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09 DECEMBER 2022

DRBF THE HAGUE REGIONAL CONFERENCE

Study of the effective use of Dispute Review Boards on PPP (P3) Infrastructure Projects in the USA



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Outline of CalPoly Study

Research Objective

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Methodology

Result and Analysis Conclusion & Recommendations







Research Objectives

To determine effective arrangements/models of DRBs that could be used at various party/contract interface levels on P3 projects To develop a framework for the effective analysis of DRB options based on P3 project-specific objectives and constraints



Methodology Workflow

| What are the major potential risks/disputes that occur on P3 Infrastructure projects | What are the various arrangements for using DRBs on P3 Infrastucture projects in North America as per contract requirements | How are DRBs implemented on projects in North America | What are the effective DRB arrangements that could be used given various interface levels and various project objectives and constraints | | |
|---|---|---|---|--|--|
| Literarture Review | Content Analysis Proposed DRB Models DRB Models DRB Committee Meetings | Preliminary Questionnaire and Focus Group Discussions | DRBAID Case Study Vetting - Content analysis and Interview Revised DRBAID | | |



CalPoly Pomona



CalPoly Study Methodology Overview

Content analysis of 10 P3 projects Each owner agency had its own standard way of arranging the DRB process

DRBF P3 Task Force + Three focus groups * Identified the various factors to determine Model selection * Identified pros and cons for each Model * Formed the basis of the Model selection tool development

> Case study vetting DRB Model selection tool applied to actual P3 projects for owner agency feedback

> > Major contribution of this study Developed a DRB Model selection tool that can be used to address all interface levels of P3s (major "friction points")



Problem Statement: P3 Structure "Friction Points"





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| | RESEARCH QUESTIONS | | | | | | | | | |
|---|---|---|---|--|--|--|--|--|--|--|
| What are the major potential risks/disputes that occur on P3 Infrastructure projects | What are the various arrangements for using DRBs on P3 Infrastucture projects in North America as per contract requirements | How are DRBs implemented on projects in North America | What are the effective DRB arrangements that could be used given various interface levels and various project objectives and constraints | | | | | | | |
| Literarture Review | Content Analysis Proposed DRB Models DRB Committee Meetings | Preliminary Questionnaire and Focus Group Discussions | Case Study- Content analysis and Interview Revised DRBAID | | | | | | | |

10 P3 infrastructure projects in United States

Benchmarked P3 contracts in terms of dispute resolution processes

Excel sheet developed to retrieve and document contracts information

Noted whether a DRB was used

If used, detailed analysis of dispute ladder noted, along with type of DRB deployed

If no DRB used, noted whether P3 contract included alternatives



Methodology – DRBF P3 Task Force Input



DRBF P3 Task Force - formed in 2016 to assist P3 project parties in adopting the Dispute Board process and implementing best practices

> Discussed various DRB Model arrangements that could be developed to address P3 parties' interface issues

Adopted DRBF Task Force-proposed 5 DRB Model arrangements







Methodology – Proposed Models













Subject matter experts to evaluate various DRB Models

3 Focus Groups –90 minutes sessions on Zoom

Included a preliminary survey to collect information on participants' previous experiences with DRBs and P3 projects



Methodology – Case study content analysis/interviews for selected P3 projects



| Project Name | Location | Interviewed |
|---|--|--|
| Central 70 project | Denver, Colorado | Project Engineer (Owner) |
| I-75 Modernization Project Segment 3 | Detroit Metropolitan Region, Michigan | Project Engineer (Owner) |
| Southern Ohio Veterans Memorial Highway (Portsmouth Bypass) project | Scioto County, Ohio | DRB Chair, Owner Project Engineer and Concessionaire rep |



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Results and Analysis





Selected P3 Projects Content Analysis

| No. | Project | Location | P3 type | Cost |
|-----|--|----------------|---------|-----------------|
| 1 | Michigan I-75 Modernization Project (Segment 3) | Michigan | DBFM | \$1.4 billion |
| 2 | I-77 Managed Lanes Project | North Carolina | DBFOM | \$647 million |
| 3 | Belle Chasse Bridge and Tunnel Replacement | Louisiana | DBFOM | \$148 million |
| 4 | Central 70 Project | Colorado | DBFOM | \$1.2 billion |
| 5 | US 36 | Colorado | DBFOM | \$208.4 million |
| 6 | Metro Region Freeway Lighting | Michigan | DBFOM | \$172 million |
| 7 | Rapid Bridge Replacement Project | Pennsylvania | DBFM | \$1.118 billion |
| 8 | SH99 Grand Parkway Segment F - G Project | Texas | DBM | \$1.04 billion |
| 9 | North Tarrant Express Segments 1&2a | Texas | DBFOM | \$650 million |
| 10 | I-595 Corridor Roadway Improvements | Florida | DBFOM | \$1.8 billion |



