Phase 2 Project Delivery Options Briefing

July 12, 2016

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TJPA

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Purpose & Goal

- Understand Needs and Characteristics of Phase 2
- Assess High-Level Risks that impact Phase 2
- Determine Phase 2 Goals & Objectives
- Factor in status of cost, budget and funding
- Assess Project Delivery Options to achieve Goals & Objectives
- Identify best Project Delivery Option that provides TJPA Board with:
  - Most efficient and achievable procurement
  - Best value
  - Maximizes appropriate risk transfer to the Private Sector

Report Approach & Process

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Project Delivery Options Examined

PROJECT DELIVERY OPTIONS

Private Sector Role	GROUP 1			GROUP 2		GROUP 3		
	DBB	CMAR	DB	DB+M	DB(f)	DBFM		
	Design Bid Build	Construction Manager At Risk	Design Build	Design Build Maintain	Design Build Finance	Design Build Finance Maintain		
						Availability Payment	Concession	Subsidization
Construction	●	●	●	●	●	●	●	●
Design		●	●	●	●	●	●	●
Maintenance				●		●	●	●
Short-Term Finance					●	●	●	●
Long-Term Finance						●	●	●
Ridership Risk							●	●

Project Needs & Characteristics

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Phase 2 – Needs & Characteristics

Design (Summarized):

- Track gradient and tunnel boxes to accommodate Caltrain and California High Speed Rail Authority (CHSRA)
- Work within public right-of-way, and preservation of existing buildings
- Layout that minimizes length of tunnel structure
- Design that addresses existing geotechnical soil stratification
- Vertical and horizontal connectivity to Transbay Transit Center
- Accommodation of station and operational requirements of Caltrain and CHSRA
- Approved Supplemental EIS/EIR that seeks to minimize environmental impacts
- Outcome that meets or exceeds intended design life

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Phase 2 – Needs & Characteristics

Construction (Summarized):

- On-Time and On-Budget
- Minimization of claims and extras
- Encourage innovation, ingenuity, and Best Practices
- Advance critical works to shorten overall construction duration
- Use of high-quality materials, workmanship, and that can minimize maintenance
- Minimization of disruptions to traffic, residents, and businesses
- Minimization of noise, dust, and vibration impacts
- Synchronize work to meet Caltrain and CHSRA schedules
- Maximize bidder competitive tension

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Phase 2 – Needs & Characteristics

Finance and Funding (Summarized):

- Effective and sound construction Financing Plan
- Develop strategic Funding Plan that manages work completed against the projected flow of funds
- Analyze Project Delivery Options that do not incur a greater cost to TJPA in comparison to financing through public means

Maintenance and Operations:

