

5.9 Rate Schedule for NHERI Projects for NHERI Lehigh RTMD Experimental Facility, ATLSS and Fritz Structural Testing Laboratory

Tables 5.9-1 through 5.9-6 apply to rates associated with NHERI projects only. NHERI projects are defined as projects receiving funding through the NSF for utilization of NHERI Lehigh RTMD Experimental Facility equipment. All other non-NHERI projects are subject to Tables 5.10-1 through 5.10-6.

Note: All costs in subsequent tables are direct cost only (personnel costs also include employee benefits as noted in Table 5.9-3). All costs will be subject to Lehigh University's current indirect cost rate. Contact NHERI Lehigh RTMD Site Operations Manager for university's current indirect cost rate. For use fees assessed per day, the charges will be applied in either half day or full day increments.

Updated: 11/1/15

Table 5.9-1		
ATLSS PROJECT FEE		
<p>The ATLSS Project Fee is assessed as a <u>one-time</u> charge at the onset of a project at the percentages noted below. The fee is assessed <u>on the total test program</u> budget. The fee is assessed to cover costs associated with forklifts, cranes, hydraulic pumps, tools, etc. required for daily operation at ATLSS.</p>		
	Unit of Measure	NHERI Projects
ATLSS Project Fee	Per project	1%

Table 5.9-2		
FLOOR, WALL SPACE, and RED BRACING FRAME – ATLSS Laboratory		
<p><i>* Note: Floor space/wall space charge is applicable to strong floor/reaction wall in laboratory's south bay (excluding red bracing frame fixture which is explained below) and to the steel test frame/wall grillage system in laboratory's north bay.</i></p>		
Floor Space* (excludes floor space within red bracing frame fixture)		
Description	Unit of Measure	NHERI Projects
Floor Space < 500 sq ft	Per calendar day	\$0
Floor Space to 1000 sq ft	Per calendar day	\$50
Floor Space to 1500 sq ft	Per calendar day	\$100
Floor Space to 2000 sq ft	Per calendar day	\$150
Floor Space to 2500 sq ft	Per calendar day	\$200
Floor Space to 3000 sq ft	Per calendar day	\$250
Floor Space to 3500 sq ft	Per calendar day	\$300
Floor Space to 4000 sq ft	Per calendar day	\$400
Wall Space* (excludes wall space within red bracing frame fixture)		
<p>Calculated by multiplying applicable floor space daily rate by wall space occupancy/blockage factor (provided below)</p>		
Description	Unit of Measure	NHERI Projects
Wall space < 20 ft	-----	1.0
Wall space to 30 ft	-----	1.3
Wall space to 40 ft	-----	1.6
Wall space to 50 ft	-----	2.0
ATLSS Red Bracing Frame**		
ATLSS Bracing Frame Fixture**	Per project per calendar year	\$15,000

*** Projects whose floor and/or wall plan footprint lie within the red bracing frame fixture are charged a \$15,000 per project per calendar year usage fee in place of being charged per square foot for floor space and per foot for wall space for this area. Projects whose floor space footprint and wall space footprint fall outside of the red bracing frame but which utilize the outside of the red bracing frame as a support fixture are subject to the standard floor and wall space use fees as outlined above for projects whose footprint falls outside of the red bracing frame fixture.*

Table 5.9-3		
PERSONNEL - Labor		

Personnel costs could be the responsibility of the NHERI project or the NHERI Lehigh Operations and Maintenance budget depending on the associated task. The section entitled “Responsibility of Project Costs” should be reviewed for determination. The personnel costs in Table 5.9-3 below would be the rates applied for tasks that are the responsibility of the NHERI research project.

