Computing Division FY2010 Budget Review

November 2nd, 2009

Vicky White

CD Budget Presentation Outline

- Mission, achievements in FY09, big plans for FY10 – skip that
- Staffing and organization
- Approach to making the budget
- Overarching look at budget – various cross-cuts
- Details by B&R and LWWBs
- Prioritized list for additional funding

Staffing

- 11 people left CD in FY09
  - 1 Application Physicist
  - 8 Computing/engineer
  - 1 Scientist
  - 1 Storekeeper
- 53 people joined CD
  - 10 PPD October 1, 2008
  - 24 FI February 1, 2009
  - 1 BSS October 2, 2009
  - 5 TD October 2, 2009
- There are 13 new hires in the budget for FY10
  - 7 posted openings
  - 4 offers are out
  - 2 new hires budgeted – but on Fenced funding- may not happen (revenue neutral)
- Headcount is at 309 today (2 long term absence)

Budget Guidance (does not include all B&R funding sources)

COMPUTING DIVISION	
General Operations & Equipment	42,420
Cost Savings from FY08 Staff Reduction	(940)
DOE HEP Web Support	30
Project 18 Labor	65
Lattice QCD	260
DeCam Project Labor	(220)
NOvA Project Labor	(425)
CMS M&O	(120)
CMS S&C	9,260
COMPUTING DIVISION Total	50,330

Plus revised project guidance

COMPUTING DIVISION (Previous Guidance Adj for MIS)		
General Operations	50,574	48,740
IT Investments	1,500	0
COMPUTING DIVISION Total	52,074	48,740

After personnel changes to CD the bottom line for CD Operations to balance out to across all B&Rs (in collab with B&R owners and their constraints) is 49,461 (we believe)

CD Salary budget

- Our salary budget is $42,036M assuming
  - No-one leaves at all
  - All current offers and posted openings are filled with some delay
  - 1 new hire, but only if Network money comes
  - 1 new posted opening is revenue neutral (DOE assignment)
  - 1 new hire is designated for CMS "contingency" – revenue neutral
  - No summer students
  - No overtime
- This is based on the standard spreadsheet (Connie) calculation using the current Pay31 amount and the most recent rates

How we will pay our people in FY10 (maybe)

mu2

JDEM SOC

Sum of Total_Bud		Export_Resource
Project_Numbe	Project_Name	Personnel Costs
10	Directorate Washington Assignments	150,496
18	ILC & SRF Infrastructure	225,730
425	NOvA	825,226
45	CMS MAINT & OPS	349,311
47	CMS Common Operations	287,345
470	DeCam	188,825
4xx	(blank)	237,549
50	CD Operations	32,161,622
508	CD-ESnet SITE CHAIRMAN	43,401
511	CD Cyber Security	569,108
531	CD COMPASS	310,152
532	Lattice QCD SciDAC	291,092
534	CD CEDS	70,226
535	Network R&D - Flow based	43,144
536	NETWORK WEATHER ECente	203,427
537	CD-END SITE CONTROL PLANE SYS	128,508
540	Open Science Grid	576,943
55	CD CMS Software & Computing	4,043,162
555	(blank)	217,991
560	Lattice QCD	444,459
589	ASCR Grid assignment	80,000
70	ES&H EEOICPA	1,263
ProjectX	Project X	58,419
R3L207	ESnet MAN Operations	34,028
R4FXX1	NEES Project	195,025
R4W202	Open Science Grid	269,751
R6A214	ARC SDSS Data Archiving & Serv	30,024
Grand Total		42,036,226

Deviations from guidance

Project	Project Name	SWF in budget	Guidance	
18	ILC & SRF Infrastructure	226	162	Discussion with Stanek - need a bit more effort
425	NOvA	825	1078	WBS may be out of sync with reality - think we have the work covered
47	CMS Common Operations	287	55	Believe this is agreed - moving some people from 55 and paying for 0.5 FTE in CMS-wide role
470	DeCam	189	139	OK'd by project - in fact they may need more
4xx	(blank)	238	240	mu2e - but if this cannot be scientists then we will not make it
?	LBNE		323	don't have the sort of people Gina wants/need
55	CD CMS Software & Computing	4,043	3800	Oversubscription to account for attrition - possible new hire
555	(blank)	218	?	Assume money comes from LBNL for JDEM SOC
ProjectX	Project X	58	96	we will try to increase a bit, but probably only moves from SciDAC

CD Operations (Project 50) $49M

- Our work plans are intimately woven with all the pots of money
- Many uncertainties
- I'm going to concentrate for a moment on how the $49M breaks down
  - With many constraints for totals of B&Rs across the lab which I think we have taken account of and coordinated
    - Astro Center – KA13
    - Detector R&D – KA15 and KA11 Lab R&D
    - Theory – KA14
    - Detector Operations and Equipment – natural constraints - not sure yet if all adds up between CD and PPD
    - Accelerator Modeling not coordinated, but little change from FY09

CD Operations budget breakdown

Expense Category	FY09 Budget	FY09 Actuals	Percent Spent	FY10 Budget	Diff FY10 budget - FY09 Actuals	% diff on FY09 actuals	Notes
Salaries	30,271	29,808	98%	32,162	2,353	8%	TD joined CD, Scientist and other strategic hires included
H/W and S/W Maintenance cor	6,130	6,253	102%	4,762	-1,491	-24%	$700K Oracle one time in FY09, $500K Teamcenter
Chargebacks	-818	-760	93%	-700	60	-8%	
Facilities and ES&H	1,180	1,190	102%	1,116	-74	-6%	
RunII	1,791	1,459	81%	1,868	409	28%	Far short of their requests. Only end-of-life , no increase c
Scientific	502	403	80%	339	-64	-16%	Some EOL replacements
Shared Scientific Services	1,817	1,697	93%	1,418	-279	-16%	Only push is for Intensity frontier facility and Virtual machines/C
Enterprise Information Services				526	526		MIS and CD merge splits IT and IM in a new way
Core IT services	3,451	3,528	102%	3,409	-120	12%	$650K for Tune IT up in Consultants line
Division support	515	562	114%	459	-103	-18%	
Travel	632	454	72%	384	-70	-15%	
Consultants and Guests	3,286	3,647	114%	4,009	363	10%	Several Enterprise Info end-of-life and Compliance needs here
Contingency	119	0	0%	-291	-291		SWF attrition needed - maybe withdraw posted openings
TOTALS	**48,877**	**48,241**	99%	**49,461**	1,219	2.5%	

Approach to such a tight budget !

- Look for DRIVER for every line item
  - ✓ Operations – must do
  - ➢ Science productivity
  - ✓ PEMP goal/compliance/certification
  - ✓ End of Life – must replace or plan to (EOL)
  - ✓ Service Infrastructure – enabler
  - ➢ Department – cost of doing business (minimize)
  - ✗ End of Service – should really upgrade (EOS)
  - ✗ Service Improvement Project (SIP)
  - ✗ Enterprise Info Systems Improvement (IP)

Tie budget to our lab goals to prioritize and categorize

- Always a problem balancing Science drivers with Operations drivers
  - We have science roadmaps for the lab and we need to work on them
  - We have constraints on B&Rs
  - We have present needs – and future investments
- Operations goals of the lab need IT and Information Systems to enable them and make the lab more efficient, in compliance, etc.

IT roadmap for cost effective IT services

- Consolidate IT services across lab
  - PPD + MIS + TD done (AD after Tev stops)
- Change culture and conform to industry standards to arrive at ISO2000 certification
  - Incident mgt, Problem Mgt, Asset Mgt, Configuration Mgt, Change Mgt, Financial Mgt, Service Level Agreements
- Manage our IT securely – inventory, control
- Create IT governance system
  - Architecture, Policy, Steering boards
  - Enterprise Architect coming v. soon
  - Limit diversity in places where it is not essential

IT roadmap/strategies

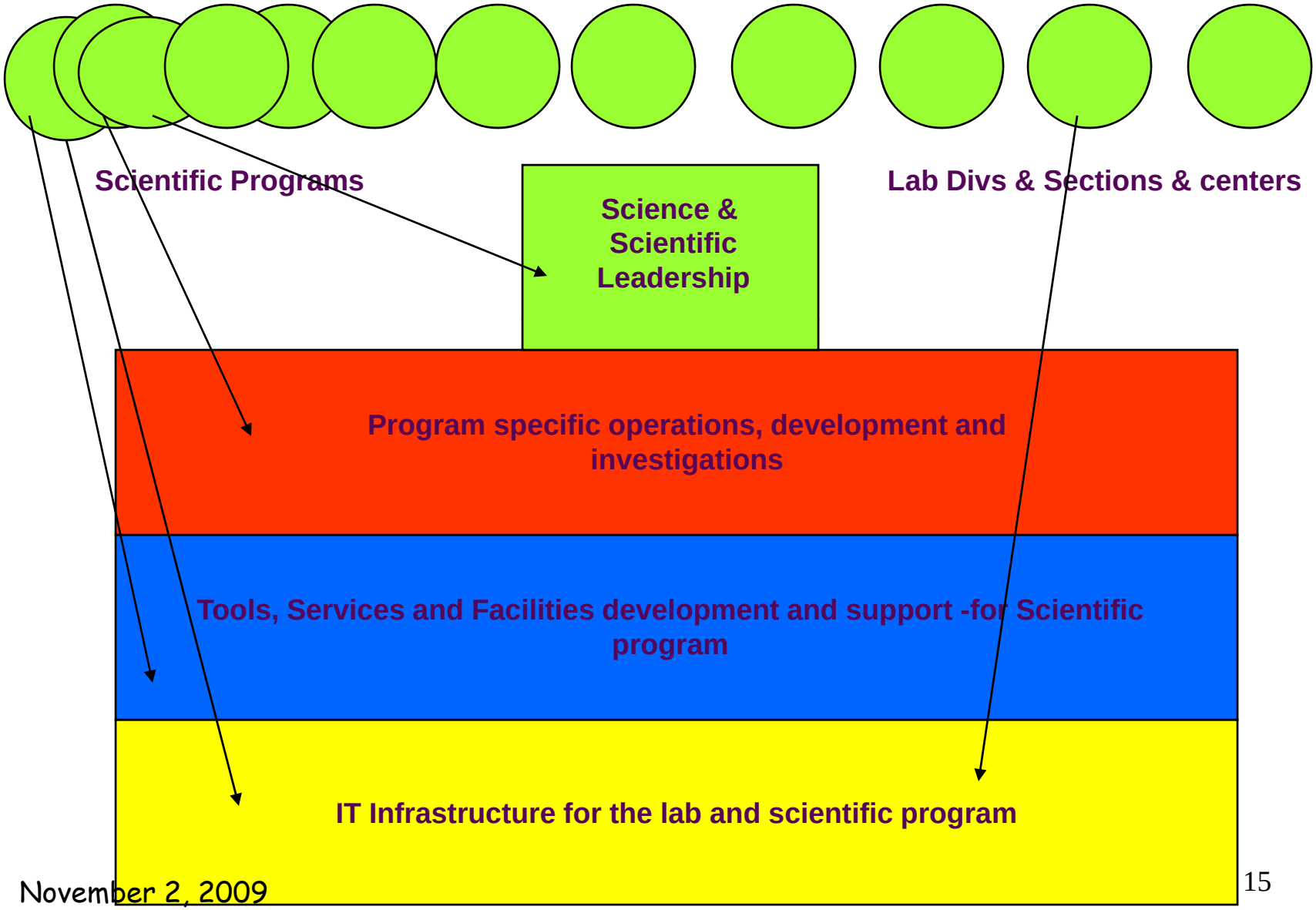
- Establish Service Level agreements for all services
- Understand and manage costs for all services
- Virtualize and consolidate servers
- Eliminate duplicate services -> aim for reduction by end of FY10
- Evaluate Outsource/Insource of some services
- Benchmark our service costs against industry
  - Aim to free up money for Scientific Program and Information Systems needs
- Become certified in IT services management according to ISO20000 standards by end 2010/early 2011

