Mitigating Delay Claims and Scheduling Best Practices

Prepared and Presented by:

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Biography

- BS Civil Engineering, University of Nevada Las Vegas
- 25 years of construction industry experience in the engineering, cost, scheduling, estimating, and field disciplines
- Heavy Consulting Experience for Public Owners and Contractors
- Multi-industry experience on over $6B in projects
- Developed and managed over 350 contractor and/or owner schedules
- Specification writing specific to scheduling and delay for Public entities
- Primavera Standards development for contractor clients
- Expert Testimony
- Subject Matter Presenter for professional industry associations
- Deep commitment to educational outreach
- Deep commitment to professional organizations
- Mentor to local professional organization

Claims & Risk Awareness

- How to Mitigate Claims
  - Risk Awareness
  - Contract Risk
  - Project Delivery Approaches & Risk
  - Contract Awareness
  - Fact Awareness
  - Claims Awareness
  - Best Practice Management

INTRODUCTION

Change is Inevitable in Construction

- Even successful projects have changes and/or claims
- Parties are typically islands of self interest
- Best way to handle claims is to proactively anticipate them
- Risks can be mitigated

Claims and Risk

- Claims (& changes) are *construction risks* that were not prevented from coming to fruition, or mitigated early - causing cost or schedule impacts:
- How do you manage risks & avoid claims?

The Three Legged Stool

- Determining Liability
- Proving Causation
- Proving Damages

Principal Causes of Disputes

- Failure to Recognize/Acknowledge Change Has Occurred
  - Failure to Deal Promptly with Changes and Unexpected Conditions
- Ambiguous/Defective Contract Documents
- Contractor Misunderstands Scope
- Poor Communication Between Project Participants
- Personality (Organizational & Personal)
- Failure to Proactively Resolve Problem

AVOIDABLE!!

How to Avoid Claims?

- Risk Awareness
- Contract Awareness
- Fact Awareness

} Claims Awareness

With the above,
you have the tools for
Claims Avoidance

Claims Avoidance

Claims Avoidance begins with a proper perspective about your approach to the project delivery system, project administration, and changes.

Claims avoidance = managing risks to prevent the occurrence of claims or to minimize its impact

Project Team Skills Required

- Contract Awareness
- Risk Awareness
- Fact Awareness
- Subject Matter Experience
- Project Management Knowledge & Skills
  - Proactive & Reactive
    - Schedule Control
    - Cost Control
    - Change Management

} "Project Controls"

Objectives for Project Control System

- Efficient means to measure, collect, verify & quantify FACTS regarding schedule, cost, resources, procurement & quality
- Provide standards to measure & compare status
- Report correct & necessary information in appropriate detail for management
- Identify & isolate critical information
- Deliver information timely to support corrective action.

Project Schedule Function

- Planning Tool
  - Establishes a reasonable plan
- Documentation Tool
  - Accurately documents construction status
  - "JUST THE FACTS!"
- Forecasting Tool
  - Forecasts impact of events and path forward

Schedules Are Factual Records

- Active review of schedule updates
  - Timely submission
  - Status of activities planned for that period
  - Accuracy of activity start and finish dates
  - Accuracy and sufficiency of logic
  - Changes & variances between updates
  - Effect on milestones?
  - Effect on project completion?

Keys to Success

- Documentation
- Thorough understanding of contract requirements
- DOCUMENTATION
- Well thought out procedures
- D-O-C-U-M-E-N-T-A-T-I-O-N
- Good working relationship between all parties
- D-O-C-U-M-E-N-T-A-T-I-O-N

Documentation

- Claims are disputes over facts, not over law.
- The party that keeps better records to preserve and identify the facts, or the party that is better trained to recognize and mitigate a problem, is going to have the advantage.

RISK AWARENESS

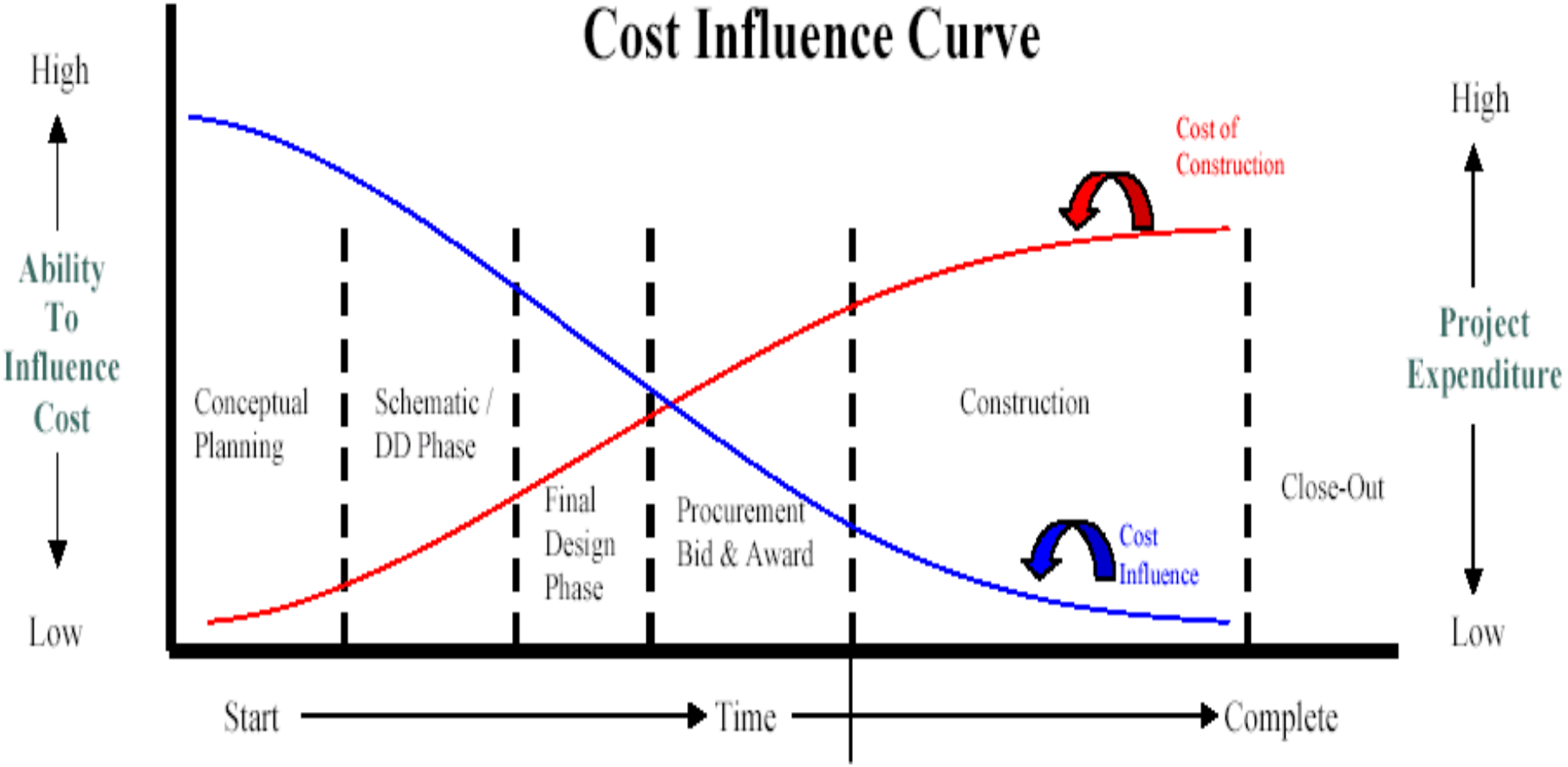
Risk

"Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on a project objective"

"A risk has a cause and, if it occurs, a consequence"

Risk Approach & Philosophy

- In general, Risks should belong to the parties who are best able to evaluate, control, bear the cost, and benefit from assuming the risk.
- Every Risk has associated unavoidable pending cost.



