



The Knowledge Leader for Project Success

Owners • Contractors • Academics

AWP: The Silver Bullet for Solving Productivity Problems on Projects?

Jim Rammell, **Wood Group** *Mustang*

Panel Discussion

Introductions

Wayne Crew, *Director, CII*

Bill O'Brien, *Associate Professor, The University of Texas at Austin*

Jim Rammell, *VP Construction Operations, Wood Group Mustang*

Glen Warren, *Workface Planning Committee Co-chair, COAA*

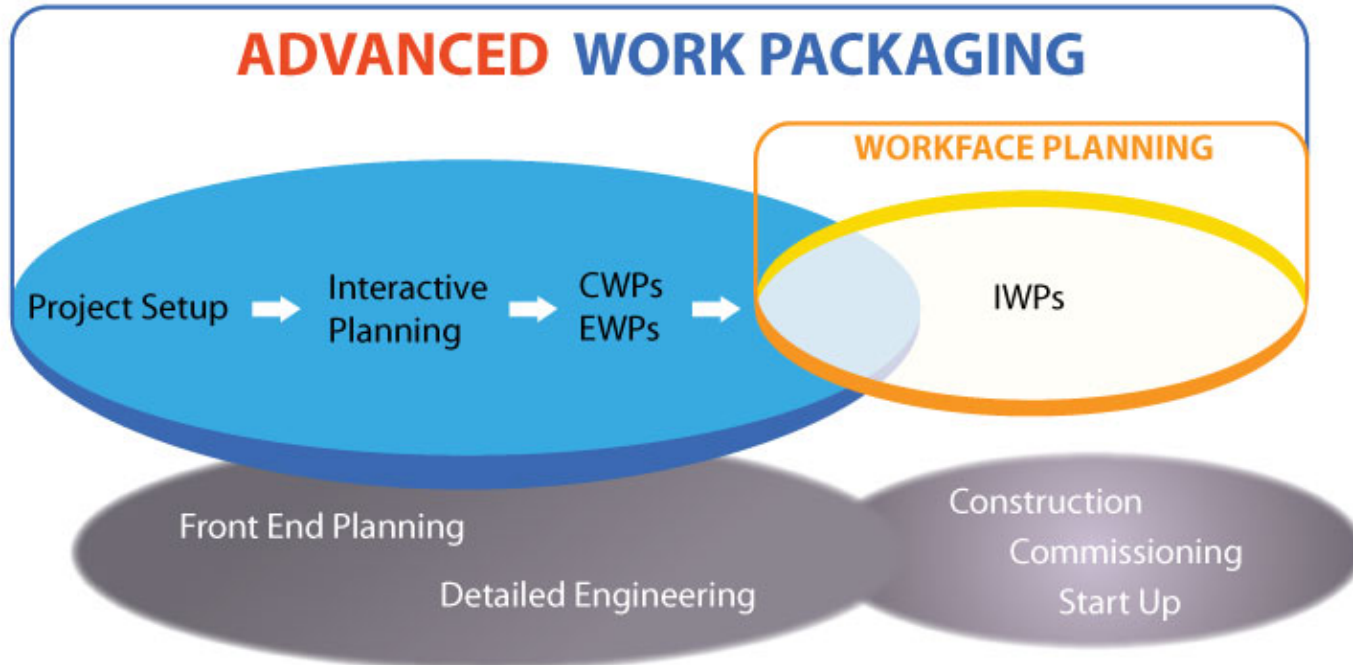


Discussion Panel

- **Moderator:** Jim Rammell
- **CII & COAA Research on Productivity:** Wayne Crew
- **Recent RT272 & RT319 Research Overview:** Bill O'Brien
- **AWP / WFP Applications from the Field:** Glen Warren
- **Wrap Up / Q&A:** Jim Rammell / All



Where We Are . . .

