



# **Toolik Field Station Annual Meeting Facilities Presentation**

23 January 2016



## Overview:

- Science Construction, Boardwalks & BLM Permits (Annelisa)
- High Level Facilities Upgrades Schedule (Dave Smith)
- Recap of 2015 construction (Jeff Sever)
  - Garage
  - Waste Heat
  - Labs 6/7
  - Well House
- Upcoming 2016 construction plans (Jason Neely)
- Toolik Long Range Facilities Plan – Sidebar Meeting (Jeff Sever)

## *Toolik Field Station – Annual Meeting – January 2016*

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← Science Construction

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Boardwalk →

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← Permitting



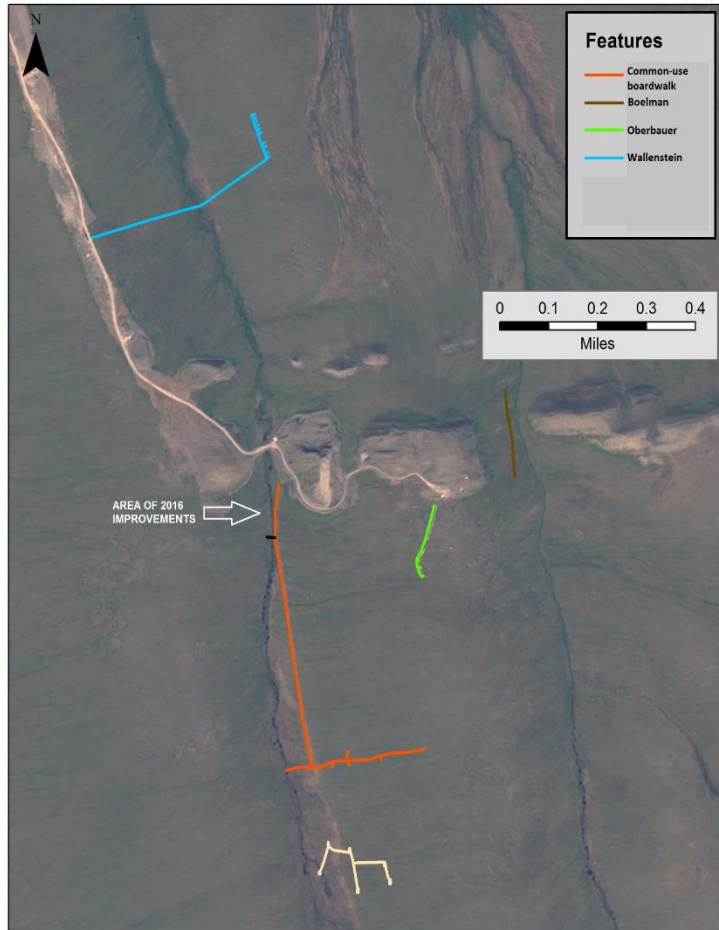
## 2016 CPS Science Construction Support – Toolik

- Obrist/Helmig Flux Hut Breakdown:
  - Slight Extension, Preliminary demobilization will not start until September 1. Will not affect original demobilization schedule.
- Boelman
- Wallenstein
- ITEX
- Imnavait AON

