

26TH ANNUAL



26TH LCI CONGRESS
OCTOBER 22-25, 2024

TVD: The Barrel or the Beat Down

James Pease, UCSF

Katie Wells, Brasfield & Gorrie, LLC

Stan Chiu, HDR

SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION

Wednesday, October 23, 2024

Introductions



26TH LCI CONGRESS
OCTOBER 22-25, 2024



Katie Wells
Brasfield & Gorrie



Stan Chiu
HDR



James Pease
UCSD

**How do you
recover when
balance is lost?**



TVD – Mastering the Barrel

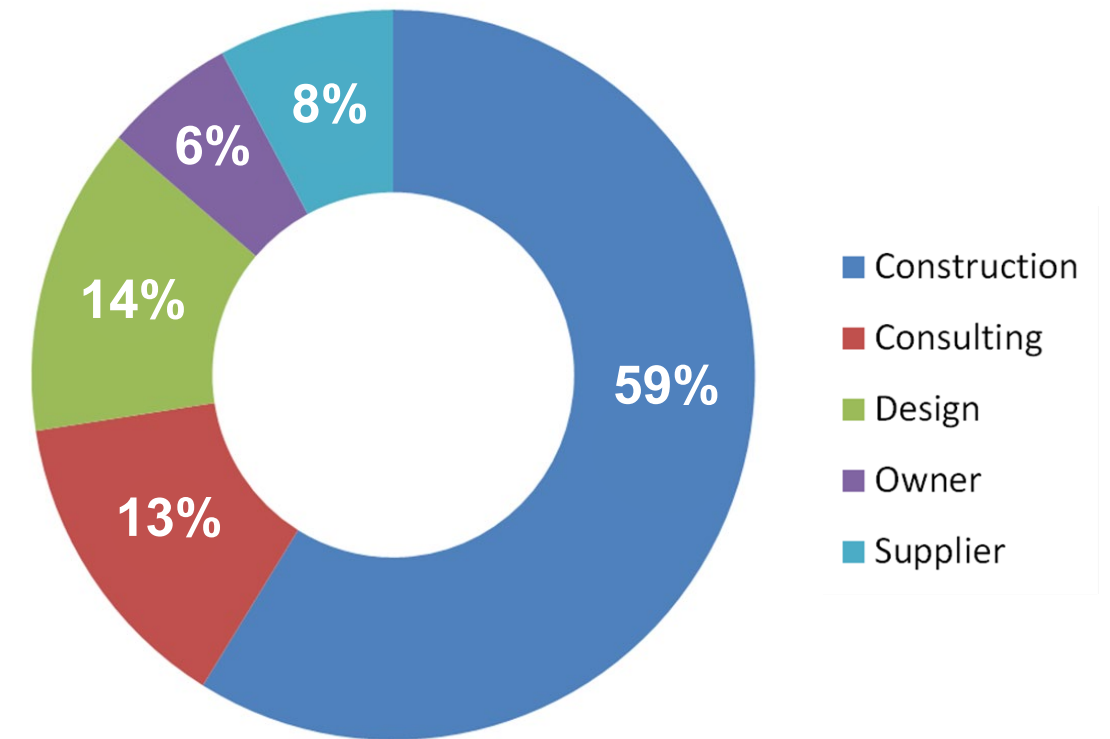
Trust • Conceptual Design & Estimating • Small Iterations
Live Collaboration and Communication

Our plan today

- **Learning to See** (Team preparation)
- **Getting into Position** (Validation)
- **The Pop Up** (Kicking off TVD)
- **The Barrel** (Small adjustments)
- **Wipeout!** (Reset)



Who's In The Room? Three wishes?



Learning to See

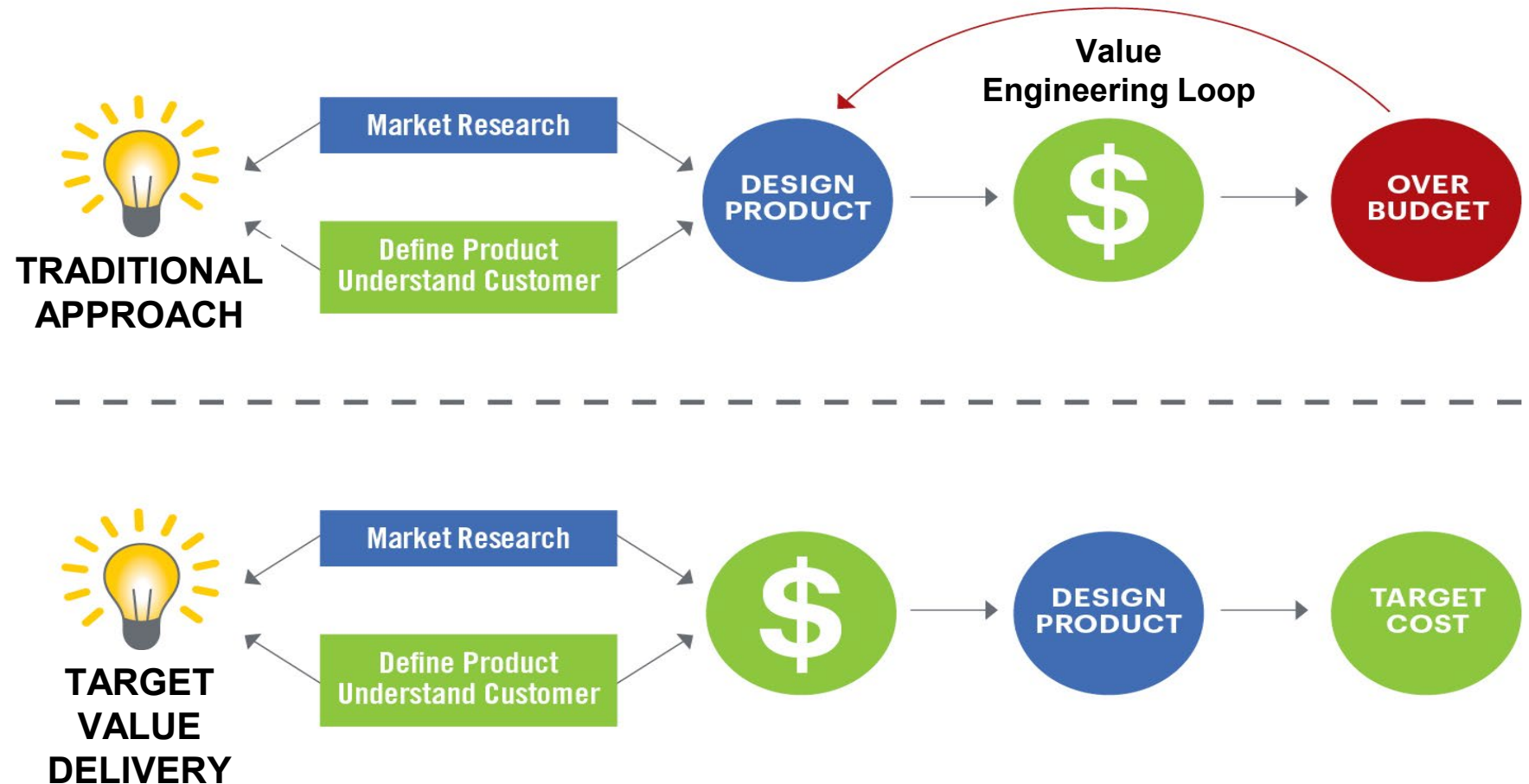


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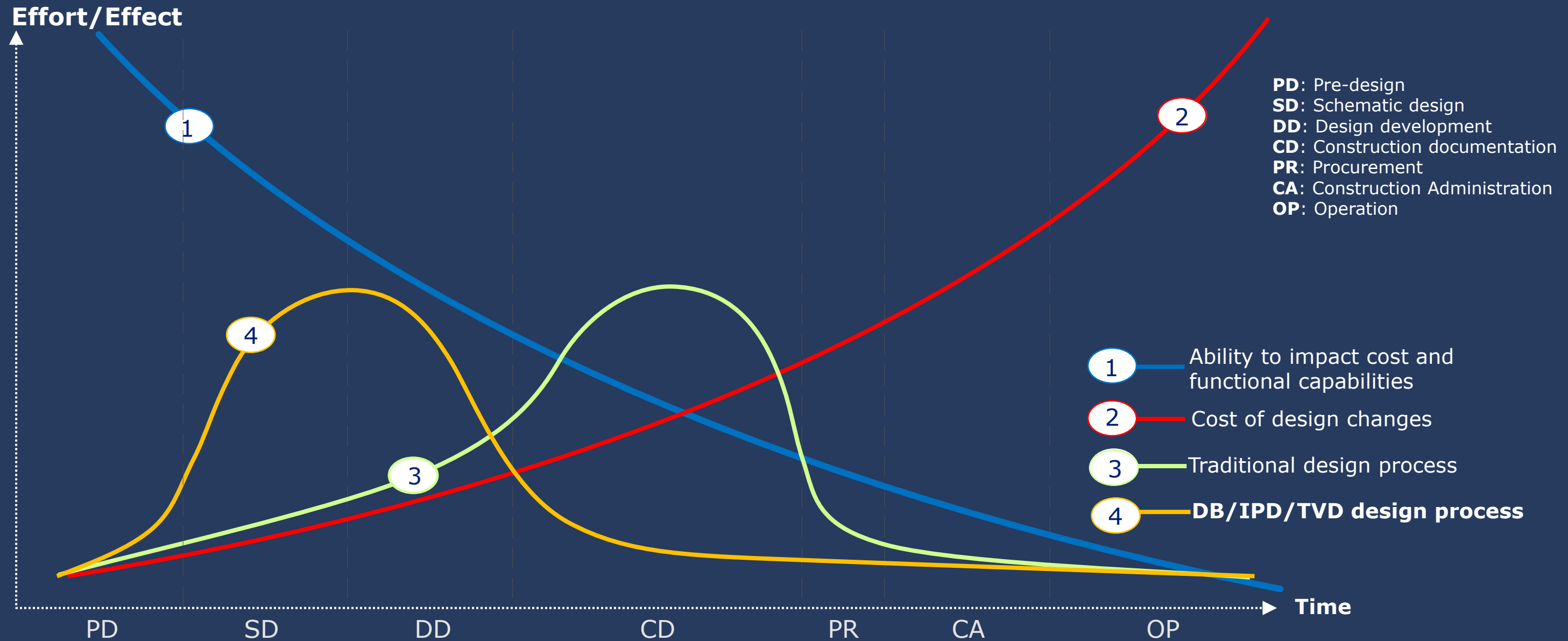


Traditional vs. Target Value Delivery

The goal of TVD is to **minimize the waste produced by the design, estimate and redesign cycle(s)** of the traditional value engineering approach.



