BRIEFING MEMORANDUM

RE: UC Merced 2020 Project
Date: July 21, 2015

The purpose of this briefing memorandum is to respond to key questions about the delivery of new campus facilities and to provide additional information about the 2020 Project to inform future Regents' actions. The memorandum provides detailed information to support the slide presentation to be presented at the joint meeting of the Committees on Grounds and Buildings and Finance at the July 2015 Regents' meeting.

In May 2013, the Committee on Grounds and Building amended the Long Range Development Plan for the Merced campus to provide flexibility on the existing site to support the development of new facilities needed to expand student access to the University. In March 2015, the Committee on Finance heard an Information Item that provided an overview of the 2020 Project and the proposed method for delivering the needed facilities and discussed generally the progress the campus has made on the 2020 Project.

Input and guidance from the Regents will be requested at the July 2015 Board meeting. No formal action or decision is being requested at this time. The agenda for future Board meetings may include requests for Regents' actions, including at the decision points discussed herein (see "Summary and Next Steps: Future Regents' Decision Points", p. 29).

This memorandum addresses several questions raised by members of the Committee on Grounds and Buildings and the Committee on Finance, as well as individual Regents who have provided input on the Project. It is organized into six sections, addressing key issues raised by the Regents and describing anticipated next steps.

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1. The Need to Build UC Merced and Objectives of the 2020 Project

A. UC's Enrollment Commitment Depends on Growth at UC Merced

The enrollment plan developed for the Legislature by the University of California calls for increasing systemwide enrollment by 10,000 students within the next 5 years. A key element of that strategy is growth at the Merced campus.

UC Merced was established in order to expand access, increase college-going rates in the historically under-served San Joaquin Valley, and stimulate economic growth and diversification in a region struggling with chronic unemployment and poverty.

Since opening in 2005, the Merced campus has grown to 6,200 students, has had an economic impact of $1.3 billion on the regional economy and has been able to develop 900,000 assignable square feet of facilities on a rural, undeveloped site in the heart of the San Joaquin Valley. More than half of the students at Merced are first-generation students, 60% come from low-income families, and 55% are majoring in science, technology, engineering and math disciplines. Based on applications submitted for Fall 2015, Merced will continue to be the most diverse campus in the system.

However, due to space limitations, the Merced campus will be unable to accept additional students after Fall 2016 without a significant financial investment from the system in its future growth. The net impact of limiting growth at Merced will be to deny access to the UC system from qualified students across the state.

Yet UC Merced's aspiration to increase enrollment to 10,000 students is constrained by the lack of traditional capital funding available to the University. If the Merced campus is to grow – *and a threshold question is whether the Board of Regents wants the campus to grow* – it must do so in a manner that suits the unique needs of this particular campus. UC Merced cannot grow in the ways its sister campuses did in the previous century.

That raises another threshold question: If the Board supports the growth of Merced, *how should the University deliver that growth and how quickly?* The different options are discussed below, all of which would require a substantial investment on the part of the University.

B. UC Merced Needs a Wide Range of Facilities to Create a Comprehensive 10,000-Student Campus by 2020

UC Merced has established a goal of creating facilities for a comprehensive 10,000-student campus by 2020. At that size, the campus will be able to attain self-sufficiency and function effectively as a world-class, but highly focused, research university.

Through an amendment to the campus Long Range Development Plan in 2013, the campus reduced the amount of infrastructure that would be needed to develop the 2020 Project site by shrinking the physical footprint for future development by 38%.

In Fall 2013, UC Merced engaged a broad set of academic, administrative and student stakeholders to participate in topic-specific focus groups to inform space-planning needs and program character for this smaller site. These intensive focus groups developed data and details of specific needs for various space types, schools, campus programs, student services, and campus-wide initiatives.

The 2020 Project program is a reflection of this process and is focused on creating mixed-use academic and student-focused space on campus. The campus has sought ways to continue patterns of efficiency and seek out models for flexible, adaptable spaces. The goal of the program is to extend the current campus to support new approaches to multi-disciplinary learning and research, consistent with the campus' recently completed Strategic Academic Focusing Initiative. To achieve that goal, the Project will develop adaptable joint- and mixed-use facilities that can accommodate the interdisciplinary nature of our programs[1].

UC Merced has developed nine goals for cost-effectiveness, delivery and long-term affordability:

- Deliver approximately 445,000 ASF[2] by Fall 2018 ("First Delivery Facilities")
- Deliver an additional 498,000 ASF of new facilities by Fall 2020 ("Second Delivery Facilities")
- Provide a flexible and adaptable joint-use physical environment
- Develop advising and support facilities to facilitate student success
- Provide an inspiring, mixed-use and dynamic living and learning environment
- Maximize short and long-term positive economic impacts within the San Joaquin Valley
- Develop environmentally sustainable facilities
- Create financial stability for the campus with a lifecycle pro-forma financial model
- Ensure the campus can maintain what it builds

[1] Please see Appendix A for the Detailed Program, p. 32.
[2] Assignable square feet.

2. Comparison of Delivery Options

A. Factors Used to Analyze Delivery Options

To meet the qualitative goals described in Section 1-B, the campus analyzed a range of existing capital delivery models based on the following factors:

Factors Used to Analyze Potential Delivery Models	
1.	Delivery of the necessary facilities by 2020
2.	Reduction of design and construction costs through economies of scale
3.	Innovation in design and construction
4.	Achievement of good performance of buildings throughout their lifecycle, including maintenance and operations of major building systems
5.	Advancement of the University's sustainability agenda
6.	Ability to share of performance and financial risk over the lifecycle of the facilities
7.	Total cost of ownership
8.	Term of contractual relationship(s)

B. Project Delivery Options and Projected Costs

The campus explored three delivery strategies for the development of the 2020 Project:

I. Design-Bid-Build Contracts
II. Design-Build Contract(s)
III. Availability Payment DBFOM Contract(s) ("2020 Project")

I. Design-Bid-Build Contracts

Delivery in 2024; University Bears Full Risk for Operations, Maintenance and Capital Renewal

Design-Bid-Build is a procurement methodology that has been utilized to deliver new campuses in the past. In this process, the campus would hold all responsibility, including the financial and performance risks, associated with the development of the master plan, the procurement of design services and the procurement of construction services.

The University would need to procure design services for master planning, and subsequently for design and construction for the infrastructure, based upon the selected master plan. Following the construction of the infrastructure, the campus would need to procure design services and construction services for the most immediately needed "First Delivery Facilities" (~445,000 ASF). Finally, it would procure design services and construction services separately for the remainder of the program, "Second Delivery Facilities" (~498,000 ASF).

Lifecycle Costs in Design-Bid-Build

In a Design-Bid-Build model, the design and construction costs are budgeted on a project-by-project basis. The cost of the design and construction is amortized over the term of a bond financing and interest costs associated with those bonds represent the financing costs. The University would make payments for the cost of the building as construction proceeds, and in full, upon completion of construction. These payments would be funded with revenue bonds (tax-exempt or taxable) issued by the University[3].

The nature of the sequential procurement methodology, including the need to develop infrastructure based on a selected master plan before procurement of buildings, elongates the delivery time for the facilities. The campus estimates that the fastest possible time to deliver the 2020 Project infrastructure, and all of the First Delivery Facilities and Second Delivery Facilities, to be a minimum of eight years (2024). As a result, the design and construction costs are higher due to construction inflation and the separation of the projects through several separately managed phases.

The University would receive a two-year warranty upon substantial completion and a ten-year warranty for latent construction defects, but would otherwise need to plan and budget for ongoing costs of facilities operations and maintenance, including full responsibility for the building performance. Over time, the University would be responsible for managing capital renewal projects, which are typically contracted as separate projects.

Together, the annual cost of the amortization of design and construction, the cost of financing, and the estimated cost of ongoing operations and maintenance of the facilities represents the "Annual DBFOM Cash Flow Requirement of the Project," as shown in the table below.

Design-Bid-Build	
	Multiple Phases
Phasing Approach	1. Infrastructure 2. First Delivery Facilities 3. Second Delivery Facilities
Substantial Completion	2024
Estimated Annual DBFOM Cash Flow Requirement After Substantial Completion	$119 million
Termination	Campus retains the discretion to proceed with each phase

[3] Please refer to Section 3(F) for a comparison of the relative cost of capital under different delivery strategies, p. 21.

