

Keli Wylie, P.E.
Alternative Project Delivery Administrator



Collaborative Delivery Initiatives

March 11, 2020



Design-Bid-Build



What is Design-Bid-Build?:

Planning

- Department scopes project
- Department clears project Environmentally

Design

- Department produces preliminary design
- Department produces final design

Letting

- Department advertises final design
- Contractor's first involvement-produces a unit price bid on construction of project as designed
- Construction contract awarded to the lowest responsive bid

Construction

- Contractor constructs project as designed at the unit prices bid

Contract Cost Bidding

Arkansas Department of Transportation Contract Schedule of Prices

State Job No.: 040774

Job Name: BENTON CO. LINE - BUTTERFIELD COACH RD. (S)

Federal Aid Project: NHPP-0072(57)

Line Number	Item Code and Description	Estimated Quantity	Unit Bid Price	Price Extension
0022	642 - RUMBLE STRIPS IN ASPHALT SHOULDERS	51,744.000 LF	0.30	15,523.20
0023	SP&642 - MUMBLE STRIPS IN ASPHALT SHOULDERS	22,704.000 LF	0.40	9,081.60
0024	SP&642 - CENTERLINE MUMBLE STRIPES IN ASPHALT ROADWAYS	22,704.000 LF	0.40	9,081.60
0025	718 - REFLECTORIZED PAINT PAVEMENT MARKING WHITE (10")	250.000 LF	5.00	1,250.00
0026	719 - THERMOPLASTIC PAVEMENT MARKING WHITE (6")	87,700.000 LF	1.00	87,700.00
0027	719 - THERMOPLASTIC PAVEMENT MARKING WHITE (8")	350.000 LF	2.00	700.00
0028	719 - THERMOPLASTIC PAVEMENT MARKING WHITE (12")	8,610.000 LF	5.00	43,050.00
0029	719 - THERMOPLASTIC PAVEMENT MARKING WHITE (24")	2,550.000 LF	10.00	25,500.00
0030	719 - THERMOPLASTIC PAVEMENT MARKING YELLOW (6")	185,164.000 LF	1.00	185,164.00

Time Considerations

- Department
- Liquidated Damages for exceeding contract time.
- No incentives for early completion.

Contract Cost + Time Bidding (A+C)

Arkansas Department of Transportation

JOB BB0414

PORTER RD.-HWY. 112/71B WIDENING & INTCHNG. IMPVTS. (S)
 FEDERAL AID PROJECT NHPP-540-1(262)66



10:30 a.m.

ROUTE: 49

COUNTY: WASHINGTON

DISTRICT: 4

APHN: YES

DBE Goal: 8%

Method: A+C Calendar Days

THE PURPOSE OF THIS PROJECT IS TO WIDEN 2.818 MILES OF I-49 TO ADD A THIRD LANE IN EACH TRAVEL DIRECTION AND CONSTRUCT I-49/HWY. 112 INTERCHANGE RAMPS AT FAYETTEVILLE IN WASHINGTON COUNTY. THIS PROJECT CONSISTS OF EARTHWORK, AGGREGATE BASE COURSE, ACHM BASE, BINDER, AND SURFACE COURSES, MINOR DRAINAGE STRUCTURES, SIX BRIDGE STRUCTURES (TOTAL SPAN LENGTH 459.62'), SIGN STRUCTURES, SIGNALS, GUARDRAIL, MAINTENANCE OF TRAFFIC, AND MISC. ITEMS.

BIDDERS	AMOUNT BID	DAYS BID	AMOUNT FOR AWARD CONSIDERATION
KIEWIT INFRASTRUCTURE SOUTH CO. FORT WORTH, TX	\$94,824,907.70	450	\$181,224,907.70
MANHATTAN ROAD & BRIDGE CO. TULSA, OK	\$110,582,836.67	545	\$215,222,836.67
EMERY SAPP & SONS, INC. COLUMBIA, MO	\$91,928,840.75	652	\$217,112,840.75
W.G. YATES & SONS CONST. CO. PHILADELPHIA, MS	\$109,761,716.93	640	\$232,641,716.93
CROSSLAND CONSTRUCTION CO., INC. COLUMBUS, KS	\$95,121,336.15	900	\$267,921,336.15

Site Use: \$192,000

AMOUNT FOR AWARD CONSIDERATION

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Contract Cost + Time Bidding (A+B+C)

Time Considerations:

Arkansas Department of Transportation

JOB BB0903

HWY. 71B INTCHNG. IMPVTS. (S)

FEDERAL AID PROJECT NHPP-540-1(78)85



10:00 a.m.

