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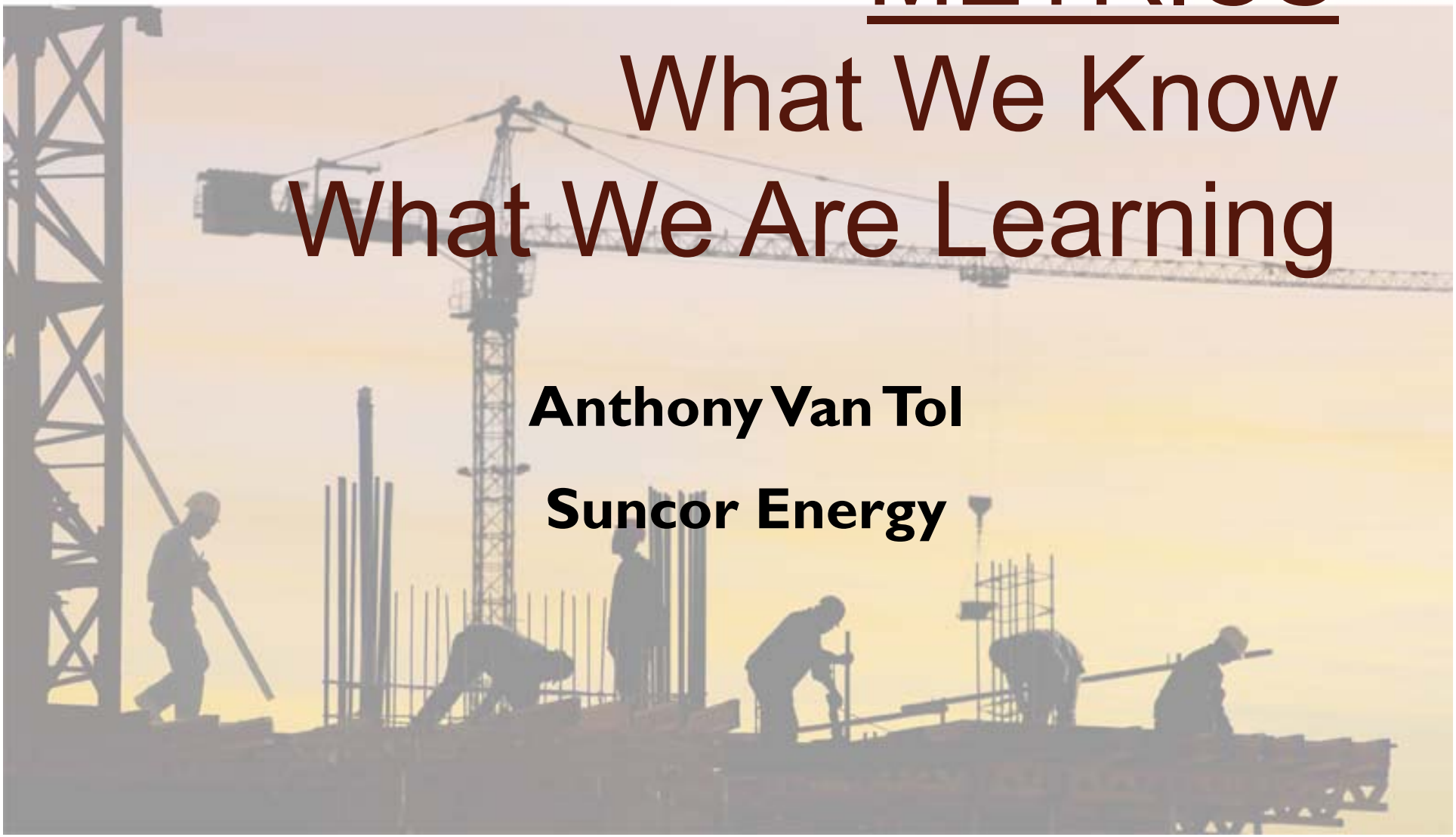
METRICS

