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TRB TRANSPORTATION RESEARCH BOARD

TRB Webinar: Open-Book Pricing Practices for Alternative Project Delivery

April 13, 2026

2:00 – 3:00 PM ET

PDH Certification Information

1.5 Professional Development Hours (PDH) – see follow-up email

You must attend the entire webinar.

Questions? Contact Andie Pitchford at TRBwebinar@nas.edu

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Purpose Statement

This webinar will examine how agencies both structure and manage open-book price negotiations in practice, with a focus on processes, documentation, and risk considerations. Presenters will discuss key elements that should be included in CMGC and PDB solicitations and preconstruction services contracts to support effective and transparent price development.

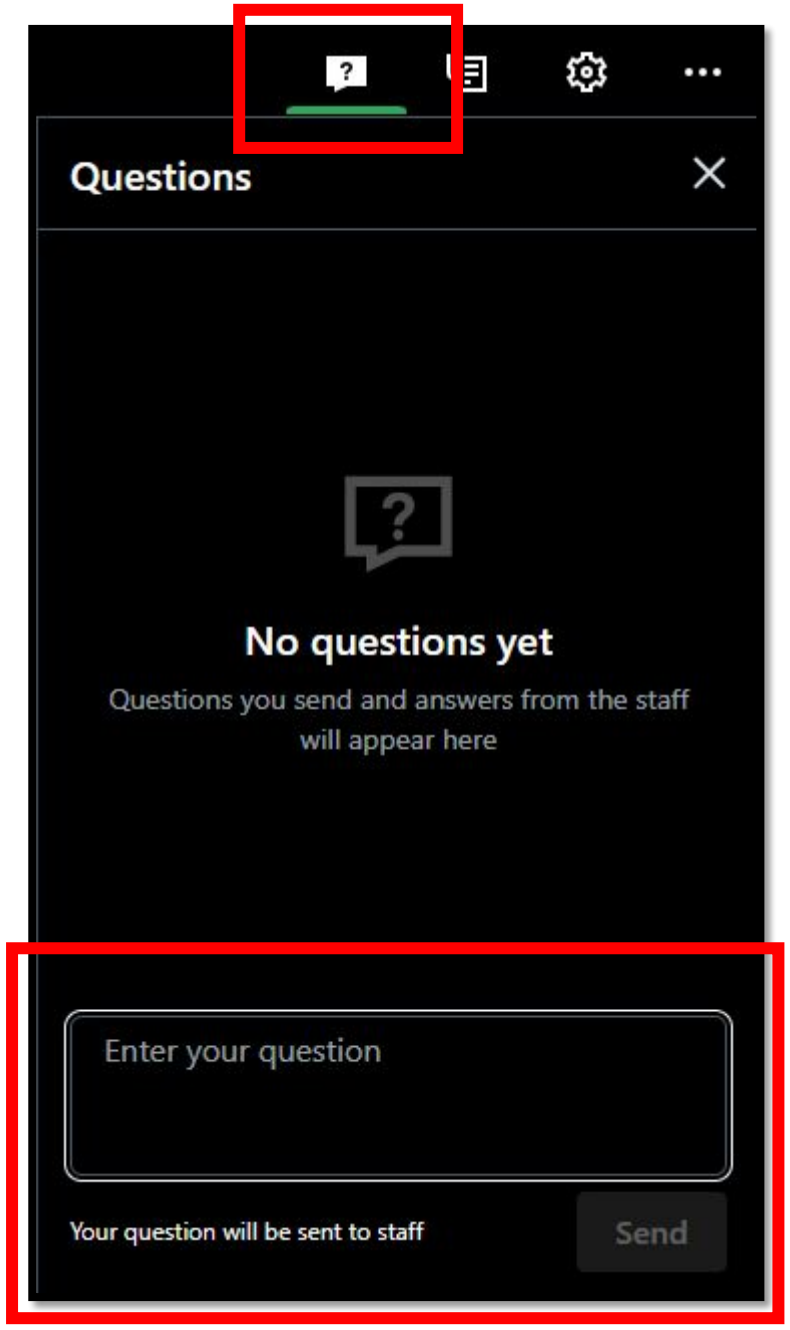
Learning Objectives

At the end of this webinar, you will be able to:

1. Prepare the necessary solicitation and contract clauses to facilitate successful open-book pricing negotiations
2. Demonstrate the basic knowledge of the open-book pricing process and its application to alternative project delivery

Questions and Answers

- Please type your questions into your webinar control panel
- We will read your questions out loud, and answer as many as time allows



Today's Presenters

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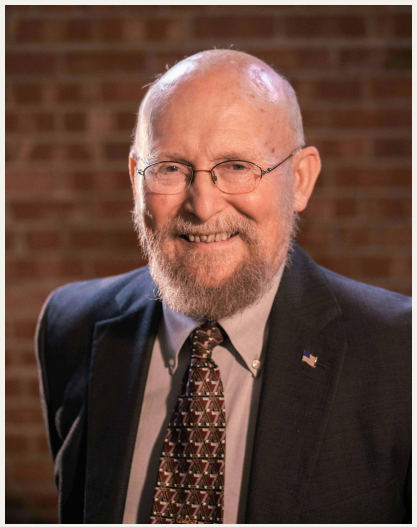