RISK OF COST IMPACTS DUE TO CHANGES
INCREASES AS PROJECT PROCEEDS THROUGH CONSTRUCTION

Claims Management:

- **Identification** – proactive identification of inherent risks
- **Transfer/Avoidance** – proactive: before contracting
- **Mitigation** – reactive: during construction as the issue arises
- **Resolution** – reactive: after issue arises

Claims Avoidance

- Thorough understanding of contract document general and special conditions
- Proper examination of specifications and plans
- Awareness of unmanageable risks, potential ambiguities, high risk issues, etc. (Requires proactive “what if” consideration while reviewing contract scope and contract documents)
- Where possible before contracting – Transfer risks
- Prepare and implement procedures and training for project staff, lines of communication, etc.
- Proactive analysis & responsive action
- Dispute resolution process and procedures

Claims Mitigation

- Diligently and promptly assert your rights allowed by the contract documents.
- Revisit the contract requirements.
- Review/assess the current status of the project and all interfacing activities.
- Develop a strategy to mitigate the impact of the event causing added costs or delays.
- Implement the strategy.
- Develop and implement a program to collect the facts to support a change order for added costs and time.
- Analyze the cost and time impacts

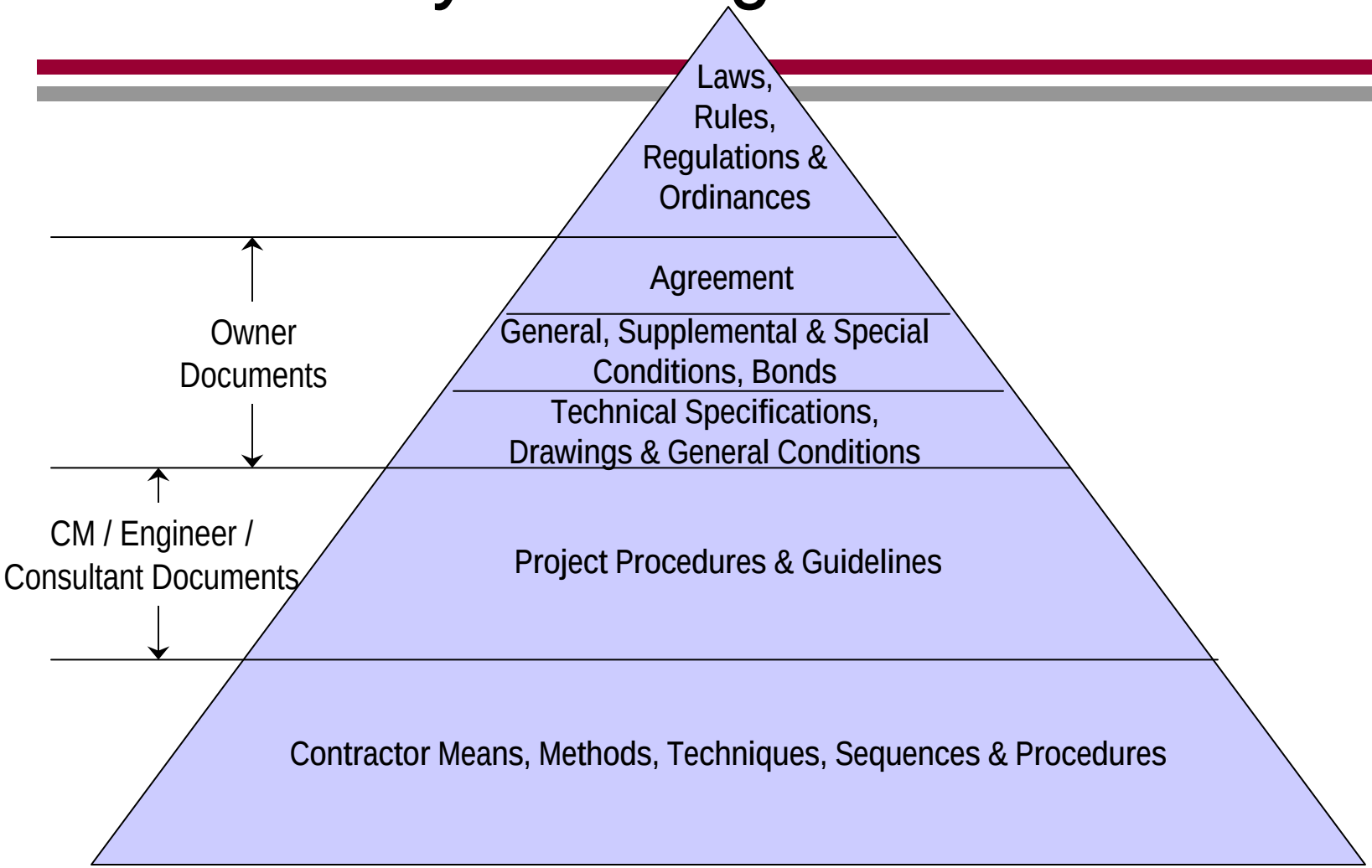
CLAIMS RESOLUTION

In addition to completing the mitigation measures:

- Prioritize the outstanding issues for resolution, in terms of time and cost
- Initiate the dispute resolution process
- Assertively pursue resolution
- Seek legal counsel guidance
- Obtain management assistance

CONTRACT RISK

Hierarchy of Obligations & Duties



Resource and Project Risks

Type of Risk	Owner's Risk	Contractor's Risk
Adequacy of Project Funding	Yes	Not usually
Adequacy of Labor Force	Not typical	Yes
Permits and Licenses	Costs; often	mostly
Site Access	Maybe	Maybe

Performance Related Risks

Type of Risk	Owner's Risk	Contractor's Risk
Adequate Plans and Specifications	Yes	Not usually
Cost under-estimation	sometimes	Yes
Equipment, materials, space, etc	If owner supplied	Yes
Means and methods	If specified	Yes
Delays in presenting changes	Yes	Yes
Delays in addressing disputes	sometimes	sometimes
Labor productivity and subcontractor work	Yes, if caused	Yes, if self caused
Subsurface conditions	Yes	maybe
Delays in performance	Yes, if caused	Yes, if caused
Worker and site safety	Possible	Yes

Outside Influence Risks

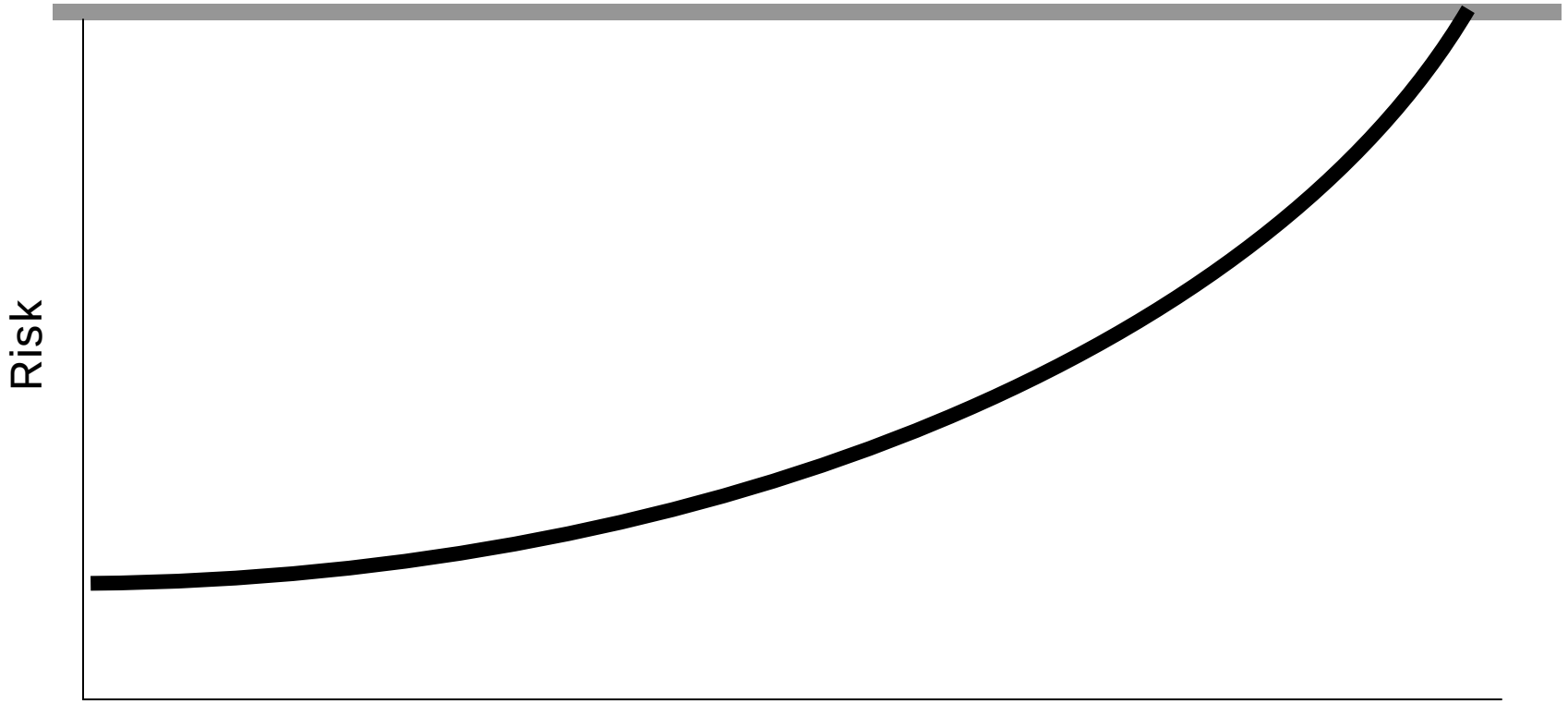
Type of Risk	Owner's Risk	Contractor's Risk
Government Acts	Yes	Possible
Weather	Depends on contract	
Acts of God	Depends on contract	
Union activities		Typically yes
Cost escalation	Depends on contract	

