

Institution		Agency Code
WASHINGTON STATE UNIVERSITY		365
Project Title	Category of Project	Project Number
WASHINGTON ANIMAL DISEASE DIAGNOSTIC & RESEARCH FACILITY (GAHBII)	DESIGN: RESEARCH	30000498
County	City	Legislative District
WHITMAN	PULLMAN	9
Was this project included in a prior 10-year capital plan? If yes, when?		Previous Project Number
YES; (2003-05/05-07; #10-2-107, 2007-09; #8-2-46., 2009-11, #10-2-046)		See prior plan
Prepared By:	Phone Number	Analysis Date:
WSU Budget Office, Deborah Carlson	509-335-3344	

1. Project Schedule:

	Start Date	Complete Date
Pre-design	May 2010	June 2010
Design	July 2011	June 2013
Bid	July 2013	
Construction/Occupancy	July 2013	April 2015

2. Problem Statement (short description of the project – the needs and the benefits)

This request is for design funds for the Washington Animal Disease Diagnostic & Research Facility (Global Animal Health Building II). It will house the Washington Animal Disease Diagnostic Laboratory (WADDL), which is a state, regional, and national reference and disease surveillance laboratory at the front line of our region’s and nation’s defense against foreign diseases and food-borne illness. It will also house research and development laboratories and will serve as a teaching laboratory for educating veterinary (DVM) students as well as post-DVM and other health professionals as a part of the School for Global Animal Health (SGAH) and the Department of Veterinary Microbiology and Pathology graduate education programs.

Since occupying the Bustad Hall laboratories in 1978, WADDL has grown into one of the premier animal disease diagnostic laboratories in the nation. As one of 12 founding members of the National Animal Health Laboratory Network and one of only 10 veterinary diagnostic laboratories in the Laboratory Response Network for Bioterrorism, WADDL has a critical role in Homeland Security and national defense against biological threat agents.

With staff increasing by a factor of 3 and case load increasing by over 4-fold, together with growth and increased breadth of programs to fulfill enhanced responsibilities to our stakeholders, our state and our nation, today’s diagnostic services and programs have greatly exceeded the functional and safe operating capacity of the over 30-year-old building. Facilities are seriously overcrowded and not integrated for best laboratory practices, workflow, and biosafety.

WADDL is the only veterinary diagnostic laboratory in Washington State officially sanctioned and funded to provide comprehensive animal, food, and environmental surveillance for diseases such as pandemic H1N1 influenza, avian influenza, West Nile encephalitis, BSE (Mad Cow Disease), and foot and mouth disease. As such, WADDL is a critical resource for other state and federal agencies, including the Washington State Departments of Agriculture and Health. The programs are integral to achieving the goals of the state of Washington in protecting its citizens against disease threats and economic impacts of diseases of animals. The project will help educate more students in the associated fields and ensure continued international laboratory accreditation essential for

maintaining federal and state programs supporting disease surveillance, global health and global agricultural markets.

3. History of the project or facility

The original Global Animal Health Building Phase II project was a combined research and diagnostics project, supporting rapidly expanding College of Veterinary Medicine infectious disease research and disease surveillance programs. The project has been part of the capital request for WSU's College of Veterinary Medicine since 2003-2005 (project ID 2008-3-046 and 10-2-107).

Phase I of the Global Animal Health Building is being constructed with the majority of funding provided through a Gates Foundation grant. The Phase I facility will house the global animal health *fundamental research* component. As a result, the remaining *diagnostics, disease surveillance, and translational research* components will be housed in this adjoining Phase II building. This Phase II building will house the Washington Animal Disease Diagnostic Laboratory (WADDL), diagnostics related research and development laboratories, and a teaching laboratory for distance and onsite related training.

4. University programs addressed or encompassed by the project

The primary University programs addressed by the project are the Washington Animal Disease Diagnostic Laboratory (WADDL) and the School for Global Animal Health. WADDL was established by special legislative mandate in 1974, and is an integral part of WSU College of Veterinary Medicine. **WADDL is the only fully accredited animal disease diagnostic laboratory serving the State of Washington.** As such, it is *the* Washington Animal Disease Diagnostic Laboratory. The new facility will house programs that are a vital component of the School for Global Animal Health, that support the activities of WSU's infectious disease research, the Animal Health Research Center, Safe Food Initiative, Unified Agriculture Initiative, and the USDA-ARS Animal Disease Research Unit.