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Open-Book Pricing Practices for Alternative Project Delivery

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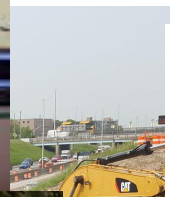

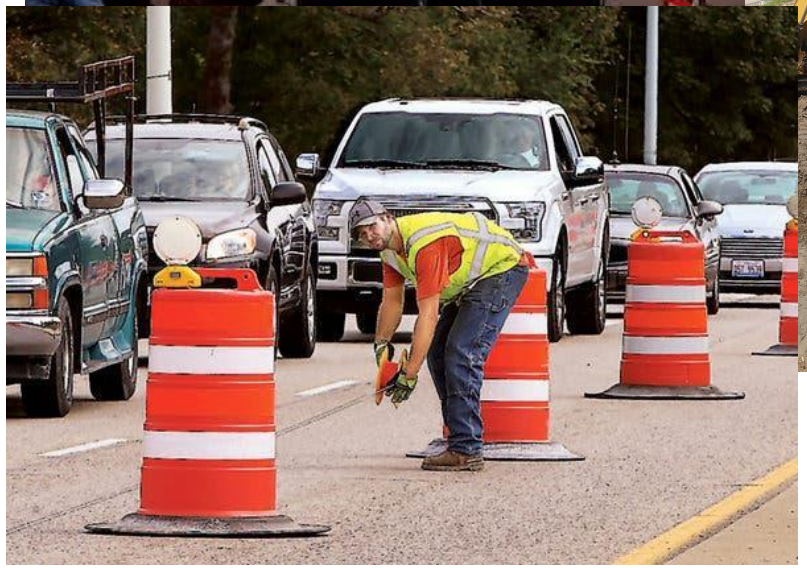

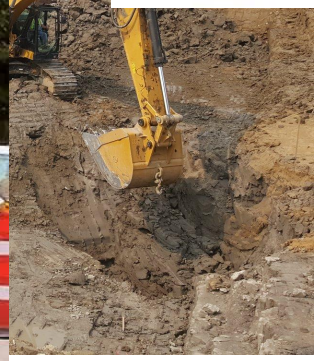

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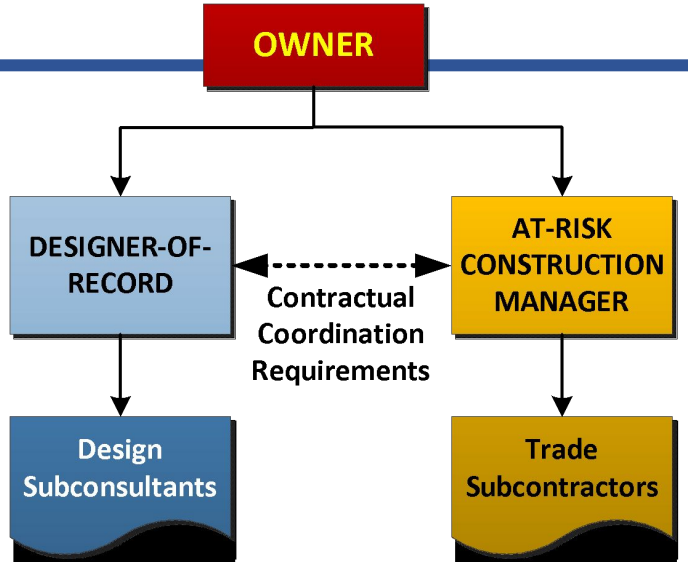
Disclaimer

- This presentation presumes that the participant understands the contractual differences between Construction Manager/General Contractor (CMGC) [also called CM-at-Risk] and Progressive DB (PDB).
- It also assumes that the participant understands fixed price project delivery methods and how CMGC and PDB differ.
- The presentation springs from the research the presented in NCHRP 653: *Open-Book Pricing Practices for Construction Manager/General Contractor and Progressive Design-Build Projects.* https://www.nationalacademies.org/publications/29084

Alternative Project Delivery

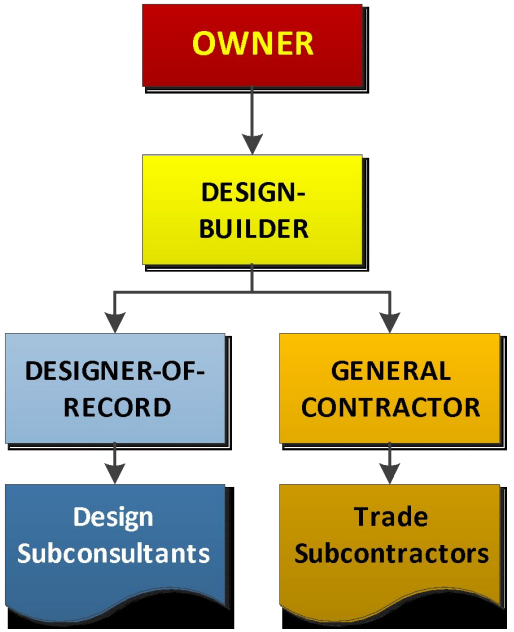
- Alternative project delivery methods facilitate getting construction started before 100% design completion.
- Traditional design-build (DB) requires that:
  - The owner prepare a biddable conceptual design in its solicitation
  - Competing DB contactors to prepare a technical proposal regarding their proposed design approach and a lump sum price to submit a responsive proposal
- Construction Manager/General Contractor (CMGC) [also called CM-at-Risk] and Progressive DB (PDB) are awarded on a basis of qualifications with the construction price being negotiated.