- Maintenance and Operations will be provided by rail operators

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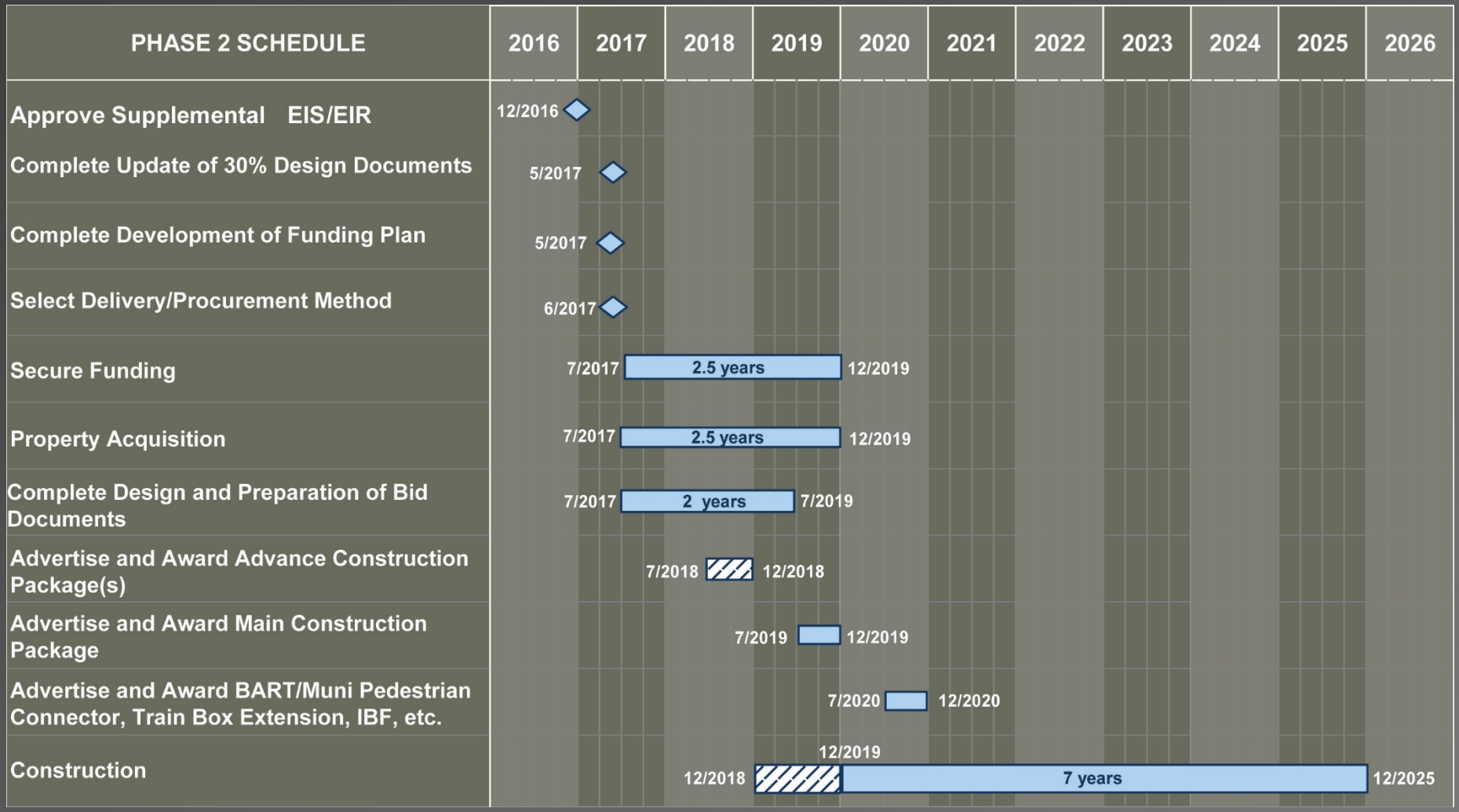
Current Baseline Schedule *



(*) - As Presented in the June 9, 2016 TJPA Board Meeting

Project High Level Risks

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Phase 2 – High Level Risk Profile

High-Level Risks:

- Funding Commitment and Availability
- Access for Businesses, Vehicles and Pedestrians (during construction)
- Scope Creep Control
- Cost Overrun and Budget Adherence
- Schedule Achievement and Synchronization
- Tunnel and Geotechnical Risk Transfer
- Right-of-Way and Property Acquisition
- Permitting
- Utility Relocation and Protection
- System Integration and Inter-Agency Coordination

Project Goals & Objectives

Goals & Objectives Workshops

Workshops were conducted with Input Groups that focused on the following topics:

- ✓ Project Scope and Schedule
- ✓ Procurement and Legal Matters
- ✓ Property and Right-of-Way
- ✓ Archaeology and Environmental
- ✓ Utilities and Agency Coordination
- ✓ Interagency Coordination
- ✓ Construction Cost, Budget and Escalation
- ✓ Funding and Project Finance
- ✓ Systems Integration
- ✓ Maintenance Responsibility
- ✓ Tunnel Construction and Geotechnical Parameters

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Phase 2 – Goals & Objectives Determination

The Key Goals & Objectives were determined to be:

- ✓ Account for Community Impacts and Facilitate Engagement
- ✓ Drive Cost Certainty
- ✓ Maximize Competition and Value
- ✓ Drive Design and Construction Quality
- ✓ Properly and Responsibly Define, Mitigate and Allocate the Risk Profile to the Private Sector
- ✓ Drive Schedule Certainty
- ✓ Undertake a Procurement that is Transparent and Fair

