

The Lawrence Berkeley National Laboratory-University of California, Berkeley

Richmond Bay Campus

**Options and Considerations Regarding Its Development Utilizing
Public Private Partnerships**



Scoping Memo Prepared by the
Bay Area Council Economic Institute

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Bay Area Council Economic Institute

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Summary

The University of California, Berkeley (UCB) and Lawrence Berkeley National Laboratory (LBL) have extensively explored the concept of creating a shared campus where collaborative research initiatives can leverage partnership across researchers and resources. One objective core to the plan has been the establishment of a platform supporting efforts with private enterprises, to commercialize research initiatives on a streamlined basis. LBL has also determined that its mission would benefit from the efficiencies and synergies generated by consolidating its current offsite programs from seven sites into two.

With the scope, vision, site, program and timeline for the shared campus now well defined, the focus necessarily turns to funding. Public funding for any capital improvement or expansion of facilities in the UC system is at best severely limited. With the debt capacity of the State on a concerning trajectory, the outlook for further issuance of state debt for capital projects is constrained. LBL's access to grant funding, while significant, does not promise to support the full capitalization of the joint campus as planned.

The purpose of this introductory scoping memo is to analyze at a high level the potential for private capital to help fund the development of the Richmond Bay Campus. The structure reviewed is known as P3, or Public-Private Partnership, and is a model that has been used for decades both domestically and – to a far greater extent - internationally. P3 is defined as a structured agreement whereby the private partner takes on not just the more conventional responsibility for Design, Bid and Build project functions, but also shoulders the Financing, Operations and Maintenance responsibilities and risks. The P3 model, and its potential, based on preliminary review, for use in financing the Richmond Bay Campus, is discussed in further detail below.

Background

First steps were taken toward realizing the Richmond Bay shared campus plan in 2011, when a Request for Proposals developed to identify the most viable sites for the shared campus was released to property owners in the surrounding East Bay area. After an exhaustive review of the twenty one responses received, the Richmond Field Station site was selected.

The Long Range Development Plan for the 133-acre Richmond Bay Campus contemplates up to 5.4 MM square feet of buildings with a population of 10,000, to be developed in multiple phases over approximately 40 years, and incorporating in full:

<u>Functions:</u>	<u>Population:</u>
• Research labs	Research scientists and faculty
• Offices, Conference space	Graduate and post-doctoral students
• Dining / Cafes	Undergraduate students and interns
• Auditorium / Visitor center	Administrative staff
• Operations facilities	Operational staff
• Parking	Third party tenants

The Development Plan establishes the campus vision as *“a state-of-the-art, inspirational and sustainable place to produce world-class collaborative science for healthy living and sustainable communities.”* The long range scientific goals of the collaboration include *“The discovery of solutions for 21st century challenges in energy, environment, human health, and the global economy,”* with the following areas of focus:

- Bioscience solutions for
 - Carbon-neutral fuels
 - Reduced human environmental footprint
 - Improved human health
- Sustainable transportation
- Advanced manufacturing and design
- Commercializing technology research

Additional campus goals associated with the Development Plan include its catalytic role as:

- A center for innovation
- Enabling capacity for other public and private research facilities
- An enabler of broader economic revitalization
- A vibrant mix of new and existing uses

- A facility efficiently connected to public transit
- Part of a South Richmond Specific Plan

Early parameters for the design aspects of the Richmond Campus in the Master Plan include:

- Distinct walkable neighborhoods
- Shared activity zones
- Diversity of open edges and public access points
- A multi-modal grid connected to surrounding streets/trails
- A distinct visitor arrival experience
- Deflected wind, with sheltered spaces
- East-west solar building orientation

The expected timeline for development of the Richmond Bay Campus is as follows:

- 2013
Long Range Development Plan
CEQA/NEPA EIR/EA
Conceptual design Development
- 2014 – 2018
If LRDP and project funding is approved,
design and construction of Phase I
- 2018 and beyond:
Future phases

