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FOR
FACILITIES PLANNING AND CONSTRUCTION COMMITTEE**

Committee Meeting: 11/4/2015

Board Meeting: 11/5/2015
Austin, Texas

*Brenda Pejovich, Chairman
David J. Beck
Alex M. Cranberg
Wallace L. Hall, Jr.
R. Steven Hicks*

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<u>Modification to the CIP</u>			
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Adjourn	12:00 p.m.		

1. **U. T. System Board of Regents: Discussion and appropriate action regarding Consent Agenda items, if any, assigned for Committee consideration**

RECOMMENDATION

The proposed Consent Agenda is located at the back of the book. Consent Agenda items assigned to this Committee are on Pages 343 - 344.

2. U. T. System: Discussion on the Hybrid Project Delivery Initiative

REPORT

Mr. Michael O'Donnell, Associate Vice Chancellor for Facilities Planning and Construction, will report on the ongoing progress related to implementation of the Hybrid Project Delivery Initiative.

BACKGROUND INFORMATION

As included in the *Hybrid Delivery Methods - Action Plan* presented to the Facilities Planning and Construction Committee on August 19, 2015 (set forth on the following pages), the Office of Facilities Planning and Construction has proceeded with implementation of the Hybrid Project Delivery Initiative. The role of the Project Advocate has been further refined and a discreet list of projects has been identified for demonstration of the intended benefits. The Office of Facilities Planning and Construction continues to conduct focused outreach in the design and construction community to foster interest in the upcoming Capital Improvement Program projects and to incorporate aspects of the Hybrid Project Delivery Initiative in collaboration with Deputy Chancellor Daniel.



THE UNIVERSITY OF TEXAS SYSTEM
OFFICE OF FACILITIES PLANNING AND CONSTRUCTION

Hybrid Delivery Methods – Action Plan

August 2015

Hybrid Delivery Methods – Action Plan

Executive Summary

While all major projects are highly complex undertakings, regardless of scope, they all have a major common element. The ultimate successful delivery of major projects hinges on the unrelenting demand for a comprehensive and rigorous set of early and effective design processes; we term these *front-end loading*. To be successful, these processes should be led by an effective, formally empowered, institutionally-based leader or team – *The Project Advocate*. This individual or team must be empowered by the Institutional President with the authority to require total participation by the requisite institutional constituents and interface seamlessly and continuously with the capital delivery management team. This Advocate must continue to serve in this demanding role throughout the life of the project. Of special importance is the ability to effectively control the inevitable level of client driven change as the project progresses through the later execution phases of detailed design, construction, and commissioning. While some level of change is unavoidable, managing this single element effectively is the cornerstone to achieving the requisite project cost, schedule, and quality targets. Further, other specific private sector best practices, including modified advocacy and contracting techniques, will be integrated into the delivery process as appropriate in order to increase competition, expertise and the quality of project outcomes by encouraging larger, most sophisticated consultants and contracting firms/teams to consider higher education capital projects. Finally, the targeted utilization of select Advisory Teams, at key steps in the early design process, offers a significant opportunity for added design and constructability review and expertise.

Executed effectively across a select set of major projects, these processes have the potential of reducing needed contingency through the more efficient delivery of facilities, the transparent identification of targeted savings for other key capital initiatives, and the opportunity to expand the use of these elements across the broader University of Texas System’s \$7.05 billion capital program. While the current processes employed continue to enable the successful delivery across a large, diverse set of facilities within the public sector, the hybrid elements described further within this Action Plan have an estimated initial cost reduction potential of \$30MM - \$80MM over a three (3) year period. This Action Plan attempts to delineate a unique opportunity to test new procedures and processes, and further extends these elements to a select segment of the recently approved Tuition Revenue Bond projects funded by actions from the 84th Legislative Session. We are available to discuss any of the concepts described here and seek your impressions and input to further advance these concepts.

Background: The six-year Capital Improvement Program (CIP) at The University of Texas System represents one of the most ambitious programs in higher education today. Owing to the approval of Tuition Revenue Bond (TRB) funding from the 84th Legislative Session, the projected value of the CIP at the conclusion of the August 2015 Board of Regents cycle is estimated at \$7.05 billion. The current processes, modeling and techniques employed at The University of Texas System are routinely examined, and improvements integrated, in order to maintain a best-practice delivery system within higher education¹. While the existing model has facilitated the effective delivery of a large, diverse, public-sector capital program across our institutions, the organization has remained committed to a continuous improvement process.

