Muon Campus AIP

Change Request Form

CR#: BT004

1) **DATE:** 3/19/14	2)**WBS:** BT1	3) **Originator:** Ken Domann

4) WBS Description of Primary Affected Tasks: Beam Transport AIP

5) Technical Description & Primary Motivation for Change: The starting date for the Recycler Lambertson MLAW was move to March 2014 from October 2014 in order to have the Lambertson available earlier. It is planned to install the spare MLAW during the 2014 summer shutdown and that will become the "hot" spare for ANU unless we have the new one available. Trim quads required for the Recycler to P1 beam line have been changed from STQBs to the standard Recycler MQTs because it was determined that the STQBs will not fit in the limited vertical space available. More M&S and labor was allocated for the summer Recycler installation. It was determined that available spare magnets for the dipole correctors (one each, vertical and horizontal) could be used to satisfy the requirement for the Recycler to P1 connection. The vertical dipole corrector needs to be modified in order to increase the aperture. The assembly of the cable adaptors and other load parts for the Beam Transport Kicker Loads and Cooling System was moved to the end of summer in order to optimize resources. Finally, the F0 quadrupole installation scope was removed due to improvements in the optics design, originally thought to require the F0 quadrupoles, being accomplished with the existing magnets. The start dates and durations of some Beam Transport to Delivery Ring mechanical activities were changed to mesh better with other similar activities within the Muon Campus that require the same resources.

6) Assessment of Cost Impact (Use attachments if needed): Total cost impact is an increase of $179.28K to the overall budget. See Attachments for detail changes.

7) Assessment of Schedule Impact (Use attachments if needed): Some activities were replanned to new dates, however there is no impact to any interface milestones.

8) Secondary Impact & Other Comments: N/A

9) Approvals:

AIP Project Manager:	JPM 3/20/14	**Date:** 3/20/14
AIP Project Coordinator:	~~3/20~~	**Date:** 3/20/14
AD Div Director:	11291	**Date:** 3/21/14
Directorate:		**Date:** 3/24/14

Beam Transport CR004 Hours Delta

3/19/2014

UID	WBS	Name	Current Hours	Replan Hours	Delta	Comments
6	BT1	**Beam Transport AIP**	**10384**	**8229**	**-2155**	
451	BT1.02	**Beam Transport Extraction System**	**4776**	**4348**	**-428**	
452	BT1.02.01	**Beam Transport Lambertson (MLAW) Magnet**	**1086**	**0**	**-1086**	
556	BT1.02.01.01	Verify Existing Design for Lambertson MLAW Magnet	163	0	-163	Deleted task
		FNTD_MECH_DESIGN_EN	63	0	-63	
		FNTD_MECH_DRAFTER	100	0	-100	
557	BT1.02.01.02	Prep Purch Req & Process PO for Lambertson MLAW Magnet Parts	6	0	-6	Deleted task
		FNTD_ENGNRING_PHYST	2	0	-2	
		FNTD_MECH_DESIGN_EN	4	0	-4	
560	BT1.02.01.05	Final Assembly of Lambertson MLAW Magnet Complete	887	0	-887	Changed name, removed hours, put budget in TD WIP delivery task
		FNTD_MECH_DESIGN_EN	160	0	-160	
		FNTD_MECH_SYSTM_TECH	624	0	-624	
		FNTD_PRJ_CTRL_SPCLST	75	0	-75	
		FNTD_WELDER	28	0	-28	
561	BT1.02.01.06	Test & Measure Lambertson MLAW Magnet Complete	30	0	-30	Changed name, removed hours, put budget in TD WIP delivery task
		FNPD_GEODEIST	8	0	-8	
		FNPD_METROLOGIST	16	0	-16	
		FNTD_ENGNRING_PHYST	6	0	-6	
400	**BT1.02.02**	**Beam Transport Extraction Kickers**	**3690**	**4348**	**658**	
401	**BT1.02.02.01**	**Beam Transport Extraction Kicker Magnets (RKB 2)**	**440**	**0**	**-440**	
403	BT1.02.02.01.07	Kicker Magnets Assembly	440	0	-440	Deleted task, put budget in TD WIP delivery task
		FNTD_MECH_ASMBY_TECH	176	0	-176	
		FNTD_MECH_DESIGN_EN	176	0	-176	
		FNTD_MECH_TECH_SPVSR	88	0	-88	
412	**BT1.02.02.03**	**Beam Transport Kicker Loads & Cooling System**	**30**	**40**	**10**	
455	BT1.02.02.03.05	Prep Req & Process PO for Cable Adaptors(6) & Other Load Parts	30	40	10	Increased hours
417	**BT1.02.02.04**	**Beam Transport Recycler Ring Extraction Insert Installation**	**3220**	**4308**	**1088**	
420	BT1.02.02.04.03	Existing Kicker/Lambertson Magnet/Vacuum Installation	1260	2028	768	Added resource
		FNAD_MECH_ASMBY_TECH	960	1600	640	
		FNAD_MECH_DESIGN_EN	120	200	80	
		FNPD_GEODEIST	120	120	0	
		FNPD_METROLOGIST	60	60	0	
		FNAD_AC_SYSTM_SPCLST	0	48	48	
745	BT1.02.02.04.05	Recycler Ring Extraction Insert Installation Planning	1520	1712	192	Added resource
		FNAD_ELEC_TECH	320	320	0	
		FNAD_ENGNRING_PHYST	320	320	0	
		FNAD_MAGNT_DESIGN_EN	240	240	0	
		FNAD_MECH_ASMBY_TECH	320	320	0	
		FNAD_MECH_DRAFTER	320	320	0	
		FNAD_AC_SYSTM_SPCLST	0	192	192	
419	BT1.02.02.04.04	Kicker Cooling Skid Installation	184	248	64	Added resource
		FNAD_MECH_ASMBY_TECH	160	160	0	

