INTEGRATED DESIGN AND CONSTRUCTION

CAMPO
Project Delivery Team
Lessons Learned

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FAR Guiding Principles

- ✓ **FAR 1.102 (a)** The vision for the Federal Acquisition System is to deliver…while **maintaining the public's trust** and fulfilling public policy objectives. Participants in the acquisition process should **work together as a team…**
- ✓ **FAR 1.102 (b)(3)** Conduct business with **integrity, fairness, and openness**;
- ✓ **FAR 1.102 (c) The Acquisition Team** consists of all participants in Government acquisition… but also the customers they serve, and **the contractors** who provide the products and services.
- ✓ **FAR 1.102-4** The purpose of defining the Federal Acquisition Team (Team) in the Guiding Principles is to ensure that participants in the System are identified beginning with the customer and **ending with the contractor** of the product or service. By identifying the team members in this manner, **teamwork, unity of purpose, and open communication** among the members of the Team in **sharing the vision and achieving the goal** of the System are encouraged.
- ✓ **FAR 1.102-5(e) -** If a policy or procedure, or a particular strategy or practice, is in the best interest of the Government and is not specifically addressed in the FAR…**the Team should not assume it is prohibited**. Rather, absence of direction should be interpreted as permitting the Team to innovate and use sound business judgment…

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Introduction

1. Project Delivery Method – defines roles, responsibilities, and timing of services for each party.
    - Design-Bid-Build (D-B-B)
    - Design-Build (D/B)
    - Construction Manager At-Risk (CM At-Risk)

2. Contract Type – establishes risk in terms of performance, schedule, and cost.
    - Fixed-Price (FAR 16.2)
    - Cost-Reimbursement (FAR 16.3)
    - Incentive Contracts (FAR 16.4)

3. Source Selection Procedure - the timing for submission and evaluation of proposals, and the relationship of evaluation factors to the attainment of the acquisition objectives
    - Sealed Bidding (FAR 14)
    - Negotiated Procurement (FAR 15)
    - Two Phase D/B Procedures (FAR 36.3)

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Introduction

What Determines a Successful Project (*per AIA and AGC task force)

1. Cost
2. Quality
3. Time/Schedule
4. Safety
5. Meets Originally Intended Purpose

Factors That Impact Success

1. Integration/Collaboration
2. Innovation
3. Partnering

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Introduction to EARLY CONTRACTOR INVOLVEMENT (ECI)

A variation of Tools on the Fixed Price Continuum

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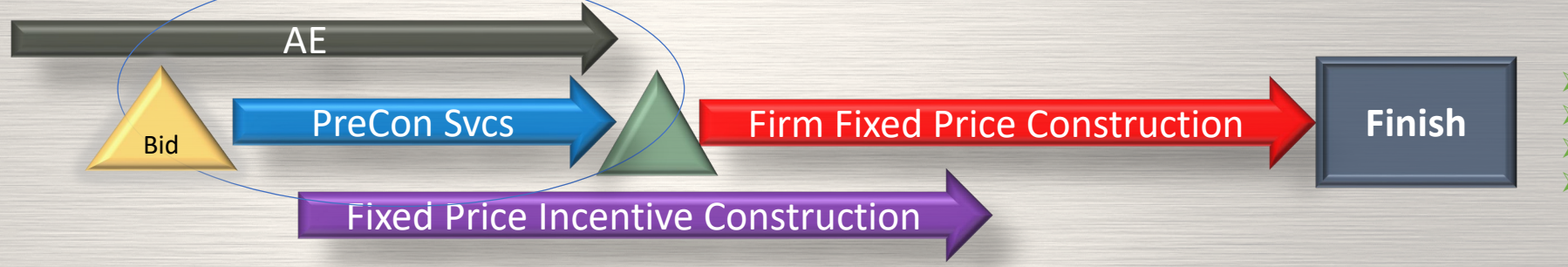
Traditional vs ECI Delivery Methods

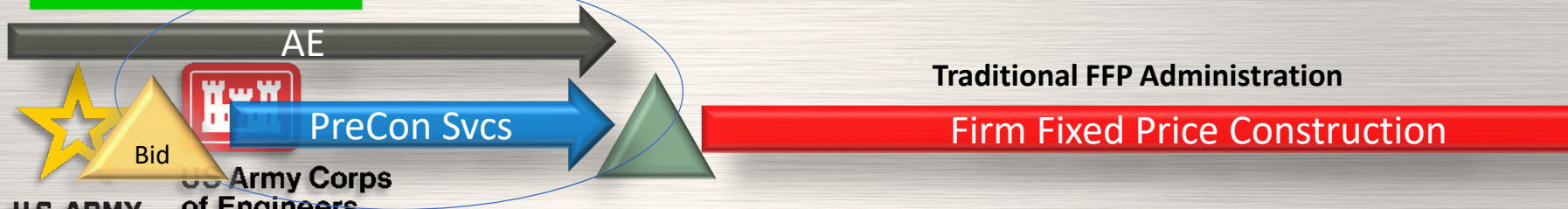
Traditional

ECI – FPIS



- Non-Traditional Administration
- Fast Tracking
- Cost Accounting Standards
- Earned Value Mgmt System