Disadvantages of Design-Bid-Build Contracts

A Design-Bid-Build contracting strategy would not deliver the necessary facilities on a timely basis, and would not offer an opportunity to reduce design and construction costs through economies of scale.

The Design-Bid-Build process typically involves a separate procurement and project management process for each individual building. This approach demands a significant level of campus resources to successfully manage and coordinate multiple building projects, potentially with multiple contractors on the operating campus at the same time. This would add significant interface risk and pose project management challenges on the operating campus. Mitigation of these risks would require project delivery to be slower than assumed and/or further increase cost. *The Estimated Annual DBFOM Cash Flow Requirement for this case does not include additional contingency to mitigate this risk.*

The Design-Bid-Build strategy also has limitations on the warranties provided by each contractor. These limitations concentrate performance risk for the developed facilities on the University. Over time, the University would need to contract for capital renewal projects on a scheduled or deferred basis. The pricing of capital renewal projects would be subject to unknown future construction market conditions. In the event that buildings do not perform as designed and/or maintenance of capital renewal work is deferred, costs can become unpredictable and escalate rapidly. *The Estimated Annual DBFOM Cash Flow Requirement for this case does not include additional contingency to mitigate this risk.*

The campus retains financial risk associated with unforeseen events that may periodically render facilities unavailable to students, faculty and/or staff. Examples include, but are not limited to, failures of major building systems, a loss of electrical power, or a breakdown of air conditioning units that render a facility uninhabitable for a period of time. When these unfortunate events occur, the University still must make all payments associated with the amortization of the design and construction costs, financing, operations and maintenance of the affected facility.

II. Design-Build

Delivery in 2020-2022;University Bears Full Risk for Operations, Maintenance, and Capital Renewal

Design-Build is characterized by a single point of responsibility for both design and construction activities. Design-Build is often chosen to transfer risk and coordination responsibility to one contracting party to ensure a higher level of coordination for these two critical components of project delivery. Utilization of a Design-Build strategy would enable development of the supporting infrastructure for the Project at the same time as the buildings, thereby streamlining design and construction of the facilities. As compared with a Design-Bid-Build process, Design-Build can combine facility delivery into one or two procurements.

In order to achieve the University's goal of delivering facilities by 2020, this strategy would combine design services for master planning and design with the construction of the infrastructure and facilities.

The University could procure the design and construction of the infrastructure and facilities in a single-phase procurement, with two delivery sequences. The contractor would be required to deliver the First Delivery Facilities by Fall 2018, followed by the Second Delivery Facilities by Fall 2020.

Alternatively, in a two-phase Design-Build procurement approach, the University would likely sequence the procurement of the Second Delivery Facilities to follow the completion of the First Delivery Facilities, delaying substantial completion of the facilities until approximately 2022.

Lifecycle Costs in Design-Build

In a Design-Build model, the design and construction costs (under a single entity) are budgeted as a capital project. The cost of the design and construction is amortized over the term of a bond financing and interest costs associated with those bonds represent the financing costs. The University would make payment for the cost of the building as construction proceeds, and in full, upon completion of construction. These payments would be funded with revenue bonds (tax-exempt or taxable) issued by the University[4].

A single-phase procurement process would reduce project cost relative to a Design-Bid-Build or multiple-phase project, due to economies of scale and avoidance of construction cost inflation. In a two-phase procurement approach, the 2020 Project would likely reach substantial completion in six years (2022). This approach would enable the University to "opt-in" to the development of the second phase of the Project. The economics of this approach would be expected to be substantially similar to a single procurement that incorporates a pre-development agreement for the second phase of the project (see below: "Challenges to Delivering the Needed Facilities in Multiple Phases", p. 13). This scenario would be more cost-effective than Design-

[4] Please refer to Section 3(F) for a comparison of the relative cost of capital under different delivery strategy options, p. 21.

Bid-Build, but more costly than a single-phase Design-Build procurement.

The campus would receive a two-year warranty upon substantial completion and a ten-year warranty for latent construction defects, but would otherwise need to plan and budget for ongoing costs of facilities operations and maintenance, including full responsibility for the building performance. Over time, the University would be responsible for managing capital renewal projects, which are contracted as separate minor or major capital projects.

Together, the annual cost of the amortization of design and construction, the cost of financing, and the estimated cost of ongoing operations and maintenance of the facilities represents the "Annual DBFOM Cash Flow Requirement of the Project," as shown in the table below.

Design-Build (DB)		
	Variant 1 **Single-Phase DB Procurement**	**Variant 2** **Two-Phase DB Procurement**
Phasing Approach	First Delivery Facilities and Second Delivery Facilities are sequenced, with an integrated delivery of infrastructure	First Delivery Facilities and the associated infrastructure are procured and delivered. Following substantial completion, a second procurement is conducted for Second Delivery Facilities and the associated infrastructure
Substantial Completion	2020	2022
Estimated Annual DBFOM Cash Flow Requirement After Substantial Completion	$105 million	$113 million
Optional Termination	Contingent breakage that could also result in delay, with related costs	No additional costs or breakage that would result in delay

Disadvantages of Design-Build Contracts

A single-phase procurement strategy would be necessary to deliver the needed facilities on a timely basis and to maximize economies of scale.

Similar to design-bid build, the Design-Build strategy has limitations on the value of the warranties provided by each contractor. These limitations concentrate performance risk for the developed facilities on the University. Over time, the University would need to contract for capital renewal projects on a scheduled or deferred basis. The pricing of capital renewal projects would be subject to unknown future construction market conditions. In the event that buildings do not perform as designed and/or maintenance of capital renewal work is deferred, costs can become unpredictable and escalate rapidly. *The Estimated Annual DBFOM Cash Flow Requirement for this case does not include additional contingency to mitigate this risk.*

The campus retains financial risk associated with unforeseen events that may periodically render facilities unavailable to students, faculty and/or staff. Examples include, but are not limited to, failures of major building systems, a loss of electrical power, or a breakdown of air conditioning units that render a facility uninhabitable for a period of time. When these unfortunate events occur, the University still must make all payments associated with the amortization of the design and construction costs, financing, operations and maintenance of the affected facility.

Relative to a single-phase Design-Build procurement, a two-phase Design-Build procurement entails two separate procurement processes, elongating the time for substantial completion, as well as increasing costs. Costs would increase with construction-cost inflation, which would increase the annual amortization of design and construction cost, and increase financing cost due to a higher amount of debt. A two-phase approach would require repeating the procurement process for the second phase, decreases economies of scale and the leveraging of volume, and increases mobilization and demobilization costs relative to a single-phase approach.

III. Availability Payment DBFOM Contract

Delivery in 2020; Ensures Funding of Operation, Maintenance and Capital Renewal Over Facilities' Lifecycle

An Availability Payment DBFOM contract builds upon the concept of a single phase Design-Build approach in order to achieve the campus objective to implement a lifecycle financial model and risk profile for its facilities that preserves the value of University ownership of the facilities. The DBFOM approach creates private-sector competition for a contract that links the cost of long-term maintenance and operation of the facilities to their initial design and construction.

In this procurement methodology, the University would make two types of payments: (i) "milestone" payments, upon the delivery of the facilities; and (ii) "availability" payments, which are performance-based payments made over the lifecycle of the facilities.

Milestone payments would be made to finance approximately 50-75% of the cost of the facilities. These payments would be funded through the issuance of revenue bonds (tax-exempt or taxable). Like a Design-Build contract, the cost of the milestone payments is amortized over the term of the bond financing and interest costs associated with those bonds represent the financing costs.

Following the delivery of the facilities, over the term of a long-term contract (equivalent in length to a bond financing), the University would make availability payments, subject to the availability and performance of the facilities as specified in the Project Agreement. These availability payments are designed to pay for the amortization of the private financing portion of the design and construction costs, interest on financing, and the cost of maintenance, operation and renewal of the facilities (please refer to Section 3(F)2, "Availability Payments" for a complete discussion, p. 22)[5]. If the buildings do not perform up to the standards established in the Project Agreement, the availability payments are reduced. These availability payment reductions function to share the financial and performance risk of maintaining and operating facilities over time. The size of the availability payments is determined through a competitive procurement process.

This strategy differs from other long-term development contracts the University has historically undertaken. Under this strategy, the University would not transfer property rights to the counterparty – in short, the Project Agreement is not a lease. The University also would not assign its revenue streams to a third party: the University will receive all revenue associated with the implementation of its programs.