Richmond Bay Campus Phase 1

In the phased development of the campus, an initial portion of the property encompassing 16 acres has been proposed for development with up to 800,000 gross square feet of building. The conceptual plan for Phase I includes six buildings, together with dining, parking and multi-function conference facilities. The timeline for Phase I commences with the construction of two buildings as soon as the necessary approvals and entitlements are obtained. These two buildings are targeted for occupancy in 2017 and would encompass approximately 130,000 square feet for biosciences integration, and approximately 120,000 square feet for energy

sciences. A third building, containing approximately 270,000 square feet for health sciences, would follow completion of the first two buildings, with expected occupancy in 2017-2019. The final three buildings planned as part of Phase I would be developed to house future synergistic partnerships around environmental science, earth science, advanced manufacturing and technology commercialization.

Project Development – the P3 Option

The overall development of the Richmond Bay Campus is a massive undertaking that will be divided into multiple phases and executed over an estimated forty year period. The project will require the revamping and upgrading of infrastructure throughout the site, which could involve the creation of a Mello-Roos District, or an assessment district, to finance infrastructure improvements.

With limited public financing available to implement this vision and develop the proposed facilities, this paper suggests consideration of a creative financing model that engages private capital. In addition to robust track records for P3 innovation in Australia, Canada and the UK, elements of the P3 model are now being incorporated in US projects, including in California the Long Beach Courthouse, the water and wastewater concessions of Rialto and Bayonne, and the Presidio Parkway; Chicago’s proposed Infrastructure Trust; Measure R projects of the LA Metropolitan Transit District; and the State of Virginia’s DOT P3 initiative. The application of this model is attracting particular interest as funding constraints are hitting federal, state and local agencies that need to deal with aging infrastructure, expansion requirements, and limited debt capacity.

Related Considerations

The most often-cited barrier to full P3 DBFOM development is the low cost of tax-exempt public funding. The combination of a steep decline in the cost of private debt, and constraints on public debt capacity have in many cases, however, closed that gap. Lower life-cycle operating costs, achieved through improved operations and maintenance, is another factor that can compensate for tax-exempt funding’s initial lower costs.

There are many instances where public funding is the better option. When the scale of a project doesn’t warrant enough competitive interest from qualified private sector participants, or doesn’t justify the essentially fixed nature of the transaction costs, then a P3 DBFOM may not be the answer. But there are also instances where public funding simply may not be available, and where the use of a P3 DBFOM structure with private capital is fundamental to whether projects move forward or do not.

In general, it is the transfer of both front-end and long-term risk from the public partner to the private sector that can result in dramatically accelerated timelines, life-cycle cost-savings of up to 30%, and performance and maintenance milestones that eliminate or reduce the costs of deferred maintenance often associated with increasingly constrained public budgets and operations capacity.

These considerations may or may not apply to the proposed Richmond Bay Campus.

Case Study: Long Beach Courthouse

Existing social infrastructure P3s in the U.S. provide useful points of reference for the UCB/LBNL decision-making process. A narrative analysis on the Long Beach Courthouse is summarized below, and is recommended as a guide to key factors involved in assessing a P3 project's market viability. This document can be located either by doing a search for "Long Beach Courthouse Analysis" or through the following link:

<http://www.courts.ca.gov/documents/Long-Beach-PBI-evaluation-report-9-14-12.pdf>

These projects serve as comparable and instructive models to inform the decision-making around any P3 portion of the Richmond Bay Campus development.