Current Initiatives: Over the past year, the philosophy and processes for establishing a U. T. System major capital project's scope, cost, and delivery model were examined for best practices and potential areas of improvement were identified. Throughout this analysis, the overarching intent was to test the efficacy of incorporating as many *private sector* best practices as possible into a large, *public sector* higher education facility delivery program. Concurrent activities included a preliminary examination of the traditional delivery processes as governed by existing U. T. System Board of Regents' *Rules & Regulations* and other requisite governing statutes in order to explore acceptable alternate, private sector procurement and project delivery approaches that could positively impact the delivery of large, complex major new facilities. Reviews were conducted with the assistance of the U. T. System Board of Regents Office and the U. T. System Office of General Counsel.

Major topics:

- Establishing Scope: Investment Level / Responsibility
- Establishing Cost: Estimating Accuracy / Contingencies
- Board of Regents' Approval Points
- Contracting Practices

Specific goals and desired outcomes:

- (1) Improve information and approval request format to the U. T. System Board of Regents at key project development points - target strategic prioritization and decision making for available funding;
- (2) demonstrably reduce facility costs through delivery efficiencies thereby maximizing the value of requisite capital funding to U. T. System and the institutions; and

¹ A comprehensive reengineering study regarding all aspects of the capital program at U.T. System was initiated with MGT/3DI in 2007 based on an analysis of best-in-class public and private sector serial builders; the overall construct consisting of centralized *program* management and decentralized *project* management was instituted following that effort and remains the fundamental basis of the organization's overall structure.

- (3) implement a robust, near-term *Action Plan* that captures targeted savings for a select set of major candidate projects and demonstrates the efficacy of broader key private-sector model element applications across the greater U. T. System capital facilities program.

This effort concluded with a white paper prepared in June 2015 – **Hybrid Delivery Methods – A Demonstration Project** which delineated those processes that are considered most leveraging in the efficient delivery of future major facility projects. Included were the areas of Scope Development; Pre-Design/Pre-Construction Processes; Consultants and Contactor Procurement, and Contingency Management. The essence of the paper’s conclusions however can be distilled down to a single common element: the ultimate successful delivery of major projects hinges on the unrelenting demand for a comprehensive and rigorous set of early and effective design processes, commonly termed – *front-end loading*. To be successful, these processes must be led by an effective, formally empowered, institutionally-based leadership team – *The Project Advocate*.²

Action Plan Development: Initially, it was determined that a series of 2-3 major new candidate projects, executed and subsequently evaluated over the next 3-year period, would provide sufficient feedback to determine which elements of the Hybrid Delivery Methods would be most leveraging for the broader U. T. System capital program. A key finding further proposed the addition of a Board approved Conceptual Phase that would authorize up to a 5% institution spend targeted towards the procurement of early Architectural, Engineering, Construction Management, and other site related consultants necessary to conduct a robust, front-end loaded set of integrated key studies. Under the direction of a Project Advocate, with technical assistance from the institution facilities organization, and the OFPC Project Manager, this phase would be targeted towards the completion of up to 100% schematic design at the conclusion of the conceptual studies. This early phase would culminate with a second presentation to the BOR for addition of the project to the CIP, including a formal presentation by the Project Advocacy team to the FPCC Board Members justifying the drivers for the subject facility based on a detailed and comprehensive Business Plan. Requisite changes to the existing Board of Regents’ *Rules and Regulations* and other contractual and procurement related changes necessary to maximize private sector element efficiencies, within the existing governing statutes, would be pursued concurrently; it is presently estimated that these processes could be modified and the proposed changes completed in time for inclusion in the November 2015 Board cycle. Further, an independent listing of potential legislative issues for the 85th session would be compiled over time for discussion with the U. T. System Office of Governmental Relations.

² Previously termed *The Project Champion*, the construct for *The Project Advocate* has been refined to include an individual, or team of one to three individuals, formally empowered by the Institution’s President.

The effectiveness of the front-end loading activities during the conceptual phase, coupled with a formal Change Management Plan,³ would facilitate a reduction in the standard contingencies applied to a major project. Based on the effectiveness of these early exercises, the standard contingencies could be formally reduced from a nominal 10%, to near zero, at the third U. T. System Board of Regents' project approval phase – Design Development.⁴ While some projects will potentially need to return to the Board for additional funding, the opportunity for substantive savings will be increased through the transparent segregation of funds before the project enters the construction phase. While the ultimate designation for project savings is a Board decision, it is anticipated that such savings would remain with the specific institution for use on other targeted capital initiatives. As noted earlier, a comprehensive analysis of the results on 2-3 demonstration projects would provide a logical next step towards application of key hybrid elements to the broader U. T. System Capital Program across all institutions.