Under an Availability Payment DBFOM contract, the Developer must not only design efficient facilities on the agreed-upon time schedule, it must properly maintain the major building systems in order to earn the agreed-upon availability payments. If any facilities are not available in accordance with the contract standards, the University is entitled to deduct an established amount

[5] Please also refer to Section 3(F) for a comparison of the relative cost of capital under different delivery strategy options, p. 21.

from the availability payment. In addition, the transaction is structured to provide for monetary reserves that only become available to the Developer at the end of the agreement term. These reserves provide a financial incentive for the Developer to return the buildings in a state of good repair, as specified in the Project Agreement.

The Availability Payment DBFOM strategy helps ensure that the Project fits within a long-term financial model so that the campus can afford to maintain what it builds. By linking the cost of the long-term maintenance and operation of the facilities to their initial design and construction, the strategy promotes quality design and construction and good performance throughout the lifecycle of the buildings. This risk-sharing structure will enable the campus to focus on delivery of its core teaching, research and public-service mission by minimizing capital maintenance and operations risk.

Optional Termination Provisions ("Opt-Out")

The Availability Payment DBFOM contract includes a provision that enables the Regents to terminate the contract at any time – an option to "Opt-Out". Upon exercising this termination provision, the Regents would make a payment equal to the amount of outstanding Developer debt and equity, a "make-whole" plus contractor breakage costs. The impact of taking this action would be to change the risk profile and lifecycle cost of the Project from a single-phase project to a two-phase project. In other words, the Estimated Annual DBFOM Cash Flow Requirement would increase by approximately $8 million.

If the University were to choose to opt-out, it would result in the need to refinance the portion of the design and construction costs originally financed by the Developer with debt issued by the Regents. In that event, the benefits of sharing financial and performance risk could be eliminated.

Lifecycle Costs in an Availability Payment DBFOM

In an Availability Payment DBFOM procurement, bidders enter into a bid process across all lifecycle cost elements. The bids are based on the estimated annual DBFOM cash-flow requirement after substantial completion, according to the terms of the Project Agreement, including the technical specifications and performance standards the Developer must meet.

The lifecycle methodology includes periodic capital renewal to ensure that the buildings continue to perform in accordance with the contractual standards throughout the life of the long-term contract. This avoids the need for the University to bid capital renewal projects at a point to-be-determined in the future. By its nature, this methodology provides performance guarantees that are not available in a Design-Bid-Build or Design-Build procurement approach.

In the Design-Bid-Build and Design-Build models, even if a facility becomes unavailable due to construction defects covered by the original warranty, the University's payments for the facilities would not be reduced in a manner similar to an availability payment. The University would be responsible for the cost of the repair. Experience also tells us that maintenance and operations costs can be unexpectedly high, due to poor design or construction short of an actual defect or

outside of the warranty period.

Because the price competition in an Availability Payment DBFOM procurement is based on lifecycle costs that include the design, construction, financing, operations and maintenance, the proposers have the incentive to design preventative maintenance programs to ensure facility availability. The competition requires that decisions be made at the point of initial design to drive down design, construction, operations and maintenance costs. These cost savings are estimated to exceed a marginally higher cost of capital. The net benefit is expected to be passed on to the University through the competitive process and is guaranteed under the Project Agreement.

C. Challenges to Delivering the Needed Facilities in Multiple Phases

The DBFOM approach proposed for the 2020 Project assumes the facilities would be delivered by a single developer under one contract, but in *two sequences*. The first sequence would deliver critical facilities by Fall 2018. The second sequence would substantially complete the remaining facilities by Fall 2020. This strategy would include an optional termination provision that would enable the University to opt-out of the contract (see "Optional Termination Provisions," p. 12, above).

One alternative that has been proposed is to re-characterize the *sequences* envisioned in the 2020 Project DBFOM model into severable *phases* that the University would have an option to exercise. Under this "pre-development agreement" approach, the University would contract with a single developer to build the 2020 Project program, with an option requiring an affirmative action by the University to initiate the second phase.

The goal of the pre-development agreement approach is to protect the University in the event the chosen developer does not perform adequately and the University does not want to proceed with the same developer for second phase. The developer would also have an incentive to perform well in Phase 1 to ensure that the University exercises its option on Phase 2.

In order to capture the benefits of the pre-development agreement model, it would be in the University's interest to delay moving forward with the second phase until there is work product to review from the first phase. A delayed start due to the need for a second approval process would almost certainly mean Phase 2 would be completed *after* Fall 2020.

Given that the timeframe for the execution of the pre-development agreement is unknown, bidders would price the second delivery scope as a discrete project in the form of indicative pricing or subject to escalation. This could result in higher bids and would sacrifice economies of scale, resulting in a higher Annual DBFOM Cash Flow Requirement. These added costs would offset advantages that this approach might yield with respect to avoiding potential breakage and/or litigation costs that would occur if the University chose to terminate the DBFOM contract following delivery of the first phase facilities.

The optional termination provision in the availability payment DBFOM model provides similar protection as the pre-development agreement, while capturing the savings that result from

economies of scale and the benefits of earlier delivery. This optional termination structure enables the University to terminate the contract in the event of poor performance or for any other reason. The cost of the option is incurred only when it is exercised. By contrast, the phased pre-development agreement approach builds in the "cost" of the option at the inception of the contract, through higher bids, sacrifice of economies of scale and later delivery. Moreover, in the event the University did choose to opt-out of the single procurement approach, the annual DBFOM Cash Flow Requirement would end up being equivalent to an approach that employs the use of a pre-development agreement.

Availability Payment DBFOM Contract		
	Single-Phase Procurement with Optional Termination (2020 Project Approach)	**Single-Phase Procurement with Pre-Development Agreement**
Phasing Approach	First Delivery Facilities and Second Delivery Facilities are sequenced, with an integrated delivery of infrastructure	First Delivery Facilities and the associated infrastructure are procured and delivered. At the same time, a pre-development agreement is entered into for development of the Second Delivery Facilities and the associated infrastructure
Substantial Completion	2020	2022
Annual DBFOM Cash Flow Requirement After Substantial Completion	<= $105 million	<= $113 million
Optional Termination	University retains a right of optional termination at any time. Exercising this option would require a premium to be paid at the time of termination. Contingent breakage that could result in delay, with related costs	University retains a right of optional termination at any time. Exercising this option would require a premium to be paid at the time of termination. No additional costs or breakage that would result in delay

Disadvantages of Design-Build-Finance-Operate Maintain Availability Payment Contracts

In order to hold the developer accountable for the performance of the buildings over their lifecycle, the term of the contract needs to extend through at least one capital maintenance cycle. Therefore, the University would be in contract with the developer for up to 39 years. The financial structure of the DBFOM model, discussed in Section 3 on p. 17, also results in a higher cost of capital to the University, estimated to be a difference of 0.75% to 1.25%. To offset these higher costs, the other components of lifecycle costs (design, construction, operations and maintenance) would need to be at least 5% less expensive. For this reason, the procurement process for the 2020 Project establishes a threshold, called the "upset limit", to ensure that the financial bids result in lifecycle costs lower than the Design-Build approach[6].

D. Comparison of the DBFOM Approach with Design-Bid-Build and Design-Build Delivery Options

Among the delivery models, DBFOM and Design-Build have the fastest time to delivery and the best opportunity for economies of scale and innovation. Under the Design-Build method, the University would enter into a contract with a Developer who would design and construct all infrastructure and facilities. The DBFOM approach is based on the Design-Build method - but adds a long-term operations and maintenance component for major building systems.

In delivering the DBFOM model, the campus would seek a developer with expertise and demonstrated innovation in design, construction, and management, *as well as* the ability to maintain major building systems in a cost-effective manner. As discussed above, the developer is held accountable for the performance of the facilities. The DBFOM approach is best positioned to encourage innovation in a world-class competition around delivery and maintenance of the entire group of facilities and infrastructure.

Because the delivery strategy holds the developer accountable for facility performance over its lifecycle, the University can be less prescriptive and allow for greater innovation in design, construction, and facilities maintenance. Preventative maintenance on major building systems, which reduces cost over the building's lifecycle, is built into the developer's facilities management plan.

Relative to a Design-Build approach, the financial structure of the DBFOM model results in a higher cost of capital to the University. Notwithstanding the higher cost of capital, our analysis suggests this model will yield a net benefit for the University, because other components of lifecycle costs would be reduced to a greater extent. The use of an upset limit[7] would ensure that savings are passed on to the University and guaranteed through the Project Agreement.