ROUTE: 49

COUNTY: BENTON

DISTRICT: 9

Method: A+B+C Calendar Days

APHN: YES

DBE Goal: 9%

THE PURPOSE OF THIS PROJECT IS TO REPLACE THE I-49 OVERPASS BRIDGE STRUCTURE AND MODIFY ROADWAY APPROACHES TO A SINGLE POINT URBAN INTERCHANGE (SPUI) SYSTEM AT THE HWY. 71B INTERSECTION, INSTALL NEW SIGNALS AT THE RAMPS, MOBERLY LANE, AND N. 46TH ST., AND WIDEN HWY. 71B FROM FOUR LANES TO SIX LANES IN BENTON COUNTY. THIS PROJECT CONSISTS OF REMOVAL AND DISPOSAL ITEMS, EARTHWORK, TRENCHING AND SHOULDER PREPARATION, AGGREGATE BASE COURSE, PORTLAND CEMENT CONCRETE BASE, ACHM BASE, BINDER, AND SURFACE COURSES, COLD MILLING, APPROACH SLABS AND GUTTERS, PRECAST CONCRETE BARRIER, MINOR DRAINAGE STRUCTURES, GUARDRAIL, EROSION CONTROL ITEMS, CONCRETE BARRIER WALL, RUMBLE STRIPS IN ASPHALT SHOULDERS, TRAFFIC SIGNAL ITEMS, RETAINING WALLS, A SIMPLE COMPOSITE PLATE GIRDER SPAN BRIDGE (239.21'), SHORING, PAVEMENT MARKING, AND MISC. ITEMS.

Site Use B: \$18,000

SITE CONTRACT

Site Use C: \$9,000

USE

TIME

AMOUNT FOR AWARD

BIDDERS

AMOUNT BID

DAYS

DAYS

CONSIDERATION

BIDDERS	AMOUNT BID	DAYS	DAYS	AMOUNT FOR AWARD CONSIDERATION
APAC-CENTRAL, INC. FAYETTEVILLE, AR	\$26,897,563.15	520	680	\$42,377,563.15
PHILLIPS HARDY, INC. COLUMBIA, MO	\$27,834,432.49	580	700	\$44,574,432.49
EMERY SAPP & SONS, INC. COLUMBIA, MO	\$32,353,206.61	800	800	\$53,953,206.61

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Contract Cost + Time Bidding

Purpose:

- To expedite projects by allowing contract time to be set under a competitive bidding scenario.
- Incentivize completion of the project on schedule.

Requirements:

- Contract Time bid must be supported by a Critical Path Method (CPM) schedule.
- CPM schedule is used through project to determine Contractor's progress and to evaluate the time impact of any change orders.

Benefit:

- 6,909 days saved on 110 projects (2014-2018)
- Days saved is the difference in days bid between winning bidder and 2nd low bidder.



Alternative Delivery



What is Alternative Delivery?:

Definition

- Any delivery method that involves a construction Contractor in a project's pre-construction activities.

Authority

- Specific legislative authority is necessary before alternative delivery methods can be used.

Types

- Construction Manager/General Contractor (pilot legislation) - 2017
- Design-Build (broad authority) - 2017

Purpose

- Foster innovation, identify and mitigate risk, improve constructability of design, improve cost controls, and optimize construction schedules.

Alternative Delivery

When should Alternative Delivery be used?:

Innovation

- On projects where innovation is desired to address project complexities. Design-Build is best for maximizing the use of innovations.

Design

- On projects with complicated design and maintenance of traffic components that could introduce constructability concerns.
- On projects with tight corridors, extensive third party involvement.

Cost

- On projects that need some level of cost certainty or cost control.

Schedule

- On projects that have tight timelines for completion or where impacts on customers need to be minimized.

Qualifications Based Selection (QBS)

What is Qualifications Based Selection?:

QBS

- An attempt to identify the most qualified team of experienced professionals in order to provide the best solutions for the unique problems and goals of a specific project.

Personnel

- Seeks to select committed Key Personnel who are experienced and successful in the specific need areas of the project.

Firm

- Seeks to select a firm that is experienced and successful in work that is similar to the project in scope, environment, and complexity.

Selection

- Based on a team scoring consensus using a scoring process that is disclosed in the procurement documents and contains both subjective and objective components.

Design-Build

Planning

- Department uses qualifications based selection (QBS) to select a Design-Builder to assist in preconstruction.