Alternative Project Delivery Methods

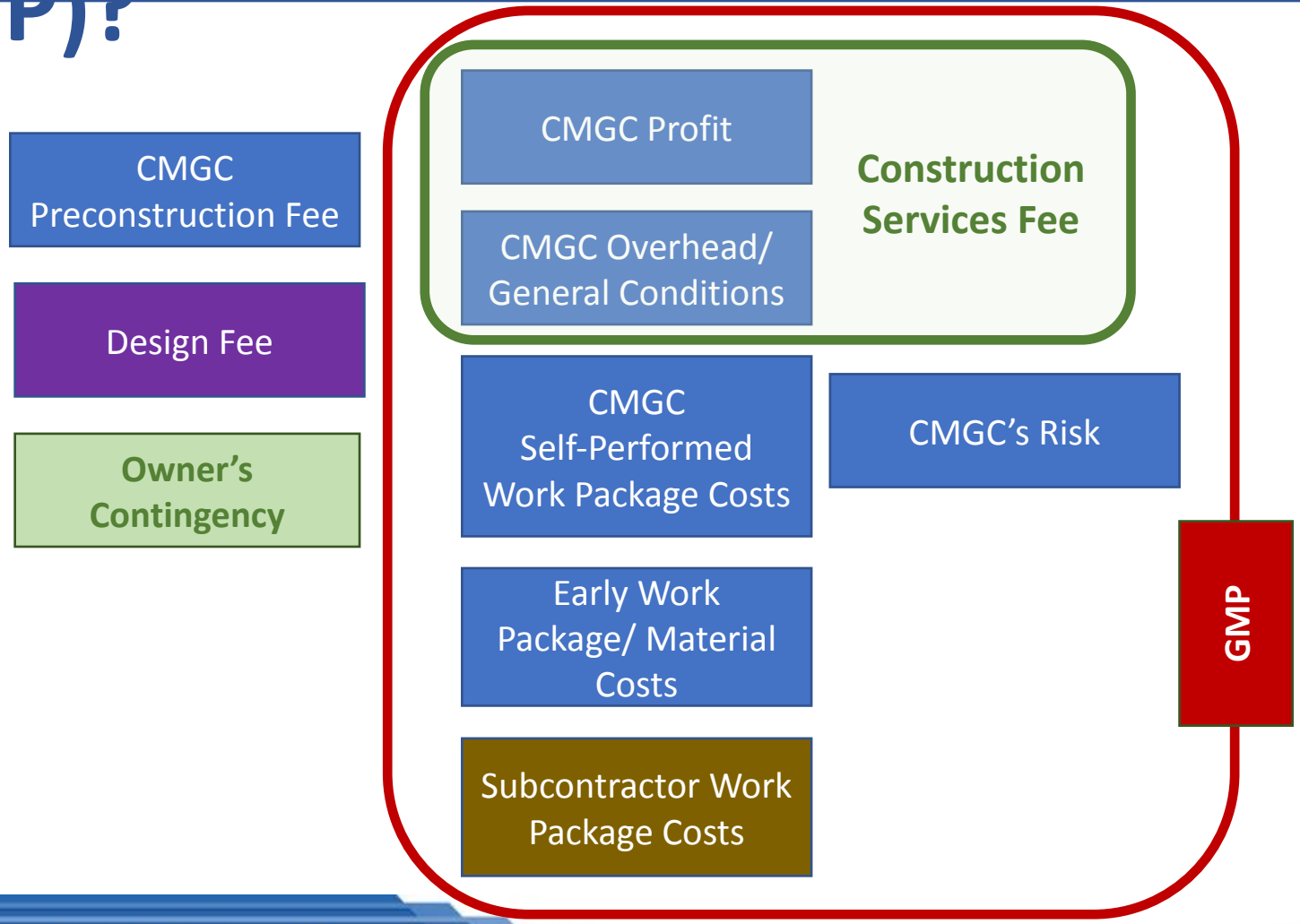


- CMGC
  - Owner retains designer
  - CMGC contractor selected on qualifications
  - Preconstruction contract includes negotiating a GMP
  - If agreement reached CMGC is award construction contract.
  - If no agreement, owner executes the off-ramp & reprocures project as low-bid DBB

- Progressive DB
  - Owner selects PDB on qualifications
  - Single point of responsibility for design and construction
  - GMP negotiated when design has reached a level where contingencies can be minimized.
  - If agreement reached PDB given NTP for construction.
  - If no agreement, owner executes the off-ramp & reprocures project



What Is a Guaranteed Maximum Price (GMP)?



CMGC Precon Fee – The amount paid to the CMGC for services provided during preconstruction.

Design Fee – The amount paid to the designer-of-record for producing the design

What Are Open-Book GMP Negotiations?