IDaC



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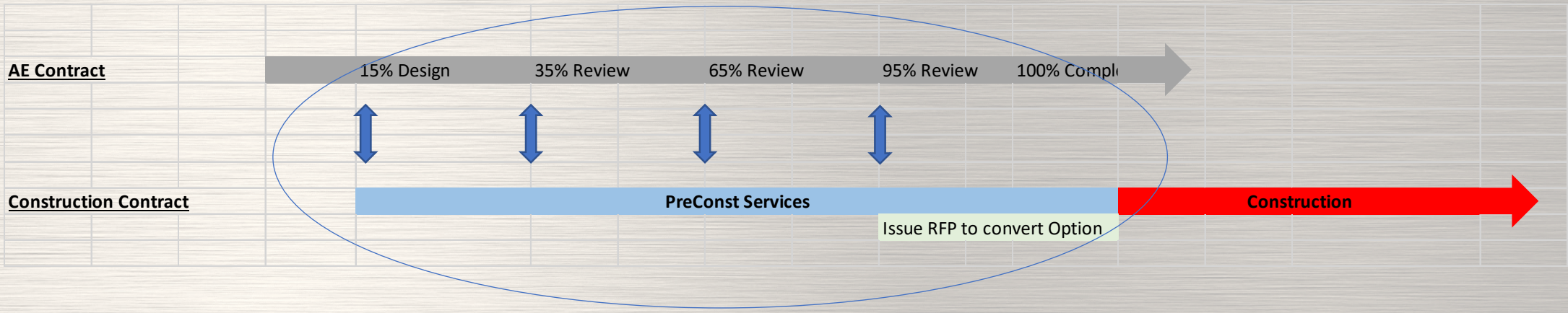
- ✓ Integration
- ✓ Collaboration
- ✓ Cost
- ✓ Schedule
- ✓ Quality
- ✓ Shared Risk

Preconstruction services

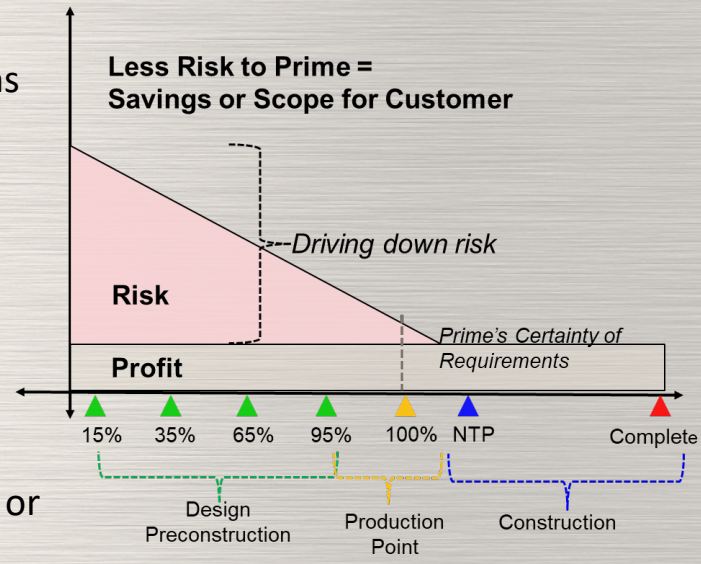


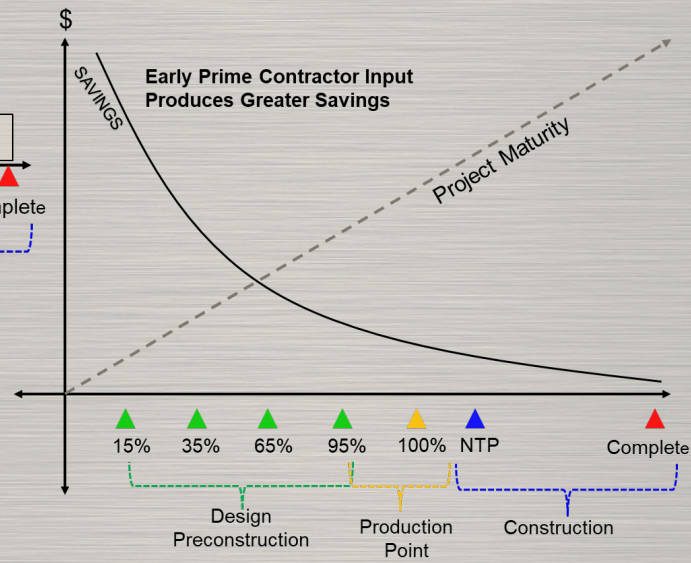
-**Preconstruction Services include**:

-Consultation in construction methodology, current market conditions and identification of coordination issues;

-Construction cost estimates
-to validate designer prepared estimates at each review phase
-for alternative designs and materials
-for changed market conditions

-Cost control
when there is a significant difference or the construction estimate exceeds the target, the estimates will be examined to determine the cause for the differences and steps made to correct the Government or contractor estimates





NOTE: The contractor shall not be responsible for any design services. The responsibility of the design will remain wholly with the Designer of Record.

