

Managing Risk in a Progressive Design-Build Project



Speakers:

James Frost, PE, DBIA

Steven Fry



Speaker Introductions

James Frost, PE DBIA

- 33 Years Experience
- Principal Engineer for Kleinfelder
- Located in San Diego, CA
- Vertical Structures Manager for LAX
Automated People Mover
- Co-Landside Civil Manager for The New T1

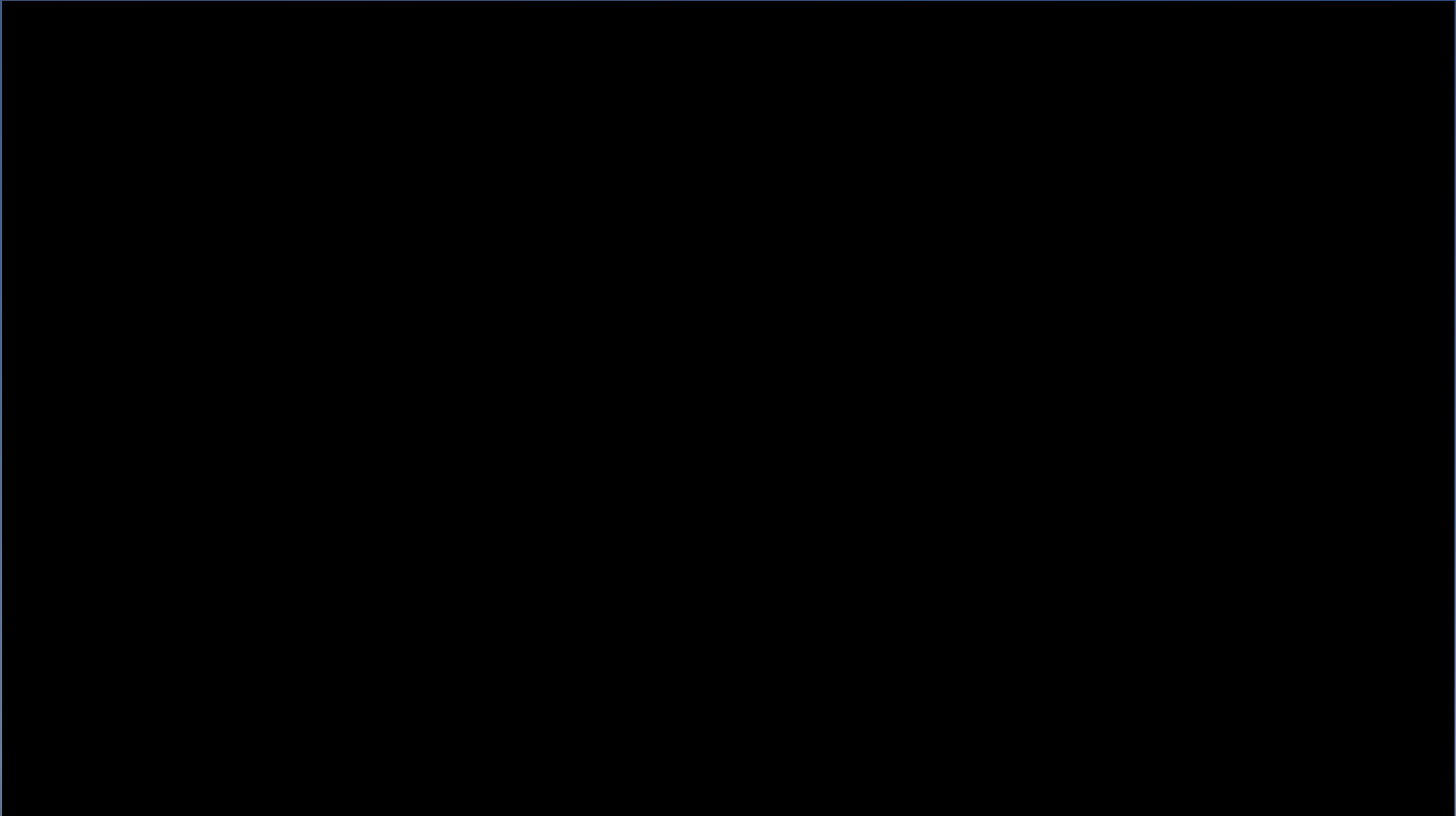
Steven Fry

- 25 Years Experience
- Director of Preconstruction
- Civil Director for The New T1
- Experience on +10 Delivery Methods
- Experience on Multiple PDB Projects
- Started as Craft Worker