Tuition Revenue Bond Projects: The fifteen (15) TRB funded projects resulting from the 84th Legislative Session total \$1.58 billion and suggest a potential enhancement of the Hybrid Project – Demonstration Program just outlined above. Four (4) of the projects are Repair and Renovation Projects (R&R), or contain significant R&R components within their respective scopes and are long-duration projects within health related facilities. Further, these same four (4) projects, along with one (1) additional Health related project, are Institutionally Managed through existing MOUs, or will be Institutionally Managed as a direct consequence of the nature of the individual project scopes within an operating health related facility. While these circumstances do not necessarily preclude the hybrid project economies previously noted, there are overarching patient and operational concerns that will need to be considered by each of the Institution Presidents, with their respective staffs, regarding application of any of these initiatives.

However, the remaining ten (10) TRB funded projects represent \$845.4 million. Some of these projects have proceeded with institutionally funded conceptual studies, and some A/E teams have been procured. Most of these projects will be added to the CIP at the August 2015 Regents' Meeting⁵. Accordingly, it is recommended that these ten (10) projects move forward, considering and appropriately incorporating as many of the Hybrid Delivery element efficiencies as possible, during early execution. Once the initial 2-3 initial demonstration projects have proceed approximately one (1) year, and assessments are made regarding the efficacy of individual Hybrid Model elements, it is recommended that a select number of these TRB projects, or other suitable major projects, be added to this program and that a formal update be presented to the U. T. System Board of Regents in 2016. While a full cost savings reduction may not be possible due to the advanced stage of a particular project definition, a significant segregation of some funding and associated targeted savings is possible and should be established as an achievable target going forward. Augmenting the initial 2-3 demonstration

³ All aspects of a Change Management Process are presently defined, developed and reside within the existing e-manual.

⁴ At the time of Design Development, the BOR would need a transparent assessment of the projects risk profile since the opportunity for the project to return to the Board for a CIP Modification would increase based on unknowns including Market Factors.

⁵ The U.T. Austin Robert A. Welch Hall Renovation is presently on the CIP owing to previous renovation phases and the \$125 million TRB project will be added at the August BOR cycle as a CIP Modification.

projects, after a reasonable demonstration period of program element effectiveness, increases the opportunity for greater application of the Hybrid Model across the broader U. T. System capital program.

While, the major hybrid elements of front-end loading and rigorous change management through effective and formal project advocacy are proven project elements and have minimal downside, their successful application requires sustained collective commitment, and often, cultural change. Notwithstanding, all projects under the Hybrid Model will be closely monitored and specific elements can be reduced or eliminated for more traditional processes should any adverse anomalies be noted during the execution phase. A specific report on all of the Hybrid Initiative Projects will be developed and distributed monthly to the U. T. System Executives and the Board of Regents.

Michael O'Donnell
Associate Vice Chancellor
Office of Facilities Planning and Construction
The University of Texas System

APPENDICES:

Hybrid Elements

OFPC Contingency Categories and Typical Ranges

Capital Project Construction Delivery Method Summary

APPENDICES

HYBRID ELEMENTS

Scope and Basis of Design

- Consider a fifty (50)-year building lifespan rather than a 75 to 100-year institutional model, and test each building element for pay-back against that life.
- Similar to projects such as UTHSC-SA's MARC, UT-Austin's Dell Pediatric Research Building and the buildings associated with the Dell Medical School, among others, explore commercial-grade, readily-available, economic standards for structural, envelope, mechanical, electrical and plumbing system application.
- Consider the adoption of generic lab, flexible "flipped classroom" space, and open-office space standards.
- Take advantage of near-site utilities where economically feasible and where redundancy is necessary, but challenge "institutional" standards and building system redundancies against the commercial-grade standards noted above.
- While measures such as shelling space (warm or cold) or reducing square footage could be considered to reduce overall costs, it is not part of this analysis.