Early Team Involvement



TVD Maturity Assessment

The use of cost estimates

Target Values developed for element clusters

Cost is one of several design variable elements.

Cost estimates developed during and after design

Cost estimates developed after design

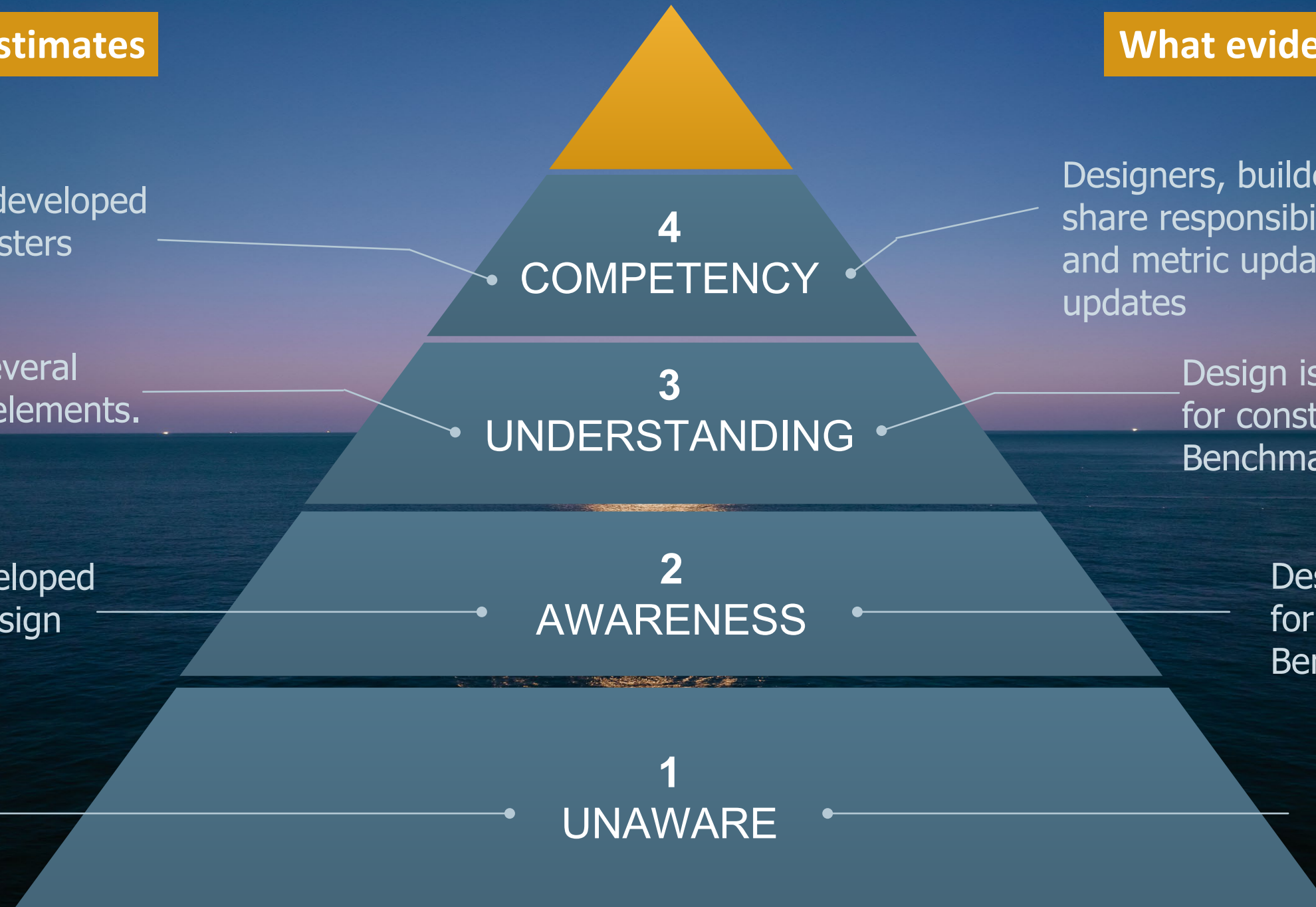
What evidence looks like

Designers, builders and end users share responsibility; real time cost and metric updates at design updates

Design is evaluated for constructability. Benchmarks are used.

Design is evaluated for constructability. Benchmarks are used.

VE and cost reduction rework cycles



TVD Maturity Assessment

The use of cost estimates

Target Value clusters supported by enhanced estimate detail.

5 - Mastery

4
COMPETENCY

3
UNDERSTANDING

2
AWARENESS

1
UNAWARE

What evidence looks like

A mechanism is in place to evaluate the design against the targets. Scheduled ongoing reviews.

Scope and cost were kept tightly aligned through frequent estimate updates and reconciliations.

Value is returned via reduced cost or increased scope.

Team Needs

Technical skills



Team mindset



Structure



Team Needs

Technical skills

- Benchmark interpretation
- Conceptual cost estimating
- Conceptual design skills (**design sketch**)
- Design with cost drivers as an input



Team Needs

Team Mindset: Managing the Uncertainty

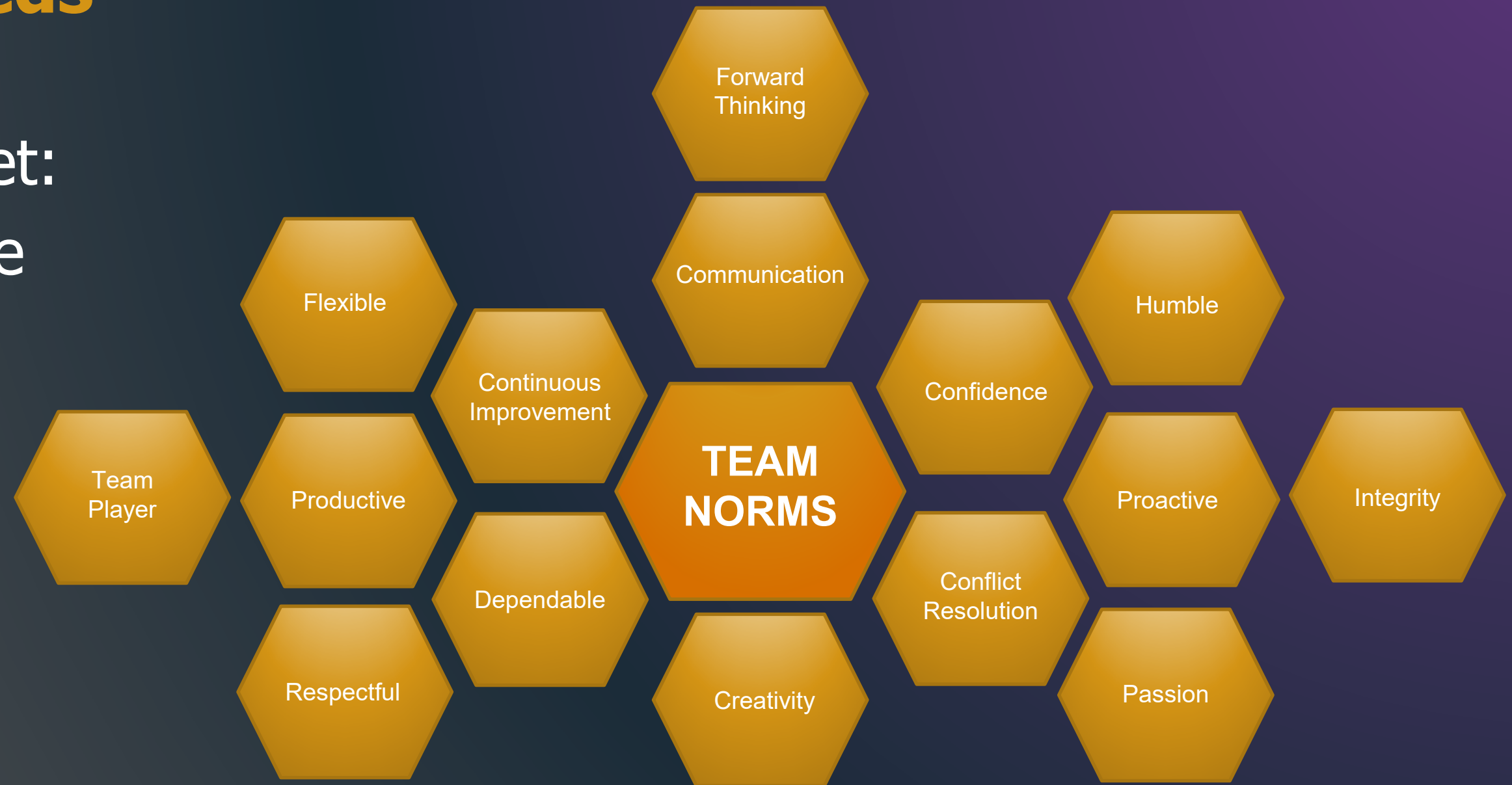
- Collaborate, really collaborate
- Reliable promising
- Handshake agreements