What We Know
What We Are Learning



Anthony Van Tol

Suncor Energy

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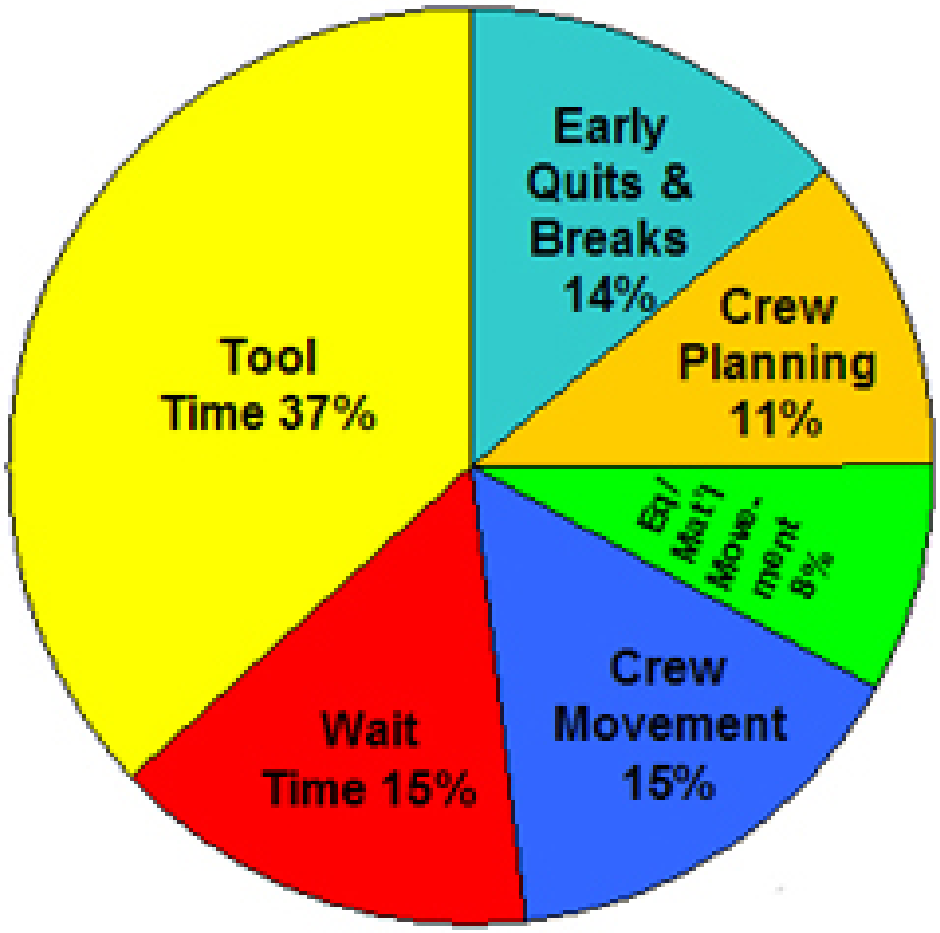
Why WFP?



Productivity on large oil & gas construction projects is typically quite low (about **35 to 40%**).

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Definitions

COAA Definition: The process of organizing and delivering all the elements necessary, before work is started, to enable craft persons to perform quality work in a safe, effective, and efficient manner.

Working Definition: The work required for planning, packaging, executing and turning over Field Installation Work Packages.

In support of Workface Planning, the following construction planning tools are required to be complete and organized:

- System Identification
- Path of Construction
- Participative Planning
- Construction Work Areas
- Construction Work Packages
- Engineering Work Packages
- Field Installation Work Packages
- TAG Numbering
- Start-up & Turnover