Pre-Design and Pre-Construction Processes

- Engage design and constructability consultant team / development management firm(s) with expertise in similar building types to inform the Owner of best practices during the conceptual phase, and to review and challenge the design team and contractor on an on-going basis. This **Design Advisory Team** would also provide input on the early procurement of long-lead items (e.g., curtain wall systems, mechanical equipment, lab equipment, elevators, etc.); operability; schedule; cost, commissioning, etc.
- Assign a Project Advocate, lock-in Owner Project Requirements in the conceptual phase, execute a formal shared-governance Project Charter, and develop a very robust Change Management process. The Project Advocate must be invested in the programmatic needs and operational success of the project, must be empowered and incentivized to ensure input early from the institutional stakeholders and, must discourage late changes. This could allow the reduction of Project Contingency from the standard 2%-3% to near zero. A list of standard project contingency categories and ranges is included as part of the Appendix. It must be emphasized however that rigorous "front-end-loading", through an extended design phase, and minimization of execution phase changes, are fundamental tenants in avoiding a significant increase in the project risk profile.

Procurement of Consultants, Contractors

- U. T. System has recently completed major projects with 6 of the top 10 ENR Texas-Louisiana Contractors. Notwithstanding, as an adjunct to the standard posting of this project on state-required sites, aggressive outreach efforts will include advertising in industry magazines; and additional outreach by OFPC, Campus, and System executives to firms that might not normally consider institutional work.
- Consider promoting a more risk-tolerant, collaborative and solutions-focused approach by eliminating liquidated damages for non-performance, and capping consequential damages at 2x the Contractor's fee. This approach will require review with OGC and modification of our standard contract format but, may result in a greater pool of 1st tier interest.
- Explore a pilot modification to the Regents' Rules, including a review of State procurement statutes, which could allow greater flexibility in negotiating the fees paid to consultants. The intended goal: ensure that a more creative, focused, and incentivized "A Team" is assigned to the project with demonstrated experience in commercial project goals including reduced costs and tighter schedules, resulting in the final delivery of a quality facility through production of more thoroughly vetted design documents.
- Consider procurement of an early site development contractor to clear and prepare the site, perform a thorough subsoil investigation, and survey and re-route any underground obstructions and utilities. This will leave a clean site for the building contractor and allow reduction of Owner Construction Contingency.

Design Processes

- In order to attract and ensure high quality staff and independent input, procure an Architect of Record ("Master Consultant"), and then participate in the selection of all major sub-consultants and the negotiation of their fees.
- To ensure strong competition of all equipment, require the Architect and consultants to provide up to three acceptable models of all major equipment, lighting, etc. in the documents and specifications.

Procurement of Construction Contractors, Contracts, and Reimbursement Processes

- Enhance schedule competition during the contractor procurement to reduce escalation costs.
- Utilize *Design-Assist* to engage key, knowledgeable trade consultants early in the design phase to achieve a market-driven, cost/schedule-effective design for complex elements (including structural, curtain wall, mechanical, electrical and control systems). Further explore the split of identified buy-out savings between the Contractor, Owner, and Subcontractor. This modified approach will require OGC input and concurrence.
- Consider incentivizing the Contractor to take on full responsibility for design errors and omissions in the final documents. Consider incentivizing quality through a 1% - 2% fee consistent with best

practices in the private building sectors. This modified approach will require OGC input and concurrence.

- Participate in the interviews of major subcontractors during selection. Enhance those interviews by seeking cost reduction or quality enhancement strategies from each proposer, with adjustments as necessary to the successful bidder.

Contingencies

- If many of the items above are successfully incorporated into the governance and execution of such a demonstration project, in addition to other potential project savings and schedule enhancements, OFPC's total contingencies could be reduced from the historical level of 9% - 10%, to near zero; this assumes an understanding and acceptance by the Board of Regents and the Institution of a higher than normal project risk profile for the demonstration project.

Improvement Initiatives – Outline by Phase:

- **Strategic Initiatives Plan: Prioritized Institution Initiatives Requiring PUF or other funding w/ 5-10 year horizon – Chancellor / EVC's / Institutions**
 - Facilitates longer-term PUF prioritization strategy
 - Identifies Capital Facility Needs – TPC Range (soft)

- **BOR Conceptual Phase Funding Approval: Identifies Specific Capital Projects Proposed for Conceptual Study Funding: 2 year horizon**
 - Authorizes Institution to spend up to 5% of TPC
 - Work lead by designated Project Advocate
 - Early Identification of Facility Grade (Institutional, Commercial, etc.,) and other Statement of Need (SON)/Owner Project Requirements (OPR)/Basis of Design Decisions
 - Increase Design Consultant and CM Outreach
 - Procure Architect of Record and participate in procurement of major sub-consultants
 - A/E Procurement up through 100% Schematic Design
 - Identify / Engage Design Advisory Team
 - Procure CM for Contractibility Review – Fixed Fee

