APPENDICES

Appendix 1: Existing Richmond Field Station Building Inventory (2012)

Appendix 2: Phase I Planning

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Opposite page: View of Western Stege Marsh in the foreground and the San Francisco Bay and Marina Bay residential community beyond.

APPENDIX 1: EXISTING RICHMOND FIELD STATION BUILDING INVENTORY (2012)

Bldg. No.	Current Use	Year Built	GSF	Ht. (Ft.)	Struc. Cond.
38	Shop	post 1996	5,740	25	Good
102	Inactive	pre 1940	6,737	12	Poor
110	Inactive	pre 1940	1,325	12	Good
111	Shop	unknown	507	15	Good
112	Research Ofc	1960-1969	16,949	12	Poor
113	Storage	1980-1989	1,800	14	Good
114	Storage	pre 1940	4,523	12	Good
116	Shop	1950-1959	967	15	Good
117	Field Bldg	unknown	608	12	Good
118	Research	pre 1940	1,708	20	Good
120	Storage	unknown	269	12	Good
121	Storage	unknown	728	15	Good
125	Storage	pre 1940	1,024	12	Good
128	Storage	pre 1940	10,287	12	Good
149	Storage	unknown	720	12	Good
150	Research	pre 1940	5,410	15	Good
151	Research Ofc	1960-1969	2,629	20	Good
152	Research	pre 1940	4,201	12	Poor
153	Shop	pre 1940	3,754	14	Good
154	Research	1960-1969	2,731	20	Good
155	Office	pre 1940	1,896	14	Good
158	Research	pre 1940	3,343	24	Good
159	Research Ofc	pre 1940	2,366	15	Poor
160	Recreation	pre 1940	1,926	15	Poor
161	Research	pre 1940	2,392	15	Good
162	Restroom	unknown	240	15	Good
163	Office	pre 1940	6,430	12	Good
164	Office	pre 1940	3,462	15	Good
165	Research	pre 1940	749	15	Good
167	Shop	1950-1959	4,092	14	Good

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Bldg. No.	Current Use	Year Built	GSF	Ht. (Ft.)	Struc. Cond.
175	UC Bindery	pre 1940	16,052	12	Poor
176	Research	unknown	672	15	Good
177	Research	pre 1940	2,969	14	Poor
178	Office	pre 1940	3,950	12	Poor
180	Office	pre 1940	11,008	15	Poor
185	Storage	pre 1940	3,165	12	Good
190	TSRC	pre 1940	2,951	14	Poor
190 TLR	Storage	unknown	480	9	Good
194	SPO	1950-1959	1,892	14	Good
195	Storage	unknown	664	12	Untenable
196	Conference	pre 1940	2,807	14	Poor
197	Veh Stor Sv	unknown	2,419	18	Poor
198	Storage	1980-1989	1,800	14	Good
201	EPA	1980-1989	46,000	20	Good
275	Research Lab	1960-1969	7,914	12	Good
276	Research	1960-1969	4,880	18	Good
277	Research	1960-1969	21,426	25	Good
280A	Research Ofc	unknown	13,069	20	Good
280B	Storage	unknown	15,777	20	Good
282	Research Lab	unknown	129	10	Good
300	Research Ofc	1960-1969	1,320	9	Good
400	NRLF	1970-1979	253,660	36	Good
400	NRLF Addition	1980-1989	incl.	48	Good
420	Storage	1960-1969	10,635	42	Good
421	Research Lab	1960-1969	1,242	10	Good
445	Conference	1950-1959	2,336	14	Poor
450	Veh Storage	1950-1959	6,778	14	Good
451	Office	1950-1959	7,421	12	Poor
452	Office	1950-1959	7,355	12	Poor

Bldg. No.	Current Use	Year Built	GSF	Ht. (Ft.)	Struc. Cond.
453	Office	1950-1959	5,764	12	Poor
454	Office	1960-1969	6,580	12	Poor
460	Storage	unknown	984	12	Good
470	Research	unknown	438	14	Good
471	Greenhs Sv	unknown	558	14	Good
472	Research Ofc	1950-1959	2,633	14	Good
473	Office	1950-1959	3,570	14	Good
474	Storage	1950-1959	342	14	Good
475	Storage	unknown	1,296	14	Good
478	RFS Admin Ofc	1950-1959	38,862	25	Poor
480	Research	1950-1959	7,036	14	Poor
482	Research	unknown	1,516	14	Good
484	PEER	1960-1969	14,133	63	Poor
485	Research	1960-1969	429	14	Good
486	Research Lab	1960-1969	8,068	36	Good
487	Inactive	unknown	543	14	Good
488	Storage	unknown	175	14	Good
490	Storage	unknown	180	14	New