Letting

- Proposals submitted during QBS contain details on the project design and cost. Selection of a Design-Builder is typically by best-value formula containing both technical and cost components.

Design

- Contractor develops final design.
- Level of Department involvement in design determined by project goals

Construction

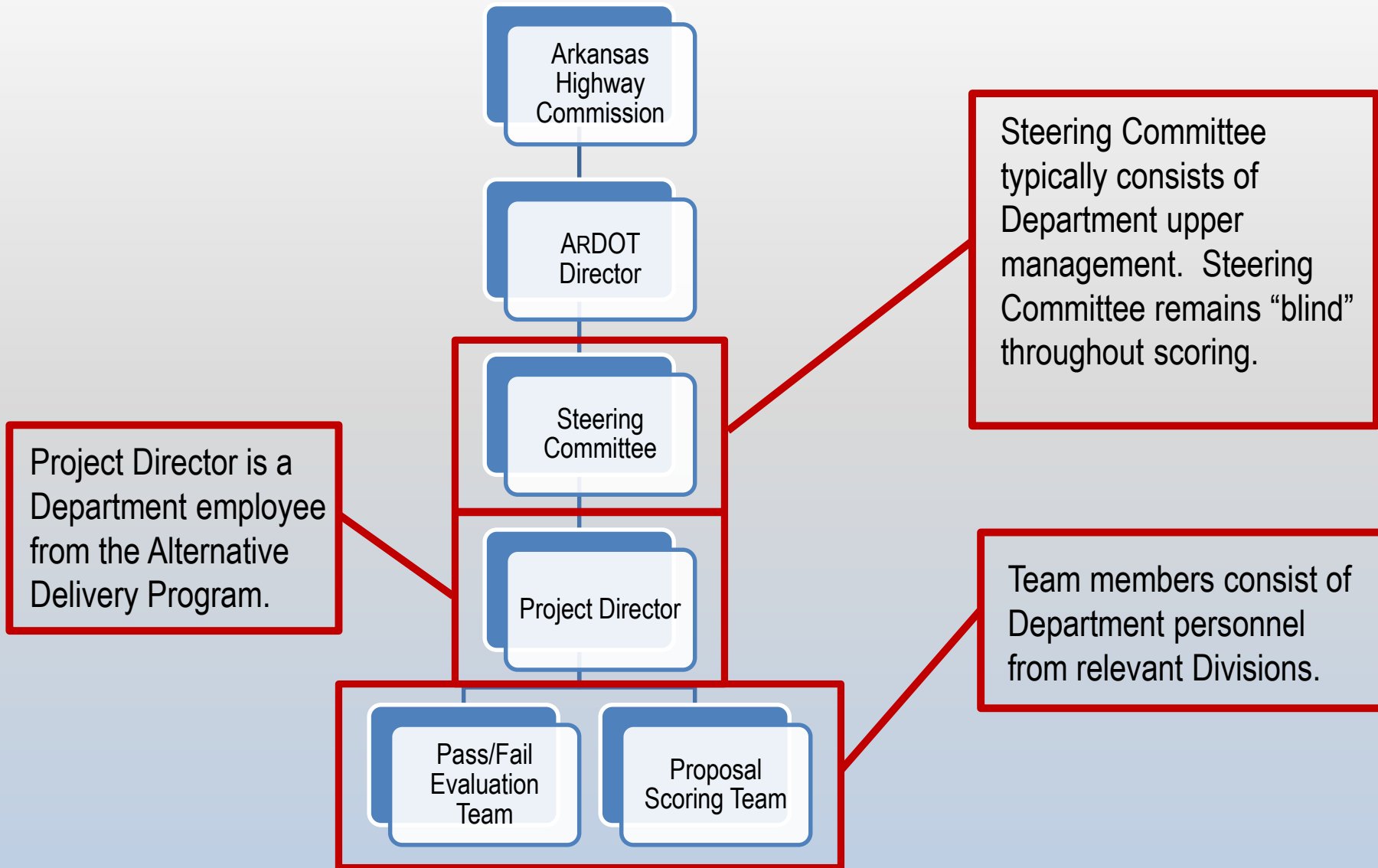
- Design-Builder constructs the project for a lump sum amount.

Design-Build Procurement (2-Phase)

RFQ

- Request for Qualifications (RFQ) is open to anyone who wants to respond with a Statement of Qualifications (SOQ).

Design-Build Scoring



3 Project Evaluation Teams (ARDOT)

Step 1:

- Submittals are checked against the pass/fail criteria of the procurement document.

Step 2:

- Passing Submittals are scored using the scoring process described in the procurement documents.