| | | | | | - | _ | | | | | _ | | | | - | |
|--|---------|--------------------|---|--|---------|--|---|-----------------|------------------|---------------------------|---------------|----------------|--------------------------------|--------------------------------|-----------------------------------|--|
| Project Name | РЗ Туре | Cost | Owner | Concessionnaire party arrangement | Partner | Design ated Senior Person of each Party | Disp Third party facilitat or | ute reso DAB | lution la DRB | dder Arbitra I tion | Mediat ion | Litigati on | DRB Model arrangme nt | Members Selection Method | Binding/ Non- binding DRB | If non- binding, binding option |
| Michigan I-75 Modernization Project (Segment 3) | DBFM | \$1.4 billion | Michigan Department of Transportation (MDOT) | John Laing (40%) AECOM (30%) Dan's Excavating, AJAX Paving, Jay Dee Contractors (30%) | | \checkmark | | | \checkmark | | | \checkmark | Model 1 | Conventional Selection | Non-binding | Litigation |
| I-77 Managed Lanes Project | DBFOM | \$647 million | North Carolina Department of Transportation | Cintra I-77 Mobility Partners, LLC 50.10% GCM TH Investments, LLC 20.58% John Laing I-77 Holdco Corp 10.00% Aberdeen Infrastructure Investment I-77 LLC 10.00% GCM BD Investments, LLC 9.32% | | ~ | | | | | / | > | No DRB | No DRB | No DRB Nonbinding mediation | Litigation |
| Belle Chasse Bridge and Tunnel Replacement | DBFOM | \$148 million | Louisiana Department of Transportation | Plenary Infrastructure Belle Chasse (PIBC) | | \checkmark | \checkmark | | | | / | \checkmark | No DRB | No DRB | No DRB Nonbinding mediation | Litigation |
| Central 70 Project | DBFOM | \$1.2 billion | Colorado Department of | Kiewit Development Company (40%) Meridiam (60%) | | \checkmark | | | \checkmark | | | \checkmark | Model 1 - Multiple | Conventional Selection | Non-binding | Litigation |
| US 36 | DBFOM | \$208.4 million | Colorado Department of Transportation | Plenary Roads Finco LP (Plenary) - the TIFIA Borrower | | \checkmark | | | \checkmark | | | \checkmark | Model 1 | Joint Selection | Non-binding | Litigation |
| Metro Region Freeway Lighting | DBFOM | \$172 million | Michigan Department of Transportation | Star America Fund GP, LLC (85% equity partner) Aldridge Electric Company (15% equity partner) | | \checkmark | | | \checkmark | | | \checkmark | Model 1 | Conventional Selection | Non-binding | Litigation |
| Rapid Bridge Replacement Project | DBFM | \$1.118 billion | Pennsylvania | Plenary Group USA Ltd. (80%) | | ./ | | | ./ | | | | Model 1 - Multiple | Conventional Selection | Non-binding | Litigation |
| SH99 Grand Parkway Segment F - G Project | DBM | \$1.04 billion | Texas Department of Transportation | Zachry-Odebrecht Parkway Builders, a Texas joint venture comprised of Zachry Construction Corporation and Odebrecht Construction, Inc | | ✓ ✓ | | ✓ | <u> </u> | | / | • | DAB | No DRB | DAB Binding | Enigation |
| North Tarrant Express Segments 1&2a | DBFOM | \$650 million | Texas Department of Transportation | Cintra Concesiones de Infraestructuras de Transporte, S.A. (56.7%) Meridiam Infrastructure (33.3%) Dallas Police and Fire Pension System (10%) | ✓ | \checkmark | | ~ | | | / | | DAB | No DRB | DAB Binding | |
| I-595 Corridor Roadway Improvements | DBFOM | \$1.8 billion | Florida Department of Transportation | I-595 Express, LLC (ACS Infrastructure Development and TIAA (50/50 split of the equity portion on loan)) as Concessionaire | | \checkmark | | | \checkmark | | | | Model 1 | Conventional Selection | Non-binding | Any ADR |

