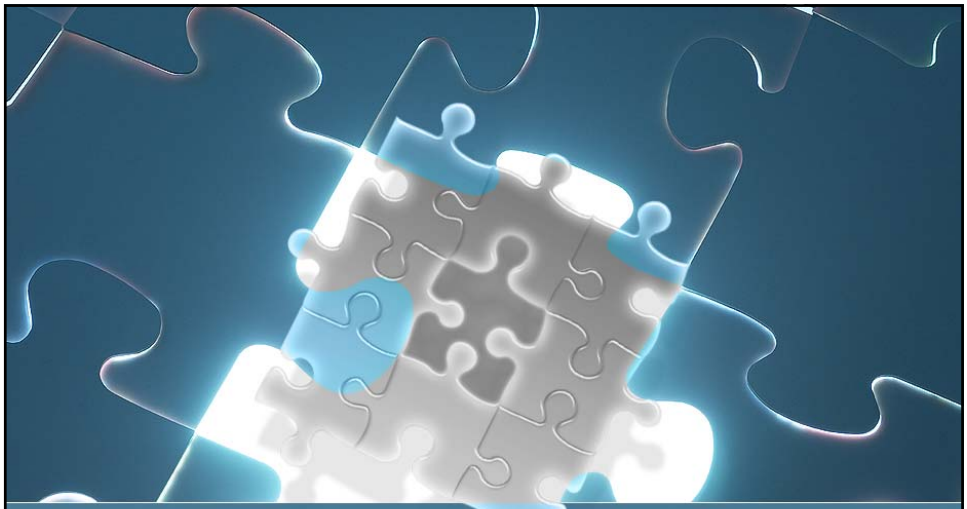


The Lean Approach to Project Delivery – Future State Map Report Out – 1/14/08

Future State Map Report Out

- Review of What We Set Out to Accomplish – Create a Future State Map to:
- Eliminate waste
  - Overproduction
  - Waiting (time on hand)
  - Unnecessary transport or conveyance
  - Overprocessing or incorrect processing
  - Excess inventory
  - Unnecessary movement
  - Defects
  - Unused Employee Creativity

Source: *The Toyota Way 14 Managing Principles from the World's Greatest Manufacturer*, Jeffrey K. Liker, 2004

Review of Challenges to California Healthcare Projects

- Very Complex Projects
- Three or More Years From Design Start to Permit
- OSHPD Review
- Changes in Technology
- Limited Resources
- Large Batch Process
- Ineffective Cost Control During Design
- Poor Integration of Design and Construction Technology
- Loss of Team Members
- Poor Construction Phasing

What Are We Trying To Achieve?

- Meet Program Requirements
- Level the Design and Construction Work Flow
- Create More Accurate Submittal Packages
- Integrate Cost with Design to Manage in Real Time
- Create a Baseline Starting Point for the Design Process
- Deliver Only What "the customer" needs
- Keep the Design and Construction Team Integrated Throughout the Project Lifecycle
- Shorten the Time to Market
- Provide Flexibility Where Needed to Meet Program Requirements
- Create a Process that Will Encourage Truly Collaborative Behavior When Used Together with Other Lean Tools and Methods

Progress To Date

- Workshop One - Focus and Results
  - Introduction of the Ideas and Intent of the workshops.
  - Hear from "Customers" what value is to them and what they are doing to improve today.
    - OSHPD, CHW, Sutter, St. Joseph, Kaiser
  - Break into four groups to map current state of each of the four Owners.
  - Cross functional teams pre-assigned.
  - Developed Initial Current State Maps
  - Team by Team report out of Progress and Lessons Learned

Progress To Date

- Workshop Two - Focus and Results
  - Discussion and Identification of 8 Wastes
  - Completion of Current State Maps
  - Identification of Opportunities For Improvement based on Waste Identification During Current State Mapping Process
  - Completed Current State Maps
  - Identified over 200 areas of waste in existing process.
  - Shared results with all teams