Grouping the budget by "Drivers"

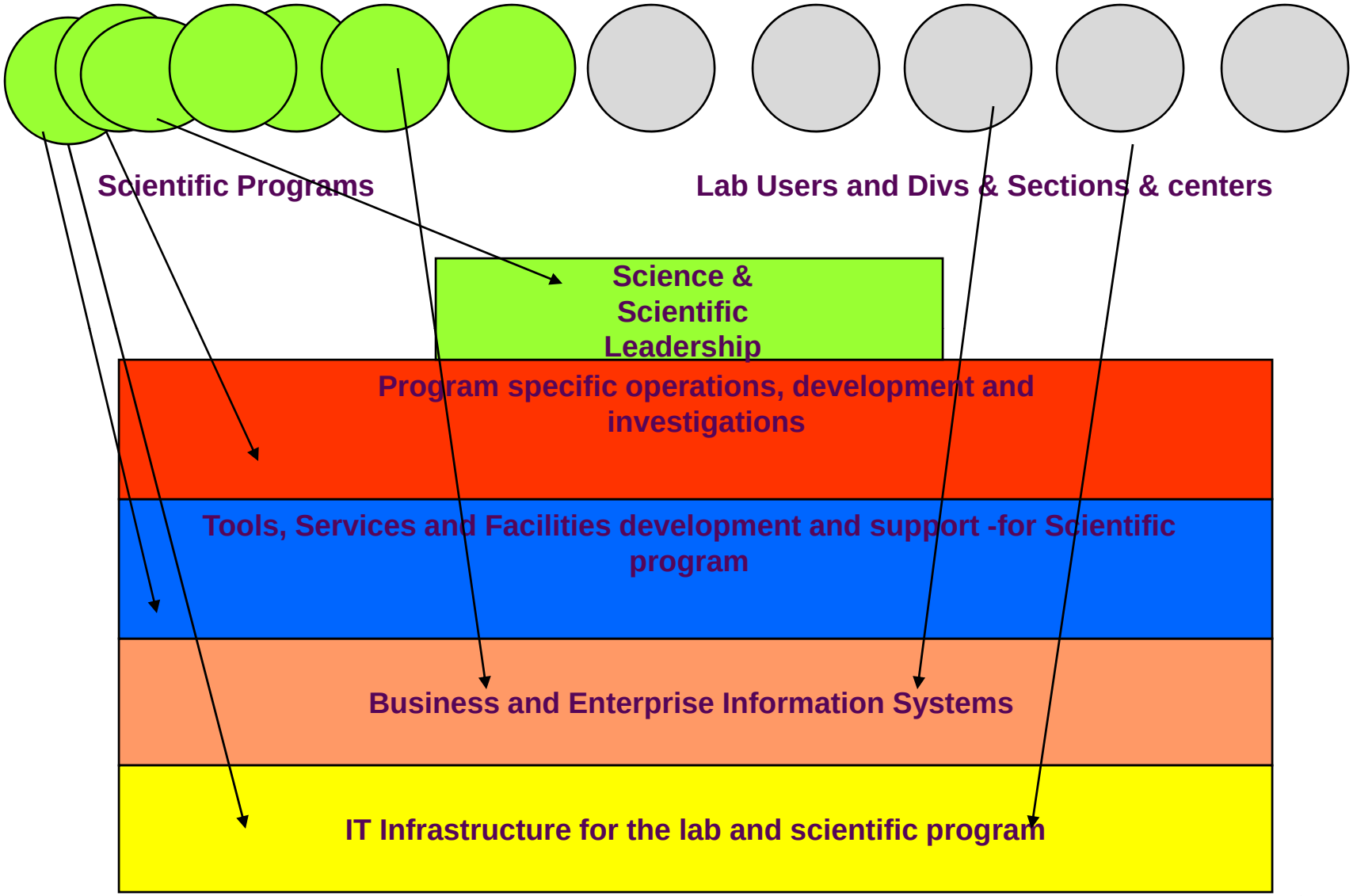
	DRIVER	M&S $K	Notes	M&S Reque
OPS	Operations	6,634	85% is pure maintenance costs	7790
EOL	Deal with end of Life systems	2,738	e.g. > 4 year old CDF and D0 worker nodes, out of service or soon to be out of service systems E.g. Peoplesoft, FNALU, many network devices	3543
PEMP	PEMP/Compliance/ISO20K/IT consolidatio	3,372	respond to audits, PEMP goals, QA promises and bring IT services under cost and operations control	3521
SI	Service Infrastructure	2,470	Invest in Virtualization - cut servers out of both IT services and scientific services and use FermiCloud and IT virtualization service instead (aggressive!). Create shared facility for Intensity Frontier	3152
IF	Move some support to Intensity Frontier	272	Dedicated disks for different Intensity frontier experiments	394
	Department cost of doing business	599	Laptops, furniture, hiring fees, non-project travel, supplies, education reimbursements, relocation, printers, paper, etc.	1359
	Collaboration and Training	722	Project/Science related travel + all training, fees	1421
	Science, R&D, PR	390		806
	Missing SIP or EOS - contingency	100		
		17,297	**THIS IS THE M&S BUDGET ON PROJECT 50 - CD OPERATIONS**	
EOS	End of Service Life		Lot of network stuff, many servers - hope to force consolidation and virtualization of servers	1639
IP	Information System Improvement Project		Not estimated yet -- see later slide on Infor systems roadmap	
SIP	Service Improvement Project		Both Scientific and IT -- More capabilities for CDF, D0, Data Storage, WAN, Networks, Sharepoint, Unified Communications, VOIP and more	7913

- Note – all EOS, SIP and IP (unless EOL or PEMP) excluded

The Layers of CD mission FY09



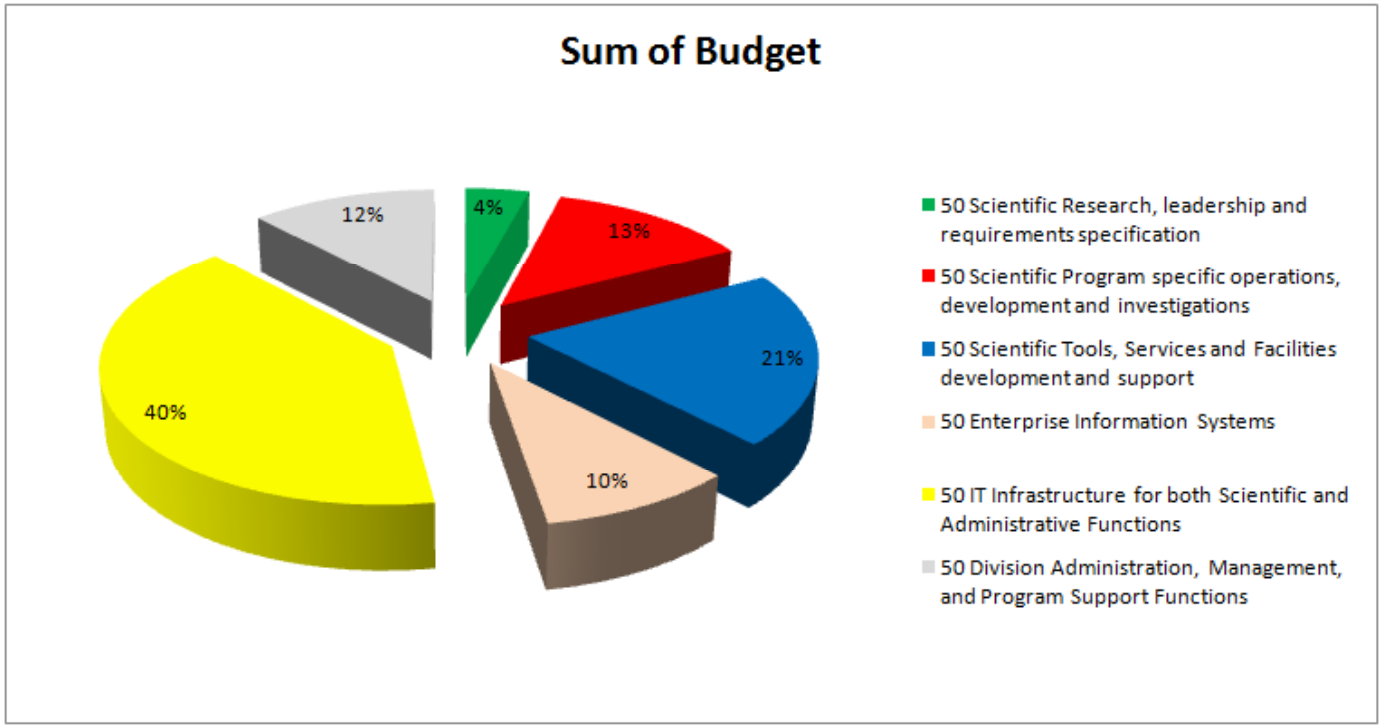
Added a Layer for FY10



Budget by Layer

		Data	
Project_I	Activities::Layer Description	Sum of Budget	Sum of FT
50	Scientific Research, leadership and requirements specification	2066	13
	Scientific Program specific operations, development and investigations	6487	29
	Scientific Tools, Services and Facilities development and support	10154	63
	Enterprise Information Systems	4782	23
	IT Infrastructure for both Scientific and Administrative Functions	19980	84
	Division Administration, Management, and Program Support Functions	5993	32
50 Total		49461	245
Grand Total		49461	245

$K



Activities and Services (my WBS) by Layer (all people all funding)

Sum of FTE		
Activities::Layer Description	ActLevel0	Total
Scientific Research, leadership and requirements specification	SCIENTIFIC RESEARCH & LEADERSHIP	13.1
Scientific Research, leadership and requirements specification Total		13.1
Scientific Program specific operations, development and investigations	CMS	21.3
	COSMOLOGY HPC	1.4
	INTENSITY FRONTIER	6.2
	LATTICE QCD	7.1
	PROJECT-X	0.5
	RUN2	12.9
	USCMS TIER-1 FACILITY	10.1
Scientific Program specific operations, development and investigations Total		59.5
Scientific Tools, Services and Facilities development and support	ACCELERATOR MODELING	4.5
	DAQ & ENGINEERING	14.4
	DATA STORAGE	14.8
	GENERAL PHYSICS COMPUTING FACILITY	0.9
	GRID & CLOUD COMPUTING	18.1
	HIGH PERFORMANCE COMPUTING	0.2
	PREP	3.8
	SCIENTIFIC COMPUTING FACILITIES	1.0
	SCIENTIFIC SIMULATIONS & SOFTWARE	20.7
	SERVERS FARMS & DISKS OPERATIONS	9.1
	WIDE AREA NETWORK	6.3
Scientific Tools, Services and Facilities development and support Total		93.7

More Activities and Services by Layer (all people, all funding)