Pass/Fail Responsiveness



Organization and Key Personnel
Experience of Firms

Knowledge of Project

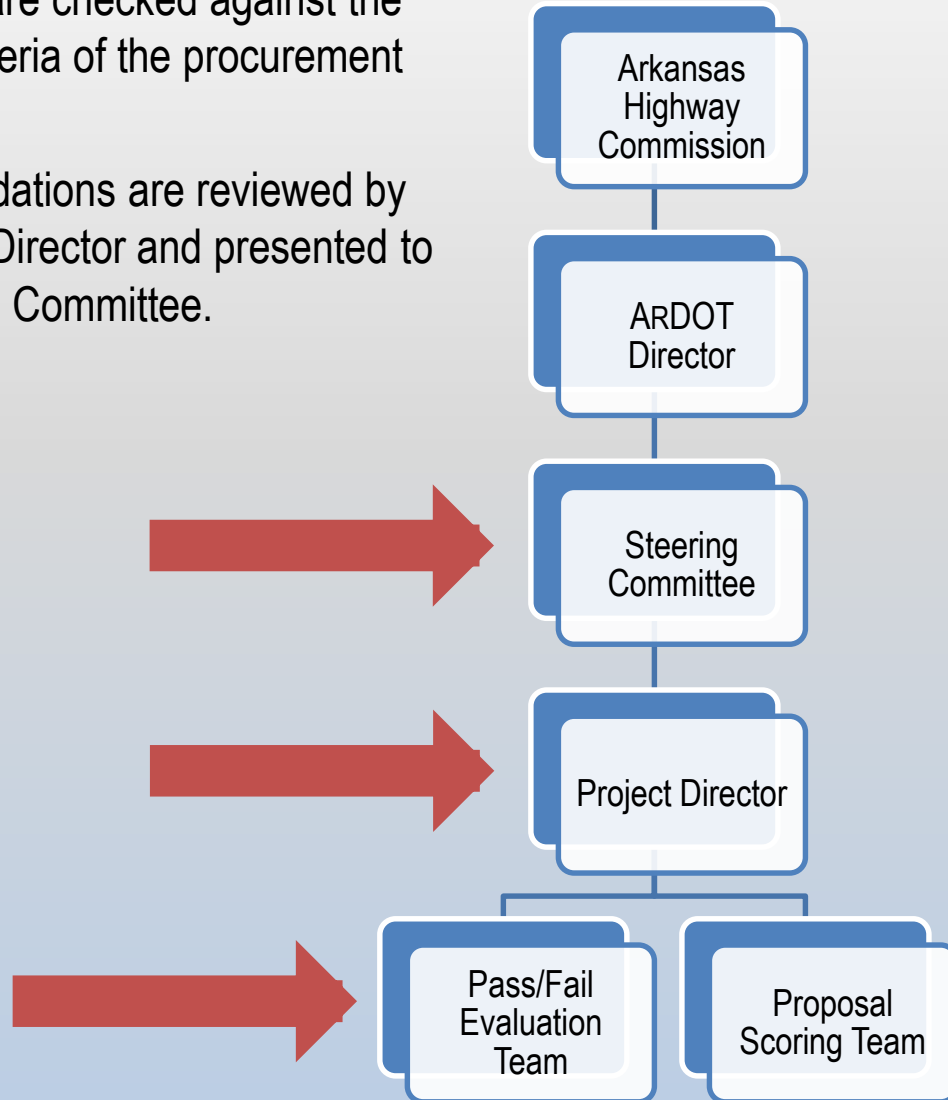
Qualitative Ratings

Qualitative Rating	Description
Exceptional	The Respondent has provided information relative to the requirements of the RFQ which are considered to SIGNIFICANTLY EXCEED the stated objectives/requirements in a beneficial way and indicates a consistently EXCEPTIONAL level of quality. The SOQ includes many strengths, including significant strengths, and very few weaknesses which must be considered minor weaknesses.
Very Good	The Respondent has provided information relative to the requirements of the RFQ which are considered to EXCEED the stated objectives/requirements in a beneficial way and indicates a VERY GOOD level of quality. The SOQ includes many strengths and only few weaknesses which must be considered minor weaknesses.
Good	The Respondent has provided information relative to the requirements of the RFQ which are considered to SLIGHTLY EXCEED the stated objectives/requirements and offers a generally GOOD level of quality. The number and/or significance of strengths must outweigh the number and/or significance of weaknesses.
Acceptable	The Respondent has provided information relative to the requirements of the RFQ which are considered to MEET the stated objectives/requirements and offers an ACCEPTABLE level of quality. The number and/or significance of strengths and weaknesses should be approximately balanced, but weaknesses may outweigh strengths.
Poor	The Respondent has provided information relative to the requirements of the RFQ which are considered to NOT MEET the stated objectives/requirements due to lack of essential information, presence of conflicting information, and use of an approach that creates undo risk for ARDOT and offers a POOR level of quality creating risk that the Respondent would fail to satisfy the requirements of the Agreement. Number and/or significance of weaknesses substantially outweighs any strengths.