In addition, the building will support instructional activities in the College of Veterinary Medicine through laboratory training of DVM students and post-DVM graduate students, including students affiliated with the School for Global Animal Health. It will also provide expanded space for diagnostic needs of the veterinary teaching hospital.

5. Integral to Achieving Statewide Policy Goals:

a. Statewide goal or goals the project is expected to address and extent to which it will do so.

1) Degrees: Related to this project proposal, a conservative estimate of increased number of degrees beyond the 2011 level specified in WSU's current HECB/OFM performance measures is eleven (11). Refer to Appendix A. These advanced degrees (MS and PhD) students are in high demand fields focused on health issues.

Though the project is in the "research" category, construction of the facility and the programs housed there directly impact Doctor of Veterinary Medicine (DVM) and graduate student experiences in the teaching laboratory and training of post-DVM students as part of the School for Global Animal Health and Department of Veterinary Microbiology and Pathology's graduate education programs. The facility will serve as an active learning laboratory for DVM students (past average, 44 DVM students annually) who complete a 4 week block rotation in diagnostic medicine (each block in groups of 4-6 students).

An average of 8-10 post-DVM students enrolled in either MS or PhD degree programs receive their disciplinary training in pathology or microbiology in the WADDL annually. These students participate as active health professionals in the laboratory under guidance of mentors during the entire course of their degree work.

Increased and improved laboratory facilities will also accommodate projected growth of SGAH graduate programs. A Global Animal Health Pathway program, to be launched in the 2010-11 academic year, will include in the future a joint DVM/MS option in Global Animal Health. It is anticipated that an average of 2-3 students per DVM class, or a total of 8-12 annually, will be enrolled in this program. These students complete coursework in disease surveillance and diagnosis of emerging diseases with experiential learning in the WADDL. Additionally, coursework and laboratory experience in disease surveillance includes experiential learning in WADDL, both in the active laboratory and classroom laboratory. Laboratory activities will be offered as a distance component for training of international SGAH graduate students as well. It is expected that this course will have enrolled 8-10 students annually (includes both on site and students at distant locations).

2) Economic Development through Theoretical or Applied Research: While this facility will positively impact the state goal of increasing number of degrees, the Washington Animal Disease Diagnostic & Research Facility (WADDRF) particularly addresses two primary strategic Priorities of Government - **“Improving the Health of Washingtonians”** and **“Improving the Economic Vitality of Businesses and Individuals”**. The facility will house the newly created School for Global Animal Health and the Washington Animal Disease Diagnostic Laboratory. Disease surveillance is critical to recognition of emerging diseases that can have a profound impact on the health and economic welfare of Washingtonians.

The programs that will be located in this facility have the primary responsibility in Washington State for disease surveillance in animals and environmental samples. These include all of the significant diseases that can be transmitted from animals to humans (so called zoonotic diseases). Most notable currently are pandemic H1N1 influenza, avian influenza, West Nile Encephalitis, BSE (Mad Cow Disease), and foot and mouth disease.

In calendar year 2009, over 270,000 laboratory assays were performed in support of these activities. Early recognition and the ability to respond quickly for disease eradication and recovery are essential elements of limiting the spread of diseases, whether in animal or human populations. For example, it is estimated that each hour of delay in diagnosis of foot and mouth disease will result in an additional \$10M loss. Early recognition of influenza virus in the bird or swine population is a key to limiting its spread and can literally prevent a global pandemic. A recent National Academy of Sciences study noted that the impact of 6 emerging diseases alone in the last decade has resulted in an impact totaling over \$250 billion. These are examples of the extent to which surveillance activities to be located in the Global Animal Health Building, Phase II can have an impact on the health and economic vitality of Washingtonians.

Activities of the WADDRF are not limited to these types of diseases. Agricultural markets, including aquaculture production, are dependent on maintaining or verifying disease free status in animals or their live products. Early recognition of a disease which can shut off exports is vital to limiting the impact on agricultural markets. As we have experienced in Washington State with BSE, these diseases can have serious and prolonged impact on the economy. Early recognition and response can prevent the closure of markets.