## *Toolik Field Station – Annual Meeting – January 2016*



Toolik Field Station Boardwalks  
Imnavait Research Area 19 March 2013



Imnavait Boardwalk Replacement:  
500 ft, 2'-wide Tommydock

Welker Grid

## Toolik Field Station – Annual Meeting – January 2016

### Possible Removals to look at for 2017:



*Imnavait*

### Toolik Field Station Boardwalks

Toolik Lake

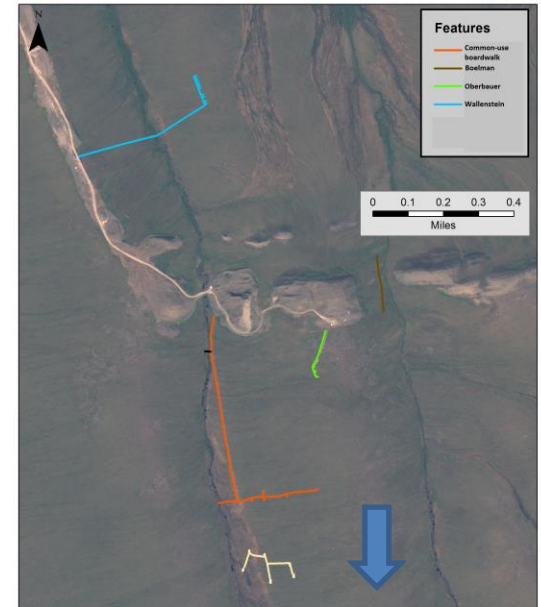
17 July 2014



Toolik Field Station Boardwalks  
Imnavait Research Area



19 March 2013





## Permitting

- CPS completed 95% of the permit process and the NEPA review.
- 15 months after beginning the process, BLM decided they will not grant Right of Way Permits to CPS.
- Need to reach agreement on who at IAB will take over the permit, who will be responsible for the \$400 application fee and annual rent (~\$35), and how these transactions will be handled.





## Facilities Upgrades Schedule

- Completed Work
  - Dining Facility - 2010
  - Cotton Grass Upgrades - 2012
  - Garage, ATCO Berthing (8 Room, 16 Bed) Waste Heat, and Labs 6 & 7 Start Up - 2015
- Proposed New Lab
  - 2014 Bids for Current Design - ~\$3M
  - 2014 Modular Building Bids for a Similar Footprint - ~\$1.4M
  - 2018 Budgeted Cost in Upgrades Schedule - \$2M
- Proposed New Dorm
  - 2012 Estimate for Current Design - ~\$6M
  - 2019 Budgeted Cost in Toolik Upgrades Schedule - \$2.5M