Sum of FTE		
Activities::Layer Description	ActLevel0	Total
Enterprise Information Systems	DOCUMENT WORKFLOW AND INFORMATION SERVICES	2.9
	ENTERPRISE INFORMATION SERVICES	1.3
	ENTERPRISE INFORMATION SYSTEMS	15.5
	IT INFRASTRUCTURE INFORMATION SERVICES	3.0
Enterprise Information Systems Total		22.7
IT Infrastructure for both Scientific and Administrative Functions	COMPUTER SECURITY AND POLICY	6.9
	COMPUTING CENTERS PLANNING & OPERATIONS	7.4
	CORE IT SERVICES	24.7
	DATABASE SERVICES	10.0
	DESKTOPS	14.3
	NETWORKS	10.4
	SERVICE DESK	8.3
	STORAGE SERVICES	4.0
	VIRTUAL PLATFORMS	3.0
IT Infrastructure for both Scientific and Administrative Functions Total		88.7
Division Administration, Management, and Program Support Functions	DIVISION ADMINISTRATION	25.2
	DIVISION INFRASTRUCTURE	0.0
	ES&H	1.6
	GOVERNANCE & OVERSIGHT	3.8
	PROJECT MANAGEMENT & QA	2.6
Division Administration, Management, and Program Support Functions Total		33.2

Funding per layer

Sum of Budget		
Activities::Layer Description	Tasks::BnRdescription	Total
Scientific Research, leadership and require	KA 11 01 021 Proton Based Research - Ntl Lab Energy Research	763
	KA 11 01 022 Proton Based Research - Ntl Lab Intensity Research	122
	KA 13 01 02 Non-Accelerator Based Physics Research	1005
	KA 14 01 02 Theoretical Physics Research	74
	KA 15 02 01-1 Future Physics - General Accelerator	101
Scientific Research, leadership and requirements specification Total		2066
Scientific Program specific operations, dev	Accounts Receivable	185
	KA 11 01 021 Proton Based Research - Ntl Lab Energy Research	448
	KA 11 02 01-2 Proton Facilities - Detector Operations	3563
	KA 11 02 02-2 EQU Proton Facilities Complex Support - Detector	1292
	KA 11 02 03-3 EQU 71RF NOvA MIE	0
	KA 11 02 034 FUTURE FACILITY R&D	58
	KA 11 02 05-5 CMS Detector and Computing Support	5777
	KA 11 02 05-5 EQU CMS Detector and Computing Support	3634
	KA 13 01 02 Non-Accelerator Based Physics Research	744
	KA 13 01 03-1 EQU81SA DECam MIE	309
	KA 13 01 032 Non-Accelerator Based Physics Future Projects	190
	KA 13 01 032 Non-Accelerator Based Physics Future Projects AR	8
	KA 14 01 02 Theoretical Physics Research	409
	KA 14 01 03 Theoretical Physics - SCIDAC	133
	KA 14 01 05 Computational HEP (Lattice Gauge)	572
	KA 14 01 05 EQU Computational HEP (Lattice Gauge)	1600
	KB 03 01 02 Nuclear Physics - Theory, National Laboratory Research	10
	KB 03 01 05-2 Nuclear Physics SciDAC	171
	Program Support Overhead	31
Scientific Program specific operations, development and investigations Total		19134

Funding by layer

⊟Scientific Tools, Services and Facilities de	Accounts Receivable	10
	CSS Overhead	317
	KA 11 01 021 Proton Based Research - Ntl Lab Energy Research	2328
	KA 11 01 022 Proton Based Research - Ntl Lab Intensity Research	325
	KA 11 02 01-1 Proton Facilities - Accelerator Operations	4
	KA 11 02 01-2 Proton Facilities - Detector Operations	5171
	KA 11 02 02-2 EQU Proton Facilities Complex Support - Detector	515
	KA 11 02 03-3 EQU 71RF NOvA MIE	797
	KA 11 02 034 FUTURE FACILITY R&D	242
	KA 11 02 05-5 CMS Detector and Computing Support	994
	KA 13 01 02 Non-Accelerator Based Physics Research	115
	KA 13 01 032 Non-Accelerator Based Physics Future Projects	199
	KA 14 01 02 Theoretical Physics Research	47
	KA 14 01 02 Theoretical Physics Research AR	320
	KA 14 01 03 Theoretical Physics - SCIDAC	978
	KA 15 02 01-1 Future Physics - General Accelerator	607
	KA 15 02 01-2 Future Physics - SRF	157
	KA 15 02 02-1 Future Physics - Linear Collider	81
	KA 15 03 02 Future Physics - Detector Development	493
	KB 03 01 05-2 Nuclear Physics SciDAC	0
	KJ 01 01 04 Advanced Scientific Computing Research (ASCR) - Next Generation Networking for Science	116
	KJ 04 04 Advanced Scientific Computing Research (ASCR) - Next Generation Networking for Science	360
	KJ 05 04 Advanced Scientific Computing Research (ASCR) - High Performance Network Facilities & Testb	61
	Program Support Overhead	167
Scientific Tools, Services and Facilities development and support Total		14404

Funding by layer

⊟Enterprise Information Systems	CSS Overhead	1233
	G&A Overhead	3446
	KA 11 02 02-3 EQU Proton Facilities Complex Support - Other	80
	Program Support Overhead	22
Enterprise Information Systems Total		4782
⊟IT Infrastructure for both Scientific and Adn	Accounts Receivable	92
	CSS Overhead	16534
	FS 10 05 Safeguards & Security - Cyber Security	785
	G&A Overhead	1614
	KA 11 01 021 Proton Based Research - Ntl Lab Energy Research	24
	KA 11 02 01-2 Proton Facilities - Detector Operations	1127
	KA 11 02 02-2 EQU Proton Facilities Complex Support - Detector	567
	KA 11 02 03-3 EQU 71RF NOvA MIE	28
	KA 11 02 05-5 CMS Detector and Computing Support	122
	KA 13 01 02 Non-Accelerator Based Physics Research	53
	KA 13 01 032 Non-Accelerator Based Physics Future Projects	0
	KA 13 01 032 Non-Accelerator Based Physics Future Projects AR	42
	Program Support Overhead	60
IT Infrastructure for both Scientific and Administrative Functions Total		21048
⊟Division Administration, Management, and	CSS Overhead	2072
	G&A Overhead	18
	HQ 10 01 Office of Health, Safety & Security - Worker Advocacy	1
	KA 11 01 02 Proton Based Research - National Lab Research	-100
	KA 11 02 01-2 Proton Facilities - Detector Operations	0
	KA 11 02 02-2 EQU Proton Facilities Complex Support - Detector	0
	KA 11 02 08 Other Facility Activities	150
	Program Support Overhead	4003
Division Administration, Management, and Program Support Functions Total		6144
Grand Total		67578

Detailed budget discussion by B&R and Labwide WBS

37 B&Rs to walk through using required presentation format

Sum of Budget_entered	Record Ty	Expendit	
	FY10 Budget		FY10 Budg
BnRHeading	M&S	SWF	
Accounts Receivable	58	229	287
CSS Overhead	8,845	11,312	20,156
FS 10 05 Safeguards & Security - Cyber Security	216	569	785
G&A Overhead	2,547	2,531	5,078
HQ 10 01 Office of Health, Safety & Security - Worker Advocacy		1	1
KA 11 01 02 Proton Based Research - National Lab Research	-100		-100
KA 11 01 021 Proton Based Research - Ntl Lab Energy Research	349	3,214	3,563
KA 11 01 022 Proton Based Research - Ntl Lab Intensity Research	11	436	447
KA 11 02 01-1 Proton Facilities - Accelerator Operations		4	4
KA 11 02 01-2 Proton Facilities - Detector Operations	2,389	7,472	9,861
KA 11 02 02-2 EQU Proton Facilities Complex Support - Detector	2,106	268	2,374
KA 11 02 02-3 EQU Proton Facilities Complex Support - Other	80		80
KA 11 02 03-3 EQU 71RF NOvA MIE		825	825
KA 11 02 034 FUTURE FACILITY R&D	4	296	300
KA 11 02 05-5 CMS Detector and Computing Support	2,213	4,680	6,892
KA 11 02 05-5 EQU CMS Detector and Computing Support	3,634		3,634
KA 11 02 08 Other Facility Activities		150	150
KA 13 01 02 Non-Accelerator Based Physics Research	115	1,802	1,918
KA 13 01 03-1 EQU81SA DECam MIE	120	189	309
KA 13 01 032 Non-Accelerator Based Physics Future Projects	172	218	390
KA 13 01 032 Non-Accelerator Based Physics Future Projects AR	20	30	50
KA 14 01 02 Theoretical Physics Research	28	501	530
KA 14 01 02 Theoretical Physics Research AR	50	270	320
KA 14 01 03 Theoretical Physics - SCIDAC	91	1,020	1,110
KA 14 01 05 Computational HEP (Lattice Gauge)	127	444	572
KA 14 01 05 EQU Computational HEP (Lattice Gauge)	1,600		1,600
KA 15 02 01-1 Future Physics - General Accelerator	199	509	708
KA 15 02 01-2 Future Physics - SRF	12	145	157
KA 15 02 02-1 Future Physics - Linear Collider		81	81
KA 15 03 02 Future Physics - Detector Development	3	491	493
KB 03 01 02 Nuclear Physics - Theory, National Laboratory Research	10		10
KB 03 01 05-2 Nuclear Physics SciDAC	12	159	171
KJ 01 01 04 Advanced Scientific Computing Research (ASCR) - Next G	3	113	116
KJ 04 04 Advanced Scientific Computing Research (ASCR) - Next Gen	29	332	360
KJ 05 04 Advanced Scientific Computing Research (ASCR) - High Perfo	18	43	61
Program Support Overhead	662	3,622	4,284
(blank)		80	80
Grand Total	25,622	42,036	67,658

Program Support Overhead

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
Program Supp	1.10.1 : Central Computing							0	0	0			
	1.10.13 : Conference/Workshop Support	67	36	103	109	85	195	-42	-50	-92	-63%	-138%	-89%
	1.10.3 : Computer Networking							0	0	0			
	1.12.1 : Buildings and Facilities	692	402	1094	907	440	1347	-215	-38	-253	-31%	-9%	-23%
	1.12.2 : ES&H	16	250	266	13	190	203	3	60	63	19%	24%	24%
	1.13.1 : Management/Supervision	618	2678	3296	651	3393	4045	-34	-715	-749	-5%	-27%	-23%
	1.13.2 : General Purpose Equipment and Support	107	273	381	14	260	274	93	14	107	87%	5%	28%
	1.13.3 : Computing Support/Information Systems		26	26		17	17	0	9	9		34%	34%
	1.13.4 : Training and Education				1		1	-1	0	-1			
Program Support Overhead Total		1500	3666	5165	1695	4385	6081	-196	-720	-915	-13%	-20%	-18%

		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
Program Supp	1.10.1 : Central Computing	5	17	22				5	17	22	100%	100%	100%
	1.10.13 : Conference/Workshop Support	79	169	249	109	85	195	-30	84	54	-37%	50%	22%
	1.12.1 : Buildings and Facilities	124		124	907	440	1347	-782	-440	-1222	-629%		-983%
	1.12.2 : ES&H	13	204	217	13	190	203	0	15	14	-3%	7%	7%
	1.13.1 : Management/Supervision	388	2853	3241	651	3393	4045	-263	-541	-804	-68%	-19%	-25%
	1.13.2 : General Purpose Equipment and Support	53	351	404	14	260	274	38	91	130	73%	26%	32%
	1.13.3 : Computing Support/Information Systems		27	27		17	17	0	10	10		36%	36%
	1.13.4 : Training and Education				1		1	-1	0	-1			
Program Support Overhead Total		662	3622	4284	1695	4385	6081	-1033	-764	-1797	-156%	-21%	-42%

- Moved all real facilities costs off to CSS overhead (where they should be) – division building, office costs left on here
- Removed use of this for people already in an overhead pool

