

BSSB PULSE SHIFT SCENARIOS

Beam Destination	BSSB Scenario #	BSSB State #	Description (30 Total)	Beam Permits																Beam Switches								Necessary (& Rltd) Events	Notes								
				LU	LD	NTF	MTA	BO	L3	BDS	MB	MI	RR	MU	P1	P2	SW	NM	MS	L	MTA	B	MB	R	MU	MI	SW			NM							
400 MeV Dump	L1	1	Linac 400 MeV Studies	1	1	0	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1	1	x	x	x	x	x	x	x	x	11 0A	Linac Studies - non-HEP Pulse Shift
MTA	L2	2	MTA 400 MeV Studies	1	1	0	1	x	x	x	x	x	x	x	x	x	x	x	1	x	1	x	x	x	x	x	1	x	1	x	x	x	x	x	x	11 03 04	MTA Linac Studies - non-HEP Pulse Shift
Booster Scenarios																																					
Booster Dump	B1	10	Booster Studies	1	1	0	x	1	x	x	x	x	x	x	x	x	x	x	1	x	x	1	x	x	x	x	x	x	x	x	x	x	x	x	17	Beam to Booster Dump.	
Booster Dump	B2	*	Booster Studies	1	1	0	x	1	1	0	x	x	x	x	x	x	x	x	1	x	x	1	x	x	x	x	x	x	x	x	x	x	x	x	13+14+15+16+19+1C+1D	Beam to Booster Dump.	
MB TGT	B3	11	Protons B->MB	1	1	0	x	1	0	1	1	x	x	x	x	x	x	x	1	x	x	x	1	x	x	x	x	x	x	x	x	x	x	1D BF	Beam to MiniBooNE		
RR Scenarios																																					
RR ABT	R1	20	Recycler Studies (\$E0)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	x	1	x	x	x	x	x	x	x	x	x	E0 13+15+19+1C+14+16 BE /DE	Recycler study beam to RR Abort		
RR ABT	R2	21	Recycler Tuneup (\$E1)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	x	1	x	x	x	x	x	x	x	x	x	E1 13+14+15+16+19+1C BE /DE	Recycler Tuneup to RR Abort for \$29 & \$2B Study Beam		
RR ABT	R3	22	Recycler Tuneup (\$E2)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	x	1	x	x	x	x	x	x	x	x	x	E2 13+16 BE /DE	Recycler Tuneup to RR Abort for \$20 & \$21 Beam		
RR ABT	R4	23	Recycler Tuneup (\$E3)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	x	1	x	x	x	x	x	x	x	x	x	E3 19+15 BE /DE	Recycler Tuneup to RR Abort for \$2A Beam		
RR ABT	R5	24	Recycler Tuneup (\$E9)	1	1	0	x	1	0	1	x	x	1	x	x	x	x	x	1	x	x	x	x	1	x	x	x	x	x	x	x	x	x	E9 1C+14 BE /90 /91 /93 /94 /DE	Recycler Tuneup to RR Abort for 8 GeV Beam to Muon		
MI Scenarios																																					
MI ABT	M1	30	MI \$21 Cycle w/o RR tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	x	x	x	x	x	x	21 13+16 /E2 /30 BF	MI Tuneup to MI Abort for \$21 Beam without Recycler		
MI ABT	M2	31	MI \$20 Cycle w/o RR tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	x	x	x	x	x	x	20 13+16 /E2 /30 BF	MI Tuneup to MI Abort for \$20 Beam without Recycler		
MI ABT	M3	32	MI \$23 Cycle tuneup	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	x	x	x	x	x	x	23 19+15 /A5 BF	MI Tuneup to MI Abort for \$23 Beam		
MI ABT	M4	33	MI Studies Cycle with RR \$E3	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	x	x	x	x	x	1	x	x	(20+21+23+29+2A+2B+2D+2E) 19+15 E3 BE DE /A5				MI Studies to MI Abort with Recycler \$E3					
MI ABT	M5	34	MI \$2D Studies	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	2D 13+14+15+16+19+1C BF /E9 /93				MI Studies to MI Abort					
MI ABT	M6	35	MI Studies Cycle with RR \$E1	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	x	x	x	x	x	1	x	x	(20+21+23+29+2A+2B+2D+2E) 13+15+19+1C+14+16 E1 BE DE				MI Studies to MI Abort with Recycler \$E1					
MI ABT	M6a	36	MI \$29 Studies w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	29 13+14+15+16+19+1C BF /E1 /80				MI Studies to MI Abort					
MI ABT	M7a	38	MI \$2B Studies w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	2B 13+15+19+1C BF /E1				MI Studies to MI Abort					
MI ABT	M8	39	MI \$2E Studies	1	1	0	x	1	0	1	x	1	x	x	x	x	x	x	1	x	x	x	x	x	1	x	x	2E 13+14+15+16+19+1C BF				MI Studies to MI Abort					
MI ABT	M9	40	MI Studies Cycle with RR \$E2	1	1	0	x	1	0	1	x	1	1	x	x	x	x	x	1	x	x	x	x	x	1	x	x	(20+21+23+29+2A+2B+2D+2E) 13+16 E2 BE DE /30 /32				MI Studies to MI Abort with Recycler \$E2					
Muon Scenarios																																					
Muon	MN1	50	8 GeV Protons to Muon target via RR	1	1	0	x	1	0	1	x	x	1	1	1	1	x	x	1	x	x	x	x	1	x	x	x	E9 1C+14 93+94 BE /DE				8 GeV Protons to Muon via Recycler					
Muon	MN2	51	8 GeV Protons to Muon via MI	1	1	0	x	1	0	1	x	1	x	1	1	1	x	x	1	x	x	x	x	1	x	x	x	2D 1C 85 BF				8 GeV Protons to Muon via MI					
Muon	MN3	52	Non 8 GeV Protons to Muon	1	1	0	x	1	0	1	x	1	x	1	1	1	x	x	1	x	x	x	x	1	x	x	x	29 14 80 BF /E1				MI Ramped Protons to Muon					
Muon	MN4	53	8 GeV Protons to Muon (around target) via RR	1	1	0	x	1	0	1	x	x	1	1	1	1	x	x	1	x	x	x	x	1	x	x	x	E9 1C+14 90+91 BE /DE				8 GeV Protons to Muon via Recycler					
NuMI/NOvA Scenarios																																					
NuMI TGT	N1	60	NuMI/NOvA Protons with RR	1	1	0	x	1	0	1	x	1	1	x	x	x	x	1	1	x	x	x	x	x	x	1	(2A) 15+19 A5 E3 BE DE				NOvA						
NuMI TGT	N2	61	NuMI/NOvA Protons w/o RR	1	1	0	x	1	0	1	x	1	x	x	x	x	x	1	1	x	x	x	x	x	x	1	23 15+19 A5 BF				NUMI						
SWYD Scenarios																																					
SWYD	S1	70	SWYD Protons w/o RR	1	1	0	x	1	0	1	x	1	x	x	1	1	1	x	1	x	x	x	x	1	x	x	21 13+16 30 BF /E2				120GeV FT - Long Flattop without RR						
SWYD	S3	72	SWYD Protons with RR	1	1	0	x	1	0	1	x	1	1	x	1	1	1	x	1	x	x	x	x	1	x	x	(20) 13+16 30 E2 BE DE				120GeV FT - Long Flattop with RR						