Existing Buildings

LEGEND

- Property Boundary
- Existing Buildings
- **NRLF** Northern Regional Library Facility
- **EPA** US EPA Region 9 Laboratory
- **PEER** Pacific Earthquake Engineering Research Center
- **ADMIN** Richmond Field Station Administrative Offices (formerly Forest Products Laboratory)
- **TSRC** Transportation Sustainability Research Center
- **HFS** Hydrogen Fueling Station

N

0 150 300 600'

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APPENDIX 2: PHASE I PLANNING

The first period of campus construction, shown in the Initial Site Development Illustrative figure, is currently anticipated to occur over a five-year period beginning in 2014 and continuing through 2018. This initial phase of development will consist of up to 600,000 square feet of building space including 400,000 square feet of consolidated LBNL biosciences space currently leased in Berkeley, Emeryville, and Walnut Creek and up to 200,000 square feet of development that may house additional LBNL programs, UC Berkeley programs, or joint programs such as an initiative in advanced manufacturing. New buildings may house the Lab's Joint Genome Institute, the Joint BioEnergy Institute, the Advanced Biofuels Process Demonstration Unit, Systems Biology Knowledgebase, Life Sciences programs, an integrated facility for advanced research diagnostics, a conference facility, a dining facility, and various support facilities, and may include product and process development space for industry counterparts in synergistic research areas. This development will add approximately 1,000 additional people to the site on a daily basis, increasing the population from 300 to roughly 1,300. Building demolition; tree removal and landscaping; earthwork; and utilities rerouting and installation will be carried out along with building construction.

The first campus buildings will be clustered at the southern portion of the site's developable area, closest to the waterfront. The scale and configuration of development is intended to create a locus of activity on the campus so that the first campus inhabitants will experience a high quality work environment and a strong campus identity will be initiated for future phases to model. Temporary surface parking lots will be located adjacent to the first buildings. Eventually, structured parking will be constructed on site and these surface parking lots will become building sites.

The 16-acre portion of the Richmond Bay Campus provides the opportunity to eventually cluster up to 800,000 gsf of research facilities in a contiguous setting, the projected requirement to integrate all of LBNL's synergistic bioscience programs. This is currently the most under-utilized area of the University's Richmond properties with that capacity. Initial development in this area will allow active programs in occupied structures to the north, such as the Earthquake Engineering Research Center, to remain for some time. It will retain the opportunity to develop a significant facility, such as a 3,000 foot-long linear accelerator or other configuration, in the northern areas as long as possible. It will drive the need to complete the clean-up of the Mercury Fulminate Area, the last known soil contamination identified as requiring off-haul, and the need to mitigate for sea level rise for property protection. With the best views of the marsh, shoreline, and bay, this extraordinary site will draw the first programs to move to the campus. The first facilities and programs will be chosen strategically to create a strong draw for additional development at the Richmond Bay Campus.

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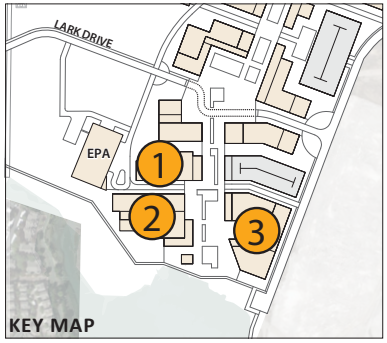
Initial Site Development Table

Building	Total GSF
1	110,000-150,000
2	110,000-150,000
3	280,000-300,000
TOTAL	500,000-600,000

Parking

Approximately 870 parking spaces



Initial Site Development Illustrative

APPENDIX 3: RELATED DOCUMENTS

Berkeley Lab Policy on Sustainability Standards for New Construction, Lawrence Berkeley National Laboratory, DRAFT, November 2012.

City of Richmond Bicycle Master Plan, City of Richmond, CA, October 2011.

City of Richmond Pedestrian Plan, City of Richmond, CA, October 2011.

Current Conditions Report, University of California Berkeley Richmond Field Station, Tetratech EM Inc. and Sea Engineering, Inc., November 2008.

Richmond Bay Campus Bicycle Access and Infrastructure – Guiding Principles, Haet, Nordman, and Greenberg, June 2012.

