

# NOAO-S Facilities Operations

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## Status of FY2016 & FY2017 Projects

At the closing of Q2 of FY2017

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### Executive Summary

In FY2016 the NOAO-S Facilities Operations Department (Facilities Operations) embarked on an ambitious program to upgrade and improve the existing facilities to provide more reliable services and to allow for certification of critical areas and equipment. A first set of projects was planned for FY2016 and are described in “*Budget Fiscal Year 2016, v3.2, Section 4*”. In February 2016 a three-year budget proposal was prepared: “*Outlook budget fiscal years 2017-2019, Facilities Operations NOAO-S, v1.2*”. That document described the most urgent upgrades and improvements and presented a three-year budget outlook. Following this proposal, the FY2017 plan and budget included a second set of upgrade and improvement plans, which are described in “*Budget Fiscal Year 2017, v4.1, Section 4*”. These documents can be found on the NOAO-S Facilities Operations website<sup>1</sup>.

Here we present the status of the FY2016 and FY2017 upgrade and improvement projects and the project accounts at the end of the second quarter of FY2017, including outstanding encumbrances on April 26, 2017.

An overview of the funding for the FY2016 and FY2017 projects is given in Table 1. At the start of FY2017 the total funding for upgrade and improvement projects was 373.7 MCLP, including FY2016 carry forward in the project accounts. The balance in the project accounts was 251.3 MCLP at the end of Q2 of FY2017.

Several large and costly projects are planned for the second half of the fiscal year. We also note that the projects completed and recently started (e.g. road repair), including two unplanned FY2016 projects, are coming in over budget by about 65 MCLP. Thus, while current, linear projection indicates a surplus at the end of the fiscal year, we will monitor spending in these project accounts and in the last quarter of FY2017 we will assess if there are sufficient funds left for the purchase of a backhoe, one of the larger expenses planned for in FY2017.

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<sup>1</sup> <http://www.ctio.noao.edu/noao/content/Reports-and-documentation>

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## 1. Introduction

In FY2016 the NOAO-S Facilities Operations Department (Facilities Operations) embarked on an ambitious project to upgrade and improve the common infrastructure on Cerro Tololo, Cerro Pachón and in La Serena, to provide more reliable services, and a safer work environment for the AURA staff. Where feasible critical areas and equipment will be upgraded such that certification under Chilean health and safety standards is possible.

The first set of projects was planned for in FY2016 and are described in “*Budget Fiscal Year 2016, v3.2, Section 4*”. Several of these projects were deferred to FY2017, as described in the status report of December 19, 2017, “*Status FY2016 Projects, v4.1*”. The FY2017 upgrade and improvement projects are described in “*Budget Fiscal Year 2017, v4.1, Section 4*” and together with the FY2017 Q1 progress report we distributed a status update “*Status of FY2017 and FY2016 Projects, v3.1*”, April 3, 2017. All reports are posted on the NOAO-S Facilities Operations website.

In the current report, to be released together with the FY2017 Q2 progress report, we present an update on projects at the end of April 2017.

## 2. Projects completed during FY2016 and during FY2017 Q1

### 2.1. Projects completed in FY2016

The following projects were completed in FY2016:

- Power Line Stability  
Installation of three automatic circuit re-closers at critical points in the AURA power line system.
- Communication Network  
Upgrade of the mountain communication system, consisting of replacement and relocation of the antenna on Cerro Pachón and replacement of the repeater.
- Hotels Tololo, Pachón and La Serena  
Roof repair Hotel Tololo; Maintenance bathrooms Hotel Pachón
- Water supply system  
Submersible pump repaired and a spare pump purchased
- Maintenance shop roof repair  
Roof repair CTIO Instrument and Facilities Operations Maintenance workshops

A full description can be found in “*Status FY2016 Projects, v4.1*”, December 19, 2016, posted on the NOAO-S Facilities Operations website.

### 2.2. Projects completed in Q1 of FY2017

The following FY2016 projects were completed during the first quarter of FY2017:

- Hotel Tololo

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The outside walls of the hotel Tololo were painted in Q1. At the beginning of Q2 the room doors varnished and room numbers replaced to complete the maintenance of the outside of the hotel building.

- Hotel Pachón  
Room #7, which used to be in use as policlinic, was converted back into hotel room
- Policlinic Pachón  
The 2-units building was converted into a policlinic and been in use as such since October 2016.
- Kitchen Tololo  
The kitchen Tololo was renovated, a project that started at the end of FY2016 and completed with the inauguration on January 6, 2017.

A full description can be found in “Status FY2017 & FY2016 Projects, v3.1”, April 3, 2017, posted on the NOAO-S Facilities Operations website.

## **3. FY2016 projects planned for FY2017**

The following projects were deferred to FY2017 all together: major road repairs; preparation of the electric subsystems for certification; expansion of the Pachón kitchen and dining area; and preparation for certification of heaters in the facilities buildings on Tololo and Pachón.