CSS Overhead

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
CSS Overhead	1.10.1 : Central Computing	3911	2860	6770	4447	3484	7932	-537	-625	-1161	-14%	-22%	-17%
	1.10.3 : Computer Networking	2727	2022	4749	3233	1483	4717	-507	539	32	-19%	27%	1%
	1.12.1 : Buildings and Facilities	472	495	967	284	519	803	189	-25	164	40%	-5%	17%
	1.13.3 : Computing Support/Information Systems	924	2976	3899	285	2525	2810	638	451	1089	69%	15%	28%
CSS Overhead Total		8033	8352	16385	8250	8012	16262	-217	340	123	-3%	4%	1%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
CSS Overhead	1.10.1 : Central Computing	4101	6921	11022	4447	3484	7932	-346	3437	3091	-8%	50%	28%
	1.10.3 : Computer Networking	2121	1361	3482	3233	1483	4717	-1113	-122	-1235	-52%	-9%	-35%
	1.12.1 : Buildings and Facilities	994	968	1962	284	519	803	710	449	1160	71%	46%	59%
	1.13.1 : Management/Supervision	1353	541	1894				1353	541	1894	100%	100%	100%
	1.13.3 : Computing Support/Information Systems	276	1520	1796	285	2525	2810	-9	-1005	-1014	-3%	-66%	-56%
CSS Overhead Total		8845	11312	20156	8250	8012	16262	595	3300	3895	7%	29%	19%

- End of year Tune IT Up $650K and purchase of Team center $500K – budget not moved into correct task codes for LWWBS match
- FY10 – MIS IT underpinnings moved to CSS (consolidation of IT)
  - And some CD Info sytems costs moved to G&A – e.g. ESHTRK, TRAIN
- FY10 – TD tech support added SWF of $684K
- Costs for ISO20K project, IT service management processes moved to correct LWWBS ?

IT PEMP/Accred/Compliance projects for FY10

- Move everyone to Exchange for email (DOE CAP)
- Teamcenter service (QA promise)
- Continue toward ISO20K certification and complete change of culture in IT service delivery – goal end C2010
- Tune IT up => fully managed desktops, in compliance
- FEC and contract H clause => governed procurement of IT
- Cyber security analysis and scanning infrastucture (partial)

IT layer SIPs, EOS we will not do

	$	$
requested	Driver	
ActLevel0	End of Service Life	Service Improvement Project
COMPUTER SECURITY AND POLICY		330,000
COMPUTING CENTERS PLANNING & OPERATIONS	362,000	699,000
CORE IT SERVICES	286,000	739,146
DATABASE SERVICES	158,000	40,000
DESKTOPS	4,200	76,000
NETWORKS	320,000	2,116,000
SERVICE DESK	2,750	50,000
STORAGE SERVICES	220,000	532,001
	1,352,950	4,582,147

- These are budget requests – not scrubbed – but they are unlikely to be able to be trimmed to less than 60%
- Some SIPs may not be worthy
  - Network ones are all – a robust network is essential to our future
- Storage services – no increase in capacity this year for IT part, except as provided through virtual servers

Facility Operations Costs

- No improvements will be done - just survival
- GCC Room A plans to refurbish on hold (can't retire the old nodes anyway)
- We get a new Computer Room (and no extra money to operate it) – why? every construction project has an operations phase.

G&A Overhead

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
G&A Overhead	1.10.3 : Computer Networking							0	0	0			
	1.13.3 : Computing Support/Information Systems	2340	3061	5401	1826	3360	5186	514	-298	215	22%	-10%	4%
	1.14.11 : Computing Support/Information Systems				3		3	-3	0	-3			
	1.14.8 : Management Systems	243	426	669	489	178	667	-246	248	2	-101%	58%	0%
G&A Overhead Total		2583	3487	6070	2317	3538	5855	265	-50	215	10%	-1%	4%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
G&A Overhead	1.13.1 : Management/Supervision	38		38				38	0	38	100%		100%
	1.13.3 : Computing Support/Information Systems				1826	3360	5186	-1826	-3360	-5186			
	1.14.11 : Computing Support/Information Systems				3		3	-3	0	-3			
	1.14.8 : Management Systems	2510	2531	5041	489	178	667	2021	2353	4374	81%	93%	87%
G&A Overhead Total		2547	2531	5078	2317	3538	5855	230	-1007	-777	9%	-40%	-15%

- New split of MIS/CD
- Most of the M&S is for Maintenance and Consultants

IM – EOL and PEMP/Accred/Compliance

- Finish FTL
- FLEET implementation (done)
- Peoplesoft – upgrade and reimplement rapidly (out of support early 2011)
  - Get proper support for roles, organisation, workforce planning, performance reviews and authoritative people and organization data. Fix broken onboarding and account processes
- TeamCenter implementation

More IM – EOL and PEMP/Accred/Compliance

- Outside evaluation of E-Business suite implementation to make upgrade plan (out of service late 2011 – and folks claim it will take almost all-hands one year just to upgrade to the current version)

Some of the IM – Projects in roadmap but not for this year

- iProcurement in full
- New Budget System
- Data Warehouse and Management Dashboard
- ES&H workflow automation, analysis tools, databases, upgrades to infra
- Integrated FESS databases, GIS, work processes
- Real use of Sharepoint for intranet workflows (forms), sharing

Governance and Steering Committee

- Wanted to have a portfolio of IM projects and get management and stakeholder input to
  - Prioritize
  - Share in ownership of business process improvements
- At the moment – unless we decide to stop one of the EOL or PEMP driven projects, we have no money to do more
- But we will proceed with Governance bodies and do planning

FS 10 05 Safeguards & Security - Cyber Security

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
FS 10 05 Safe	1.10.3 : Computer Networking	226	543	769	0	518	518	226	25	251	100%	5%	33%
FS 10 05 Safeguards & Security - Cyber Security Total		226	543	769	0	518	518	226	25	251	100%	5%	33%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
FS 10 05 Safe	1.10.3 : Computer Networking	216	569	785	0	518	518	215	51	267	100%	9%	34%
FS 10 05 Safeguards & Security - Cyber Security Total		216	569	785	0	518	518	215	51	267	100%	9%	34%

- Fenced funding – total all cyber security includes CSS funding
- Extra money at end of year $226K of M&S for improving our SPLUNK data mining capabilities
- Never know how much we will actually get – not enough for sure!
- Several SIPs will not be done

KA 11 02 02-3 EQU Proton Facilities Complex Support - Other

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 02-3	1.10.1 : Central Computing	568		568	562		562	5	0	5	1%		1%
	1.10.3 : Computer Networking	100		100	76		76	24	0	24	24%		24%
	1.13.3 : Computing Support/Information Systems	208		208	208		208	0	0	0	0%		0%
KA 11 02 02-3	EQU Proton Facilities Complex Support - Other T	875		875	846		846	29	0	29	3%		3%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 02-3	1.10.1 : Central Computing	80		80	562		562	-482	0	-482	-603%		-603%
	1.10.3 : Computer Networking				76		76	-76	0	-76			
	1.13.3 : Computing Support/Information Systems				208		208	-208	0	-208			
KA 11 02 02-3	EQU Proton Facilities Complex Support - Other T	80		80	846		846	-766	0	-766	-957%		-957%

- Only major non-expt purchase this year will be server for TeamCenter
- Possibly IT disks will need to be Equipment money – budgeted now on Operating
- Many EOS and SIP projects not funded – intend to force Virtualization and Consolidation
- Virtual Services may need to switch some money to Equipment also

KA 11 02 01-2 Proton Facilities - Detector Operations

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 01-2	1.10.1 : Central Computing	473	2659	3132	267	2558	2825	206	101	308	44%	4%	10%
	1.10.2 : PREP		99	99		115	115	0	-16	-16		-16%	-16%
	1.10.3 : Computer Networking	330	1622	1952	666	1280	1946	-336	342	6	-102%	21%	0%
	1.10.6 : Engineering Support		70	70		120	120	0	-50	-50		-71%	-71%
	1.13.1 : Management/Supervision	69		69				69	0	69	100%		100%
	1.2.3 : Run II Computing	1926	2070	3997	1763	2427	4191	163	-357	-194	8%	-17%	-5%
	1.5.2 : External Beamlines & Fixed Target Exps	13	38	51	8		8	5	38	42	35%	100%	83%
	1.6.1 : NuMI / MINOS	52	302	354	143	297	440	-92	6	-86	-178%	2%	-24%
	1.6.4 : MiniBooNE		31	31				0	31	31		100%	100%
	1.6.6 : MINERvA	48		48	38	78	117	9	-78	-69	20%		-145%
	1.6.8 : SciBooNE							0	0	0			
KA 11 02 01-2 Proton Facilities - Detector Operations Total		2910	6892	9802	2886	6876	9761	25	16	41	1%	0%	0%

		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 01-2	1.10.1 : Central Computing	389	1881	2271	267	2558	2825	123	-677	-554	32%	-36%	-24%
	1.10.2 : PREP		61	61		115	115	0	-54	-54		-90%	-90%
	1.10.3 : Computer Networking	776	1487	2264	666	1280	1946	111	207	318	14%	14%	14%
	1.10.4 : Computing DAQ/Online/R&D	36		36				36	0	36	100%		100%
	1.10.6 : Engineering Support		106	106		120	120	0	-14	-14		-13%	-13%
	1.2.3 : Run II Computing	1083	2842	3925	1763	2427	4191	-680	414	-266	-63%	15%	-7%
	1.5.2 : External Beamlines & Fixed Target Exps				8		8	-8	0	-8			
	1.6.1 : NuMI / MINOS	2	113	115	143	297	440	-142	-184	-325	-7599%	-163%	-283%
	1.6.4 : MiniBooNE		24	24				0	24	24		100%	100%
	1.6.6 : MINERvA		90	90	38	78	117	-38	12	-26		13%	-29%
	1.6.8 : SciBooNE		16	16				0	16	16		100%	100%
	1.6.9 : Other Neutrino Support	103	852	955				103	852	955	100%	100%	100%
KA 11 02 01-2 Proton Facilities - Detector Operations Total		2389	7472	9861	2886	6876	9761	-496	596	100	-21%	8%	1%

KA 11 02 02-2 EQU Proton Facilities Complex Support - Detector

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 02-2	1.10.1 : Central Computing	235		235	130		130	105	0	105	45%		45%
	1.10.3 : Computer Networking	625		625	689		689	-64	0	-64	-10%		-10%
	1.13.1 : Management/Supervision	50		50				50	0	50	100%		100%
	1.2.3 : Run II Computing	434		434	568		568	-134	0	-134	-31%		-31%
	1.6.1 : NuMI / MINOS	199		199	124		124	75	0	75	38%		38%
KA 11 02 02-2 EQU Proton Facilities Complex Support - Detecto		1543		1543	1511		1511	32	0	32	2%		2%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 02-2	1.10.1 : Central Computing	172		172	130		130	42	0	42	25%		25%
	1.10.3 : Computer Networking	643	268	910	689		689	-46	268	221	-7%	100%	24%
	1.2.3 : Run II Computing	1234		1234	568		568	665	0	665	54%		54%
	1.6.1 : NuMI / MINOS				124		124	-124	0	-124			
	1.6.9 : Other Neutrino Support	58		58				58	0	58	100%		100%
KA 11 02 02-2 EQU Proton Facilities Complex Support - Detecto		2106	268	2374	1511		1511	596	268	863	28%	100%	36%

- Not always easy to budget correctly between this category and the operating funds for Detector Operations

A Note on Networking

- Gets paid for in
  - Layer 1 – CSS and Detector Operations
  - Layer 2 – mostly Detector Operations and some Proton Research for some leading edge Wide area networking activities
- Is divided up into 6 OMB53 IT investments when submitted to DOE
  - Including one for Accelerator Networks

Networking

- This is a big site and a data intensive science. We have lots of EOL, EOS systems and physical infra.
  - Need to look to VOIP (TD new building is expecting it as a production service – it will not be!)
  - Much site fiber work to do –a lot of it lined out in this budget
  - Network infrastructure is expensive
- Working hard to become industry standard, but robust
- Had an outside assessment in FY09 of part of plan
  - Other labs are investing more I believe – we need to benchmark with them and with industry to understand better what we should be spending.