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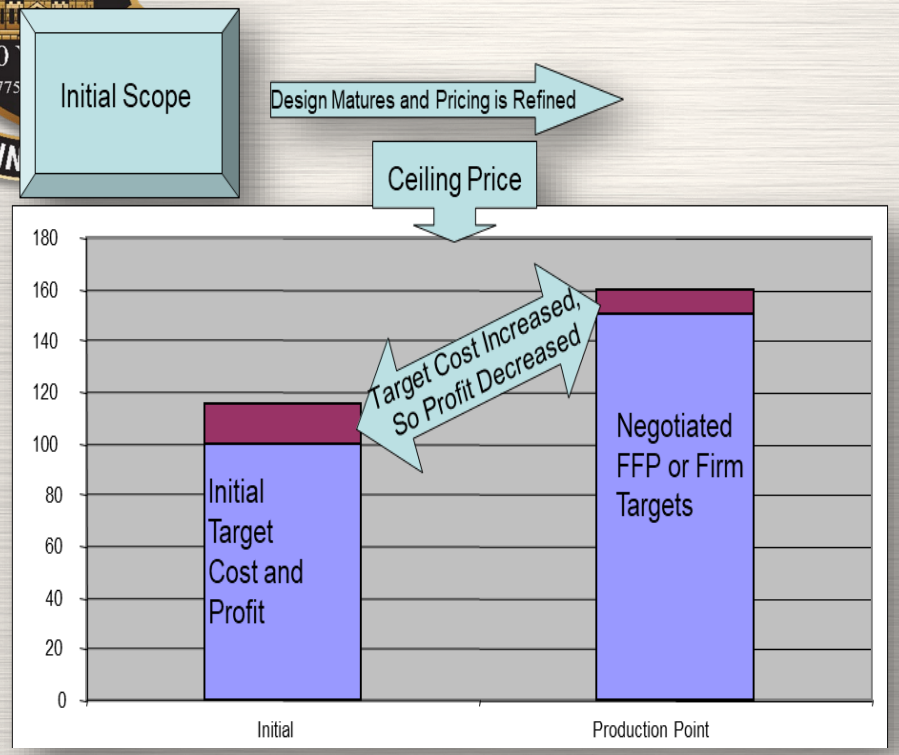

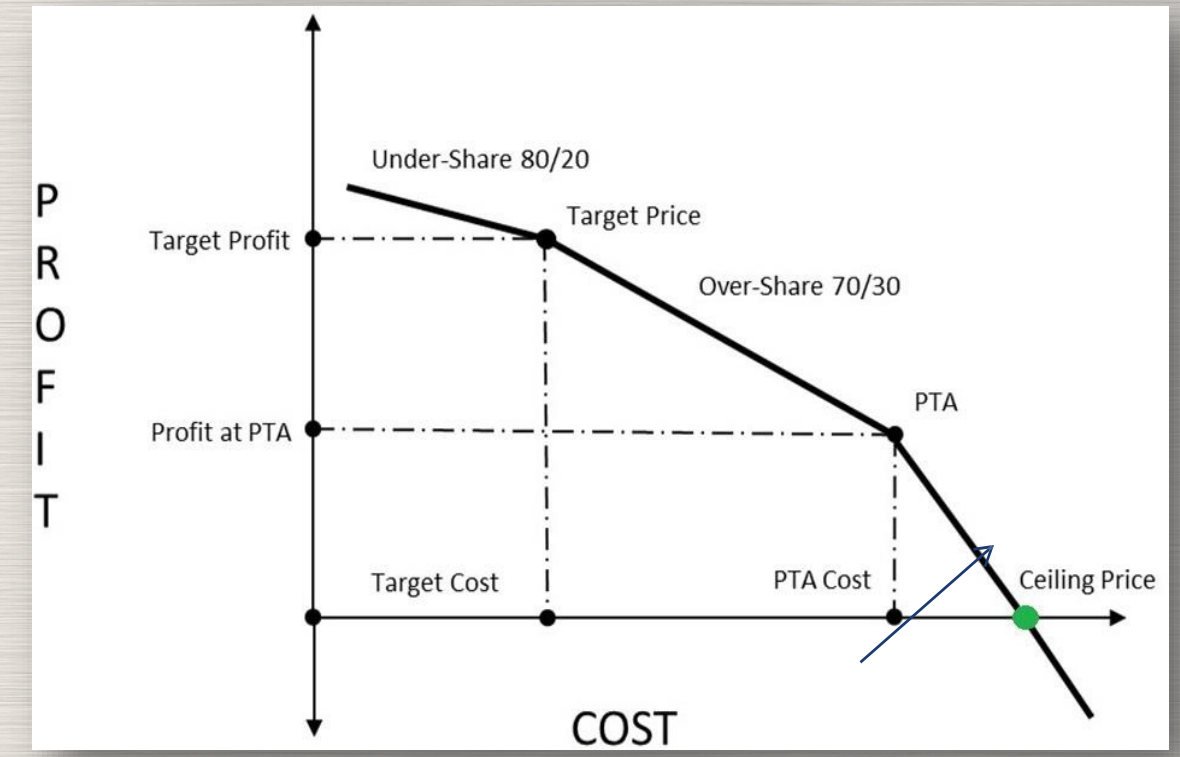

Government point of view

- As cost decreases, price to the Government decreases
- Share the risk of cost increase
- Ceiling Price limits the Government's exposure