The proposed project, due specifically to the planned use as a research facility primarily for sponsored experimentation, research, and/or training in research methods, is exempt from the requirements of Chapter 39.35D RCW High Performance Public Buildings (LEED Silver). However, the new proposed project will incorporate new energy-efficient technologies while minimizing operating and capital costs.

6. Greenhouse Gas Emissions Reductions:

- a. Provide documentation of institution's adopted policies to reduce greenhouse gas emissions in accordance with RCW 70.235.070 and to reduce annual per capita vehicle miles per RCW 47.01.440 or RCW 43.160.020 as applicable.

WSU's Sustainability Initiative, Executive Policy #24 (Appendix B), affirms WSU's commitment to sustainability policies and programs on its campuses. Implementation of EP24 is guided by the Sustainability/and Environment Committee (SEC). The SEC has developed Climate Action Plans for all WSU campuses which embody specific goals which WSU will attain. These goals include meeting the Washington Department of Ecology greenhouse gas and climate change regulations. WSU has adopted four strategies to achieve its greenhouse gas (GHG) reduction goals: green development, energy conservation, transportation, and carbon offsets. For more information and reference sites, see Appendix C.

WADDRF, like all new WSU facilities, will be designed and constructed to use state-of-the-art energy conservation technology, minimizing the facilities' carbon footprint from combustion energy sources both local and regional. Through the combined efforts of facility construction, renovations, and improvements, and a continued analysis of the university's overall impact to the climate, WSU continues to pursue strategies to reduce its greenhouse gas emissions. This project will have no effect on WSU vehicle mile reduction goals.

7. Integral to Institution's Planning and Goals:

- a. Describe the proposed project's relationship and relative importance to the institution's
 - (a) Campus/Facilities Master Plan

The facility is listed prominently in the 2010 Pullman Campus Master Plan¹ and is considered part of the veterinary medicine precinct.

Over the past decade WSU's Capital Planning and Development has refined the Campus Master Planning from a broad campus-wide approach, to college and precinct planning efforts, and further still to buildings and specific infrastructure projects to establish direction and accomplish long-term goals within reasonable time and budgetary constraints.

During design, the urban planning and site design of the WADDRF will focus upon the enhancement of the overall function and utilization of the VETMED/Pharmacy precinct site and facilities, while working to establish a strategic plan for future project improvements and impacts. In addition to meeting the immediate project goals, the end result should improve the precinct circulation and service conditions, general building services, research animal delivery and service, Veterinary Teaching Hospital, and WADDL client animal access and improve connections to the Research and Education Complex (REC) sites to the north.

¹ 2010 Pullman Campus Master Plan, pg. 48 - <http://www.cpd.wsu.edu/masterplan/PlanReports/Pullman/Plan.pdf>

(b) Strategic Plan

This facility proposal directly supports all goals of the Washington State University Strategic Plan². Existing and expanded programs in the CVM, led by two members of the Institute of Medicine, National Academy of Sciences and Washington State Academy of Sciences (Drs. Terry McElwain and Guy Palmer) have and will continue to achieve national and international preeminence in innovation, discovery, and creativity (goal 1). Central to the WADDL and the School for Global Animal Health (SGAH) programs is provision of a premier education and transformative experience in global health that prepares students to excel in a global society (goal 2). Faculty in the programs are recognized for their leadership in local, national, and global outreach and engagement through service on regional, national, and international study and advisory groups, as well as their service to the State of Washington and Pacific Northwest in animal health, diagnostics, and disease surveillance (goal 3). The WADDL and SGAH are committed to an environment of diversity, integrity, and transparency (goal 4).

Washington State University has identified several areas of preeminent research for targeted expansion. These research foci include infectious diseases at the animal/human interface, with a new home for this research and associated disease surveillance activity in the School for Global Animal Health. The proposed facility will provide a focal point for this research and the school on the Washington State University campus.

b. Identify whether the proposed project is the institution's first, second, or third priority for state funding among all of the Design Requests the institution is proposing for the 2011-13 biennium.

- ✓ **SECOND PRIORITY** – Among WSU's scored proposals for the four design categories of Growth, Renovation, Replacement, and Research, this project is the "2nd" highest priority.