Fiber Types

Multi Mode Fiber

- OM1 – 10 Mb from 300 to 2000 meters
- OM2 - 1 Gb from 500 meters
- OM3 – 10 Gb from 300 meters standard, but some manufacturers go 550 meters
- OM3+ - 10 - 40 gigabit from 500 meters

Single Mode Fiber

- OS1 – 10 Gb from 10,000 meters
- OS2 – 10 Gb from 40,000 meters
- OS2 – 40 and 100 Gb from 10,000 meters

Fiber Types

Fiber Type	Name	Speed (Gb/s)	Distance (meters)
Multimode	OM1	<= 0.1	2,000
	OM2	1	220
	OM3	10	300
	OM3+	40	500
Single Mode	OS1	10	10,000
	OS2	10	40,000
		40 and 100	10,000

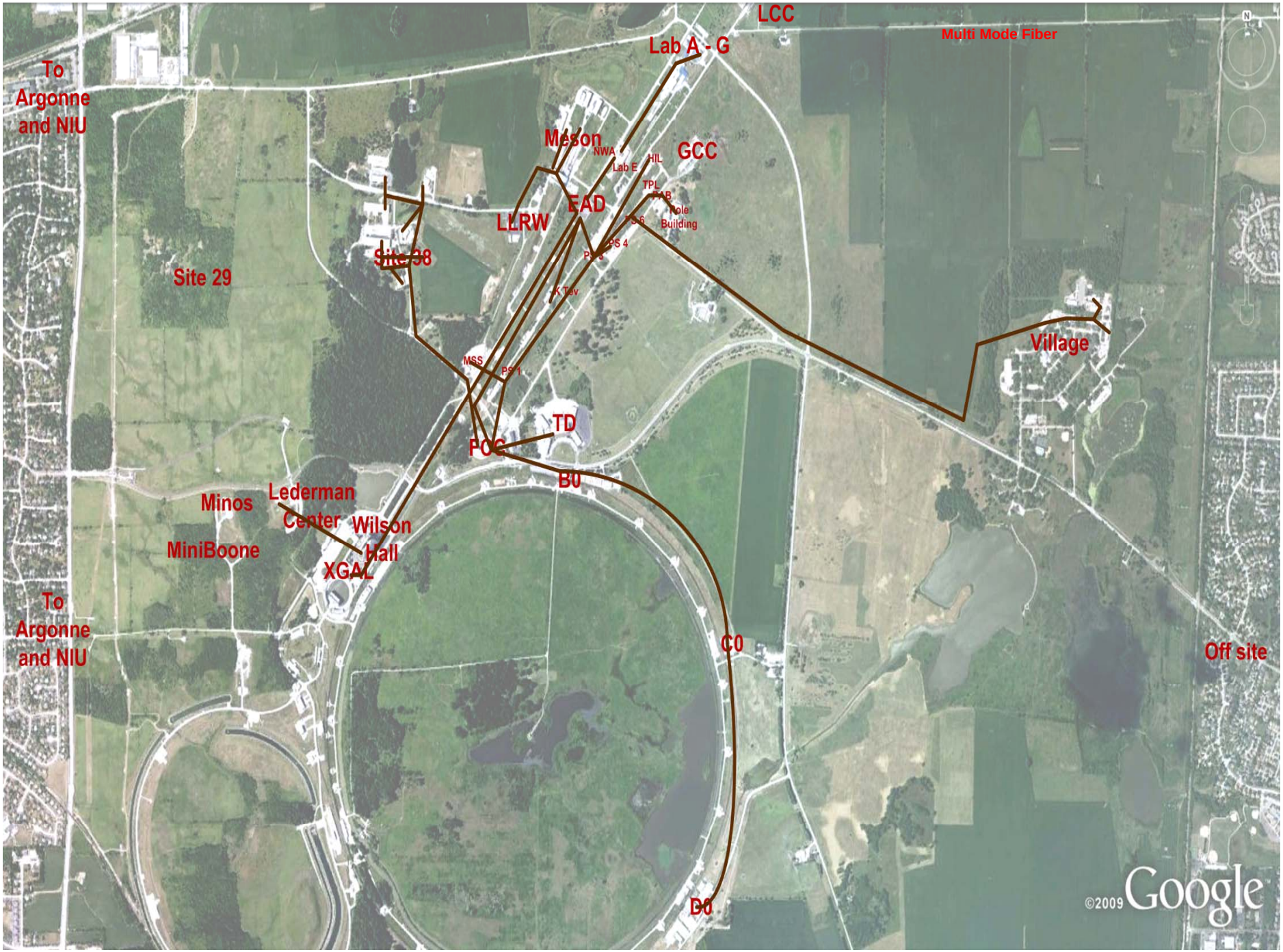
Upgrade aging inter-building cabling…

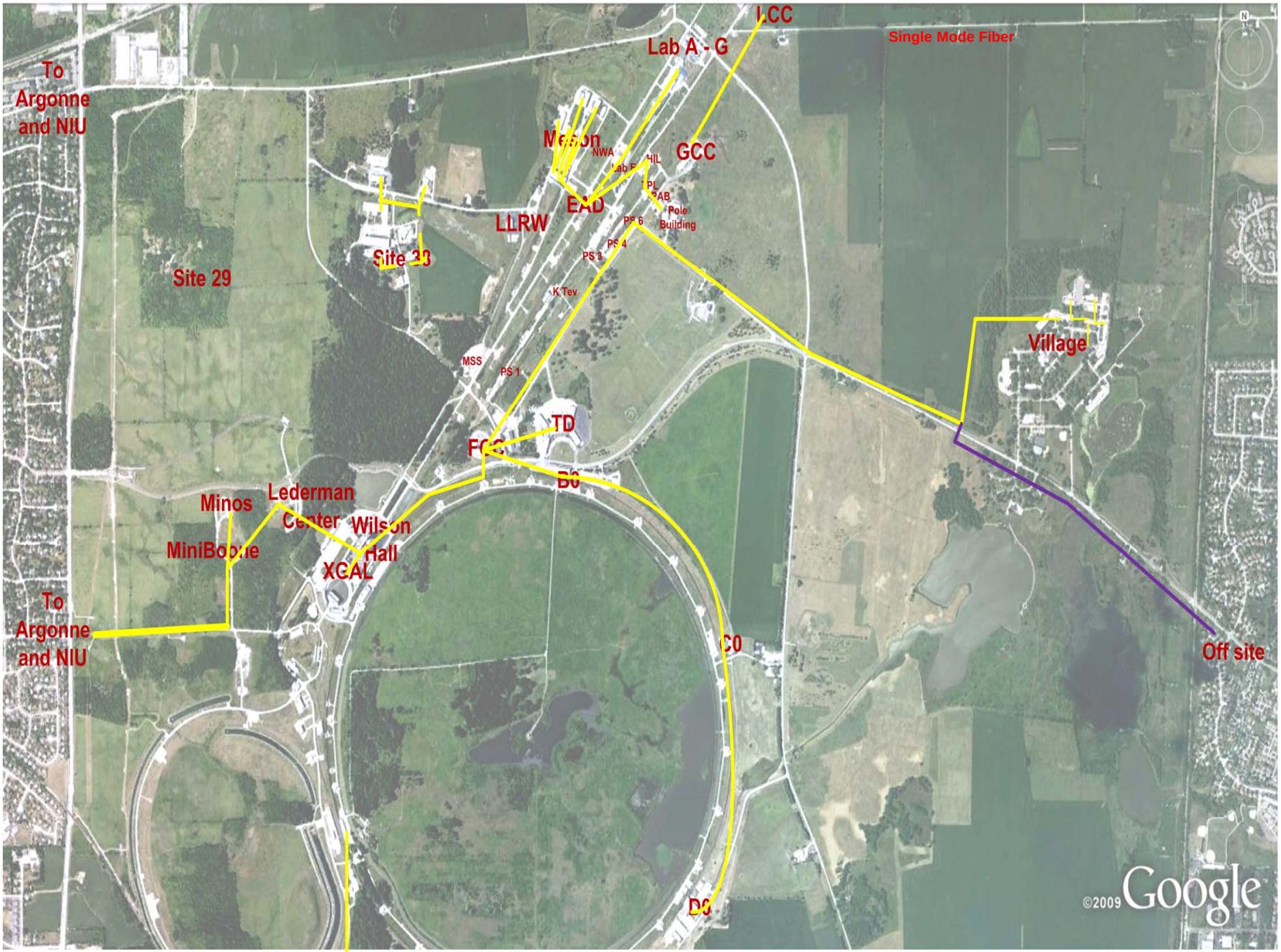
with new fiber cables: higher bandwidth and supports longer distances