Contractor point of view

- Contractor can increase profit dollars and profit percentage by reducing cost below target cost
- Share Ratio above target price provides risk mitigation to the Contractor

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Why Use Incentive delivery methods

Construction experience is integrated into the design

- Increased Collaboration and Innovation

Bid bust reduction/elimination

- Reduce Contingency with Target Pricing
- Shared Risk / Reward Incentive

Design Input

- ECI - DOR represents Owner interest

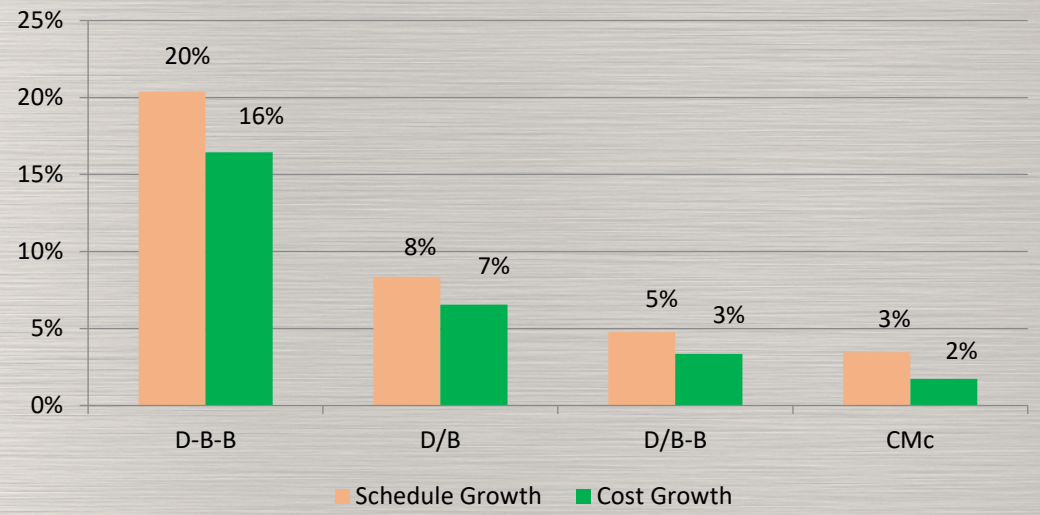
Maintain In-house technical competencies

- Valuable construction input
- Implement CM/GC lessons learned

Success in Public Sector

- GSA – Construction Manager as Constructor (CMc)
- State Departments of Transportation (Arizona, Michigan, Utah)
- USACE – Baltimore, Fort Worth, Kansas City, New Orleans

GSA – 103 projects est. $6.9B
Cost and Schedule Growth By Delivery Method



Note: Chart from 2015 DBIA & SAME Federal Project Delivery Symposium

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IDaC coordination & approval Process

- The unique project requirements and market research are the foundation of the decision to use IDaC.
- Requires communication and coordination with the vertical teams, especially PM, CT, OC, RE, & E&C
- Acquisition Planning & the Business Case Development are concurrent

60 days
1

+ 30 days
2
Vertical Team Integration
-Analysis of District Experience, Capability & Project Oversight Structure
-Seek Vertical Team integration on Concepts, Acquisition Strategies, Risks, & Constraints
-Customer engagement

+ 15 days
3
HQ E&C Technical Review
-Project Overview
-District E&C Capability Assessment
-Regional / CX Support Agreements
-AE/Engineering Management Expertise
-HQ E&C Recommendation

+ 15 days
4
HQ PID Decision Brief (Mil/CW)
-Project Overview
-Comparison of Acquisition Strategies
-PID Chief Approval within 120 days

+ 30 days
5
Final Acquisition Plan Approval by SCO

Market Research/Acquisition Plan Development/Approval — 150 days

PMP/Business Case Development/Submittal — 90 days

IDaC Procurement - Making the Case

Whittier Narrows Dam

1. Life Safety Risk

   WN-DSMP is a Dam Safety Action Classification (DSAC) Level 1.

2. Constructability and Scheduling

   Coordination & Sequencing of utility relocation agreements. Contractor input will be invaluable in shortening the duration.

3. Performance / Innovation / Partnering

   Align on Scope, Risk, and Expectations.

Approval: IDaC delivery method offers significant advantages in accelerating life safety outcomes, managing complex utility coordination, and reducing construction risks.

Prado Dam Spillway

1. Life Safety Risk – Construction Sequencing

   Primary objective to avoid life safety risk during construction by aligning on a construction sequence before execution.

