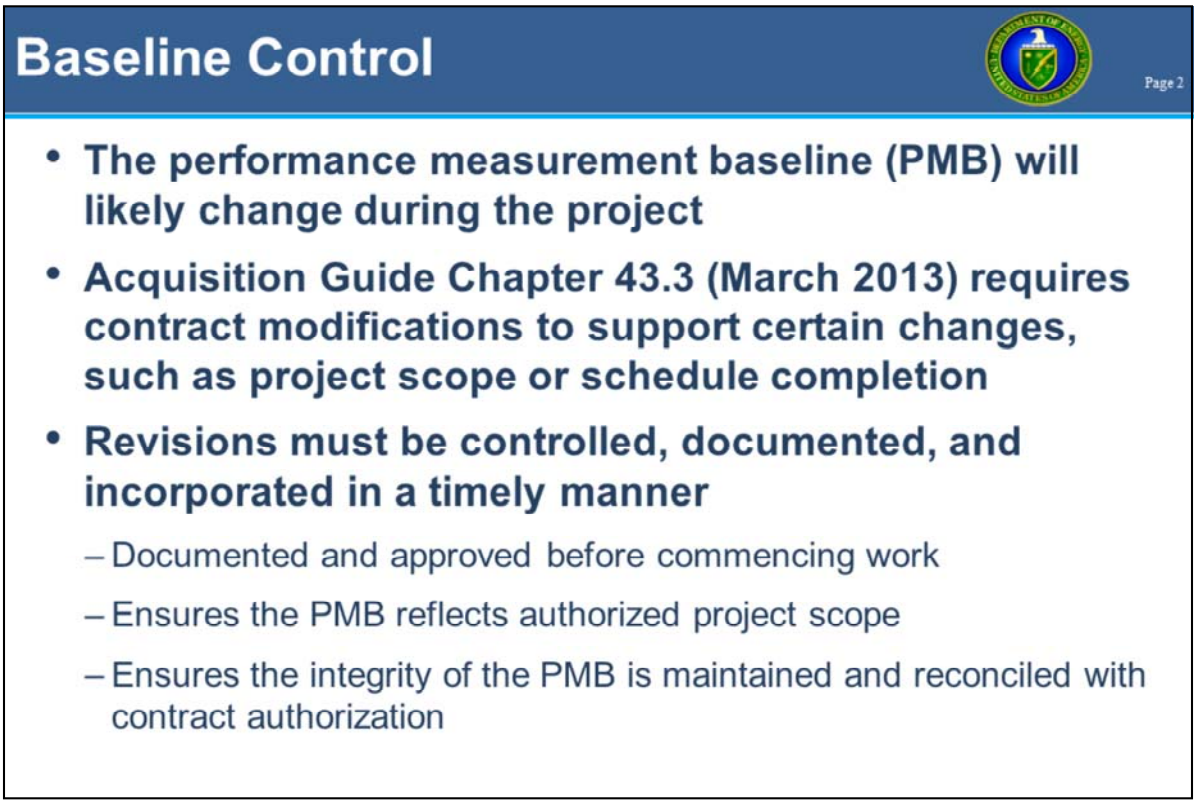
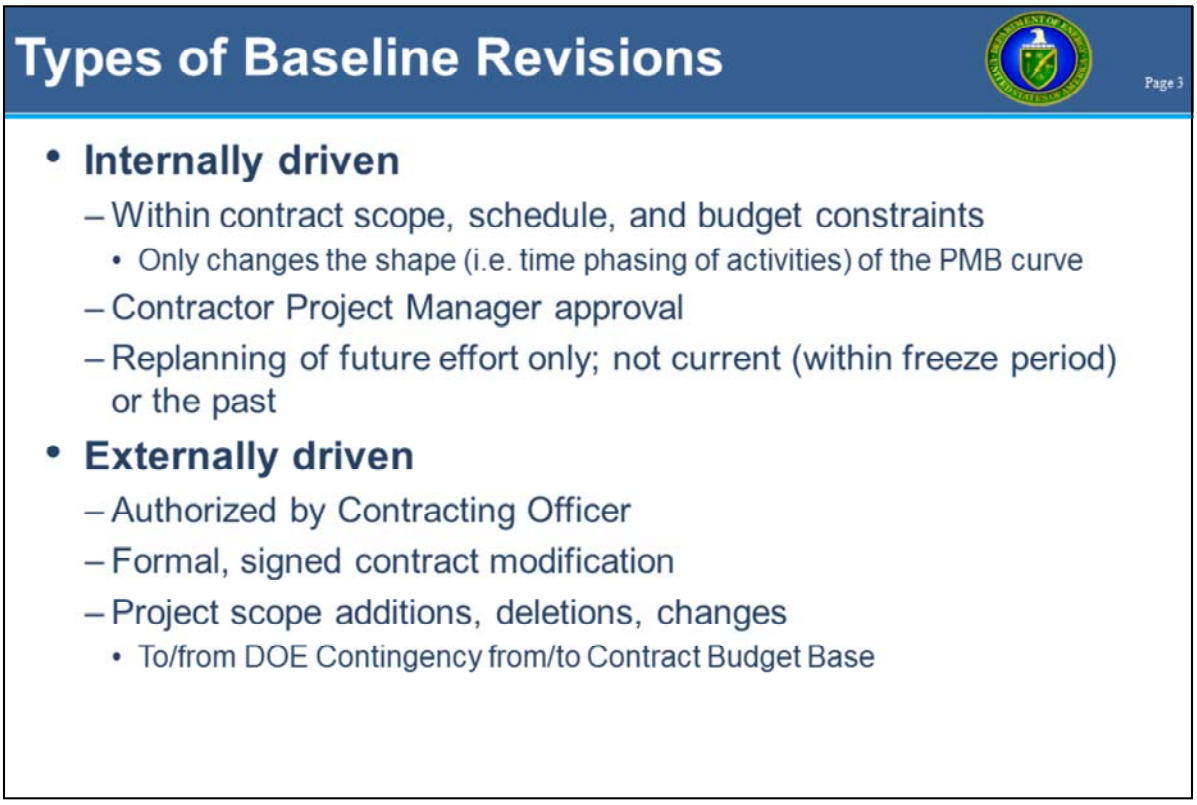
This EVMS Training Snippet, sponsored by the Office of Acquisition and Project Management (OAPM) discusses baseline revisions and the different baseline control vehicles used in DOE.