confidence factor



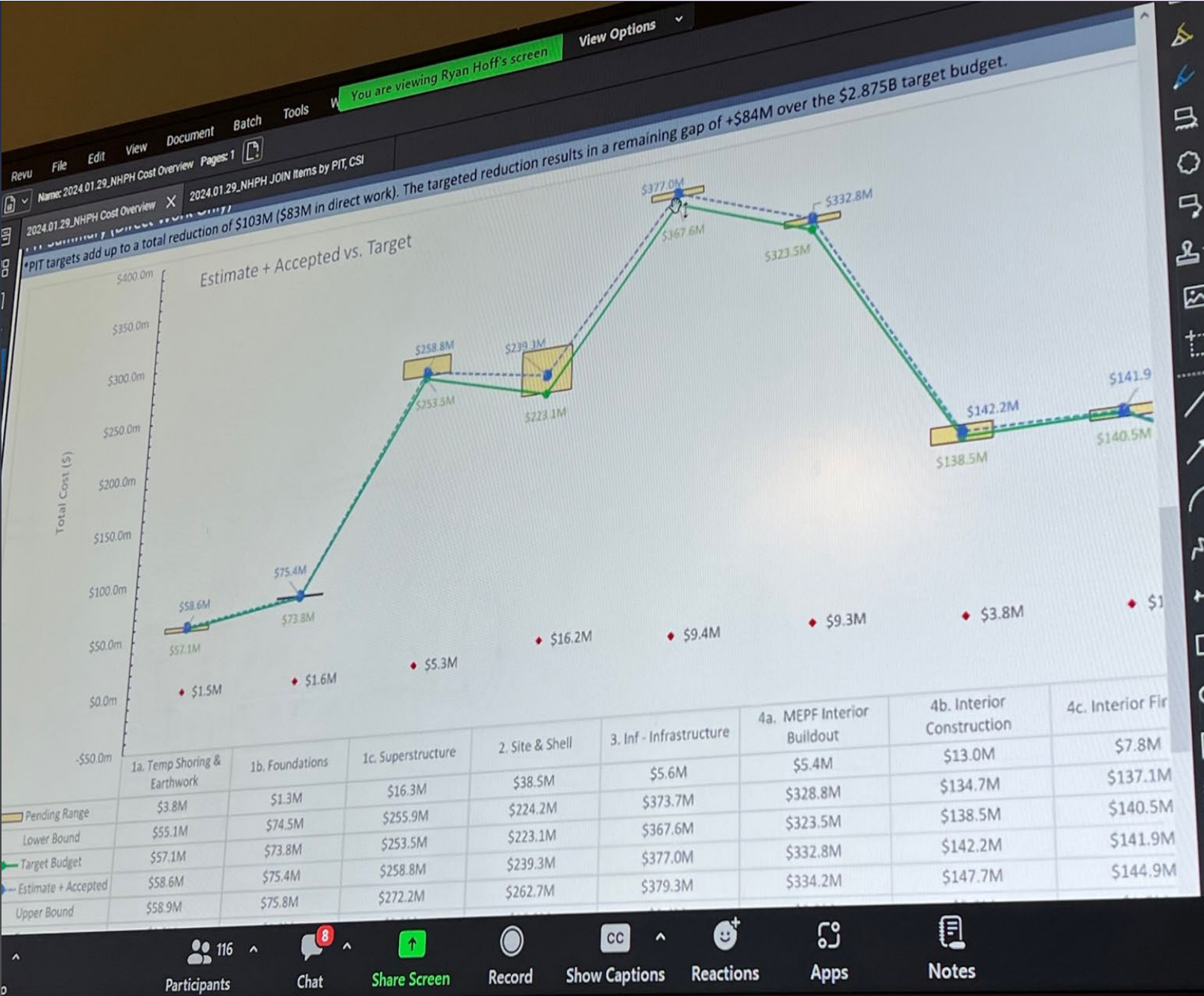
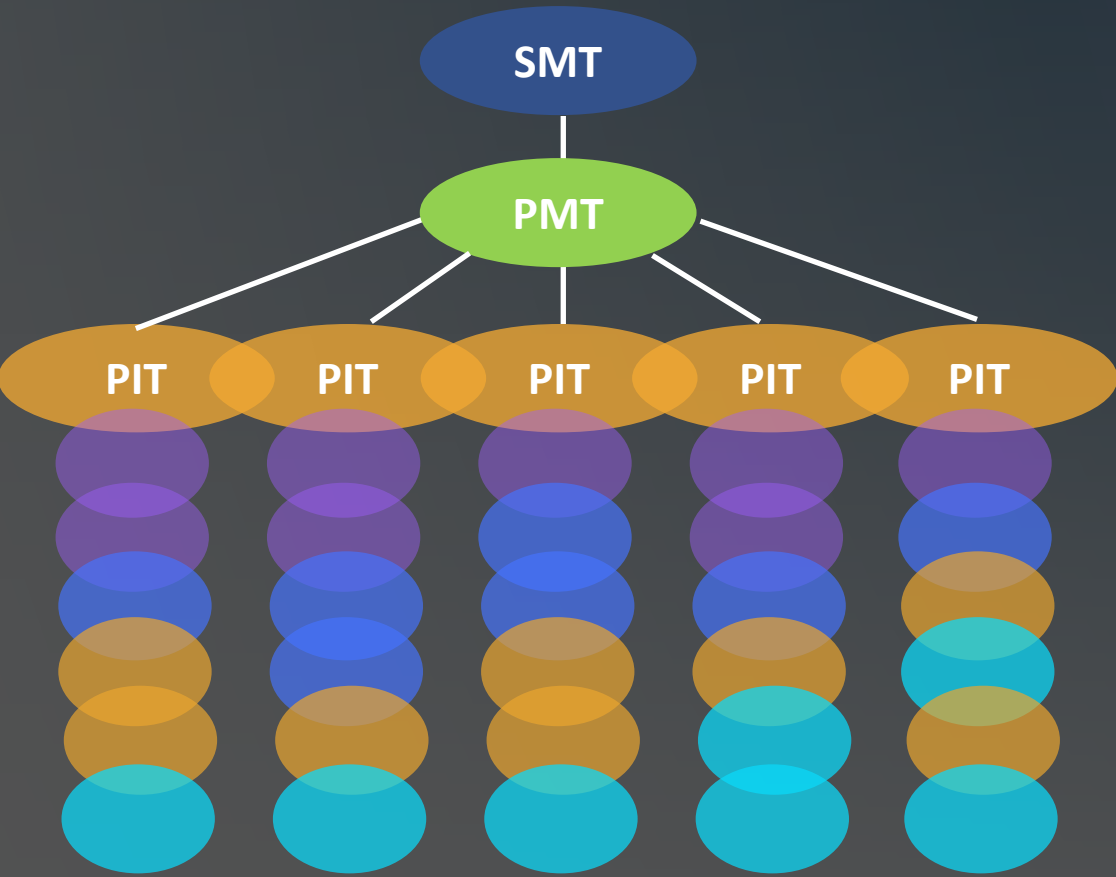
Team Needs

Team Mindset:
Managing the
Uncertainty



Team Needs: Structure

Chunk not batch / Cross functional





Getting Into Position (Validation)



Validation: 4 Expected + 1 Required



Scope

Budget

Schedule

Risks &
Opportunities

Trust

Validation Outcome

A3 NO	TITLE	REVISION NO	CHAMPION	DATE	COLLABORATORS	AUDIENCE	STATUS
01	TVH 1st Floor Expansion Validation	1	Taylor Fowler	5/13/2016	Construction Team	Mark D'Arcy	Submitted for Approval

BACKGROUND:

Temecula Valley Hospital successfully opened in October 2013 with 140 private beds within a five story structure on 37 acres of land. The Key to the success of the hospital is the ability to support the top service programs including cardiology,neurology, surgery, and ED service. In June of 2015, a study of 1st Floor Expansion options was conducted and a business plan submitted for a 22,500SF addition to the existing 1st floor of the Hospital. In February of 2016 a Construction Team was assembled to complete a Validation of design, schedule and cost for the proposed 1st Floor Expansion Project.

PROBLEM STATEMENT/CURRENT STATE:

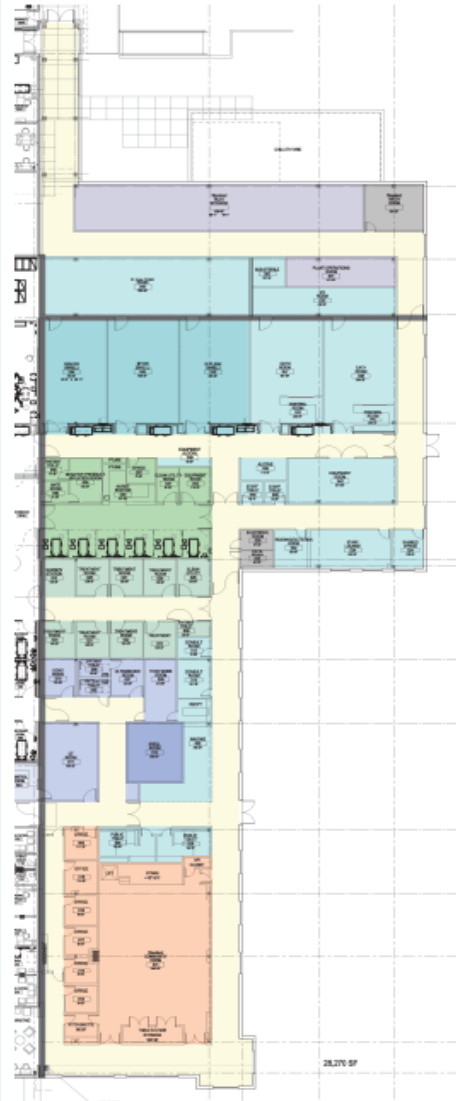
To support the current and anticipated growth of the hospital, the hospital needs to proceed with the first floor expansion plans. The construction team further evaluated the originally proposed expansion option, and is presenting a refined plan and cost estimate that has been vetted through a three month Validation process. The recommendation is to fund design in order to continue progress on the recommended expansion option that includes the following:

- 2 Cath Labs
- 7 PACU Bays
- 7 Pre/Post Bays
- 1 CT Scanner
- Waiting Area
- Community Room
- 2,000SF of Ops/Bulk Storage
- Shelled: 1 Imaging Room
- Shelled: 3 Operating Rooms

