - Shortage of Equipment
  - Shortage of Skillful Labors
  - Weather

- Incomplete Drawing Details (RFIs)
- Incomplete Scope / Potential Added Scope (Foreseeing Scope Creep)
- Crowded Working Area (Loss of Productivity)
- Unforeseen Site Condition
- Third Party Construction Work
- Tests and Inspections

The following risks are most likely unforeseen by contractors before construction.

- Owner Requested Changes (Change Orders)
- Rework

2. After this document is submitted, GCPMT will meet with you to discuss and finalize the document to be included in the contract.
3. After this document is finalized, your company will be required to update the status of schedule risks every month or when risk status has changed. The update will be in the format similar to the table below: You may add additional risk items as the project progresses. However, if you plan well in the beginning, there should not be too many more!

Potential Schedule Risks	Who could contribute it	How to mitigate it	Status (Green, Yellow, Red)	Update (Narrative)

4. If you have contracts with other sub-tiers such as supplier, vendors, etc. and not sure about their risks, you should send this form to them to fill it out and return to GC along with yours. You are responsible for clarifying and finalizing the documents with them as GC has no contracts with your sub-tiers. If you are certain about the risks of your sub-tiers, you can incorporate theirs to your documents.
5. Not returning this document will deem that your company foresees no potential schedule risks on this project!