[6] See Section 3(D) – Capturing Value Through Procurement: The Upset Limit and Financial Bids, pg. 19.
[7] The procurement process would establish a threshold to ensure that financial bids result in lifecycle costs lower than the Design-Build approach. See Section 3(D) – Capturing Value Through Procurement: The Upset Limit and Financial Bids, p. 19)

The value created by the DBFOM approach relies upon the ability to drive design, construction, operations and maintenance costs lower to offset a relatively higher cost of capital. The value proposition is based on the premise that the developers will have a more efficient method of completing the project and ensuring building performance over time than we would expect to accomplish ourselves under more traditional delivery methods.

This premise will be tested through a competitive procurement process, whereby development teams must compete across all lifecycle costs, to win a contract that requires the winning team to provide long-term performance guarantees at the bid cost, (see Section 3(D) Capturing Value Through Procurement, p. 19).

The proposed scope and strategy for the Project have received extensive modeling and evaluation. Based on that analysis, the DBFOM approach is viewed as the optimal solution to fulfill the 2020 Project program goals, because:

- The approach provides an advantage in **time to delivery**
- Relative to a Design-Bid-Build approach, the approach achieves efficient and **cost-effective pricing of design and construction,** due to acceleration in the time to delivery and economies of scale.
- The DBFOM approach allows the University to be less prescriptive, thereby allowing greater innovation across design, construction and facilities maintenance, enabling the proposers to **drive lifecycle costs lower notwithstanding higher cost of capital**
- The approach provides a long-term guarantee of building performance throughout their lifecycle that includes incentives for cost-effective **preventative maintenance**
- **Transfer of significant non-core risks** from the campus to the developer during both construction and operations
- A competitive procurement process for all lifecycle cost components will enable the University to **capture value**
- DBFOM strategy achieves budgetary stability with respect to maintenance and operation for **35 years**

During the process of analyzing the approach to the 2020 Project, a Value for Money analysis was conducted, concluding that, when compared with Design-Bid-Build and Design-Build strategies, risk-adjusted savings are likely to be realized through the availability payment DBFOM delivery strategy. The analysis was conducted to support or refute the qualitative and quantitative comparison of delivery strategies. While a Value for Money analysis does not guarantee savings through the process or serve as the primary basis for our analysis, it supports the conclusion that the University can expect to achieve risk-adjusted savings relative to other delivery strategies.

3. 2020 Project Financial Considerations: A Hybrid Approach

A. Impact on the University of California's Credit Capacity

Under any delivery strategy, a commitment to expand the Merced campus would require a substantial financial investment by the University. While the Availability Payment DBFOM model offers an optimal approach relative to other strategies, it would not address every financial challenge facing the campus.

Depending on the terms of the final Project Agreement, rating agencies may view availability payment obligations – like the 2020 Project – as debt-like and include them in their analysis of the system's debt burden. The Office of the President anticipates briefing credit rating agencies on the 2020 Project over upcoming quarters.

B. DBFOM Financial Structure: A Base Case

A base case plan of finance for the Project has been modeled as a "hybrid" version of an availability payment DBFOM contract. As envisioned, the University would invest approximately 50-75% of the total project construction cost using a combination of General Revenue and Limited Project Revenue Bonds[8]. The Developer would provide funding for the remainder, through a combination of equity and private debt. The total design and construction cost estimate under the DBFOM approach has been assumed to be $900 million in 2014 dollars. With construction escalation, the year-of-expenditure assumptions approach $1 billion.

C. 2020 Project Lifecycle Financial Model Structured to Ensure Affordability

The campus developed a pro forma lifecycle financial analysis that incorporates assumptions about the financial resources and expenditures of the campus over time, including both operating and capital components. A summary of the campus pro forma model is included in Appendix 2.

2014 OP-UCM Memorandum of Understanding assumptions are incorporated into the Financial Model

The pro forma financial analysis shows that the campus has structured its financial model based on the financial capacity envisioned by a 2014 Memorandum of Understanding (MOU) between the campus and the Office of the President. These assumptions include:

- An addition to the UC Merced base budget of $10,000 per new student, continued through the term of the successor MOU, based on an annual growth rate of 650 students;

- A one-time permanent addition of $5 million to the UC Merced budget base, with those funds to be used to partially fund start-up packages for the 18-25 new research-active faculty UC Merced expects to bring in per year through FY 2021-22. The model assumes that this increase takes effect starting in the FY 2015-16 budget.

[8] Please see Section 3(G) for more detail, p. 23.

At the time the MOU was executed, the scope and financial model for the Project remained unclear. The MOU indicated that, based on preliminary analysis, appropriations of State General Funds will be necessary to fund approximately 35-55% of Project costs, with the understanding that State General Funds must be attributable to State-eligible projects. With this in mind, the campus has assumed that $40 million per year from the systemwide capital plan will be provided to finance the Project[9].

Additional assumptions have been incorporated into the Financial Model

Ten additional assumptions have been included in the campus financial model. They include:

- Student Enrollments reflect the UC Merced long-range enrollment plan

- Core Funds Revenue assumes an allocation of State General Funds consistent with the existing Memorandum of Understanding, with growth of 4% in FY 2022-23 and thereafter. In addition, assumes gross resident tuition revenue (*i.e.*, before financial aid set-asides) in an amount equivalent to 3% annual increases, either from rate increases or from other University revenue augmentation, in FY 2017-18 and thereafter.

- Student Financial Aid: Return tuition revenues as aid to resident undergraduate, graduate and summer session students in the amount of 33%, 50% and 25%, respectively.

- Pell Grants: Assumes receiving the same $/undergraduate student as in FY2014 and growth at the inflation rate after 2020.

- Faculty and Staff Resources: Assumes a long-term student-to-faculty ratio of 20.0 and a long-term staff-to-faculty ratio of approximately 2.4x. Includes wage-inflation growth.

- Instruction Costs: Scales with additional ladder-rank and lecturer hires to achieve target long-term ratio as described above. Includes wage inflation growth.

- Academic and Institutional Support: Scales with staff hires to achieve target long-term ratio as described above. Includes inflation growth.

- Grants and Research: Scales with ladder-rank faculty hires and includes inflation growth.

- Auxiliary Revenue and Expense: Assumes new facilities operate at a similar operating margin to existing facilities and fee growth at the rate of inflation.

- Inflation: Assumes annual inflation rate of 3%.

[9] Current analysis indicates that the Project will cost approximately $105 million per year, over the life of the Project Agreement. The annual $40 million amount equates to 38% of Project cost and would be attributable to state-eligible projects and/or operating costs.

The current version of the campus pro forma is included as an appendix to this memorandum. Based on these assumptions, legally available campus revenue (including capital-eligible sources as well as State General Funds) would be 3.37x of the total amount of annual debt service and availability payments in FY 2020-21 increasing to 3.90x by FY 2024-25.

The financing of the Project will create a fixed obligation of the campus and the system to pay for the facilities. As such, to the extent that financial assumptions are not met and a significant financial stress case materializes, the negative impact would be felt in one of three ways: the campus would need to tap its reserves, programs would need to be cut, or the campus would need to seek alternative sources of funding.

The campus continues to work with the Office of the President to optimize the plan and retain financial flexibility as the Project moves forward. Unlike other delivery models, this model allows an opportunity to optimize the finance plan within the funding components in the DBFOM hybrid structure.

D. Capturing Value Through Procurement: The Upset Limit and Financial Bids

The procurement process is structured to ensure that the estimated Annual DBFOM Cash Flow Requirement (the annual costs associated with amortized design and construction, finance, and operation/maintenance) after substantial completion is equal to or less than a threshold cost for the project. In an availability payment DBFOM model, the Annual Cash Flow Requirement includes three primary costs: (i) the amortization and interest cost of bonds issued to fund milestone payments; (ii) availability payments; and (iii) operating costs and contingencies held by the University.

Value generation is confirmed and captured through the competitive RFP procurement process with the establishment of an "upset limit." The upset limit ensures that savings, relative to the Design-Build approach, are passed on to the University and guaranteed through the Project Agreement. If a proposer submits a financial proposal with a bid maximum availability payment that exceeds the Upset Limit, the proposal would be deemed non-responsive.

Responsive proposals that include a financial bid below the upset limit would pass value to the University. If the teams are not able to submit a financial bid at or below the upset limit, the University would be unable to move forward because it would not have a responsive proposal. Therefore, it would trigger a decision point to re-evaluate the scope, cost and/or structure of the project.