- Open-book pricing is often specified in Construction Manger/General Contractor (CMGC) and Progressive Design-Build (PDB) delivery methods where the project is awarded without the construction contract amount.
- In CMGC, the DOT holds the design contract.
- In PDB, the design is assigned to the design-builder.
- Both methods seek to leverage early contractor involvement in the design process, including increasing cost and schedule certainty.
- The GMP negotiation process is the mechanism used to make contingencies visible.

Reasons for Open-Book Approaches to Establish GMPs

- Minimal investment in technical components of RFQ.
  - Owner can award the contract on QBS basis – no price component
  - Owner can also award the contract on Best-value basis – price component constrained to fees, markups and assigned minimal weight in award algorithm
- Industry also makes less investment in preparing a responsive proposal.
  - Enhances competition
  - Reduces contingencies contained in final price
- Objective is to jointly validate the final scope of work and lock in construction price once the scope has been validated, risks have been allocated, and the GMP is based on a set of quantities, means and methods which will allow timely completion of the project.

Invest in the *Project*, not the *Procurement*

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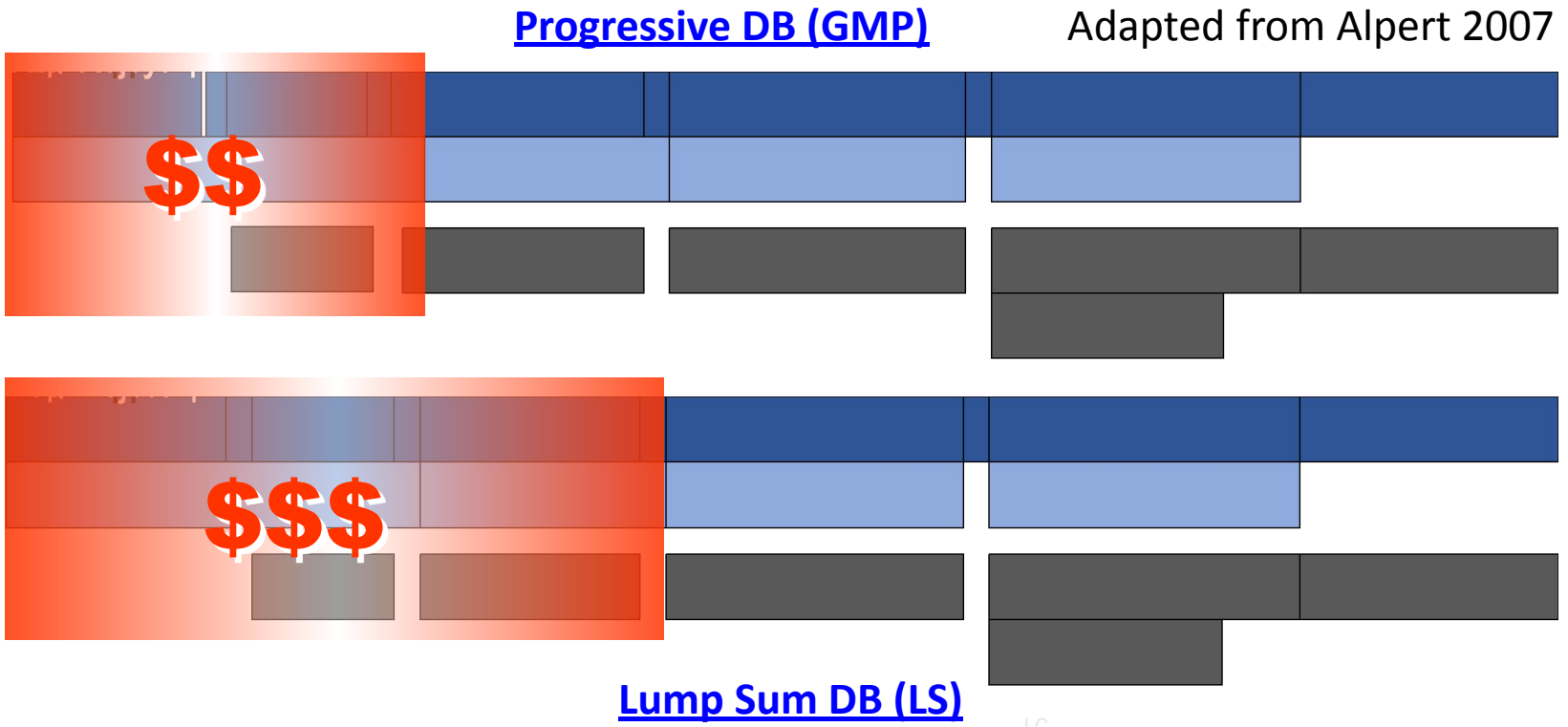
- PDB reduces the complexity and cost of the procurement process

- Owner's staff time and technical support for procurement
- Stipends for multiple unsuccessful proposers
- Industry investment in design for proposal



Additional risk included in ultimate project cost - More unknowns = higher contingency

Open-Book Fundamentals

- Design fee separate from construction fees
  - Can be set as a lump sum or percentage at award, or
  - Negotiate after award
  - ICE involvement?

onstruction Cost + Fees = Contract Price (GMP)

- Need to build up unit <u>COSTS</u> that match pay item quantities of work
- Fees are applied to unit costs to arrive at unit prices used to build GMP, with markup for overhead/profit and risk contingency.
- If PDB is a lump sum, unit prices are extended and summed to arrive at contract amount including risk.