Project Cost and Value

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Phase 2 – Cost Estimate ++

	Total Phase 2
	in $ millions
Construction	$1,504
Design Contingency	$211
Subtotal Construction	**$1,715**
Escalation 5% to mid construction (2023)	$583
Total Construction Cost	**$2,298**
ROW	$266
Programwide @ 22.5%	$517
Program Cost	**$3,082**
Construction Contingency @ 10%	$230
Program Reserve @ 15%	$462
Subtotal Contingency and Reserve	**$692**
Total Program Cost	**$3,774**
BART/Muni Pedestrian Connector ($110M direct cost + $51M escalation & construction contingency)	$161
Total Program Cost	**$3,935**

(++) - As Presented in the June 9, 2016 TJPA Board Meeting

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Phase 2 - Potential Funding

Sources ($ Millions)	Total Funds	Net Proceeds
Committed San Francisco County Sales Tax	$83.0	$83.0
Committed San Mateo County Sales Tax	$19.0	$19.0
Committed MTC/BATA Bridge Tolls	$7.0	$7.0
Committed Regional Transportation Improvement Program	$18.0	$18.0
Transit Center District Plan (Mello-Roos)	$275.0 - $375.0	$275.0 - $375.0
Tax Increment Residual (after TIFIA repayment)	$665.0 - $735.0	$200.0 – $340.0
Land Sales (Block 4)	$45.0	$45.0
FTA New Starts	$650.0	$650.0
New MTC/BATA Bridge Tolls	$300.0	$300.0
Future San Francisco County Sales Tax	$350.0	$350.0
Future California High Speed Rail Funds	$557.0	$557.0
Passenger Facility Charges	$2,510.0 – 8,025.0	$865.0 – $1,920.0
Total Potential Funds	**$5,479 - $11,164**	**$3,369 - $4,664**

Project Delivery Options & Evaluation

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Phase 2 – Key Assumptions & Understandings

- Core mission of TJPA → Plan, develop and deliver Phase 2, including securing project funding
- Maintenance of tunnel and rail infrastructure (life-cycle and routine), and Operations, will be retained and performed by the Rail Operators
- TJPA's maintenance responsibilities will be limited to routine cleaning and maintenance of the Transit Center's public spaces
- Risk Assessment and Risk Management Report is from 2008, and will be updated as Phase 2 planning progresses
- Series of Case Studies of major transit projects with similar characteristics to the Phase 2 work informed analysis and considerations of Report
- Critical commitments related to Phase 2 responsibility matrix and governance structure remain in-progress