Agenda

- Overview of Project
- Progressive Design Build Delivery Method
- Managing Risk
 - Procurement Phase
 - Preconstruction Phase
 - Construction Phase

Project Overview



Project Overview

- New 30 Gate Terminal
- 5,000 Space Parking Plaza
- 5.5 Miles of on-airport Roadways
- 10 New Bridges
- Pedestrian Areas – 5.28 AC
- Landscape Area (Permeable) – 19.51 AC
- Roadway Area – 24.70 AC
- Terminal & Parking Plaza – 21.10 AC



The Site

Arrivals Curb



The Site

Parking Plaza



The Bridges



The Bridges

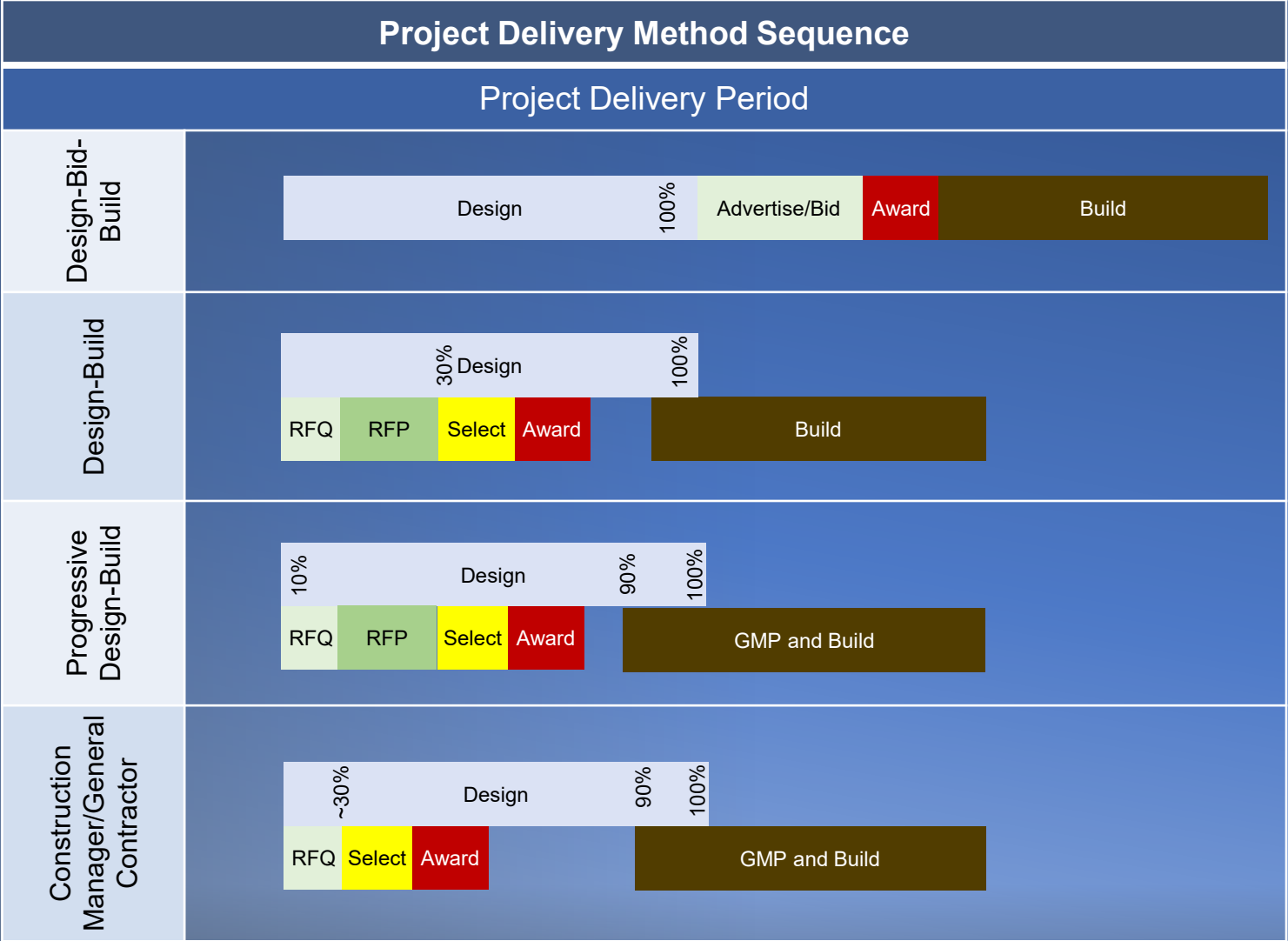


The Bridges



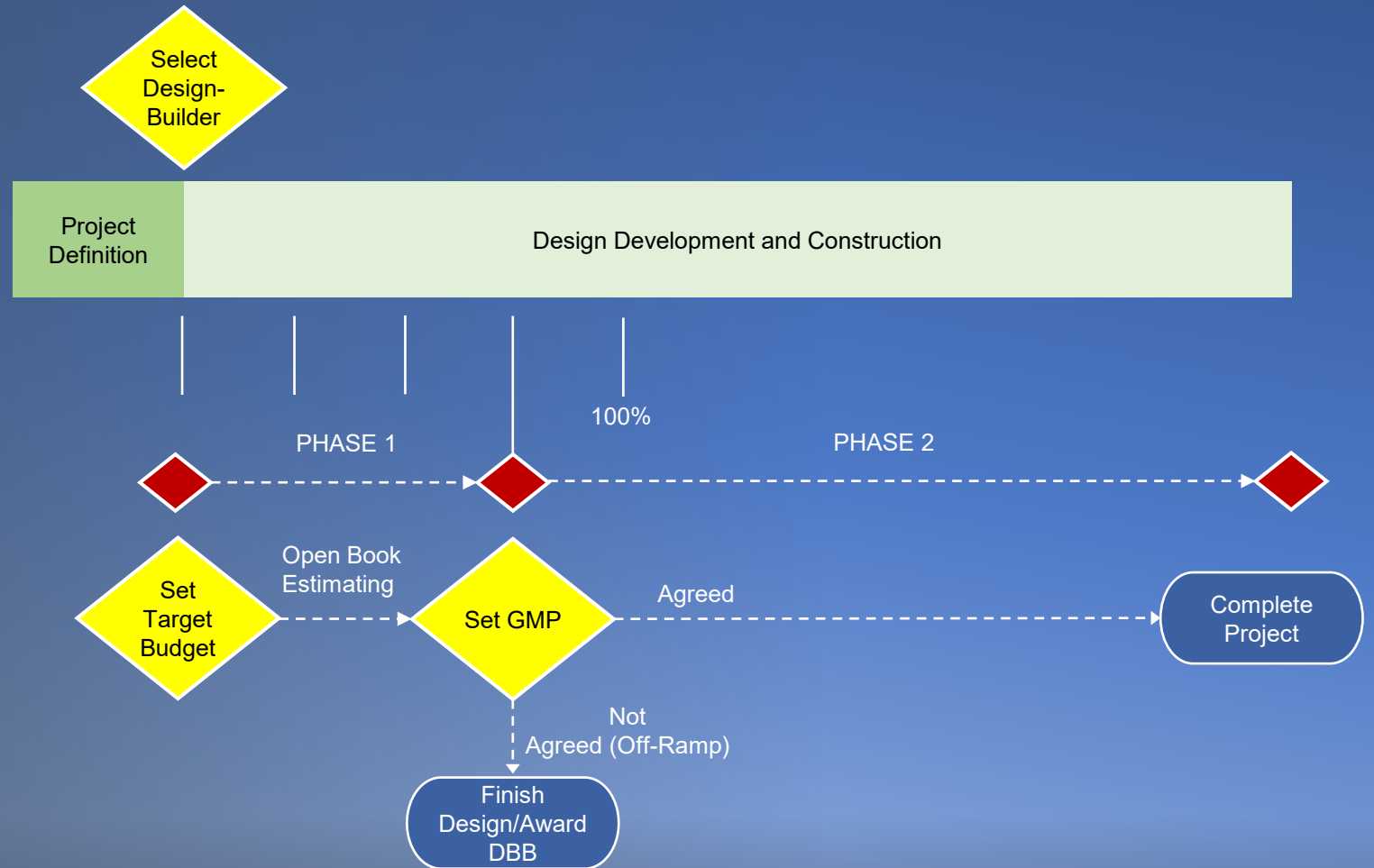
Project Delivery Alternatives

- Design-Bid-Build (D-B-B)
- Design-Build (D-B)
- Progressive Design Build (PDB)
- Construction Manager / General Contractor (CMGC or CMAR)