8. Impact on Economic Development:

a. Identify any specific state, regional, or local economic development plans associated with the project, and describe how it would support them.

The research to be housed in this building is responsive to numerous statewide policies and economic development strategies. As noted above in Section 5, these research programs are especially responsive to the statewide Priorities of Government as part of a broader strategy of increased support for the research and education needed to drive a technology-based economy. Numerous statewide policy documents highlight this strategy for the future of Washington (see, for example the Bio 21 report of the WA Technology Alliance and the resulting Life Science Discovery Fund³, *The Future of Life Sciences in Washington* prepared by the Washington Biotechnology and Biomedical Association⁴, *The HEC Board 2008 Strategic Master Plan*⁵, *Enhancing Washington State's Economic Future*, prepared by the Washington Economic Development Commission⁶, and *The Next Washington*⁷). Specifically, the research programs to be located in this building will

² WSU Strategic Planning site address: <http://strategicplan.wsu.edu/> and full document: http://strategicplan.wsu.edu/08_13_strategic_plan.pdf

³<http://www.technology-alliance.com/documents/bio21reportp2.pdf>

⁴http://www.wabio.com/econ_dev_reports/WA_Growth_Strategy_2006.pdf

⁵<http://www.hecb.wa.gov/Research/masterplans/documents/2008MasterPlan-fromPRT.pdf>

⁶<http://www.cted.wa.gov/DesktopModules/CTEDPublications/CTEDPublicationsView.aspx?tabID=0&ItemID=3320&MIId=1250&wversi on=Staging>

⁷ http://www.governor.wa.gov/priorities/economy/next_wa_final.pdf

contribute in the long run to Washington's pre-eminence in Global Health. As noted in the *Economic Impact Assessment of Global Health on Washington State's Economy*,⁸ this is a \$4.1 billion segment of Washington's economy.

b. Demonstrate that federal or private funding likely available to support the research in the facility.

Current annual funding for the Washington Animal Disease Diagnostic Laboratory is \$5.3M. Only 37% of this funding is from state resources. The remainder is a combination of revenue generated by the laboratory and outside grants and contracts. There has been a continuing downward trend in state funding over the past decade, from a high of nearly 70% in the mid-1990s, to the current figure of 37%. It is probable that the downward trend will continue even as the programs continue to expand. In spite of this decrease in state funding, because of increased research and service revenue total WADDL funding has increased 66% from \$3.2M in FY04 to \$5.3M in FY09.

Extramural support for research and development activities that will be located in the Global Animal Health building is also expected to grow with recruitment of new faculty to the School for Global Animal Health. Core faculty of WSU affiliated with the School and WADDL have extramural funding for infectious diseases research and disease surveillance of \$5.0M dollars (annually).

c. Summarize and quantify the expected economic benefits of the project/ selected documentation.

The School for Global Animal Health and the Washington Animal Disease Diagnostic Laboratory are key partners in global health in the State of Washington. Direct economic effect is expected through new private and federal research funding. Economic impact analysis of global health in the state of Washington by the Office of Global Affairs at the University of Washington reveals the creation of nearly 14,000 direct jobs (mean annual wage of \$55,937) and a 3.2 total job/direct job multiplier resulting in greater than 43,000 total jobs. This employment generates more than \$4B in total business activity and total tax revenue to the state of \$141M. The total business activity generated by global health research and teaching at WSU and UW exceeds \$130M and has a total expenditure/State expenditure multiplier of approximately 4:1.

In addition to this direct measurable economic effect, there are immeasurable benefits generated through protecting and expanding national and international markets for Washington agricultural products. Animal agriculture is a \$1.5B industry in Washington. Our agricultural markets, including aquaculture production, are dependent on maintaining or verifying disease free status in animals or their live products. Early recognition of a disease which can shut off exports is vital to limiting the impact on agricultural markets, and surveillance is the key. As we have experienced with BSE, this can have serious and prolonged impact on the economy.