Beam Transport CR004 Hours Delta

UID	WBS	Name	Current Hours	Replan Hours	Delta	Comments
		FNAD_ELEC_TECH	16	16	0	
		FNAD_ELEC_DESIGN_EN	8	8	0	
		FNAD_AC_SYSTM_SPCLST	0	64	64	
418	BT1.02.02.04.05	Kicker Electrical & Controls Installation (incl Cables)	256	320	64	Added resource
		FNAD_MECH_ASMBY_TECH	24	24	0	
		FNAD_ELEC_TECH	124	124	0	
		FNAD_ELEC_DESIGN_EN	108	108	0	
		FNAD_AC_SYSTM_SPCLST	0	64	64	
422	**BT1.03**	**Beam Transport RR to P1 Beamline Connection**	**3,504**	**2660**	**-844**	
423	**BT1.03.01**	**Beam Transport RR to P1 Magnets**	**928**	**84**	**-844**	
428	**BT1.03.01.02**	**RR to P1 Permanent Magnets RQA (4)**	**416**	**0**	**-416**	
566	BT1.03.01.02.01	RR to P1 Permanent Magnets (RQA's) Design Complete	64	0	-64	Changed name, removed hours, put budget in TD WIP delivery task
		FNTD_MECH_SYSTM_TECH	64	0	-64	
571	BT1.03.01.02.02	RR to P1 Permanent Magnets (RQA's) Procurement Complete	32	0	-32	Changed name, removed hours, put budget in TD WIP delivery task
		FNTD_MECH_DESIGN_EN	32	0	-32	
568	BT1.03.01.02.03	RR to P1 Permanent Magnets (RQA's) Assembly Complete	176	0	-176	Changed name, removed hours, put budget in TD WIP delivery task
		FNTD_MECH_DESIGN_EN	16	0	-16	
		FNTD_MECH_SYSTM_TECH	160	0	-160	
567	BT1.03.01.02.04	RR to P1 Permanent Magnets (RQA's) Testing Complete	144	0	-144	Changed name, removed hours, put budget in TD WIP delivery task
		FNPD_GEODEIST	32	0	-32	
		FNPD_METROLOGIST	64	0	-64	
		FNTD_ENGNRING_PHYST	16	0	-16	
		FNTD_MECH_DESIGN_EN	32	0	-32	
430	**BT1.03.01.03**	**RR to P1 Trim Quad MQTs (4+1)**	**136**	**0**	**-136**	Changed name
572	BT1.03.01.03.01	Prep Req & Process PO for RR to P1 Trim Quad Magnets	16	0	-16	Removed hours, put budget in TD WIP delivery task
		FNTD_MECH_DESIGN_EN	16	0	-16	
575	BT1.03.01.03.04	MQT's Assembly Complete	120	0	-120	Changed name, removed hours, put budget in TD WIP delivery task
		FNPD_GEODEIST	40	0	-40	
		FNPD_METROLOGIST	80	0	-80	
432	**BT1.03.01.04**	**RR to P1 Horizontal Dipole Corrector (1)**	**188**	**0**	**-188**	**Changed name**
576	BT1.03.01.04.01	RR to P1 Horizontal Dipole Correctors Inspection	8	0	-8	Deleted task
		FNTD_MECH_SYSTM_TECH	8	0	-8	
577	BT1.03.01.04.02	RR to P1 Horizontal Dipole Correctors Procure Magnet Coil Parts	8	0	-8	Deleted task
		FNTD_MECH_DESIGN_EN	8	0	-8	
578	BT1.03.01.04.03	RR to P1 Horizontal Dipole Correctors Fabricate Coils	88	0	-88	Deleted task
		FNTD_MECH_DESIGN_EN	8	0	-8	
		FNTD_MECH_SYSTM_TECH	80	0	-80	
579	BT1.03.01.04.04	RR to P1 Horizontal Dipole Correctors Final Assembly	36	0	-36	Deleted task
		FNTD_MECH_DESIGN_EN	4	0	-4	

Beam Transport CR004 Hours Delta

3/19/2014

UID	WBS	Name	Current Hours	Replan Hours	Delta	Comments
		FNTD_MECH_SYSTM_TECH	32	0	-32	
580	BT1.03.01.04.05	Retrieve RR to P1 Horizontal Dipole Corrector from Spares	48	0	-48	Changed name, removed hours
		FNPD_GEODEIST	16	0	-16	
		FNPD_METROLOGIST	32	0	-32	
434	**BT1.03.01.05**	**RR to P1 Vertical Dipole Correctors (1+1)**	**188**	**84**	**-104**	
585	BT1.03.01.05.01	RR to P1 Vertical Dipole Correctors Inspection	8	0	-8	Deleted task
		FNTD_MECH_SYSTM_TECH	8	0	-8	
584	BT1.03.01.05.02	RR to P1 Vertical Dipole Correctors Procure Magnet Coil Parts	8	0	-8	Deleted task
		FNTD_MECH_DESIGN_EN	8	0	-8	
583	BT1.03.01.05.03	RR to P1 Vertical Dipole Correctors Fabricate Coils	88	0	-88	Deleted task
		FNTD_MECH_DESIGN_EN	8	0	-8	
		FNTD_MECH_SYSTM_TECH	80	0	-80	
582	BT1.03.01.05.04	RR to P1 Vertical Dipole Correctors Final Assembly Complete	36	0	-36	Changed name, removed hours, put budget in TD WIP delivery task
		FNTD_MECH_DESIGN_EN	4	0	-4	
		FNTD_MECH_SYSTM_TECH	32	0	-32	
581	BT1.03.01.05.05	RR to P1 Vertical Dipole Correctors Test & Measure Complete	48	0	-48	Changed name, removed hours, put budget in TD WIP delivery task
		FNPD_GEODEIST	16	0	-16	
		FNPD_METROLOGIST	32	0	-32	
755	BT1.03.01.05.06	TD Deliver RR to P1 Vertical Dipole Corrector to AIP	0	84	84	New task
		FNTD_MECH_SYSTM_TECH	0	32	32	
		FNTD_MAGNT_DESIGN_EN	0	4	4	
		FNPD_GEODEIST	0	16	16	
		FNPD_METROLOGIST	0	32	32	
12	**BT1.04**	**Beam Transport to Delivery Ring**	**2,104**	**1,221**	**-883**	
14	**BT1.04.01**	**Beam Line Aperture Improvements**	**2,104**	**1,221**	**-883**	
15	**BT1.04.01.01**	**Beamline Magnets**	**422**	**0**	**-422**	
118	**BT1.04.01.01.03**	**Beamline CDA Magnet (F-17C Replacement)**	**422**	**0**	**-422**	
720	**BT1.04.01.01.03.01**	**Beamline CDA Magnet (F-17C Replacement) Design**	**88**	**0**	**-88**	
160	BT1.04.01.01.03.01.02	CDA Refurbishment Plan	88	0	-88	Deleted task, put budget in TD WIP delivery task
		FNTD_MAGNT_DESIGN_EN	38	0	-38	
		FNTD_MAGNT_SCIENTIST	8	0	-8	
		FNTD_MECH_DRAFTER	14	0	-14	
		FNTD_PRJ_CTRL_SPCLST	28	0	-28	
719	**BT1.04.01.01.03.02**	**Beamline CDA Magnet (F-17C Replacement) Construction (1)**	**334**	**0**	**-334**	**Changed name**
161	BT1.04.01.01.03.02.01	CDA Magnet Identify/Assess Units Complete	70	0	-70	Changed name, removed hours, put budget in TD WIP delivery task
		FNAD_ENGNRING_PHYST	10	0	-10	
		FNTD_ENGNRING_PHYST	13	0	-13	
		FNTD_MAGNT_DESIGN_EN	38	0	-38	
		FNTD_PRJ_CTRL_SPCLST	9	0	-9	
163	BT1.04.01.01.03.02.04	CDA Magnet Testing Complete	36	0	-36	Changed name, removed hours, put budget in TD WIP delivery task