As of March 2013, the project is more than 70% complete and is hitting all benchmarks. The initial analysis of alternative delivery options supported a P-3 approach as offering the best opportunity to finance and complete a public building cost-efficiently and in the timeliest manner, saving 30 months off of the construction schedule while putting the 35-year quality-of-service performance of the building under a milestone-based contract. The public partner is under no obligation to pay until the building is available for occupancy, and the private partner will be penalized any portion of the service fee not justified by its operations and maintenance performance and the ongoing availability of the space for use by the public partner. Put differently, all development, construction, financing, completion and operating risk lies with the private partner. This full transfer of risk and the corresponding elimination of balance sheet exposure, addressing financing needs with no or minimal debt obligation for UCB and without a full federal appropriation for LBL, suggests consideration of a P3 development model for all or part of the Richmond Bay Campus.

In the case of the Long Beach Courthouse, the conservative analysis of a DBFOM (Design, Build, Operate, Finance, Maintain) P3 approach estimates a \$52 million savings over the life of the building, against the \$495 million overall project cost. The other procurement options that were competitively reviewed (in increasing order of risk transfer to a private partner) were:

- DBB (Design, Bid, Build with tax-exempt financing provided by public entity)
- DBF (Design, Bid, Finance with take-out by public entity on construction completion)
- DBO (Design, Build, Operate, with or without tax-exempt financing provided by public entity)
- DBFOM (Design, Build, Finance, Operate, Maintain)

The DBB public procurement benchmark was constructed for use as a public comparator against each of the alternative delivery methods. Key considerations in the decision to proceed with the full P3 DBFOM approach included accelerated delivery at a time when deterioration, crowding and malfunction at the existing courthouse were reaching a critical point. In this context, the benefits associated with accelerated access to the research and

collaborative activities available to UCB/LBL through the new Richmond Bay Campus should be considered against the longer timelines that are likely with a conventional procurement. P3 has historically provided an ability for projects to proceed without committed public funding. In addition to the timeline compression and accountability accomplished through transfer of development and completion risk to the private partner, a P3 DBFOM's accelerated delivery scenario should be considered when evaluating the economic and social benefits of campus development for the greater community.

Also relevant to the evaluation of the Richmond Bay Campus development as a potential P3, the scale of the Courthouse project is comparable to a Phase 1 initial RBC build-out, with its 114,000 square feet considered large enough to attract competitive interest in the international P3 market. Another comparable factor to the Richmond Bay Campus is the Long Beach Courthouse's diversity of tenant uses - with the Courthouse incorporating 73,000 square feet for justice use, 31,400 for commercial office space that could eventually be expanded into for future justice needs, and 9,600 square feet for retail space. . Another determinant in the P3 DBFOM selection for the Courthouse was the ability to free up debt funding capacity (balance sheet) for other much-needed projects already on the public partner's needs list. From an economic development standpoint, the Courthouse project has supported 450 construction jobs and will support 100 future management positions.

The Superior Court of Los Angeles County will occupy approximately 80% of the space and is committed to an annual performance-based service fee for 35 years. The public partner is obligated to pay an availability fee to the private partner to support the development of the space provided and ongoing operations and maintenance, an obligation is secured through a lease by the public partner to the private partner.

The project is financed through a combination of taxable bank debt and equity and is secured by a pledge to the banks of the private partner's lease. Of note, there is a lag for debt security purposes of 15 years between the 35-year project agreement and the 50 year lease agreement. If there is a failure on the part of the public partner to make necessary service fee payments, the assumption is that the private partner's backstop is its ability to re-lease the space to other parties. To do so, substantial retrofitting and transitioning is assumed to be necessary, as well as rental market uncertainty, so the private partner's lease has built-in lag to provide value against that eventuality. If, however, all parties fulfill their obligations, the private partner will hand back a well-maintained Courthouse together with all operations and maintenance responsibilities to the public partner, at which point the public partner will no longer have an obligation to make service fee payments.

A full review of the project in a September 2012 report from the Office of Court Construction and Management concludes, "The project has surpassed the design and construction progress normally achieved by traditional delivery methods."

These considerations may or may not apply to the proposed Richmond Bay Campus.