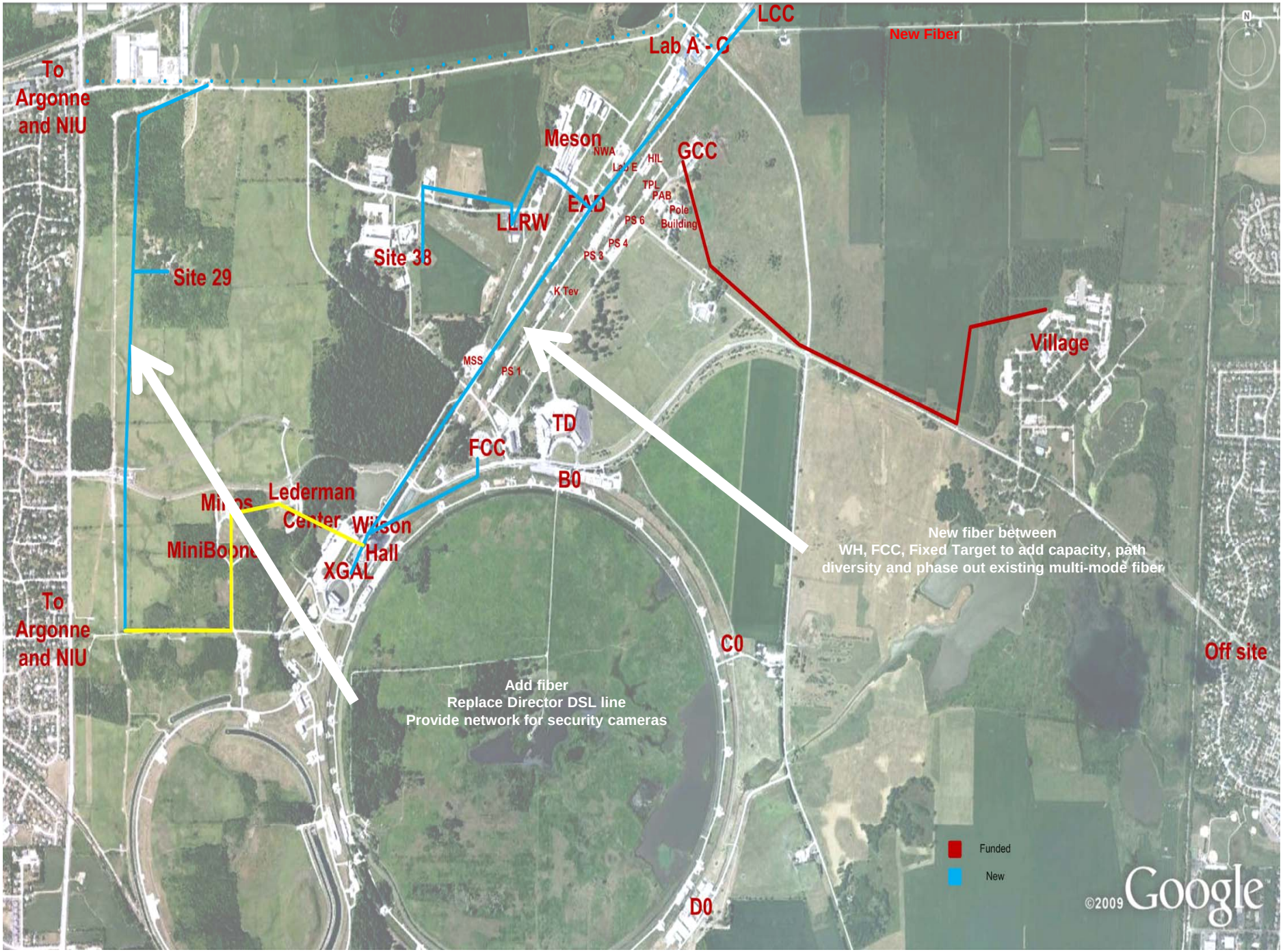
Experiment Requirements

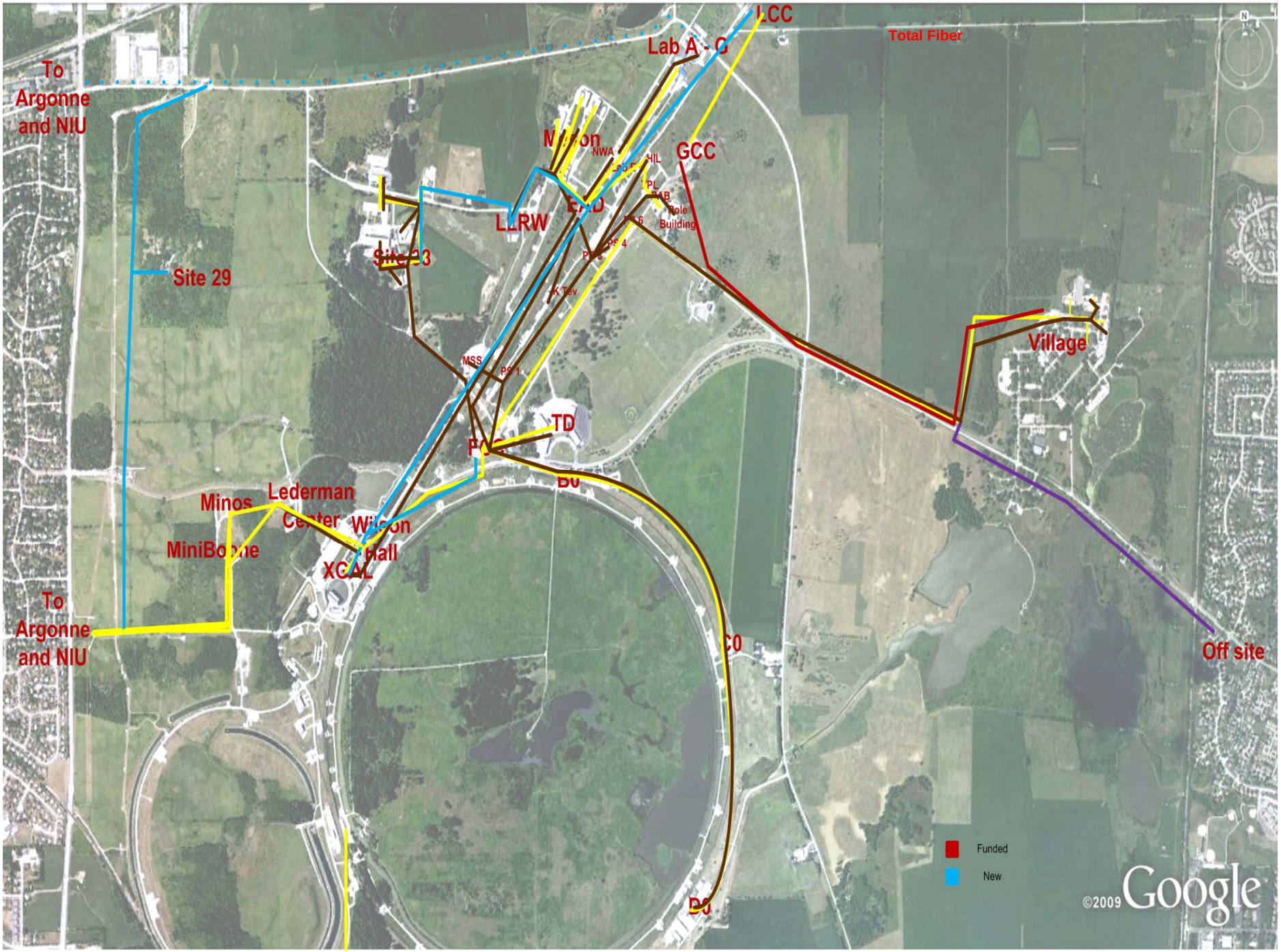
CMS	4.4Gb (440MB)	CERN to Fermi
	.5 - 5Gb (50MB – 500MB) 20 – 30 Gb Total	Fermi to each Tier 2
	20 – 40 Gb	GCC to FCC
Enstore	20 Gb	GCC to FCC
CDF	20 Gb	GCC to FCC
D0	20 Gb	GCC to FCC
FermiGrid	6 Gb	GCC to FCC
AD	TBD	XGAL to Fixed Target
E906	1 Gb	Fermi to offsite
E907	1 Gb	Meson to EAD
NOvA	2 – 4 Gb	to FCC/GCC


Fermilab
©2009 Google


LCC
Multi Mode Fiber
Lab A - G
To
Argonne
and NIU
Meson
NWA
Lab E
HIL
GCC
TPL
AB
Pole
Building
EAD
LLRW
Site 38
Site 29
PS 4
PS 3
K Tev
Village
MSS
PS 1
TD
FCC
B0
Minos
Lederman
Center
Wilson
Hall
MiniBoone
XGAL
To
Argonne
and NIU
C0
Off site
D0
©2009 Google


LCC
Lab A - G
Single Mode Fiber
To
Argonne
and NIU
GCC
NWA
EAD
LLRW
Site 33
Site 29
PS 6
Pole
Building
PS 4
PS 3
K Tev
Village
MSS
PS 1
TD
FCC
D0
Lederman
Minos
Center
Wilson
Hall
MiniBoone
XCAL
To
Argonne
and NIU
C0
Off site
D0
©2009 Google


To Argonne and NIU
Site 29
Site 38
LLRW
Meson
NWA
Lab E
HIL
GCC
TPL
PAB
Pole Building
EAD
PS 6
PS 4
PS 3
K Tev
LCC
Lab A - C
New Fiber
Village
MSS
PS 1
TD
FCC
B0
Lederman
Center
Wilson
Hall
XGAL
MiniBoone
To Argonne and NIU
C0
D0
Off site
Add fiber
Replace Director DSL line
Provide network for security cameras
New fiber between
WH, FCC, Fixed Target to add capacity, path diversity and phase out existing multi-mode fiber
Funded
New
©2009 Google


Total Fiber
LCC
Lab A - C
To Argonne and NIU
GCC
LLRW
Site 29
Village
TD
Minos
Lederman
Wilson Hall
MiniBoone
XCAL
To Argonne and NIU
Off site
Funded
New
©2009 Google

Run II Computing needs

- CDF and D0 expected to get a lot more money to upgrade their services, retire old nodes and servers, buy lots more disk for analysis
  - None of that happens in this budget
  - Only EOL replacements – nodes > 4 years
  - Small amount of disk and additional computer power
  - Required tapes and technology refresh on tape drives
- Within constraints on Project 50 and Detector Operations B&Rs plus need to support Intensity Frontier expts this is all that could be done
- Will force even more sharing of resources across programs, rather than dedicated Run II resources

CMS

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 05-5 CM	1.3.3 : CMS Software & Computing	2546	4221	6767	2438	3733	6171	108	488	596	4%	12%	9%
KA 11 02 05-5 CMS Detector and Computing Support Total		2546	4221	6767	2438	3733	6171	108	488	596	4%	12%	9%
KA 11 02 05-5 EQ	1.3.3 : CMS Software & Computing	4460		4460	4054		4054	406	0	406	9%		9%
KA 11 02 05-5 EQU CMS Detector and Computing Support Total		4460		4460	4054		4054	406	0	406	9%		9%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 05-5 CM	1.3.2 : CMS	8	637	645				8	637	645	100%	100%	100%
	1.3.3 : CMS Software & Computing	2204	4043	6247	2438	3733	6171	-233	310	76	-11%	8%	1%
KA 11 02 05-5 CMS Detector and Computing Support Total		2213	4680	6892	2438	3733	6171	-225	946	721	-10%	20%	10%
KA 11 02 05-5 EQ	1.3.3 : CMS Software & Computing	3634		3634	4054		4054	-420	0	-420	-12%		-12%
KA 11 02 05-5 EQU CMS Detector and Computing Support Total		3634		3634	4054		4054	-420	0	-420	-12%		-12%

- Believe all these numbers are in agreement with CMS Research Program
- Less manpower than FY09 - short funding
- Need a Scientist – Ian Fisk is going to CERN for 2 years

KA11 01 022 – new service type

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 01 022	1.10.1 : Central Computing							0	0	0			
	1.10.3 : Computer Networking	6	121	127		179	179	6	-57	-51	100%	-47%	-40%
	1.10.6 : Engineering Support							0	0	0			
	1.5.2 : External Beamlines & Fixed Target Exps		29	29		70	70	0	-42	-42		-144%	-144%
	1.5.3 : Other Experimental Initiatives	2	222	223	5	201	206	-3	20	17	-157%	9%	8%
	1.5.4 : Liquid Argon TPC R&D							0	0	0			
	1.5.6 : MU2E-placeholder		273	273		191	191	0	82	82		30%	30%
	1.5.7 :		78	78				0	78	78		100%	100%
	1.6.1 : NuMI / MINOS	2	128	130		13	13	2	115	117	100%	90%	90%
	1.6.4 : MiniBooNE							0	0	0			
	1.6.6 : MINERvA		27	27		9	9	0	19	19		68%	68%
KA 11 01 022	Proton Based Research - Ntl Lab Intensity Reseal	10	879	889	5	664	669	5	215	220	51%	24%	25%

		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 01 022	1.10.3 : Computer Networking	4	75	79		179	179	4	-104	-100	100%	-139%	-126%
	1.5.2 : External Beamlines & Fixed Target Exps		64	64		70	70	0	-6	-6		-10%	-10%
	1.5.3 : Other Experimental Initiatives	6	297	304	5	201	206	1	96	97	23%	32%	32%
	1.5.6 : MU2E-placeholder					191	191	0	-191	-191			
	1.6.1 : NuMI / MINOS					13	13	0	-13	-13			
	1.6.6 : MINERvA					9	9	0	-9	-9			
KA 11 01 022	Proton Based Research - Ntl Lab Intensity Reseal	11	436	447	5	664	669	6	-227	-222	54%	-52%	-50%