The need for rapid surveillance of emerging disease is clearly illustrated by the **\$13B economic loss attributable to the 2001 Foot and Mouth Disease outbreak in the U.K.** In the 2001 outbreak, there was a delay in diagnosis of 2 weeks. Models based on this outbreak predict that **each hour of delay in diagnosis will result in an additional \$10M economic loss in livestock intensive areas.**

Increasing the capacity to identify, develop, and implement novel control solutions to both emergent pathogens and long-standing disease problems (e.g. *Salmonella*) will meet the dual goals of protecting human health and agricultural markets. In addition, it is expected that additional products such as vaccines for use in animals and novel diagnostic assays will provide a direct market return

⁸ http://www.washington.edu/home/international/pdfs/wastateglobal_economicimpact.pdf

for the Washington State biotechnology industry. The existing facilities are outmoded and too small to meet these expanded needs, challenges, and opportunities.

9. Impact on Innovation:

- a. Explain how the research activities proposed for the project will advance areas of existing preeminence, or position the institution for preeminence in a field or area. Evidence of existing or potential research preeminence could include, but is not limited to, funding history, faculty qualifications, publications, patents, business spin-offs, etc.

As noted above, Washington State University has identified several areas of preeminent research for targeted expansion. These areas include infectious diseases at the animal/human interface, with a home and identity for this research and associated disease surveillance activity in the newly created School for Global Animal Health. The mission of the School is to “*provide innovative solutions to global infectious disease challenges through research, education, global outreach, and application of disease control at the animal-human interface*”. A key component is the disease surveillance and diagnostic test development activities in the Washington Animal Disease Diagnostic Laboratory that will be located in the Phase II building. As noted above, the Washington Animal Disease Diagnostic Laboratory is one of the premier animal disease diagnostic laboratories in the nation. WADDL is one of 12 founding members of the National Animal Health Laboratory Network and one of only 10 veterinary diagnostic laboratories in the nation in the Laboratory Response Network for Bioterrorism. It is one of only 7 laboratories in the nation that are approved to test for BSE (Mad Cow Disease). The laboratory has a critical role in Homeland Security and national defense against biological threat agents. **WADDL is the only veterinary diagnostic laboratory in Washington State officially sanctioned and funded to provide comprehensive animal, food, and environmental surveillance for diseases such as pandemic H1N1 influenza, avian influenza, West Nile encephalitis, BSE (Mad Cow Disease), and foot and mouth disease.**

The School for Global Animal Health is unique among North American institutions of higher education by taking such a bold step to address some of the most significant health issues of humans worldwide through intervention at the animal/human interface. Through the school, WSU is leveraging the current preeminence in global health in the State of Washington to create alliances that truly makes the State of Washington a global leader in these areas. Partnerships have been developed with the University of Washington, Fred Hutchison Cancer Research Center, Seattle Biomedical Research Institute, Infectious Disease Research institute, PATH, and PNNL in the Global Health Alliance and Washington Vaccine Alliance. The lead project for a Life Science Discovery Fund proposal of the Washington Vaccine Alliance is the School for Global Animal Health component to develop a vaccine against *E. coli* O157 in animals. Recognition of this project came from Governor Gregoire at the recent Pacific Health Summit where she announced an agreement between the State of Queensland and Washington State University to collaborate on achieving this goal. These are examples of the expansion of research activities that have been accomplished in the very short period of time that the School for Global Animal Health has been created. Recognition of the expertise and program goals of the School for Global Animal Health led to the very generous grant of \$25M from the Bill and Melinda Gates Foundation to fund Phase I of the Global Animal Health Building. Groundbreaking for Phase I was held June 25, 2010 and completion is expected in the spring of 2012. This proposed Phase II project will adjoin Phase 1.

Faculty members currently affiliated with the School for Global Animal Health have an outstanding history of research funding, research accomplishments and national and international recognition. Director of the School, Dr. Guy Palmer, and Executive Director of the Washington Animal Disease Diagnostic Laboratory, Dr. Terry McElwain, are members of the prestigious Institute of Medicine in the National Academy of Sciences, as well as the Washington State Academy of Sciences.

Dr. Palmer heads a large vaccine development project funded by the Wellcome Trust, one of only two projects funded by the Trust in North America. Dr. Tom Besser is the principal investigator of a \$10M National Institutes of Health project on food and waterborne diseases that created one of only two Zoonosis Research Units in the United States (the other is at Cornell University).

Dr. Wendy Brown, also funded through the NIH, has received prestigious national and international honors for her research in immunology. Observations in her laboratory were instrumental in designing the unique approach being used for developing a vaccine against *E. coli*.