Case Study: Gates Vascular Institute (Gates Vascular Institute/Clinical Translational Research Center – Kaleida Health/University of Buffalo)



In the United States, the most notable health sciences public private partnership project is the 500,000 square foot Gates Vascular Institute. The lowest four floors of the building contain 250,000 square feet of emergency department, vascular and neurological operating suites, and a patient hotel. The upper four floors contain research laboratories, space for clinical trials, an imaging suite, biorepository, and bioengineering facilities. At the heart of the building on the fifth floor is a collaborative zone – containing a bioscience incubator, conference suite and education

facility. Using a public private partnership, the project was delivered 2 years ahead of schedule, with savings of \$20M over traditional public procurement methods.

Unlike Canadian and UK P3 projects, which have historically limited themselves to solving immediate problems, a new, more sophisticated long-term approach was taken with this project, focusing on the opportunity for innovation. Here the P3 emphasis was not just on the provision of cost-effective infrastructure; instead, through an integrated business/financial/economic model the partners were able to pursue transformation and consolidation of their healthcare and research activities, saving an additional \$25M in annual operating costs. Additional value was provided through related urban regeneration. It is estimated that this project will deliver \$65M per annum in much needed local economic impact for downtown Buffalo.

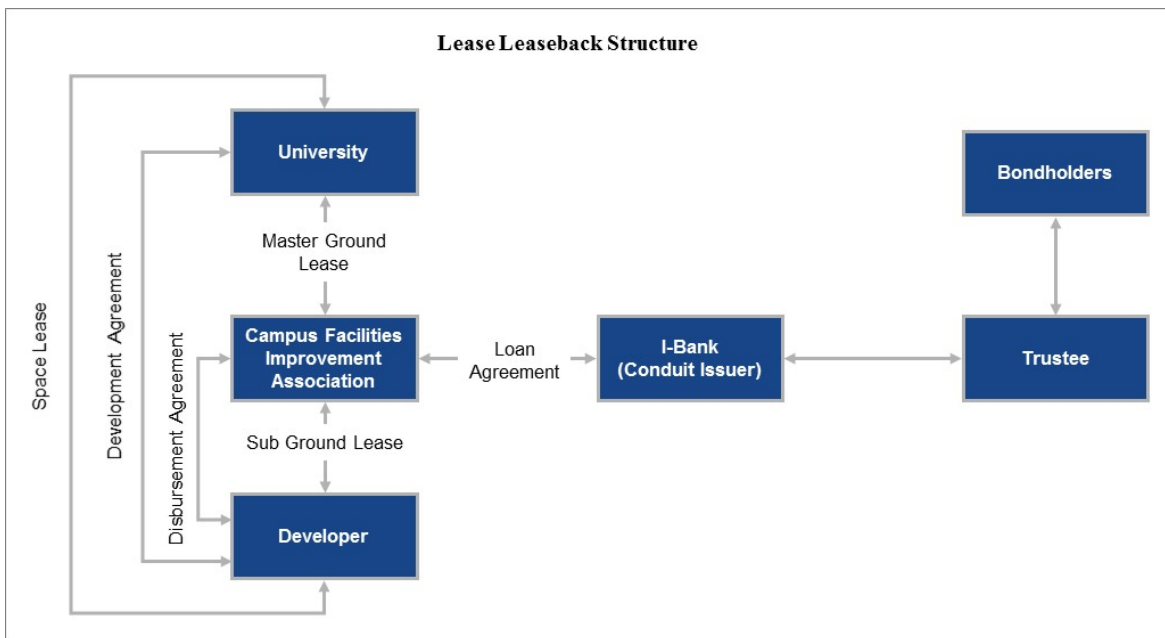
The Gates Vascular Institute project demonstrates that the benefits of P3 development can be about more than just schedule acceleration and cost savings, as important as those things are. P3s can provide more integrated benefits, including operational savings; increased efficiency of utilization; improved staff attraction and retention; improved productivity; increased business flexibility, and innovation; and improved accessibility and quality in the delivery of research and innovation. A P3 strategy for the Richmond Bay Campus should therefore be considered in light of the potential to bring similar innovative design benefits to the campus and to research partnership opportunities with private industry.