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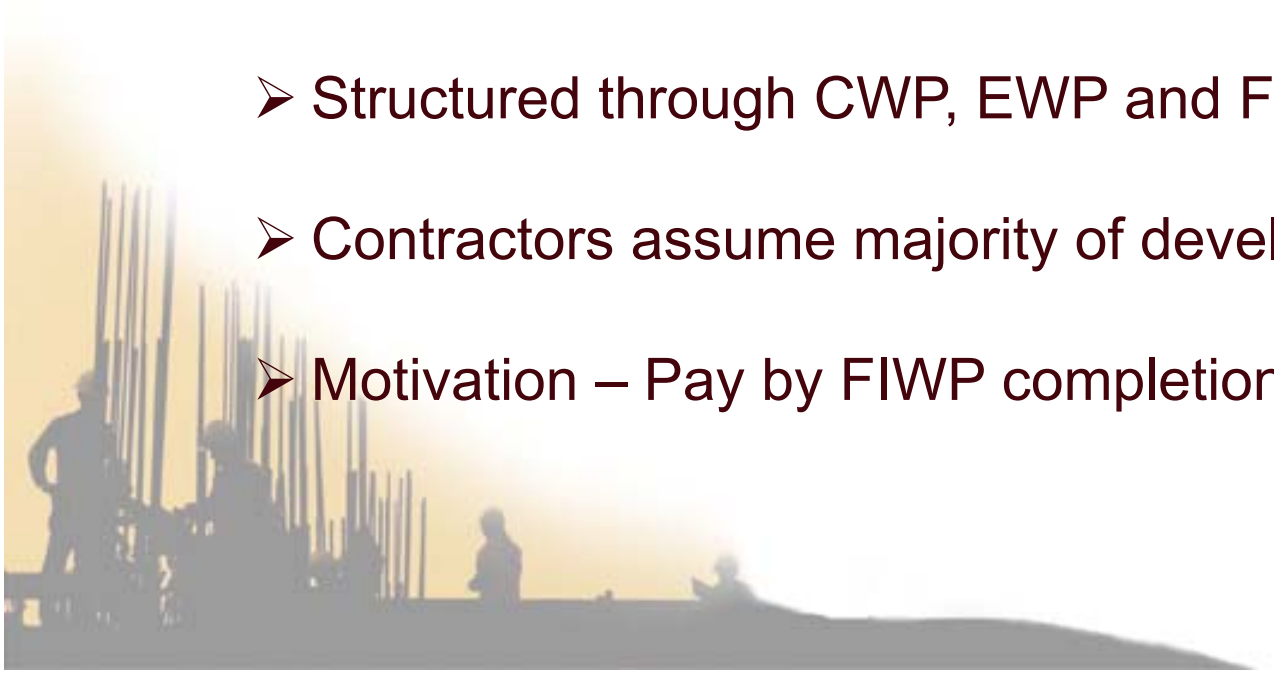
WFP Objectives

- Administered through Suncor Construction Management Team
- Front End Planning Tools support
- Structured through CWP, EWP and FIWP release plans
- Contractors assume majority of development work
- Motivation – Pay by FIWP completion