The University would determine the Upset Limit based upon the estimated Annual DBFOM cash flow requirement for a single-phase Design-Build project into a long-range, lifecycle financial model. By establishing this annual cost as the upper threshold for an availability payment DBFOM model, the University would require responsive bids to provide the lifecycle performance guarantee at no cost to the University. The Upset Limit is anticipated to be established such that any financial bid that would result in an annual DBFOM cash flow requirement above $105 million per year would be deemed non-responsive. The competitive

process, however, offers the possibility that a winning proposal will offer a maximum availability payment below the Upset Limit. The long-term financial pro forma analysis for the campus can be found in Appendix 2 on page 36.

The Upset Limit is set to ensure that the delivery approach is both affordable and economically equivalent or better than the Design-Build approach. Following submission of financial bids, the availability payment is fixed over the term of the Project Agreement, with the exception of any adjustments to reflect market changes in interest rates between the submission of the financial bid and financial closing and a set inflation escalation for operations and maintenance costs.

E. Detailed Financial Submittals Provided by Each Developer Team

The RFP will require financial submissions from each of the teams. The financial submission will enable the campus to assess the financial health of each team, the assumptions built into their financial plan, their availability payment assumptions and a detailed accounting that will reveal where the parties anticipate cost efficiencies.

In addition to the bid maximum availability payment, the proposal requires a narrative summary of critical elements of the Project structure, the proposed sources of financing, non-financing expenses, rationale for use of the reserve accounts, refinancing approaches, and risk mitigation. It will also outline the use of financing sources in relation to the State-eligible components of the project. A sensitivity analysis is also required that is intended to demonstrate the strength of the proposed financial plan. The procurement also requires detailed backup information to support the proposal.

Detailed Schedule of Values – Bidders must provide detailed design and construction costs in Construction Specifications Institute Divisions (CSI) format. Required divisions include engineering services, utilities relocation, mobilization, clearing, facilities, drainage, signage, lighting, systems and landscape. Prior to submittal, technical advisors working on behalf of project lenders will review these costs. Bidders are also required to provide detail for any amount greater than $1 million to be paid to the Developer.

Bid Financial Model – The bid financial model is an electronic submittal containing all inputs, forecasts and calculations used by the Developer to determine the maximum availability payment in its bid. The procurement also requires detailed pro-forma output tables, including: Financial Plan Overview, Quarterly Construction Period Sources and Uses Analysis, Annual Construction Period Sources and Uses Analysis, Operating Period Capital Structure, Debt Financing Data and Subordinate Debt (if any) Financing Data, Debt Coverage Ratios, Cash-Funded Reserves (or Letters of Credit) and Owner's Anticipated Payment Schedule. Bidders must also provide an instruction book describing how to operate the model. Prior to submittal, the financial model will be audited by an independent party and reviewed by project lenders.

Financial Commitment Documentation - Bidders are required to provide executed commitment letters for any debt, equity or other financial instruments shown in the sources and uses for the project. Bidders are also required to provide term sheets (and draft funding agreements if available) for their debt instrument(s), and must provide indicative rating letters if the debt will

be rated. Funders and rating agencies are required to complete formal internal approval processes in advance of issuing these commitments.

F. Cost of Capital

In order to manage the cost of capital to the University, the plan of finance has been structured to incorporate a significant amount of tax-exempt financing. Therefore, the plan of finance has been structured as a "hybrid" financing that includes a combination of public and private financing components. This hybrid approach preserves the transfer of design, construction, and operations and maintenance risks as well as the lifecycle costing benefits of the availability payment procurement while bringing the overall cost of capital closer to the cost that would have been available if the University had financed the Project.

Under the Availability Payment DBFOM model, the University would meet its payment obligations in two ways:

1. Milestone Payments will be tied to specific construction goals

Milestone payments funded by University revenue bonds will fund approximately 50-75% of the projected design and construction cost with the remainder from financing and equity obtained by the Developer.

The current plan of finance models a total of $600 million in construction milestone payments that will be made to the Developer upon achievement of specified construction milestones. The University will use its traditional low-cost debt instruments to finance those payments.

The model assumes that milestone payments would be funded from:

- $50 million in funding already allocated from the University's 2012 Century Bond issuance
- $250 million to be funded with future issuance(s) of University of California General Revenue Bonds and/or Limited Project Revenue Bonds (LPRBs); and
- $300 million to be funded with proceeds of future issuance(s) of University of California General Revenue Bonds (GRBs)

The projected weighted average cost of capital for these sources of payments reflects the cost of capital for issuing University debt.

The system's commercial paper program may also be leveraged for the first two construction milestone payments. This would reduce the cost of interest during construction relative to the model's current assumptions.

2. Availability Payments will be based on performance

Once the facilities are built to the agreed-upon specifications and the campus accepts them, the Developer is entitled to payments over the subsequent 35 years, as long as the asset is made available to the campus at the standard required by the University as detailed in the Project Agreement. Availability payments for capital are sized to cover approximately 25-50% of the projected design and construction costs. In addition to capital-related payments, the availability payment also includes amounts sized to cover operating and maintenance costs. The payments will be adjusted downward for lack of performance or if the facilities are unavailable to the campus.

Project financing that is provided based upon the pledge of availability payments is more expensive than traditional tax-exempt bonds issued by the Regents. This higher cost reflects the performance risk taken on by the Developer and the possibility that availability payments may be reduced in the event that buildings are not available at the standards required by the Project Agreement. As a result, the projected weighted average cost of capital for the 2020 Project, which includes returns on Developer debt and equity, is higher. This amount is projected to be 75 to 125 basis points higher than the University's cost of capital.[10]

The draft plan of finance anticipates financing payment obligations under the Project Agreement from legally available campus revenue, such as revenue generated by the Project, other campus revenue and fee sources, and certain State sources available for capital expenditures.

	100% University Financing	2020 Project Base Case	100% Private Financing
% University Financing	100%	50% to 75%	0%
% Private Financing	0%	25% to 50%	100%
Weighted Cost of Capital	*'X'* %	*'X'* plus 0.75% to 1.25%	*'X'* plus 1.5% to 2%

It should be noted that at the current program size, in the DBFOM case, additional public capital above the $600 million currently assumed in the plan of finance for the milestone payments may not be consistent with achieving the DBFOM risk transfer benefits or attracting sufficient bidder interest for a competitive process, especially if bidders are able to deliver lower-than-expected construction costs.

[10] The weighted average cost of capital assumes that the developer's capital structure will include 10% equity and 90% debt.

G. 2016-17 State Capital Outlay Request

In July 2013, Assembly Bill 94 (Chapter 50, Section 8) added sections 92493 to 92496 to the Education Code ("AB 94"), which allowed the University to utilize State General Fund appropriations as a repayment source, with certain conditions, for certain University-issued revenue bonds. The four project categories that are eligible for funding under this mechanism are: (1) seismic and life safety needs, (2) enrollment growth, (3) modernization of out-of-date facilities, and (4) renewal or expansion of infrastructure to serve academic programs.

In July 2015, Senate Bill 81 amended sections 92493, 92495 and 92495.5 of the Education Code to expand the eligible uses of funds to include "availability payments, lease payments, installment payments, and other similar or related payments for capital expenditures…"

In September 2015, the 2020 Project will be incorporated into a request for the Regents to approve the 2016-17 Budget for State Capital Improvements. Approval of the use of State General Funds for the 2020 Project would enable the University to pledge State General Funds to the repayment of tax-exempt bonds issued to fund milestone payments and/or availability payments under the contract, subject to the provisions of Section 92493, *et seq.* of the Education Code.

4. The Project Agreement and Risk

A. The Project Agreement: Default and Termination Provisions

The key document in the procurement is a multi-volume "Project Agreement." It sets forth the rights and obligations of both the Developer and the University. Campus, institutional and advisory experts, and stakeholders have spent almost two years developing the document. The Project Agreement includes commercial and risk-allocation provisions that reflect:

- Developer's obligation to design, build, finance (obligations other than University milestone payments), operate, and maintain major building systems
- Requirements for "First Delivery" (in 2018) of certain facilities critical to facilitate campus enrollment growth prior to 2020
- Penalties for late delivery or poor performance
- Good-faith thresholds to employ local businesses from the San Joaquin Valley
- Maintenance and renewal requirements of the facilities for 35 years
- Labor, prevailing-wage requirements and safety standards
- Governmental, regulatory, sustainability and building official approval requirements
- Limitations on the ability of the Developer to assign or transfer its obligations
- Procedures for force majeure events (e.g. earthquakes, natural disasters)
- A form of direct agreement with the Lenders
- University's oversight and approval rights, including step-in rights in the event of default
- Duration and allocation of responsibility for various elements of Project operations

Under the Project Agreement, the Developer will be responsible for developing the conceptual design included in its bid to final design, in accordance with the design requirements, technical specifications and performance standards contained in the Project Agreement. The Developer will be required to provide design submittals for the campus' review and approval during the contract administration phase. The Project Agreement will also set handback standards for the condition of the buildings on their return to the University at the end of the Agreement.