UCSF's Experience with P3 Methods

UCSF has successfully developed the Sandler Neuroscience Research Building at Mission Bay as a P3. This has resulted in a less expensive project that was delivered with a shortened schedule, as compared to projects delivered through UCSF's normal design/bid/build (DBB) procurement process.

This occurred in part because the private party was able to build faster with standardized design and at lower cost. In that process the private party was able to minimize or avoid a number of the delays and uncertainties inherent in internal governmental processes: public contracting at lowest bid quotation, which can lead to expensive and adversarial change order processes; lengthy and complex internal reviews and decision-making processes which can add cost and time; ; and scope changes occurring mid-design or even during construction, which can also contribute to cost overruns and delay.

The 237,000 square foot Sandler Neuroscience Research Building was built for \$173,527,000, exclusive of financing costs, and approximately \$200,000,000 in total. It utilized a distinct structure involving a lease lease-back procurement method with a private partner in the developer. Specifically, the Campus Facilities Improvement Association (CFIA), a non-profit, was established in 2008 to assist UCSF in its ability to finance the construction of the building. The CFIA had tax-exempt bonds issued by the California Infrastructure and Economic Development Bank (I-Bank) for capital costs not secured through grants. To enable this issuance, the site was leased to CFIA, which sub-leased the site to the private developer, Edgemoor McCarthy Cook Partnership LLP, which took on design, build, operations and maintenance (DBOM) responsibility for the facility. The facility was then leased back from the developer to The Regents for use by UCSF. Pursuant to the terms of the lease documents, the University is unconditionally obligated (regardless of whether the facility is completed or continuously operational) to make lease payments during the time the bonds are outstanding.



Source: The University of California

The initial rent (i.e. for the first 97 months) is inclusive of certain operating expenses and is \$14,800,000 per year. After considering operating costs of \$1,600,000, the net rent to the developer is \$13,200,000 which is equal to a 6.58% net yield on total cost. The developer must assign lease payments paid by The Regents/UCSF to the Trustee as security for the

payment of the bonds. The private developer operates the property for the term of the lease, removing UCSF from operating responsibility for the building. Instead UCSF pays \$6.75 annually per square foot, escalating in the future, to cover operating costs. UCSF retained responsibility for security, utilities, and janitorial expenses above the operating cost it is paying to the private developer.

The project was built and delivered to the user groups within 24 months, and the total project schedule was an impressive 50 months from the issuance of an RFQ.

As noted, ultimate financial risk is borne by UCSF in this scenario, and it/the Regents must pay back the bonds. The fact that the University assumes the financing risk makes the Neuroscience Building a partial (DBOM) P3 project rather than a full (DBFOM) P3, where the financing risk for the project is fully borne by the private partner and the sole financial obligation of the public partner is the annual rent or availability payments due to the private partner.

The Richmond Bay Campus P3 Option

One objective of the Richmond Bay Campus is to provide a vehicle for UC Berkeley and LBNL to create a regional innovation cluster that supports entrepreneurs and enables the commercialization of research. There is a particular opportunity, once the campus achieves critical mass, to attract private enterprises that want to participate in the synergies being created and pursue collaborative opportunities with UCB/LBL, as well as with other tenants.

Virtually all aspects of the campus, including retail, parking, support facilities, offices, classrooms and laboratories, can potentially be developed using P3 models, with distinct applications in each portion. It is assumed in this process that UCB/LBL would seek to shift the risks associated with financing, developing and operating all or some of these facilities to private partners, and to that extent take the project(s) off of UC Berkeley and LBL's books. In a variant of the complete (DBFOM) P3 model, UCB/LBNL could also utilize public financing (if available), while engaging private partners to reduce the other development costs. To the extent, however, that federal funding is not available for LBL, and that UCB wished to conserve its debt capacity for main campus applications, P3 methods may provide an attractive option.