Progressive Design Build Delivery

- Places estimating and constructability into the design process to arrive at a design and cost at key points in the design process and then GMP



Design-Bid-Build

vs

Progressive Design Build



- The Owner manages two separate contracts
- Longer Delivery Schedule
- Owner has Control of Design
- Less Opportunity for Optimization by Builder
- Risk Transfer Depends on Contracts



- The Owner manages one contract
- Shorter Delivery Schedule
- Owner has Control of Design
- More Opportunity for Optimization by Builder
- Transparent Risk Management

Progressive Design-Build Keys

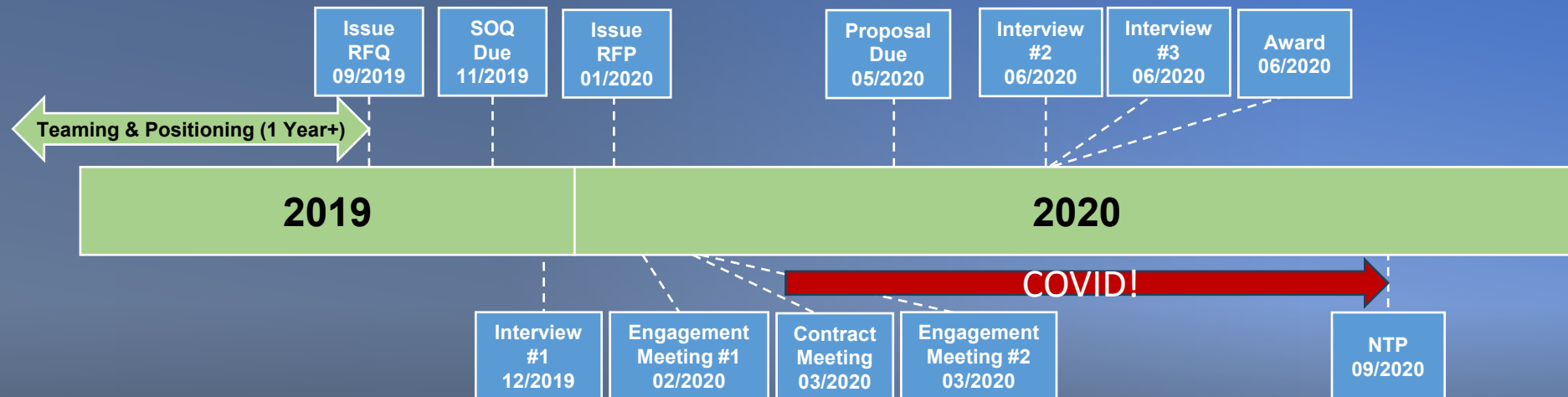
- Shared Risk Register
- Collaborative Solutions the minimize or mitigate not shift risk
- Only pay for risk that is realized
 - Mitigate before GMP
 - Use Allowances
 - Use contingencies

Advantages of Progressive Design Build delivery

- Qualifications Based Selection
- No Stipend Cost for Proposal
- Owner works with D-B to Develop Design
- Time to Develop the Design prior to Pricing
- Estimating is Open Book
- Risks are Transparent and captured in Contingency:
 - Design Development Risk
 - Construction Cost Risk