Project Delivery Approaches & Price Mechanisms Have Different Risks

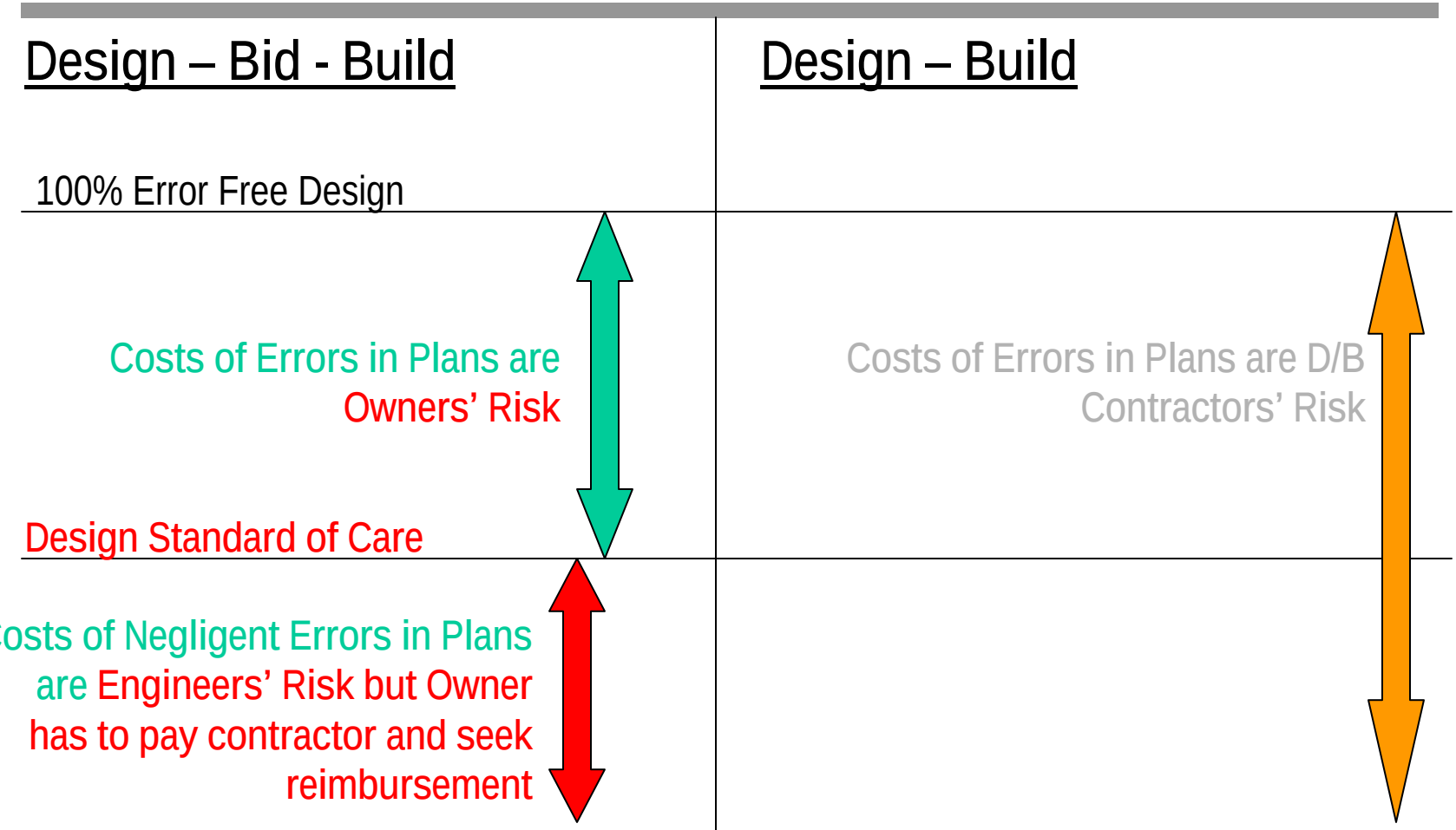
- Cost Plus
- Fixed Price
- GMP
- Unit Price
- Design-Build

Who bears the risks for costs/delays for the above contract delivery approaches?

Contract Risk
Project Delivery Methodology



Design Error Risk Responsibility



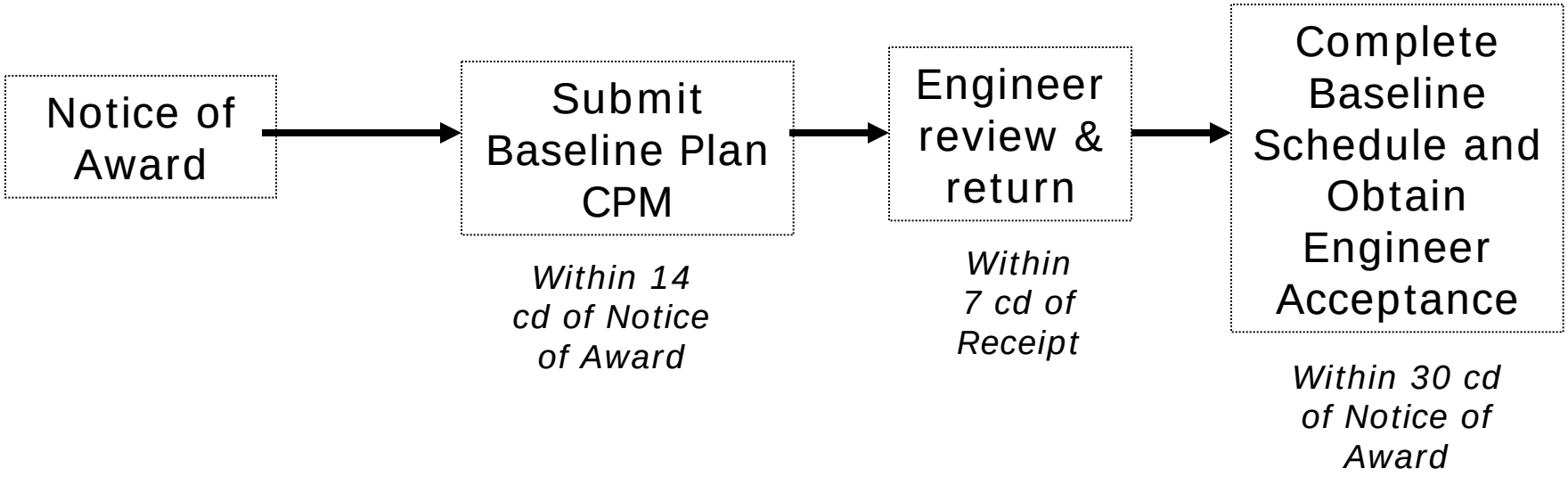
Contract Awareness

- Review and summarize contract general conditions, special conditions
- Understand contract provisions entitling cost & time adjustments
- Identify express obligations of all parties
- Evaluate implied conditions of all parties
- Notice requirements

Contract Awareness

- Understand remedies available to all parties
- Understand risk shifting, retention, sharing
- Prepare outlines or procedures for project staff to implement contract administration functions
- Assign responsibilities for contract administrative functions

State DOT Specification
1.6 Baseline Construction Schedule
C. Schedule Submission



4. “No progress payments are made Before the Engineer accepts the baseline Construction schedule.”

FACT AWARENESS

Fact Awareness

- With Contract and Risk Awareness, as events occur during performance, analyze the facts for comparison to the Contract and Risk framework
- Prepare & **timely** submit Change Requests
- Need constant vigilance, training, experience to improve this required skill
- Apply prudent, timely project management skills

Event Method

- Eyes & ears on the project as it progresses
- Discuss progress with your team
- Listen to contractor and subcontractors
- Review daily reports
- Compare anticipated progress:
  - Lookahead schedule
  - Shop Drawing/Submittal progress
  - RFIs
  - Change Order Submissions
- Perform a daily, informal variance analysis – record impressions in your diary

Documentation

Claims are disputes over facts, not over law. The party that keeps better records to preserve the facts or the party that is better trained to recognize a problem is going to have an advantage.

The party that contemporaneously observes and records relevant critical facts will have not only better records, but the better ability to address claim issues.

The Three Legged Stool

- Determining Liability
- Proving Causation
- Proving Damages

CATEGORY OF DELAYS

Categories of Delay

- Excusable: A delay caused by unforeseeable events beyond the control and without the fault or negligence of the contractor. Examples: Act of God, Unusually severe weather, labor disputes.
- Compensable: Excusable delay, caused by an act or failure to act by the Owner. Contractor is entitled to a time extension and damages resulting from the delay, as allowed by the contract.
- Non-Excusable: Due to act or omission of the contractor, or falls within the risks of the contractor as contemplated by the contract. Contractor is not entitled to damages or time extension.
- Concurrent: Separate delays occurring at the same time, but caused by individual events where the Owner is responsible for one delay and the contractor is responsible for another.

Excusable Delays (Typical)

- Unusually severe weather
- Natural disasters, Acts of God
- Unforeseeable labor action, where Contractor is not at fault and it beyond its control

Compensable Delay (Typical)

- Owner caused examples:
  - Defective specifications
  - Unavailability or late owner furnished material
  - Owner directed changes
  - Differing site conditions

Concurrent Delay

- Owner and a Contractor are each responsible for separate critical path delays in completing the work, *during the same time*
- Owner is barred from assessing the Contractor with liquidated damages and the Contractor is precluded from recovering delay damages
- Contractor is entitled to a time extension but not delay damages.

