NM Infrastructure Finance Conference

Design-Build Project Delivery

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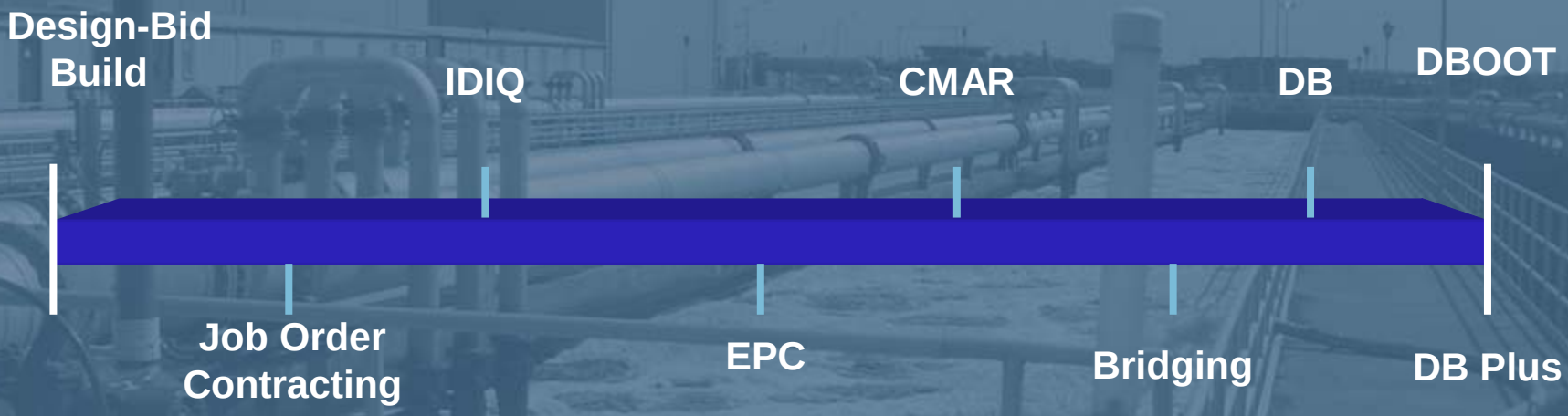
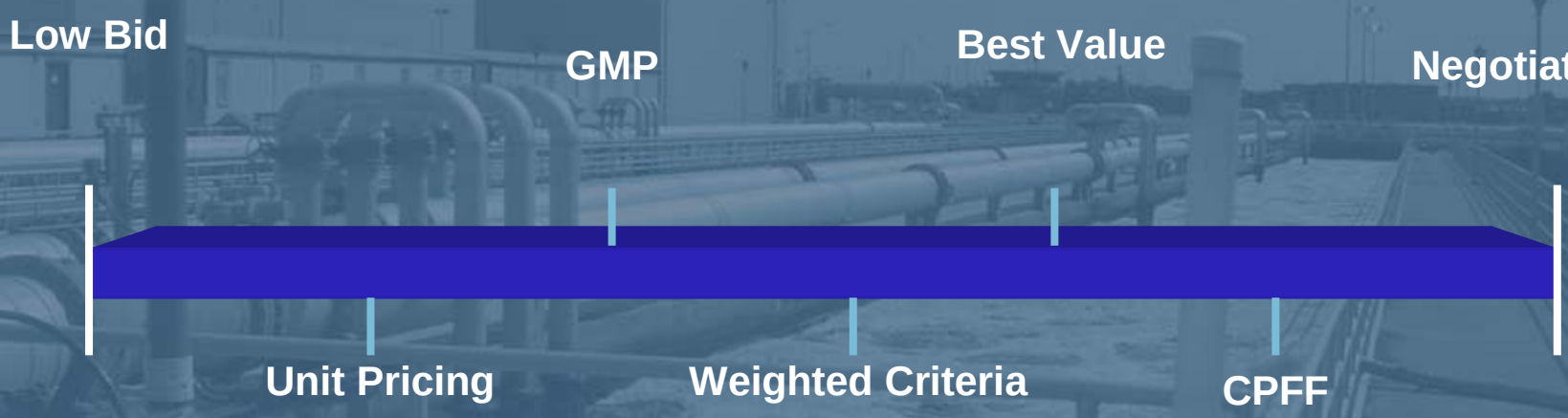
HDR


• Project Delivery Options and Trends
• Basics of Project Delivery Methods
– Design-Bid-Build (DBB)
– Construction Management at Risk (CMAR)
– Design-Build (DB)
• DB Approach and Owner Considerations
• NM Procurement
• Project Examples
• Questions and Answers
HDR