Open-Book Fundamentals

- Scope definition and validation
  - Scope lock before negotiation
  - Alternative technical concepts (ATC) can be included in early OPCC (Opinion of Probable Construction Cost)
- Quantities, means and methods before costs
  - Conform with ICE and programming, environmental, etc. commitments
- Transparency and verification
  - What does the owner need to see? – documents, assumptions, etc.
  - What can be considered in developing an OPCC?
  - Allocation of indirect costs to fees allows focus on design and construction costs.

How "Open" are Open-Book Negotiations?

- The myth: *The owner can ask the contractor to see anything it wants.*
- The reality: *There is no standard for what constitutes the level of documentation the defines "open."*
- So, we must fall back on contractual definitions.
- Owner sets the rules and definitions by which costs will be accounted.
  - Definitions of components of the GMP
  - The open-book negotiation process itself
  - Actions if the EE, ICE, and CMGC OPCC are materially different
  - Off-ramp constraints
- Rules and definitions should be in solicitation.

Typical Open-Book Negotiation Rules

- Typical rules:
  - How markups for profit, general conditions, other indirects are computed.
  - Definitions for which “buckets” indirect cost are accounted from.
  - Contingency amount determination
  - Contingency ownership and rules for what costs can be accounted for in the contingency
  - Fee structure allocation
  - Allowable direct costs
  - Documentation to back-up costs
    - Labor, equipment, materials invoices
    - Subcontractor invoices
    - Insurance, bond, general conditions payment receipts
  - Other information desired by the owner to validate cost items

Open-Book Pricing Practices

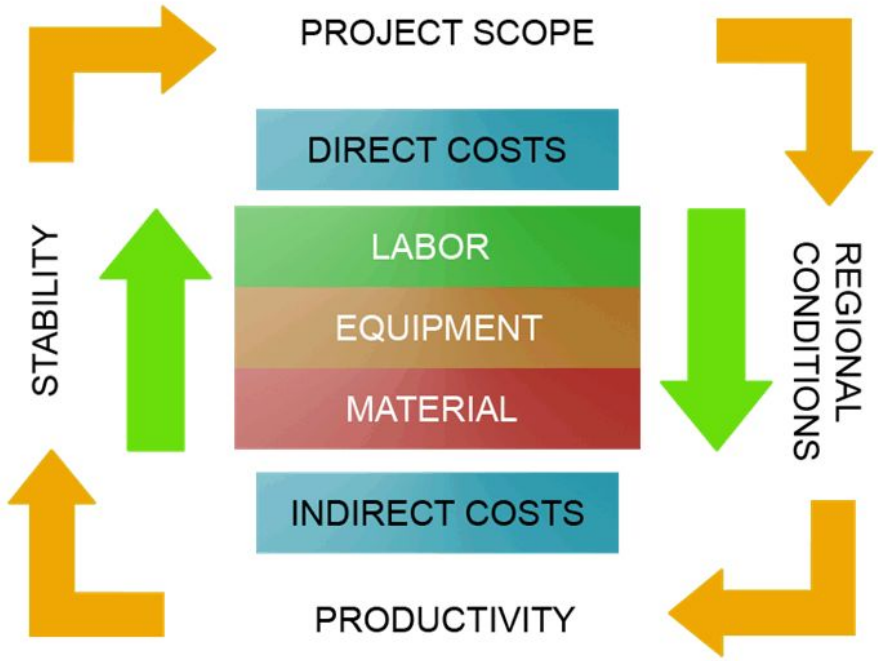
- Joint development of project cost model
- Engineer's Estimate (EE), interim opinions of probable construction costs (OPCC), and independent cost estimates (ICE) should all be assembled according to the owner's rules.
- Profit and overhead as lump sum makes GMP negotiations easier to manage.
- Risk should be addressed first and agreed as to how it will be included in final GMP.
- Rules for contingency usage must be published.

Owner Risk Evaluation Perspectives

- Of all the perspectives, contractual is the one that will be used by the courts if a realized risk cannot be resolved on the project.
- There is probably an optimal combination of perspectives for the owner to use when conducting risk evaluation on a risk-by-risk basis that is related to possible risk response options:
  - Accept the risk – Theoretical
  - Transfer the risk – Contractual
  - Share the risk – Ethical
  - Mitigate the risk – Partisan
  - Avoid the risk – Partisan

Independent Cost Estimate (ICE)

- During the price negotiation process,
  - Owner's budget estimate
  - Designer's engineers estimate (EE)
  - Contractor's current opinion of probable construction costs. (OPCC)
- Given the historic poor quality of budget and EEs, some DOTs engage an ICE consultant to furnish a third OPCC to validate the contractor's OPCC.



Motivation to Engage ICE

- DOTs and their design consultants use historic data such as bid tabulations to produce their estimates.
  - Historic bid prices are out of date
  - Engineering economics used to escalate to the future
  - Do not reflect the means and methods of a given contractor
  - Often, DOTs collect state-wide, low-bid pricing
- Contractors have access to real-time data
  - Can get quotes for actual cost of materials in the future
  - Subcontractors furnish actual costs in their quotes
  - Production-based estimates reflect the actual means and methods the contractor intends to use to build the project

Motivation to Engage ICE

- Comparing average historic prices from past projects to production-based estimates is not an apples-to-apples exercise.
  - Contractor is essentially bidding against the EE
- Research shown that the winning bid consistently exceeded the EE by 7% (Carr 2005).
- Hence, need for an ICE that can build-up an independent production-based estimate to validate the contractor's OPCC.