To benefit from the maximum efficiencies and cost savings associated with P3, it is important that each project and/or phase have enough scale to attract competitive bidding from private entities. This is the case because documenting and financing a P3 venture is expensive and time consuming for the private sector. From this perspective, the initial planned portion of Phase I, encompassing three buildings with their support facilities, could form a reasonable core for the first P3. The remainder of Phase I should ideally be developed soon after, to create enough critical mass to start attracting private research companies to the campus.

Conceptually, the initial portion of the campus used primarily by UCB/LBNL could be developed using the classic DBFOM P3 (design-build-finance-operate-maintain) model, which could potentially be applied to the other phases as they are developed.

In this scenario, UCB/LBL could follow up on Phase 1 by dedicating a further portion of the campus as an area (or phase) where it could ground lease pads to private entities to erect buildings for their own use in collaboration with UCB/LBL. Another area (or phase) could potentially be created for private enterprises to enter into participating ground leases or concession agreements and then develop properties that they would lease to other research oriented tenants. In this strategy, long-term concession agreements, or long-term participating ground leases to a developer to build a project which is then leased back to UCB/LBNL or other tenants, could be utilized to structure P3 development of distinct phases of the campus.

It should be noted that this DBFOM method differs from the format used for the UCSF Neuroscience project where the design, build, operate and maintain (DBOM) risks, but not the financing risks, were transferred to the private partner.

Grant revenue, indirect cost recovery, and the commercialization of research, together with rental from ground leases and/or revenue from concession agreements, can potentially generate substantial revenue, enabling portions of the campus can potentially be financed by private partners. It is possible to model the financial options, and combine them with an integrated innovation evaluation, to create a full life-cycle benefits assessment. In all instances, the ground would continue to be owned by UCB/LBL, and the assets would revert to UCB/LBL at the termination of the ground lease or concession terms.

Any P3 project must generate a return on investment for the private partner. As an alternative approach to revenue generated from the facilities themselves would utilize an “availability payment” structure, under which the private sector finances, designs, builds and operates the facility and receives “availability payments” upon completion of construction and throughout the remaining term of the agreement. During that term the private partner is responsible for maintenance and operation of the facility. Availability payments are subject to downward adjustment for deficiencies in performance, utilizing a detailed payment mechanism that defines types of deficiencies and assigns financial consequences based on their significance, the time needed to cure them, and similar factors.

We suggest that a series of potential P3 models be analyzed for each phase of the campus to determine which will generate the maximum benefits for the University and the Lab. The following is a simple high-level sample model demonstrating some of the variables that can be examined, in this case presenting a pure DBFOM P3 approach to different combinations of the Phase 1 development:

RICHMOND BAY CAMPUS OUTPUT SUMMARY					
Construction Period Sources and Uses of Funds					
Uses of Funds (\$'000) Megan's \$850 Per Sq Foot Case					
			All Phases at Once	1 A Alone	1 A + 1 B
Capital Costs	Cost/Sq Ft	\$ Cost			
	Escalation Factor %		3.0%	3.0%	3.0%
	Escalation Base Year		2013	2013	2013
	Unlevered Posttax IRR		15.5%	15.6%	15.6%
	Lev Post Tax Equity IRR		14.2%	14.2%	14.2%
	Debt: Debt Service Coverage Ratio		159%	159%	159%
	Annual Lease-Purchase Payment (\$MM's)		92,000	48,500	62,000
	Infrastructure and Site	#/Units	\$ Cost		
	BLDGS Phase 1 A	130,000	850	98,208	98,208
	BLDGS Phase 1 B	120,000	850	90,653	90,653
	BLDGS Phase 1 C	270,000	850	203,970	0
	Parking Structure (Spa	500	40,000	17,775	17,775
	Capital Costs		435,296	140,672	231,326
Add Soft Cost	Engineering, Design, (30.000%	130,589	42,202	69,398
	Subtotal - Non Finance Capit		565,885	182,874	300,723

Richmond Bay Campus P3 Decision Framework

Each specific phase on the campus must be analyzed to determine which types of financial structuring should be considered. This will vary when considering properties leased to single occupancy entities, multi-tenant properties or properties for sole or majority use by UC/LBL.