Schedule Variances vs Critical Path Delay

- If an activity starts on time but finishes late, this finish delay, or variance, may be commonly called a “delay,” but it may not be a “critical path delay”
- Variances are common
- If the cause of the variance caused costs to increase, but is not impacting the critical path, it may still be compensable under the Contract (but without entitlement to a time extension): Disruption

Proving the Delay or Disruption Claim

- Often have both Delay and Disruption
- Often need a schedule or delay analysis to show how compensable events caused impacts to planned activities

Acceleration

Acceleration refers to applying additional resources above those planned to complete the work earlier or in response to mitigating a delay that has already occurred or is anticipated.

Two types:

- Directed
- Constructive

Constructive Acceleration

1. Excusable delay exists,
2. Contractor gives timely notice to Owner of:
   Entitlement to a time extension
   Requests a time extension
3. Owner failed or refused to grant the entitled time extension (or grants an insufficient time extension) within a reasonable time,
4. Owner expressly or impliedly directed the Contractor to perform prior to the entitled completion date (this is an Acceleration Order), and
5. Contractor proves it accelerates the work in response to the owners order and incurred increased costs (damages).

Acceleration Claims

Methods of Acceleration:

- Overtime
- Additional Shifts
- Additional Crews

Types of Damages:

- Overtime Premiums
- Shift Differential
- Additional Supervision
- Loss of Productivity

SCHEDULING PRACTICES

Setting Best Practice Standards

- *Scheduling Baseline Standards*
  - Establishing templates
  - Establishing Criteria
- *Updating Standards*
- *Managing the Critical Path*
  - Identifying the critical path
  - Critical Path Accounting
- *Managing through the delay process*
  - Identifying delays
  - Accounting for delays
  - Resolving delays

Best Practices Implementation Challenges

- Technology
- Paradigm Conversion (Stand-alone to Enterprise)
- Corporate Standards
- Re-thinking Processes
- Training New Processes

Primavera Implementation Benefits

- Corporate Standardized Processes
- Consistent Project Roadmaps
- Consistent Tracking and Analysis
- Effective Risk Management
- Enhanced Executive Oversight
- Enterprise Reports and Metrics
- Early Issue Identification and Resolution
- Understanding the Value of the Best Practices System
- Executive Buy-in
- Enterprise Collaboration
- Commitment

Planning for Project's Inevitable Delay

Planning For Delays

- 6 Phases in the Construction Project
  - "Love is Blind" — Pre-bid Period
  - Enthusiasm — Honeymoon
  - Panic — Running out of Time and money
  - Search for the guilty — Notification of claims
  - Punishment of the — Fire the PM, Claims innocent
  - Praise for the participants — Opening Ceremony, non-Dedication of the facility

Planning For Delays

- Scheduling requirements have increased for the following reasons
  - Economics
  - Scheduling Efficiency
  - Technology Availability
  - Legal Application

BMP Specifications

- Public or Federal Owners
- Associations - AACEi

BMP Specifications-Owner

Baseline Schedule Revisions

Baseline Schedule Revision Submittals are required when the contractor has significant changes to activity sequencing (logic), major changes to durations or changes in work scope. Baseline Schedule Revisions shall be used to update the Rev. 0 Baseline Schedule to reflect delays (and their effect on the Contract Durations and the Purchase Order), schedule recovery plans and other Contractor initiated schedule revisions. If Contractor intends to pursue only minor revisions to the current Schedule, a Revision Submittal shall consist of that month's Schedule Update Submittal incorporating such minor revisions. Minor revisions shall consist of straight forward Activity duration, logic tie and restraint date changes and exclude any significant Activity redefinition and logic tie re-sequencing initiated by Contractor or reflecting changes in the Work, delays and/or schedule recovery plans.

To the extent Contractor intends to pursue significant revisions to the current Baseline Schedule, Contractor shall submit a proposed Baseline Schedule Revision Submittal developed using duplicate electronic data files

Appendix 2C-6

Specification E-2009-84
Construction of TRTP Segments 4, 5 & 10
500kV and 220kV Transmission Lines

BMP Specifications-Owner

108.03.04 THREE WEEK LOOK AHEAD SCHEDULE – FOR ALL PROJECTS

A. Concurrent with the weekly progress meetings, the CONTRACTOR shall submit a three week look ahead schedule (two weeks forward and one behind) to the Construction Manager and/or ENGINEER. This schedule shall be generated from the master schedule. It shall indicate the status on scheduled activities within the three week window, including:

1. Percent complete
2. Actual start/finish dates
3. Planned start dates
4. Continuation of work
5. Start and Finish Variance Columns (Targeted to the previous update)

BMP Specifications-Owner

SECTION 108 – PROSECUTION AND PROGRESS

108.03 PROSECUTION AND PROGRESS

DELETE THIS SUBSECTION IN ITS ENTIRETY AND REPLACE WITH THE FOLLOWING:

A. The CONTRACTOR shall be responsible for planning, scheduling and reporting the progress of the work to ensure timely completion of the contract utilizing realistic durations, material lead time, logic flow, representative cure time, etc. CONTRACTOR acknowledges overall duration as realistic and buildable per provided plans and within the contract duration.

B. The CONTRACTOR shall designate an authorized representative who will be responsible for the preparation, revision and updating the overall project schedule. This person shall be experienced in the preparation and management of schedules of similar complexity, shall have 3yrs verifiable experience and shall be proficient in the use of a Critical Path Method Scheduling (CPM) Software (i.e. Primavera, Suretrack).

ENGINEER may order that the scheduler be removed and replaced with a competent scheduler if the scheduler provided does not meet acceptable qualifications and performance standards.

BMP Specifications-AACE

- This recommended practice focuses on the basic elements necessary to perform a Time Impact Analysis (TIA.) Necessary considerations and optional analysis practices are described. The TIA is a 'forward looking' prospective schedule analysis technique that adds a modeled delay to an accepted contract schedule to determine the possible impact of that delay to project completion.
- This practice is not recommended for a retrospective (hindsight or forensic) view taken after a significant passage of time since the delay event.
- This TIA practice concerns itself with time aspects, not cost aspects of projects. The time impact must be quantified prior to determining any cost implications. No practical advantage is obtained by including cost factors into a time impact analysis. Linking time and cost into one analysis implies that time impacts are a function of costs, which for the purposes of a prospective TIA is not true. Separating time analysis from cost analysis makes TIA inherently easier to accomplish and accept contractually; eliminating the cost driven considerations from both 'creator' and 'approver' of the TIA.
- A TIA may be performed to evaluate the potential or most likely results of an unplanned event. This event may be either schedule acceleration or a delay. For simplicity and clarity, we will refer to this event as a delay (i.e., acceleration can be considered as a negative delay).

Schedule Specs Consideration

- Minimum Scheduling Requirements
- Scheduler Qualification Requirements
- Scheduling Software Requirements
- Schedule Acceptance
- Critical Path Method
- Work Breakdown Structure (WBS)
- Float
- Calendars
- Durations
- Relationships
- Contingency Time
- Change of Contract Time
- Submittal, Procurement, Delivery Activities
- Testing, Training, & Startup Activities

NOTICE OF AWARD PROCESS

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Within 2 hrs after bid opening:
- 1% Subcontractor List

Within 1 day after bid opening:
- Good Faith Effort Form
- List of Completed Projects
- Supplier List
- Certificate of Eligibility
- Superintendent Resume
- Project Manager Resume