FUTURE STATE/GOAL:

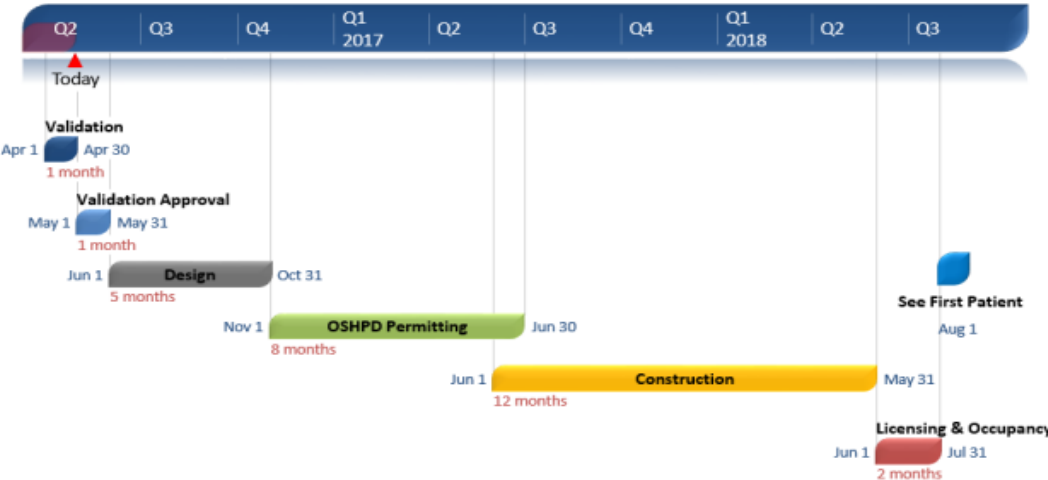
Provide the design and construction of a 1st Floor Expansion that meets growth needs for the hospital, considers impacts to the future Tower project, is completed on time, meets Target Cost goals, and causes limited, planned disruption to the Hospital.

ANALYSIS:



Milestone Schedule:

2016 2018



Validated Project Budget:

	Budget Item	Totals
1000	Design & Consultants	\$3,159,422.00
2000	Equipment & Furnishings	\$9,430,221.00
2100	Systems	\$341,824.00
3000	Construction	\$16,299,599.00
4000	Permit, Printing, Insurance	\$677,965.00
5000	Testing & Inspection	\$767,500.00
8000	Contingencies	\$1,265,494.00
	PROJECT TOTAL	\$31,942,025

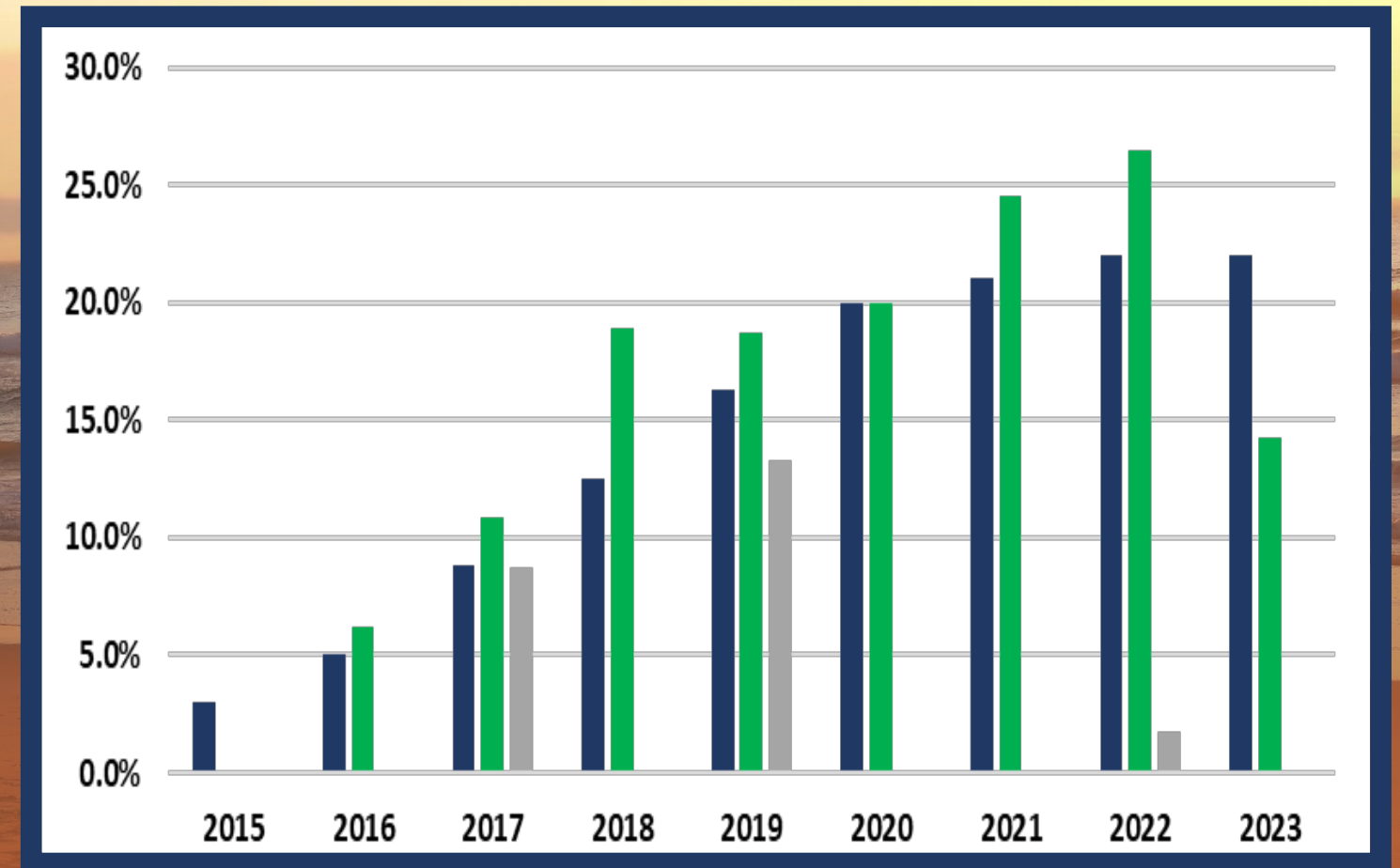
PROPOSAL/PATH FORWARD:

The Construction Team is requesting funding for Design & Consultant fees totaling **\$2,208,747**. This amount will fund the Expansion project through design, permit, and early trade coordination. After completion of design, the Construction Team will request funding for the remainder of the project cost. Additional Validation documentation (detailed cost study, variance report, equipment/IT budgets, complete funding request, expanded design docs) was submitted with this A3 and can be found as a separate attachment.



Stretch goal?

- Confidence that you're in range
- Group familiarity with stretch goal
 - Yes, no success failure
- Data or info about the role of stretch goals



The Pop Up (Kicking Off TVD)





Kick-Off



Project Structure




Take-Off

Team Start-Up

- Onboarding / Kick-Off Meeting
- Recommit to Conditions of Satisfaction
- Decision Workflow
- Team Collaboration Plan



Kick-Off Meeting




Oldcastle Project Flagship – Kickoff Agenda

Date | Location

Day 1 – Team Dynamics

8:00am	Breakfast
8:30am	Commencement Open Meeting, Purpose Moment, Review Agenda & Project Overview
9:00am	Introductions Team Introductions & Ice Br
10:00am	Break
10:30am	Measures of Success Project Goals & Measures o
11:00am	Team Organization Team Organization, Roles &
11:30am	Lunch
12:30pm	Team Activity
1:00pm	Collaboration Strategy Team Communication, Meeti
2:00pm	Design Assist Trade Partner Strategy
2:30pm	Break
3:00pm	Focus Session Project Specific Focus Sessio
4:00pm	Adjourn Plus/Delta & Adjourn
6:00pm	Team Social Location TBD
7:00pm	Dinner



Oldcastle Project Flagship – Kickoff Agenda

Date | Location

Day 2 – Team Workshops

8:00am	Breakfast
8:30am	Commencement Open Meeting, Review Agenda & Ice Breaker
9:00am	Schedule Workshop Major Milestones & Design Decision Planning
12:00pm	Lunch
1:00pm	Budget Workshop Cost Review & Design Alignment
4:00am	Adjourn Plus/Delta & Adjourn

UAB MedWest

Team Kick-Off Day 2

Date: 7/15/2020

Location: Blackjack Farm

Time: 8:00:00 AM

Facilitator: Katie Wells

Time Mgr: Stephen Powell

Start	End	Duration (minutes)	Topic	Leader	Comments / Resources / Homework	Needed Attendees
8:00:00 AM	8:30:00 AM	30	Breakfast / Socialize	Facilitator		Core Team
8:30:00 AM	9:00:00 AM	30	Introduction / Agenda Overview / Ice Breaker	Jud	Overall Budget Discussion	Core Team + Nick Harper
9:00:00 AM	11:00:00 AM	120	Budget Discussion			
11:00:00 AM	11:15:00 AM	15	Break			
11:15:00 AM	12:45:00 PM		MEP and Structural / Lunch	Jud / Stephen	Structural System and MEP System Review	Core Team
12:45:00 PM	1:45:00 PM					
1:45:00 PM	3:35:00 PM					
3:35:00 PM	4:05:00 PM					
4:05:00 PM	4:20:00 PM					
4:20:00 PM	6:20:00 PM					
		Total				

Start	End	Duration (minutes)	Topic	Leader	Needed Attendees
1:45:00 PM	2:05:00 PM				
2:05:00 PM	2:25:00 PM				
2:25:00 PM	2:45:00 PM				
2:45:00 PM	3:15:00 PM				
3:15:00 PM	3:35:00 PM				
		Total			