Beam Transport CR004 Hours Delta

UID	WBS	Name	Current Hours	Replan Hours	Delta	Comments
		FNTD_MECH_ASMBY_TECH	36	0	-36	
546	BT1.04.01.01.03.02.05	Stripping and blasting coils	80	0	-80	Deleted task
		FNTD_MECH_ASMBY_TECH	80	0	-80	
547	BT1.04.01.01.03.02.06	Insulate and impregnate coils	56	0	-56	Deleted task
		FNTD_MECH_ASMBY_TECH	56	0	-56	
548	BT1.04.01.01.03.02.07	Install manifolding	48	0	-48	Deleted task
		FNTD_MECH_ASMBY_TECH	48	0	-48	
549	BT1.04.01.01.03.02.08	Final inspection and assembly	40	0	-40	Deleted task
		FNTD_MECH_ASMBY_TECH	40	0	-40	
550	BT1.04.01.01.03.02.09	Final magnet measurements	4	0	-4	Deleted task
		FNTD_MECH_ASMBY_TECH	4	0	-4	
16	**BT1.04.01.02**	**Beamline PS**	**388**	**0**	**-388**	
205	**BT1.04.01.02.01**	**Beamline PS Design**	**20**	**0**	**-20**	
314	BT1.04.01.02.01.02	Beamline PS Design F0 quadrupole power supplies	20	0	-20	Deleted task
		FNAD_ELEC_DESIGN_EN	16	0	-16	
		FNAD_ENGNRING_PHYST	4	0	-4	
204	**BT1.04.01.02.02**	**Beamline PS Implementation**	**368**	**0**	**-368**	
699	**BT1.04.01.02.02.02**	**Beamline PS Implementation F0 Quadrupole PS**	**368**	**0**	**-368**	Deleted task
318	BT1.04.01.02.02.02.02	Beamline PS Implementation Procure and configure F0 quadrupole power supplies	336	0	-336	Deleted task
		FNAD_ELEC_DESIGN_EN	40	0	-40	
		FNAD_ELEC_TECH	296	0	-296	
697	BT1.04.01.02.02.02.05	Beamline PS Implementation Install power supplies for F0 quads	32	0	-32	Deleted task
		FNAD_ELEC_DESIGN_EN	16	0	-16	
		FNAD_ELEC_TECH	16	0	-16	
17	**BT1.04.01.03**	**Beam Line Installation & Mechanical**	**1,294**	**1,221**	**-73**	
588	**BT1.04.01.03.01**	**Beam Line Installation & Mechanical Design**	**122**	**72**	**-50**	
603	BT1.04.01.03.01.02	Installation Plan	32	72	40	Added resource
		FNAD_MECH_TECH_SPVSR	32	32	0	
		FNAD_AC_SYSTM_SPCLST	0	40	40	
599	BT1.04.01.03.01.06	F0 quadrupole magnet stand design	60	0	-60	Deleted task
		FNAD_MECH_DESIGN_EN	30	0	-30	
		FNAD_MECH_DRAFTER	30	0	-30	
598	BT1.04.01.03.01.07	F0 quadrupole vacuum plan	30	0	-30	Deleted task
		FNAD_MECH_DESIGN_EN	10	0	-10	
		FNAD_MECH_DRAFTER	20	0	-20	
605	**BT1.04.01.03.02**	**Beam Line Installation & Mechanical Implementation**	**1,172**	**1,149**	**-23**	
685	**BT1.04.01.03.02.01**	**V714 B-2 Magnet**	**112**	**124**	**12**	
613	BT1.04.01.03.02.01.04	Prepare V714 C-Magnet for removal	24	26	2	Added resource
		FNAD_ELEC_TECH	4	4	0	
		FNAD_MECH_SYSTM_TECH	20	20	0	
		FNAD_AC_SYSTM_SPCLST	0	2	2	
611	BT1.04.01.03.02.01.06	Installation oversight and vacuum install	44	50	6	Added resource
		FNAD_MECH_DESIGN_EN	16	16	0	
		FNAD_MECH_SYSTM_TECH	24	24	0	