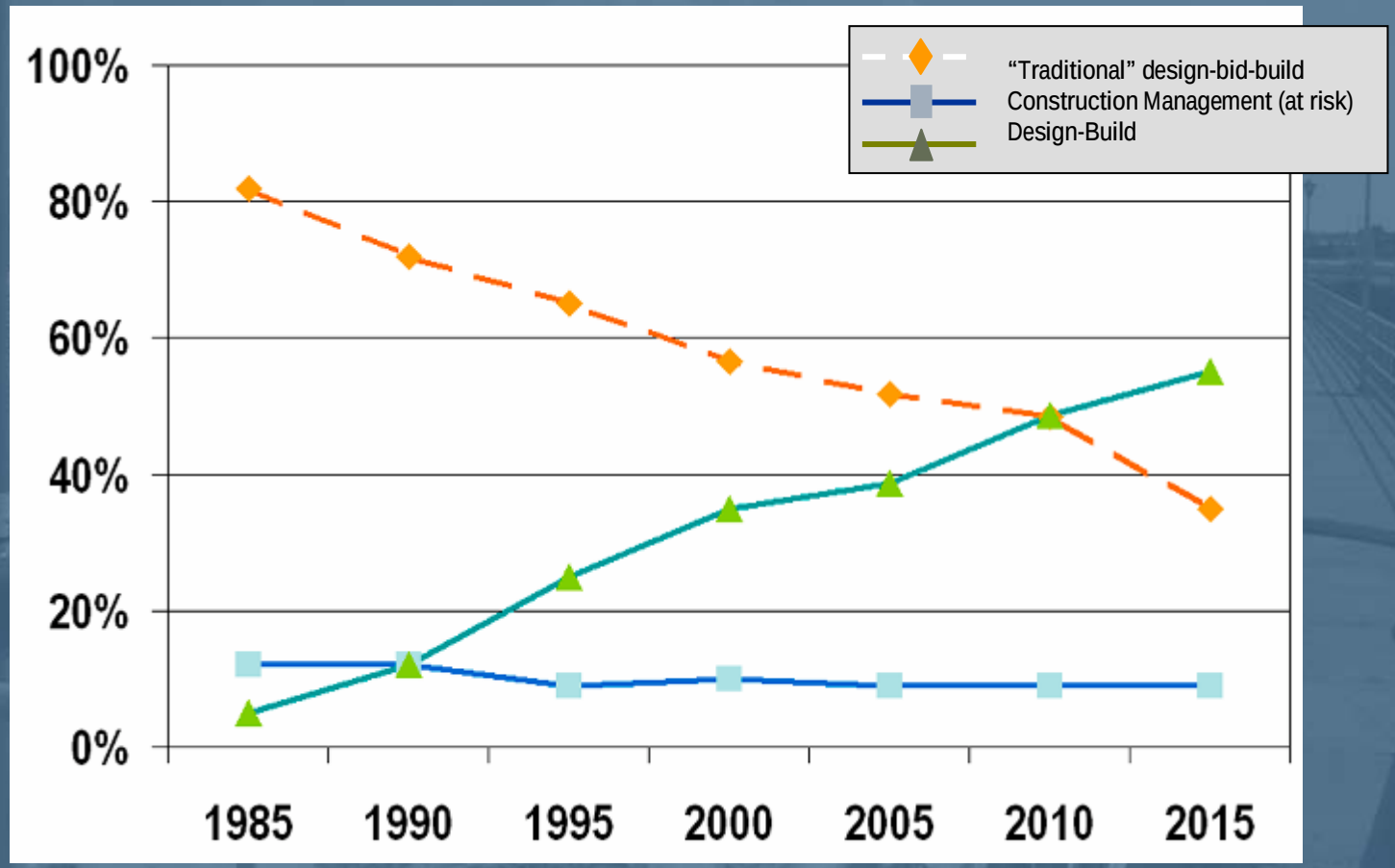
Project Delivery Options/Spectrum



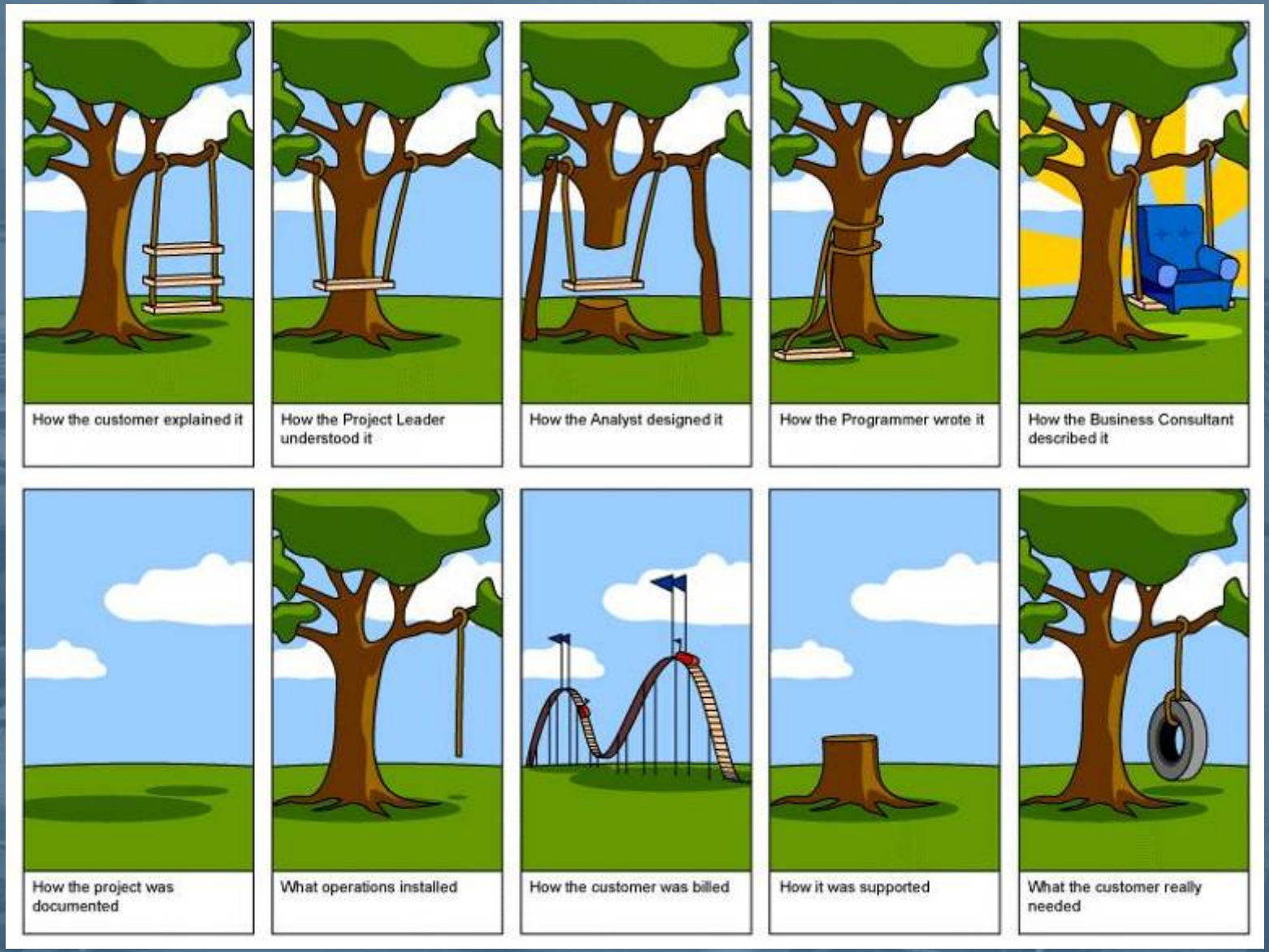
Procurement Selection Methods



Market Penetration of Major Project Delivery Systems (CII-ENR)