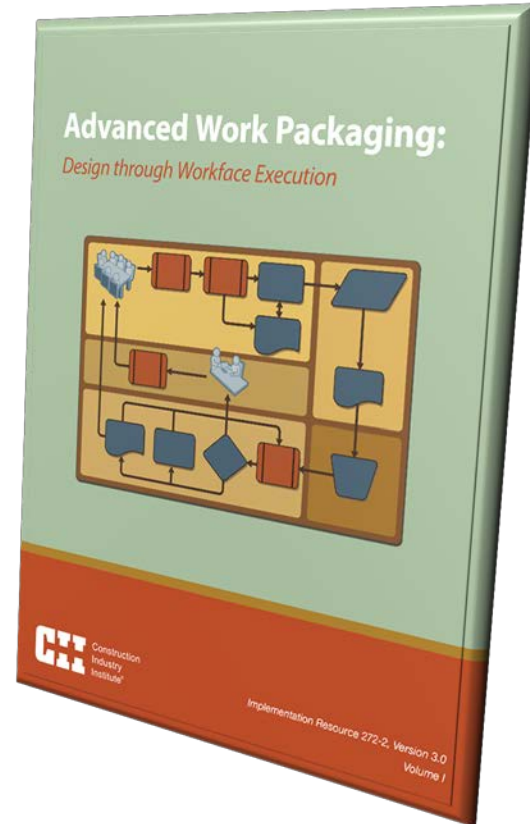
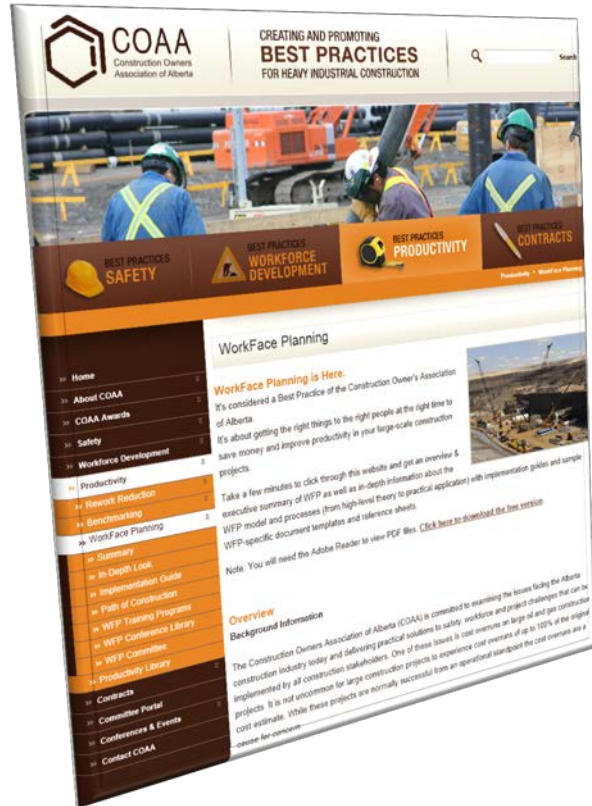


Summary Benefits

- Productivity
- Predictability
- Safety
- Quality / Reduced Rework
- Alignment / Communication