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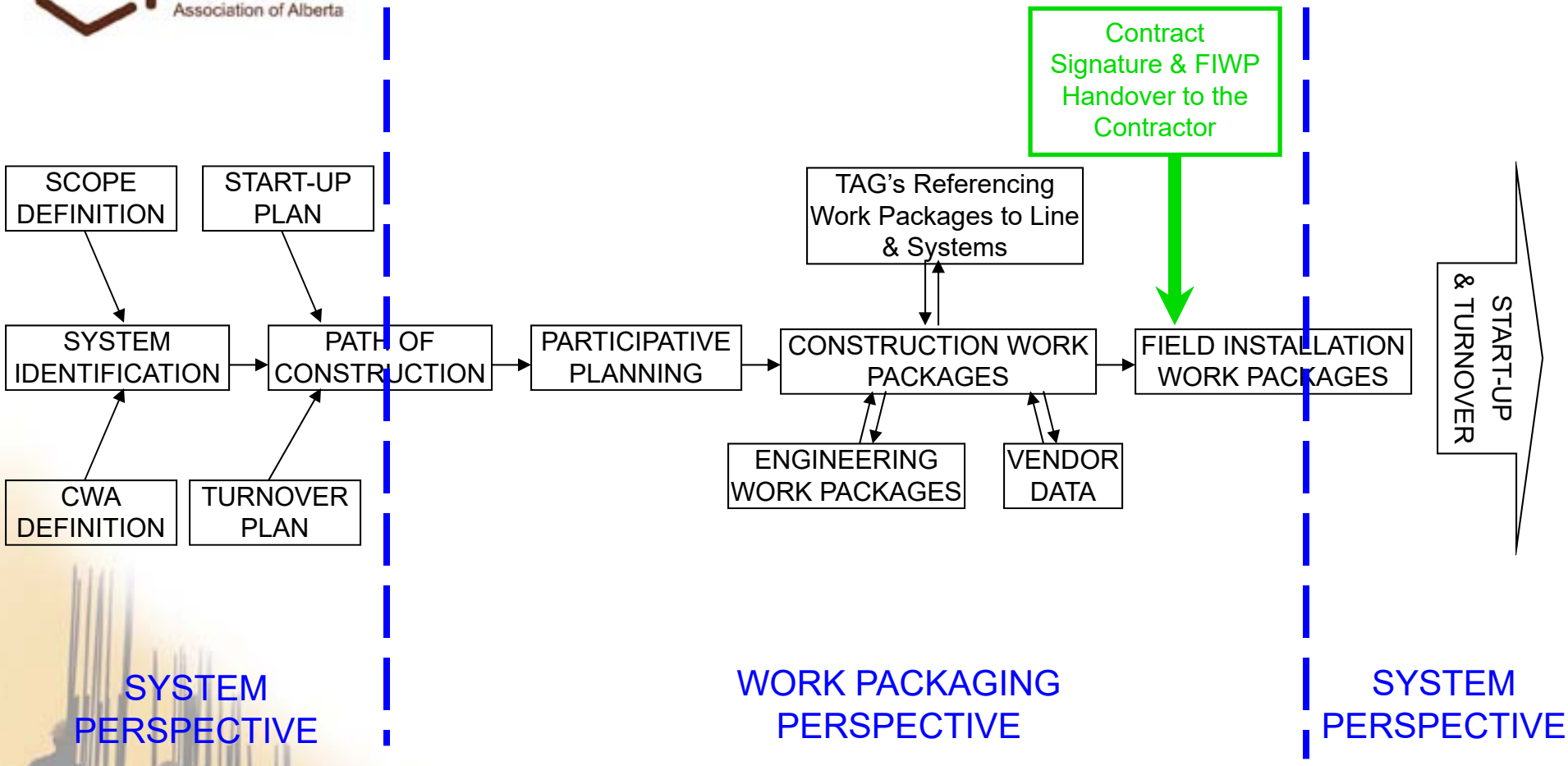
Process



CONSISTANCY, CONSISTANCY, CONSISTANCY

Consider a project…

- Collection of **Systems**
- Broken into Construction Work Areas (**CWA**)
- Divided into Construction Work Packages (**CWP**)
- Detailed in Field Installation Work Packages (**FIWP**)
- **Discipline Specific** FIWP's
- **Track Progress** of Discipline Specific FIWP's