It is a given that during the life of the project, the performance measurement baseline (PMB) will change for a variety of reasons. These changes may affect the technical scope, schedule, and/or budget of the project. Revisions to the baseline may be necessary to maintain a valid work plan. In accordance with the DOE Acquisition Guide Chapter 43.3 (March 2013), certain changes cannot be made to the PMB, such as addition of scope to the contract, until the Contracting Officer (CO) has issued a contract modification.

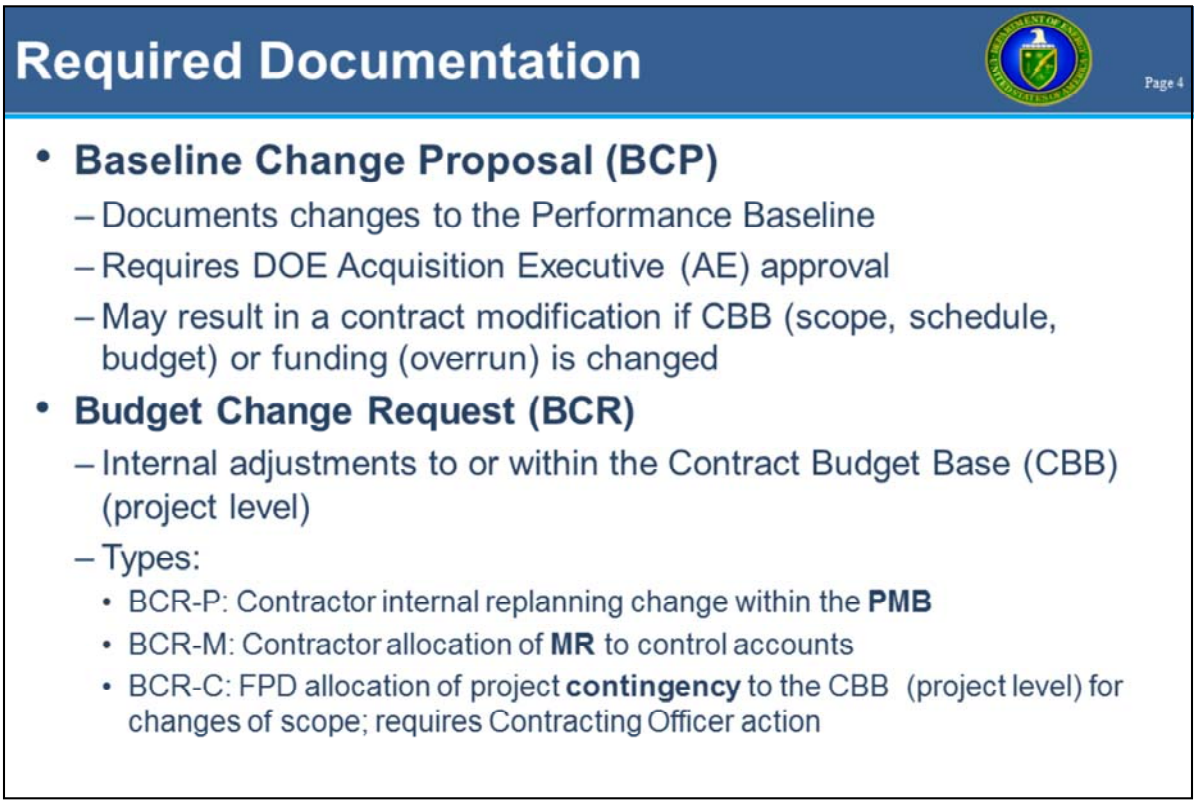
Revisions to the baseline must be controlled, documented, and incorporated in a timely manner. As with the original work authorization process, work cannot commence prior to completion of documentation and approval. The control, documentation, and timely incorporation ensure the PMB reflects the authorized project scope, schedule, and budget. At all times the baseline must be maintained and reconciled with the contract authorization.



There are two types of baseline revisions: those internally driven by the contractor and those that are externally driven by the customer.

Internal re-planning is re-planning not only within the scope of work of the contract but also within the budget constraints of the contract's Contract Budget Base and the schedule that supports completion of contract milestones and the project. However, even though the change is an internal change that does not require a contract modification pursuant to Acquisition Guide 43.3 (March 2013), the customer should be notified of the change if it is significant. Usually this occurs through the formal periodic performance reports. Internal changes require contractor project manager approval. Replanning is limited to future effort. Replanning past or current period effort is considered retroactive and can only be done under very specific circumstances as stated in ANSI/EIA-748. For more information relative to the internal replanning of MR, refer to Snippet 4.3 MR vs. Contingency and Budget vs. Funds.

Externally driven changes must be authorized by the contracting officer. They are documented via contractual authorization. The purpose of the change will be scope driven, either to add, delete, or change the effort under contract. The budget comes from the DOE Contingency and changes the Contract Budget Base.



The terminology on this slide is based on recommendations provided by EFCOG in the *Baseline Change Proposals and Contingency White Paper/Best Practice* published September 19th, 2013 and as defined in the *APM Glossary of Terms Handbook.*

A Baseline Change Proposal (BCP) is a document that provides a complete description of a proposed change to an approved performance baseline, including impacts on the project scope, schedule, design, methods, and cost baselines. The BCP represents a change to one or more of the elements of a project's Performance Baseline (PB) including the Total Project Cost (TPC), Critical Decision 4 (CD-4) completion date, or some feature of the project's scope and Key Performance Parameters (KPP), and must be approved by the applicable Acquisition Executive (AE).