Clear Objectives and Communication - Keys to Success



Definition and Organization of Design-Bid-Build

The Traditional Project Delivery System for the Public Infrastructure Industry Under Which the Owner Holds Separate Contracts with a Designer and a Contractor

OWNER

Designer

Consultant

Consultant

Consultant

Builder

Trade Contractor

Trade Contractor

Trade Contractor

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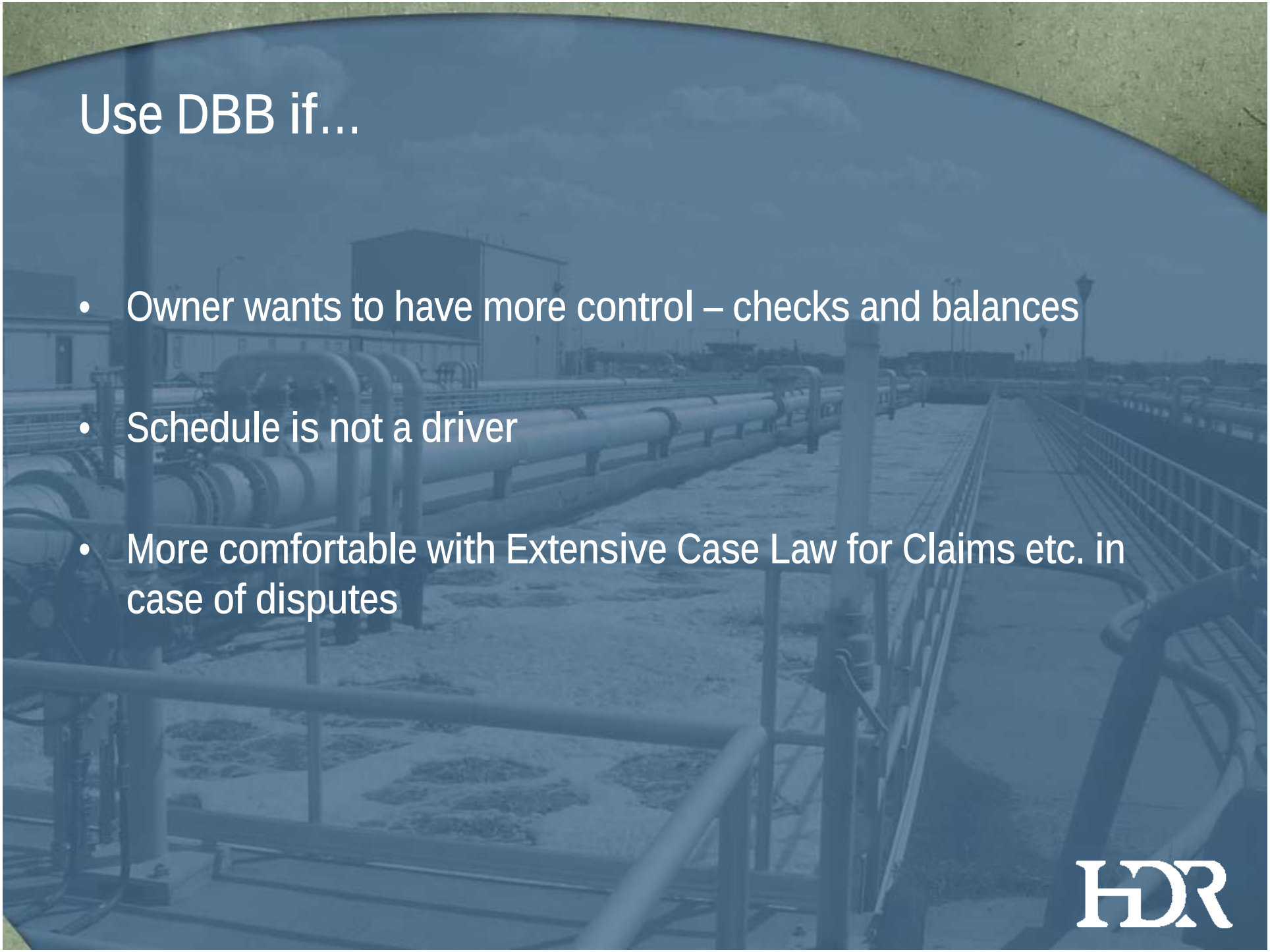
What is the Process Flow for Traditional Design-Bid-Build?

- Proceeds in a Linear Fashion
- Design Completed Before Bidding
- Bidding Completed Before Construction



Use DBB if…

- Owner wants to have more control – checks and balances
- Schedule is not a driver
- More comfortable with Extensive Case Law for Claims etc. in case of disputes

DBB: Pros and Cons

- Pros
  - Owner w/ control of Designer
  - Not a black box
  - Staff is most familiar with this approach
  - Proven Legal Precedents

- Cons
  - Longest Duration
  - Owner is referee
  - Change Orders are a motivation
  - Creativity is not encouraged
  - Owner guarantees design to contractor
  - If bid over budget, redesign job
  - Low bid does not always equal lowest cost

Definition of Construction Management at Risk

Owner Holds Separate Contracts with an A-E Firm and Construction Manager Especially Hired to Work Together During the Project to Develop the Design by the Licensed A-E and to Establish a Price for Construction Guaranteed by the CM

OWNER

Designer

Consultant

Consultant

Consultant

CM @ Risk

Trade Contractor

Trade Contractor

Trade Contractor

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What is the Process Flow for CM@Risk?