### **3.1. Road Maintenance**

A severe storm in March 2015 washed out part of the road at “kilometer 30” and produced severe damage to the retaining wall at “kilometer 27”. In Q1 of FY2017 repairs were defined in detail: a ford, with culverts at kilometer 30 and replacement of the damaged gabions at kilometer 27. A call for bids was launched in December and in January and February 2017 quotes were received. Work on both areas started on March 25, 2017. At the end of April 2017 the first part, replacements of the damage gabions and cleaning out of the river bed in that area is nearing completion. The project as a whole should be finished by the beginning of July.

Status: In progress

### **3.2. Cerro Pachón electric substation**

In order to certify the Cerro Pachón electric substation, the critical areas of this station have been enclosed with a fence and, electrical warning signboards have been installed. We plan to certify this electric substation together with the Cerro Tololo electric substation.

Status: In progress

### **3.3. Cerro Tololo electric substation**

Renovation and upgrades of the equipment in the Tololo Power House are underway, and are funded through the No-Cost-Extension of the NOAO Cooperative Agreement 2010-2015. Once complete, we will seek to certify this electric substation.

Status: In progress

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## **3.4. Kitchen Pachón**

In the second half of FY2017 the project to improve the Cerro Pachón kitchen and dining facilities will be developed, and work is planned to start before the end of FY2017. This project will include an enlargement of the kitchen, renewal of equipment where necessary, and expansion of the dining area. It will also include improving the gym area.

Status: No progress, expected to start during the last quarter of FY2017.

## **3.5. Heaters Hotel & Kitchens Tololo and Pachón**

In Q2 we reviewed the status of all heaters on Cerro Tololo and Cerro Pachón and defined for each heater if it needs to be replaced and if the area and piping needs to be upgraded. In the coming few years we plan to replace all air heaters with water heaters, starting with the air heaters of the Tololo houses (Q3 and Q4 of FY2017) and an upgrade of the piping and manifold of the water heaters of the Tololo Technician and 10-units buildings. An upgrade of the heating system of the Hotel/Restaurant building on Cerro Pachón will be planned for and carried out in conjunction with the amplification of the Pachón kitchen/dining facilities which is planned for FY2017 Q4. Maintenance of all heaters, which is part of regular operations and thus paid for by the hotel and kitchen cost centers, will be carried out in FY2017 Q3.

Status: In progress.

## **4. FY2017 Projects**

The following projects are planned in FY2017: upgrades on the water supply system; upgrade of the Tololo sewage system; move the La Serena hotel to house #9; purchase electrical equipment and spares; renovate electric cables; and purchase of a backhoe.

### **4.1. Water Supply System**

We plan to upgrade the fill system for the water tanks on Tololo, renew the chlorination system and implement a water level measurement system.

Status: No progress, expected to start in May 2017.

### **4.2. Upgrade Tololo Sewage System**

As part of the renovation of the Tololo kitchen, the kitchen sewage system was renewed, including a new degreasing chamber. Expenses for this part of the project were part of the kitchen renovation. Originally we had planned to install a water treatment plant for the sewage system of the Tololo hotel/restaurant building only. However, we are now planning on revising all septic tanks on Cerro Tololo, and evaluate whether major maintenance is sufficient or whether it is necessary to replace the tank with a water treatment plant. This part of the project will be on hold till after winter, and will be executed in FY2018.

Status: In progress

### **4.3. La Serena Hotel**

With the arrival of LSST a new office building and data center will be constructed on the La Serena compound and as a result the La Serena hotel building will be demolished. To continue to offer a hotel

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service, we are converting House 9 into a guesthouse/hotel. House 9 has four bedrooms, two bathrooms, a kitchen and a living room. We are adding two full bathrooms, so that each bedroom has an adjacent, private bathroom. We are also adding a lavatory for daytime users of the hotel. We are considering adding three or four prefabricated dorms to House 9, depending on the long-term estimated needs for the hotel. The re-modeling project started on April 17, 2017 and will be completed by the end of May.

Status: In progress

## **4.4. Electric equipment and spares**

We plan to purchase a spare automatic circuit re-closer, as well as electric equipment. However, as the cost of installations of the automatic circuit re-closers was higher than budgeted by 4 MCLP (see Table 1), the budget available for electric equipment and spares is only 10MCLP and purchases will be adjusted accordingly. Purchases will be held off till the last quarter of FY2017, and we will take into account the total balances in the project accounts.

Status: In progress

## **4.5. Medium Tension Power Lines**

We plan to renew parts of the medium tension power lines, in the part bifurcation to Cerro Pachón. As a precaution, with winter around the corner, we will already purchase some of the materials, but the bulk of the work and expenditures is expected to start after winter, i.e. in September 2017.

Status: In progress

## **4.6. Backhoe purchase**

We plan to use part of the upgrade and improvement budgets for renewal of major equipment, e.g. heavy equipment to be used for road maintenance, renewal of trucks. When the FY2017 budget was being prepared, funds for the purchase of a backhoe were included. However, with the major road repair at kilometer 30 and 27 just starting, and after having received the offers, we will be reconsidering priorities within the road works, and we will use part of the funds allocated for the backhoe for the road repairs at kilometer 30 and 27. In the last quarter of FY2017 we plan to assess whether there are sufficient funds left for the purchase of a backhoe.

Status: On hold