CII and COAA Joint Effort



Wayne Crew

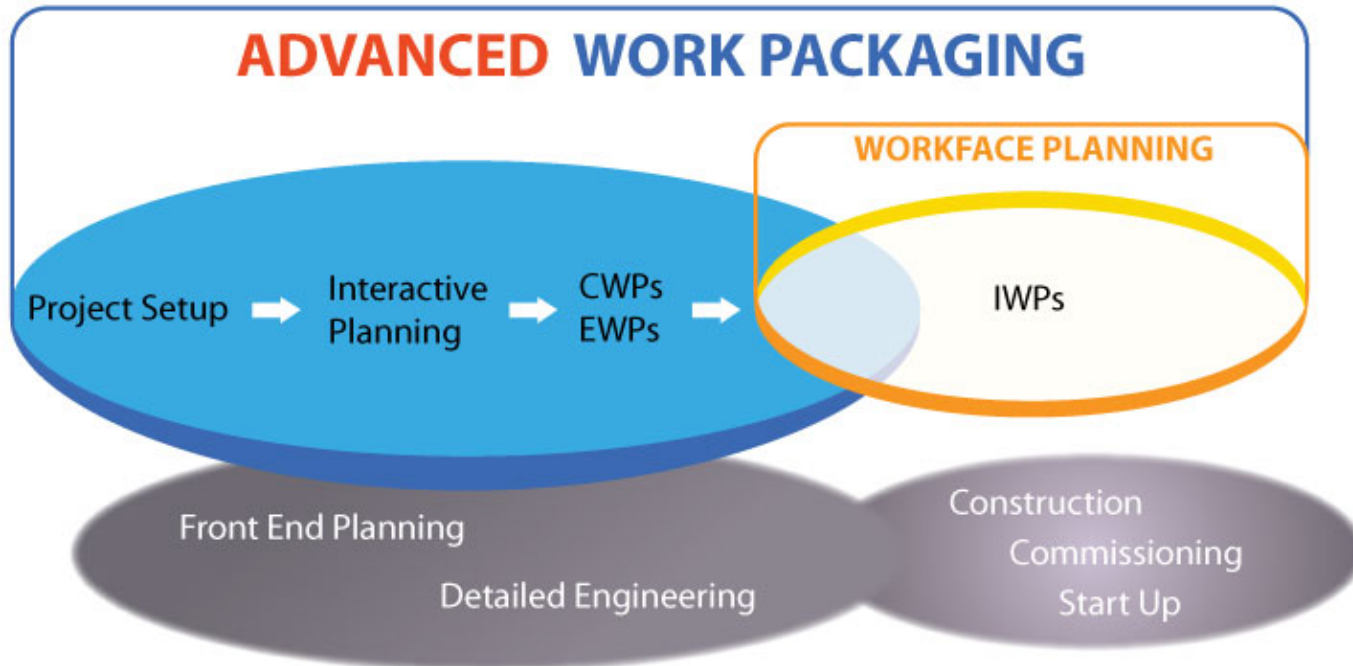


CII & COAA Research on Productivity

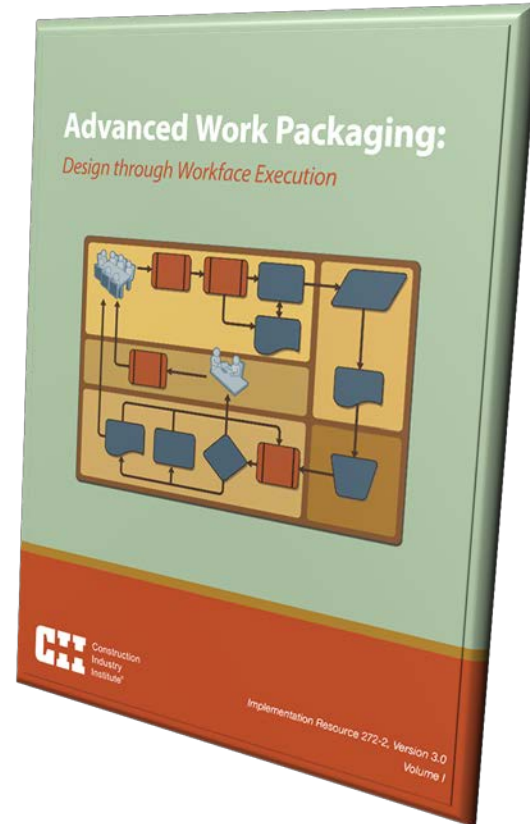
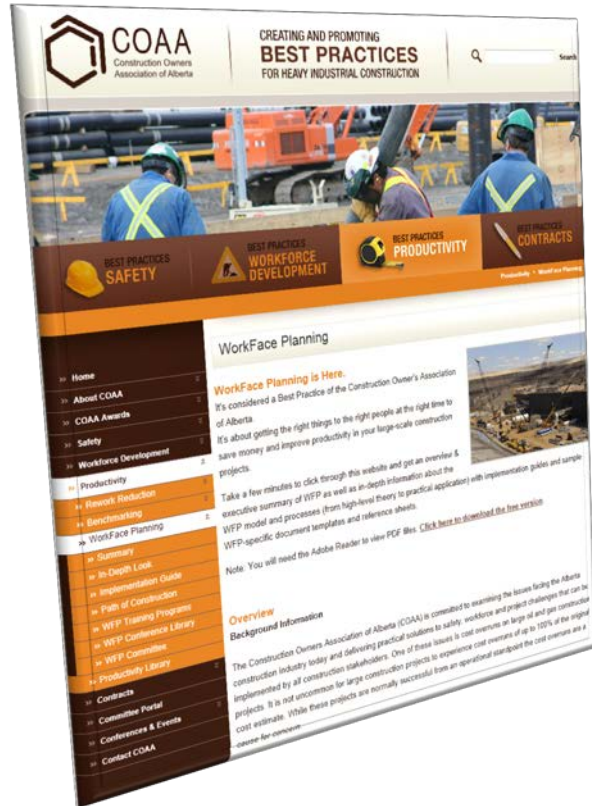
- How does this fit into FEL?
- Also 252, 215, last 5 years of effort
- Holistic approach, 272/319 fits into theme
- Alignment thermometer, front end planning
- AWP fits in here & here, connects the dots through capital project life cycle



Where We Are . . .



CII and COAA Joint Effort



Bill O'Brien



AWP: So what's really new?

- We **KNOW** Front End Planning helps projects
 - Statistics, logic, case examples
- AWP is the extension of FEP across the project lifecycle
 - People, processes, tools
- AWP promotes success at the work front
 - Provides pre-requisites for effective short-interval (field) planning
- AWP is a disciplined process to overcome problems resulting from a fragmented and specialized industry
 - Two key ideas: (1) CWP/EWP definition; (2) Role of WorkFace Planners



Documented Benefits

- 25% productivity improvement
 - 10% decrease in total installed cost
 - Greater schedule & cost certainty
 - Improved safety performance
 - Improved quality
 - Improved contractor profitability
 - Improved stakeholder alignment
- } *multiple case studies*
- *No silver bullet – achieving the benefits takes work!*
 - *But no reason to wait...*



Preliminary Statistical Results

Compared to poor AWP implementation, effective implementation shows

- 30% increase of **Safety performance**
- 20% increase in **Quality performance**

*AWP drives **Project Cost and Schedule Predictability***

(25% explanatory power)

Small sample, but robust results from statistical analysis.