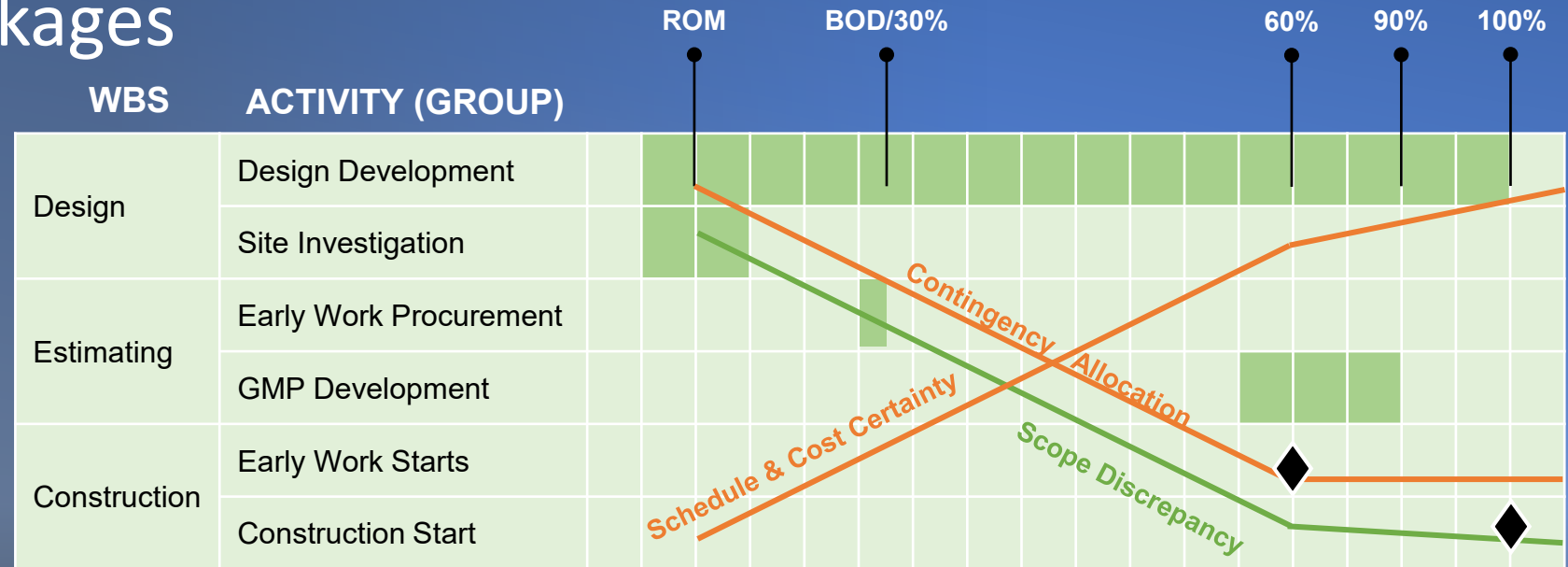
Risk Mitigation During Procurement

- Collaborative Teaming Environment
- Focus on Client's Needs and Optimization
- Limited Design Effort
- Open Discussions with Client
- Price Set at GMP (after Selection)



Risk Mitigation During Pre-Construction

- Utility Coordination and Potholing
- Subsurface Investigation
- Design Development
- Make Ready Packages
- Permitting Plan
- Contingencies



Risk Mitigation During Pre-Construction

- Schedule
- Constructability Reviews
- Trade Partner Procurement
- Owner Changes
- Re-Work

Risk Mitigation During Construction

- Successful Pre-Construction is #1 way to mitigate risk
- Field Changes
- Designer Engagement
- Permitting and AHJ's
- Change Management OAC
- Use of contingencies and allowances

Client Concerns

- Will we get a partner?
- How will pricing be competitive?
- What is the value of preconstruction?
- We don't have authorization for PDB?