Progress To Date

- Workshop Three - Focus and Results
  - Discussion and Identification Future State Characteristics and Goals.
  - Identification of Near Term (future state) and Long Term (ideal state) opportunities.
  - Started work on both Future State and Ideal State Maps
  - Shared results with both teams

Progress To Date

- Workshop Four - Focus and Results
  - Continued work on both Future State and Ideal State Maps and specific OFI areas.
  - Created a framework for continuing with this process upon completion of the five workshops.
  - Shared results with all teams

Progress To Date

- Workshop Five - Focus and Results
  - Identified Actual Pilot Projects that will implement one or more process improvements from this workshop.
  - Reviewed the results of our waste priority survey.
  - Completed the framework for continuing with this process upon completion of the five workshops.
  - Shared results with all teams

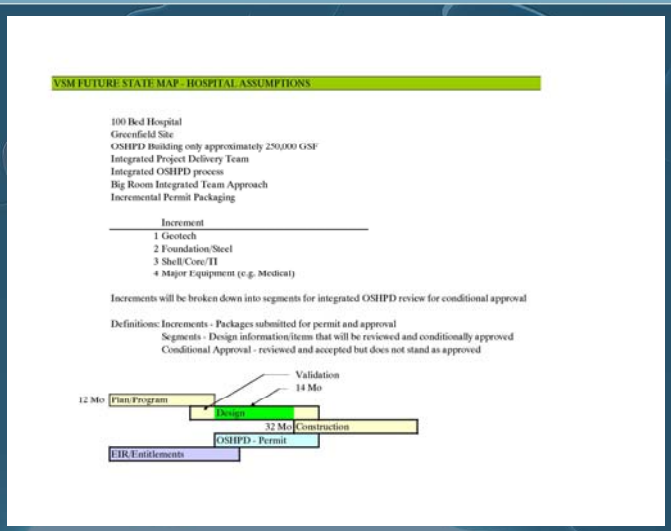
Progress To Date

- Workshop Six –
  - Report out from participating pilot projects.
  - Teams highly focused on OSHPD Process
  - Update from OSHPD

Progress To Date

- Identified Near Term (future state) and Long Term (ideal state) opportunities
- Developed initial Future State Map with specific focus on highest priority waste
- Identified Five Pilot Projects that are in the process of implementing one or more process improvements
- Completed the framework for continuing the development and implementation of the Future State process with guidance of P2SL and monitoring of pilot projects.
- Goal: Publish and make available to the design and construction community a future state framework map

Future State Map Assumptions



VSM FUTURE STATE MAP - HOSPITAL ASSUMPTIONS

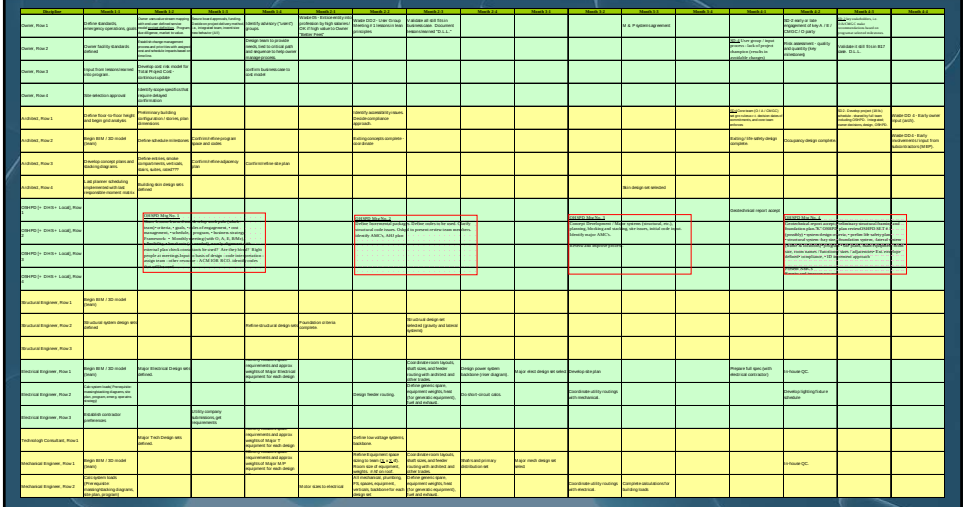
100 Bed Hospital
Greenfield Site
OSHPD Building only approximately 250,000 GSF
Integrated Project Delivery Team
Integrated OSHPD process
Big Room Integrated Team Approach
Incremental Permit Packaging