 - Includes siting and requisite ORE evaluations, geotechnical, historical, and other studies
 - Improves Philanthropic Opportunity
 - Improved Funding Definition

- Final Phase Activity is presentation to BOR for CIP Approval by Project President/Advocate
- **BOR CIP Approval:**
 - Releases Balance of A/E Funding with Improved Front-End Loading
 - Adjust Forward Fee for Consultants / Contractors
 - Basis of Need Justified through Business Plan – improved definition
 - Increased Design, Cost and Schedule Alignment
 - Reduces Scope Change Paradigm – Project Advocate / Change Management Process
 - Facilitates Earlier / Substantive Review by Design Advisory Team
 - Improves time to 100% CD's
- **BOR Design Development Approval:**
 - Greater Alignment of Expectations
 - Revise Estimate Eliminating Contingencies from Final Working TPC – Advise BOR of Risk Profile
 - Procure Balance of CM / Contractor Services w/ Completed Documents
 - Eliminate LD's and Cap CD's at 2x Fee
 - Utilize Design Assist where appropriate
 - Select and Execute Applicable Changes on 2-3 Candidate Projects
 - Assess Outcomes and Extend Program- Wide as Appropriate
 - Estimated Near-Term Upside - \$30MM / 3 years for 2-3 Candidate Projects
 - Increase Near-Term Upside to \$80MM / 3 years by including up to ten (10) additional TRB funded projects

OFPC Contingency Categories and Typical Ranges:

Contingencies are funding categories included in a project budget to cover various unspecified project costs that are anticipated to be present throughout the project's duration, yet are difficult to quantify and therefore cannot be estimated at budget creation. The initial contingency percentages at budget development have been established using historical project information, the specific project's complexity and size, and the level of confidence in the project scope and schedule.

The three contingency categories developed and controlled by OFPC and identified at budget development include:

- 1. Contractor's Contingency** may be used by the CM-R or D-B contractor as approved by OFPC and to the extent allowed by the contract agreement, for costs identified through the refinement, development and completion of the construction documents or procurement of the work; the Guaranteed Maximum Price is established prior to completion of the construction documents and subject to market validation. Contractor Contingency is not to be used for contractor rework, unforeseen conditions, cost increases caused by lack of coordination or communication with the Project Architect or trade Subcontractors, or to correct errors or omissions in the construction documents. Unused Contractor's Contingency is returned to the Owner as savings. This is typically set between **2% - 4%** of the Guaranteed Maximum Price.
- 2. Owner's Construction Contingency** is identified in the Guaranteed Maximum Price or construction contract in order to fund additional costs due to unforeseen conditions, errors or omissions in the construction documents, or items of work the scale of which could not be identified at budget development. This is set typically between **3% - 5% for new buildings**, and **4% - 5% for renovation projects**.
- 3. Project Contingency** is included and identified outside the construction contract amount, typically to fund unanticipated increases to any other budget line item within a project budget, to fund scope that may be added by the institution, or to cover potential claims. This is set typically at **3%** of the Total Project Cost. Draw-down of the contingencies is used as one of the performance indicators during the course of a project.

Capital Project Construction Delivery Method Summary

In general, the building construction value of a Capital Improvement Program new construction project represents approximately 70% of the Total Project Cost (TPC) value.

CONSTRUCTION MANAGER AT RISK (CM-R)

Since 1997 when alternate delivery methods were approved by the Texas Legislature, the CM-R delivery method has been used by OFPC for a majority of completed projects (126 representing 47% of completed projects - \$5.61B) and projects currently underway (27 representing 63% of ongoing projects - \$3.26B). In this method, the Owner holds both the Project Architect/Engineer and construction contractor prime agreements, and the procurement of the construction contractor (Construction Manager at Risk) occurs during the design phase when pre-construction services from the CM-R add tangible benefit to the designers. This method supports multiple design and construction stages as the overall project design is coordinated. This allows the project to be separated into sequential work packages that support engaging the subcontractor market earlier in the overall delivery of the project.

The initial contract with the CM-R establishes the lump sum pre-construction phase fee, defines a not-to-exceed value for General Conditions, and locks percentage values for construction phase fee and Construction Manager at Risk's contingency. General Conditions, CM-R fee, and CM-R contingency are further defined and contracted along with values for cost of work in the Guaranteed Maximum Price proposal (GMP). The CM-R contingency is available to the contractor to address fluctuations in the subcontractor market for material and labor cost increases (escalation) and to address refinements in the design that occur after execution and Owner's acceptance of the GMP. After buy-out, savings and funds remaining in the GMP revert to the Owner.