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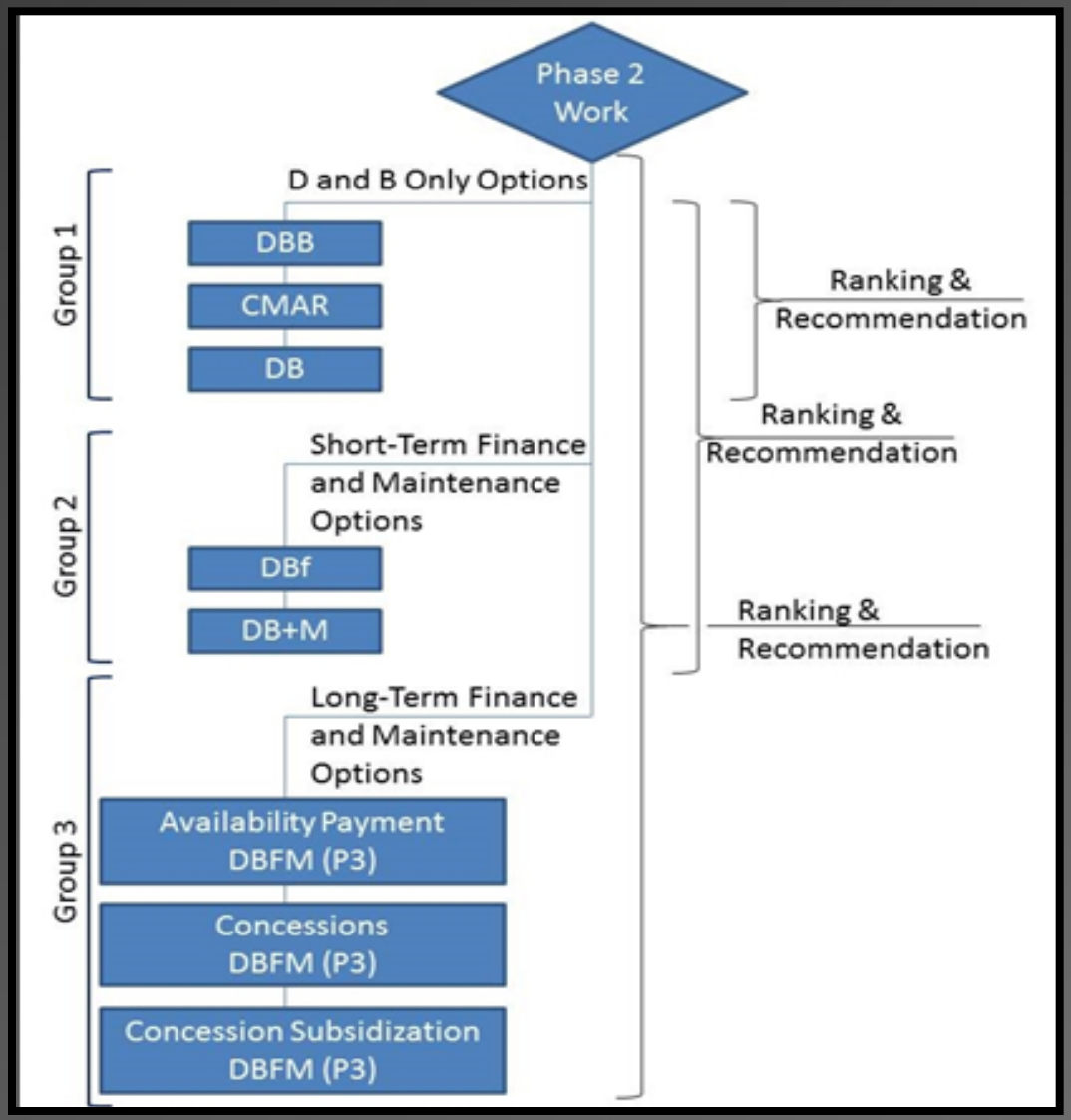
Project Delivery Options *Overall Examination* *



Group 1 – Design & Build Only Options:

- Design-Bid-Build (DBB)
- Construction Manager at Risk (CMAR)
- Design-Build (DB)

Group 2 – Short-Term Finance or Maintenance Additive Options:

- Design-Build-Finance (DBf)
- Design-Build+Maintain (DB+M)

Group 3 – Long-Term Maintenance & Finance Additive Options:

- Design-Build-Finance-Maintain (DBFM)

(*) – Full Suite of Solutions Examined for Completeness and Comparison

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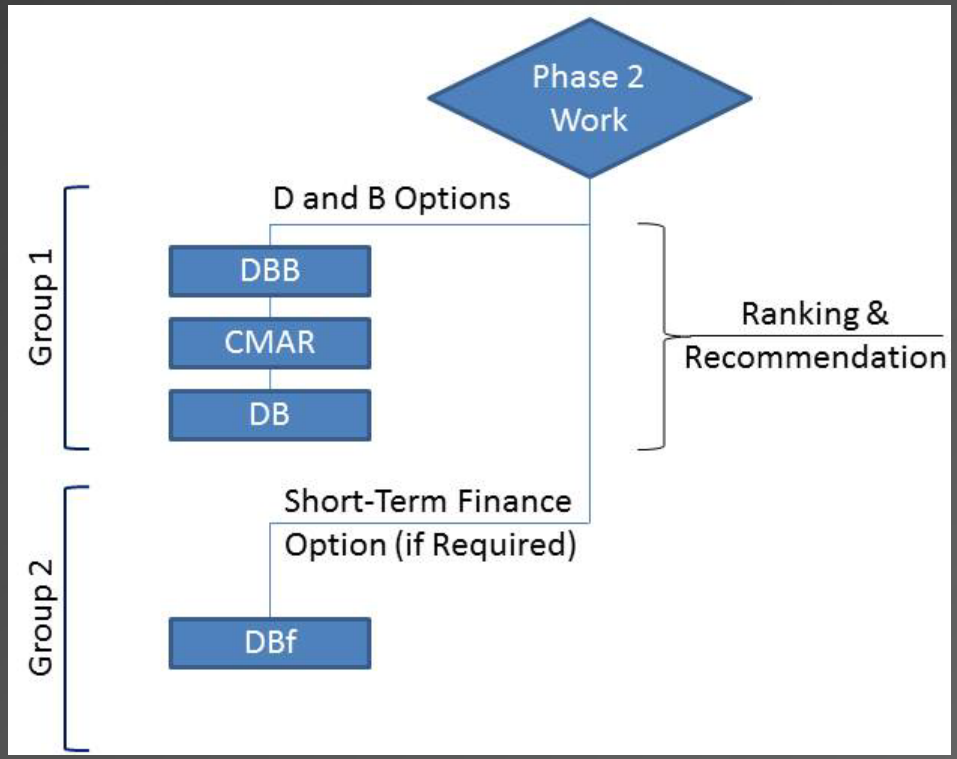
Project Delivery Options *Specific Focus* **