Increment
1 Geotech
2 Foundation/Steel
3 Shell/Core/TI
4 Major Equipment (e.g. Medical)

Increments will be broken down into segments for integrated OSHPD review for conditional approval

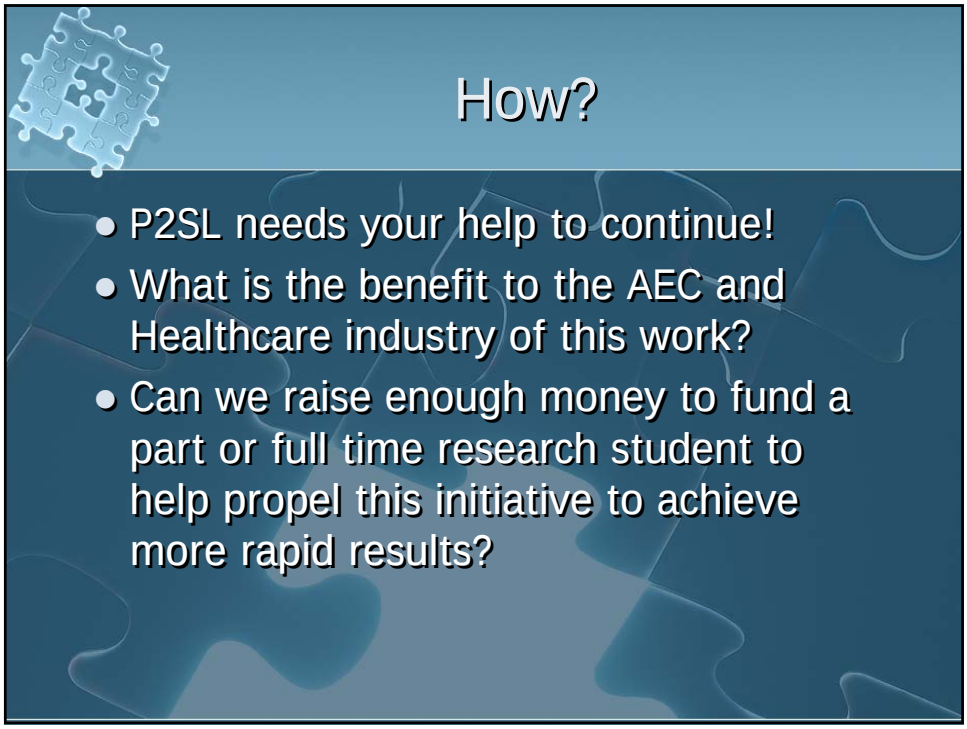
Definitions: Increments - Packages submitted for permit and approval
Segments - Design information/items that will be reviewed and conditionally approved
Conditional Approval - reviewed and accepted but does not stand as approved

Future State Map Framework



Next Steps

- Create standard mapping format and criteria for use by all teams.
- Continue to focus on eliminating identified waste streams through VSM process and PDCA. Share results with P2SL.
- Identify new innovations and experiments being carried out by the pilot projects. Document and Share results with P2SL.
- Incorporate the Learning into the Future State Map and publish to community.
- Visit other project teams to observe and learn from their efforts.


How?
P2SL needs your help to continue!
What is the benefit to the AEC and Healthcare industry of this work?
Can we raise enough money to fund a part or full time research student to help propel this initiative to achieve more rapid results?