- Scientists salaries mainly and some WAN (for CMS work) split
- Not quite as much effort on new initiatives as hoped for
- Mu2e moved to another B&R for FY10

KA 11 01 021 Proton Based Research - Ntl Lab Energy Research

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 01 021	1.10.1 : Central Computing	169	1156	1325	148	1379	1527	22	-223	-202	13%	-19%	-15%
	1.10.13 : Conference/Workshop Support							0	0	0			
	1.10.3 : Computer Networking	352	236	588	279	467	746	73	-231	-158	21%	-98%	-27%
	1.10.4 : Computing DAQ/Online/R&D							0	0	0			
	1.13.1 : Management/Supervision							0	0	0			
	1.2.3 : Run II Computing	15	808	823	8	183	191	7	625	633	49%	77%	77%
	1.3.1 : LHC Accelerator	22	74	96	4	30	34	19	44	62	84%	59%	65%
	1.3.3 : CMS Software & Computing	161	935	1096	42	720	762	119	215	334	74%	23%	30%
	1.5.3 : Other Experimental Initiatives	2		2	0		0	2	0	2	90%		90%
KA 11 01 021	Proton Based Research - Ntl Lab Energy Researc	722	3209	3931	480	2779	3259	242	430	672	34%	13%	17%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 01 02 P	1.13.1 : Management/Supervision	-100		-100				-100	0	-100			
KA 11 01 02	Proton Based Research - National Lab Research T	-100		-100				-100	0	-100			
KA 11 01 021	1.10.1 : Central Computing	166	1760	1927	148	1379	1527	19	381	400	11%	22%	21%
	1.10.3 : Computer Networking	91	391	483	279	467	746	-188	-76	-264	-206%	-19%	-55%
	1.2.3 : Run II Computing	5	298	303	8	183	191	-3	115	113	-51%	39%	37%
	1.3.1 : LHC Accelerator		8	8	4	30	34	-4	-22	-26		-260%	-302%
	1.3.3 : CMS Software & Computing	87	755	842	42	720	762	45	35	80	51%	5%	9%
	1.5.3 : Other Experimental Initiatives				0		0	0	0	0			
KA 11 01 021	Proton Based Research - Ntl Lab Energy Researc	349	3214	3563	480	2779	3259	-130	434	304	-37%	14%	9%

KA 13 01 02 Non-Accelerator Based Physics Research

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 13 01 02	1.10.1 : Central Computing							0	0	0			
	1.5.3 : Other Experimental Initiatives		104	104		84	84	0	20	20		19%	19%
	1.8.2 : Astrophysics Theory		118	118		139	139	0	-21	-21		-18%	-18%
	1.9.1 : SDSS	41	489	530	29	587	615	12	-98	-86	30%	-20%	-16%
	1.9.2 : CDMS		18	18		23	23	0	-5	-5		-29%	-29%
	1.9.3 : Pierre Auger	1	73	74		87	87	1	-14	-12	100%	-19%	-17%
	1.9.4 : Dark Energy R&D		303	303	47	100	147	-47	203	156		67%	51%
	1.9.5 : JDEM		307	307	31	147	178	-31	160	129		52%	42%
	1.9.6 : Dark Energy Survey	19	362	381	30	383	413	-11	-21	-32	-60%	-6%	-8%
	1.9.7 : Chicago Observatory for Underground Part	4	114	118	4	63	67	0	51	52	11%	45%	44%
KA 13 01 02	Non-Accelerator Based Physics Research Total	65	1888	1953	141	1613	1753	-75	275	200	-115%	15%	10%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 13 01 02	1.5.3 : Other Experimental Initiatives	6	140	146		84	84	6	57	62	100%	40%	43%
	1.8.2 : Astrophysics Theory		49	49		139	139	0	-91	-91		-186%	-186%
	1.9.1 : SDSS	36	520	556	29	587	615	7	-66	-60	19%	-13%	-11%
	1.9.2 : CDMS		18	18		23	23	0	-4	-4		-23%	-23%
	1.9.3 : Pierre Auger	1	88	89		87	87	1	2	3	100%	2%	3%
	1.9.4 : Dark Energy R&D	22	171	193	47	100	147	-25	71	46	-115%	42%	24%
	1.9.5 : JDEM	36	172	207	31	147	178	5	24	29	14%	14%	14%
	1.9.6 : Dark Energy Survey	15	497	512	30	383	413	-15	114	99	-101%	23%	19%
	1.9.7 : Chicago Observatory for Underground Particle Exp		146	146	4	63	67	-4	83	80		57%	54%
KA 13 01 02	Non-Accelerator Based Physics Research Total	115	1802	1918	141	1613	1753	-25	190	165	-22%	11%	9%

More Astrophysics stuff

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 13 01 032	1.10.4 : Computing DAQ/Online/R&D							0	0	0			
	1.9.5 : JDEM	47	298	346	75	319	394	-28	-21	-48	-58%	-7%	-14%
KA 13 01 032	Non-Accelerator Based Physics Future Projects T	47	298	346	75	319	394	-28	-21	-48	-58%	-7%	-14%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 13 01 03-1	1.9.6 : Dark Energy Survey	120	189	309				120	189	309	100%	100%	100%
KA 13 01 03-1	EQU81SA DECam MIE Total	120	189	309				120	189	309	100%	100%	100%
KA 13 01 032	1.9.5 : JDEM	172	218	390	75	319	394	97	-101	-4	56%	-46%	-1%
KA 13 01 032	Non-Accelerator Based Physics Future Projects T	172	218	390	75	319	394	97	-101	-4	56%	-46%	-1%
KA 13 01 032	1.9.1 : SDSS	20	30	50				20	30	50	100%	100%	100%
KA 13 01 032	Non-Accelerator Based Physics Future Projects A	20	30	50				20	30	50	100%	100%	100%

- DECam work was done in FY09 but charged somewhere else ?
- JDEM in FY10 represents the money we don't yet have from LBL for the Science Operations Center pre-project R&D
- SDSS is ARC funding of $50K/year for SDSS data archives

Nova Project

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 11 02 03-3	(blank)		825	825				0	825	825		100%	100%
KA 11 02 03-3	EQU 71RF NOvA MIE Total		825	825				0	825	825		100%	100%

- Some is really in Nova OPC
- Budgeted Labor costs for Nova differ from the June guess (guidance not available) and the updated guidance (most recent Friday) of $1.2M
- We believe we are going to do what Nova wants and needs
- We believe the Nova WBS has not caught up with reality

KA 15 03 02 Detector Develop

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 15 03 02 F	1.10.1 : Central Computing					65	65	0	-65	-65			
	1.10.3 : Computer Networking							0	0	0			
	1.10.4 : Computing DAQ/Online/R&D	79	30	109	23	30	53	56	0	56	71%	1%	52%
	1.10.6 : Engineering Support		136	136	2	192	194	-2	-56	-58		-41%	-43%
	1.13.2 : General Purpose Equipment and Support							0	0	0			
	1.5.1 : Future Kaons							0	0	0			
	1.5.3 : Other Experimental Initiatives				10	37	47	-10	-37	-47			
	1.5.5 : Linear Collider Detector							0	0	0			
	1.9.4 : Dark Energy R&D	30		30	0	0	0	30	0	30	100%		101%
	1.9.7 : Chicago Observatory for Underground Particle Exp		181	181		85	85	0	97	97		53%	53%
KA 15 03 02 Future Physics - Detector Development Total		109	347	456	34	409	443	74	-61	13	69%	-18%	3%

		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 15 03 02 F	1.10.1 : Central Computing					65	65	0	-65	-65			
	1.10.4 : Computing DAQ/Online/R&D				23	30	53	-23	-30	-53			
	1.10.6 : Engineering Support		430	430	2	192	194	-2	238	236		55%	55%
	1.5.3 : Other Experimental Initiatives	3	61	64	10	37	47	-7	24	17	-237%	39%	26%
	1.9.4 : Dark Energy R&D				0	0	0	0	0	0			
	1.9.7 : Chicago Observatory for Underground Particle Experiments					85	85	0	-85	-85			
KA 15 03 02 Future Physics - Detector Development Total		3	491	493	34	409	443	-31	82	51	-1109%	17%	10%

- This has been coordinated with Peter Wilson and PPD
- There is $120K of M&S that has got lost in the shuffle that was agreed to – it makes my bottom line $120K worse I believe

KA140102 Theory

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 14 01 02 E	1.8.3 : Lattice Gauge Theory Computing							0	0	0			
KA 14 01 02 EQU	Theoretical Physics Research Total							0	0	0			
KA 14 01 02 T	1.8.1 : Particle Theory		48	48	0	32	32	0	16	16		34%	33%
	1.8.3 : Lattice Gauge Theory Computing	40	363	403	38	449	486	3	-86	-83	7%	-24%	-21%
KA 14 01 02	Theoretical Physics Research Total	40	411	452	38	481	518	3	-69	-67	7%	-17%	-15%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 14 01 02 T	1.8.1 : Particle Theory				0	32	32	0	-32	-32			
	1.8.2 : Astrophysics Theory	5	166	171				5	166	171	100%	100%	100%
	1.8.3 : Lattice Gauge Theory Computing	23	335	358	38	449	486	-14	-114	-128	-61%	-34%	-36%
KA 14 01 02	Theoretical Physics Research Total	28	501	530	38	481	518	-9	21	11	-33%	4%	2%

- FY09 1 mistaken SWF (from Accelerator Theorist) not fully cleaned up
- Need to look at this in conjunction with the next slides. This is both our host lab support for the national LQCD facility and also computing support for our local Theory/Lattice QCD program
- For FY10 Computational Cosmology support is moving into this B&R

SciDAC – LQCD and other

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 14 01 03 T	1.10.3 : Computer Networking	44	415	459	45	410	454	-1	6	5	-1%	1%	1%
	1.7.6 : Advanced Accelerator Concepts - Comput	15	386	401	7	237	244	8	149	157	54%	39%	39%
	1.8.3 : Lattice Gauge Theory Computing		65	65		39	39	0	26	26		40%	40%
KA 14 01 03 Theoretical Physics - SCIDAC Total		59	866	926	52	686	737	8	180	188	13%	21%	20%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 14 01 03 T	1.10.3 : Computer Networking	60	577	637	45	410	454	15	167	183	26%	29%	29%
	1.7.6 : Advanced Accelerator Concepts - Comput	31	310	341	7	237	244	24	73	96	77%	24%	28%
	1.8.3 : Lattice Gauge Theory Computing		133	133		39	39	0	93	93		71%	71%
KA 14 01 03 Theoretical Physics - SCIDAC Total		91	1020	1110	52	686	737	39	334	373	43%	33%	34%

- Mixes Lattice QCD, Accelerator Modeling an Open Science Grid all in one funding pot
- Each of them has several other source to make a coherent program of work
- We are not assured of any of this money – budget is a best guess and may well overestimate labor for these Fenced funding project – will be an overrun on Project 50 SWF

KA140103 and 04 Lattice various

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 14 01 04 E	1.8.3 : Lattice Gauge Theory Computing	24		24	25		25	-1	0	-1	-4%		-4%
KA 14 01 04 EQU	Theoretical Physics - Other Total	24		24	25		25	-1	0	-1	-4%		-4%
KA 14 01 04 T	1.10.3 : Computer Networking		-3	-3		-5	-5	0	2	2			
	1.8.3 : Lattice Gauge Theory Computing				0		0	0	0	0			
KA 14 01 04	Theoretical Physics - Other Total		-3	-3	0	-5	-5	0	2	2			
KA 14 01 05 C	1.8.3 : Lattice Gauge Theory Computing	20	264	284	9	262	272	10	2	12	52%	1%	4%
KA 14 01 05	Computational HEP (Lattice Gauge) Total	20	264	284	9	262	272	10	2	12	52%	1%	4%
KA 14 01 05 E	1.8.3 : Lattice Gauge Theory Computing	678		678	648		648	30	0	30	4%		4%
KA 14 01 05 EQU	Computational HEP (Lattice Gauge) Total	678		678	648		648	30	0	30	4%		4%