Beam Transport CR004 Hours Delta

UID	WBS	Name	Current Hours	Replan Hours	Delta	Comments
		FNTD_WELDER	4	4	0	
		FNAD_AC_SYSTM_SPCLST	0	6	6	
607	BT1.04.01.03.02.01.10	Electricians reterminate load cables	0	1	1	Added resource
		FNAD_AC_SYSTM_SPCLST	0	1	1	
606	BT1.04.01.03.02.01.11	Final vacuum work and reconnect magnet	44	47	3	Added resource
		FNAD_ELEC_TECH	4	4	0	
		FNAD_MECH_SYSTM_TECH	40	40	0	
		FNAD_AC_SYSTM_SPCLST	0	3	3	
686	**BT1.04.01.03.02.02**	**F-0 Lambertsons**	**116**	**135**	**19**	
623	BT1.04.01.03.02.02.01	Prepare F-0 lambertsons for removal	46	48	2	Added resource
		FNAD_ELEC_TECH	6	6	0	
		FNAD_MECH_SYSTM_TECH	40	40	0	
		FNAD_AC_SYSTM_SPCLST	0	2	2	
622	BT1.04.01.03.02.02.02	Load cable disconnection	0	1	1	Added resource
		FNAD_AC_SYSTM_SPCLST	0	1	1	
621	BT1.04.01.03.02.02.03	Installation oversight	30	34	4	Added resource
		FNAD_MECH_DESIGN_EN	10	10	0	
		FNAD_MECH_SYSTM_TECH	20	20	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
619	BT1.04.01.03.02.02.05	Vacuum pipe and other components	0	10	10	Added resource
		FNAD_AC_SYSTM_SPCLST	0	10	10	
618	BT1.04.01.03.02.02.06	Final vacuum work	40	42	2	Added resource
		FNAD_MECH_SYSTM_TECH	32	32	0	
		FNTD_WELDER	8	8	0	
		FNAD_AC_SYSTM_SPCLST	0	2	2	
687	**BT1.04.01.03.02.03**	**F-0 Quadrupoles**	**174**	**0**	**-174**	**Deleted task**
630	BT1.04.01.03.02.03.02	Final assembly of F-0 quadrupole stands	56	0	-56	Deleted task
		FNAD_MECH_ASMBY_TECH	8	0	-8	
		FNAD_MECH_SYSTM_TECH	48	0	-48	
629	BT1.04.01.03.02.03.03	Survey crew stake out of new magnet stands	12	0	-12	Deleted task
		FNPD_METROLOGIST	12	0	-12	
628	BT1.04.01.03.02.03.04	Installation oversight for F0 quads	36	0	-36	Deleted task
		FNAD_MECH_DESIGN_EN	16	0	-16	
		FNAD_MECH_SYSTM_TECH	20	0	-20	
625	BT1.04.01.03.02.03.07	Final vacuum work and reconnect magnet	46	0	-46	Deleted task
		FNAD_ELEC_TECH	6	0	-6	
		FNAD_MECH_SYSTM_TECH	32	0	-32	
		FNTD_WELDER	8	0	-8	
624	BT1.04.01.03.02.03.08	Algnment of F-0 quadrupoles	24	0	-24	Deleted task
		FNPD_METROLOGIST	24	0	-24	
688	**BT1.04.01.03.02.04**	**F-17 CDA**	**120**	**141**	**21**	
640	BT1.04.01.03.02.04.03	Prepare F-17 C-Magnets for removal	28	32	4	Added resource
		FNAD_ELEC_TECH	4	4	0	
		FNAD_MECH_SYSTM_TECH	24	24	0	

UID	WBS	Name	Current Hours	Replan Hours	Delta	Comments
		FNAD_AC_SYSTM_SPCLST	0	4	4	
638	BT1.04.01.03.02.04.05	Installation oversight for F-17 CDA	32	36	4	Added resource
		FNAD_MECH_DESIGN_EN	16	16	0	
		FNAD_MECH_SYSTM_TECH	16	16	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
635	BT1.04.01.03.02.04.08	Electricians terminate load cables	0	1	1	Added resource
		FNAD_AC_SYSTM_SPCLST	0	1	1	
634	BT1.04.01.03.02.04.09	Vacuum pipe and other components	0	10	10	Added resource
		FNAD_AC_SYSTM_SPCLST	0	10	10	
633	BT1.04.01.03.02.04.10	Final vacuum work and reconnect magnet	60	62	2	Added resource
		FNAD_ELEC_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	48	48	0	
		FNTD_WELDER	4	4	0	
		FNAD_AC_SYSTM_SPCLST	0	2	2	
689	**BT1.04.01.03.02.05**	**HV 100 Dipoles**	**200**	**231**	**31**	
652	BT1.04.01.03.02.05.02	Final assembly of the HV100 hanger	56	62	6	Added resource
		FNAD_MECH_ASMBY_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	48	48	0	
		FNAD_AC_SYSTM_SPCLST	0	6	6	
651	BT1.04.01.03.02.05.03	Prepare HV100 EPB dipoles for removal	32	36	4	Added resource
		FNAD_ELEC_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	24	24	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
649	BT1.04.01.03.02.05.05	Installation oversight for HV100 MDC's	48	54	6	Added resource
		FNAD_MECH_DESIGN_EN	24	24	0	
		FNAD_MECH_SYSTM_TECH	24	24	0	
		FNAD_AC_SYSTM_SPCLST	0	6	6	
646	BT1.04.01.03.02.05.08	Electricians terminate load cables	0	1	1	Added resource
		FNAD_AC_SYSTM_SPCLST	0	1	1	
645	BT1.04.01.03.02.05.09	Vacuum pipe and other components	0	10	10	Added resource
		FNAD_AC_SYSTM_SPCLST	0			
644	BT1.04.01.03.02.05.10	Final vacuum work and reconnect magnet	64	68	4	Added resource
		FNAD_ELEC_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	48	48	0	
		FNTD_WELDER	8	8	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
690	**BT1.04.01.03.02.06**	**HV 102 Dipole**	**144**	**169**	**25**	
662	BT1.04.01.03.02.06.03	Prepare HV1002 EPB dipoles for removal	32	36	4	Added resource
		FNAD_ELEC_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	24	24	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
660	BT1.04.01.03.02.06.05	Installation oversight for HV1002 MDC's	48	54	6	Added resource
		FNAD_MECH_DESIGN_EN	24	24	0	
		FNAD_MECH_SYSTM_TECH	24	24	0	