# Toolik Field Station – Annual Meeting – January 2016

## Facilities Upgrades Schedule

Facility Upgrades - Toolik - 1512		Data Date 25-Dec-15									printed - 23-Jan-16				
Activity Name	Start	Finish	Budget at Completion	Actual Cost To Date	ARRA Cost To Date	RSL Actual Cost To Date	RSL Forecasted	NEON Actual Cost To Date	NEON Forecasted	UAF Cost To Date	2015	2016	2017	2018	2019
											Q	Q	Q	Q	Q
<b>Facility Upgrades - Toolik</b>	<b>01-Feb-10 A</b>	<b>31-Jan-20</b>	<b>\$21,976,893</b>	<b>\$14,740,894</b>	<b>\$5,000,000</b>	<b>\$5,281,581</b>	<b>\$7,143,218</b>	<b>\$4,241,682</b>	<b>\$6,766</b>	<b>\$217,630</b>					
Project/Const. Mgmt (71)	01-Feb-13 A	20-Oct-15 A	\$152,053	\$151,111	\$0	\$120,589	\$0	\$30,522	\$1,569	\$0					
Base Construction (07)	01-Feb-12 A	30-Jan-15 A	\$124,534	\$124,534	\$0	\$124,534	\$0	\$0	\$0	\$0					
Maintenance (08)	01-Feb-12 A	31-Jan-20	\$4,814,509	\$2,306,291	\$0	\$2,306,291	\$2,508,218	\$0	\$0	\$0					
Cotton Grass (61)	14-May-12 A	30-May-14 A	\$196,212	\$196,212	\$0	\$196,212	\$0	\$0	\$0	\$0					
Construction/ Fieldwork	14-May-12 A	30-May-14 A	\$196,212	\$196,212	\$0	\$196,212	\$0	\$0	\$0	\$0					
Dining Hall / Ops Center (66)	01-Feb-10 A	12-Jul-13 A	\$6,434,862	\$6,434,862	\$5,000,000	\$1,317,309	\$0	\$0	\$0	\$117,554					
Engineering / Design	01-Feb-10 A	23-Apr-10 A	\$485,288	\$485,288	\$0	\$485,288	\$0	\$0	\$0	\$0					
Procurement	01-Mar-10 A	28-May-10 A	\$235,031	\$235,031	\$0	\$117,477	\$0	\$0	\$0	\$117,554					
Construction/ Fieldwork	03-May-10 A	12-Jul-13 A	\$5,714,543	\$5,714,543	\$5,000,000	\$714,543	\$0	\$0	\$0	\$0					
Garage (69)	07-May-12 A	12-Feb-16	\$4,009,309	\$3,950,996	\$0	\$339,735	\$0	\$3,611,260	\$5,197	\$0					
Engineering / Design	07-May-12 A	12-Dec-14 A	\$334,199	\$334,199	\$0	\$311,065	\$0	\$23,134	\$0	\$0					
Procurement	18-Aug-14 A	15-May-15 A	\$79,722	\$79,722	\$0	\$0	\$0	\$79,722	\$0	\$0					
Construction/ Fieldwork	28-May-13 A	12-Feb-16	\$3,595,388	\$3,537,075	\$0	\$28,671	\$0	\$3,508,404	\$5,197	\$0					
Laboratories 6 & 7 (72)	02-Jun-14 A	27-Nov-15 A	\$300,937	\$296,791	\$0	\$110,895	\$0	\$85,821	\$0	\$100,075					
Engineering / Design	16-Nov-15 A	27-Nov-15 A	\$1,529	\$486	\$0	\$0	\$0	\$486	\$0	\$0					
Procurement	04-Aug-14 A	21-May-15 A	\$119,069	\$117,031	\$0	\$80,629	\$0	\$36,402	\$0	\$0					
Delivery	02-Jun-14 A	10-Aug-15 A	\$116,518	\$118,063	\$0	\$14,192	\$0	\$3,795	\$0	\$100,075					
Construction/ Fieldwork	11-Aug-14 A	17-Sep-15 A	\$63,821	\$61,211	\$0	\$16,073	\$0	\$45,138	\$0	\$0					
Utility Distribution (46)	26-Jul-12 A	27-Nov-15 A	\$409,861	\$380,481	\$0	\$111,055	\$0	\$269,426	\$0	\$0					
Engineering / Design	31-Aug-15 A	27-Nov-15 A	\$14,187	\$10,590	\$0	\$0	\$0	\$10,590	\$0	\$0					
Procurement	26-Jul-12 A	26-Jun-15 A	\$202,113	\$201,878	\$0	\$81,830	\$0	\$120,048	\$0	\$0					
Construction/ Fieldwork	29-Aug-12 A	13-Nov-15 A	\$193,560	\$168,013	\$0	\$29,225	\$0	\$138,788	\$0	\$0					
Laboratory 0 (70)	01-Feb-12 A	19-Sep-18	\$2,344,818	\$284,818	\$0	\$40,165	\$2,060,000	\$244,652	\$0	\$0					
Engineering / Design	01-Feb-12 A	22-Jan-14 A	\$276,973	\$276,973	\$0	\$32,320	\$0	\$244,652	\$0	\$0					
Procurement	12-Feb-18	12-Feb-18	\$2,060,000	\$0	\$0	\$0	\$2,060,000	\$0	\$0	\$0					
Construction/ Fieldwork	14-Jul-14 A	19-Sep-18	\$7,845	\$7,845	\$0	\$7,845	\$0	\$0	\$0	\$0					
Dormitory A (68)	28-Mar-12 A	22-Nov-19	\$3,189,798	\$614,798	\$0	\$614,798	\$2,575,000	\$0	\$0	\$0					
Engineering / Design	28-Mar-12 A	19-Oct-12 A	\$547,566	\$547,566	\$0	\$547,566	\$0	\$0	\$0	\$0					
Construction/ Fieldwork	31-Aug-12 A	22-Nov-19	\$2,642,231	\$67,231	\$0	\$67,231	\$2,575,000	\$0	\$0	\$0					