Dr. Terry McElwain, Executive Director of WADDL, serves on national and international boards and steering committees which provide consultation to government agencies on disease surveillance, and has been a Committee member for two key National Academy of Sciences studies on animal health infrastructure in the United States and Global Disease Surveillance.

Faculty members in the Infectious Diseases Research program have patented or licensed many diagnostic tests and reagents over the past 20 years. Notable among those is the diagnostic test for scrapie in sheep, the only approved live animal test for a spongiform encephalopathy (that is, the agents that cause diseases like Mad Cow Disease), and three tests currently approved by the World Organization for Animal Health (OIE) and the United States Department of Agriculture for international movement of horses and cattle. A complete listing of patents and licensed products is available upon request.

The research and disease surveillance programs of faculty in the School for Global Animal Health have received major funding from the National Institutes of Health, United States Department of Agriculture, and the Wellcome Trust. A 5 year history of research expenditures for these faculty members shows a continuing increase. The significance of this is enhanced when considering that funding for research nationally has been increasingly difficult to acquire, with success rates at NIH in some Institutes now as low as 10%. Annual research expenditures for faculty in the School for Global Animal Health have increased from \$2.8M in FY04 to \$5.0M in FY09, an increase of 79%.

Finally, faculty investigators at WSU collaborate closely on infectious disease research projects with scientists in the USDA/Agricultural Research Service/Animal Disease Research Unit (ADRU) located within the College of Veterinary Medicine. The Animal Disease Research Unit funding has also increased over the same 5 year period, from \$5.0M in FY04 to \$6.8M in FY09, an increase of 36%. In addition, the ADRU provides over \$700K in collaborative research funds and critical research infrastructure support to the CVM annually, including \$190K annual direct funding to the College of Veterinary Medicine through cooperative research agreements. Faculty members in the Infectious Diseases Research Program and School for Global Animal Health have a long history of success in research funding and productivity, including scholarly activity and translation of their work into deliverables. Increasing funding trends are expected to continue and to be even more pronounced in the future with recruitment of new faculty to the School for Global Animal Health. Investment in this facility will be an investment in success for the State of Washington.

10. Availability of Research Space: (See 11. Below).

11. Adequacy of Research Space: (The following addresses both availability and adequacy.)

The Washington Animal Disease Diagnostic Laboratory has been housed in a portion of Bustad Hall since its completion in 1978. WADDL was assigned ~ 11,000 ASF consisting of laboratories for bacteriology, microbiology, serology, necropsy, cooler space for incoming and outgoing animal carcasses and pathological waste, other support space for specialized low temperature freezer storage of animal disease samples, faculty offices, laboratory supply storage, and business and medical records office. Since 1978, case accessions in WADDL have grown nearly fivefold, and laboratory

examinations have increased from ~70,000 in 1978 to over 270,000 in 2009. To meet the demands of this growth, staff size has tripled. No research overflow or surge space exists on campus.

Laboratory services have been expanded to include newly funded state and federal programs such as the Aquaculture Diagnostics and Certification program (facilitates continued export from Washington State of live aquatic products), the Avian Health and Food Safety Laboratory (food safety testing), and the National Animal Health Laboratory Network (NAHLN) and Laboratory Response Network. The networks fund surveillance for diseases such as pandemic H1N1 influenza, avian influenza, West Nile virus, and foot and mouth disease that impact the health of Washington citizens and the economy of our animal agricultural sector.

High throughput testing has increased substantially in the past two years. WADDL has performed over 100,000 surveillance tests over the past 5 years for diseases such as BSE tests, pandemic influenza, and avian influenza, with as many as 16,000 influenza tests run annually. Associated with the NAHLN, there is an expectation that WADDL would perform up to 1,500 – 2,000 assays/day during an animal health emergency such as a foot and mouth disease outbreak, all within a laboratory space that meets government mandated biocontainment and security requirements. The minimum recommendation is for 1,500 square feet of BSL3 space, nearly quadruple the existing WADDL BSL3 space of ~400 square feet.