As detailed above, the financial structure includes milestone payments from the University to the Developer during construction. However, in contrast to progress payments used in typical scenarios, the gap between the amount of work in place and the milestone payments actually paid by the University to the Developer provides a large contingency against contractor default or failure to pay subcontractors or suppliers. The result of this effective retention is that it allows the University to offset losses before payment to the contractor, as opposed to trying to recover losses after payment.

In order to protect the University in the event of nonperformance during construction, the campus will require a "performance bond" of $275 million and a "payment bond" of $275 million. Performance bonds cover the failure of the Developer to perform pursuant to the contract. Payment bonds are intended to cover the failure of prime contractors to pay subcontractors. The size of the performance-bonding requirement reflects an amount that is approximately two times larger than the estimated the maximum probable loss that could occur for performance or payment, assuming that all reasonable mitigation measures are followed and

prudent management by the University.

B. Dispute Resolution Board During Entire Term Of The Contract

DBFOM contracts typically contain dispute-resolution procedures that govern disputes that arise between the parties throughout the term of the contract. The Dispute Resolution Board for the 2020 Project is comprised of three persons selected by the campus and the Developer. The Board's determination is provisionally binding pending litigation filed by the party disputing the resolution. The dispute-resolution procedures also contain features of particular importance to large-scale, complex projects using the proposed delivery method, including:

(1) A requirement for the Developer to continue work pending resolution of the dispute;
(2) Payment of undisputed amounts otherwise owed by the University;
(3) Provisionally binding or finally binding fast-track determinations of disputes related to time-sensitive issues such as achievement of substantial completion; and
(4) Consolidation of related subcontractor disputes.

C. Analysis of Risk Scenarios

There are risks the University incurs each time it undertakes a construction project, regardless of delivery method. The following describe several risk scenarios faced by the University, how these risks are manifested in the Availability Payment DBFOM structure, the proposed approach to mitigating these risks, and stress-case scenarios:

- **Concentration risk:** The concentration of responsibility for delivery of the project with a single developer raises questions about performance risk to the University. In a traditional project, the University might diversify this risk through implementation of a phasing approach that breaks the overall project into several phases, with construction of buildings over a long period of time and by different contractors.

  However, in order to attain enrollment goals, the campus must consolidate the development of infrastructure and facilities. The facilities incorporated within the Project program are necessary by the 2020-21 academic year to facilitate the campus' enrollment growth.

  The Project Agreement contains certain delivery milestones. These milestones are designed to ensure that First Delivery Facilities are delivered by the start of the 2018-19 academic year. Additional milestones ensure that the requisite complement of facilities is available to the campus to increase enrollment to 10,000 upon substantial completion in 2020.

  Significant penalties, including liquidated damages and "Noncompliance Points," will be assessed for failure to meet the delivery milestones. Noncompliance Points are unique to DBFOM contracts, and are a system to measure the Developer's performance levels during the design, construction, and operations and maintenance phases of the Project and trigger remedies set forth in the Project Agreement. In addition, the Project Agreement proposes relatively short cure periods for failure to deliver construction milestones. This

regime imposes significant consequences for failure to meet construction milestones and creates a *de facto* phasing regime in the event of non-performance.

- **Construction delays:** The University is ultimately responsible for the indirect costs of the delayed opening of facilities and the damage to University reputation. But the Developer retains most of the financial risk in this scenario. The Design-Build contractor will not be inclined to stop work because the Developer and lenders require completion before earning availability payments. While construction delay risk is encountered in all capital projects, this structure reduces financial risk to the University because it would reduce the amount of availability payments paid over the term of the contract.

  "Stress Case" Scenario: In the event that the selected Developer does not perform the contracted design and construction work, the University will experience a delay in the opening of its new facilities. Even with shortened cure periods and accelerated step-in rights described above, the facilities would already be behind schedule when the University obtains the right to fully take over the project and finish the work under a new contractor. By the time the University completes the work under a new contractor, the facilities could be one or two years late. In this scenario, faculty hiring under the campus's Strategic Academic Focusing Initiative would stall and enrollment growth would be delayed. The blow to the reputation of the campus could put its ability to grow further into jeopardy, even after the facilities are completed.

- **Contractor, developer or subcontractor failures (i.e. due to bankruptcy):** This is a risk associated with all capital projects undertaken by the University. Under this delivery model, the University will have paid money in the event of failure, but for only a fraction of the construction value (to the extent that milestones have been met); lenders and equity partners will bear financial risk equivalent to the amount of their investment and will step in to replace the contractor, subject to University approval. Performance and payment bonds also act as further safeguards to lenders and the University.

  "Stress Case" Scenario: In the event that the Developer's inability to manage its contractors and sub-contractors results in substantial completion delay, the worst case scenario could be manifest in material construction delays. In this event, the applicable worst-case scenario is described under "Construction delays" (*above*).

- **Relief events:** The Project Agreement provides for several relief events for which the developer may seek additional monetary compensation, time extension and/or other relief. In the event of a relief event, the Developer is required to submit a Relief Event Claim to the University. The Project Agreement specifies procedures for consideration of compensation due to a relief event that requires University approval, evidenced either through a written amendment to the Project Agreement or a Change Order, as applicable. The Developer can challenge the University's willingness to provide relief through specified dispute-resolution procedures. Relief events include University changes to specifications during construction. In this case, the University will be exposed to increased costs of construction and price negotiation. These changes could require a renegotiation of long-term operations and maintenance payments and performance requirements.

Relief events also include, but are not limited to: force majeure events; changes in law; University-caused delays; discovery of archeological, paleontological or cultural resources; discovery of threatened or endangered species; release of contaminated materials; and issuance of temporary restraining orders or other injunctions.

"Stress Case" Scenario: Unforeseen relief events could require the University to compensate the Developer in a manner that could materially affect the campus' expected financial model. In the event that the University disagrees with the Relief Event Claim, the Developer could escalate the claim through the dispute-resolution procedures specified by the Project Agreement, with the risk that ultimately, the University is liable for a Relief Event. Because the Developer would be required to continue to perform their obligations under the contract during resolution of the dispute, however, the nature of the cost and/or time delay is somewhat mitigated.

- **Operations and maintenance failures:** The University will face reputational and operational risks if the Developer does not perform in accordance with the contract, but there are remedies under the Agreement: availability payments will be reduced, the University may step in to provide remedies at the developer's expense, and persistent breaches may lead to a termination for default. In all cases lenders/equity partners are incentivized to take responsibility for securing long-term performance.

  "Stress Case" Scenario: Significant breaches of the performance standards established through the Project Agreement could negatively impact students, faculty and staff who regularly utilize the facilities. In a worst-case scenario, whereby the rights of the University and/or lenders are not sufficient to cure persistent breaches, the University would need to terminate the contract for default. In this severe case, given that the University and lenders have attempted to find an alternative third-party operations and maintenance provider, it is likely that the University would need to quickly ramp up its facilities operations and maintenance organization to provide for the shortfall in services.

- **Revenue shortfalls:** The pro forma financial analysis shows that the campus has structured its financial model based on the financial assumptions included within the Memorandum of Understanding between the campus and the Office of the President. Should campus revenues fall materially below projections, either due to loss of appropriations or a shortfall in enrollment, the campus would face significant exposure as the University would be contracted to continue to make availability payments regardless of facilities being fully occupied or not.

  "Stress Case" Scenario: Subject to performance under the Project Agreement, the financing of the Project creates a fixed obligation of the campus and the system to pay for the facilities. To the extent that facilities are made available pursuant to the agreement, but financial assumptions do not materialize and/or a significant financial stress case materializes, the negative impact would be felt in one of three ways: the campus would need to tap its reserves, programs would need to be cut, or the campus would need to seek alternative sources of funding.