Select Designer

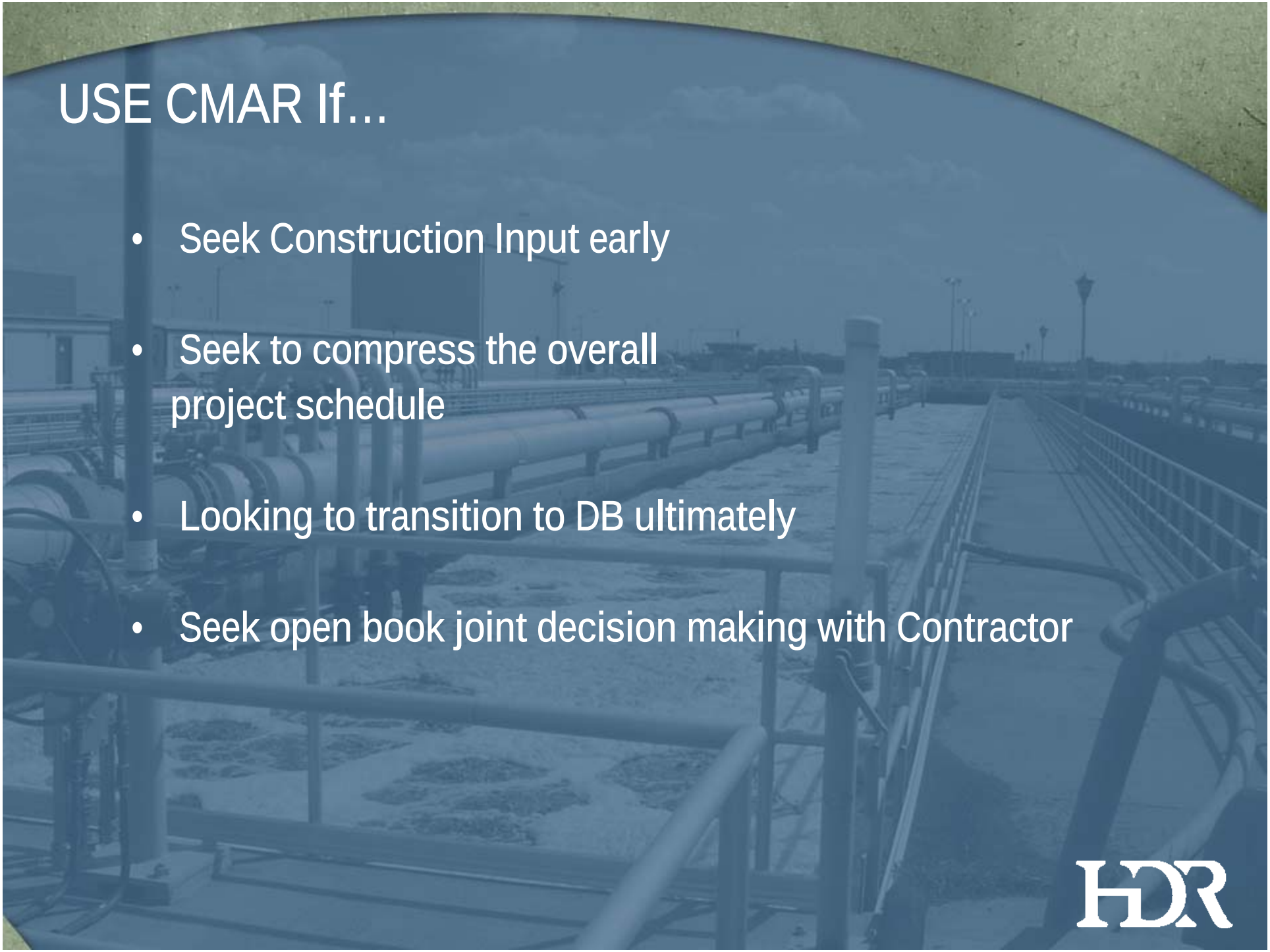
Select CM@Risk

Price & Receive Subcontract Quotes

When is CM@Risk the Right Choice?

Best Used on Projects Meeting 1 to 3 of these Criteria:

1. Time - Have tight schedule
2. Cash Flow - Need to maintain a set budget number
3. Quality - Want performance; not confrontation with designer and builder



USE CMAR If…

- Seek Construction Input early
- Seek to compress the overall project schedule
- Looking to transition to DB ultimately
- Seek open book joint decision making with Contractor

CMAR: Pros and Cons

- Pros:
  - Practical Design with Contractor early involvement
  - Owner has control of Designer
  - Open Book Costs
  - Can be selective on subcontractors
  - Schedule can be compressed
- Cons:
  - Owner still guarantees design to contractor
  - Owner still referee between Designer and Contractor
  - GMP may be inflated
  - Designer does not have to agree to contractor ideas

Definition / Organization of Design-Build

OWNER

A Single Organization Offering Both Construction and A-E Services Through One Contract to an Owner

DESIGN BUILD TEAM

Designer

Builder

Consultant

Consultant

Consultant

Trade Contractor

Trade Contractor

Trade Contractor

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What is the Process Flow for Design-Build?

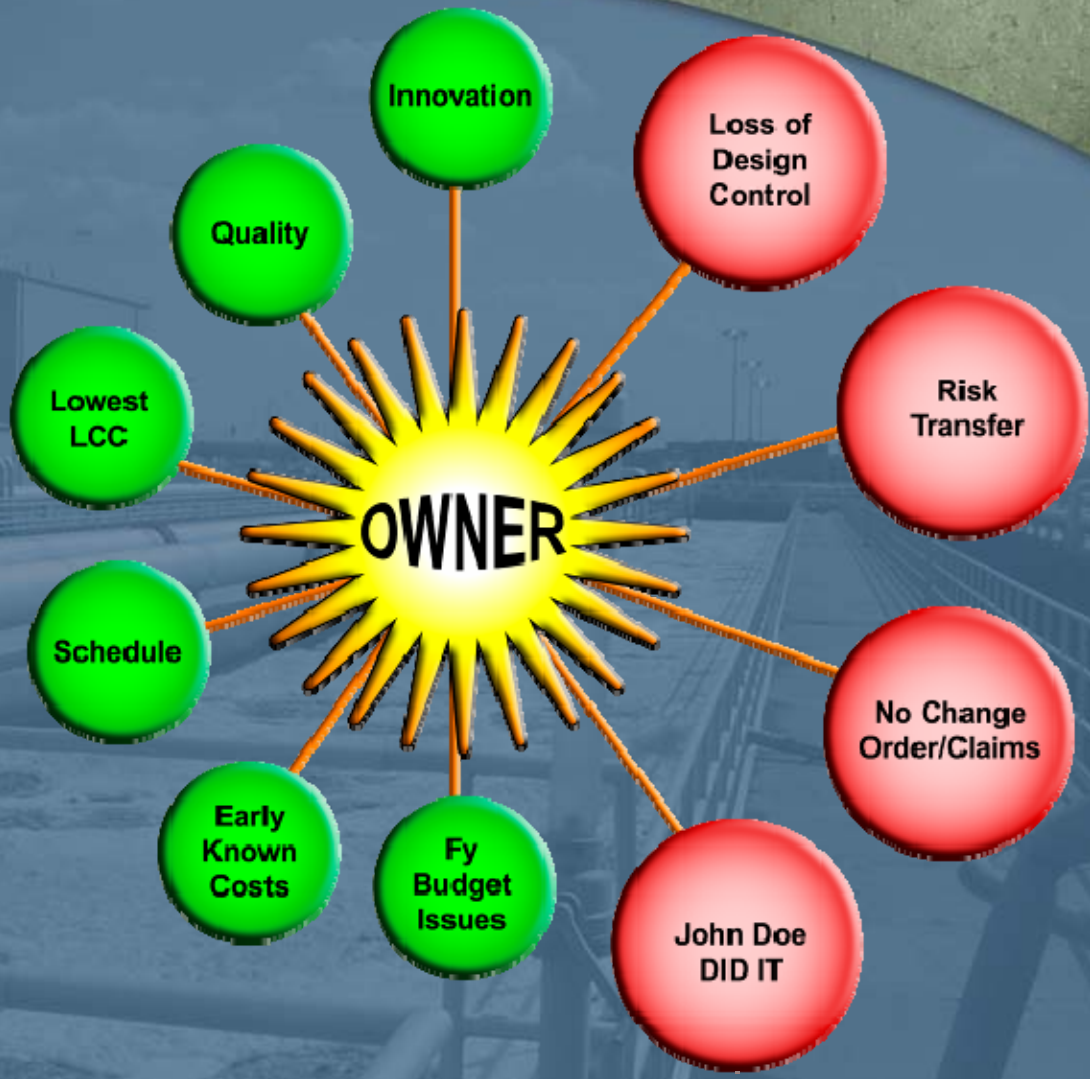
- Proceeds in a Concurrent Fashion
- Construction Starts Before Design Is Complete
- Pricing Occurs Before / During Design