The math for the business case:

X% increase in field productivity x %field labor of TIC
= % decrease in TIC

→ *25% field improvement x 40% field costs =
10% decrease in TIC*

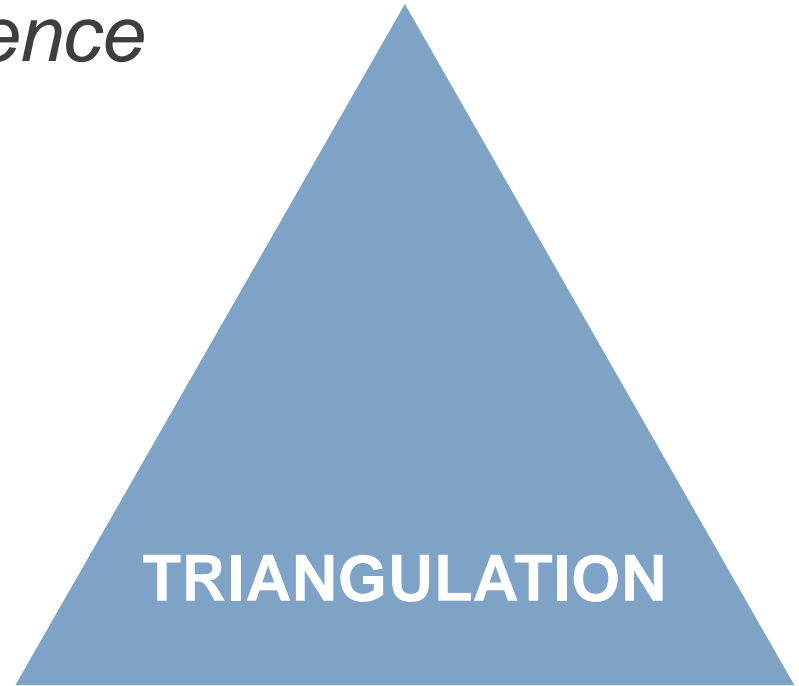
- Field studies show tremendous opportunity for improvement in tool time on almost all projects.
- Small improvements pay for up front costs.

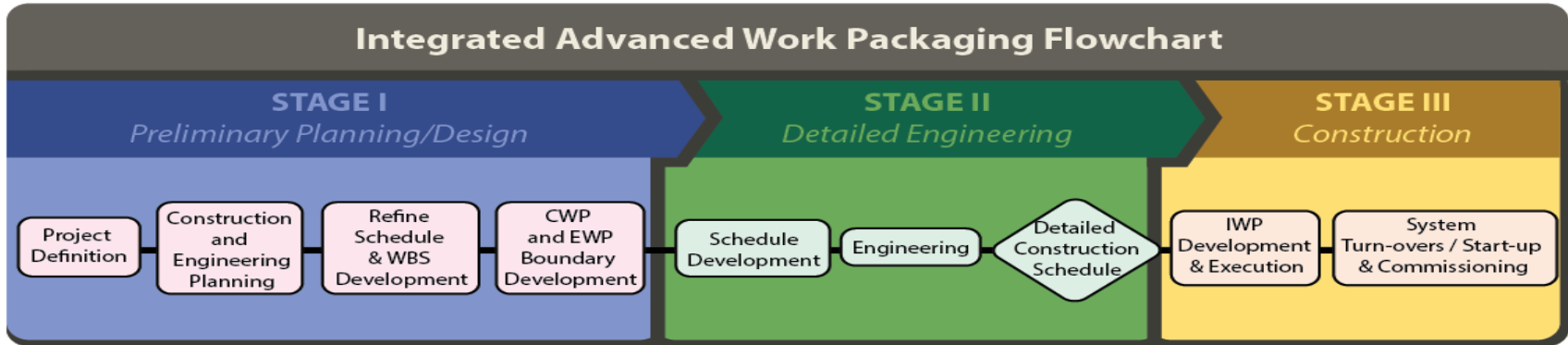


Why can you trust the research findings?

Multiple Sources of Evidence

- Case Studies
- Expert interviews
- Workshops
- Surveys
- Team deliberation
- External review