2. Constructability and Scheduling

   Opportunities to work year-round, avoid RFIs, and reduce surprises (e.g., REAs).

3. Shared Understanding and Partnership for Complex, Long-Term Construction

   a collaborative problem-solving approach that is essential on a high-risk, multi-year dam safety megaproject.

Approval: a highly complex project with life safety concerns...therefore, it is critical for the Corps to have the builder's input to finalize design detailing, material specifications, and construction sequencing constraints.

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Procurement Timeline

Whittier Narrows Dam

- August 2022 – Market Research
- July 2023 – Business Case Approved
- January 2024 – Advertise
- June 2024 – Proposal Received
- Jan 2025 – Final Proposal Received
- 25 Apr 2025 – Contract Award
- 7 May 2025 – Notice to Proceed

- **7 May 2027 – Option Expires**

Prado Dam

- August 2022 – Market Research
- May 2023 – Business Case Approved
- December 2023 – Advertise
- May 2024 – Proposals Received
- Jan 2025 – Final Proposal Received
- 14 Apr 2025 – Contract Award
- 30 Apr 2025 – Notice to Proceed

- **30 Apr 2027 – Option Expires**

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IDaC Key Takeaways

Think Slow, Act Fast

- **Early alignment enables cost certainty and efficient funding.**

Decisions to pursue IDaC should occur early and consider opportunities to enable meaningful innovation, optimize construction, and improve cost and schedule certainty. Early alignment leads to greater scope clarity and reduced risks regardless of the level of design maturity.

Build w/ Lego

- **Early work items and test sections reduce execution risk.**

Incorporating these activities reduces risk for USACE and the contractor by improving technical understanding, validating performance assumptions, and supporting dam safety objectives while also giving industry greater confidence in constructability.

- **Essential to have a collaborative and trusted team.**

Success hinges on an experienced team that prioritizes transparency and partnership. Negotiations for both Prado and Whittier evolved into solution-driven sessions, building mutual trust and aligning Government and contractor teams on delivery expectations before contract award.

Get Your Team Right

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Summary of Work – WNDS

1.5.3.1 Workshop 1 - Initial Partnering Meeting

This four full-day workshop will occur within 15 workdays of NTP. The goal of the workshop is to build trust, identify common goals, and understand individual project members' expectations and organizational values. In addition to team introductions, project orientation, review of the Contract, and a Plan-In-Hand site walk, the team will review the Preconstruction Services Management Plan, develop the initial Risk Register, establish resolution ladders, as well as a cost validation and reconciliation of the contractor's cost estimate accepted as a best value proposal, and develop the Partnering Agreement. The workshop will also involve meeting with and hearing from impacted agencies.

Joint Risk Register

1.5.10 Construction Cost Estimate

Provide open-book working estimates throughout the duration of the Contract. Within 20 workdays after the Notice to Proceed is issued, provide an initial cost estimate based on the Best Value proposal accepted by USACE. The cost estimate must be presented in such detail so that labor, material, equipment, subcontracts, general assumptions, and the approach to the estimate are clear and organized. Include assumptions for construction means and methods, changes in scope, quantity estimates, and phasing.

As part of the open-book cost estimate, provide all backup documents requested by the Contracting officer including labor rates, equipment cost rates, field office overhead calculations, home office overhead audit reports, subcontractor quotes, and supplier quotes. If, at any point, the construction cost estimate exceeds the initial target price, notify the Contracting Officer in writing and make appropriate recommendations to reduce the estimated construction costs.

The open-book construction estimate will serve as the basis of the Construction Option negotiations; therefore, it must be developed in a format that serves both parties and that complies with Contract requirements and other applicable regulations. The Contracting Officer must approve the cost estimate format before the working construction estimates is initiated.

Cost Validation & Reconciliation

Open Book Estimate

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Summary of Work - Prado

Joint Risk Register

(3) Risk Register

Develop and maintain a construction Risk Register in close coordination with Government during the preconstruction services workshops. The construction Risk Register must be consistent with the Government preferred construction sequence and current project design as discussed during the preconstruction services workshops. The Risk Register must include narrative that identifies and quantifies project construction risk and includes recommendation for avoiding, reducing, and mitigating identified risks. The Contractor is responsible for the preparation, modification, and maintenance of the Risk Register. The first draft of the Risk Register must be submitted within 30 days of completion of the second workshop. The Risk Register approval will require several levels of Government approvals. The Government will provide review comments within 21 days of receipt of the Risk Register. Revise and re-submit the Risk Register 30 days following the completion of each subsequent workshop to be followed by the Government 21-day review and comment period. The final Risk Register must be based on the Government preferred construction sequence and any modified design changes resulting from the preconstruction services workshops submitted 30 days following the fifth workshop