5. 2020 Project Labor Considerations: A Hybrid Approach

UC Merced has designed a strategy that enhances workforce opportunities:

- UC Merced will continue to manage custodial, grounds and existing dining operations, and will continue to employ represented UC employees who will be covered by current and future system wide labor agreements. Under this framework, no current or future employee represented by University of California Service Unit (SX) would be adversely affected.

- However, under the hybrid DBFOM model, the Developer will assume responsibility for operating and maintaining major building systems in facilities it has designed and built, and will be free to hire non-University employees to perform those functions. No current represented UC Merced employee will be adversely affected.

- With the physical expansion, UC Merced expects to create as many as 400 new permanent faculty and staff jobs, many of which are expected to be represented positions.

UC Merced is committed to following the letter and the spirit of similarly structured projects:

- Developers, contractors/subcontractors, manufacturers and distributors will be required to adhere to the University's prevailing-wage requirements.

- The University will obligate developers to comply with campus Labor Compliance Program provisions, including monitoring of the prevailing-wage requirements.

- The Project Agreement would require full compliance with the skilled workforce provisions of Sec. 22164 of the California Public Contract Code, which stipulates that a designated percentage, beginning at 30% and increasing to 60% by 2020, of skilled journeypersons be registered in, or graduates of, a State- or federally- approved apprenticeship program. The Project is the first public-private partnership in California to require compliance with these new provisions.

- The Project establishes goals for small business enterprises.

- 2020 Project developers will be required to make "reasonable and good-faith efforts" to draw construction workers from the Central Valley Infrastructure Employment Project.

The campus will also have significant and immediate and long-term economic impacts:

- An independent study found that by 2022, the on-going operations of the 2020 Project will increase spending by over $200 million per year in the State, with total one-time impact, including direct and ripple effects, estimated at about $1.5 billion in Merced County – and $2.4 billion statewide. This impact equates to 8,400 new jobs in Merced, 10,800 jobs in the San Joaquin Valley, and 12,600 jobs statewide during construction.

6. Summary and Next Steps: Future Regents' Decision Points

After more than two years of analysis, the campus proposes an availability payment-based "Design-Build-Finance-Operate-Maintain" (DBFOM) model because it is a cost-effective and comprehensive strategy that addresses the costs of design, construction, financing, operations and maintenance in a lifecycle financial model.

The proposed delivery strategy shares performance and financial risks with a private-sector developer in order to ensure that the developer is held accountable and provides performance guarantees for the facilities it provides over the lifecycle of those facilities, under a long-term contract. This procurement and project delivery model uses a performance-based payment structure and takes advantage of innovative and cost-effective design and operating solutions from the global market for infrastructure and public buildings.

It is important to note that this strategy differs from other long-term development contracts the University has historically undertaken. Under this strategy, the University will neither confer property rights to the counterparty (it is not a lease) nor assign variable revenue streams to a third party (it will receive all revenue and make predetermined availability payments). In addition, all work functions included in the University of California Service Unit job classifications will be performed only by employees of the University of California. The contract will be procured under provisions of the Public Contract Code, in a competitive process that will help the University reduce costs, but still provide prevailing-wage and other protections to workers.

Current Status of Project: Preparation for Potential Request for Proposals

In May 2013, the Regents amended the Long Range Development Plan for the Merced campus to allow for the development of an integrated, mixed-use project to deliver the facilities needed to complete the second phase of the Merced campus, representing the base set of facilities necessary for a comprehensive 10,000-student campus.

Subsequent to this initial action, the campus initiated an RFQ/RFP process to select a private development consortium (including an equity firm, a Design-Build contractor, design professionals, and an operations and maintenance prime contractor, together the "Developer") to deliver the Project utilizing an Availability Payment DBFOM approach. The Chancellor and EVP-CFO (the Project sponsors) selected three "short-listed" teams to proceed to the RFP phase of the procurement. In collaboration with the Office of the President and the Office of General Counsel, the campus is in the process of developing the Instructions to Proposers and Project Agreement, which together constitute the RFP that will be released to the short-listed teams in November 2015. In advance of that release, the campus has prepared a proposed stipend agreement that has been shared with proposers and that the campus anticipates executing in July or August.

Careful consideration has been given to identify the appropriate approvals for this complex Project, which need to be consistent with the Board's existing project approval requirements, but which must also reflect the necessities of the DBFOM procurement method proposed for the Project. An issue that has critical bearing on the success of the procurement process is the **timing of the approval of the Project Agreement**; however, this is only one step in a robust

project-review and approval process outlined below.

Next Steps: Regents' Decision Points

The 2020 Project will require a series of Regents' approvals, including:

- Approval of the Project Agreement (the contract for design, construction, financing, and operation of the Project), reflecting all commercial terms, and the design and performance standards for the Project;
- Approval of the Budget (the Project's minimum programmatic scope and maximum price or "upset limit," and funding/financing structure), the State capital improvement budget request, and acceptance of an amended Physical Design Framework;
- Approval of External Financing, and
- Approval of Design.

The following schedule displays this proposed process. Items in red indicate Regents actions.

July 2015 Regents Meeting	Information Item: Detailed Briefing
September 2015 Regents Meeting	Information Item: Commercial Terms **Budget for State Capital Improvements ("AB94 submittal")**
November 2015 Regents Meeting	**Approval of RFP, including Project Agreement** (constitutes "budget" approval including minimum programmatic scope and maximum upset limit) **Best Interest Determination** **Delegation to the President to execute the Project Agreement** **Acceptance of the Physical Design Framework** **Acceptance of Capital Financial Plan** – [pertinent only if inclusion of other projects is needed to facilitate the 2020 Project] **Release RFP (after Regent's approval)**
March 2016	**Receive Proposals**
May 2016 Regents Meeting	**Approval of External Financing** **Select Preferred Proposer** Design commences pursuant to separate design contract (authority level TBD)
June 2016	**President Executes Project Agreement**
July 2016	**Approval of Design** (based on Master Plan plus representative buildings)

In September 2015, the Regents would be requested to consider the Budget for State Capital Improvements for submission to the State of California. This meeting would also include a discussion of the commercial terms of the draft Project Agreement. The purpose of the discussion would be to incorporate input and guidance from the Regents into the draft Project Agreement, in order to facilitate consideration of the full RFP package at the November 2015 Regents' meeting.

In November 2015, the Regents would be requested to approve the full RFP package for the Project before it is released to the short-listed teams. The RFP package will include the final Project Agreement, and approval of the RFP would constitute approval of the commercial terms and technical requirements for the Project. The RFP will require bidders to submit a master plan for the 2020 Project, preliminary designs for the building types specified in the program, and plans for sustainability, facilities maintenance, and other related items. Approval of the RFP package would constitute "budget" approval (the minimum programmatic scope and maximum "price" or upset limit, and funding/financing structure) for the Project.

The Regents' action to approve the commercial terms of the Project Agreement would also include a proposal to delegate execution of the Project Agreement to the President. The President's authority would be limited by the terms of the Regents' approval, including the minimum programmatic scope and maximum price (the maximum annual payments or "upset limit") contained in the Project Agreement.

While it is important to note that the November 2015 action to approve the RFP would be the Regents' final consideration of the commercial terms of the Project Agreement, it would not be the last action required to move forward with the Project.

Following the release of the RFP and receipt of the bidders' proposals, the Chancellor and EVC-CFO would select a preferred bidder, after a thorough evaluation of the proposals. In May 2016, the Regents would be requested to approve the external financing necessary to fund milestone payments under the Project Agreement, subject to State approval of the Budget for State Capital Improvements.

The Project Agreement would be executed by the President following these approvals. In July 2016, the Regents would be requested to approve the Project design.

Appendix 1

PROGRAM SUMMARY FOR THE 2020 PROJECT

Through an amendment to the campus Long Range Development Plan in 2013, the campus reduced the amount of infrastructure that would be needed by shrinking the physical footprint for future development by 38%.

In Fall 2013, UC Merced engaged a broad set of academic, administrative and student stakeholders to participate in topic-specific focus groups to inform space-planning needs and program character for this smaller site. These intensive focus groups developed data and details of specific needs for various space types, schools, campus programs, student services and campus-wide initiatives.

The 2020 Project program is a reflection of this process and is focused on creating mixed-use academic and student-focused space on campus. The campus has sought ways to continue patterns of efficiency and seek out models for flexible, adaptable spaces. The goal of the program is to extend the current campus to support new approaches to multi-disciplinary learning and research, consistent with the Strategic Academic Focusing Initiative. To achieve that goal, the Project will develop adaptable joint- and mixed-use facilities that can accommodate the interdisciplinary nature of the campus' programs.