Design-Build Scoring

Step 1:

- Submittals are checked against the pass/fail criteria of the procurement document.
- Recommendations are reviewed by the Project Director and presented to the Steering Committee.



Design-Build Procurement (2-Phase)

RFQ

- Request for Qualifications (RFQ) is open to anyone who wants to respond with a Statement of Qualifications (SOQ).

Short List

- SOQ are scored by the Department using a scoring process that is described in the RFQ. Typically the top three scorers are selected for the Short List.

RFP

- A Request for Proposals (RFP) is sent to each team on the Short List. A Proposal is prepared by each team in accordance with the RFP and submitted to the Department for consideration. The Proposal will typically include both a technical and a price component.

Request for Proposal (RFP)

Short Listed Firms (SOQ)

- Project Information
- Proposal Details

- The form of the Design-Build Contract
- The legal obligations of all parties

- The “sand box” for design
- Specifications

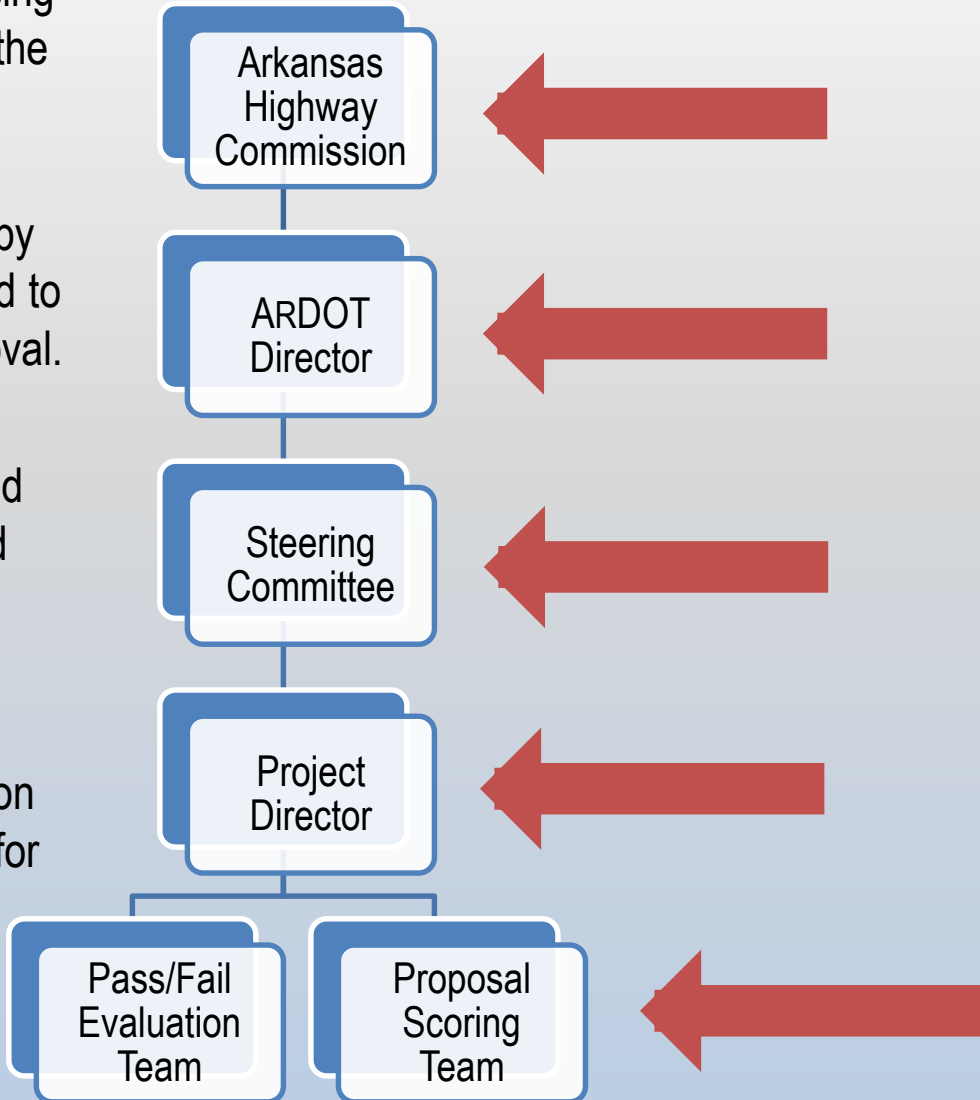
Instructions to Proposers

Design-Build Agreement

Technical Provisions

Proposal Scoring

- Passing Submittals are scored using the scoring process described in the procurement documents.
- Recommendations are reviewed by the Project Director and presented to the Steering Committee for Approval.
- Steering Committee Chairman and Project Director present Approved scoring results to the ARDOT Director for Concurrence.
- ARDOT Director presents Selection recommendation to Commission for final Selection.



Design-Build Procurement (2-Phase)

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Selection

- Proposals are scored by the Department using a scoring process that is described in the RFP. The team with the highest overall score will be selected as the Design-Builder.

Post-Procurement Activities

DBA

- Execution of the Design-Build Agreement by Department and D-B contractor.

NTP 1

- Notice to Proceed (NTP) 1 authorizes and initiates Preliminary Engineering activities, including geotechnical borings, design, utility coordination, and ROW acquisition.

NTP 2

- NTP 2 authorizes and initiates construction activities.