When is Design-Build the Right Choice?

Best Used on Projects Meeting 1 to 5 of these Drivers:

1. Schedule is critical
2. Budget – early knowledge of project costs
3. Single Point of Responsibility – One contract
4. Quality - Want performance; not confrontation with designer and builder
5. Creative/Innovative solutions desired

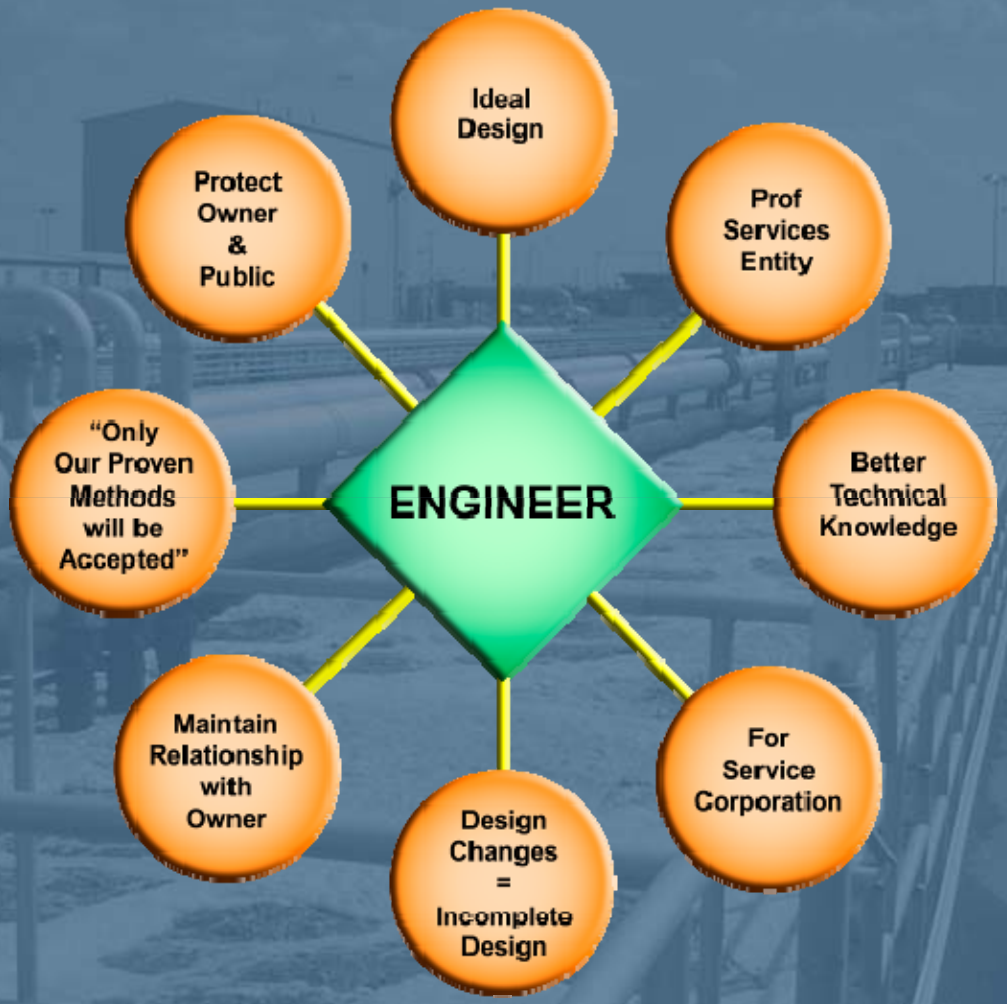
Owner Decision Factors: Alt. Delivery



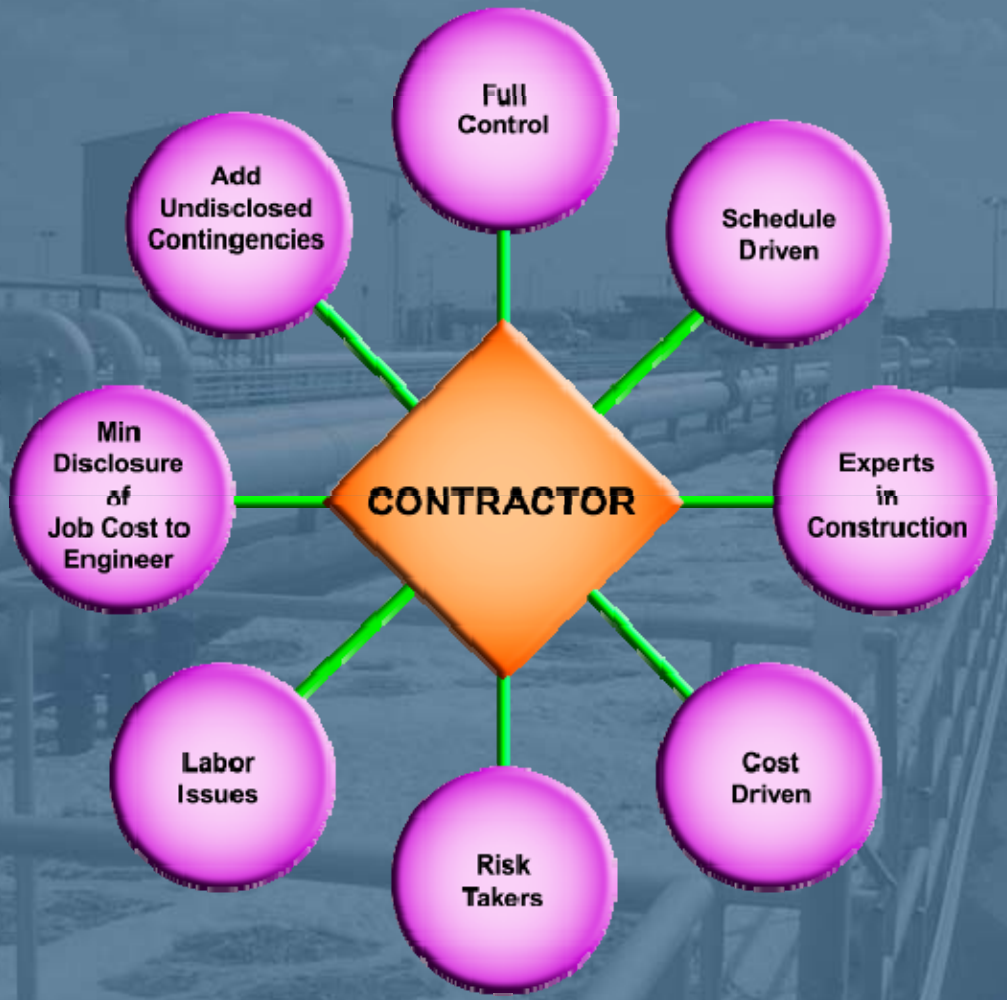
DB: Pros and Cons

- Pros:
  - True Team Integration
  - Shortest Schedule
  - Appropriate Risk Transfer