Steel FIWP	**Inst. FIWP**
Pipe FIWP	**Insul. FIWP**
Elec. FIWP	**etc… FIWP**

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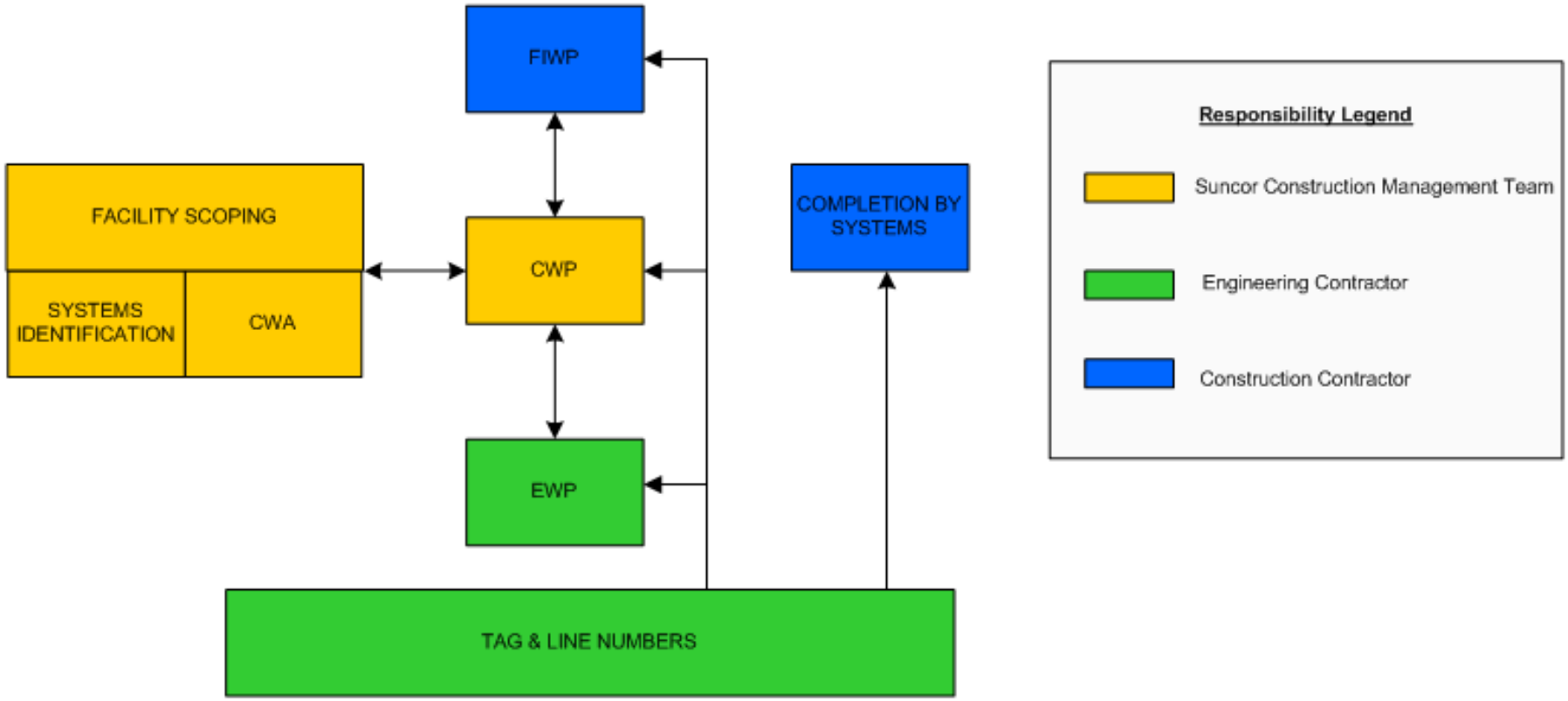
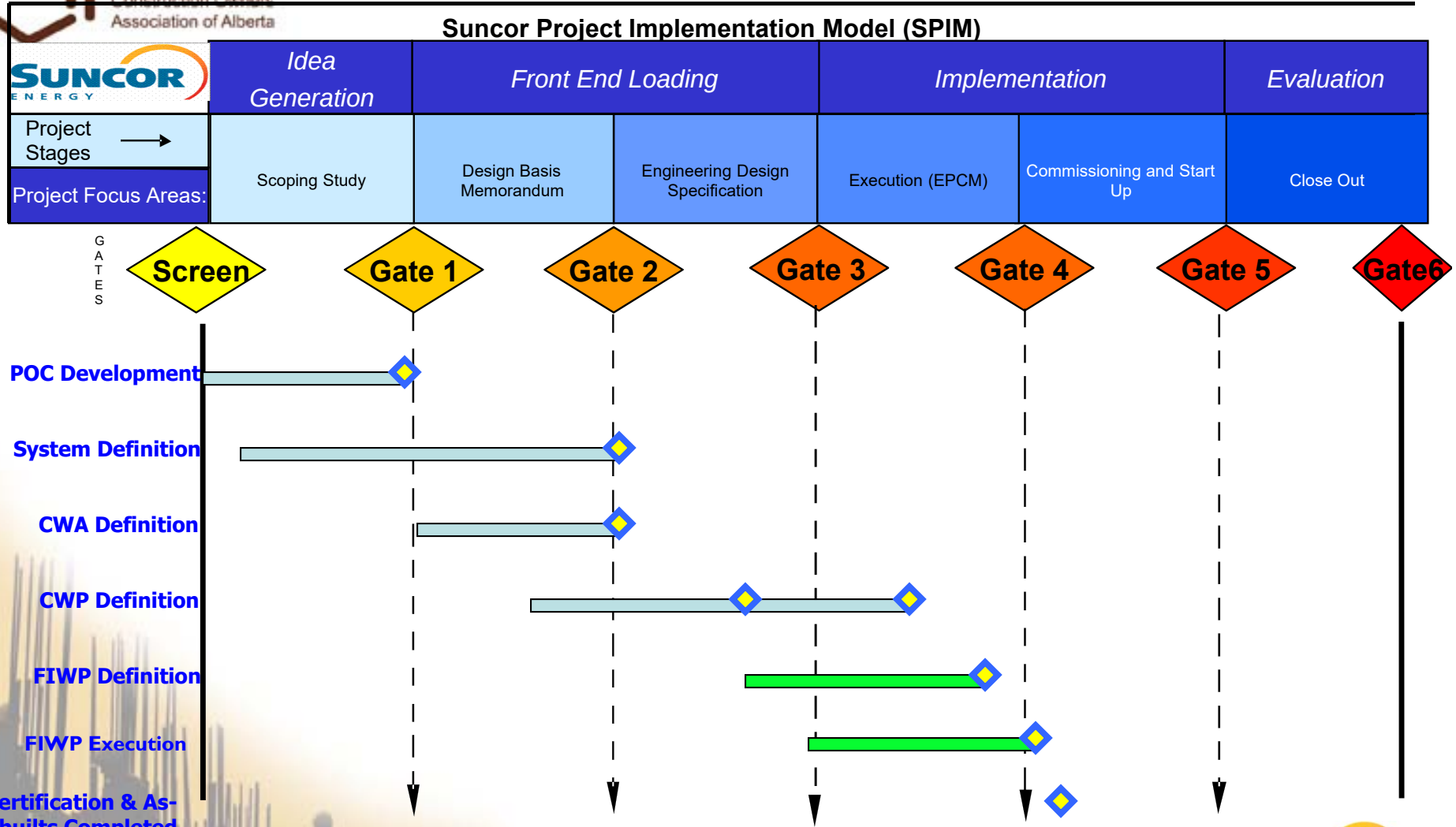
Cross Referencing