I-30 Project

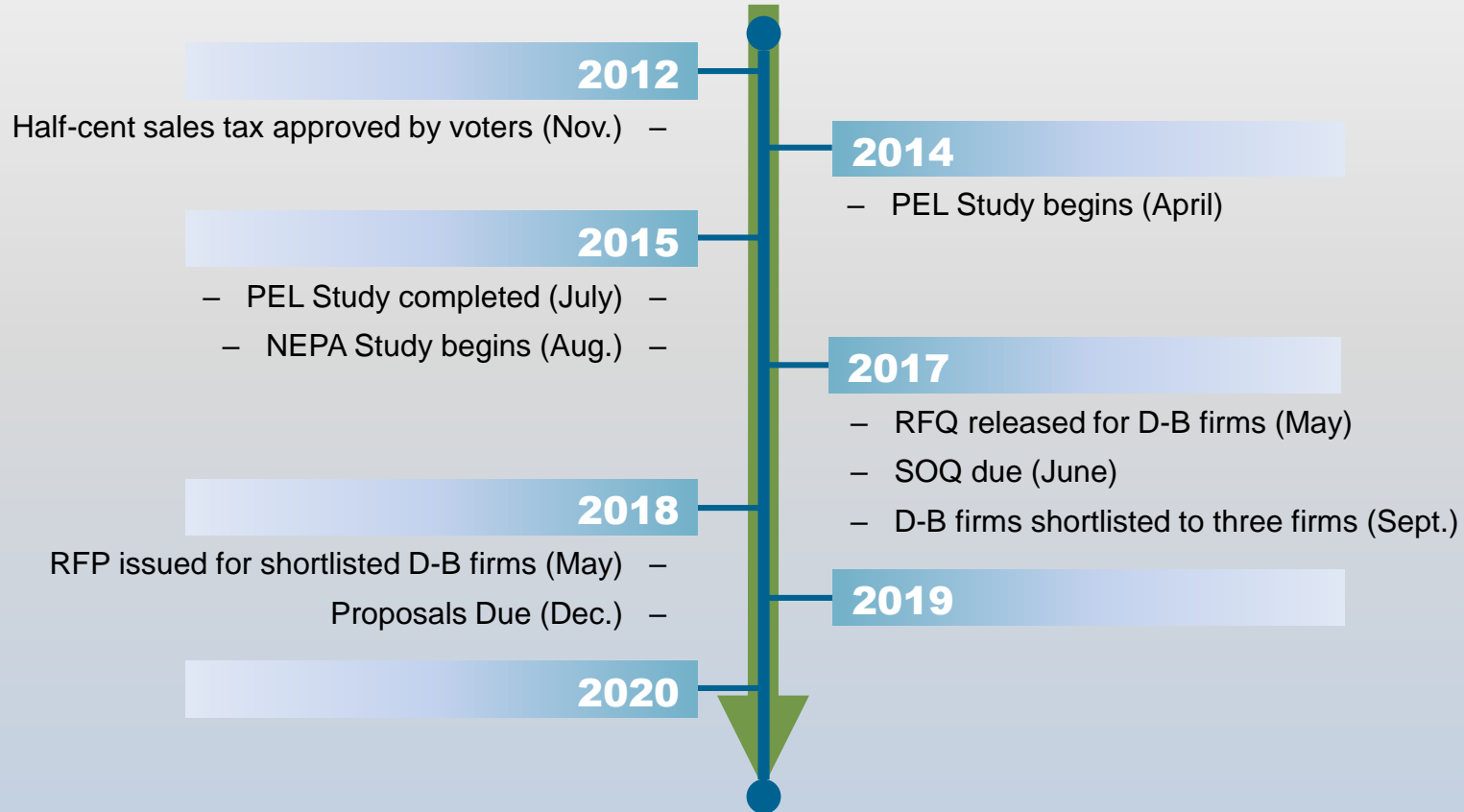


- 7.3-mile Interstate project
- Convergence of six major interstates/highways
- Major River Crossing
- Two UPRR Yard crossings
- Highest traffic volume in the State
- Complex merging and weaving throughout corridor
- Interactions with the business districts of two municipalities
- Infrastructure that is functionally and structurally deficient.



30 Crossing History

Design-Build Timeline



I-30 Project



- 7.3-mile Interstate project
- Convergence of six major interstates/highways
- Major River Crossing
- Two UPRR Yard crossings
- Highest traffic volume in the State
- Complex merging and weaving throughout corridor
- Interactions with the business districts of two municipalities
- Infrastructure that is functionally and structurally deficient.