Beam Transport CR004 Hours Delta

UID	WBS	Name	Current Hours	Replan Hours	Delta	Comments
		FNAD_AC_SYSTM_SPCLST	0	6	6	
657	BT1.04.01.03.02.06.08	Electricians terminate load cables	0	1	1	Added resource
		FNAD_AC_SYSTM_SPCLST	0	1	1	
656	BT1.04.01.03.02.06.09	Vacuum pipe and other components	0	10	10	Added resource
		FNAD_AC_SYSTM_SPCLST	0	10	10	
655	BT1.04.01.03.02.06.10	Final vacuum work and reconnect magnet	64	68	4	Added resource
		FNAD_ELEC_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	48	48	0	
		FNTD_WELDER	8	8	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
691	**BT1.04.01.03.02.07**	**Trim Dipoles**	**114**	**127**	**13**	
672	BT1.04.01.03.02.07.02	Final assembly of the trim stand	42	46	4	Added resource
		FNAD_MECH_ASMBY_TECH	6	6	0	
		FNAD_MECH_SYSTM_TECH	36	36	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
671	BT1.04.01.03.02.07.03	Prepare old trim dipoles for removal	16	18	2	Added resource
		FNAD_ELEC_TECH	4	4	0	
		FNAD_MECH_SYSTM_TECH	12	12	0	
		FNAD_AC_SYSTM_SPCLST	0	2	2	
669	BT1.04.01.03.02.07.05	Installation oversight for new trims	16	20	4	Added resource
		FNAD_MECH_DESIGN_EN	8	8	0	
		FNAD_MECH_SYSTM_TECH	8	8	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
666	BT1.04.01.03.02.07.08	Final vacuum work and reconnect magnet	40	43	3	Added resource
		FNAD_ELEC_TECH	4	4	0	
		FNAD_MECH_SYSTM_TECH	28	28	0	
		FNTD_WELDER	8	8	0	
		FNAD_AC_SYSTM_SPCLST	0	3	3	
692	**BT1.04.01.03.02.08**	**Upstream M3**	**192**	**222**	**30**	
683	BT1.04.01.03.02.08.02	Final assembly of the upstream M3 hanger	56	60	4	Added resource
		FNAD_MECH_ASMBY_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	48	48	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
682	BT1.04.01.03.02.08.03	Prepare upstream M3 components	32	36	4	Added resource
		FNAD_ELEC_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	24	24	0	
		FNAD_AC_SYSTM_SPCLST	0	4	4	
680	BT1.04.01.03.02.08.05	Installation oversight for upstream M3	48	56	8	Added resource
		FNAD_MECH_DESIGN_EN	24	24	0	
		FNAD_MECH_SYSTM_TECH	24	24	0	
		FNAD_AC_SYSTM_SPCLST	0	8	8	
677	BT1.04.01.03.02.08.08	Electricians terminate load cables	0	1	1	Added resource
		FNAD_AC_SYSTM_SPCLST	0	1	1	
676	BT1.04.01.03.02.08.09	Vacuum pipe and other components	0	10	10	Added resource

Beam Transport CR004 Hours Delta

3/19/2014

UID	WBS	Name	Current Hours	Replan Hours	Delta	Comments
		FNAD_AC_SYSTM_SPCLST	0	10	10	
675	BT1.04.01.03.02.08.10	Final vacuum work and reconnect magnet	56	59	3	Added resource
		FNAD_ELEC_TECH	8	8	0	
		FNAD_MECH_SYSTM_TECH	40	40	0	
		FNTD_WELDER	8	8	0	
		FNAD_AC_SYSTM_SPCLST	0	3	3	