		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 14 01 04 E	1.8.3 : Lattice Gauge Theory Computing				25		25	-25	0	-25			
KA 14 01 04 EQU	Theoretical Physics - Other Total				25		25						
KA 14 01 04 T	1.10.3 : Computer Networking					-5	-5						
	1.8.3 : Lattice Gauge Theory Computing				0		0						
KA 14 01 04	Theoretical Physics - Other Total				0	-5	-5						
KA 14 01 05 C	1.8.3 : Lattice Gauge Theory Computing	127	444	572	9	262	272	118	182	300	93%	41%	52%
KA 14 01 05	Computational HEP (Lattice Gauge) Total	127	444	572	9	262	272	118	182	300	93%	41%	52%
KA 14 01 05 E	1.8.3 : Lattice Gauge Theory Computing	1600		1600	648		648	952	0	952	59%		59%
KA 14 01 05 EQU	Computational HEP (Lattice Gauge) Total	1600		1600	648		648	952	0	952	59%		59%

- US Lattice QCD Facilities project and operations of the facility
- Also Project Management - 0.75 FTE – for OMB300 (onerous)
- We don't know the funding levels yet - guessing

KA 15 02 01 Acclerator

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 15 02 01-1	1.10.1 : Central Computing	31	467	498	26	266	293	4	201	205	14%	43%	41%
	1.10.6 : Engineering Support	125	172	297	137	133	270	-12	39	27	-10%	23%	9%
	1.7.6 : Advanced Accelerator Concepts - Comput	14	179	193	5	175	180	9	5	13	62%	3%	7%
	1.7.8 : Superconducting RF Module Test Facility							0	0	0			
KA 15 02 01-1	Future Physics - General Accelerator Total	169	818	987	169	574	742	0	245	245	0%	30%	25%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 15 02 01-1	1.1.2 : Accelerator Upgrades	58	117	175				58	117	175	100%	100%	100%
	1.10.1 : Central Computing	19	359	378	26	266	293	-7	93	86	-36%	26%	23%
	1.10.6 : Engineering Support	121	34	154	137	133	270	-16	-99	-115	-13%	-296%	-75%
	1.7.6 : Advanced Accelerator Concepts - Comput	1		1	5	175	180	-4	-175	-179	-636%		-25577%
KA 15 02 01-1	Future Physics - General Accelerator Total	199	509	708	169	574	742	30	-64	-34	15%	-13%	-5%

- The General Accelerator part pays for our Accelerator Modeling tools and Accelerator Science people (those parts not paid on other projects or SciDAC)
- ? Mixed with some engineering - - ?

KA 15 02 01 Accelerator R&D

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 15 02 01-2	1.7.8 : Superconducting RF Module Test Facility							0	0	0			
KA 15 02 01-2	Future Physics - SRF Total							0	0	0			
KA 15 02 02-1	1.7.4 : Linear Collider		83	83		83	83	0	0	0		0%	0%
	1.7.8 : Superconducting RF Module Test Facility							0	0	0			
KA 15 02 02-1	Future Physics - Linear Collider Total		83	83		83	83	0	0	0		0%	0%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KA 15 02 01-2	1.7.8 : Superconducting RF Module Test Facility	12	145	157				12	145	157	100%	100%	100%
KA 15 02 01-2	Future Physics - SRF Total	12	145	157				12	145	157	100%	100%	100%

- After 20 emails we think we have this right
- But not yet correctly split between 18.1 and 18.2 codes
- All engineering support for LLRF, SRF, NML, etc

More bits of Lattice and SciDAC

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KB 03 01 02 N	1.8.3 : Lattice Gauge Theory Computing		9	9	0	9	9	0	0	0		5%	2%
KB 03 01 02	Nuclear Physics - Theory, National Laboratory Research T		9	9	0	9	9	0	0	0		5%	2%
KB 03 01 05-2	1.10.3 : Computer Networking							0	0	0			
	1.8.3 : Lattice Gauge Theory Computing	15	169	184	8	158	166	7	11	18	44%	7%	10%
KB 03 01 05-2	Nuclear Physics SciDAC Total	15	169	184	8	158	166	7	11	18	44%	7%	10%
		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KB 03 01 02 N	1.8.3 : Lattice Gauge Theory Computing	10		10	0	9	9	10	-9	1	97%		10%
KB 03 01 02	Nuclear Physics - Theory, National Laboratory Res	10		10	0	9	9	10	-9	1	97%		10%
KB 03 01 05-2	1.8.3 : Lattice Gauge Theory Computing	12	159	171	8	158	166	4	1	4	30%	0%	2%
KB 03 01 05-2	Nuclear Physics SciDAC Total	12	159	171	8	158	166	4	1	4	30%	0%	2%

- Nuclear Physics money to add to the other 5 funding pots (and manage as a coherent program)

ASCR – cats and dogs

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KJ 01 01 03	1.10.1 : Central Computing		6	6	0	6	6	0	0	0		3%	1%
KJ 01 01 03 Total			6	6	0	6	6	0	0	0		3%	1%
KJ 01 01 04 A	1.10.1 : Central Computing	2	67	68	1	65	66	0	2	2	24%	2%	3%
	1.10.3 : Computer Networking	7	80	87		16	16	7	64	71	100%	80%	81%
KJ 01 01 04 Advanced Scientific Computing Research (ASCR) - Next Ge		9	147	155	1	81	83	7	65	73	86%	45%	47%
KJ 01 02 Adva	1.10.1 : Central Computing							0	0	0			
	1.10.3 : Computer Networking	18	63	81	5	68	73	13	-5	8	70%	-8%	10%
KJ 01 02 Advanced Scientific Computing Research (ASCR) - High Perfor		18	63	81	5	68	73	13	-5	8	70%	-8%	10%
KJ 04 02 Adva	1.14.1 : Management/Supervision	11	40	51		45	45	11	-5	6	100%	-13%	11%
KJ 04 02 Advanced Scientific Computing Research (ASCR) - Computer S		11	40	51		45	45	11	-5	6	100%	-13%	11%
KJ 04 04 Adva	1.10.1 : Central Computing		68	68				0	68	68		100%	100%
	1.10.3 : Computer Networking	30	45	75		1	1	30	44	74	100%	99%	99%
KJ 04 04 Advanced Scientific Computing Research (ASCR) - Next Gener		30	113	143		1	1	30	112	142	100%	99%	100%
KJ 05 04 Adva	1.10.3 : Computer Networking	18	67	85	10	54	63						
KJ 05 04 Advanced Scientific Computing Research (ASCR) - High Perfor		18	67	85	10	54	63						

		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
KJ 01 01 03	1.10.1 : Central Computing				0	6	6	0	-6	-6			
KJ 01 01 03 Total					0	6	6	0	-6	-6			
KJ 01 01 04 A	1.10.1 : Central Computing	3	70	73	1	65	66	1	5	6	51%	7%	9%
	1.10.3 : Computer Networking		43	43		16	16	0	27	27		62%	62%
KJ 01 01 04 Advanced Scientific Computing Research (ASCR) - Next Ge		3	113	116	1	81	83	1	32	33	51%	28%	29%
KJ 01 02 Adva	1.10.3 : Computer Networking				5	68	73						
KJ 01 02 Advanced Scientific Computing Research (ASCR) - High Performance Computing and					5	68	73						
KJ 04 02 Adva	1.14.1 : Management/Supervision					45	45						
KJ 04 02 Advanced Scientific Computing Research (ASCR) - Computer Sciences Research Total						45	45						
KJ 04 04 Adva	1.10.3 : Computer Networking	29	332	360		1	1						
KJ 04 04 Advanced Scientific Computing Research (ASCR) - Next Gener		29	332	360		1	1	29	331	360	100%	100%	100%
KJ 05 04 Adva	1.10.3 : Computer Networking	18	43	61	10	54	63	8	-10	-2	47%	-24%	-3%
KJ 05 04 Advanced Scientific Computing Research (ASCR) - High Perfor		18	43	61	10	54	63	8	-10	-2	47%	-24%	-3%

More cats and dogs

B&R	LWWBS	FY09 Budget			FY09 Actuals			diff FY09 Budget - Actual			% diff FY09 Budget - Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
40 04 03 30-9-	1.10.3 : Computer Networking							0	0	0			
	1.9.1 : SDSS				3		3	-3	0	-3			
40 04 03 30-9-3Y App Program 40 Work for Others Total					3		3	-3	0	-3			
40 04 09 90-0	1.9.1 : SDSS							0	0	0			
40 04 09 90-0 Program 40 Work for Others Total								0	0	0			
KA 11 02 01-1	1.1.1 : Accelerator Maintenance and Operations		23	23		16	16	0	7	7		31%	31%
	1.1.2 : Accelerator Upgrades					84	84	0	-84	-84			
KA 11 02 01-1 Proton Facilities - Accelerator Operations Total			23	23		100	100	0	-77	-77		-337%	-337%

		FY10 Budget			FY09 Actuals			diff FY10 Budget - FY09 Actual			% diff FY10 Budget - FY09 Actual		
		M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total	M&S	SWF	Total
40 04 03 30-9-	1.9.1 : SDSS				3		3	-3	0	-3			
40 04 03 30-9-3Y App Program 40 Work for Others Total					3		3	-3	0	-3			
Accounts Rec	(blank)	58	229	287				58	229	287	100%	100%	100%
Accounts Receivable Total		58	229	287				58	229	287	100%	100%	100%
HQ 10 01 Offic	1.14.17 : ES&H		1	1				0	1	1		100%	100%
HQ 10 01 Office of Health, Safety & Security - Worker Advocacy Total			1	1				0	1	1		100%	100%
KA 11 02 08 C	1.14.1 : Management/Supervision		150	150				0	150	150		100%	100%
KA 11 02 08 Other Facility Activities Total			150	150				0	150	150		100%	100%
KA 11 02 01-1	1.1.1 : Accelerator Maintenance and Operations		4	4		16	16	0	-12	-12		-298%	-298%
	1.1.2 : Accelerator Upgrades					84	84	0	-84	-84			
KA 11 02 01-1 Proton Facilities - Accelerator Operations Total			4	4		100	100						

- NEES project on ARRA money from University
- Stop charging Accel for repairs, help - silly

Conclusions

- CD can live with this budget if that is what the lab needs us to do but
  - CDF and D0 will be VERY unhappy and it MAY really affect science output – have to watch it carefully
    - And then decide what to give up in the EOL, PEMP, Compliance, Service Infrastructure category
  - Some EOS may turn into EOL
  - Slow progress on IPs that need to move fast to make the lab more efficient

Priorities for additional funding

1. Senior hires for IT Services Manager, and IM transformation projects ($300K)
2. CMS Scientist to keep CMS afloat (?)
3. Help with missing SWF that assumes significant losses in staff and posted openings to be pulled down ($300+400K)
4. CDF and D0 additional equipment to enable extra resources for analysis and keeping up with production. ($800K)
5. Network Infrastructure - $1M
6. Accelerate IT consolidation (of services) - to save money sooner - $1M
7. Tackle one more Information System project - TBD $500K

FY09 carryover

- There was no M&S carryover - $120K and that was already in a RIP
- Would have like to use the SWF $400K if I'd known about it (rebate)