| | | | | | | | | Disp | ute reso | lution la | dder | | | | | | |
|--|---------|--------------------|---|--|--|----------------|--|-----------------------------------|--------------|--------------|-----------------|---------------|----------------|--------------------------------|--------------------------------|-----------------------------------|--|
| Project Name | РЗ Туре | Cost | Owner | Concess | ionnaire party arrangement | Partner ing | Design ated Senior Person of each Party | Third party facilitat or | DAB | DRB | Arbitra tion | Mediat ion | Litigati on | DRB Model arrangme nt | Members Selection Method | Binding/ Non- binding DRB | If non- binding, binding option |
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| I-77 Managed Lanes Project | DBFOM | \$647 millio | Gove | rnment | Entity (GE) | | Single Dispu | e ute | | | | ~ | √ | No DRB | No DRB | No DRB Nonbinding mediation | Litigation |
| Belle Chasse Bridge and Tunnel Replacement | DBFOM | \$148 millio | SDI | ↓ IlConce | scionaire | | Board | d | | | | \checkmark | \checkmark | No DRB | No DRB | No DRB Nonbinding mediation | Litigation |
| Central 70 Project | DBFOM | \$1.2 billion | | | |) | | | | | | | \checkmark | Model 1 - Multiple | Conventional Selection | Non-binding | Litigation |
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| Metro Region Freeway Lighting | DBFOM | \$172 millio | Ļ | | | | | | | | | | 1 | Model 1 | Conventional Selection | Non-binding | Litization |
| Rapid Bridge Replacement Project | DBFM | \$1.118 billion | Design-Buil | der | O & M Provider | - | | Stand | | vitation | n to | | \checkmark | Model 1 - Multiple | Conventional Selection | Non-binding | Litigation |
| SH99 Grand Parkway Segment F - G Project | DBM | \$1.04 billion | of Transportation | Zachry Co Odebrecht | onstruction Corporation and Construction, Inc | √ | √ | allend | ∩ √ | leeun | ys | \checkmark | | DAB | No DRB | DAB Binding | |
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| I-595 Corridor Roadway Improvements | DBFOM | \$1.8 billion | Florida Department of Transportation | I-595 Expr Infrastruct (50/50 spli loan)) as C | ress, LLC (ACS ure Development and TIAA t of the equity portion on Concessionaire | | ~ | | | \checkmark | | | | Model 1 | Conventional Selection | Non-binding | Any ADR |



Result & Analysis

Focus Group





| | MODEL EVALUATION | | | | | | | | | | |
|--|---|--|--|---|--|--|--|--|--|--|--|
| EVALUATION ASSUMPTIONS | The project delivery method will be Design Build Finance Operate Maintain (DBFOM) Assume the project has good P3 project governance/management practices in place Assume the project has early selection of DB members and use for duration of projects Assume contract agreement allows DB to handle any type of dispute (that is, both technical and financial) Assume use of a DB Process (even though details may vary, such as separate technical and financial DRBs) Assume only Owner, Concessionaire, DBT, O&M involvement, and <u>not</u> Financial Entities or Other Stakeholders are part of the DB Process | | | | | | | | | | |
| Model Evaluation | Model 1.0 - Conventional DB | Model 2.0 | Model 3.0 | Model 4.0 | Model 5.0 - Omnibus | | | | | | |
| | DB Process at the Concession Contract level only, with a standing invitation for the D&B Contractor and O&M entity to attend the Concession level DB meetings | Three separate DB Processes, with one covering the Concession Contract, one covering the D&B Contract, and one covering the O&M Contract for the full term | Two separate DB Processes, one for the Concession Contract, and one covering the D&B Contract and the early years of the O&M Contract | One DB Process at the D&B Contract and O&M contract level | One DB Process covering the Concession, the D&B Contract and the O&M Contract | | | | | | |
| | Dener SPVE anoexclosular SPVE anoexclosular Design Biblior Design Biblior Design Biblior | Over | Durier Deriver SRVCoccessionalie SRVCoccessionalie Deriver De | Dumer SPWCansessionative SPWCansessionative Design-Ballder 0.6 till Provider Design-Ballder 0.6 till Provider | Over SPECanoantoration Design=3.attion 0.6.80 Provider | | | | | | |
| Have you been involved in this DB arrangement before? (Yes/No) | | | | | | | | | | | |
| Using Model 1.0 "cost" (defined by out of pocket cost of DB Process) as a baseline, how does each other Model compare (e.g., lower, higher, same)? Justification? Please include actual cost range if available | | | | | | | | | | | |
| Using Model 1.0 time (defined by DB process time from dispute initiation to resolution) as a baseline, how does each other Model compare (e.g, shorter, longer, same)? Justification? | | | | | | | | | | | |
| How does the parties' participation in each Model impact (improve) the avoidance and resolution of disputes? | | | | | | | | | | | |
| What impediments/barriers would you foresee in implementing the DB Process in these various arrangements? | | | | | | | | | | | |
| How effective is the Model at bringing up all issues that might give rise to disputes within the overall P3 framework and contracts? | | | | | | | | | | | |
| Does the Model enable all relevant information and people to be available to/within the DB Process (e.g., including subcontractors, designers, lenders and financial | | | | | | | | | | | |