Beam Transport CR004 M and S Delta

3/19/2014

UID	WBS	Name	Replan M&S	Current M&S	Delta	Comments
6	**BT1**	**Beam Transport AIP**	**$1,127,470**	**$822,458**	**$305,012**	
7	**BT1.01**	**Beam Transport Project Management**	**$60,000**	**$68,000**	**-$8,000**	
9	**BT1.01.02**	**Beam Transport Project Management Oversight**	**$60,000**	**$68,000**	**-$8,000**	
11	BT1.01.02.02	Beam Transport AIP Project Management OS FY14	$30,000	$34,000	-$4,000	Reduced M&S
490	BT1.01.02.03	Beam Transport AIP Project Management OS FY15	$30,000	$34,000	-$4,000	Reduced M&S
451	**BT1.02**	**Beam Transport Extraction System**	**$614,327**	**$374,478**	**$239,849**	
452	**BT1.02.01**	**Beam Transport Lambertson (MLAW) Magnet (Existing Magnet)**	**$237,251**	**$80,000**	**$157,251**	
559	BT1.02.01.04	Receive Lambertson MLAW Magnet Parts	$0	$80,000	-$80,000	Deleted task, budget moved to WIP task
728	BT1.02.01.07	TD Deliver Lambertson MLAW Magnet to AIP	$237,251	$0	$237,251	New activity
400	**BT1.02.02**	**Beam Transport Extraction Kickers**	**$377,076**	**$294,478**	**$82,598**	
401	**BT1.02.02.01**	**Beam Transport Extraction Kicker Magnets (RKB 2)**	**$129,598**	**$82,000**	**$47,598**	
483	BT1.02.02.01.03	Kicker Magnets Deliver Capacitors/Ferrites	**$0**	$60,000	-$60,000	Remove M&S, budget moved to WIP task
486	BT1.02.02.01.06	Kicker Magnets Deliver Other Components	**$0**	$22,000	-$22,000	Deleted task, budget moved to WIP task
761	BT1.02.02.01.09	TD Deliver RKB Kicker Magnets to AIP	$129,598	$0	$129,598	New activity
417	**BT1.02.02.04**	**Beam Transport Recycler Ring Extraction Insert Installation**	**$247,478**	**$212,478**	**$35,000**	
420	BT1.02.02.04.02	Existing Kicker/Lambertson Magnet/Vacuum Installation	$120,000	$85,000	$35,000	Added M&S
422	**BT1.03**	**Beam Transport RR to P1 Beamline Connection**	**$173,728**	**$74,600**	**$99,128**	
423	**BT1.03.01**	**Beam Transport RR to P1 Magnets**	**$173,728**	**$74,600**	**$99,128**	
428	**BT1.03.01.02**	**RR to P1 Permanent Magnets RQA (4)**	**$46,102**	**$12,000**	**$34,102**	
571	BT1.03.01.02.02	RR to P1 Permanent Magnets Procure Needed Parts	$0	$12,000	-$12,000	Deleted task, budget moved to WIP task
757	BT1.03.01.02.05	TD Deliver RR to P1 Permanent Magnets (RQA's) to AIP	$46,102	$0	$46,102	New activity
430	**BT1.03.01.03**	**RR to P1 Trim Quad MQTs (4+1)**	**$127,626**	**$16,000**	**$111,626**	
574	BT1.03.01.03.03	Receive RR to P1 Trim Quad Magnets	$0	$16,000	-$16,000	Deleted task, budget moved to WIP task
754	BT1.03.01.03.06	TD Deliver MQT's to AIP	$127,626	$0	$127,626	New activity
432	**BT1.03.01.04**	**RR to P1 Horizontal Dipole Corrector (1+1)**	**$0**	**$23,300**	**-$23,300**	
577	BT1.03.01.04.02	RR to P1 Horizontal Dipole Correctors Procure Magnet Coil Parts	$0	$23,300	-$23,300	Deleted task
434	**BT1.03.01.05**	**RR to P1 Vertical Dipole Correctors (1+1)**	**$0**	**$23,300**	**-$23,300**	
584	BT1.03.01.05.02	RR to P1 Vertical Dipole Correctors Procure Magnet Coil Parts	$0	$23,300	-$23,300	Deleted task
12	**BT1.04**	**Beam Transport to Delivery Ring**	**$279,415**	**$305,380**	**-$25,965**	
14	**BT1.04.01**	**Beam Line Aperture Improvements**	**$279,415**	**$305,380**	**-$25,965**	
15	**BT1.04.01.01**	**Beamline Magnets**	**$32,515**	**$4,580**	**$27,935**	
118	**BT1.04.01.01.03**	**Beamline CDA Magnet (F-17C Replacement)**	**$32,515**	**$4,580**	**$27,935**	
719	**BT1.04.01.01.03.02**	**Beamline CDA Magnet (F-17C Replacement) Construction (1)**	**$32,515**	**$4,580**	**$27,935**	
545	BT1.04.01.01.03.02.02	Acquire Tooling (Curing Form)	$0	$2,500	-$2,500	Deleted task, budget moved to WIP task
162	BT1.04.01.01.03.02.03	Procure other materials - Manifolding, plumbing parts & insulation	$0	$2,080	-$2,080	Deleted task, budget moved to WIP task
756	BT1.04.01.01.03.02.10	TD Deliver CDA Magnet to AIP	$32,515	$0	$32,515	New activity
16	**BT1.04.01.02**	**Beamline PS**	**$76,900**	**$109,800**	**-$32,900**	
204	**BT1.04.01.02.02**	**Beamline PS Implementation**	**$76,900**	**$109,800**	**-$32,900**	
699	**BT1.04.01.02.02.02**	**Beamline PS Implementation F0 Quadrupole PS**	**$0**	**$32,900**	**-$32,900**	**Deleted task**
317	BT1.04.01.02.02.02.01	Beamline PS Implementation Procure F0 quadrupole power supplies	**$0**	$19,700	-$19,700	Deleted task
694	BT1.04.01.02.02.02.03	Beamline PS Implementation Procure load cables for F0 quadrupoles	**$0**	$4,500	-$4,500	Deleted task
698	BT1.04.01.02.02.02.04	Beamline PS Implementation Procure installation materials for F0 quads	**$0**	$3,000	-$3,000	Deleted task
696	BT1.04.01.02.02.02.06	Beamline PS Implementation Install load cables for F0 quads	**$0**	$2,300	-$2,300	Deleted task
695	BT1.04.01.02.02.02.07	Beamline PS Implementation Install primary power for F0 quads	**$0**	$3,400	-$3,400	Deleted task
17	**BT1.04.01.03**	**Beam Line Installation & Mechanical**	**$170,000**	**$191,000**	**-$21,000**	
605	**BT1.04.01.03.02**	**Beam Line Installation & Mechanical Implementation**	**$170,000**	**$191,000**	**-$21,000**	

Beam Transport CR004 M and S Delta

3/19/2014

UID	WBS	Name	Replan M&S	Current M&S	Delta	Comments
687	**BT1.04.01.03.02.03**	**F-0 Quadrupoles**	**$0**	**$21,000**	**-$21,000**	**Deleted task**
631	BT1.04.01.03.02.03.01	Procure magnet stands for F-0 quadrupole	$0	$10,000	-$10,000	Deleted task
627	BT1.04.01.03.02.03.05	Magnet and stand rigging for F0 quads	$0	$10,000	-$10,000	Deleted task
626	BT1.04.01.03.02.03.06	Electricians terminate load cables	$0	$1,000	-$1,000	Deleted task