  - Creative State-of-the-art technology solutions
  - Potential Lower Costs
  - Owner guarantee of design a non-issue
  - Trust and Synergy
- Cons:
  - Major Effort during Selection Process
  - Limited Case Law
  - Loss of Control over Designer by Owner
  - Multiple Solutions must be evaluated
  - QBS as a selection factor is a challenge
  - Limited experience both for Owners and Industry

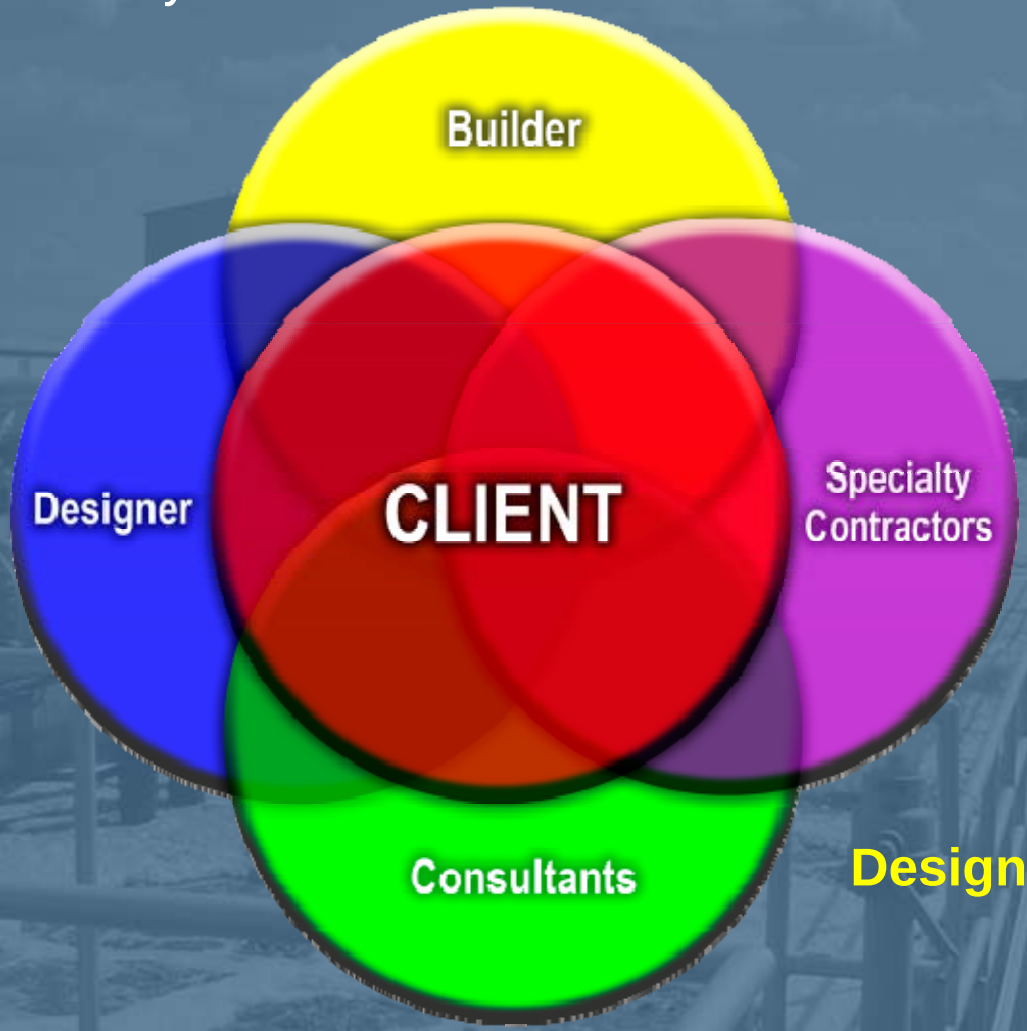
Engineering Mindset



Construction Mindset



Integrated Project Delivery Team



Design-Build

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DB Selection Process:

- Typically a two-phase process
  - Phase 1: Qualifications based (RFQ) with short list
  - Phase 2: Request for proposals (RFP)
- Phase 1 selection based on weighted criteria:

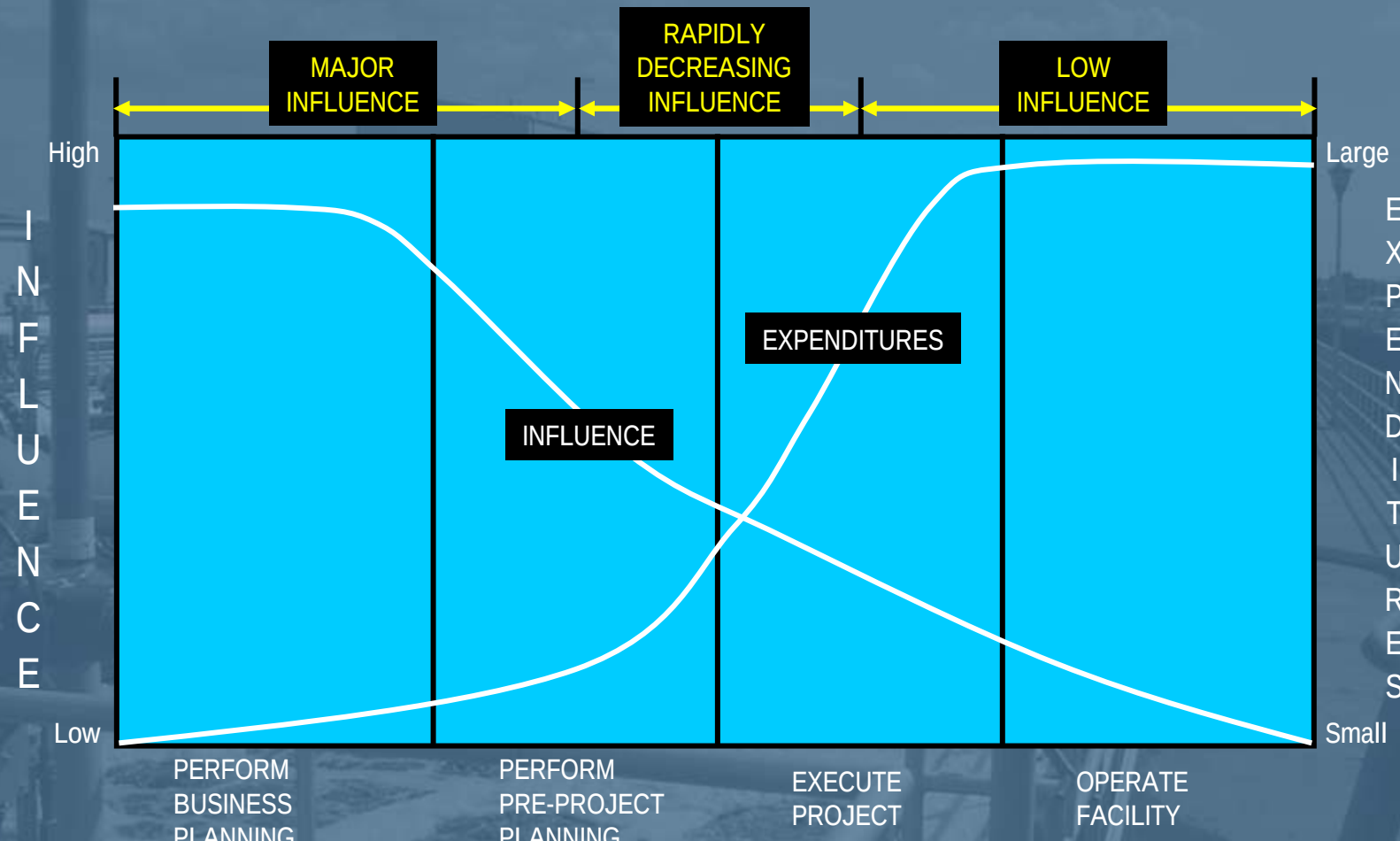
- Mgmt Plan & project organization`
-Project approach
-QA and safety plan
-Technical competence
-Key staff
-Prior experience of similar projects
-Prior experience as a team
-Financial stability
-Bonding capacity
-Ability to meet schedule
-Location of respondent relative to project site

- Phase 2 Selection typically value-based: Involves balance of cost, risk, schedule, and quality

Three basic variations of DB for RFP/RFQ:

1. Performance-based – Owner states objectives (e.g. permit requirements)
   - Provides flexibility to meet Owner objectives
   - Does not dictate how to meet objectives
   - Provides DB team with most flexibility – Innovative and cost-effective solutions
2. Prescriptive - Owner provides at least 30% design
   - Owner has clear preferences on technology, manufacturer, or approach
3. Progressive/Bridging/Draw-build – Owner provides design greater than 35%
   - Owner wants to maintain more control and be more certain of costs
   - Creates liability concerns with DB team because asked to take on risk for existing design
   - Limits benefit of innovative ideas

Influence vs. Expenditure Curves



Do's for Owners: Alternative Delivery

- Use the right drivers
- Determine if procurement allows alternative delivery
- Use a fair/reasonable selection process
  - Clear Path to Victory
- Engage the Industry early in the RFQ/RFP process
- Develop a fair Risk Matrix for risk assignments
- Use DCP (Owner's Rep) for first few projects
- DCP selection and DB selection are critical
- Foster a Teaming / Open Interaction Environment

Do's for Owners: Alternative Delivery

- Focus on Life Cycle Costs (LCC) for selection
- Use Performance Based Requirements
- Seek True Team Integration
- Determine makeup of Selection Committee early
- Use Extensive Interviews