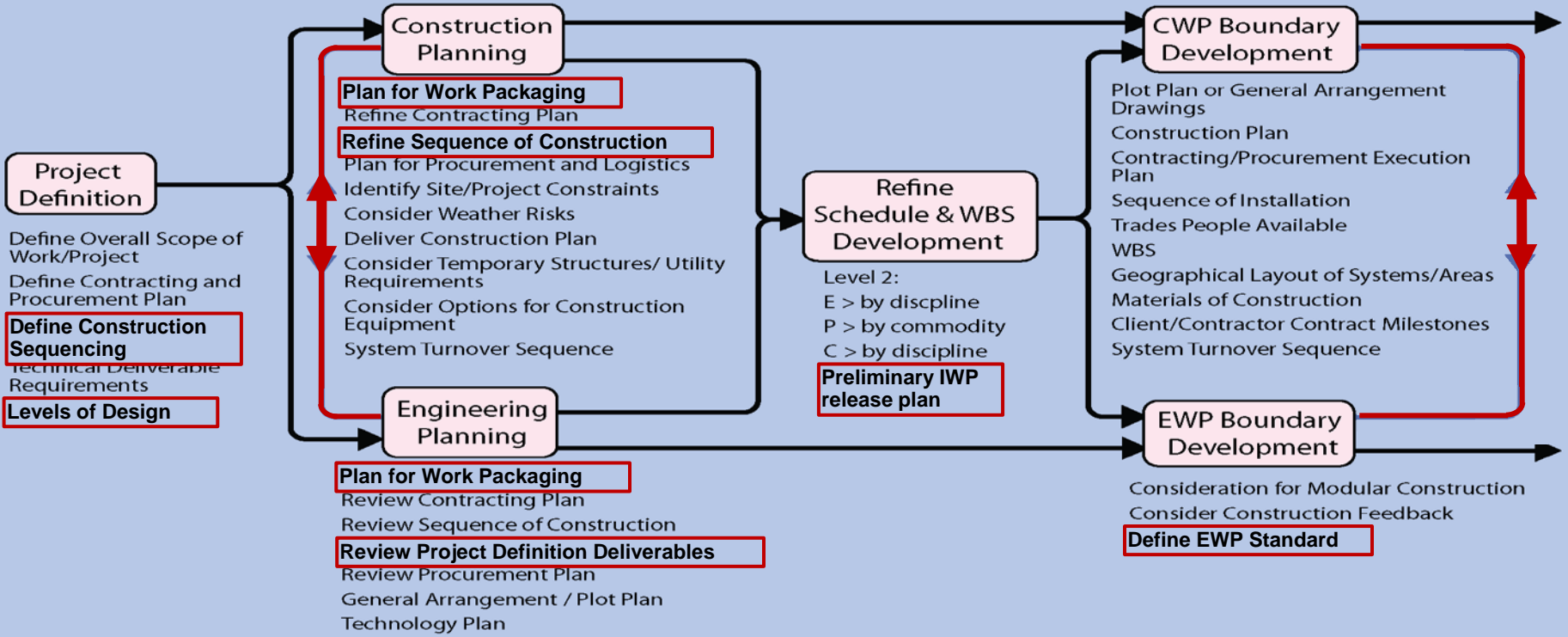
Main areas of Enhancement:

- Project definition
- Construction & engineering planning
- CWP & EWP boundary development
- IWP and workface planning capability/discipline