Beam Transport Cap Pre CR004

Control Account / Work Package	CAM / EVT / Resource Assignment	Baseline Start / Cost Set	Baseline Finish / FY12	Actual Start / FY13	Actual Finish / FY14	Forecast Start / FY15	Forecast Finish / FY16	Cumulative
A1303.01.02.01 Project Management Oversight FY13		8/26/13	9/30/13	8/26/13	9/30/13	8/26/13	9/30/13	
	Scheduled	0.00	56.42	0.00	0.00	0.00	0.00	56.42
A1303.01.02.02 Project Management Oversight FY14		10/1/13	9/30/14	10/1/13		10/1/13	9/30/14	
	Scheduled	0.00	0.00	143.54	0.00	0.00	0.00	143.54
A1303.01.02.03 Project Management Oversight FY15		10/1/14	9/30/15			10/1/14	9/30/15	
	Scheduled	0.00	0.00	0.00	145.95	0.00	0.00	145.95
A1303.01.02.04 Project Management Oversight FY16		10/1/15	2/29/16			10/1/15	2/29/16	
	Scheduled	0.00	0.00	0.00	0.00	37.08		37.08
A1303.02.01 Beam Transp Lambertson (MLAW) Mag		10/1/14	9/17/15			10/1/14	9/17/15	
	Scheduled	0.00	0.00	0.00	211.12	0.00	0.00	211.12
A1303.02.02.01 Beam Transp Extract Kicker Mags (RKB 2)		8/26/13	6/13/14	8/26/13		8/26/13	5/20/14	
	Scheduled	0.00	6.22	154.54	0.00	0.00	160.76	
A1303.02.02.02 Beam Transp Extract Kicker PS		10/1/13	12/1/15			10/1/13	12/1/15	
	Scheduled	0.00	0.00	32.21	361.81	80.36	474.38	
A1303.02.02.03 Beam Transp Kicker Loads & Cooling Syst		8/26/13	10/27/14	8/1/13		8/1/13	10/2/14	
	Scheduled	0.00	6.22	409.50	13.19	0.00	428.91	
A1303.02.02.04 Beam Transp Recyl Ring Extract Insert Install		10/1/13	2/1/16	10/1/13		10/1/13	2/1/16	
	Scheduled	0.00	0.00	413.43	113.87	97.81	625.11	
A1303.03.01.01 RR to P1 Vertical Bend Dipole ADCW (1)		10/1/13	1/24/14			10/1/13	1/24/14	
	Scheduled	0.00	0.00	24.28	0.00	0.00	24.28	
A1303.03.01.02 RR to P1 Permanent Mags RQA (4)		10/1/13	5/7/14			10/1/13	5/7/14	
	Scheduled	0.00	0.00	56.58	0.00	0.00	56.58	
A1303.03.01.03 RR to P1 Trim Quad STQB (4+1)		10/1/13	4/25/14	10/1/13		10/1/13	4/25/14	
	Scheduled	0.00	0.00	35.54	0.00	0.00	35.54	
A1303.03.01.04 RR to P1 Horizontal Dipole Corrector (1+1)		10/1/13	4/4/14			10/1/13	4/4/14	
	Scheduled	0.00	0.00	46.64	0.00	0.00	46.64	
A1303.03.01.05 RR to P1 Vertical Dipole Correctors (1+1)		10/1/13	4/4/14			10/1/13	4/4/14	
	Scheduled	0.00	0.00	46.64	0.00	0.00	46.64	

Beam Transport Cap Pre CR004

	CAM	Baseline		Actual		Forecast		
Control Account	EVT	Start	Finish	Start	Finish	Start	Finish	
Work Package	Resource Assignment	Cost Set	FY12	FY13	FY14	FY15	FY16	Cumulative
A1303.03.02.01 RR to P1 Lambertson PS		10/1/13	7/23/14	10/1/13		10/1/13	7/23/14	
		Scheduled	0.00	0.00	60.13	0.00	0.00	60.13
A1303.03.02.02 RR to P1 Vertical Magnet PS		10/1/13	7/23/14	10/1/13		10/1/13	7/23/14	
		Scheduled	0.00	0.00	60.13	0.00	0.00	60.13
A1303.03.02.03 RR to P1 Trim Dipole PS(2)		10/1/13	3/27/14	10/1/13		10/1/13	3/27/14	
		Scheduled	0.00	0.00	26.00	0.00	0.00	26.00
A1303.03.02.04 RR to P1 Trim Quad PS(4)		10/1/13	3/6/14	10/1/13		10/1/13	3/6/14	
		Scheduled	0.00	0.00	30.93	0.00	0.00	30.93
A1303.03.03 Beam Transp RR to P1 Instrumentation		10/1/14	12/29/14			10/1/13	12/27/13	
		Scheduled	0.00	0.00	0.00	264.20	0.00	264.20
A1303.03.04 Beam Transport RR to P1 Installation		4/3/15	7/27/15			4/3/15	7/27/15	
		Scheduled	0.00	0.00	0.00	463.65	0.00	463.65
A1303.04.01.01.01 Beamline B2 Dip Mag (1) (V714 Replacement)		1/2/14	8/14/14			10/1/13	2/26/14	
		Scheduled	0.00	0.00	49.96	0.00	0.00	49.96
A1303.04.01.01.02 Beamline Exist Mags to be Repurposed		11/1/13	7/20/15	10/1/13		10/1/13	7/20/15	
		Scheduled	0.00	0.00	15.84	5.13	0.00	20.97
A1303.04.01.01.03 Beamline CDA Mag (F-17C Replacement)		1/2/14	6/20/14			10/1/13	3/26/14	
		Scheduled	0.00	0.00	52.60	0.00	0.00	52.60
A1303.04.01.02 Beamline PS		10/1/14	11/18/15			10/1/14	11/18/15	
		Scheduled	0.00	0.00	0.00	290.06	20.77	310.83
A1303.04.01.03 Beam Line Installation & Mechanical		1/30/14	8/20/15			10/1/13	8/20/15	
		Scheduled	0.00	0.00	182.45	296.22	0.00	478.67
A1303.04.01.04 RR to AP-0 Targ Stat & RR to M3 Line optics		3/3/14	4/25/14			3/3/14	4/25/14	
		Scheduled	0.00	0.00	67.64	0.00	0.00	67.64
A1303.04.02 Beam Transport Electrical Infrastructure		10/1/14	12/29/14			10/1/14	12/29/14	
		Scheduled	0.00	0.00	0.00	180.21	0.00	180.21
A1303.04.03 Beamline Instrumentation & Controls		10/1/14	5/5/15			10/1/14	5/5/15	
		Scheduled	0.00	0.00	0.00	584.50	0.00	584.50
Grand Total								
		Scheduled	0.00	68.85	1,908.59	2,929.91	236.02	5,143.37