The lack of available space and adequacy of the existing space has also been cited by accrediting agencies as a serious problem. Expansion of programs, and increased responsibilities to our agriculture stakeholders and the public have exceeded the scope and design of current facilities and have resulted in substandard space to meet accreditation requirements. A report following a comprehensive laboratory accreditation site visit in September 2005 had as its number one recommendation the *“timely completion of the design and building of a dedicated diagnostic laboratory facility on the Pullman campus to replace aging laboratory space in Bustad Hall”*. Full accreditation is essential to continued participation in federal and state disease surveillance programs, acceptance of test results by trading partners to global markets for Washington State animal agriculture, and to meet the needs of regulatory agencies such as the Centers for Disease Control and Prevention, USDA, and Washington State Departments of Agriculture and Health.

The WADDL also provides a laboratory setting for training and education of DVM and post-graduate students, but facilities are not conducive to modern educational methods and do not meet optimal biosafety standards. With staff growth of 300%, caseload growth of nearly 500%, and facility growth limited by a factor of only 0.4 since 1978, together with increased breadth of programs and associated security and biosafety requirements to fulfill enhanced responsibilities to our stakeholders, our state and our nation, as noted above, **the program has far exceeded the capacity and original design of the aging Bustad Hall facilities**. Comprehensive diagnostic capability for animal diseases, capacity for health emergencies, including bioterrorism, requires uniquely designed and dedicated space. No additional space on campus has the necessary contiguous laboratory space that meets the unique biocontainment and security requirements for the work that is performed in WADDL.

12. Availability of Instructional Space:

See Appendix D for utilization statistics and comments about HECB targets and WSU planning efforts. The Pullman campus is short of teaching laboratory space as cited in previous HECB capacity studies and current utilization statistics.

The Global Animal Health Building, Phase II will provide updated, safe, and modern instructional laboratory space for graduate programs and DVM student training. The facility will serve as a working laboratory for both DVM and post-DVM graduate student training and will be occupied by these students full time (40–50 hours/week). Pre-design includes a teaching laboratory for instructional activities associated with practicums on laboratory assays, biosafety, and related laboratory based activities. The building will not add any traditional classroom space.

13. Reasonableness of Cost:

Provide as much detailed cost information as possible, including baseline comparison of costs per square foot (SF) with the cost data provided in Section 5.0 of the Project Evaluation Guidelines and Application Instructions. Also, describe the construction methodology that will be used for the proposed project.

In conjunction with the planning efforts conducted as a component of the Global Animal Health Building (GAHB) design, Davis Langdon and Associates (DLA) prepared a plan based upon a cost per square foot analysis of this programmed project. Having participated in this early design effort, DLA has a detailed understanding of the complexities of the facility and space program.

The cost estimate was developed based upon many of the building criteria established as part of the GAHB design process.

The cost per square foot is currently estimated at a construction (MACC) cost of \$528/SF, corrected to July 1, 2008 construction midpoint. Although this cost is higher than the benchmark expected cost range for research facilities as identified by OFM, this project is far more complex than typical research buildings due to the facilities’ unique combination of BSL3 biocontainment and large animal necropsy. A construction cost comparison of similar biocontainment facilities is included below; the data has been adjusted for project location and to a July 1, 2008 midpoint of construction.

Comparable Facility Name	Location	Gross SF	Total Construction Cost	Cost per SF	Construction Completion Date	Adjusted Cost per SF
WADDRF	Washington State University, Pullman WA	73,455	\$45,633,030	\$605	July 2015	\$528
New England Regional Biosafety Lab	Tufts University, Grafton MA	41,000	\$23,100,000	\$563	May 2009	\$510
Tulane Regional Biosafety Lab	Tulane University, Covington LA	38,000	\$20,075,000	\$528	January 2009	\$651
Regional Biocontainment Lab	Colorado State University, Fort Collins CO	38,000	\$21,900,000	\$576	October 2007	\$667

Due to the size and complexity of this project, WSU will utilize the GC/CM method of construction.

14. Contribution of Other Funding Sources:

No non-state funds are expected for the Washington Animal Disease Diagnostic & Research Facility (GAHBII). The related project under construction, however, Global Animal Health Building Phase I is funded through a \$25M gift from the Gates Foundation and a \$10M match provided by a combination of state approved WSU building fund bonds, University and additional donor funds. The two building projects will result in adjoined building space with some building infrastructure for Phase 2 included in Phase 1, and shared use of conference rooms, atrium entry, and passageways.