Typical duration = 1-2 months

NOTICE TO PROCEED PROCESS

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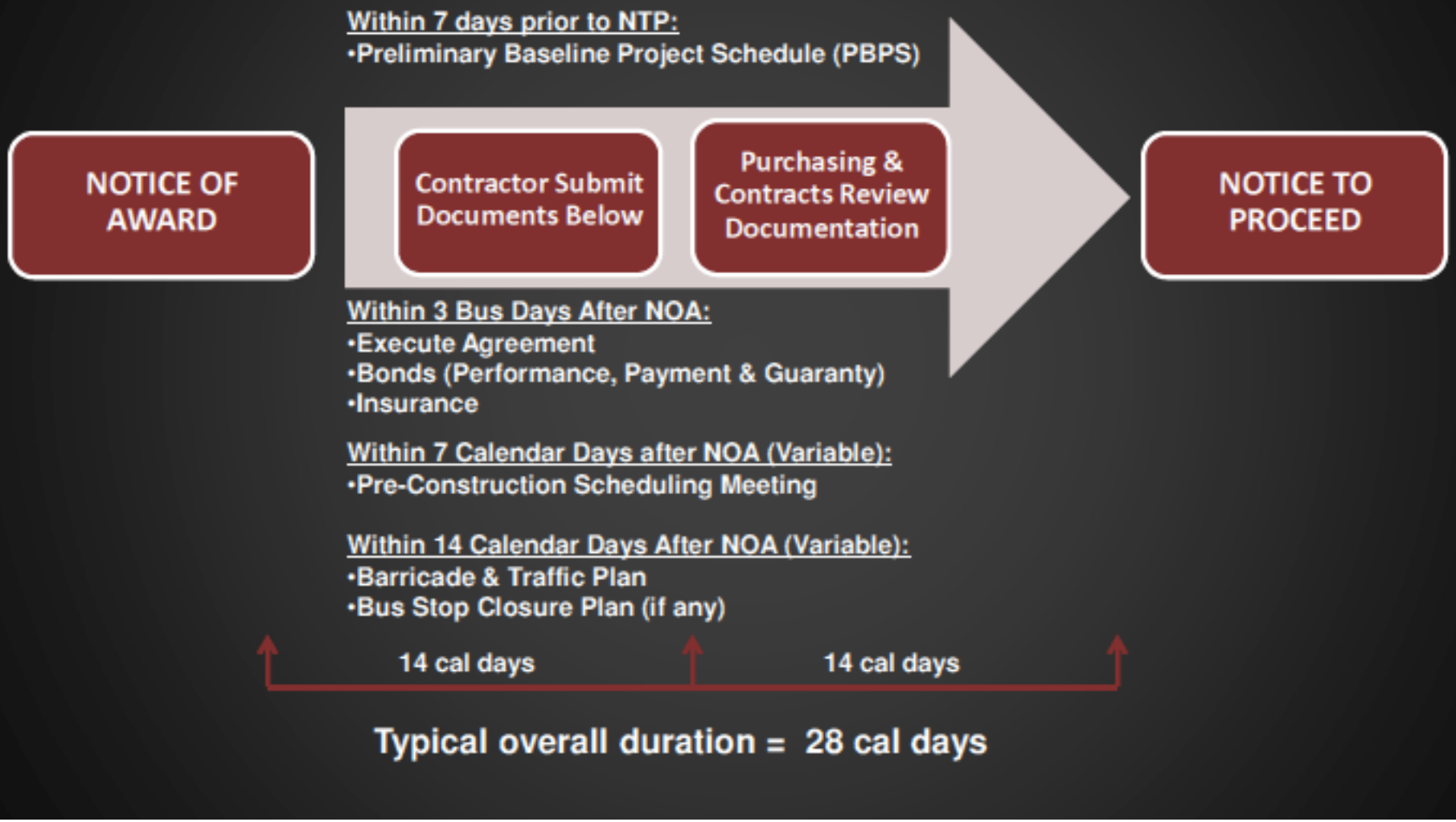
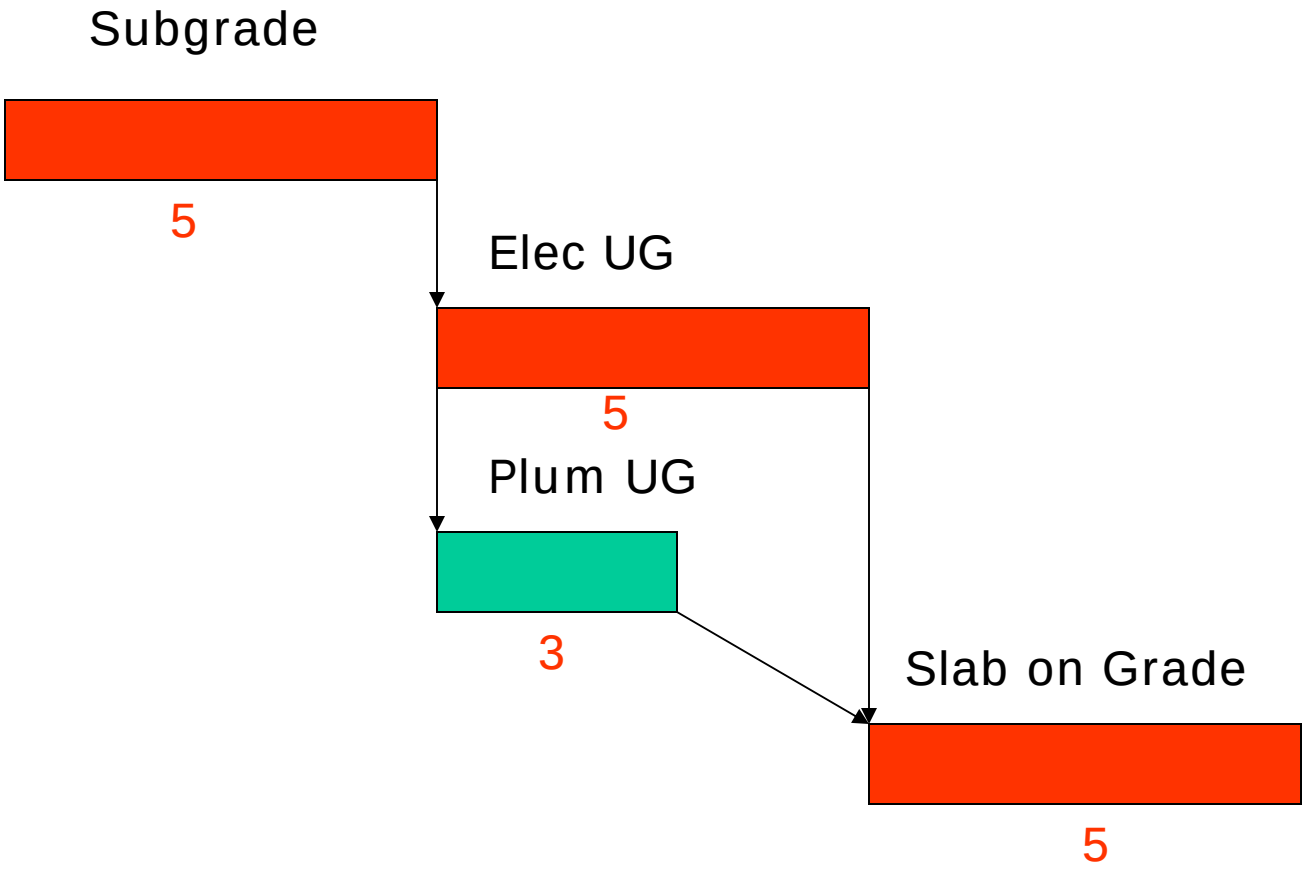
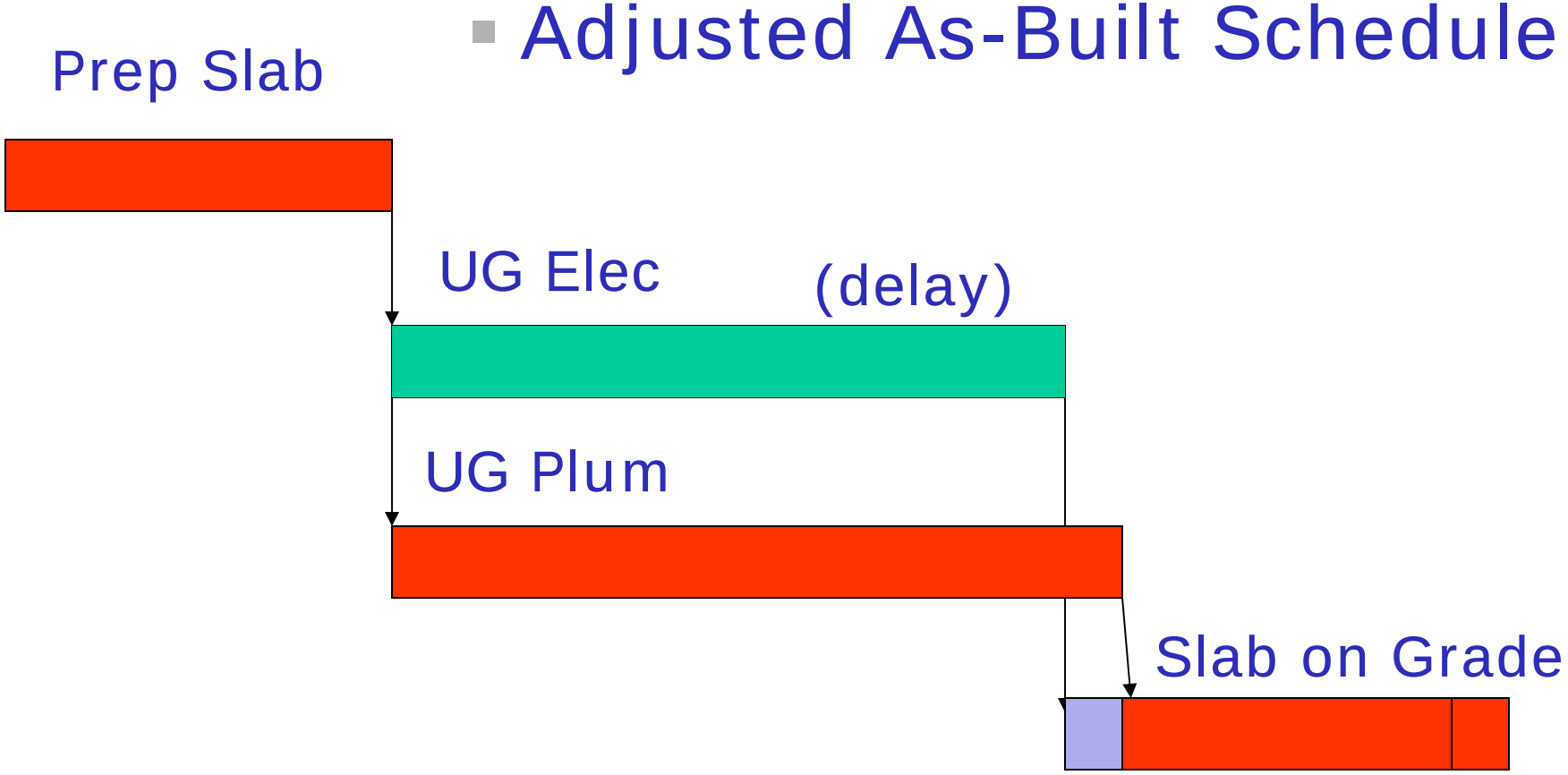