Beam Transport Cap Post CR004

	CAM	Baseline		Actual		Forecast		
Control Account	EVT	Start	Finish	Start	Finish	Start	Finish	$K
Work Package	Resource Assignment	Cost Set	FY12	FY13	FY14	FY15	FY16	Cumulative
A1303.01.02.01 Project Management Oversight FY13		8/26/13	9/30/13	8/26/13	9/30/13	8/26/13	9/30/13	
		Scheduled	0.00	56.42	0.00	0.00	0.00	56.42
A1303.01.02.02 Project Management Oversight FY14		10/1/13	9/30/14	10/1/13		10/1/13	9/30/14	
		Scheduled	0.00	0.00	138.61	0.00	0.00	138.61
A1303.01.02.03 Project Management Oversight FY15		9/23/14	9/22/15			9/23/14	9/22/15	
		Scheduled	0.00	0.00	3.29	137.55	0.00	140.84
A1303.01.02.04 Project Management Oversight FY16		9/23/15	2/1/16			9/23/15	2/1/16	
		Scheduled	0.00	0.00	0.00	2.49	34.52	37.01
A1303.02.01 Beam Transport Lambertson (MLAW) Magnet		9/2/14	9/17/15			9/2/14	9/17/15	
		Scheduled	0.00	0.00	292.63	0.00	0.00	292.63
A1303.02.02.01 Beam Transport Extraction Kicker Magnets (RKB 2)		8/26/13	6/24/14	8/26/13		8/26/13	6/24/14	
		Scheduled	0.00	6.22	163.02	0.00	0.00	169.24
A1303.02.02.02 Beam Transport Extraction Kicker Power Supplies		10/1/13	12/1/15			2/17/14	12/1/15	
		Scheduled	0.00	0.00	32.21	361.81	80.36	474.38
A1303.02.02.03 Beam Transport Kicker Loads & Cooling System		8/26/13	10/27/14	8/1/13		8/1/13	10/27/14	
		Scheduled	0.00	6.22	386.46	36.83	0.00	429.52
A1303.02.02.04 Beam Transport Recycler Ring Extraction Insert Installa		10/1/13	2/1/16	10/1/13		10/1/13	2/1/16	
		Scheduled	0.00	0.00	421.85	182.97	200.20	805.02
A1303.03.01.01 RR to P1 Vertical Bending Dipole ADCW (1)		10/1/13	6/18/14			3/3/14	6/18/14	
		Scheduled	0.00	0.00	24.28	0.00	0.00	24.28
A1303.03.01.02 RR to P1 Permanent Magnets RQA (4)		10/1/13	5/1/15			10/1/13	5/1/15	
		Scheduled	0.00	0.00	0.00	57.94	0.00	57.94
A1303.03.01.03 RR to P1 Trim Quad STQB (4+1)		10/1/13	7/9/14	10/1/13		10/1/13	7/9/14	
		Scheduled	0.00	0.00	157.42	0.00	0.00	157.42
A1303.03.01.05 RR to P1 Vertical Dipole Correctors (1+1)		10/1/13	4/4/14			10/1/13	4/4/14	
		Scheduled	0.00	0.00	8.65	0.00	0.00	8.65

Beam Transport Cap Post CR004

	CAM	Baseline		Actual		Forecast		
Control Account	EVT	Start	Finish	Start	Finish	Start	Finish	$K
Work Package	Resource Assignment	Cost Set	FY12	FY13	FY14	FY15	FY16	Cumulative
A1303.03.02.01 RR to P1 Lambertson PS		10/1/13	10/29/14	10/1/13		10/1/13	10/29/14	
		Scheduled	0.00	0.00	49.64	10.72	0.00	60.37
A1303.03.02.02 RR to P1 Vertical Magnet PS		10/1/13	10/29/14	10/1/13		10/1/13	10/29/14	
		Scheduled	0.00	0.00	49.64	10.72	0.00	60.37
A1303.03.02.03 RR to P1 Trim Dipole PS(2)		10/1/13	9/3/14	10/1/13		10/1/13	9/3/14	
		Scheduled	0.00	0.00	26.00	0.00	0.00	26.00
A1303.03.02.04 RR to P1 Trim Quad PS(4)		10/1/13	7/17/14	10/1/13		10/1/13	7/17/14	
		Scheduled	0.00	0.00	30.93	0.00	0.00	30.93
A1303.03.03 Beam Transport RR to P1 Instrumentation		10/1/14	12/29/14			10/1/14	12/29/14	
		Scheduled	0.00	0.00	0.00	264.20	0.00	264.20
A1303.03.04 Beam Transport RR to P1 Installation		4/3/15	7/27/15			4/3/15	7/27/15	
		Scheduled	0.00	0.00	0.00	463.65	0.00	463.65
A1303.04.01.01.01 Beamline B2 Dipole Magnet (1) (V714 Replacement)		3/3/14	12/16/14			3/3/14	12/16/14	
		Scheduled	0.00	0.00	39.94	10.00	0.00	49.94
A1303.04.01.01.02 Beamline Existing Magnets to be Repurposed		11/1/13	7/20/15	10/1/13		10/1/13	7/20/15	
		Scheduled	0.00	0.00	5.09	16.14	0.00	21.23
A1303.04.01.01.03 Beamline CDA Magnet (F-17C Replacement)		1/2/14	4/10/15			8/1/14	4/10/15	
		Scheduled	0.00	0.00	1.14	40.87	0.00	42.01
A1303.04.01.02 Beamline PS		6/2/14	6/4/15			6/2/14	6/4/15	
		Scheduled	0.00	0.00	13.36	211.71	0.00	225.07
A1303.04.01.03 Beam Line Installation & Mechanical		1/30/14	8/20/15			10/1/13	8/20/15	
		Scheduled	0.00	0.00	84.78	372.20	0.00	456.99
A1303.04.01.04 RR to AP-0 Target Station and RR to M3 Line optics		2/10/14	6/2/14			2/10/14	6/2/14	
		Scheduled	0.00	0.00	67.64	0.00	0.00	67.64
A1303.04.02 Beam Transport Electrical Infrastructure		8/4/14	12/26/14			8/4/14	12/26/14	
		Scheduled	0.00	0.00	10.18	169.77	0.00	179.95
A1303.04.03 Beamline Instrumentation & Controls		9/9/14	7/15/15			9/9/14	7/15/15	
		Scheduled	0.00	0.00	79.59	502.76	0.00	582.35
Grand Total								
		Scheduled	0.00	68.85	2,086.37	2,852.34	315.08	5,322.65