Independent Estimate

- AACEI Recommended Practice 31R-03 - the independent review “should be reasonably free from undue influence by the stakeholders; i.e., their pay or career is not primarily determined by the recipient of the estimate.”
- DOT retains the ICE - ICE has no contractual responsibility to the contractor or the design consultant.
- 23 CFR § 635.114(c) mandates "the opening of bids, the State DOT shall examine the unit bid prices of the apparent low bid for reasonable conformance with the engineer's estimated prices."
- ICE provides a third point of reference to the contractor’s price and the engineer’s estimate.
- If contractor’s and ICE’s prices are more than the engineer’s estimate, the DOT has validation that the engineer’s estimate of current market conditions is erroneous.

Procedures for Employing the ICE

- Each DOT has unique rules
- Three general approaches
  - Open, side-by-side comparison of the engineer's estimate, the CMGC's estimate, and the ICE during negotiations. All parties are cognizant of the details of all three estimates.
  - Closed side-by-side comparison (also called “Single Blind”) of the engineer's estimate, the CMGC's estimate, and the ICE during negotiations. The agency is the only entity that has access to the details of all three estimates. ICE can see the CMGC’s.
  - Blind bidding (also called “Double Blind bidding”). The CMGC and ICE’s estimates are submitted in a manner that does not identify the source, and the agency then compares the two “bids” to the engineer’s estimate. Details are disclosed to the other parties at the discretion of the agency.

Estimate Comparison

Open side-by-side comparison	Closed side-by-side comparison	Blind Bidding	Unable to Classify
AK, AZ, CA, CO.ME, MI, MN, MT, NC, NV, OR, TN, WA	DE, FL, MD	CT, UT	AR, ID, LA, NE, NM, RI, VT, EFLHD

- Disadvantages of open and closed approaches
  - Both ignore that EE is based on historical pricing
  - CMGC and ICE will use real-time pricing
  - Possible DOT bias toward the ICE OPCC over the contractor's
  - Blind bid removes DOT bias

Conclusions

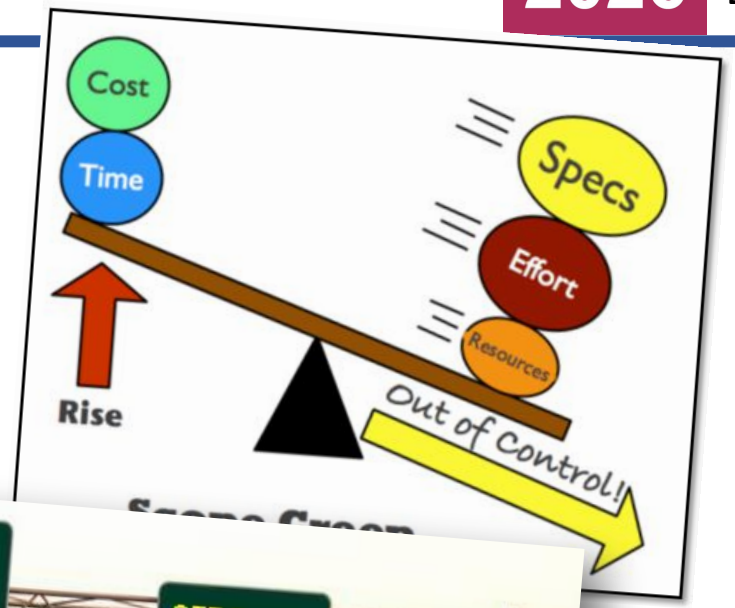
- The ICE is a valuable member of the open-book negotiating process
  - Provides a 3rd OPCC to compare to the GMP and the EE.
  - Validates
    - GMP pricing
    - Content of the final scope
    - Accuracy of the cost model
  - Demonstrates that the DOT took steps to ensure the GMP was fair and reasonable to upper management and other external stakeholders.
  - Reinforces the accuracy of the transparent pricing.

Conclusions

- The value of the open-book negotiating process is the creation of trust and understanding of current market conditions.
- Transparent pricing requires the contractor to show the owner why its prices are up-to-date and reflect current market conditions.
- Open-book process provides a mechanism to reveal missing elements or issues with the scope.
- Risk can be negotiated and mutually agreed.
  - Risks can be jointly assigned
  - Risk mitigation measures can be jointly agreed

Conclusions

- Failed open-book negotiations are the results of inaccurate early budget estimates
  - Full scope of work has not been identified and priced in the basis of estimate.
  - Early estimates are based on historic average pricing that is escalated to the future using assumptions that may not be applicable to construction commodities.
- Off-ramps are not the result of unreasonable contractor pricing.