STAGE I

Preliminary Planning/Design



Glen Warren



KEY BARRIERS TO AWP/WFP IMPLEMENTATION

FROM 2012 WORKSHOP - SELECTED INDUSTRY EXPERTS

- STAKEHOLDERS DON'T BELIEVE BENEFITS**
- STAKEHOLDERS THUS DON'T “BUY-IN”**

SOLUTION - REQUIRE MORE CASE STUDIES



CASE STUDIES

DOCUMENTATION OF CASE STUDIES IS GROWING

2 REPRESENTATIVE EXAMPLES

- **ALASKA**
- **ALBERTA OIL SANDS**



WHY IS WFP PRODUCTIVITY NOT CONSISTANT

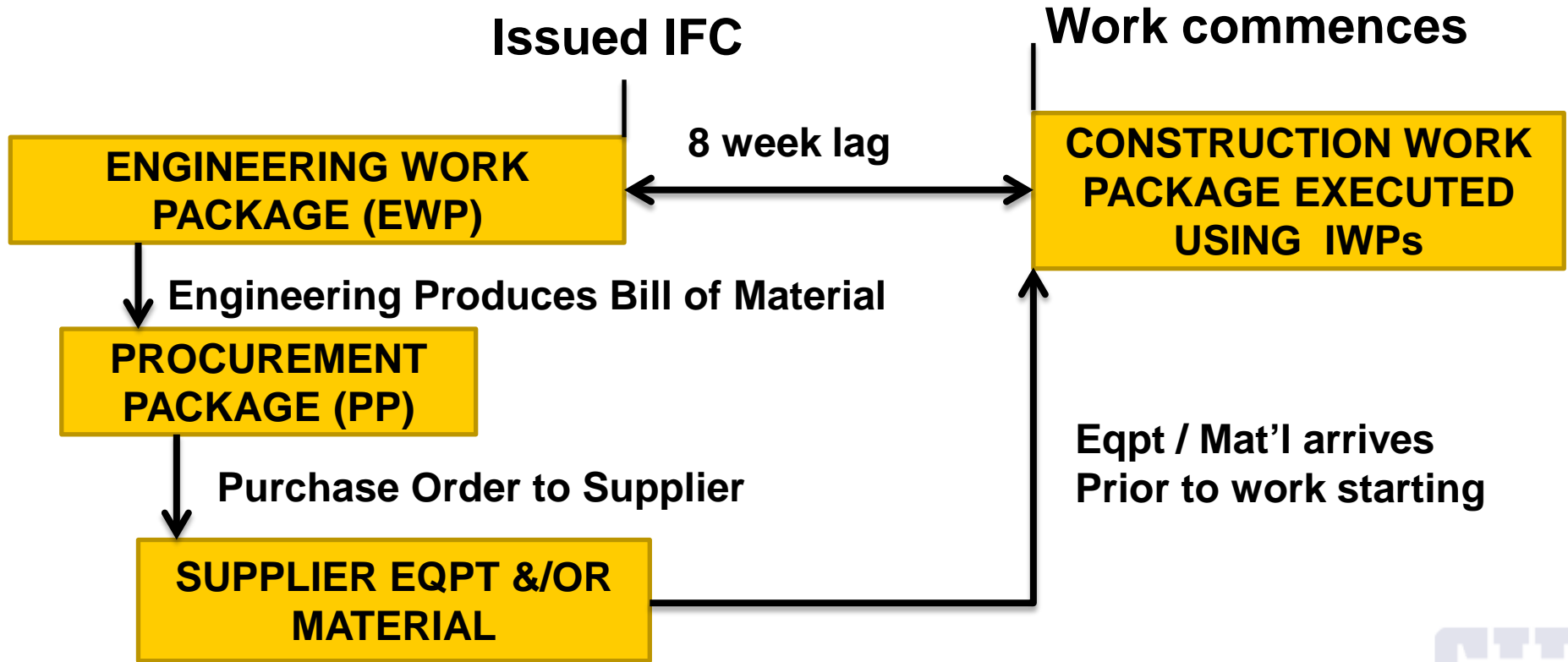
- **FRONT END DELIVERABLES**

- **NOT COMPLETE**

- **NOT DELIVERED IN RIGHT SEQUENCE**



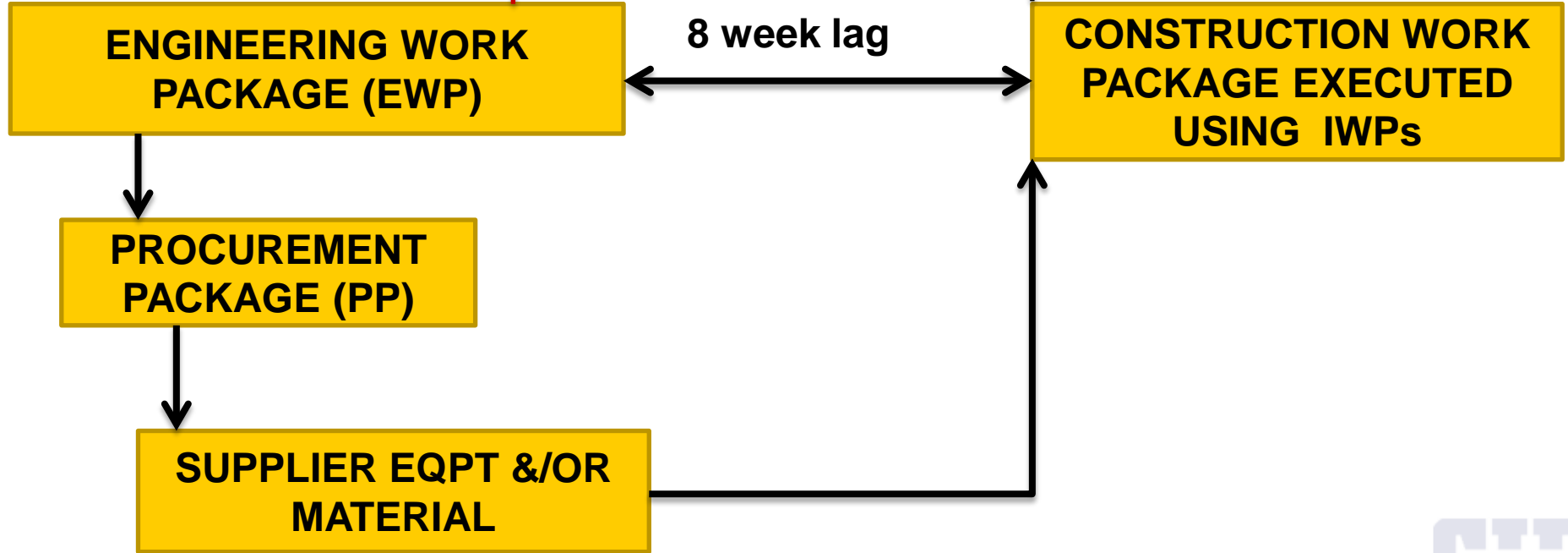
PLANNED PATH OF CONSTRUCTION PROCESS



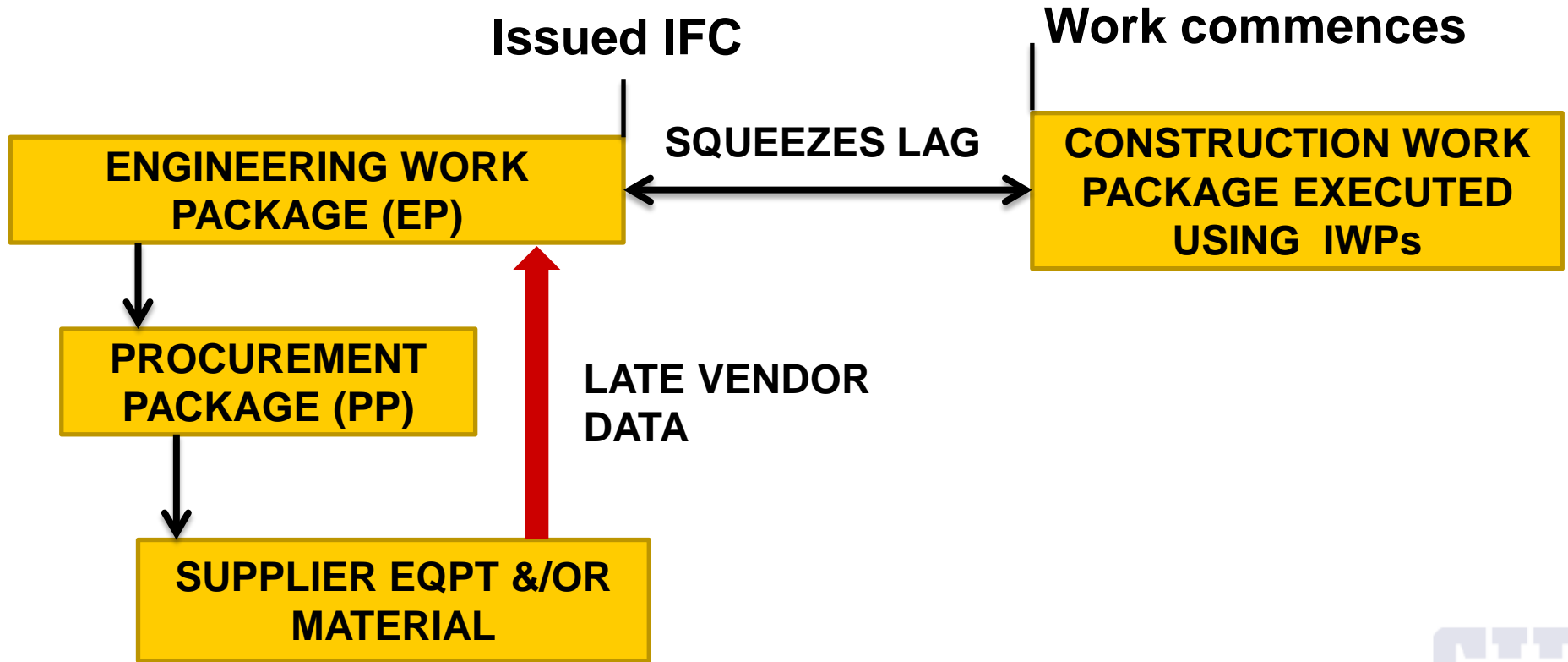
