



BUDGET FISCAL YEAR 2015

FACILITIES OPERATIONS

NOAO-S

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NOAO-S Facilities Operations

Executive Summary

This report presents the fiscal year 2015 (FY2015) annual budget for the NOAO-S Facilities Operations department. The NOAO-S Facilities Operations Department (hereafter Facilities Operations) maintains the common infrastructure on the AURA recinto in La Serena and the AURA-Observatory near Vicuña. In addition, Facilities Operations runs the restaurant and hotel facilities on Cerro Tololo and Cerro Pachón and the motel on the La Serena recinto. The total budget for FY2015 is 1596 MCLP. This includes the costs for several infrastructure improvement projects planned for FY2015, amounting to a total of 53 MCLP. These 53 MCLP, 3.42% of the budget, will be treated as contingency as agreed by the Advisory Committee on October 23, 2014. That implies that the projects for which these funds are allocated, will not start before the third quarter, of the fiscal year, and preferably take place in the fourth quarter. All costs to provide the services are recovered through user fees. The FY2015 fees are presented in the last part of this report.

Introduction

The NOAO-S Facilities Operations department maintains the common infrastructure for AURA-O and the programs and smaller tenants present on the AURA-O recintos, in La Serena and near Vicuña. This includes road maintenance, maintenance of the common electric power systems, water and wastewater systems and the communication system. Facilities Operations also manages the restaurant and hotel facilities on the two mountaintops as well as the hotel service on the La Serena recinto. Finally, the Facilities Operations department oversees the guard service and the transportations services. A detailed description of the service provided or supervised by the Facilities Operations department can be found in the Service Level Agreement July 22, 2014. Included in the services, but under direction of the NOAO-S safety engineer, is the emergency medical service. The description of this service is not yet included in the Service Level Agreement, pending a reorganization of this service.

The departmental operations costs are fully recovered through fees charged to the programs and visiting astronomers. These fees are calculated annually on the basis of the yearly budget and a cost-sharing model agreed upon by the programs. The budget is primarily based on previous year's budget and other long-term experiential data regarding costs for goods and services in Chile. An adjustment for inflation is made each year, along with discretionary corrective adjustments to the budgets for the specific services. For all administrative and operational activities in Chile, direct accounting is in Chilean Pesos (CLP). Correspondingly, all monetary figures in this report are in CLP and, fees are calculated and charged in CLP.

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The FY2015 budget

In Table 1 the FY2015 budget is presented, 1596 MCLP total, covering all cost centers, departmental overhead and the business fees. Compared to the total budget for FY2014, this is an increase of 10%. Part of this increase is due to regular inflation corrections, salary adjustments. In addition, the FY2015 budget includes the cost for several major improvement projects, proposed by the NOAO-S Facilities Operations department and prioritized by the Facilities Operations Advisory Committee.

Table 1: NOAO-S Facilities Operation FY2015 Budget

	Budget FY 2015	Budget Extra Projects	Total Budget FY 2015	Budget FY 2014	
TOTAL REVENUES	1,542,908,773	52,750,000	1,595,658,773	1,445,049,380	10 %
Payroll and Fringe Benefits Expenses	709,819,005	-	709,819,005	641,225,962	11 %
Supplies & Materials	355,062,772	-	355,062,772	419,586,488	(15)%
Utilities & Office Expense	193,337,066	-	193,337,066	227,903,588	(15)%
Equipment Repair & Maintenance	1,661,247	-	1,661,247	-	+100%
Equipment & Building Leases	1,718,018	-	1,718,018	3,520,381	(51)%
Travel Expenses	31,701,239	-	31,701,239	17,157,204	85 %
Foreign Travel - Staff	689,300	-	689,300	-	+100%
Miscellaneous Expense	2,498,104	-	2,498,104	29,137,482	(91)%
Insurance	3,106,903	-	3,106,903	2,972,086	5 %
Conferences & Mtgs\Training	6,033,709	-	6,033,709	306,764	1,867 %
Contracted Services	281,452,435	20,000,000	301,452,435	204,325,754	48 %
NOAO South Services	39,752,665	-	39,752,665	40,645,214	(2)%
Recruitment - Ads & Misc Exp	143,642	-	143,642	616,674	(77)%
Facility Support	-	-	-	133,443	(100)%
Freight	2,517,730	-	2,517,730	1,474,672	71 %
Capital Equipment	26,185,500	30,000,000	56,185,500	-	+100%
Non-Payroll Expenses Subtotal	945,860,330	50,000,000	995,860,330	947,779,750	5 %
Internal Sales	(195,256,199)	-	(195,256,199)	(218,575,504)	(11)%
Business Service Fee	82,485,636	2,750,000	85,235,636	74,619,171	14 %
TOTAL EXPENSES	1,542,908,772	52,750,000	1,595,658,772	1,445,049,379	10 %

The detailed budget is presented in Table 2, with information per cost center, and cost for labor and non-payroll separated. This table is split up in three parts, separating the cost centers for the different kind of fees, share, census and per-use from one another.