UAB MedWest

Team Kick-Off Day 3

Date: 7/16/2020

Location: BJ Farm

Time: 8:00:00 AM

Facilitator: Katie Wells

Time Mgr: Stephen Powell

Start	End	Duration (minutes)	Topic	Leader	Needed Attendees
8:00:00 AM	8:30:00 AM	30	Breakfast / Socialize	Facilitator	Core Team
8:30:00 AM	8:50:00 AM	20	Agenda Overview / Ice Breaker	Facilitator	Core Team
8:50:00 AM	10:20:00 AM	90	Pull Planning Validation Package		
10:20:00 AM	10:35:00 AM	15	Break	Facilitator	Core Team
10:35:00 AM	12:05:00 PM	90	Pull Planning Validation Package		
12:05:00 PM	12:50:00 PM	45	Lunch	Facilitator	Core Team
12:50:00 PM	1:20:00 PM	30	Wrap Up / Next Steps	Facilitator	Core Team
1:20:00 PM	1:40:00 PM	20	Plus / Delta	Stephen	Core Team
1:40:00 PM	2:40:00 PM	60	Prepare to Report out to ELT	Stephen	Core Team
2:40:00 PM	3:40:00 PM	60	Report Out to ELT		
		Total	7.67 Hours		

Conditions of Satisfaction

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A3 #

54

TITLE

Conditions of Satisfaction

New Hospital at Parnassus Heights

UCSF Health

1. Baseline:

The purpose of this A3 is to review and affirm the Conditions of Satisfaction (CoS)

1. The CoS have been collaboratively developed and agreed upon by the IFOA signatory firms.

2. Purpose: Provide framework to guide project stakeholders when making decision to ensure alignment with what the project team has defined as "value" and what success means for the project.

3. Goal: Align the team, empower those best equipped to take action, foster innovative solutions and drive speed and efficiency into the decision-making process.

4. Operationalization: CoS will be used to guide decision making and align the team around project priorities, develop a common language for collaboration, define expected behaviors and drive team culture to work together to achieve positive outcomes.

2. Key Factors to Consider:

UCSF Health Mission Statement:
UC San Francisco is the leading university dedicated to advancing health worldwide through preeminent biomedical research, graduate-level education in the life sciences and health professions, and excellence in patient care.

CoS are supported by terms in the IFOA contract. Reference to CoS in the IFOA 5. PROJECT SCHEDULING
5.2 Lean Phase Planning. Lean Phase Plans must be based on collaborative planning through direct communications by all Project Participants performing Work in a particular Phase, who, working backwards from the most current approved Achievement Events, create collaborative Lean Phase schedules indicating when their portion of the Work will be completed. Direct communications among Project Participants allows the various parties to make reliable promises to each other, and specifically discuss and negotiate the hand-off criteria or other conditions of satisfaction that are mutually understood and agreed upon, which the Project Participants will memorialize in the Lean Phase Plans.

CoS will be used as an overarching framework to inform development of specific metrics around scope, safety, budget, schedule and quality. Metrics to measure CoS are Key Performance Indicators (KPI), Project Charter and Project Requirements as defined in the IFOA Exhibit A.

Metrics: "Key Performance Indicators" or "KPIs" are standards that measure the value the Parties provide to the Project and how effectively they are achieving the Project Requirements.

Behaviors: "Project Charter" will outline the culture and values that the Project Team will strive to achieve and embody on the Project.

Deliverables: "Project Requirements" are a broad brush stroke that define the project scope, schedule, budget and quality.

3. Analysis: Draft Conditions of Satisfaction

Category	Title/Category	Description	Measures of Success
Scope 1	UCSF KPIs/Business Case	The project scope will incorporate key program units needed to support operational efficiency within maximum building gross square footage in compliance with ER	Design shall comply with ER metrics to not exceed BGSF (500K) and building height/and comply with KPI's metrics as defined in approved program. Program KPI (in reference document)
Scope 2	Support (physical) integration of UCSF mission of clinical care, education, and research	The project design will support a "One Hospital" concept to provide a care delivery model that incorporates flexibility, adaptable for future consistent care, access and support across NPH, Moffitt and Long hospital platforms to operate as one hospital.	Departmental planning and adjacency solutions shall allow for and not conflict with efficient operational flows of Patients, Families, Providers, Medications, Supplies, Information, Equipment, Instruments/Processes
Scope 3	Accommodates Future Bridge/Tunnel Connections	Design shall accommodate options for future bridge/tunnel connections	The design will allow for and not conflict with future provision of tunnel and bridge connections to the AGC and Irving Street Arrial.
Schedule 1	Design and Construction Schedule	The project including, NPH, Site & Make Ready (SMR) to support UCSF business case and State DB1953 seismic mandate.	The team shall document and monitor progress for achieving final completion date through weekly dashboard
Budget 1	Design and Build to Budget	The team will deliver the NPH IFOA Contract Project (SMR, Tower and Renovations) at or below the Target Cost.	The team shall document and monitor progress of the IFOA contract budget cost through weekly dashboard
Community 1	Community Engagement and Investment	Maximize volunteer and community engagement and investment in the City and County of San Francisco with specific focus in Parnassus Heights community.	Team shall document and monitor investment and compliance with outreach programs through monthly dashboard.
Community 2	Philanthropy	Support opportunities for UCSF to achieve philanthropy and meet Parnassus community expectations.	Design shall respond to community engagement and Donor expectations.
Community 3	Social Equity and Inclusion	Create a welcoming and supportive environment for all. Maximize local hire and workforce diversity on the NPH program through DBE/DBW/BE/LBE bidder, designer and vendor opportunities. Maximize number of contracts and spend on DBE/DBW/BE/LBE.	The team shall establish and meet goals around equity and inclusion and monitor throughout the project
Innovation 1	Delivery Innovation	Maximize productivity and innovative problem solving through collaborative team engagement.	The team shall reinforce commitment to LEAN delivery to reduce waste in the discovery, creation and delivery of value through process improvement practices.
Innovation 2	Construction Innovation	Commitment to design and construct to optimize construction including prefabrication, modularity and kitting.	Team shall achieve Target Cost through through innovation in design, procurement strategies, prefabrication and construction technologies.
Safety 1	Safety	Provide a safe working environment for the NPH team and greater Parnassus Heights community through design and construction activities.	Everyone goes home safe - Patients, Staff, Learners, Visitors, Project Team & Construction Workers
Innovation 3	Continuation of Care to Maintain Operations through Construction	Minimize disruption and impact to ongoing UCSF operations and community during construction of the project.	All departments essential to the function of the hospital shall remain operational and functional throughout construction, transition and renovation.
Quality 1	Mountain Design and Massing Concept	Minimizes the perceived scale of the building to the community and campus and reduce its impact on the adjacent landscape of Mount Sutro with three, vertically distinct stacked horizontal layers, Podium (with base), inset and Mountain.	Massing is articulated to provide a clear campus identity, minimize the impact on the adjacent landscape and reduce the perceived scale to the surrounding community.
Quality 2	Healing Habitat	The patient is at the center of our thinking to reflect the mission of NPH as the holistic experience and an environment that fosters wellness for all, both physically and emotionally.	Design shall incorporate alignment to UCSF & Donor brief envisioned by Brand Bureau. The concept meets five founding principles: human connection, active healing, organic design, responsive systems, and urban culture in support of excellence of the UCSF clinical program
Quality 3	Integrity of Material	Material selection to support the healing habitat, patient, visitor and staff experience. Materials that are of high quality, authentic, and natural, that reflect comfort and quality.	Design shall reflect commitment to quality as described in Brand Bureau and UCSF design guidelines. The quality and visual testing of the design to prevent rework, keep to schedule and budget, and testing for performance through review and satisfactory level of quality.
Quality 4	Landscape	Nature is to be omnipresent throughout, around, and on the building, being the critical element supporting the healing and well-being of patients, staff, and visitors.	Design shall create distinct "journeys" through the hospital and motivational "destinations," such as hero vistas, outdoor spaces, food, and retail by incorporating views to nature and variety in planting height, density and volume.
Quality 5	Future Care Delivery	Design shall be flexible and adaptable to support quality environments of care for existing and future operations, setting the stage for the next 100 years.	Design shall provide a warm and inviting environment that meets safety, hygiene, accessibility, privacy and comfort needs for patient, staff and community.
Quality 6	Regenerative Design / Sustainability	Establish and achieve defined criteria for USGBC LEED Certified Gold and Carbon Neutral Goals	Building shall achieve LEED Gold with no new on site fossil-fuel combustion (primary equipment & appliances) and shall exceed the UCOP requirement of 160 BTU/USF/Year or lower
Quality 7	Technology and Security	Consider options for infrastructure to support existing and emerging technology which fosters wellness, education, discovery, and innovation for UCSF NPH operations.	Design shall maximize a flexible infrastructure that allows for connectivity to support programmatic changes and future technology. Smart room display, digital connection

4. Recommendation:

IFOA approval:

Agreement to baseline purpose and goals of CoS

Approval of draft CoS language

Execution of signoff

5. Action Plan: next steps

1. PMT/SMT approves CoS Language, Purpose and Goals

2. IFOA signatories sign CoS A3

3. CoS workgroup develop graphic options for "Poster"

4. CoS workgroup continue to developing KPI metrics for IFOA Exhibit A

6. Approval/Signatures:

Company	Name	Signature
UCSF	Stuart Eckblad	<div>DocuSigned by: Stuart Eckblad</div>
HDR	Hank Adams	<div>DocuSigned by: Hank Adams</div>
HBW	David Thomack	<div>DocuSigned by: David Thomack</div>
HdM	Jason Frantzen	<div>DocuSigned by: Jason Frantzen</div>
ARUP	Matthew Skuse	<div>DocuSigned by: Matthew Skuse</div>
Mazzetti	Kurt Messerli	<div>DocuSigned by: Kurt Messerli</div>
NYA	Ryan Wilkerson	<div>DocuSigned by: Ryan Wilkerson</div>
Cal Drywall	Michael Gutierrez	<div>DocuSigned by: Michael Gutierrez</div>
Rosendin	Jim Millett	<div>DocuSigned by: Jim Millett</div>
Southland	Andy Schlegel	<div>DocuSigned by: Andy Schlegel</div>
TeeCom	David Marks	<div>DocuSigned by: David Marks</div>
McGuire and Hester	Jim Garnevicus	<div>DocuSigned by: Jim Garnevicus</div>