Understanding the Critical Path



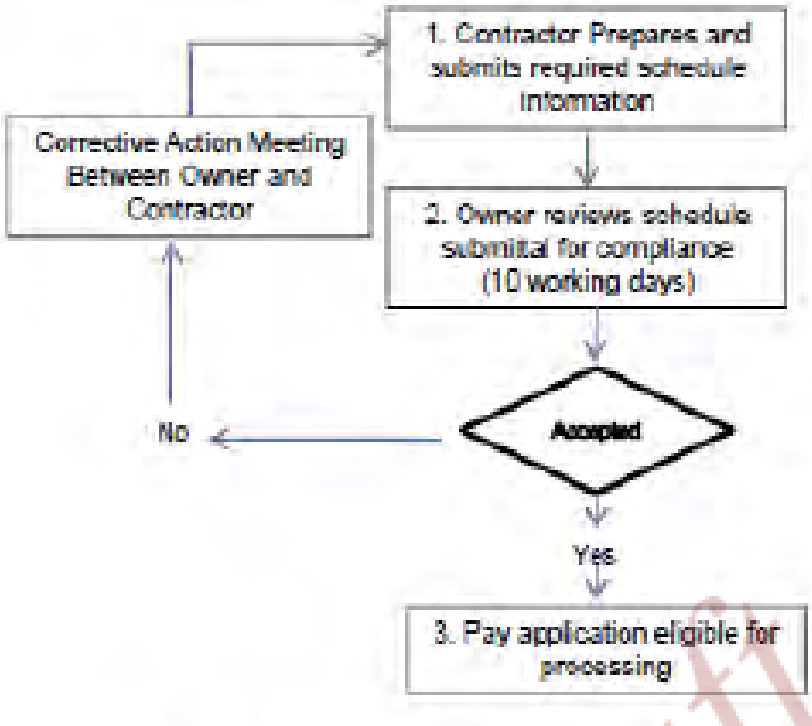
Understanding the Critical Path

- Adjusted As-Built Schedule



Process Flow
Information Management Considerations

The following flow chart represents a typical process following complete CONTRACTOR submission of schedule file and requirements.



Schedule Analysis Summary Sheet

Project Name **ABC Project**
CCWRD PM **PM Extraordinaire**

Contractor **ABC Construction**
Scheduler **PSP 12345**

SCHEDULE ANALYSIS SUMMARY

Current Update	May-11	Review Cycle	1		
Submittal No.	SU04-01310B	Review Date	24-Jun-11	Review Status	Code 1A

MILESTONE SUMMARY

	Original Contractual	Revised Contractual	Apr-13	May-11	Current Variance
ANTP	27-Sep-10		0-Jan-00	27-Sep-10	0
PNTP	25-Jan-11	11-Mar-11	0-Jan-00	30-Jun-11	(111)
Substantial	13-Jul-13	27-Aug-13	0-Jan-00	9-Dec-13	(104)
Final	10-Nov-13	26-Dec-13	0-Jan-00	8-Apr-14	(103)
Milestone #1					
Milestone #2					
Milestone #3					
Milestone #4					
Milestone #5					
Milestone #6					

FINANCIAL SUMMARY

	Contract Value	Cost Budget	Delta
Previous Update	$0	$0	$0
Current Update	$49,933,791	$49,933,791	$0

	Pay Application	Earned Value	Delta	% Paid
Previous Update	$0	$0	$0	
Current Update	$372,747	$400,228	$27,481	
Total to Date	$3,799,907	$4,015,038	$215,131	8%

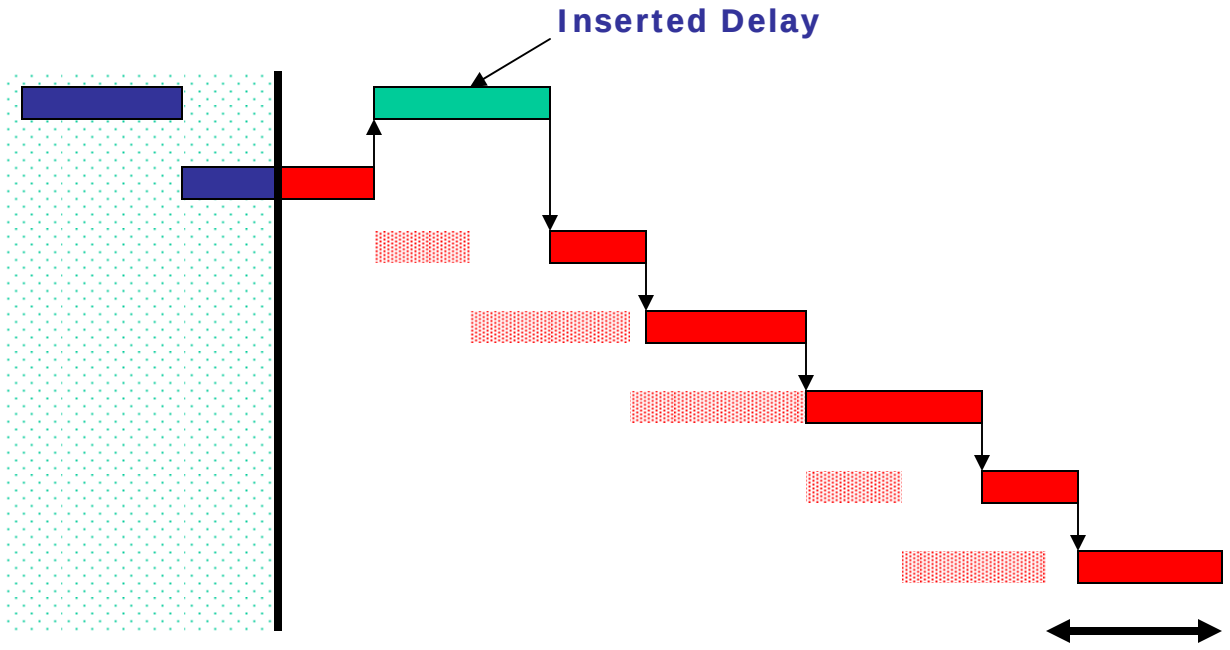
RESOURCE SUMMARY - EARNED MH

	Resource Budget	Forecast Earned Value	Actual Earned Value	Delta (Actual-Forecast)	% Complete
Previous Update	0	0	0	0	
Current Update	115282	3906	477	(3429)	
Next Update		0			
Total to Date		11066	6045	(5021)	5%

Added Summaries:
Cost, Critical Path, Schedule Impacts, Change Order, Contingency and Start up Plans Summaries

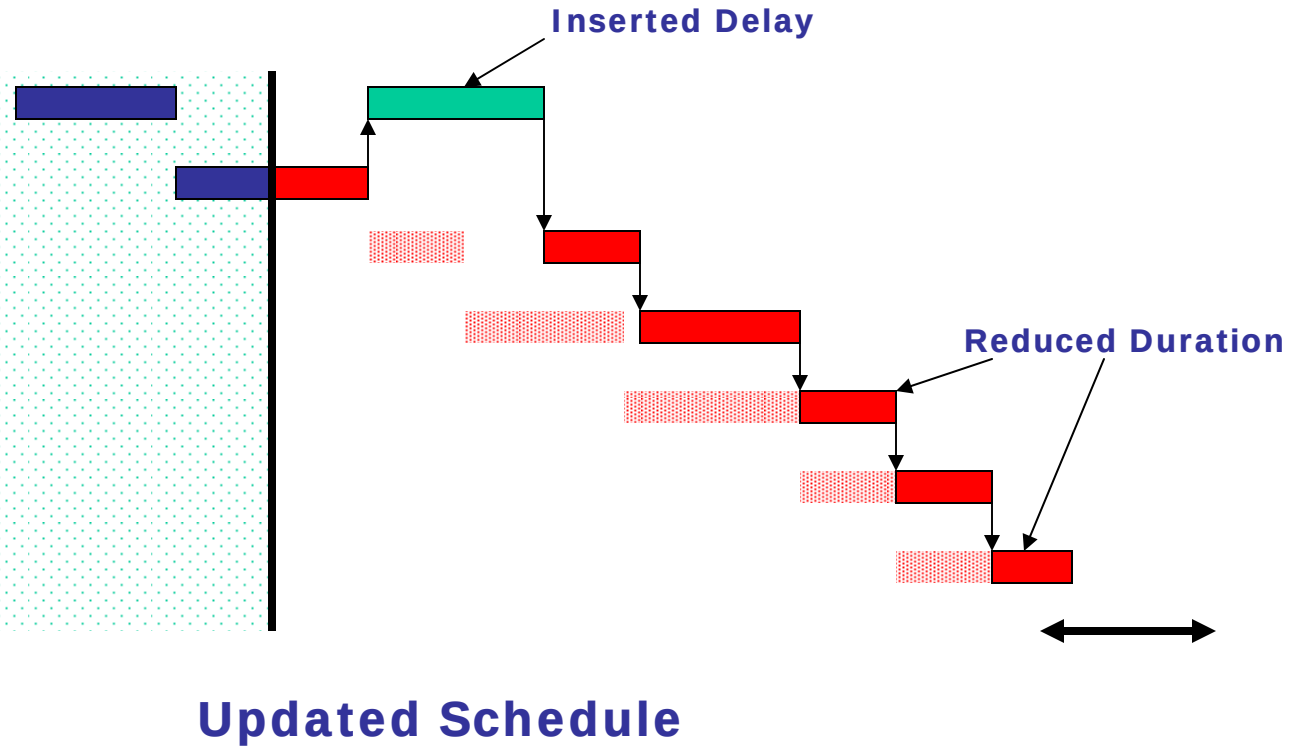
What Delays Do

- Extend Duration



Recovery From the Delay

- Managed Acceleration



Managing Project Delays

- Resolving the Delay
  - Analysis Options
    - Total Time or Duration Analysis
    - Adjusted As-Planned or Baseline
    - Adjusted As-Built
    - Contemporaneous Comparison