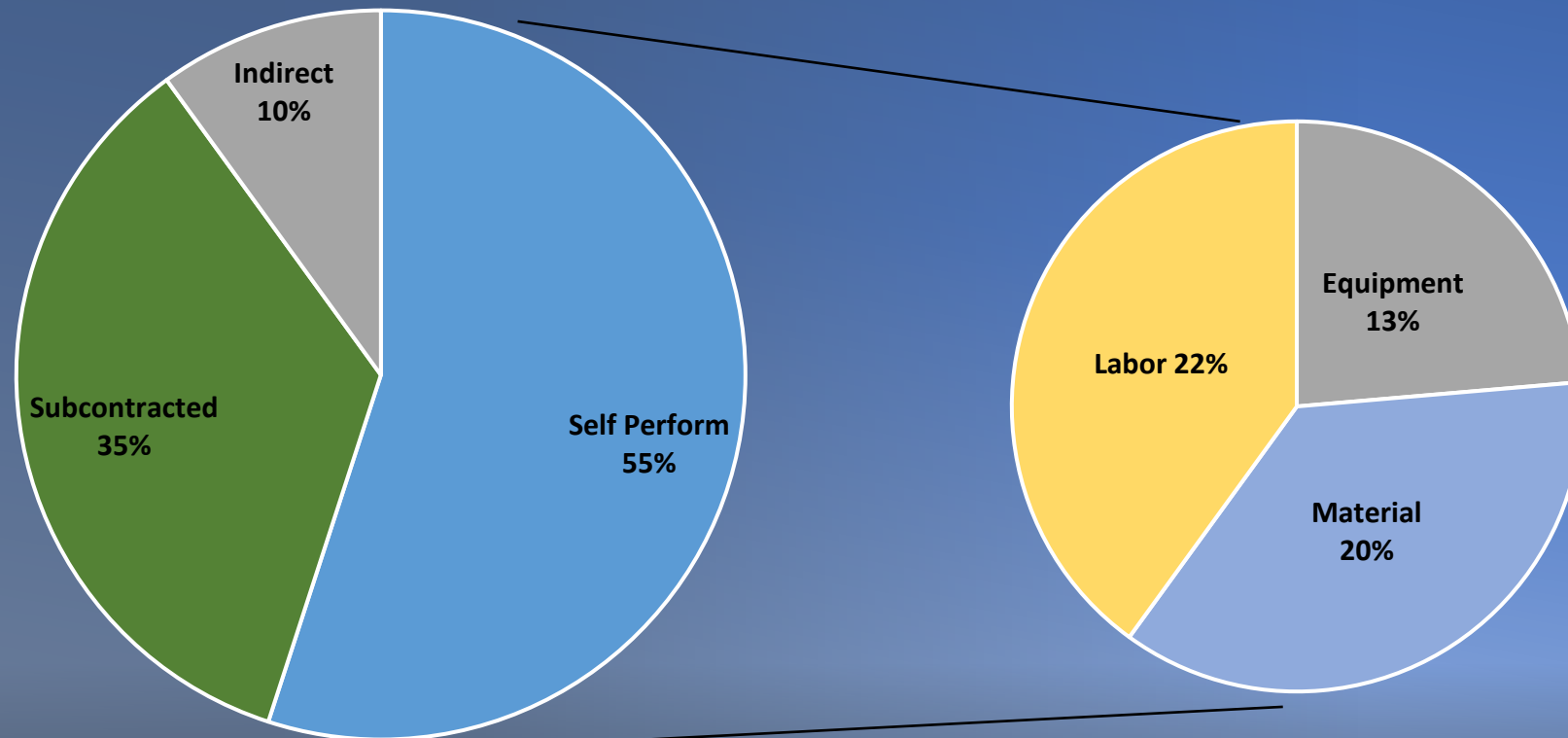
Client Concerns

- Will we get a partner?
 - Require references in the proposal and check them
 - Ask for proof through awards or testimonials
 - Are they adding value in the proposal response
 - Interview to see how the team functions

Client Concerns

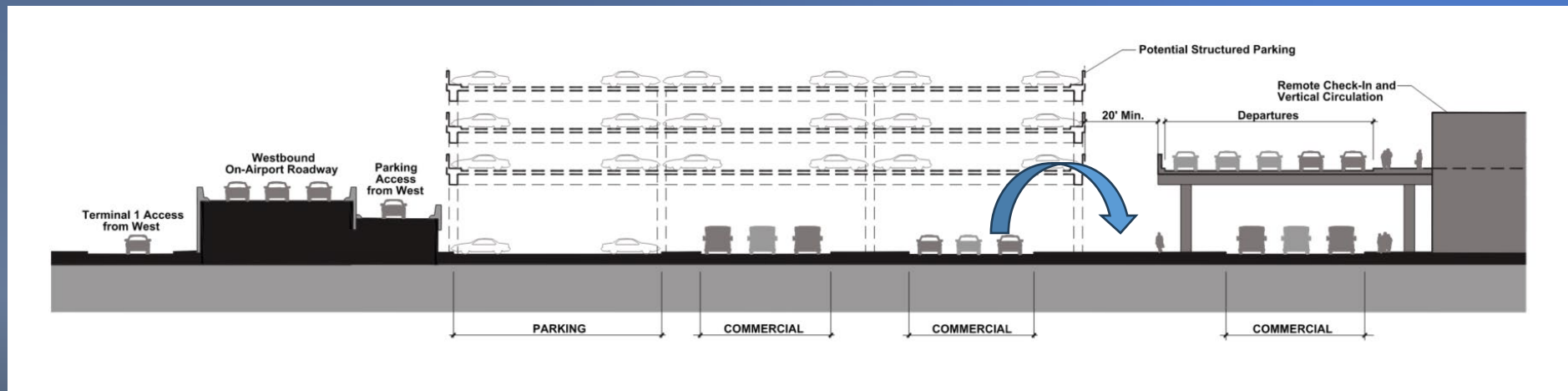
- How will pricing be competitive?