| | | 1 | MODEL EVALUATION | | | | | | | |
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| Have you been involved in this DB arrangement before? (Yes/No) | 1. Have you been involved in any of this DB arrangement before? | | | | | | | | | |
| Using Model 1.0 "cost" (defined by out of pocket cost of DB Process) as a baseline, how does each other Model compare (e.g., lower, higher, same)? Justification? Please include actual cost range if available | Most Inv Also Hyb | olved Model was rid Model of Moc | Model 1 lel 1 and 5 | | | | | | | |
| Using Model 1.0 time (defined by DB process time from dispute initiation to resolution) as a baseline, how does each other Model compare (e.g, shorter, longer, same)? Justification? How does the parties' participation | | | | | | | | | | |
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| How effective is the Model at bringing up all issues that might give rise to disputes within the overall P3 framework and contracts? | | | | | | | | | | |
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| | | | MODEL EVALUATION | | | | | | | | |
|--|--|---|--|--|---|--|--|--|--|--|--|
| EVALUATION ASSUMPTIONS | 1. The project delivery method will be 2. Assume the project has good P3 proj 3. Assume the project has early selectio 4. Assume contract agreement allows D 5. Assume use of a DB Process (even th 6. Assume only Owner, Concessionaire | e project delivery method will be Design Build Finance Operate Maintain (DBFOM) sume the project has good P3 project governance/management practices in place sume the project has early selection of DB members and use for duration of projects sume contract agreement allows DB to handle any type of dispute (that is, both technical and financial) sume use of a DB Process (even though details may vary, such as separate technical and financial DRBs) sume only Owner, Concessionaire, DBT, O&M involvement, and <u>not</u> Financial Entities or Other Stakeholders are part of the DB Process | | | | | | | | | |
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| Have you been involved in this DB arrangement before? (Yes/No) | 2. Using Mod | 2. Using Model 1.0 "cost" (defined by out-of-pocket cost of DB Process) as a baseline, | | | | | | | | | |
| Using Model 1.0 "cost" (defined by out of pocket cost of DB Process) as a baseline, how does each other Model compare (e.g., lower, higher, same)? Justification? Please include actual cost range if available | ng Model 1.0 "cost" (defined by of pocket cost of DB Process) as iseline, how does each other del compare (e.g., lower, higher, same)? Justification? Model 1 as baseline Model 1 as baseline | | | | | | | | | | |
| Using Model 1.0 time (defined by DB process time from dispute initiation to resolution) as a baseline, how does each other Model compare (e.g. shorter, longer, same)? Justification? | Model 3 Model 4 | two times model half the model 1 a | 1 and | | | | | | | | |
| How does the parties' participation in each Model impact (improve) the avoidance and resolution of disputes? | Model 5 | Model 5 - 1.5 times the cost of model 1. | | | | | | | | | |
| What impediments/barriers would you foresee in implementing the DB Process in these various arrangements? | Cost for e | each model will be ature of dispute. | e dependent on ho | w often the DRB me | ets and depend | | | | | | |
| How effective is the Model at bringing up all issues that might give rise to disputes within the overall P3 framework and contracts? | | | | | | | | | | | |
| Does the Model enable all relevant information and people to be available to/within the DB Process (e.g., including subcontractors, designers, lenders and financial | | | | | | | | | | | |