MOBILIZATION OF CONTRACTOR

FORECAST COMPLETION

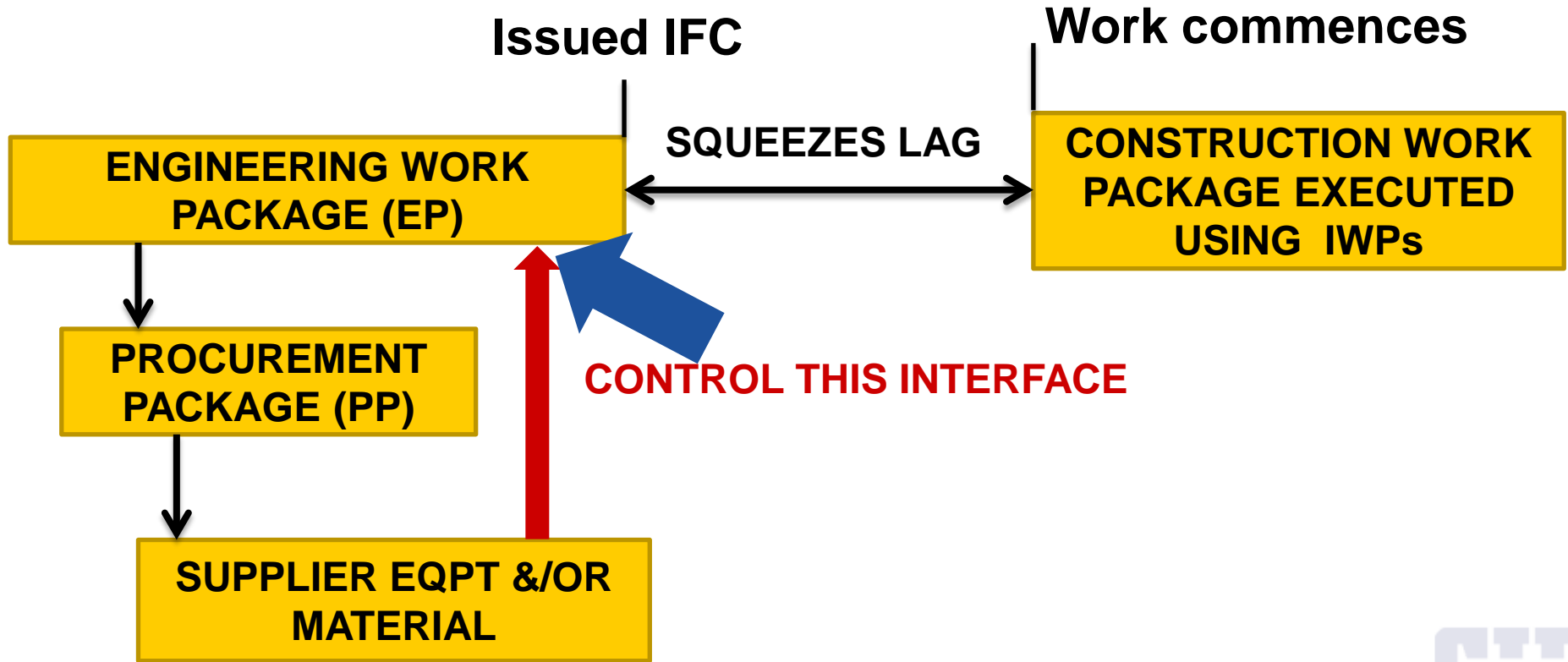
MOBILIZES RESOURCES



PLANNED PATH OF CONSTRUCTION PROCESS



PLANNED PATH OF CONSTRUCTION PROCESS



IMPROVE EWP DELIVERY PREDICTABILITY

- **EWP READINESS REVIEW (TIMELY) – INCLUDE SCM**
 - **CHAMPION DESIGNATED FOR EACH EWP**
 - **ROLES AND RESPONSIBILITIES FOR EWP DEVELOPMENT / UTILIZE CHECKLISTS**
 - **ENSURE EQUIPMENT / INSTRUMENTS / MATERIAL CAN BE TRACKED TO EACH INDIVIDUAL EWP**
 - **VENDOR DATA REQUIREMENTS EMBEDDED IN CONTRACT**
 - **RULES OF CREDIT**



LESSONS LEARNED

- **IMPLEMENTATIONS AREN'T EASY**