One notable increase in budget is in the area of road maintenance. In FY2015 essential maintenance of the heavy equipment for road maintenance is planned for to ensure continuous maintenance of the roads and the landfill area. Cost for these repairs have been included in the road maintenance budget, rather than added as an extra project, as those repairs are considered necessary, not optional. As a result, the sum of the budget of the road maintenance cost centers, “Road Maintenance Gate-Quisco”, “Road Maintenance Tololo-Quisco” and “Road Maintenance Pachon-Quisco”, has nearly doubled compared to FY2014.

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Table 2: Labor & non-payroll, per cost center, grouped by type of fee

SHARE FEES

Description	Labor	Non-Payroll	Total Cost
Extra Projects Common	0	26,375,000	26,375,000
Extra Projects Tololo	0	10,550,000	10,550,000
Extra Projects Pachon	0	15,825,000	15,825,000
Security	0	33,516,926	33,516,926
Road Maint. Gate-Quisco	10,579,405	108,809,795	119,389,200
Emergency Medical Services	33,475,195	120,321,567	153,796,762
Power Line Maint. Gate-San Carlos	11,690,625	23,030,405	34,721,030
Communications Network	3,488,265	30,191,607	33,679,872
Power Generation	635,530	16,124,095	16,759,625
Road Maint. Tololo-Quisco	1,734,560	16,381,108	18,115,668
Power Line Maint. San Carlos-Tololo	2,467,665	3,893,071	6,360,736
Road Maint. Pachon-Quisco	2,833,595	23,537,722	26,371,317
P. Line Maint. San Carlos C. Pachon	4,262,320	31,604,588	35,866,908
	71,167,160	460,160,886	531,328,046

CENSUS FEES

Description	Labor	Non-Payroll	Total Cost
Safety	9,284,935	28,165,867	37,450,802
Reception	21,956,910	18,399,798	40,356,708
Garage	32,652,610	26,786,086	59,438,696
Communication Network	3,488,265	28,074,304	31,562,569
Security La Serena	0	70,915,007	70,915,007
	67,382,720	172,341,063	239,723,783

PER USE FEES

Description	Payroll	Non-Payroll	Internal Sales	Net Cost
Janitorial Services Mountain	10,177,280	23,268,490	(9,248,570)	24,197,199
Tololo Kitchen	150,355,055	370,545,445	(84,964,905)	435,935,595
Tololo Dormitory	33,683,390	146,386,110	(20,493,856)	159,575,644
Water & Sewer	10,284,970	34,923,087	(22,827,984)	22,380,074
Water Transportation	3,091,640	7,192,246	(8,078,251)	2,205,635
Water & Sewer	1,595,650	23,860,062	(10,617,990)	14,837,723
Maintenance Group	69,022,635	34,005,427	(27,249,444)	75,778,618
Garage	13,993,976	6,957,442	(10,950,757)	10,000,661
Janitorial Services LS	26,169,200	16,109,583	(824,442)	41,454,341
Motel	12,421,885	25,819,571	0	38,241,456
	330,795,681	689,067,463	(195,256,199)	824,606,944

Table 3: Extra projects, planned for FY2015

Project	Area	Total Estimated cost
Automatic Circuit Recloser	Power Line Maintenance	30,000,000
Maintenance Water Tanks	Water Supply	20,000,000
Business Service Fee		2,750,000

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Extra Projects

The costs allocated for the projects amount to a total of 53 MCLP or an additional 3.4% and will be treated as contingency for FY2015, as agreed by the NOAO-S Facilities Operations Advisory Committee on October 23 2014. This implies that the improvement project will not start before the third quarter, and preferably take place during the fourth quarter, when reliable estimates for the end-of-year surplus or deficit of the department will be available.

These projects are:

- Automatic Circuit Reclosers, four total, of which one will be most likely be provided by CONAFE¹, the electricity company
 - To be installed at Control Puerta (by CONAFE), where the AURA power lines connect to the commercial power grid provided by Conafe, at the bifurcation, and at the entrance of Cerro Tololo and Cerro Pachón.
 - To monitor performance
 - Of incoming power and,
 - Along the power lines
 - To improve diagnostics in case of failures
 - To improve safety of electrical equipment
- Improvement of the water system through
 - Maintenance of the water tanks, of which three tanks are located on Cerro Tololo, for general water storage, and the fourth tank is located on Cerro Pachón, serving the programs on Cerro Pachón. In the future, the purchase of a second water tank for Cerro Pachón may be considered.