- **\$535M – Available Public Funds**



Design-Build Procurement (2-Phase)

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Optimization and Refinement (OR) component

Selection

- Proposals are scored by the Department using a scoring process that is described in the RFP. The team with the highest overall score will be selected as the Design-Builder.

Proposal Scoring

Technical Proposal = 450 points

Financial Proposal = 1,400 points

Optimization and Refinement Proposal = 150 points

Total Available Points = 2,000 points

Maximize the project scope for the Available Public Funds

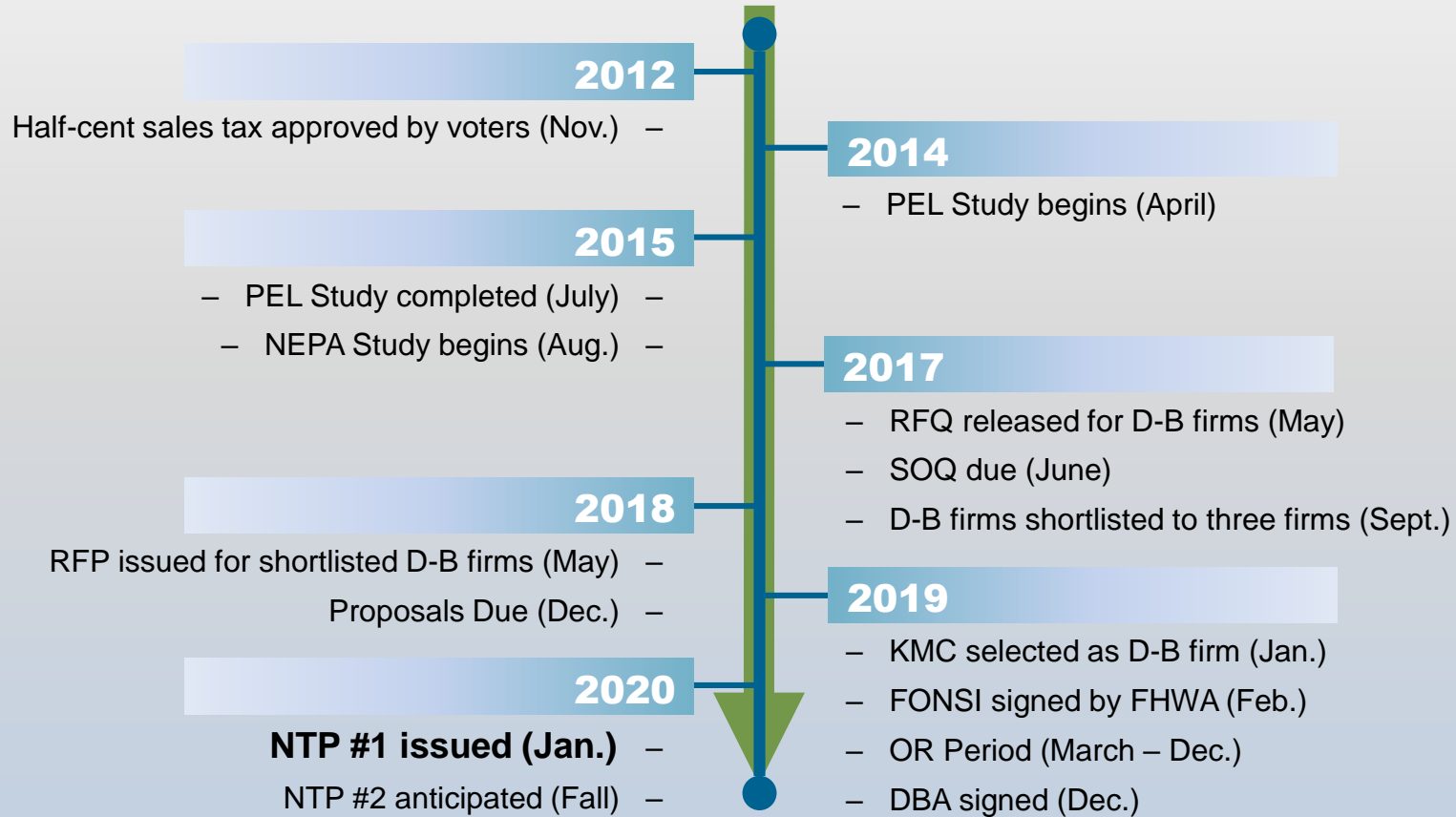
- ✓ Post award optimization and refinement period (“OR Period”)
 - ✓ Six months
 - ✓ Lump sum monthly payments to D-B
 - ✓ Jointly mitigate costly risks
 - ✓ Robust Value Engineering process