Recommendations

- An off-ramp clause should be included in all CMGC and PDB contracts.
- Owners should detail the open-book negotiating process in their CMGC and PDB solicitations.
- The ICE provides a low cost means to validate the contractor pricing.
- Opportunities to engage in collaborative decision-making should be sought and leveraged to make “best for project” decisions.
- Relying on historic average bid tabulation pricing and engineering economics should be replaced with data-driven, top-down estimates combined with a completer and more accurate basis of design to quantify the scope.

Summary

- **The DOT controls its own destiny.**
  - ICE roles range from validating proposed GMP only (Utah) to active participation in the project development process (Arkansas).
- The decision to employ an ICE is not about economics.
  - ICE fees 0.15% to 2.5% of estimated construction costs.
- When the DOT defines how the open-book process will operate and those documents required to validate contractor pricing, it defines the level of transparency.
- Open-book process depends on transparency and collaboration.
  - Asking the ICE to bid against the contractor negatively impacts collaboration.
- An open-book process that contains the desired level of transparency often avoids the execution of an off-ramp, even if costs greatly exceed the original budget.

Wrap-up

- Questions
- Clarifications
- Comments

NCHRP Synthesis 653 – Open-Book Pricing Practices. https://doi.org/10.17226/29084.

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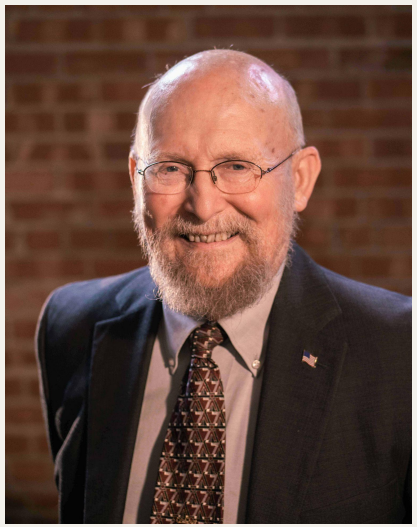

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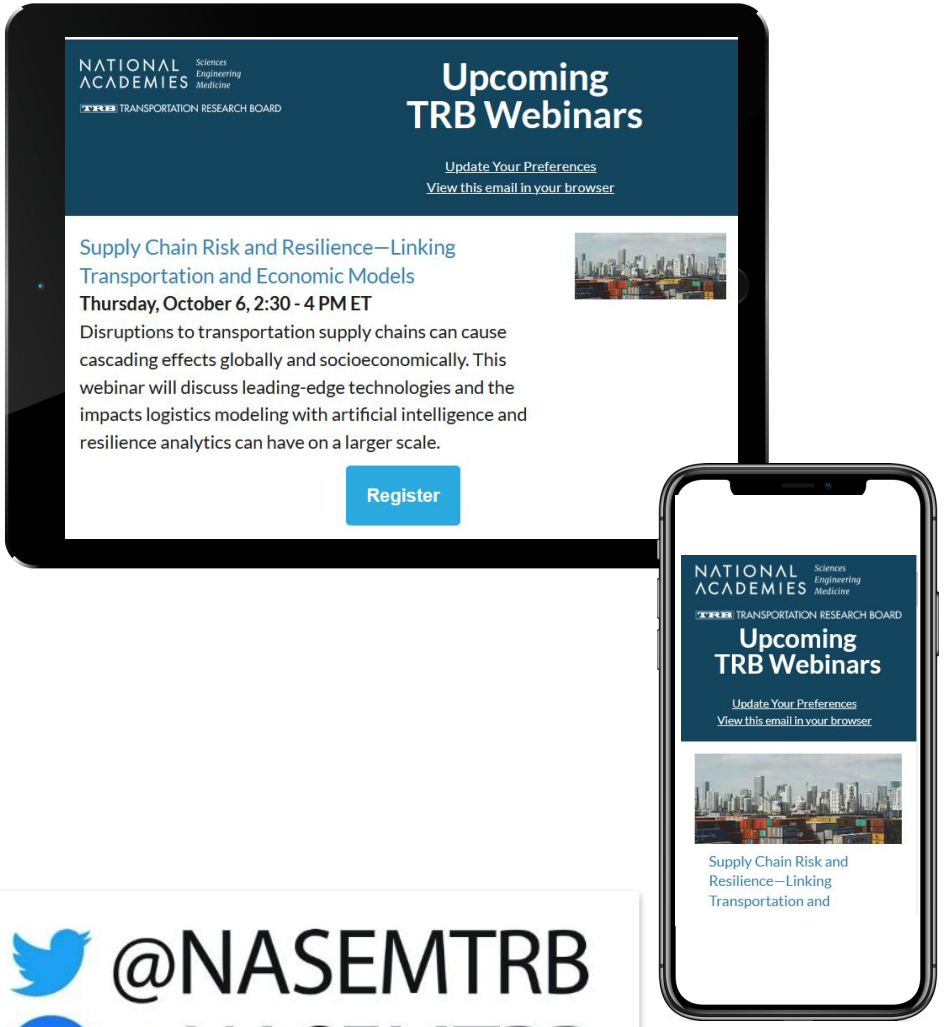