Total Time Method

Methods for assessing delay damages

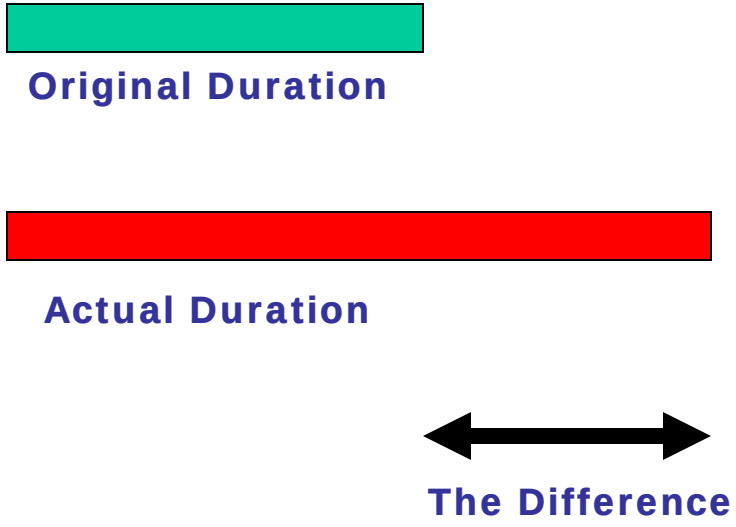
Total-Time Approach

Comparison of the As-planned and As-built schedule, the difference being the delay impact

Similar to the “Total-Cost” approach in calculating damages

Strengths & Weaknesses

Total Time Method



Adjust As-Planned Method

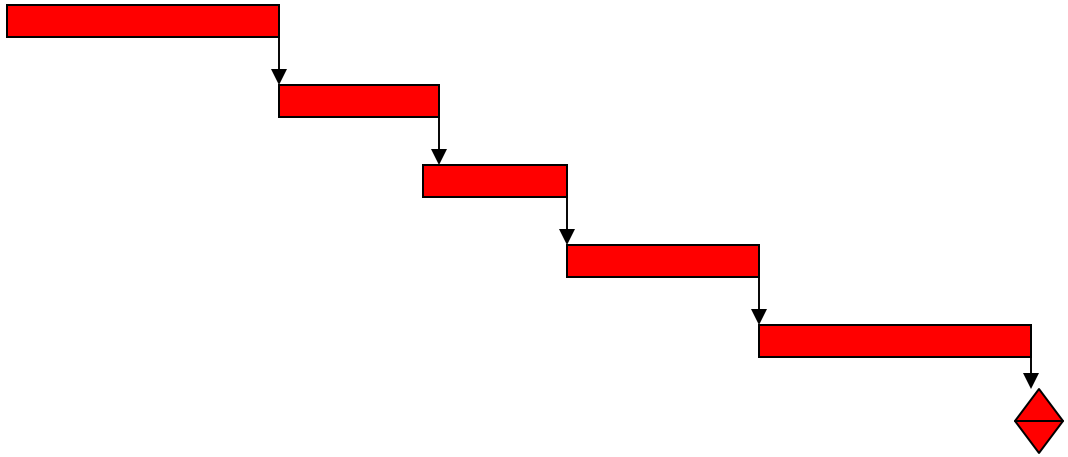
Methods for assessing delay damages

Adjusted As-Planned Schedule Approach

Impacts are incorporated into the As-planned schedule or baseline schedule. The result is the adjusted as-planned. The impact to the schedule is the delay period