Typical Project Cost Composition



Client Concerns

- What is the value of preconstruction?
 - North Coast Corridor implemented +\$185 M in savings
 - The New T1 offered a solution to optimize performance at Arrival-Departure area



Client Concerns

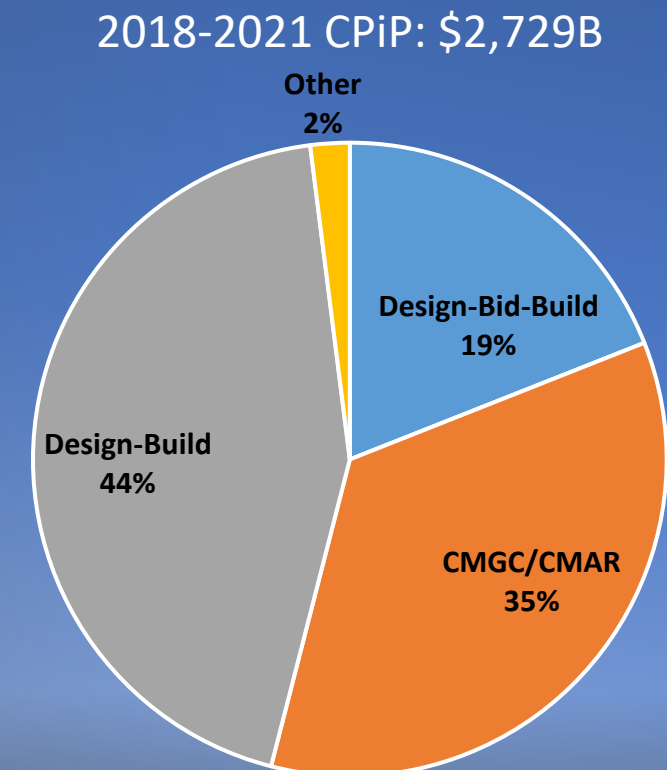
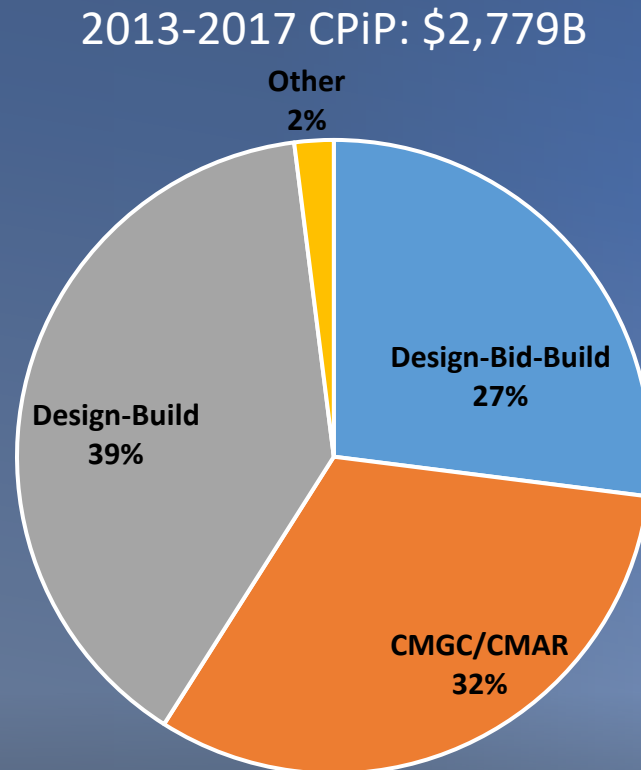
- We don't have authorization for PDB?
 - Some legislation does not differentiate between DB & PDB
 - Some Agencies only require board approval
 - Other agencies require legislation
 - Caltrans just approved an 8 project pilot program

Upswing of Design / Build Projects

- 2005 – 30%
- 2010 – 37%
- 2021 – 44%

Distribution of Delivery Method Utilization

Source(s): FMI analysis of multiple sources



Questions?