| | | | | MODEL EVALUATION | | | | | | | |
|--|---|--|--|--|--|---|--|--|--|--|--|
| EVALUATION ASSUMPTIONS | 1. Tl 2. As 3. As 4. As 5. As 6. As | The project delivery method will be Design Build Finance Operate Maintain (DBFOM) Assume the project has good P3 project governance/management practices in place Assume the project has early selection of DB members and use for duration of projects Assume contract agreement allows DB to handle any type of dispute (that is, both technical and financial) Assume use of a DB Process (even though details may vary, such as separate technical and financial DRBs) Assume only Owner, Concessionaire, DBT, O&M involvement, and not Financial Entities or Other Stakeholders are part of the DB Process | | | | | | | | | |
| Model Evaluation | Mod | el 1.0 - Conventional DB | Model 2.0 | Model 3.0 | Model 4.0 | Model 5.0 - Omnibus | | | | | |
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| | | Comer SRVCanonacionality SRVCANING SR | Over | Denier Denier SPAConsessionale Design-Station Design-Station Design-Station Design-Station | Dumar SPI/Consessionation SPI/Consessionation Design=Baildier O & III Provider | Owner SPVICencentorative SPVICencentorative Design=Builder O & N Provider | | | | | |
| Have you been involved in this DB arrangement before? (Yes/No) | | 3. Using Model 1.0 time (defined by DRB process time from dispute initiation to | | | | | | | | | |
| Using Model 1.0 "cost" (defined by out of pocket cost of DB Process) as a baseline, how does each other Model compare (e.g., lower, higher, same)? Justification? Please include actual cost range if available | | resolution) as a baseline, how does each other Model compare (e.g., shorter, longer, same)? | | | | | | | | | |
| Using Model 1.0 time (defined by DB process time from dispute initiation to resolution) as a baseline, how does each other Model compare (e.g, shorter, longer, same)? Justification? | | ModelsModel | 5 2, 3, and 4 - alm 5 - longer time. | ost the same time | as Model 1. | | | | | | |
| How does the parties' participation in each Model impact (improve) the avoidance and resolution of disputes? | | Time variability by type and complexity of the dispute | | | | | | | | | |
| What impediments/barriers would you foresee in implementing the DB Process in these various arrangements? | | | | | | | | | | | |
| How effective is the Model at bringing up all issues that might give rise to disputes within the overall P3 framework and contracts? | | | | | | | | | | | |
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| | Sever SPVEncentionalise SPVEnc | Com Com Distance Distan | Denar Denar BPWCorressionaire Design-Station Design-Statio | Denar BPWCansessionalite BPWCansessionalite DFFWCansessionalite DFWCansessionalite | Owner StriftCancentionality Design=3.stder 0 & U N Provider | | | | | |
| Have you been involved in this DB arrangement before? (Yes/No) | 4. How does | the parties' partic | ipation in each Mo | del impact (improve | e) the avoidance | | | | | |
| Using Model 1.0 "cost" (defined by out of pocket cost of DB Process) as a baseline, how does each other Model compare (e.g., lower, higher, same)? Justification? Please include actual cost range if available Both model 1 and model 5 are expected to have a similar impact if the design-builder and O&M participate in the meetings for model 1. Model 4 will own the significant risk because no owner involvement. Model 2 will be difficult to implement when there is an interface agreement between the design-builder and the O&M. | | | | | | | | | | |
| What impediments/barriers would you foresee in implementing the DB Process in these various arrangements? | | | | | | | | | | |
| How effective is the Model at bringing up all issues that might give rise to disputes within the overall P3 framework and contracts? | | | | | | | | | | |
| Does the Model enable all relevant information and people to be available to/within the DB Process (e.g., including subcontractors, designers, lenders and financial | | | | | | | | | | |

| | | | MODEL EVALUATION | | | | | | | | |
|--|--|--|--|---|--|--|--|--|--|--|--|
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| | Store SPVE accessionate SPVE a | Dear Dear Billionestant Billionest Billionest Dear Dea | Denar Denar BPVCorressionaire Design-Staller 0 & W Provider Design-Staller | Denar SPUC answestionative SPUC answestionative DEVEC answestionative Develop Baldor O & B Provider D & D Process | Oxeer SPECancentorative Design=3.464er O & U B Proveier | | | | | | |
| Have you been involved in this DB arrangement before? (Yes/No) | 5. What impe | 5. What impediments/barriers would you foresee in implementing the DB Process in | | | | | | | | | |
| Using Model 1.0 "cost" (defined by out of pocket cost of DB Process) as a baseline, how does each other Model compare (e.g., lower, higher, same)? Justification? Please include actual cost range if available Crosss relation conflicts within the Design Build Team and O&M team could be | | | | | | | | | | | |
| DB process time from dispute initiation to resolution) as a baseline, how does each other Model compare (e.g. shorter, longer, same)? Justification? | barrier fo Model 5 | or Model 3 and Mo will require a holis | odel 4. stic management a | pproach. | | | | | | | |
| How does the parties' participation in each Model impact (improve) the avoidance and resolution of disputes? | Major ba | rrier in member s | election for Model | s 2, 3 and 5. | | | | | | | |
| What impediments/barriers would you foresee in implementing the DB Process in these various arrangements? | | | | | | | | | | | |
| How effective is the Model at bringing up all issues that might give rise to disputes within the overall P3 framework and contracts? | | | | | | | | | | | |
| Does the Model enable all relevant information and people to be available to/within the DB Process (e.g., including subcontractors, designers, lenders and financial | | | | | | | | | | | |