Pre-Construction Phase Fee covers costs for CM-R participation during the design phase to review constructability and develop cost and schedule alternatives.

The CM-R GMP proposal is typically submitted at the end of Design Development or early in the construction document phase and establishes the overall not-to-exceed value for the work as defined by a specific set of documents provided by the Project Architect/Engineer. The GMP includes detailed information on project scope, estimated costs, and construction schedule. The GMP will also include a defined amount for Owner's construction contingency, and these monies are reserved to address costs for unforeseen conditions that are encountered during construction and to address Errors and Omissions (E&O) in the design and construction documents.

As stated, the Owner manages the contract with the Project Architect/Engineer and architectural and engineering fees are included by the Owner in the budget for associated building costs.

DESIGN-BUILD (D-B)

The D-B delivery method is used for projects that have accelerated schedule requirements, and this method is typically used for delivery of projects that are well-defined in the commercial construction market – housing, parking, utility production facilities, etc. Nonetheless, this method can be used for any project type and has been used for delivery of research and clinical space. This delivery method more fully relies on expertise from the commercial construction sector and should have the least amount of direct Owner participation in design refinements and changes. Since 1997, OFPC has delivered 42 projects using this method (representing 16% of completed projects - \$1.23B) and has 8 currently underway (representing 18% of ongoing projects - \$146M).

In this delivery, the D-B team is procured based on a scope of work defined by the Owner, and the D-B contractor proposes a Pre-Construction Phase Fee that includes architectural and engineering fees in the overall proposal. Although the initial scope statement is defined by the Owner, the D-B contractor is responsible for completion of design and creation of the construction documents, and the Owner manages a single prime agreement. Any Owner requested changes are contracted to the Project Architect/Engineer through the D-B contractor.

Similar to the CM-R delivery, the initial contract with the D-B establishes the lump sum Pre-construction Phase fee, which includes all design phase costs, defines a not-to-exceed value for General Conditions, and locks percentage values for construction phase fee and D-B contingency. General Conditions, D-B fee, and D-B contingency are further defined and contracted along with values for cost of work in the GMP. The D-B contingency is available to the contractor to address fluctuations in the subcontractor market for material and labor cost increases (escalation) and to address refinements in the design that occur after execution and Owner's acceptance of the GMP. An amount of Owner's construction contingency is typically included to address costs for unforeseen conditions. E&O costs are the responsibility of the D-B contractor. After buy-out, savings and funds remaining in the GMP revert to the Owner.

COMPETITIVE SEALED PROPOSALS (CSP)

The CSP delivery method most closely compares to the traditional design-bid-build delivery in that lump sum proposals based on a completed set of construction documents are submitted to the Owner by general contractors interested in procuring the work. The Owner's best value determination does consider qualifications in conjunction with price, and the selection of a contractor is not based on lowest price alone.

In this delivery, savings in the buy-out are retained by the contractor. The Owner manages the Project Architect/Engineer agreement, and changes are priced as additions (or deletions) to the construction contract. This delivery method reserves the most Owner control in the design phase, but is limited in its early engagement of the subcontractor market. This delivery also procures construction services after completion of the overall design, so time to market is longer and any advantages of releasing the work in packages is diminished.

CSP does offer more certainty in the overall price and avoids some pre-construction phase costs associated with CM-R and/or D-B. There continues to be a need for constructability verification, and multiple cost estimates during the design and construction document phases are expected. Since 1997, OFPC has used this delivery method for 37% of completed projects (99 valued at \$1.28B) and 19% of projects currently underway (8 valued at \$171M).

ASSOCIATED BUILDING COSTS

The remaining on-average 30% of the TPC consists of a variety of associated building costs. Costs for movable furnishings and movable specialty equipment whether Institution-managed or managed by OFPC are included in this portion of the overall budget. Costs for other work related to the design and performance of the project are also included here and include land surveying, geotechnical investigations, building commissioning and Test and Balance services, and any third-party expertise required based on specific conditions of the project. These may include hazardous material surveys, financial audits, forensic investigations, threat and risk assessments, environment studies, historic structure surveys, and/or specialized IT or security services.