Do's for Owners: Alternative Delivery

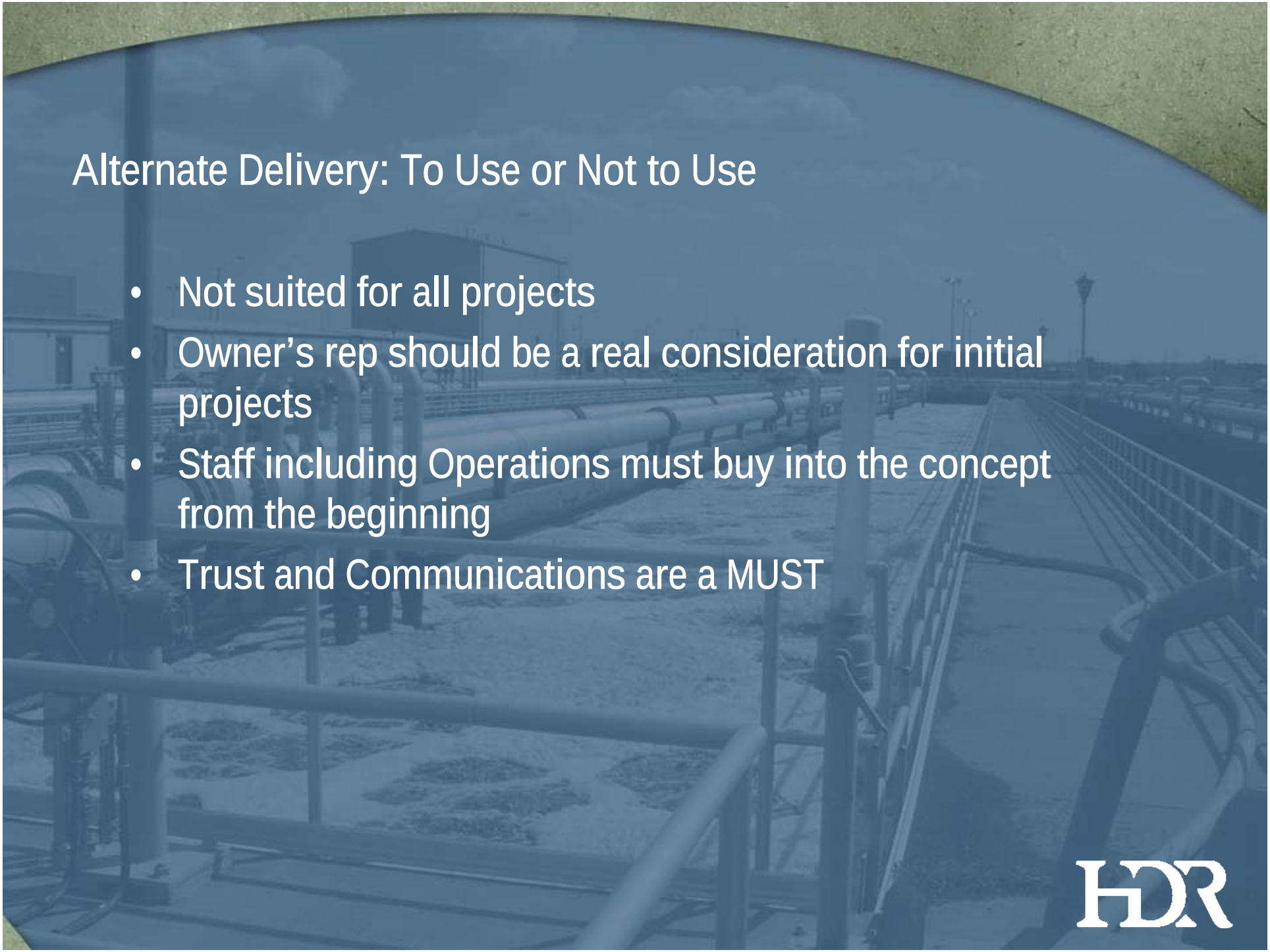
- Cone of Silence is critical – during procurement
- DCP design should be less than 30%
- Consider Influence of Different type of Teams (Contractor lead, engineer lead, joint venture, etc.)
- Ask for Reasonable Efforts during pursuit
- Use of BAFO's should be discouraged
- Limit NUMBER of formal Design Reviews
- Engage Regulatory Agencies about Fast Track Alternate Delivery projects
- Large Projects: Require Regional Market Analysis and High Quality Bidders Marketing Campaign

Owner's Perspectives: Don'ts

- Change scope significantly during Bid Phase
- Force teaming arrangements
- Use of Innovative Ideas without consent
- Unreasonable level of effort from Bidders
- Don't use Stipends for Use of Ideas
- Focus of Low Bid for DB projects is playing Russian Roulette

Keys to Success using Alternate Delivery

- Start with smaller projects and work towards larger projects (Crawl/Walk/Run Concept)
- Get buy in from administrative and operations staff
- Determine appropriate DB for your program: DB vs DB Plus
- Clear Assignments for QA and QC
- Early Planning
- Performance Specs vs Draw Build (Bridging)
- Minimize RFIs / Mandatory Submittals / Shop Drawings
- Clear statement of objectives and communication



Alternate Delivery: To Use or Not to Use

- Not suited for all projects
- Owner's rep should be a real consideration for initial projects
- Staff including Operations must buy into the concept from the beginning
- Trust and Communications are a MUST

NM Procurement for DB:

- DB delivery allowed by State if cost is greater than $10 Million excludes highway and transpo projects (Section 13-1-119.1 NMSA)
- Written determination required to use DB delivery (NMAC 1.5.7) based on project drivers (time critical, quality, costs, etc.)
- Requires 2 phase selection process:
  - Phase 1: RFQ with max short list of 5
  - Phase 2: RFP with weighted criteria (quals, detailed technical concepts, cost, schedule, etc.)
- Home rule municipalities

Project Examples – Water/Wastewater

NM:

- Pueblo of Isleta .5 & .2 mgd WWTP $ 9 Million
- SF Buckman 15 mgd WTP $ 171 Million

Others:

- SDCWA: 100 mgd WTP $ 160 Million
- Seattle PUC: 120 mgd WTP $ 76 Million
- VVWRA: 12 mgd WWTP $ 64 Million
- WBMWD: 5 mgd WRP $ 52 Million
- Okaloosa County: 20 mgd WWTP $ 50 Million
- Johnson County: Mun. Ops. Bldg $ 18 Million
- City of Riverside: 10 mgd WTP $ 17 Million
- Peace River: Pipelines $ 10 Million

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Questions

- Resources:
  Design-Build Institute of America (DBIA) – www.dbia.org
  Water Design-Build Council - www.waterdesignbuild.org

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