ATLSS Staff (rates include vacation, holiday, and sick leave and employee benefits but does not include indirect cost)

Personnel	Unit of Measure	NHERI Projects
Manager, Structural Testing	Per hour	\$82
Laboratory Operations Manager	Per hour	\$47
Laboratory Technicians	Per hour	\$43
Instrumentation Manager	Per hour	\$63
Instrumentation Technicians	Per hour	\$63
ATLSS IT Manager	Per hour	\$66
Administrative Assistant	Per hour	\$24

NHERI Lehigh RTMD EF Staff (rates include vacation, holiday, and sick leave and employee benefits but does not include indirect cost)

Personnel	Unit of Measure	NHERI Projects
NHERI Lehigh Operations Manager	Per hour	\$103
NHERI Lehigh IT Systems Administrator	Per hour	\$73

Table 5.9-4

NHERI EQUIPMENT/INSTRUMENTATION

NHERI Equipment

Description	Unit of Measure	NHERI Projects
NHERI Hydraulic System (NHERI actuators)	Setup per project per calendar year	\$0
- Static per actuator	Per test day	\$0
- Dynamic per actuator	Per test day	\$0
- Fatigue to 5M per actuator	Per M cycles	\$0
- Fatigue 5M–50M per actuator	Per M cycles	\$0
- Fatigue 50M–200M per actuator	Per M cycles	\$0
- Fatigue >200M per actuator	Per M cycles	\$0
NHERI Accumulator System	Setup per project per calendar year	\$0
- Accumulator discharge	Per discharge	\$0
NHERI Control System (Pulsar or Inertia)	Setup per project per calendar year	\$0
- NHERI Control System	Per test day	\$0

Note 1: For NHERI projects with actuator use subject to fatigue use rates above, the number of cycles used in determining the applicable use rate (based on cycle count) for *all actuators* on that project is calculated by summing the number of cycles run for all actuators.

Note 2: Fatigue projects (for NHERI projects) will not be subject to static test charges for

setting load limits for fatigue tests if the loads in such tests do not exceed the fatigue test load range. If these conditions are met, the tests conducted at slow rate to establish the load limits for cycling do not qualify as static tests. If fatigue test ranges are exceeding, then static test charges are applicable to the project.

Note 3: Crawl tests conducted on bridge fatigue simulation projects are subject to static test rates for actuators utilized during testing.

Note 4: Equipment subject to weekly and monthly rates (as opposed to the per day rate noted above) if the following criteria are met:

- Weekly rate (>2 days/calendar week)	2.5*day
- Monthly rate (>2 weeks/calendar month)	2.5*week

NHERI Instrumentation (Charges per instrument, regardless of quantity)

Description	Unit of Measure	NHERI Projects
NHERI Data Acquisition System (Pacific Instruments)	Per test day	\$0
NHERI Accelerometers (monoaxial)	Per test day	\$0
NHERI Accelerometers (triaxial)	Per test day	\$0
NHERI Temposonics	Per test day	\$0
NHERI LVDTs	Per test day	\$0
NHERI Inclinometers	Per test day	\$0
NHERI Differential Pressure Transducers	Per test day	\$0
Camera	Setup per camera per project	\$0
- Portable Web Camera	Per test day	\$0
- GoPro Camera	Per test day	\$0
Agilent Power Supply	Per instrument	\$0
Agilent Volt Meter	Per instrument	\$0

Note: Instrumentation subject to weekly and monthly rates (as opposed to the per day rate noted above) if the following criteria are met:

- Weekly rate (>2 days/calendar week)	2.5*day
- Monthly rate (>2 weeks/calendar month)	2.5*week

Table 5.10-5

Non-NHERI EQUIPMENT/ INSTRUMENTATION

ATLSS LABORATORY

Non-NHERI Equipment

Description	Unit of Measure	NHERI Projects
ATLSS Hydraulic System (non-NHERI actuators)	Setup per project per year	\$250
- Static per actuator*	Per test day	\$150
- Dynamic per actuator*	Per test day	\$250

- Fatigue to 5M per actuator	Per M cycles	\$162
- Fatigue 5M–50M per actuator	Per M cycles	\$100
- Fatigue 50M–200M per actuator	Per M cycles	\$50
- Fatigue >200M per actuator	Per M cycles	\$20
Enerpac Pumping System	Per test day	\$0
Enerpac Jacks	Per test day	\$0
Manlift	Per test day	\$0
ATLSS Control System	Setup per project per calendar year	\$50
- MTS Flex System*	Per channel per test day	\$20
- MTS 458 System*	Per channel per test day	\$12
- Wineman System*	Per channel per test day	\$12
- Vickers System (includes conditioner)*	Per channel per test day	\$10

Note 1: For NHERI projects with actuator use subject to fatigue use rates above, the number of cycles used in determining the applicable use rate for *all actuators* on that project is calculated by summing the number of cycles run for all actuators.