Primary Author

C Keffe

Contributors

Karen Conrod, Jon Inman, CoS Working Group

Approval Date

03/24/22

PMT Approval Signatures

For UCSF

F. Whitney

For HDR/ Designers

V. Turkar

For HBW/ Trades

K. Conrod

SMT Approval Signatures

For UCSF

S. Eckblad

For HDR/ Designers

H. Adams

For HBW/ Trades

D. Thomack

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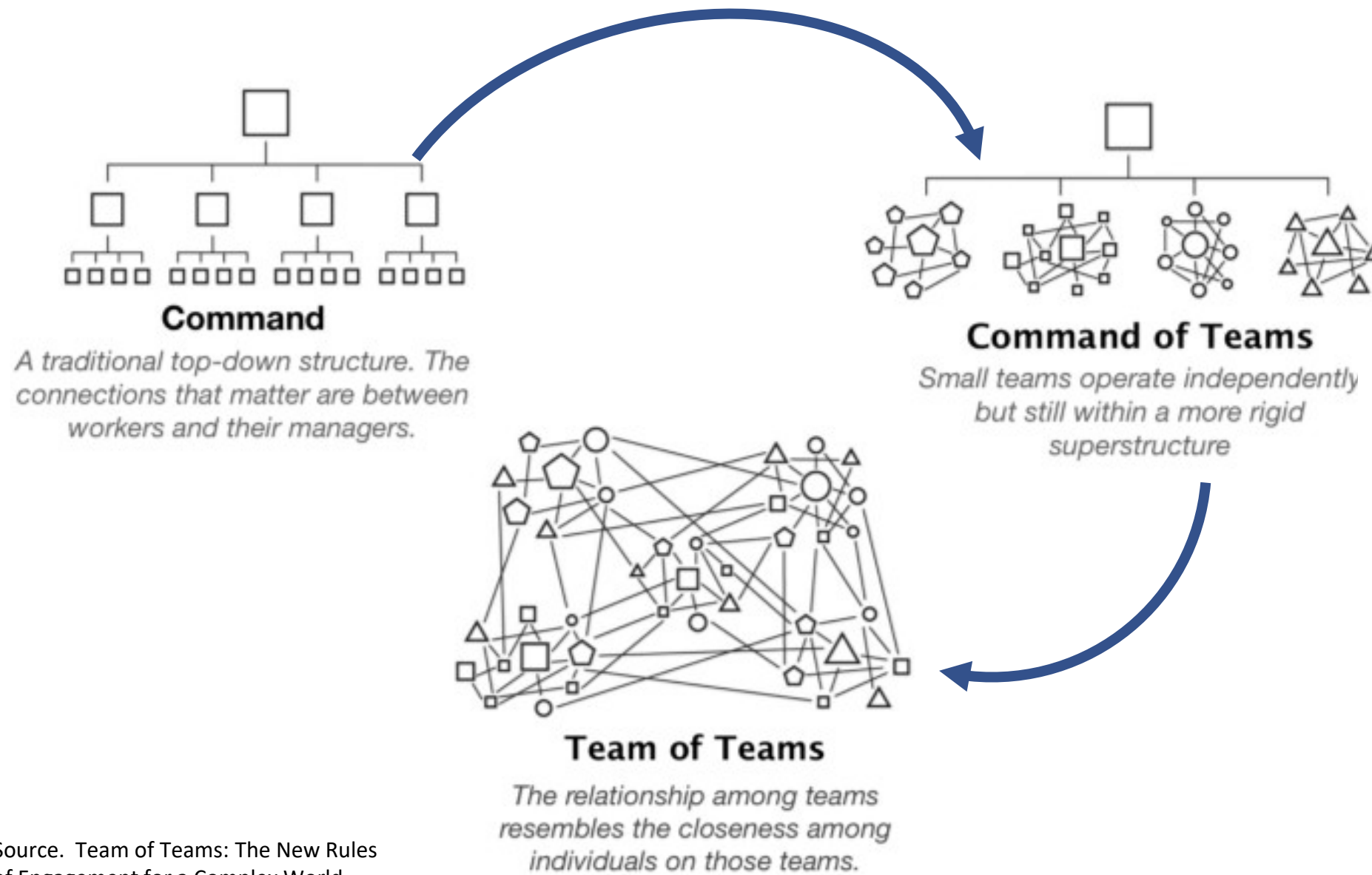
Conditions of Satisfaction

3. Analysis: Draft Conditions of Satisfaction

Guiding Statements			Measures of Success
Category	Title/Category	Description	Metrics
Scope 1	UCSF KPU's/Business Case	The project scope will incorporate key program units needed to support operational efficiency within maximum building gross square footage in compliance with EIR	Design shall comply with EIR metrics to not exceed BGSF (900K) and building height and comply with KPU's metrics as defined in approved program. Program /KPU (in reference document)
Scope 2	Support (physical) integration of UCSF mission of clinical care, education, and research	The project design will support a "One Hospital" concept to provide a care delivery model that incorporates flexibility, adaptable for future consistent care, access and support across NHPH, Moffitt and Long hospital platforms to operate as one hospital.	Departmental planning and adjacency solutions shall allow for and not conflict with efficient operational flows of Patients, Families, Providers, Medications, Supplies, Information, Equipment, Instruments/Processes
Scope 3	Accommodates Future Bridge/Tunnel Connections	Design shall accommodate options for future bridge/trunnel connections	The design will allow for and not conflict with future provision of tunnel and bridge connections to the ACC and Irving Street Arrival.
Schedule 1	Design and Construction Schedule	The project including, NHPH, Site & Make Ready (SMR) to support UCSF business case and State SB1953 seismic mandate.	The team shall document and monitor progress for achieving final completion date* through weekly dashboard
Budget 1	Design and Build to Budget	The team will deliver the NHPH IFOA Contract Project (SMR, Tower and Renovations) at or below the Target Cost.	The team shall document and monitor progress of the IFOA contract budget cost through weekly dashboard
Community 1	Community Engagement and Investment	Maximize volunteer and community engagement and investment in the City and County of San Francisco with specific focus in Parnassus Heights community.	Team shall document and monitor investment and compliance with outreach programs through monthly dashboard.



Work Cluster Organization



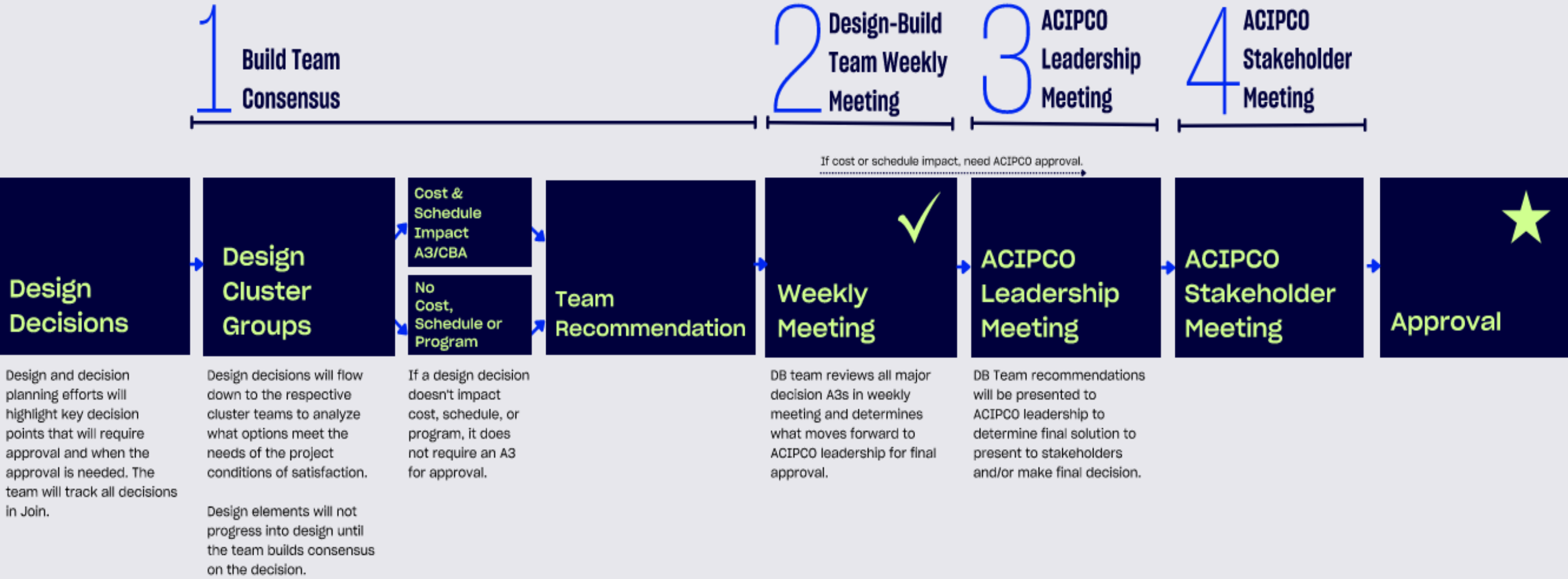
These teams:

- Break down project complexity for rapid learning and decision making
- Deliver cross-functional knowledge sharing
- Are better informed and provide well-timed decisions (less iterations)
- Ensure design solutions aren't made in a vacuum

Source. Team of Teams: The New Rules of Engagement for a Complex World, General Stanley McChrystal, 2015