Richmond Field Station Working Paper, A Study in Support of the 2020 Long Range Development Plan, University of California, Berkeley, November 2002.

Richmond General Plan 2030, City of Richmond, CA, August 2011.

UC Berkeley Campus Sustainability Report, University of California, Berkeley, September 2011.

University of California Berkeley Richmond Field Station Campus Concept Plan, LBNL, UC Berkeley, and WRT, February 2011.

University of California Sustainable Practices Policy, August 22, 2011.

APPENDIX 4: ABBREVIATIONS AND DEFINITIONS

BART	Bay Area Rapid Transit District: see http://www.bart.gov/
Bay-Friendly Design	A systematic, ecologically-based approach to creating landscapes to conserve water and reduce waste and pollution. See bayfriendlycoalition.org.
BCDC	Bay Conservation and Development Commission
BIF	Biosciences Integration Facility
Black Water	Water that has come into contact with fecal matter.
BMP	Best Management Practice
CEQA	California Environmental Quality Act: see http://ceres.ca.gov/ceqa/
DOE	United States Department of Energy: see http://energy.gov/
DTSC	California State Department of Toxic Substances Control: see http://www.dtsc.ca.gov/
EBMUD	East Bay Municipal Utility District: see http://www.ebmud.com/
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency: see http://www.epa.gov/
FAR	Floor Area Ratio: The ratio of floor area in a building to the land area of the lot on which it sits. Used to regulate or measure building volume and planning density.
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
First Costs	The initial costs for design and construction of a project.
GHG	Greenhouse Gas Emissions
GPM	Gallons Per Minute
Gray Water	Untreated waste water (for example, from clothes washers, showers, bathtubs, bathroom sinks, laundry tubs) that can be used for outdoor watering.
GSF	Gross Square Feet
I	Interstate
IDS	illustrative development scenario: one of many possible development scenarios under this LRDP, specifically designed to encompass the maximum amount of new building space, population, parking, and other site improvements identified in the LRDP, as a basis for assessing the environmental impacts in the EIR
kBtuh	Thousand British Thermal Units per Hour: a measure of heat
kWh	Kilowatt hour: a unit of energy equal to 1000 watt hours. For constant power, energy in watt hours is the product of power in watts and time in hours. The kilowatt hour is most commonly known as a billing unit for energy delivered to consumers by electric utilities.
LBNL	Lawrence Berkeley National Laboratory: a United States Department of Energy National Laboratory,

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	managed by the University of California; see http://www.lbl.gov/
LEED	Leadership in Energy and Environmental Design: A green building rating system developed by the US Green Building Council.
"Life Cycle Costs"	A method of economic analysis for all costs related to building, operating, and maintaining a project over a defined period of time
LRDP	Long Range Development Plan: defined as a "physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education" (Public Resources Code of the State of California Section 21080.09). It is a comprehensive document that establishes the land use patterns and relevant policies to guide implementation of facilities and infrastructure.
MDFs	Main Distribution Facilities
MPOEs	Minimum Points of Entry
MW	Megawatt
MWh	Megawatt hour
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act: see http://www.epa.gov/compliance/basics/nepa.html
NGVD	National Geodetic Vertical Datum
NRLF	Northern Regional Library Facility: see http://www.lib.berkeley.edu/NRLF/
PCBs	Polychlorinated Biphenyls
PG&E	Pacific Gas and Electric: see http://www.pge.com/
PDF	Physical Design Framework: A companion document to the LRDP that articulates a detailed vision for the physical form of the campus and serves as a foundation for the specific planning and design of future projects.
RFS	Richmond Field Station: Name of a portion of the site on which the Richmond Bay Campus will be located, owned by the University of California, managed by UC Berkeley
TDM	Transportation Demand Management
UC	University of California: see http://www.universityofcalifornia.edu/
UCOP	UC Office of the President: see http://www.ucop.edu/
USEPA	United States Environmental Protection Agency: see http://www.epa.gov/
USGBC	United States Green Building Council: see https://new.usgbc.org/
VOCs	Volatile Organic Compounds
WAPA	Western Area Power Administration: see http://www.wapa.gov/

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“Future generations will consider themselves bound by our preparations ... only to the extent that we have foreseen their needs and have planned wisely for them. We cannot force them to follow out our schemes if these run contrary to their own inclinations; but we may fairly expect that if we plan wisely and in accordance with the really natural and right thing, our successors will follow out what we arrange, if only because it will accord with reason.”

John Galen Howard, 1908