Note 2: Fatigue projects will not be subject to static test charges for setting load limits for fatigue tests if the loads are not exceeding the fatigue test ranges. If these conditions are met, the tests conducted at slow rate to establish the load limits for cycling do not qualify as static tests. If fatigue test ranges are exceeding, then static test charges are applicable to the project.

Note 3: Crawl tests conducted on bridge fatigue simulation projects are subject to static test rates for actuators utilized during testing.

Note 4: Equipment followed by * subject to weekly and monthly rates (as opposed to the per day rate noted above) if the following criteria are met:

- Weekly rate (>2 days/calendar week)	2.5*day
- Monthly rate (>2 weeks/calendar month)	2.5*week

Non-NHERI Instrumentation
(Charges dependent on quantity of instrumentation utilized)

Description	Unit of Measure	NHERI Projects
Trilion 3-D Image Correlation System	-----	-----
- Static	Per test day (not subject to weekly and monthly rates)	\$285
- Dynamic	Per test day (not subject to weekly and monthly rates)	\$570
DaqScribe High Speed Data Acquisition System	Per test day (not subject to weekly and	\$125

	monthly rates)	
Data Acquisition System	-----	-----
- To 16 channels*	Per test day	\$38
- 17 – 32 channels*	Per test day	\$75
- 33 – 64 channels*	Per test day	\$100
- 65 – 96 channels*	Per test day	\$125
- >96 channels*	Per test day	\$150
- CR9000 data logger (includes power supply charge)*	Per test day	\$81
- CR5000 data logger (includes power supply charge)*	Per test day	\$56
- Daytronics*	Per test day	\$25
Strain gage conditioners	Per test day	-----
- 1 – 8 channels*	Per test day	\$5
- 9 – 16 channels*	Per test day	\$10
- 17 – 32 channels*	Per test day	\$20
- 33 – 64 channels*	Per test day	\$30
- > 64 channels*	Per test day	\$40
Strain Indicator	Per test day	\$5
Peak Reader	Per test day	\$5
Precision Voltmeter	Per test day	\$10
Power Supply	Per test day	\$0
LVDTs, Temposonics, Displacement Transducers	-----	-----
- 1 – 8*	Per test day	\$10
- 9 – 16*	Per test day	\$15
- 17 – 24*	Per test day	\$20
- 25 – 32*	Per test day	\$25
- 33 – 40*	Per test day	\$30
- 41 – 48*	Per test day	\$35
- 49 – 56*	Per test day	\$40
- 57 – 64*	Per test day	\$45
- > 64*	Per test day	\$50
Plastic slides	-----	-----
- 1 – 8*	Per test day	\$5
- 9 – 16*	Per test day	\$10
- > 16*	Per test day	\$15
String Pots, Accelerometers	-----	-----
- 1 – 4*	Per test day	\$10
- 5 – 8*	Per test day	\$15
- 9 – 12*	Per test day	\$20
- > 12*	Per test day	\$25
Rotation Meters, Inclinometers	-----	-----

- 1 – 8*	Per test day	\$10
- 9 – 16*	Per test day	\$15
- > 16*	Per test day	\$20
Laser Displacement Sensors*	Per test day	\$15
Load Cell*	Per test day	\$10
Calibration stand*	Per test day	\$8
Camera	Setup per camera per project	\$15
Nikon Camera*	Per test day	\$10
Videocam*	Per test day	\$5
DVR*	Per test day	\$5