The initial program was finalized in April 2015 and is comprised of two broad categories: (1) space to address critical existing needs and (2) space needed to accommodate growth to 10,000 students. Within the program, the two largest types of space (by ASF) are Academic Space (35%) and Student Housing (35%) followed by Student Life/Athletics (23%) and Campus Operations (7%).

Academic Facilities: 35% of proposed program

The academic space program is divided into research space, instructional space and academic office space. The amounts and types of space are tied to anticipated distribution of faculty among disciplines, classroom utilization, and a modular approach to office-space needs.

Student Housing: Multi-use facilities, sized for growth and 35% of proposed program

As a campus with a high proportion of first-generation students, on-campus housing has been shown to be inextricably linked to academic performance and matriculation. The 2020 Project program is designed to house one third of the 2020 student body and 100% of all freshmen. This will be accomplished by requiring the Developer to build double-capacity rooms sufficiently sized to enable conversion to triples. The 2020 Project seeks innovative approaches that create a living/learning environment that provides flexible multi-use space that can be repurposed as both learning and student-activity spaces.

Student Life/Athletics: Shared spaces and 23% of proposed program

The Student Life program for the Project includes the health, childcare, enrollment, dining and NCAA II recreation facilities integrated throughout the campus that are necessary to support, attract and retain students. The 2020 Project encourages innovations that facilitate shared student-life spaces, one-stop, student-centered service center, and retail dining shells that can be operated by students, dining services, or third parties.

Campus Operations: Co-located for optimization and 7% of proposed program

Campus Operations includes the public safety, warehousing and environmental-health components of a UC campus. Sufficient parking will be provided in phases as the campus grows.

A detailed table of the overall project program, which reflects the campus' proposed project sequencing strategy, follows.

Total Program
2020 Project
University of California, Merced

The tables below outline the program for the 2020 Project.

The "First Delivery" column indicates critical facilities that the campus requires to maintain its enrollment goals in the near term. The "Second Delivery" column refers to facilities that would enable the campus to accommodate 10,000 students. The combination of First Delivery facilities and Second Delivery facilities constitutes the built program of the 2020 Project.

The "Master Plan Only" column represents program not part of the 2020 Project, but that will be accommodated for future development, funds permitting, within the Master Plan for the site. The program is subject to slight refinements prior to release of the RFP.

	First Delivery Facilities	***Second Delivery Facilities***	**2020 Project**	**Master Plan Only**	**Total Master Plan**
ACADEMIC PROGRAM					
Research					
Wet	*24,750*	*51,480*	76,230	--	76,230
Dry/Other	*20,460*	*32,340*	52,800	--	52,800
Computational	--	*18,480*	18,480	--	18,480
Performance Space	*3,300*	*660*	3,960	--	3,960
Lab Support and Maintenance	*8,650*	*5,900*	14,550	--	14,550
Core Lab	--	*15,000*	15,000	--	15,000
Office					
Academic Office	*64,645*	*47,365*	112,010	--	112,010
Academic Leadership Office	*10,000*	--	10,000	--	10,000
Classroom					
Classroom and Living/Learning Spaces	*14,600*	*18,760*	33,360	11,000	44,360
Class Laboratories	*15,885*	*10,560*	26,445	--	26,445
Scholarly Activities/Interaction	--	*10,000*	10,000	--	10,000
Total ASF	***162,290***	***210,545***	**372,835**	**11,000**	**383,835**

HOUSING					
Student Housing					
Residence Hall	*110,360*	*153,140*	263,500	--	263,500
Graduate Apartments	*36,800*	*36,800*	73,600	--	73,600
Staff/Faculty in Residence	*12,000*	*12,000*	24,000	--	24,000
Admin/Community	*10,037*	*5,400*	15,437	--	15,437
Support/Maintenance	*4,790*	*2,290*	7,080	--	7,080
Total ASF	***173,987***	***209,630***	**383,617**	**--**	**383,617**
STUDENT LIFE AND ATHLETICS					
Dining Services	*27,985*	--	27,985	--	27,985
Student Activity	*33,550*	*16,605*	50,155	4,240	54,395
Wellness Center	*16,740*	--	16,740	--	16,740
Enrollment Center	--	*22,220*	22,220	7,960	30,180
Welcome Center	--	--	--	12,070	12,070
Early Childhood	*3,060*	--	3,060	--	3,060
Arena	--	--	--	85,020	85,020
Aquatic Center	--	*9,910*	9,910	--	9,910
Athletic Fields	*7,770*	--	7,770	--	7,770
Total SF	***89,105***	***48,735***	**137,840**	**109,290**	**247,130**
CAMPUS OPERATIONS					
Fire Operations Facility	--	--	--	9,400	9,400
Public Safety	*16,170*	--	16,170	--	16,170
Environmental Health and Safety	*3,390*	--	3,390	--	3,390
Campus Warehouse	--	*29,440*	29,440	20,000	49,440
Total ASF	***19,560***	***29,440***	**49,000**	**29,400**	**78,400**
TOTAL PROGRAM	***444,942***	***498,350***	**943,292**	**149,690**	**1,092,982**

Site Facilities Measured in Square Feet

	First Delivery Facilities	*Second Delivery Facilities*	2020 Project	Master Plan Only	Total Master Plan
STUDENT LIFE AND ATHLETICS					
Competition Athletic Field	*100,000*	--	100,000	--	100,000
Competition Pool	--	*11,500*	--	--	--
Bleacher Seating	--	*1,000*	--	--	--
Associated Site Development	--	*20,000*	--	--	--
Recreation Field	*75,000*	*175,000*	250,000	--	250,000
Volleyball Courts (4 total)	*8,000*	*8,000*	16,000	--	16,000
Basketball Courts (4 total)	*8,000*	*8,000*	16,000	--	16,000
Tennis Courts (2 total)	*5,000*	*5,000*	10,000	--	10,000
PARKING					
Parking	*753,300*	*242,400*	995,700	--	995,700

Numeric Counts

	First Delivery Facilities	*Second Delivery Facilities*	2020 Project	Master Plan Only	Total Master Plan
STUDENT LIFE AND ATHLETICS					
Undergraduate Beds	*712*	*988*	1,700	--	1,700
Graduate Student Beds	*100*	*100*	200	--	200
Competition Athletic Field	*1*	--	1	--	1
Competition Pool	--	*1*	1	--	1
Recreation Field	*1*	*3*	4	--	4
Volleyball Courts (4 total)	*2*	*2*	4	--	4
Basketball Courts (4 total)	*2*	*2*	4	--	4
Tennis Courts (2 total)	*1*	*1*	2	--	2
PARKING					
Parking Spaces	*2,511*	*808*	3319	--	3319

Appendix 2

SUMMARY OF CAMPUS PRO FORMA MODEL

Annual Campus Pro Forma FY 2021-2030 ($M)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Revenues	$466	$485	$507	$525	$547	$563	$581	$599	$619	$638
Expenses	($350)	($373)	($397)	($409)	($423)	($436)	($450)	($463)	($477)	($492)
Net Cash Flow before Project costs	**$116**	**$113**	**$111**	**$116**	**$124**	**$127**	**$131**	**$137**	**$141**	**$146**
Campus Payment (for 2020 Project)	($97)	($106)	($107)	($108)	($110)	($111)	($112)	($114)	($115)	($117)
Other Project Commitments	($1)	($1)	($1)	($1)	($1)	($1)	($1)	($1)	($1)	($1)
Change in Campus Reserves	**$18**	**$6**	**$3**	**$7**	**$14**	**$15**	**$18**	**$22**	**$25**	**$29**
Reserves (Closing Balance)	$304	$311	$314	$321	$335	$350	$368	$390	$416	$444
Months of Operating Reserves	11	10	10	10	10	10	10	10	10	11

Breakdown of Campus Payment ($M)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Availability Payment – Capital	($47)	($47)	($48)	($48)	($49)	($49)	($50)	($50)	($51)	($51)
Availability Payment – O&M	($26)	($27)	($28)	($28)	($29)	($30)	($31)	($32)	($33)	($34)
Milestone Debt Service	($24)	($32)	($32)	($32)	($32)	($32)	($32)	($32)	($32)	($32)

Assumes 55% capital assumption for milestone payments.