(**) Note:

As Maintenance and private-based Long-Term Financing do not present themselves as absolutely essential project delivery elements and requirements for TJPA in Phase 2, specific focus was placed upon those Project Delivery Options that can meet the greatest Quantitative and Qualitative criteria.

Short-Term Financing Option is retained (DBf), as that element may be required.

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Quantitative Results

Goal and Objective Category	Project Delivery Methodologies			
	Group 1			Group 2
	DBB	CMAR	DB	DBf
Community Impact & Engagement (9 Point Maximum)	7	8	9	9
Cost Certainty (15 Points Maximum)	7	10	11	12
Design and Construction Quality (12 Points Maximum)	5	9	9	9
Maximize Competition (9 points Maximum)	7	7	8	8
Risk Definition, Mitigation and Allocation (15 Points Maximum)	5	9	9	9
Schedule Certainty (12 Points Maximum)	9	8	8	10
Transparency and Fairness (3 Points Maximum)	3	1	3	3
Quantitative Scoring Summary & Total (75 Points Maximum)	43	52	57	60

Qualitative Results

Qualitative Screening Factor (Summarized)	Project Delivery Methodologies			
	Group 1			Group 2
	DBB	CMAR	DB	DBf
1. If not 100% of funding commitment in place, can it be transacted?	Y*	-	Y*	Y
2. Market-tested in transit and tunnel type projects?	Y	-	Y	Y
3. Would the industry consider the method supportive of a biddable and bankable transaction?	Y	Y	Y	Y
4. Driver to deliver a better quality project, and a better value?	N	-	Y	Y
5. Protect investment during the maintenance term?	N	N	N	N

LEGEND:

Y = Yes, the project delivery option fulfills the screening factor
N = No, the project delivery option does not fulfill the screening factor
Y* = Yes, but only if multiple bid packages are solicited
- = Neutral, or not enough comparative transactions are known

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Overall Ranking of Options

Project Delivery Option		Quantitative Scoring	Qualitative Results	Overall Ranking	Comment
Group 1	DBB	43	Meets 3 factors; does not meet 2	3	Good solution, with flexibility on schedule and segmenting construction (if required), but it does not transfer the risk as much as other options. It also discourages innovation and value engineering.
	CMAR	52	Meets 1 factor; does not meet 1; is neutral on 3	2	Largely untested in delivering horizontal and transit infrastructure
	DB	57	Meets 4 factors; does not meet 1	1	Remains highly ranked as it is a well-accepted solution that transfers the design and construction risk, is well accepted in the marketplace, and has been successfully used in transit infrastructure projects.
Group 2	DBf	60	Meets 4 factors; does not meet 1	1 (if short term F is required)	If short-term financing is deemed to be required while a greater amount of funding is collected and accrued, DBf would be optimal.

Next Steps

Phase 2 Next Steps that interface with the work of selecting a Project Delivery Option:

- ✓ Complete 30% PE drawings;
- ✓ Perform risk assessment;
- ✓ Update Program cost estimate (& peer review);
- ✓ Complete development of funding plan (& peer review); and
- ✓ Finalize and approve the selected project delivery method.

Additional validation efforts will include:

- ✓ Final written commitments for all funding amounts and sources;
- ✓ Undertake a risk-based comparative cost analysis of the Project Delivery Options; and
- ✓ Embark on a market sounding with the design, construction and finance industry.