Note: Instrumentation followed by * subject to weekly and monthly rates (as opposed to the per day rate noted above) if the following criteria are met:

- Weekly rate (>2 days/calendar week)	2.5*day
- Monthly rate (>2 weeks/calendar month)	2.5*week

FRITZ LABORATORY

Non-NHERI Equipment

Amsler Hydraulic System	Setup per project per year	\$125
- Static per actuator*	Per test day	\$75
- Fatigue to 5M per actuator	Per M cycles	\$75
- Fatigue 5M–50M per actuator	Per M cycles	\$50
- Fatigue 50M–200M per actuator	Per M cycles	\$25
- Fatigue >200M per actuator	Per M cycles	\$10
MTS/Vickers Hydraulic	Setup per project per year	\$250
- Static per actuator*	Per test day	\$150
- Fatigue to 5M per actuator	Per M cycles	\$150
- Fatigue 5M–50M per actuator	Per M cycles	\$100
- Fatigue 50M–200M per actuator	Per M cycles	\$50
- Fatigue >200M per actuator	Per M cycles	\$20
Amsler Alternating Stress Machine	Per M cycles	\$75
Baldwin 5000 kip Universal*	Per test day	\$250
Baldwin 5000 kip Universal*	Overnight	\$100

Riehle 800 kip Universal*	Per test day	\$150
Southwark Emery 300 kip Universal*	Per test day	\$75
Drop Weight Tester	Per test day	\$15
Rexroth Pumping System	Per test day	\$100

Note 1: For NHERI projects with actuator use subject to fatigue use rates above, the number of cycles used in determining the applicable use rate for *all actuators* on that project is calculated by summing the number of cycles run for all actuators.

Note 2: Fatigue projects will not be subject to static test charges for setting load limits for fatigue tests if the loads are not exceeding the fatigue test ranges. If these conditions are met, the tests conducted at slow rate to establish the load limits for cycling do not qualify as static tests. If fatigue test ranges are exceeding, then static test charges are applicable to the project.

Note 3: Crawl tests conducted on bridge fatigue simulation projects are subject to static test rates for actuators utilized during testing.

Note 4: Equipment followed by * subject to weekly and monthly rates (as opposed to the per day rate noted above) if the following criteria are met:

- Weekly rate (>2 days/calendar week)	2.5*day
- Monthly rate (>2 weeks/calendar month)	2.5*week

Table 5.10-6

ADDITIONAL LABORATORIES/SERVICES/EQUIPMENT

ATLSS LABORATORY

Description	Unit of Measure	NHERI Projects
Large Scale Furnace	Per test day	\$50
Materials Testing	-----	-----
- Welding equipment	Per hour	\$5
- Heat treating furnace	Per hour	\$10
Mechanical Testing	-----	-----
- 2670 kN (600 kip) Universal	Per test day	\$200
- 267 kN (60 kip) Universal	Per test day	\$50
245 kN Servo	-----	-----
- Static	Per hour	\$10
- < 5 M cycles	Per M cycles	\$25
- 5 – 50 M cycles	Per M cycles	\$25
- > 50 M cycles	Per M cycles	\$10
Charpy V-notch Test Machine	Per test day	\$50
Metallography Laboratory	-----	-----
- Sample preparation	Per sample	\$5
- Hardness: Rockwell and Vickers	Per hour	\$10
- Optical microscope	Per hour	\$10

Additional Notes:

(1). The testing machines at Fritz Laboratory are also available for use by NHERI researchers. Use fees estimates and associated costs will be developed on a per test basis, based on the complexity of the test setup. The Manager, Structural Testing will assist in developing estimates for the use of this machine.

(2). All costs require indirect cost to be applied to the stated rates (stated rates are only direct cost, with the exception of personnel which also includes employee benefits). Contact the NHERI Lehigh RTMD Operations Manager for current Lehigh University indirect cost rates.

(3). Space rates (both floor and wall) are applicable for total calendar days associated with a given project. Such rates are not subject to the special weekly and monthly rates noted above for select equipment and instrumentation.