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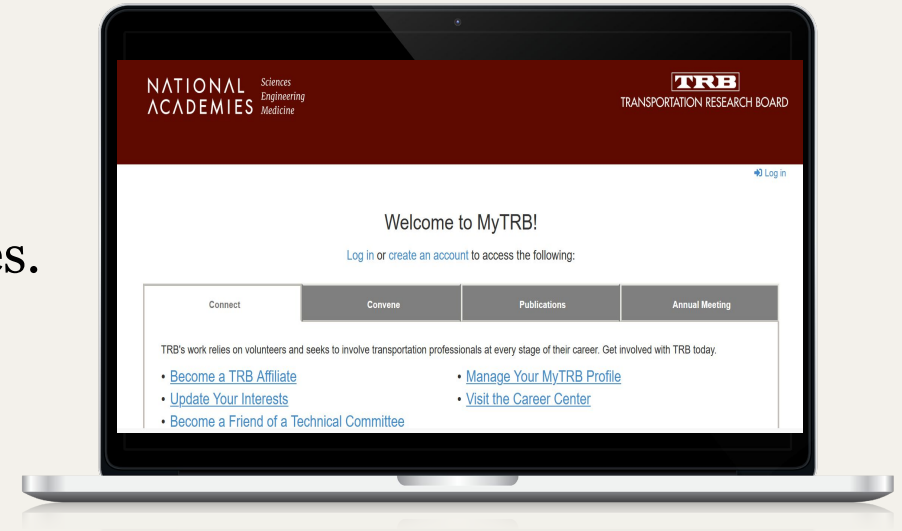

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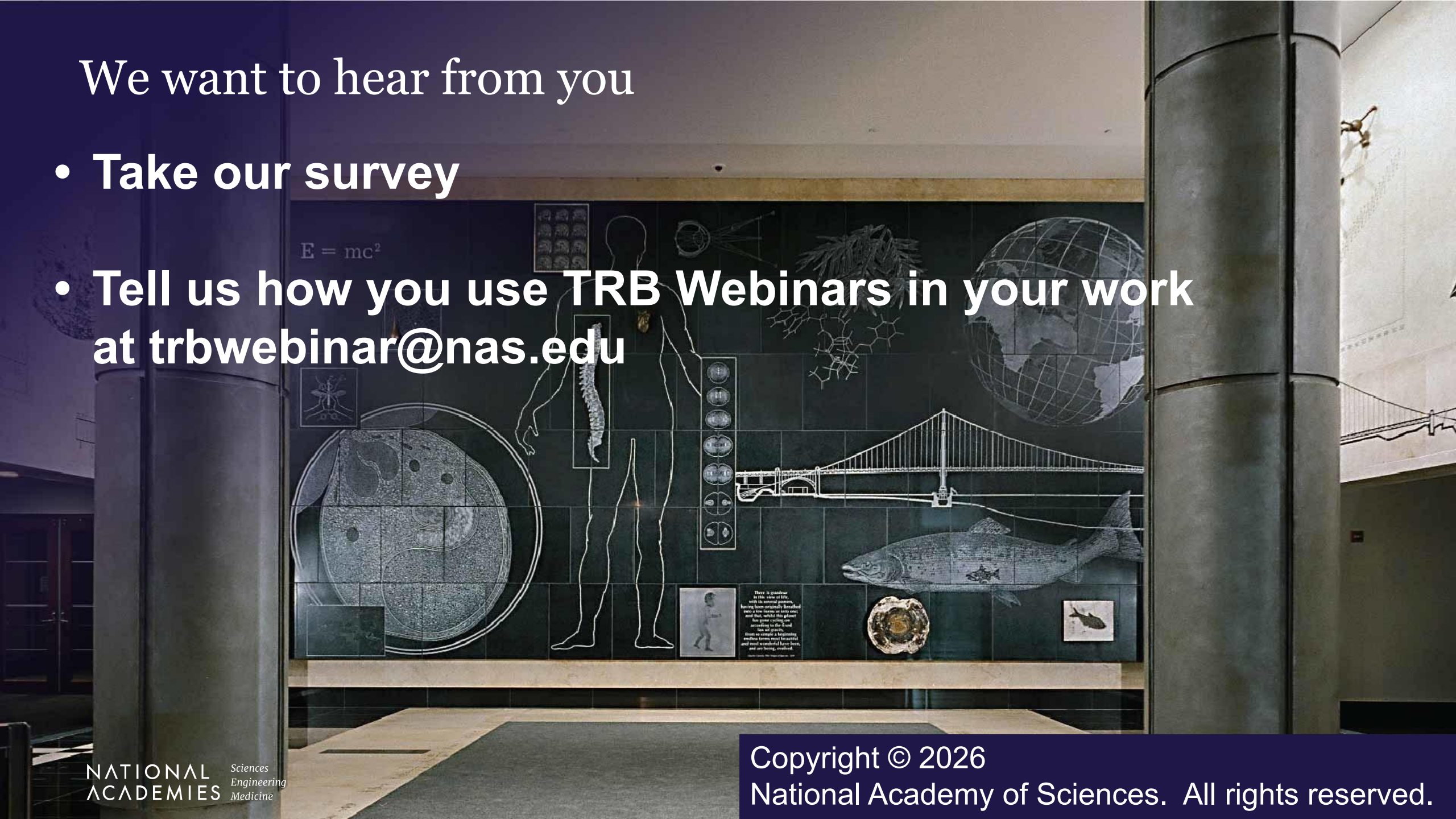

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