Decision Workflow

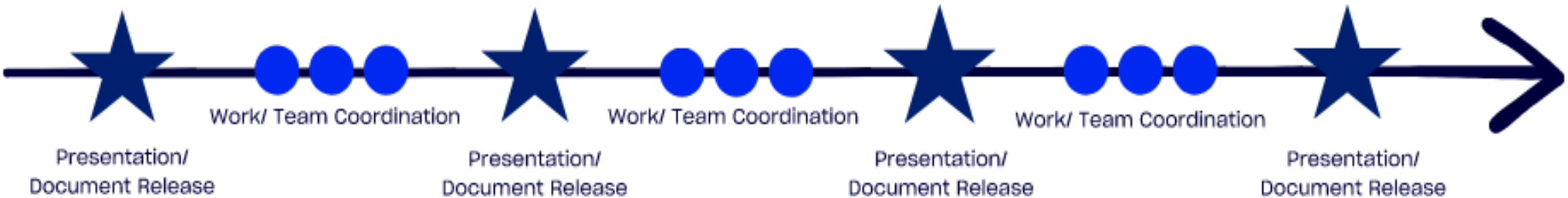
DESIGN DECISION WORKFLOW



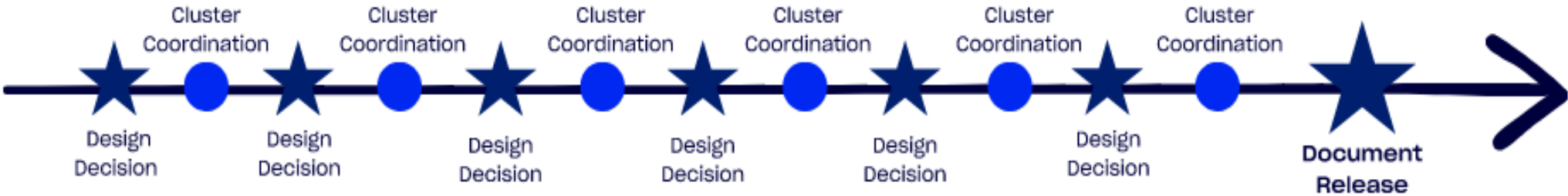
Decision Workflow

DESIGN PROCESS CADENCE

Traditional Design Process



ACIPCO Design Process





The Barrel

(Small adjustments)

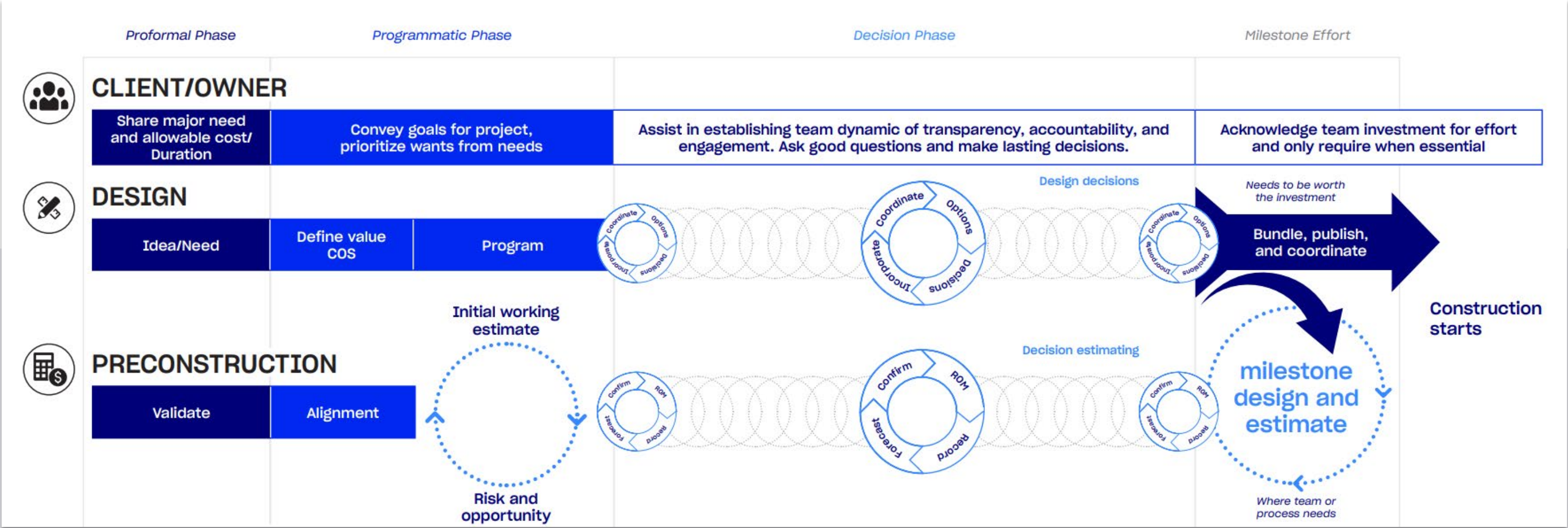


Auditing the model (tracking progress)

- Make design updates
 - Summarize all changes (big and small)
 - Scope
 - Area
- Identify enabling technology



Continuous Estimating



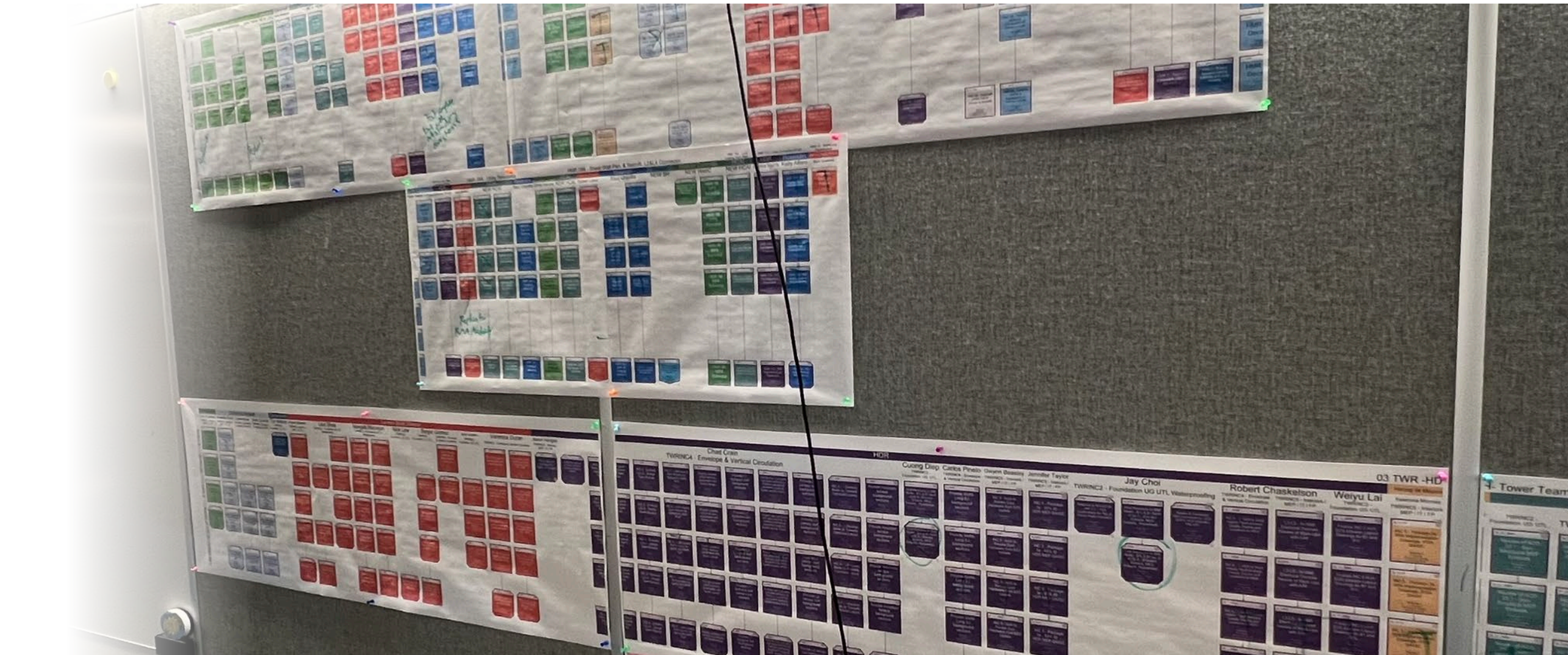
Working Estimate



Managing risks and opportunities



One piece flow / Managing schedule



Wipeout!

(Reset)