Cost Validation & Reconciliation

PRADO DAM SAFETY MODIFICATION, PHASE II Solicitation No. W912BV23R0032

The Construction Cost Estimate must include assumptions for construction means and methods, changes in scope, quantity estimates, and phasing. As part of the open-book cost estimate, provide all backup documents including equipment cost rates, field office overhead calculations, home office overhead audit reports, subcontractor quotes, and supplier quotes. If, at any point, the Construction Cost Estimate exceeds the Contractor's Initial Target Price, notify the Contracting Officer in writing and make appropriate recommendations to reduce the estimated construction costs. The Construction Cost Estimate must include a revised bid schedule. The initial Construction Cost Estimate must be provided prior to the first workshop for a cost validation and reconciliation of the estimate. The Contracting Officer will approve the cost estimate format 21 days after the first workshop. A subsequent revised draft of the Construction Cost Estimate must be submitted within 30 days of completion of the fourth workshop. The Construction Schedule approval will require several levels of Government approvals. The Government will provide review comments within 21 days of receipt of the Construction Cost Estimate. Revise and re-submit the Construction Cost Estimate 30 days following the completion of each subsequent workshop to be followed by the Government 21-day review and comment period. The final Construction Cost Estimate must be based on the preferred construction sequence and any modified design changes resulting from the preconstruction services workshops submitted 30 days following the fifth workshop.

Open Book Estimate

(6) Construction Cost Estimate

Develop a detailed Construction Cost Estimate in close coordination with Government during the preconstruction services workshops. Provide open-book working estimates throughout the duration of the Contract. The Construction Cost Estimate must be consistent with the preferred construction sequence and current project design as discussed during the preconstruction services workshops. The cost estimate must be presented in such detail so that labor, materials, equipment, subcontracts, general assumptions, and the estimate approach are clear and organized.

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CHANGE MANAGEMENT - WNDS

Reduce Filters Above Existing Zone 3 Impervious Filter

There is a potential opportunity to reduce the sand and gravel filters on the downstream face of the dam above the existing impervious Zone 3 filter. It is our experience from past projects that the filters behind the hardfill are for rapid draw down scenarios that happen on a regular basis. Barnard would like to discuss this with the Government to determine if there is an opportunity to reduce or eliminate the sand and gravel filters at a certain elevation.

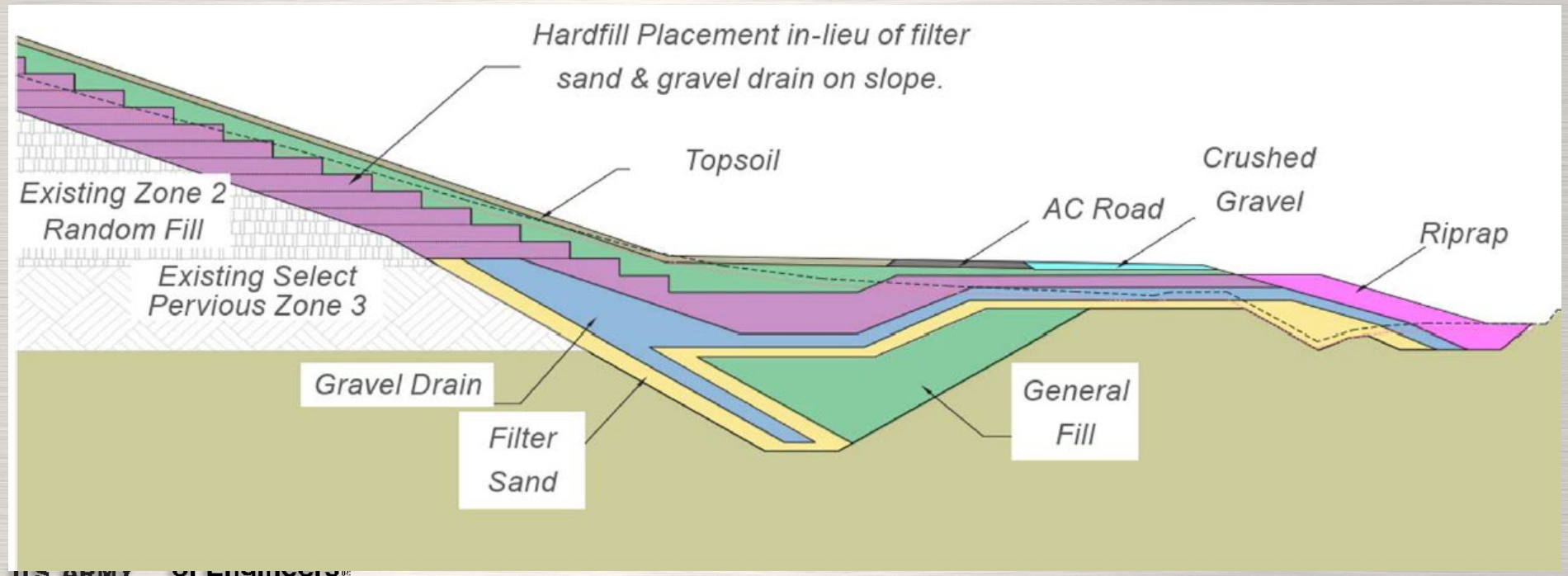
We understand from the discussion on July 16th that it may not be possible to remove all of the filters, however removing any amount in any of the locations could have an impact. For this exercise, we have assumed that all filters above the blanket would be removed and Hardfill would be placed where the filters would have been.