In addition, each CIP project typically includes a portion of the budget directly managed by the institution to address other work associated with the execution of the overall project. This budget may include costs associated with faculty or staff moves, minor renovations, telecommunications re-work, building keying and security modifications, grounds and landscape repair, campus and building signage, and work related to re-routing of utilities and the required utility shut-downs of affected buildings. CIP projects also include miscellaneous costs for reproduction and printing, the Owner-controlled insurance program, and costs for the management fee assigned to OFPC.

The TPC also includes a percentage-based amount for project contingency. This contingency is reserved for close-out and claims costs or changes approved later in the overall project delivery.

Metrics by Delivery Method:

CONSTRUCTION MANAGER AT RISK (CM-R)

<i>9/1997 – 12/2014</i>	<i>\$5,613,000,000</i>	<i>Completed</i>
	<i>\$3,259,000,000</i>	<i>Underway</i>
Pre-Construction Phase Fee	Average	1.73% of TPC
CM-R Guaranteed Maximum Price Proposal	Average	68.36% of TPC
Architectural/Engineering Fees	Average	7.17% of TPC

DESIGN-BUILD (D-B)

<i>9/1997 – 12/2014</i>	<i>\$1,231,000,000</i>	<i>Completed</i>
	<i>\$146,000,000</i>	<i>Underway</i>
Pre-Construction Phase Fee (incl. Arch./Eng. fees)	Average	6.40% of TPC
D-B Guaranteed Maximum Price Proposal	Average	68.91% of TPC

COMPETITIVE SEALED PROPOSALS (CSP)

<i>9/1997 – 12/2014</i>	<i>\$1,276,000,000</i>	<i>Completed</i>
	<i>\$171,000,000</i>	<i>Underway</i>
Total Construction Contract	Average 68.14% of TPC	
Architectural/Engineering Fees	Average 6.09% of TPC	

ASSOCIATED BUILDING COSTS⁶

Movable Furnishings, Institution-Managed	Average 1.04% of TPC
Other Work, OFPC-Managed	Average 5.28% of TPC
Other Work, Institution-Managed	Average 6.59% of TPC
Miscellaneous Expenses	Average 0.59% of TPC
Project Contingency	Average 2.75% of TPC
OFPC Management Fee	Average 3.06% of TPC

⁶ As required Associated Building Cost line items are adjusted to the specific requirements of the project and in order to fully allocate the overall project budget.

3. **U. T. System: Discussion and appropriate action regarding delegation of authority to waive the Schedule of Fees for Basic Architect/Engineer Services for Major Projects identified for hybrid delivery**

RECOMMENDATION

The Chancellor concurs in the recommendation of the Executive Vice Chancellor for Academic Affairs, the Executive Vice Chancellor for Business Affairs, the Executive Vice Chancellor for Health Affairs, and the Vice Chancellor and General Counsel that the U. T. System Board of Regents delegate authority to the Associate Vice Chancellor for Facilities Planning and Construction to waive the Schedule of Fees for Basic Architect/Engineer Services for Major Projects identified for hybrid delivery.

BACKGROUND INFORMATION

As included in the *Hybrid Delivery Methods - Action Plan* presented to the Facilities Planning and Construction Committee on August 19, 2015, and included on the preceding pages, this authorization would allow greater flexibility in negotiating the fees paid to consultants for Major Projects identified in the Hybrid Project Delivery Initiative. The intended goal is to encourage more creative, incentivized teams focused on institution and project goals, including reduced costs and more efficient schedules.

4. U. T. Austin: East Campus Parking Garage - Approval of design development; appropriation of funds and authorization of expenditure; and resolution regarding parity debt (Final Board approval)

RECOMMENDATION

The Chancellor concurs with the Executive Vice Chancellor for Academic Affairs, the Executive Vice Chancellor for Business Affairs, and President Fenves that the U. T. System Board of Regents approve the recommendations for the East Campus Parking Garage project at U. T. Austin as follows:

Project No.:	102-928	
Project Delivery Method:	Design-Build	
Substantial Completion Date:	November 2017	
Total Project Cost:	<u>Source</u> Revenue Financing System Bond Proceeds ¹	<u>Current</u> \$62,400,000
Funding Note:	¹ Revenue Financing System (RFS) to be repaid from parking fees and \$2,400,000 from capitalized interest	
Investment Metrics:	<ul style="list-style-type: none"> • Restore revenues displaced from densification of adjacent central campus • Add 2,000 parking spaces for Dell Medical School, visitors, and campus events 	