- **NEED MANAGEMENT SUPPORT (Note – plan to use DTE Energy as Example – from CII 2113 AGM)**
- **THE RESULTS ARE DIRECTLY RELATED TO THE EFFORT INVOLVED**



IS THIS “THE SILVER BULLET”



- IT NEVER WILL BE UNLESS YOU HAVE THE “GUN” TO PUT IT INTO ACTION.

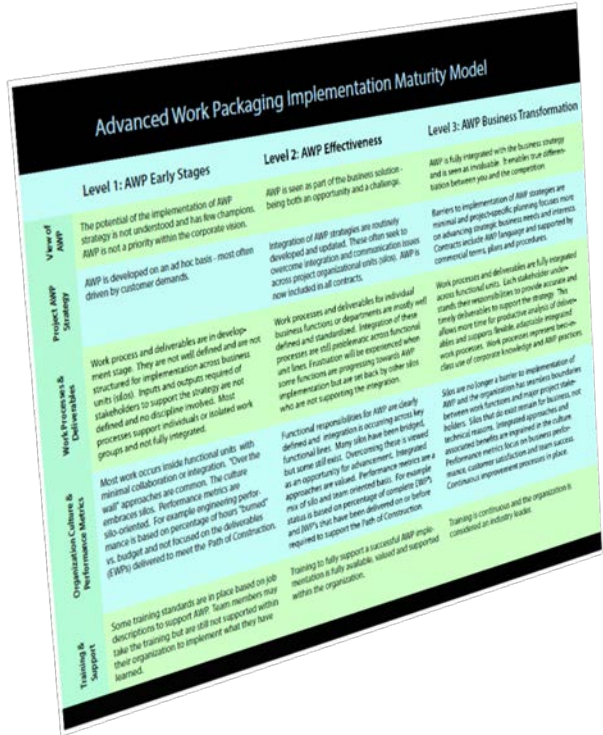


Wrap Up / Q&A

- Implementation Resources, more at rest of conference
- Additional discussions thru conference



Maturity Model



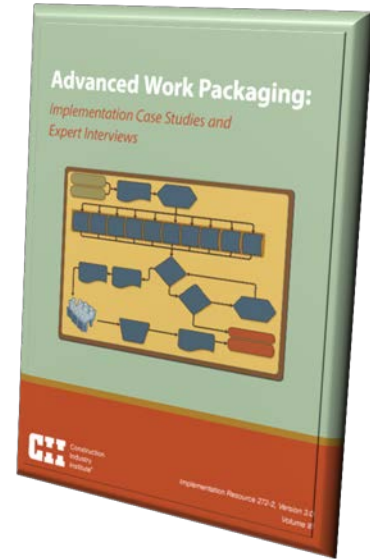
Resources



Volume I:
Recommended
Process



Volume II:
Implementation
Guidance



Volume III:
Case Studies
and Expert
Interviews

CII/COAA AWP Implementation Resource IR 272-2

✓400 pages of guidance, tools, and templates