| | | | | MODEL EVALUATION | | | |
|--|---|--|--|--|--|---|--|
| EVALUATION ASSUMPTIONS | The project delivery method will be Design Build Finance Operate Maintain (DBFOM) Assume the project has good P3 project governance/management practices in place Assume the project has early selection of DB members and use for duration of projects Assume contract agreement allows DB to handle any type of dispute (that is, both technical and financial) Assume use of a DB Process (even though details may vary, such as separate technical and financial DRBs) Assume only Owner, Concessionaire, DBT, O&M involvement, and <u>not</u> Financial Entities or Other Stakeholders are part of the DB Process | | | | | | |
| Model Evaluation | Mod | lel 1.0 - Conventional DB | Model 2.0 | Model 3.0 | Model 4.0 | Model 5.0 - Omnibus | |
| | | Process at the Concession tract level only, with a standing ation for the D&B Contractor O&M entity to attend the cession level DB meetings | Three separate DB Processes, with one covering the Concession Contract, one covering the D&B Contract, and one covering the O&M Contract for the full term | Two separate DB Processes, one for the Concession Contract, and one covering the D&B Contract and the early years of the O&M Contract | One DB Process at the D&B Contract and O&M contract level | One DB Process covering the Concession, the D&B Contract and the O&M Contract | |
| | | Comer Comer SRVCanonacionalis SRVCANIS SRV | Cover Co | Durier Deriver SRVCoccessionalie SRVCoccessionalie Deriver De | Denier SPWCancessSonatie SPWCancessSonatie Decigo_Builder C.6 III Provider Decigo_Builder | Owner Strift Cancendration BPNC Cancendration Design-Builder O & N Provider Design-Builder | |
| Have you been involved in this DB arrangement before? (Yes/No) | | 6. How effective is the Model at bringing up all issues that might give rise to disputes | | | | | |
| Using Model 1.0 "cost" (defined by out of pocket cost of DB Process) as a baseline, how does each other Model compare (e.g., lower, higher, same)? Justification? Please include actual cost range if available | | within the overall P3 framework and contracts? Increased compartmentalization with separate DRB processes will result in fewer issues being raised | | | | | |
| Using Model 1.0 time (defined by DB process time from dispute initiation to resolution) as a baseline, how does each other Model compare (e.g, shorter, longer, same)? Justification? | Effectiveness will vary based on the nature of the disputes that occur. | | | | | | |
| How does the parties' participation in each Model impact (improve) the avoidance and resolution of disputes? | | | | | | | |
| What impediments/barriers would you foresee in implementing the DB Process in these various arrangements? | | | | | | | |
| How effective is the Model at bringing up all issues that might give rise to disputes within the overall P3 framework and contracts? | | | | | | | |
| Does the Model enable all relevant information and people to be available to/within the DB Process (e.g., including subcontractors, designers, lenders and financial | | | | | | | |

| MODEL EVALUATION | | | | | | | | | |
|---|--|---|---|--|--|--|--|--|--|
| EVALUATION ASSUMPTIONS | 1. Tl 2. As 3. As 4. As 5. As 6. As | The project delivery method will be Design Build Finance Operate Maintain (DBFOM) Assume the project has good P3 project governance/management practices in place Assume the project has early selection of DB members and use for duration of projects Assume contract agreement allows DB to handle any type of dispute (that is, both technical and financial) Assume use of a DB Process (even though details may vary, such as separate technical and financial DRBs) Assume only Owner, Concessionaire, DBT, O&M involvement, and <u>not</u> Financial Entities or Other Stakeholders are part of the DB Process | | | | | | | |
| Model Evaluation | Mod | lel 1.0 - Conventional DB | Model 2.0 | Model 3.0 | Model 4.0 | Model 5.0 - Omnibus | | | |
| | | Process at the Concession tract level only, with a standing tation for the D&B Contractor O&M entity to attend the cession level DB meetings | Three separate DB Processes, with one covering the Concession Contract, one covering the D&B Contract, and one covering the O&M Contract for the full term | Two separate DB Processes, one for the Concession Contract, and one covering the D&B Contract and the early years of the O&M Contract | One DB Process at the D&B Contract and O&M contract level | One DB Process covering the Concession, the D&B Contract and the O&M Contract | | | |
| | | Gener SPVEcessedentie SPVEcessedentie Beige-Builder De N Provider Beige-Builder De N Provider Beige-Builder | Cover Cover BREADWOODER Bit Consector Displace Collification | Dumar Definitions 1 SRVEncessionalite SRVEncessionalite Design Subler O & M Provider Design Subler | Comer SPRCensessionatie SPRCensessionatie SPRCensessionatie Design-Ballder 0.6 III Provider Design-Ballder | Owner StriftCancentionality Design=3uitider O & U N Provider | | | |
| Have you been involved in this DB arrangement before? (Yes/No) | | 7. Does the Model enable all relevant information and people to be available | | | | | | | |
| Using Model 1.0 "cost" (defined by out of pocket cost of DB Process) as a baseline, how does each other Model compare (e.g., lower, higher, same)? Justification? Please include actual cost range if available Using Model 1.0 time (defined by DB process time from dispute initiation to resolution) as a baseline | | to/within the DRB Process (e.g., including subcontractors, designers, lenders, and financial entities)? Model 5 removes the barriers and involves all relevant information and people. | | | | | | | |
| how does each other Model compare (e.g, shorter, longer, same)? Justification? | | Even though Model 4 does not allow for owner involvement, it does allow every | | | | | | | |
| How does the parties' participation in each Model impact (improve) the avoidance and resolution of disputes? | | at that level to attend the meeting. | | | | | | | |
| What impediments/barriers would you foresee in implementing the DB Process in these various arrangements? | | | | | | | | | |
| How effective is the Model at bringing up all issues that might give rise to disputes within the overall P3 framework and contracts? | | | | | | | | | |
| Does the Model enable all relevant information and people to be available to/within the DB Process (e.g., including subcontractors, designers, lenders and financial | | | | | | | | | |