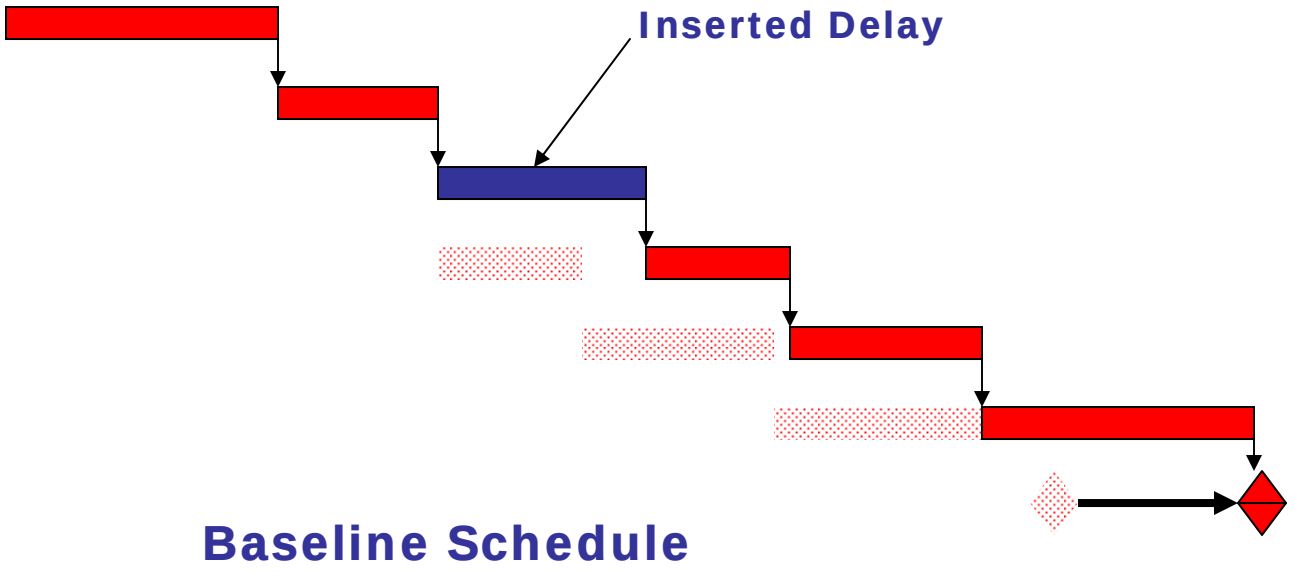
Strengths & Weaknesses

Adjust As-Planned Method



Baseline Schedule

Adjust As-Planned Method



Adjusted As-Built Method

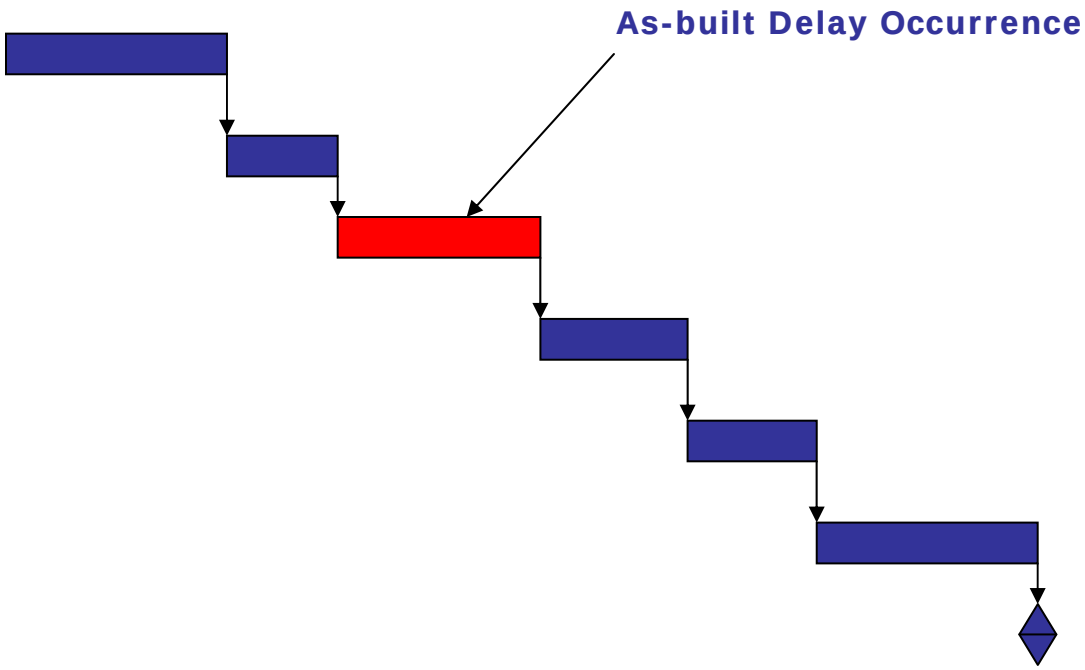
Methods for assessing delay damages

Adjusted As-Built Schedule Approach

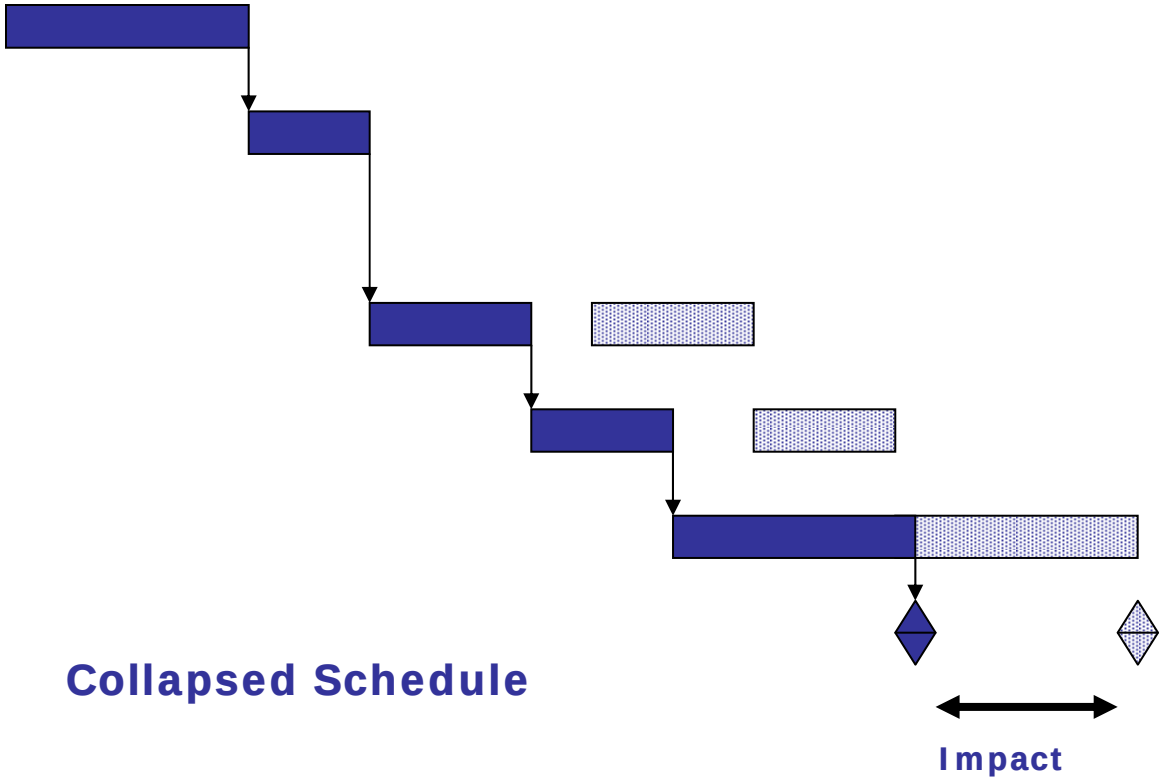
This method uses the complete as-built schedule and removes the delay impacts, the delay period to create the adjusted as-built schedule

Strengths & Weaknesses

Adjusted As-Built Method



Adjusted As-Built Method



Contemporaneous Analysis Method

Methods for assessing delay damages

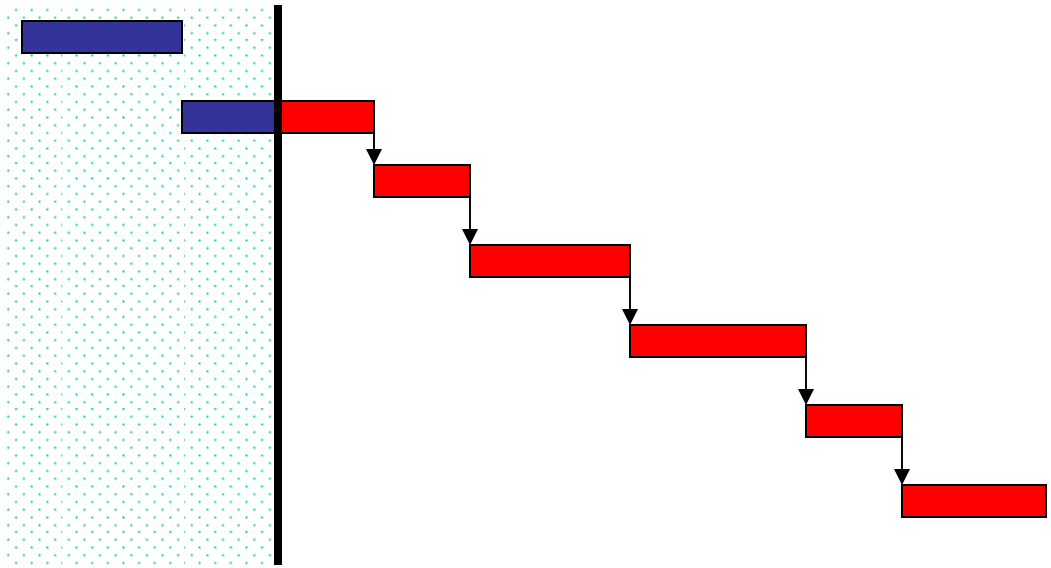
Contemporaneous Time Frame Schedule Analysis

This approach employs the schedule updates at or near the time the delay-causing event occurred

Strengths & Weaknesses

Contemporaneous Method

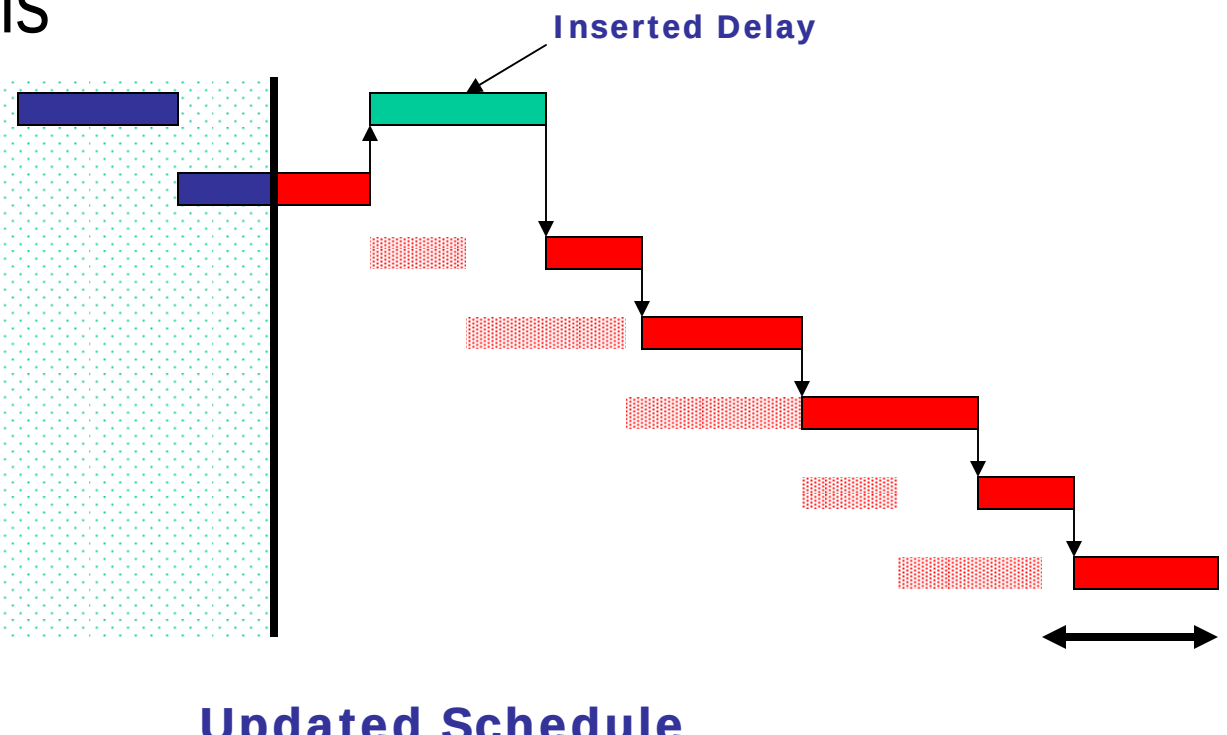
Contemporaneous Time Frame Schedule Analysis



Updated Schedule

Contemporaneous Method

Contemporaneous Time Frame Schedule Analysis



Summary Delay Considerations

- Define Baseline Schedule
- Define Modified Baseline Schedule
- Select Methodology
- Be aware of Concurrency
- Identify Chronology of Delay
- Identify Responsibility for Delay
- Identify Duration of Delay
- Understand Float
- Delay MUST be critical
- Recovery /Mitigation Efforts
- Understand Overall Delay Issue

Conclusion

- Implementation of BMP – Specs, Processes
- Project Controls Standardization- Timely
- Documentation!!!!!!!!!!!!
- Contract Awareness
- Early Notification, Early Resolution

Questions and Answers

THANK YOU!!!!!!!