- a. approve design development plans;
- b. appropriate funds and authorize expenditure of \$62,400,000 from RFS Bond Proceeds; and
- c. resolve in accordance with Section 5 of the Amended and Restated Master Resolution Establishing The University of Texas System Revenue Financing System that
 - parity debt shall be issued to pay the project's cost, including any costs prior to the issuance of such parity debt;
 - sufficient funds will be available to meet the financial obligations of the U. T. System, including sufficient Pledged Revenues as defined in the Master Resolution to satisfy the Annual Debt Service Requirements of the Financing System, and to meet all financial obligations of the U. T. System Board of Regents relating to the Financing System; and
 - U. T. Austin, which is a "Member" as such term is used in the Master Resolution, possesses the financial capacity to satisfy its direct obligation as defined in the Master Resolution relating to the issuance by the U. T. System Board of Regents of tax-exempt parity debt in the aggregate amount of \$62,400,000.

BACKGROUND INFORMATION

Debt Service

The \$62,400,000 in aggregate RFS debt will be repaid from parking revenues. Annual debt service on the \$62,400,000 RFS debt is expected to be \$4.06 million. The debt service coverage for the institution is expected to be at least 1.5 times and average 2.1 times over FY 2016-2021.

Previous Board Action

On May 14, 2015, the project was included in the CIP with a total project cost of \$62,400,000 with funding from RFS Bond Proceeds.

Project Description

This project will construct a new parking garage to provide parking for students, faculty, event patrons, and visitors to the campus. The 2,000 car capacity, multilevel garage will be located at the site of an existing parking lot at University Federal Credit Union (UFCU) Disch-Falk Field, east of IH-35, and will help replace many of the surface parking spaces on campus that have been displaced by new buildings. The garage will provide for more centralized parking to preserve land for densification of the adjacent Central Campus, the Dell Medical School District, and East Campus and will also help restore revenues for U. T. Austin Parking and Transportation Services.

Basis of Design

The planned building life expectancy is 30-50 years.

The exterior appearance and finish are consistent with similar urban parking garages and with the existing Campus Master Plan.

5. U. T. M. D. Anderson Cancer Center: Alkek Expansion - Renovations to Existing Facility - Amendment of the FY 2016-2021 Capital Improvement Program to increase total project cost; and appropriation of funds and authorization of expenditure (Final Board approval)

RECOMMENDATION

The Chancellor concurs with the Executive Vice Chancellor for Health Affairs, the Executive Vice Chancellor for Business Affairs, and President DePinho that the U. T. System Board of Regents approve the recommendations for the Alkek Expansion - Renovations to Existing Facility project at U. T. M. D. Anderson Cancer Center as follows:

Project No.:	703-XX4		
Institutionally Managed:	Yes		
Project Delivery Method:	Construction Manager-at-Risk		
Substantial Completion Date:	November 2017		
Total Project Cost:	<u>Source</u>	<u>Current</u>	<u>Proposed</u>
	Hospital Revenues	\$22,000,000	\$29,300,000

- a. amend the FY 2016-2021 Capital Improvement Program (CIP) to increase the total project cost from \$22,000,000 to \$29,300,000; and
- b. appropriate funds and authorize expenditure of an additional \$7,300,000 from Hospital Revenues.

BACKGROUND INFORMATION

Previous Board Actions

On August 23, 2007, the project was added to the CIP with a total project cost of \$68,000,000. On July 22, 2012, the President approved a reduction in scope and decrease in total project cost to \$22,000,000 with funding from Hospital Revenues.

Project Description

Renovations to Floors 10 and 11 of the Albert B. and Margaret M. Alkek Hospital began in 2013 and are nearing completion. In response to a recommendation and request from the institution's Department of Critical Care, the scope of work on Floor 7 is to be increased to bring the Intensive Care Unit (ICU) rooms and other accommodations on this floor into alignment with current institutional design standards, clinical practice guidelines, and Texas Department of Licensing and Regulation (TDLR) requirements. The increased renovations are to include the conversion from gas columns to standard headwalls, the elimination of in-room toilets, the elimination of sliding glass doors, the enclosure of medication preparation areas to meet Joint Commission requirements, and the construction of family support spaces including restrooms.

To align the critical care capacity with long-range census projections, a portion of Floor 11 has also been renovated for use as ICU beds, and a portion has been renovated for use as an Intermediate Care Unit (IMU) for hematologic patients. These renovations to Floor 11 will support the use of an ICU swing floor during the renovation of Floor 7, as well as meet long-range ICU census projections. Renovations to Floor 7 are to be completed with two ICU Pods closed at a time, as opposed to one ICU Pod at a time as previously planned.