WFP In The Project Model



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GBR Project

The Gasoline Benzene Reduction (GBR) Project

- Suncor Refinery Restart Project in Denver, Colorado
- ~$200M Environmental Addition to the Refinery
- Project consists of a:
  - ✓ Tank
  - ✓ Vessel
  - ✓ Reactor
  - ✓ Two separation cells
  - ✓ Flare System
  - ✓ Piping

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Reality

The GBR Project …

- Lump Sum EP + C Contract
- Suncor: Construction Management Role
- WFP introduced after restart (Gate 3)
- WFP introduced to project when:
  - ✓Procurement 0% complete
  - ✓Engineering 50% complete
  - ✓Construction Contracts negotiated

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Suncor Construction Management Team
Setting Expectations

- Assess State of Project
- Review & Draft WFP Program
- Review with Project Participants
- Write up & Roll out

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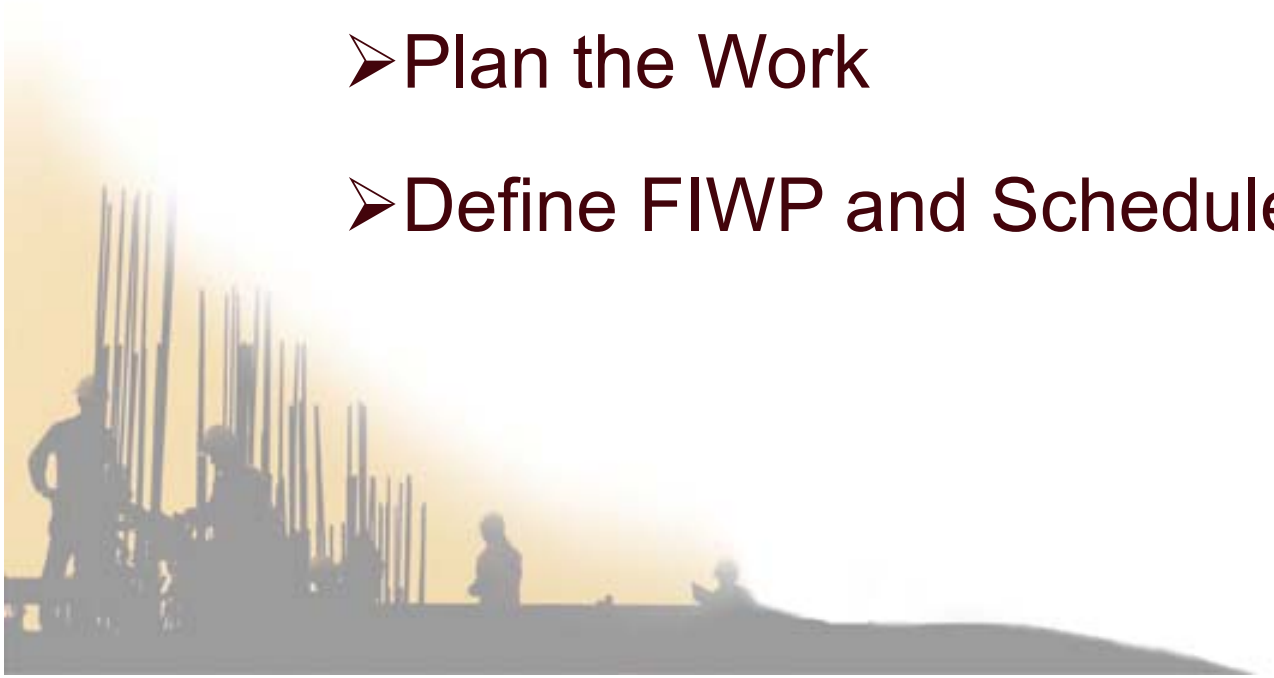
Construction Contractor Setting Expectations

- Establishes the ground rules
- Create the Working Structures
- Plan the Work
- Define FIWP and Schedule By FIWP



Contractor Executing

- Define, Validate & Assemble the FIWP's
- Detail & Check the Plan
- Execute

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Contractor Control

- Tracking to Completion
- Ensuring Turnover

Project
WFP Workflow

1. Contractor Sent Scope of Work
2. Contractor Returns Execution Plan
3. CMT Review
4. Clarification Meeting with Contractor
5. Internal Owner Review
6. Construction Readiness Review Conducted
7. Construction & Project Director Sign-off Execution Plan
8. **Work Authorization issued** Supply Chain
9. CMT monitors and controls

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Suncor Control

- Meetings to cover:
  - ✓ Construction and Project Updates
  - ✓ 30 and 90 day look-ahead's
  - ✓ Incurred Cost Review
  - ✓ Construction/Project Change
  - ✓ Individual Contractor Progress
  - ✓ Overall Project Progress/Health
- Tools:
  - ✓ Work Packages
  - ✓ Project Baselines
  - ✓ Project Management of Change Process
  - ✓ Variance Reports (with communication plans)
  - ✓ Schedules (Baseline, 30, 90, current)
  - ✓ Cost reports

Suncor Evaluating

- Progress
  - ✓ Contractor – Measurement & Reporting
  - ✓ Suncor CMT – Verification
- Schedule
  - ✓ Server Dedicated to Integrated Schedule
- Cost
  - ✓ Contractor – Measurement & Reporting
  - ✓ Suncor CMT – Verification
- Change
  - ✓ Suncor driven/Contractor driven

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The End