The sequenced financing decision matrix for phases of the project that are essentially for the exclusive use of UC/LBNL would be as follows:

- Determine if there are sponsorship, grant, gift or bequest funds available and the extent that they will cover the overall project cost. Also determine if this project represents the optimal use of those funds.
- If additional funds are required, determine the amount of UC and/or LBNL funding capacity that is available.
- If sufficient funding capacity is available, solicit proposals for tax exempt bond funding and compare those to proposals for institutional loans guaranteed by the University, which ultimately could lead to a P3 BDOM transaction. The objective would be to minimize the amount of UC and/or LBNL funding capacity that is required and heavily leverage whatever capacity is used.

- If public funding/financing is available or not, solicit and compare proposals involving the private sector. In today's economic environment, private financing may be competitive with or less costly than public financing.
- Different private partners will utilize different financing structures, including private equity, taxable bond financing, tax-exempt financing or institutional debt. The private partner financing structures would not require a guarantee from the University and would be dependent on the value of the property interest and the assignment of the lease from the University to the lender. These arrangements would take the form of DBFOM transactions and could be structured utilizing long-term ground leases or concession agreements.
- Review all viable proposed deal and financial structures to determine their impact on the UC/LBL financial position and scoring.
- Compare the lease rate, or payment proposal, from private partners if the University agrees to reimburse private partners for costs incurred during the project negotiation and documentation period. This should occur if the contract is not awarded with a lease rate, or payment proposal, in which the private partner assumes all risk after the RFQ award, whether the contract is awarded or not.
- Compare the differences in each proposal for the level of services provided and the full life cycle costs for the operation and maintenance of the project.

Conclusion and Recommendation:

We believe that UCB/LBL could benefit in significant ways from developing all or portions of the Richmond Bay Campus using properly structured public-private partnerships. These benefits would accrue during the construction/development phase and over the life of the facilities. Identifying the scale of this potential and a strategy that would maximize benefits to UCB/LBL would require the following analysis:

- Model specific P3 structures that could be utilized in developing different portions of the campus, and create a decision matrix for each.
- Specifically model the P3 structure for the development of Phase I
- Investigate the financial structure for private participation in the innovation cluster

- Link this to the potential economic and employment benefits for the City of Richmond and the surrounding East Bay region, and the opportunity to attract private sector research partners and/or entrepreneurial activity that is synergistic with research activity on the campus. This could include specific fields of interest for the university and the lab such as life science, energy and advanced manufacturing.
- Evaluate the potential for cost savings from the development phase through the life cycle of the property.

Appendix

Local and Regional Economic Impact:

Projects of the magnitude of the Richmond Bay Campus can generate significant economic benefit, both locally and in the surrounding area - in this instance, the City of Richmond, the East Bay, and the larger nine county Bay Area. These economic benefits include not only the dollars spent, but also increased employment and tax base. The development and construction of the new campus, if properly conceived and designed, has the potential to produce this catalytic effect. The Bay Area Council Economic Institute recently prepared such an analysis for a \$465,000,000 medical/research project proposed for development at Mission Bay, where the project is projected to generate benefits totaling \$545,000,000 in economic output, \$40,000,000 in taxes, and increased employment of approximately 3,000 during the two year construction phase of the development. This does not include the ongoing business and research benefits generated over the life cycle of the campus, or the synergies produced by diversifying and expanding the scale of Mission Bay's life science cluster.

Contributors:

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