CURRENT SCHEDULING PROCESS LIMITATIONS

- Work expands to fill the time allowed
- Work flow (hand off) is not reliable
- Work production is not steady
- Dates and durations determined by few
- Traditional methods of work, information, and material exist in silos and non-collaborative

BENEFITS OF LAST PLANNER

- Collaborative scheduling that practices the best elements inherently executed by our best teams
  - Buy-in, optimized flow, waste elimination, long, mid and short term schedules
- Accountability is to the project team
- Works in conjunction with critical path
- An evolution to current practices (not a revolution)

BENEFITS OF 4D

- Visualization of scope
- Visual communication medium
- Ensuring all parties are on the same page and speaking the same language
- Incorporation of safety and high-risk activity analysis
- Incorporation of construction site logistics scenarios
- Enables rapid prototyping, simulation and rehearsal
4D + LAST PLANNER = CERTAINTY OF OUTCOME

**PHASE 1**
INTRODUCING 4D TO YOUR PULL PLANNING SESSION

- Don’t try and utilize a 4D software live during the session
- Continue with traditional pull planning method
- After the session, integrate the results into the 4D
- Develop site logistics and in-construction elements into 4D and schedule

**PHASE 2**
INTRODUCING LIVE 4D VISUALIZATION TO YOUR REFINEMENT PULL SESSION OR REVIEW SESSION

- Make sure you have a 4D software expert
- Make sure you have a large screen for viewing
- Side-by-side animations showing the baseline sequence from last pull session vs. the sequence as planned in the current session
- Drives communication
- Gets everyone understanding the changes

**PHASE 3**
INTEGRATED SOLUTION

- Start with 4D and as pull session is evolving results are directed fed into 4D for real-time visual validation/refinement
- Seek out API integrations
- Seek out mobile applications to enter data during live session and share results
4D + LAST PLANNER = CERTAINTY OF OUTCOME

VALUE PROPOSITION

The forced collaboration of Last Planner combined with the visualization of scope of 4D results in enhance simulation and optimization of the construction sequencing. Yielding rapid refinement and waste/float elimination along with all stakeholders in sync, and sharing accountability.

TIME SAVING METRICS

4D SCHEDULE INTEGRATION PROCESS

2 WEEKS Reduction for every 6 months of total schedule

$270K IN REDUCED LOAN CARRY AND GC’S

“based on a 3-year 12 project study on projects in the $20M-$85M range”

LESSONS LEARNED

• Need a strong Last Planner Facilitator that is also a BIM champion
• Include in-construction logistics to the 4D (site mobilization, laydown, tower cranes, man-lifts, temp access roads, etc)
• Superintendent and project BIM specialist need to have a strong partnership
• Have project team share their own project successes company-wide: competition is a good thing