Model Pros and Cons

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|------|--|---|--|---|---|
| | One DB at the concession-contract level only, with a standing invitation for the D&B contractor to attend the concession DB meetings. | Three separate DBs, with one covering the concession contract, one covering the D&B contract and one covering the early years of the O&M contract | Separate DBs for the concession contract, and one covering the D&B contract and one covering the early years of the O&M contract. | One DB at the D&B and O&M contract level only | One DB covering both the concession and the D&B contract |
| Pros | Enables pass through Only One set of Dispute board members. Enabling DB dispute process to extend to all primary parties when needed Less chance for confusions | Enables DB process at all contract levels All parties involved but separately | Enables DB process at all contract levels All parties involved but separately | More attractive to financiers than other options | All parties involved Enables pass through Permits Dispute board to apply as a whole Less chance for confusions |
| Cons | All parties involved but DBT and O&M requires a standing invitation | Leading to confusion. Disable pass through of disputes Expensive to maintain Difficult to implement when there is an interphase agreement between the design-builder and the O&M | Leading to confusion. Disable pass through of disputes Expensive to maintain Cross relation conflicts within the Design build team and O&M will be an issue | No pass through Owner not involved Effectiveness will be questioned. No mechanism to go to owner. Cross relation conflicts within the Design build team and O&M will be an issue | Difficult for appointing Dispute board members suitable to all primary parties. |



Factors affecting Model selection

- Parties' level of participation in developing process
- Interface levels at which DRB process is involved
- Pass-through claims process
- Cost and time of process
- Complexity of the project or nature of the disputes occurring on the project
- [%] DRB member selection
 - Project parties' contractual interrelationships



Result and

Analysis –

Focus

Group



Methodology – Draft DRB Model Selection Aid Tool (DRBAID)







To aid owners and owner representatives in selection of most appropriate DRB Model Microsoft Excelused to develop the tool





DRB MODEL SELECTION AID TOOL -Assume you were in the planning stage of the project, and you have decided to use DRB as your form of DRM This tool will aid you in making a decision on the most effective DRB arrangement given your agency/project requirements/constraints Please select all that apply Appropriate model 1 Does the contractual agreement requires the participation of all parties in the DRB process? Yes 4 No 2 From your understanding of the project requirements, which parties would you prefer OR need to be involved in the DB process? Owner Concessionnaire 4 Design Builder 0&M 3 At what interface level(s) do you think you need the DRB(s)? Owner and Concessionaire (DB and O&M with standing invitation) 1. Owner and Concessionnaire, Concessionnaire & DB, Concessionnaire and O&M (each seperately) Owner and Concessionnaire and Concessionnaire, DB and O&M 1. Concessionnaire, DB and O&M only (no owner) Owner, Concessionnaire, DB and O&M all together 4 Does the projects Design-Build Contracts have pass through obligations and risk from the Concession Agreement? Yes 1,5 No 5 How would you rate the budget and the time available to form the DRB process on your project? Limited budget and time 1,5 Average budget and time 1,5 High budget and time 6 How would you rate the complexity (define) of your project? Low/Medium complexity 1,5 Difficult/challenging complexity 7 Do you forsee challenges in finding appropriate DB members for project? Selection 1,5 Yes No 8 Is the SPV Standalone? Standalone means. Yes 2,3,4 No Aid Tool 9 Any parties interrelated? (for example: concessionnaire being the owner of DB firm) 1,5 Yes No Model 1 Model 2 Model 3 Model 4 Model 5 Q (DRBAID) $\frac{1}{2}$ 0 0 0 1 0 1 0 0 0 0 1 0 0 0 1 1 0 0 0 1 6 1 0 0 0 1 7 1 0 0 0 1 8 0 1 1 0 1 9 1 0 0 0 1 Results 6 1 1 2 5 DRB Model Recommendation Model 1 Option 1

