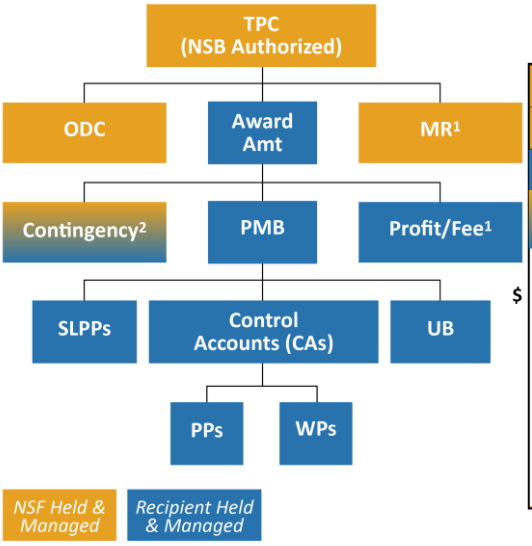
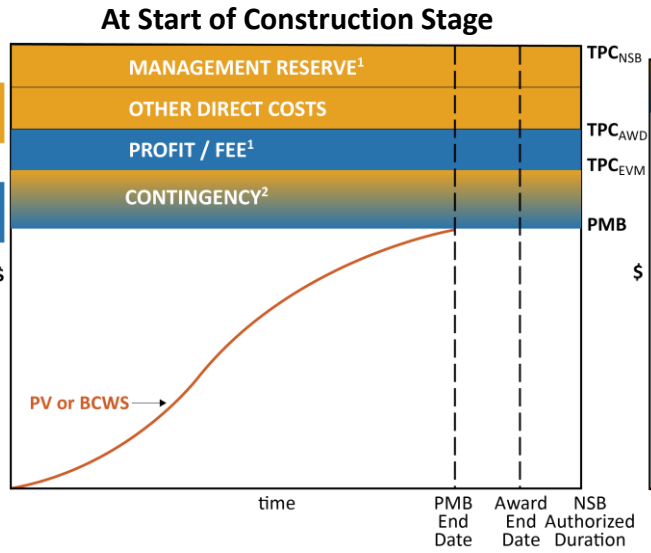
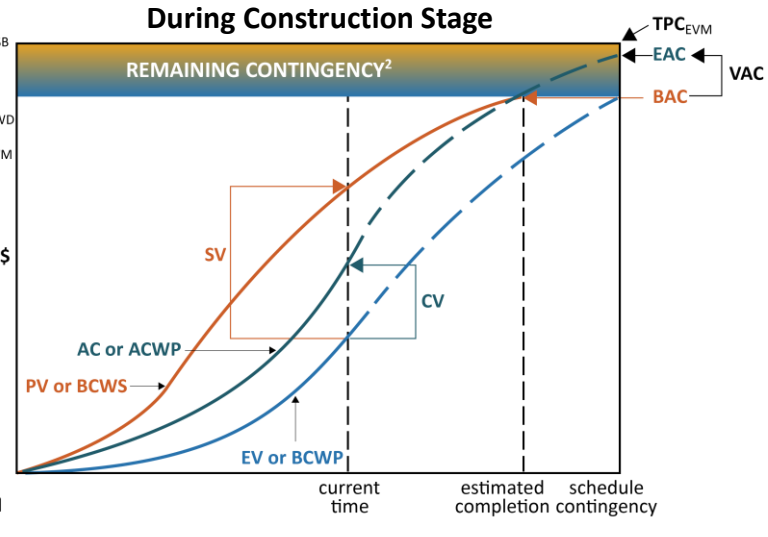
NSF Major Facilities – Earned Value Management Gold Card

JULY 2019







COMPONENTS

CA	=	Control Account = WPs + PPs
MR	=	Management Reserve is held by NSF
ODC	=	Other Direct Costs
PMB	=	Performance Measurement Baseline = CAs + UB + SLPPs = BAC
PP	=	Planning Package (far-term activities within a CA)
SLPP	=	Summary Level Planning Package
TPC_{NSB}	=	Total Project Cost (NSB authorized)
TPC_{AWD}	=	Award Amount to Recipient (PMB + contingency + profit/fee)
TPC_{EVM}	=	Total Project Cost managed by Recipient (PMB + contingency)
UB	=	Undistributed Budget (activities not yet distributed to CA)
WP	=	Work Package (near-term, detail-planned activities within a CA)

EVMS BASIC COMPONENTS

AC	=	Actual Cost	=	ACWP	= Actual Cost of Work Performed
EV	=	Earned Value	=	BCWP	= Budgeted Cost for Work Performed
PV	=	Planned Value	=	BCWS	= Budgeted Cost for Work Scheduled
BAC	=	Budget at Completion	=	$\sum BCWS$	= Sum of Budgeted Cost for Work Scheduled
EAC	=	Estimate at Completion	=	ACWP + ETC	
ETC	=	Estimated cost of remaining work (WR)			

VARIANCES

CV[3]	=	EV – AC	=	BCWP – ACWP	= Cost Variance
SV[3]	=	EV – PV	=	BCWP – BCWS	= Schedule Variance
CV%	=	(EV – AC) / EV	=	(BCWP– ACWP) / BCWP	= Cost Variance %
SV%	=	(EV – PV) / PV	=	(BCWP– BCWS) / BCWS	= Schedule Variance %
VAC	=	BAC – EAC			= Variance at Completion

OVERALL STATUS

% scheduled	=	PV_{cum}/BAC	= $BCWS_{cum}/BAC$
% complete	=	EV_{cum}/BAC	= $BCWP_{cum}/BAC$
% budget spent	=	AC_{cum}/BAC	= $ACWP_{cum}/BAC$
Work Remaining (WR)	=	$BAC – EV_{cum}$	= $BAC – BCWP_{cum}$

PERFORMANCE INDICES *(Favorable is >1.0, unfavorable is <1.0)*

CPI	=	EV / AC	= BCWP / ACWP	= Cost Performance Index
SPI	=	EV / PV	= BCWP / BCWS	= Schedule Performance Index
$TCPI_{EAC}$	=	$WR / (EAC – AC_{cum})$	=	EAC-based To Complete Performance Index

ESTIMATE AT COMPLETION FORMULAE

EAC	=	BAC / CPI_{cum}	= Estimate at Completion (general)
EAC_{CPIcum}	=	$AC_{cum} + WR/CPI_{cum}$	= Estimate at Completion (CPI)
$EAC_{composite}$	=	$AC_{cum} + WR/(CPI_{cum} * SPI_{cum})$	= Estimate at Completion (composite)

Notes:

[1] If authorized as part of TPC.

[2] During execution, contingency moves into the PMB per change control process.

[3] Favorable > 0, Unfavorable < 0