Additional improvement projects proposed by the NOAO-S Facilities Operations group will be moved over to next year, and/or additional funding will be sought. These include:

- Further improvement of the water system through
 - Renovation of electrical systems of the pumps
 - Remote monitoring of the pump systems
- Backup Frequency Converter
 - To improve the power system on Cerro Tololo
- Backhoe loader
 - To improve maintenance of the roads

An overview of the FY2015 costs for these projects is given in Table 3. The business service fees associated with these projects is also included in Table 3 for completeness.

¹ Negotiations are on-going, dd. Nov. 28, 2014

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The FY2015 Fees

In Table 4–6 the FY2015 fees are presented. The mountain share fees, in Table 4, are divided in the regular share fee, covering regular maintenance of the infrastructure and “extra share fees” covering the costs for the improvement projects. These FY2015 share fees are calculated based on the “Two-Mountain Model” discussed on the NOAO-S Facilities Operations Working Group meeting of September 3, 2014. The FY2015 census fees are presented in Table 5 and the FY2015 per-use fees in Table 6.

Mountain Share Fees

Mountain share fees are calculated based on the Two-Mountain Model, described in a presentation by van der Blik & Heathcote, September 3, 2014. Cost for infrastructure common to both mountains is split 50/50 over the two mountains, Cerro Tololo and Cerro Pachón. Cost for infrastructure on Cerro Tololo, and the “Tololo-share” of the common infrastructure is split between the tenants / programs, proportional to the diameter of the telescopes, with a reduction of 70% for remote telescopes, and telescopes which are in use three months or less. The cost for infrastructure on Cerro Pachón and the “Pachón-share” of the common infrastructure is split between LSST, Gemini-S and SOAR, whereby LSST and Gemini-S each count as one share, and SOAR as 0.8 of a share

Census Fees

Census Fees for FY2015 have increased by 7% for the La Serena based staff and 6.7% for all staff, independent on location. The census fee for La Serena based staff covers the costs for the communications network (communication radios) and the La Serena guard service (security). The “All Places, All Staff” census fees covers the costs for reception, including the mail pouch to Santiago and the USA, general garage services and general safety for all areas under supervision of the Facilities Operation department. The increase of the census fee is due to an increase in budget rather than a decrease in number of staff. This budget increase is a result of adjustments in budget for the NOAO-S Facilities Operations safety program, budget corrections for the cost of the mail pouches, which in FY2014 were erroneously budgeted under CTIO cost centers rather than under Reception, and an increased cost for the guard service.

Per-Use Fees

Per-Use Fees depend very much on the estimated quantity of use, and as a result have been fluctuating over the past years. For FY2015 the most notable fluctuation is for the Per-Use fee for water on the two mountains. On the other hand, the Per-Use fee for Water and Sewage in La Serena has decreased, because the well on the AURA recinto is back in use.

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Table 4: Mountain Share Fees for FY2015

Program	Telescopes	Share Fee	Extra Share Fee	Share Fee Total
CTIO 4M	3.97m	66,115,014	6,859,650	72,974,664
KASI	1.6m	26,645,850	2,764,595	29,410,444
SMARTS 1.5m	1.5m	24,980,484	2,591,807	27,572,291
SMARTS 1.3m	1.3m	21,649,753	2,246,233	23,895,986
PROMPT	6x0.41m, 1x0.6m, 1x0.5m	17,786,105	1,845,367	19,631,471
SMARTS 0.9m	0.9m	14,988,290	1,555,084	16,543,375
LCOGT	3x1m	14,988,290	1,555,084	16,543,375
Other	Small remote telescopes	8,326,828	863,936	9,190,764
LSST	8.4m	89,210,757	10,361,607	99,572,365
GEMINI	8.1m	89,210,757	10,361,607	99,572,365
SOAR	4.1m	71,368,606	8,289,286	79,657,892

Table 5: Census Fees for FY2015

Census Fees	FY 2015	FY 2014
La Serena Based	678,659	634,051 per employee/yr
All Places All staff Census	669,494	627,516 per employee/yr

Table 6: Per-use Fees for FY2015

Per-use Fees Mountain Facilities	FY 2015	FY 2014
Water - Tololo	7,586	6,302 per cubic meter
Water - Delivered to Pachon	15,114	11,895 per cubic meter, includes transport
Tololo Meals	13,015	12,514 per meal
Tololo Lodging	18,350	19,709 per night
Pachon Meals	13,015	12,514 per meal
Pachon Lodging	34,551	35,956 per night + aura fee (\$16.201)
Janitorial Services	14,159	13,725 per hour

Per-use Fees La Serena Facilities	FY 2015	FY 2014
Garage - Labor	4,583	6,196 per hour
Maintenance Group - Labor	19,758	15,689 per hour
Janitorial Services	10,420	10,264 per hour
La Serena Motel	42,116	36,990 per night
Water and Sewage La serena	666	1,172 per cubic meter