Model 5

Option 2



DRB

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Result and Analysis – Case Studies Vetting Major Findings Image: Strate of the strategy of

| Factors | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|-----------------------------------|---------|---------|---------|---------|---------|
| Contractual agreement requirement | 0 | 1 | 1 | 0 | 1 |
| Parties' arrangement | 1 | 1 | 1 | 0 | 1 |
| Interface levels | 0 | 0 | 0 | 0 | 1 |
| Pass through | 1 | 0 | 0 | 0 | 1 |
| Budget and time | 1 | 0 | 0 | 0 | 1 |
| Complexity of project | 1 | 0 | 0 | 0 | 1 |
| DB Member selection | 1 | 0 | 0 | 0 | 1 |
| SPV nature | 0 | 1 | 1 | 1 | 0 |
| Parties' interrelation | 0 | 1 | 1 | 1 | 0 |
| Results | 5 | 4 | 4 | 2 | 7 |

| DRBAID tool | Case 1 Central 70 project | Case 2 I-75 Modernization project Segment 3 | Case 3 Southern Ohio Veterans Memorial Highway (Portsmouth Bypass) project |
|-------------------|------------------------------|---|---|
| First Choice | Model 1 score 7 | Model 1 score 7 | Model 5 score 7 |
| Second Choice | Model 5 score 6 | Model 5 score 5 | Model 1 score 5 |
| Actual Model Used | Model 1 | Model 1 | Model 1 |







CalPoly Study Recommendations

- Because of P3 complexity and multi-party relationships, early attention needs to be given to appropriate dispute mechanisms at major friction points
- Project sponsors should assess and implement criteria to select the appropriate DRB Model based on the project's dispute risk profile
- Conventional practice of standing three-person DRB appointed at the start of a P3 project and continuing for the duration of the project is the most used arrangement to date
- However, the type of DRB process and DRB member qualifications should be tailored to specific project circumstances for most effective implementation





CalPoly Study Recommendations

- DRBAID tool intended:
 - To assist project sponsor in evaluating P3 project dispute risk profile and select most appropriate DRB Model
 - To be a starting point to evaluate most effective DRB Model
- Final selection of P3 project-specific DRB Model should be part of procurement process, including getting input from proposers
- Final DRB Model selected and implemented should be done collaboratively among project sponsor, concessionaire, design-build entity, and O&M entity.



Implementing the CalPoly DRBAID Tool?



P3 Structure: DBFOM



P3 Friction Points



Conventional DB?

- One DB at the Concession contract level, with a standing invitation for the DBT and O&M Entity to attend the Concessionlevel DB meetings
- DB has jurisdiction over Owner-Concessionaire claims, including DBT/O&M "pass-through" claims





Three Separate DBs?

- Three separate DBs, with one covering the Concession contract, one covering the DBT contract, and one covering the O&M contract
- Each DB handles claims DB 2 only within its own contractual grouping





Two Separate DBs?

- Two separate DBs, one for the Concession contract, and one covering the DBT contract and the O&M contract
- Owner-Concessionaire DB has jurisdiction over Owner-Concessionaire claims, including DBT/O&M "passthrough" claims
- Concessionaire-DBT/O&M DB has jurisd iction over "nonpass-through" claims





One DB at Lower Tier?

- One DB at the DBT contract and O&M contract level
- Concessionaire-DBT/O&M DB has jurisd iction over "nonpass-through" claims (no Owner involvement)





Omnibus DB—DRBF Recommended Model

- One DB covering the Concession Contract, the D&B contract, and the O&M contract
- DB handles Owner-Concessionaire claims, including DBT/O&M "passthrough" claims
- DB also handles Concessionaire-DBT/O&M "non-pass-through" claims





Where is the DRBF going with this study?





DRBF P3 Toolkit Development

- Summary level document covering the following:
 - P3 "Friction Points" Summary
 - Business Case for DBs on P3s
 - Dispute Systems Design approach to developing project dispute process, including placement of DB in it
 - Model Selection process and criteria—DRBAID as "framing" tool
- Implementation model documents:
 - P3 DB Specification
 - P3 DB Multi-party Agreement
 - P3 DB Operating Procedures





Overall Conclusions: DRBs & P3 Disputes

- P3 disputes are unavoidable & can result in significant time & financial losses
- P3 dispute process works more effectively if there is in-depth understanding of dispute sources and a corresponding dispute process is established ahead of time in the P3 contracts
- DRBs help maintain an open and collaborative relationship, which is necessary to sustain the "partnership" on P3 projects
- DRBs foresee situations leading to future problems and can work with parties to prevent them from evolving to formal disputes
- DRB process is much faster, less expensive, and more suited for construction conflicts and claims, as compared to arbitration and litigation





Questions ??