ROM: $45M

Revised 1.24.25

Whittier Narrows Dam Safety Modification Project W912BV23R0039
Los Angeles County, CA

Item	Description	Estimated Quantity	Unit	Unit Price	Amount
0002AQ	Crushed Gravel	6,658	CY	$ 189.00	$ 1,258,362.00
0002AR	Gravel Drain	183,040	CY	$ 282.00	$ 51,617,280.00



Quantity Change
(Scope)
100% Modification

Productivity Change
(Means/Methods)

75/25 – Underrun
50/50 – Overrun

CHANGE MANAGEMENT - WNDS

Place & Compact Filters Parallel with the Slope

In Barnard's initial pricing, our approach for placing and compacting the sand and gravel filters was to place the filters in horizontal lifts. We would like to explore the possibility of placing the filters in lifts parallel to the face of the dam. During the bid phase, Barnard performed a test section placing filter sand and drain gravel on a 2.5:1 slope. The results of the test section were inconclusive. However, we believe there are alternate methods that could be tested during the Preconstruction Services that could prove to be successful and would reduce the project price and schedule.

Rough Order of Magnitude (ROM) : $50M - $75M (this assumes a schedule savings of 198 days. We have not looked at if another activity becomes critical)

Revised 1.24.25

Whittier Narrows Dam Safety Modification Project W912BV23R0039
Los Angeles County, CA

Item	Description	Estimated Quantity	Unit	Unit Price	Amount
0002AQ	Crushed Gravel	6,658	CY	$ 189.00	$ 1,258,362.00
0002AR	Gravel Drain	183,040	CY	$ 282.00	$ 51,617,280.00

<u>No Quantity Change</u>
(Scope)
No Modification

<u>Productivity Change</u>
(Means/Methods)

75/25 – Underrun
50/50 – Overrun

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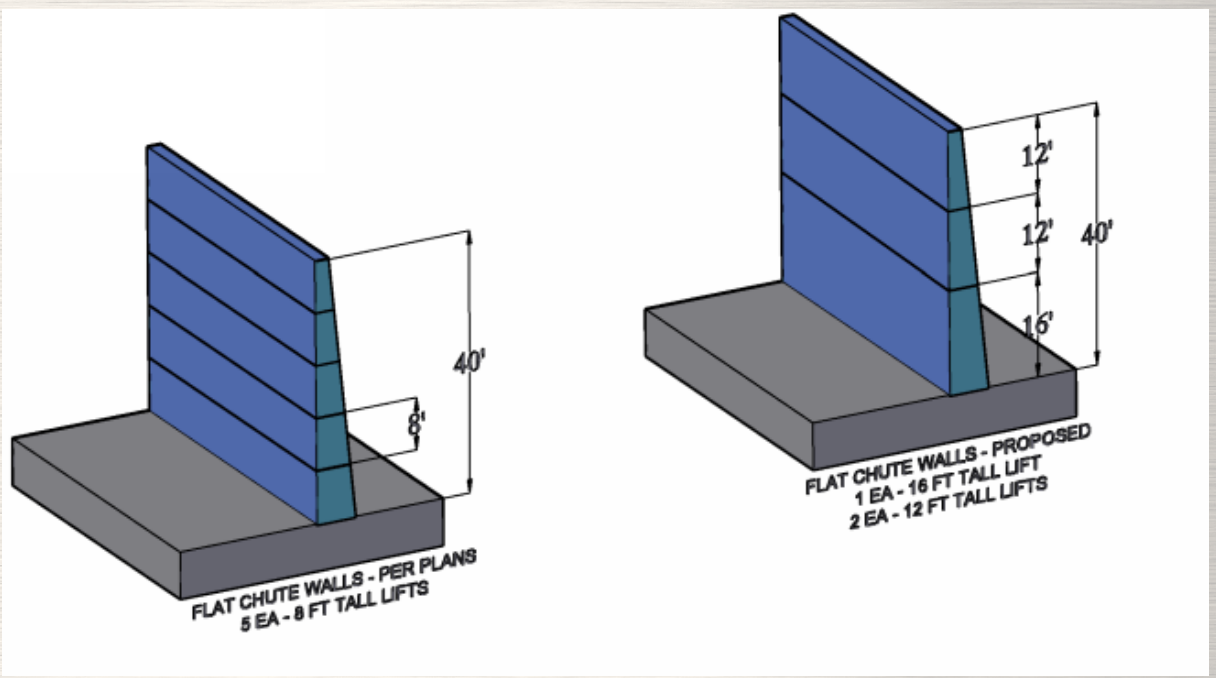
CHANGE MANAGEMENT - Prado

Place Chute/Labyrinth Walls to Full Height in 3 Placements vs. 5 Placements:



No Quantity Change
(Scope)
No Modification

Productivity Change
(Means/Methods)

50/50 – Underrun
75/25 – Overrun

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CHANGE MANAGEMENT – Prado

DRIVE ON/OFF RCC :

Specification Section 03 37 23 3.5.1d

d. Keep equipment used for RCC hauling, placement and compaction located on the RCC surface as much as possible, except during fueling, maintenance and relocations.