Leading Wipeout Indicators

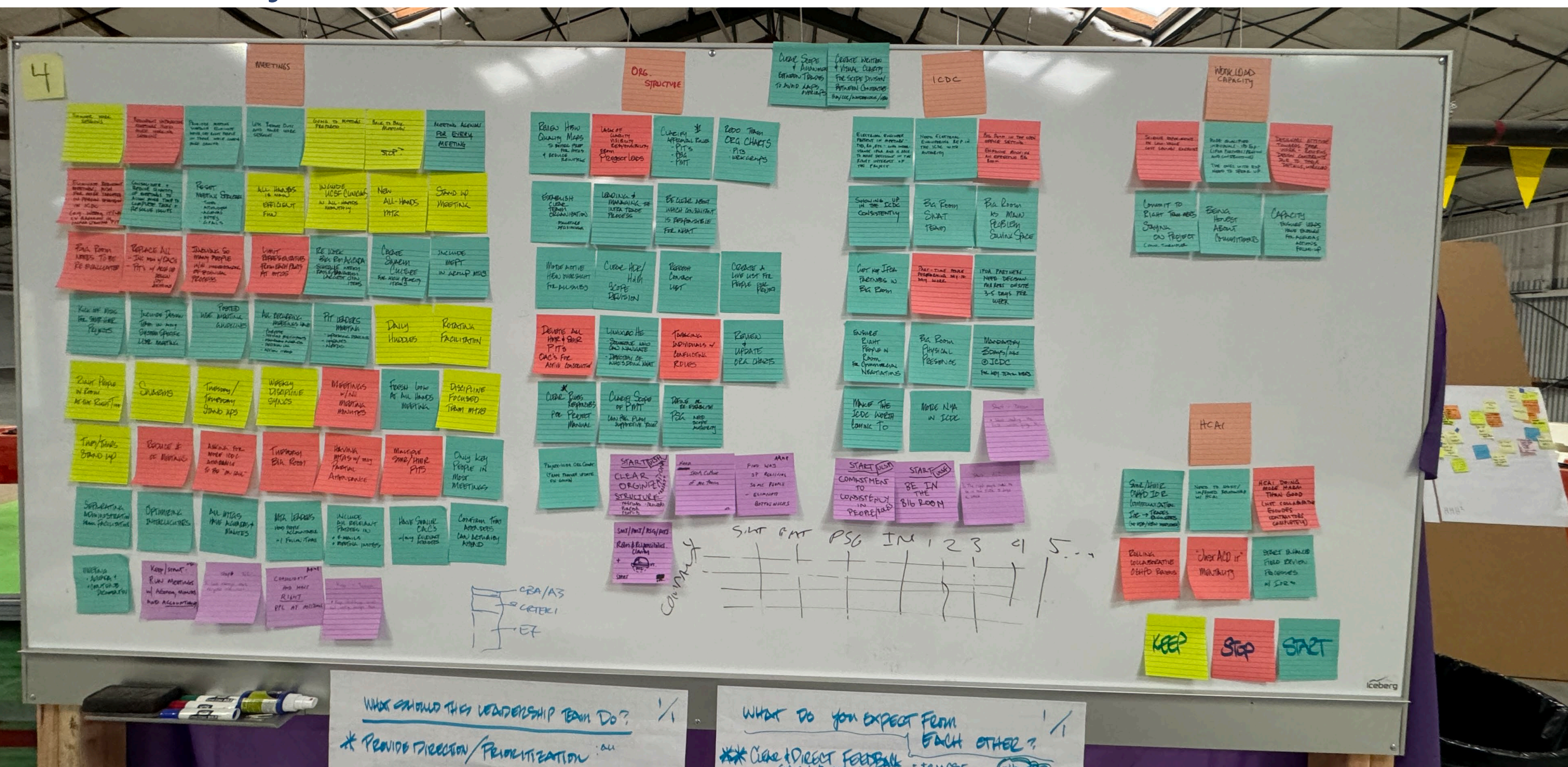
Not finishing validation

Accountability – team missing commitments

Rework – revisiting decisions

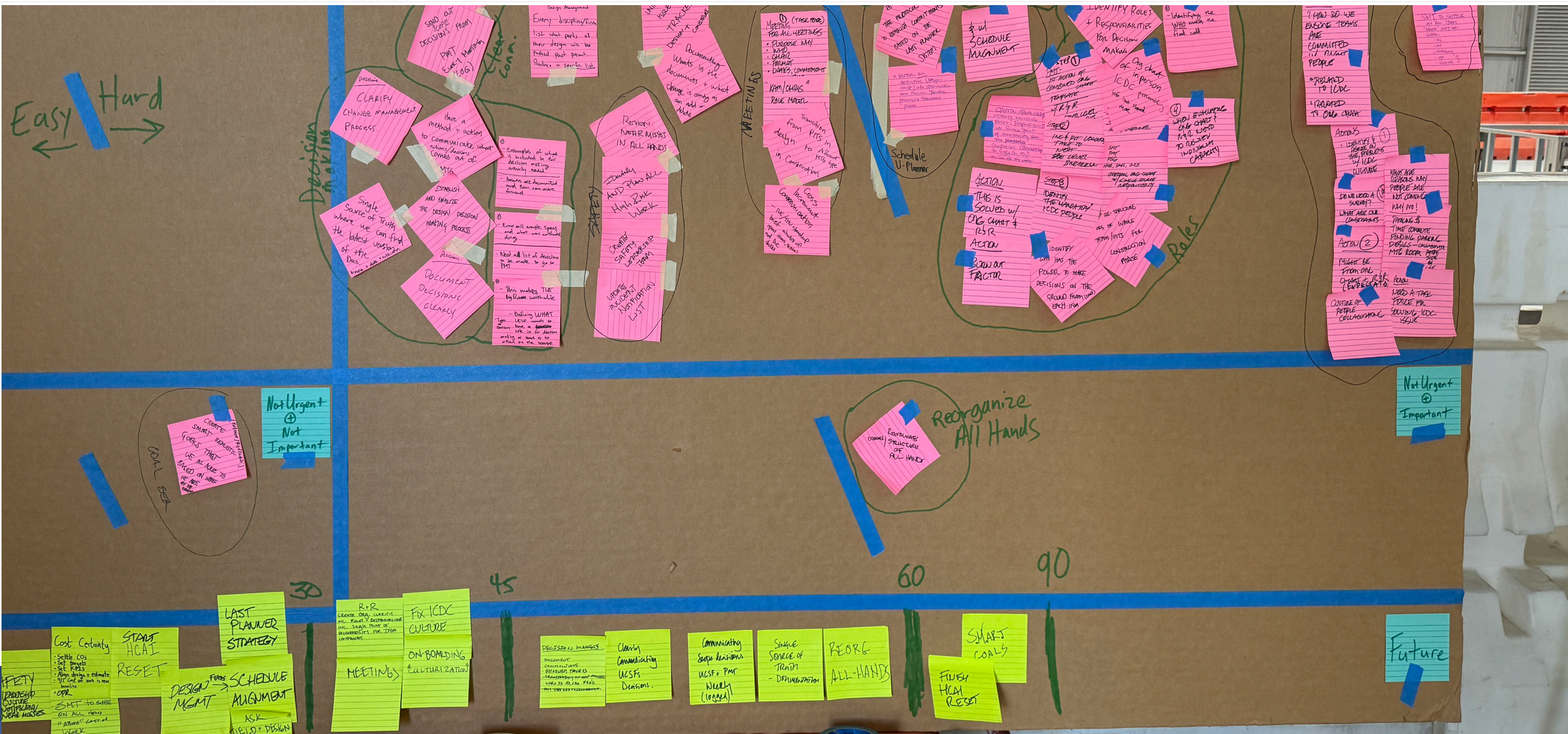
Hoping for the best

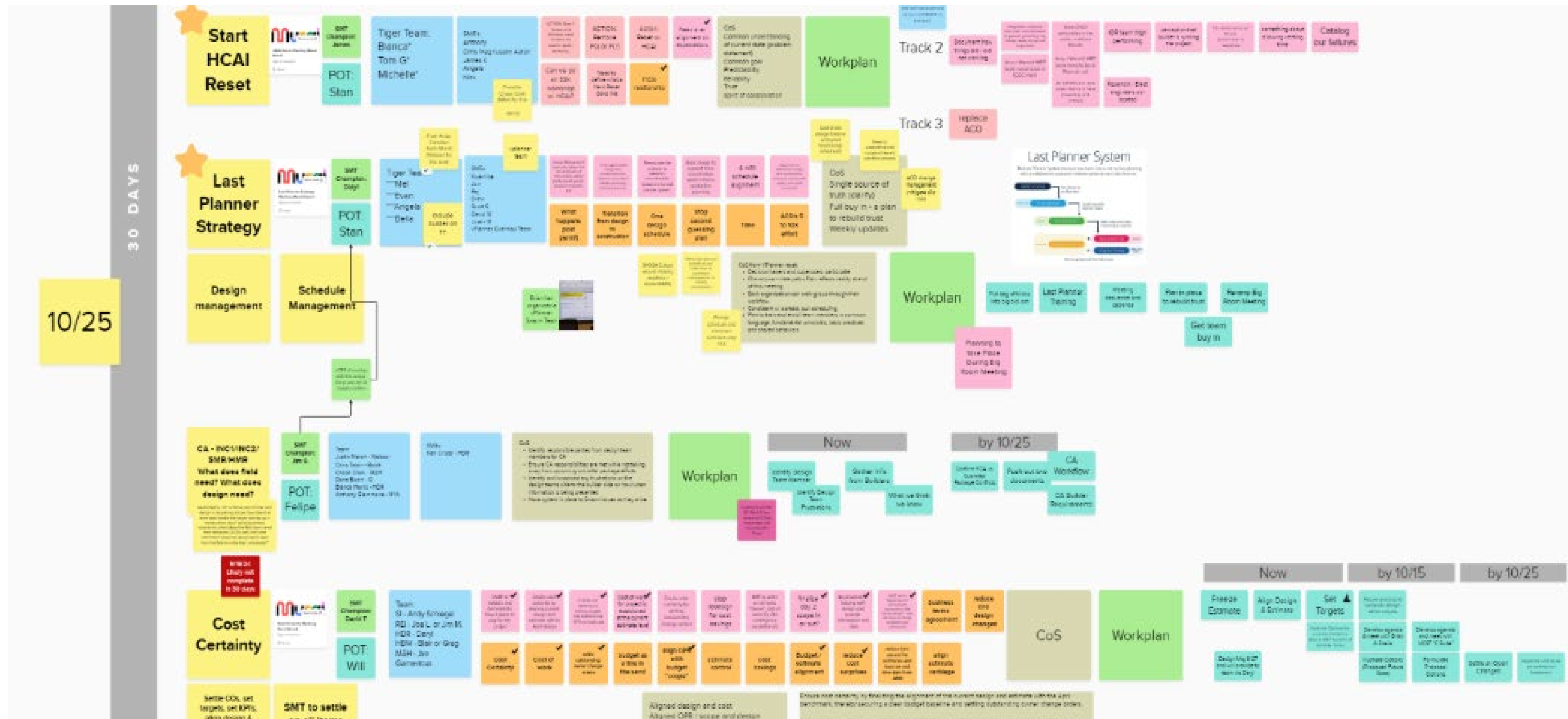




Case Study







TVD – Mastering the Barrel

Trust • Conceptual Design & Estimating • Small Iterations
Live Collaboration and Communication



26TH LCI CONGRESS
OCTOBER 22-25, 2024



In the spirit of continuous improvement, we would like to remind you to complete this session's survey! We look forward to receiving your feedback.

Contact Us

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James Pease

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26TH LCI CONGRESS
OCTOBER 22-25, 2024

Thank you for attending this presentation. Enjoy the rest of the 26th Annual LCI Congress!