## 2015 Construction – Garage





## 2015 Construction – Garage

- Project completed safely
  - No injuries
  - Passed safety audit
- Ahead of schedule
  - Original demobilization schedule October 5th, actual September 20<sup>th</sup>
  - Occupancy date September 17th
- Under Budget
  - By about \$55K
  - Change order rate 0.38% (that's really good)

## 2015 Construction – Garage



*A Warm Loader is a Happy Loader*



## 2015 Construction – Waste Heat Recovery





## 2015 Construction – Waste Heat Recovery

- Captures heat from coolant of the running engine, transfers to system loop
- System loop provides heat to Garage, Gen Modules and offline engine block heaters
- System on line September 17, 2015
- Reduced electrical load from radiator fans, heaters
- Working through final punchlist items



## 2015 Construction – Labs 6/7

- Connected to water distribution system
- Installed & connected wastewater tank
- Installed & connected fuel tank
- Install power meters
- Constructed entry stairs and landings
- Repaired flooring





## Well House Upgrades

- Lake pump connection & power
- Chlorine analyzer with automatic dosing
- Continuous flow through UV units
  - Prevents overheating when not making water
  - Prevents overcooling when treating very cold well water
- Turbidity measurement
  - Repurposed from old trailer-based system



## 2016 Facility Upgrade Projects:

- Waste Heat Recovery Punch list
  - Pipe Insulation Completion
  - Connect engine block heaters to waste heat
- Fiber Optic Conduit (Phase 3)
  - Dining Facility to Winter Quarters and Cotton Grass
- Waste Heat to Emergency Generator
  - Connect emergency generator block heater



## 2016 Facility Sustaining Projects:

- Relocate Vehicle Tent (formerly Loader)
  - Will be moved next to the Garage
- Relocate Snowmachine Shop
  - Will be repurposed as HAZMAT storage
- Dining Facility
  - Gravel Pad Assessment - Civil Engineer will assess and provide recommendation
  - Install waterless urinal
  - Install alarms for the walk-in Freezer and Cooler



## 2016 Facility Sustaining Projects Continued:

- **Electrical Projects**
  - Incubation Facility Outlet relocation
  - PLC power and enclosures for Incubation Facility, LAB 1, 2, and 3
  - Provide power to CONNEX 8
  - Power Meters for the Boat Dock and Conde Hut
- **ATCO 5 and 6 deck**
- **Well House Chlorine Contact Chamber repair**



## NEON

- Provide Electrical Service Drop
  - Located North of D-Shack A
  - Will have Power Meter and a Disconnect Switch for NEON to tie into