<u>No Quantity Change</u>
(Scope)
No Modification

<u>Productivity Change</u>
(Means/Methods)

50/50 – Underrun
75/25 – Overrun

IDaC Lessons Learned

Whittier Narrows Specific Observations

- Received only one offeror. USACE held in-person clarifications to ensure scope understanding.
- Significant value in a test section:
  - For Whittier, it was worth $70M, or 10% of project. It cannot be understated the need to expand use of demonstration and test sections during preconstruction services to lower risk for IDaC contractor.
- A cost validation Task Order from independent 3rd party review of RFP documents.
  - This was extremely valuable to validate the IGE and provided insight on market conditions and risk. In the future, recommend conducting this before the solicitation of Mega projects, with an option that could be exercised after proposals are received to update the cost validation based on bidder inquiries and amendments.
- Risk register merged USACE and Contractor risks and assigned ownership and champions.
- Lesson Learned: Scope reconciliation began with side-by-side CLIN cost comparisons.
  - Focused on factual differences in scope and quantities, avoiding early negotiation on LOE or unit prices.
  - Cost teams from both sides prepared detailed Direct Cost to Prime breakdowns to support common understanding.
  - In-person discussions improved team dynamics and accelerated convergence of IGE and OBE scopes.

IDaC Lessons Learned

Prado Specific Observations

- Multiple offerors received for Prado IDaC, meaningful in-person discussions and oral presentations.
- Base Preconstruction awarded early in FY25; Construction Option funding planned for FY27.
- Budgeting was originally based on CSRA 80% confidence. Moving to an IDaC model required funding to cover the proposed Ceiling Price, which is more comparable to the CSRA 100% confidence level. This resulted in budget gaps for the project.
- Lesson Learned: The IDaC model reduces the risk of reprogramming during construction. IDaC provides the opportunity to collaboratively mitigate risks to execution during preconstruction that is not available in traditional delivery methods.
- Lesson Learned: Pricing structure differences between Target Price and Ceiling Price (markup distribution, OH, escalation) require attention during cost/scope reconciliation with side-by-side cost comparisons with focus on differences in scope as opposed to price.
- Risk register to be addressed in forthcoming workshop to identify risks and assign ownership.

IDaC – Lessons Learned

1. Market Research & Industry Engagement

   ✓ Recommendation: Improve early market research and industry engagement during preconstruction engineering design phase to determine market risks.

2. Acquisition Strategy and Budgeting

   ✓ Recommendation: Commit to the acquisition strategy early in the project planning to align resources and funding. IDaC delivers improved cost and schedule certainty despite added upfront efforts.

3. Solicitation Phase

   ✓ Recommendation: Develop clear and detailed solicitation documents that define IDaC profit-sharing, examples of scope change triggers, and expectations for preconstruction collaboration to reduce offeror uncertainty and risk. Leverage industry days, pre-proposal conferences, and structured Q&A to attract qualified builders and improve the quality and accuracy of proposals.

IDaC – Lessons Learned

4. Evaluation Process

   ✓ Recommendation: Develop a process that leverages well-prepared IGEs and experienced estimators to effectively reconcile Open Book Estimates with offerors. Early alignment of scope, methods, and assumptions through OBE/IGE comparisons reduces misunderstandings and supports collaborative, non-adversarial negotiations..

5. Funding and Financial Considerations

   ✓ Recommendation: Plan IDaC funding early to align with the higher upfront obligation requirements of covering the proposed ceiling price. Early coordination with agency leadership ensures policy alignment and mitigates future reprogramming or budget shortfall risk.

6. Award Process

   ✓ Recommendation: Structure the award process to focus on the Ceiling Price for price reasonableness while using the Initial Target Price to define incentives and contract framework. Emphasize that true pricing confidence is achieved during preconstruction scope reconciliation, mitigating any potential of limited initial competition.

IDaC – Lessons Learned

7. IDaC Contract Administration

- ✓ Recommendation: Foster a true government-contractor partnership during preconstruction by maintaining parallel “current working” cost estimates to align scope, track changes, and support informed negotiations. Regularly update SOPs and templates based on field experience to ensure consistent cost management, risk modeling, and reconciliation practices throughout the project lifecycle

8. Other Items

- ✓ Recommendation: Initiate structured IDaC workshops to establish a partnership mindset, align scope and schedule assumptions, and implement a joint risk management process with clear ownership. Focus cost discussions on scope clarity rather than adversarial negotiation to build trust and support efficient conflict resolution.

9. Suggestions for Improvement

- ✓ Consider a dedicated team educate Districts on projects that would be good candidates for IDAC.
- ✓ Recommendation: Develop internal tools to track IGE and Open Book Estimate assumptions over time to improve scope clarity and support Final Target Price alignment.

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