- ✓ Designed to accommodate concurrent D-B procurement and NEPA analysis (CFR 636.109)

- ✓ Ability to incorporate work product from non-selected proposer into plan

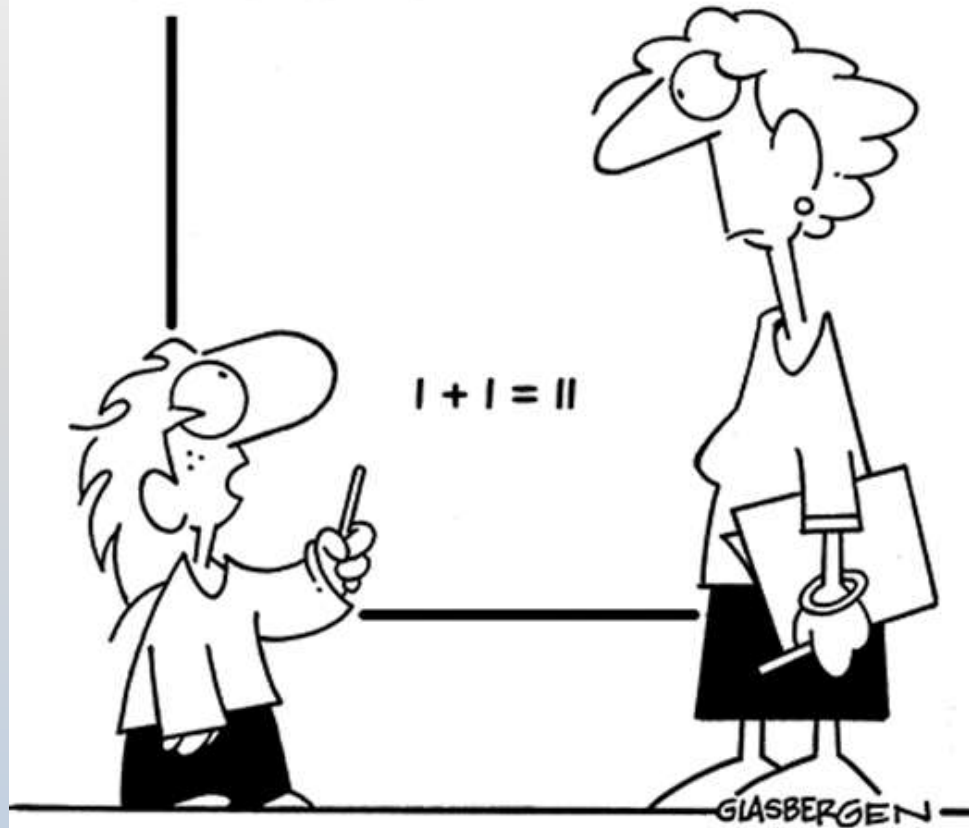
30 Crossing History

Design-Build Timeline



Questions?

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"If you want a better answer, ask a better question!"