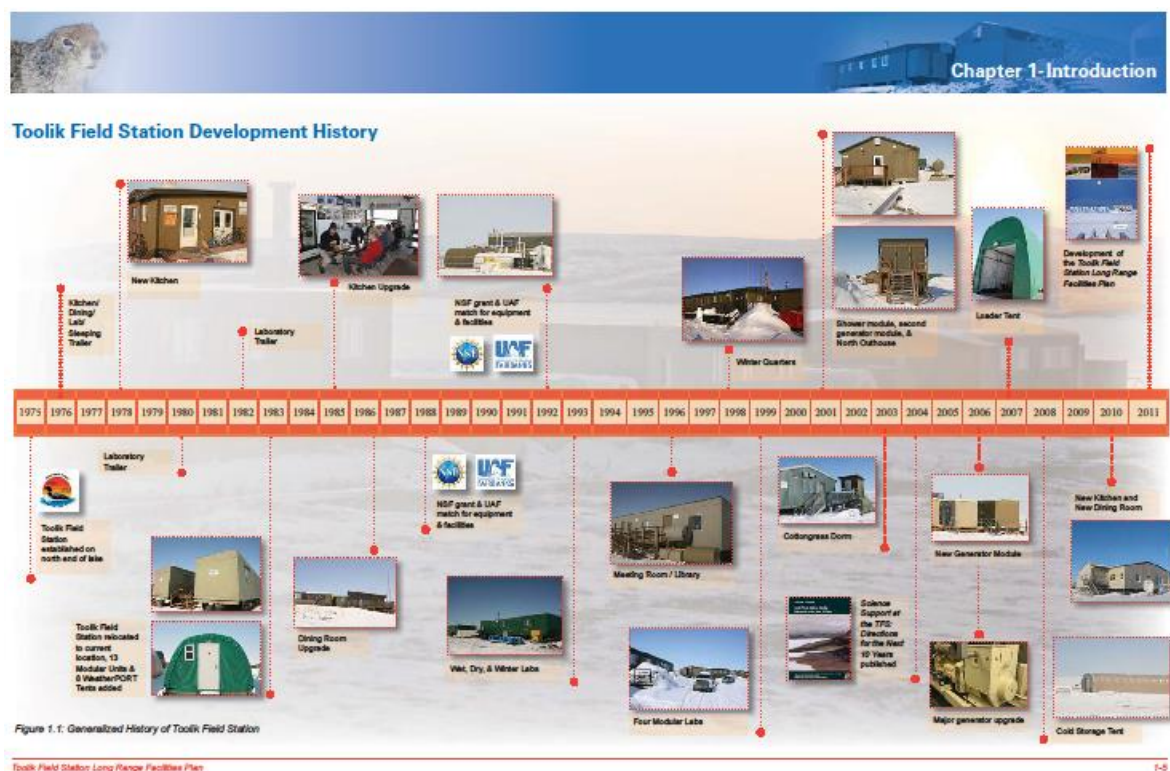


## Long Range Facilities Plan – Update

- Version 1 is dated March 2013
- Working on Version 2
- Draft will be distributed for stakeholder review
- Target completion date April/May 2016

# Long Range Facilities Plan – Update

- Additions to Chapter 1 – Introduction & Timeline





# Long Range Facilities Plan – Update

- Updated User Day data, photos

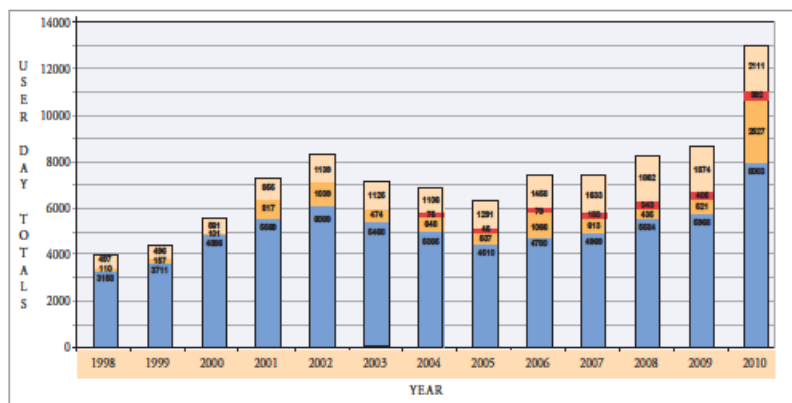


Table 1.1: Toolik Field Station's Summer Population User Days (1998-2010)



Figure 1.4: Major Facilities at Toolik Field Station



## Long Range Facilities Plan – Update

- Review Vision, Goals and Guiding Principles
- Update Infrastructure & Utilities section to include new construction
- Update Utility Corridor Map
- Confirm Site Development assumptions and constraints
  - Functional relationships, land use planning
  - Impacts on research
  - Update site maps



## Long Range Facilities Plan – Update

- Update Development Plan
  - Confirm facilities to be relocated, retained or removed
  - Update Map
- Sustainability
  - Review and confirm priorities
- Design Guidelines
  - Update as needed

# Long Range Facilities Plan – Update