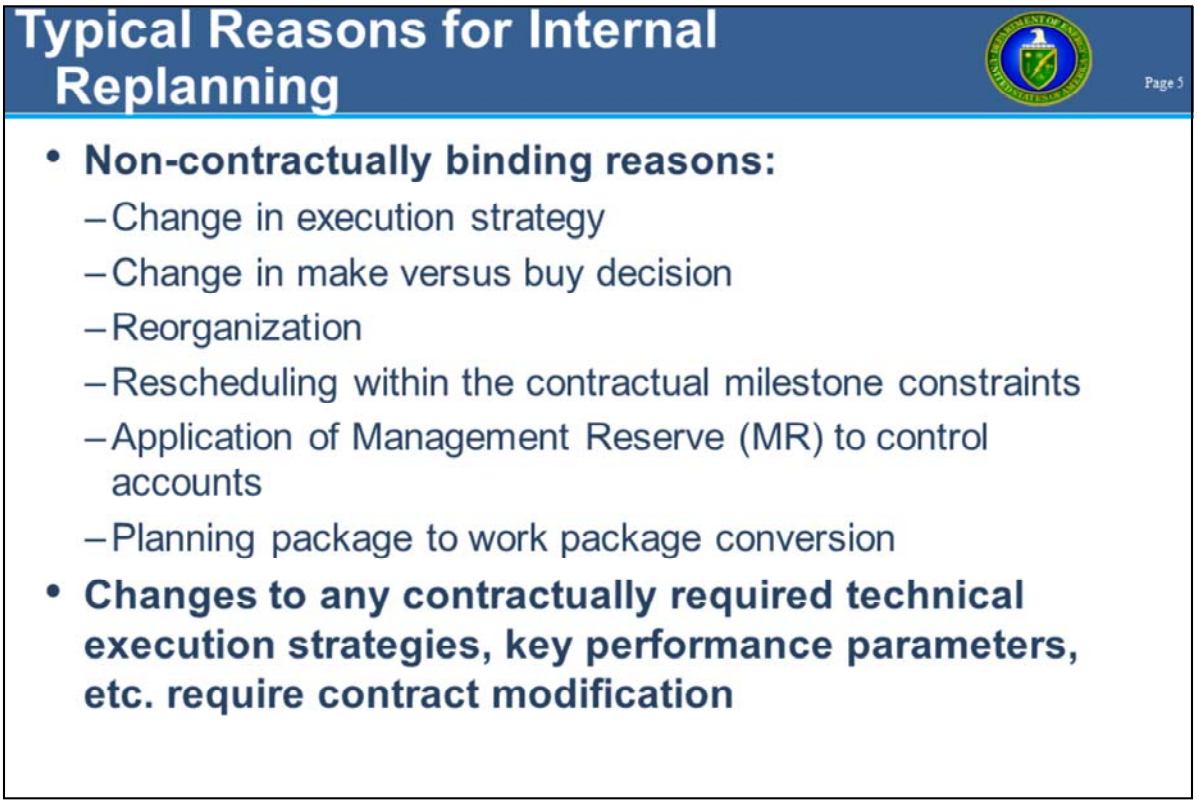
A BCP may or may not result in a change to the CBB or contract. If the BCP results in scope changes to the contract, the CBB will be affected, and the contract must be modified by the CO. If the BCP is purely to address an overrun, then while the contract must be modified by the CO to address funding, the CBB would not change.

For in-scope changes to the *Performance Baseline (PB)*, Budget Change Requests (BCRs) document events that only require an internal adjustment to the performance baseline components and that do NOT change the TPC, CD-4 date, or represent a change to some feature of the project's scope and KPPs approved by the applicable Acquisition Executive. It may necessitate a contract action and/or changes to contractor documentation used to maintain configuration control (at the project level) of the Contract Budget Base (CBB) and/or Performance Measurement Baseline (PMB). While BCR is a common industry term, some contractors may use other terms as defined in their EVM System Descriptions.

Objective evidence supporting a change should be maintained with the BCR, and all changes should be reconcilable and traceable via project documentation and required EVMS budget logs.

Although the following terms and definitions are suggested to provide a common understanding of the different types of BCRs possible, this does not mandate contractor's changing their EVM System Descriptions.

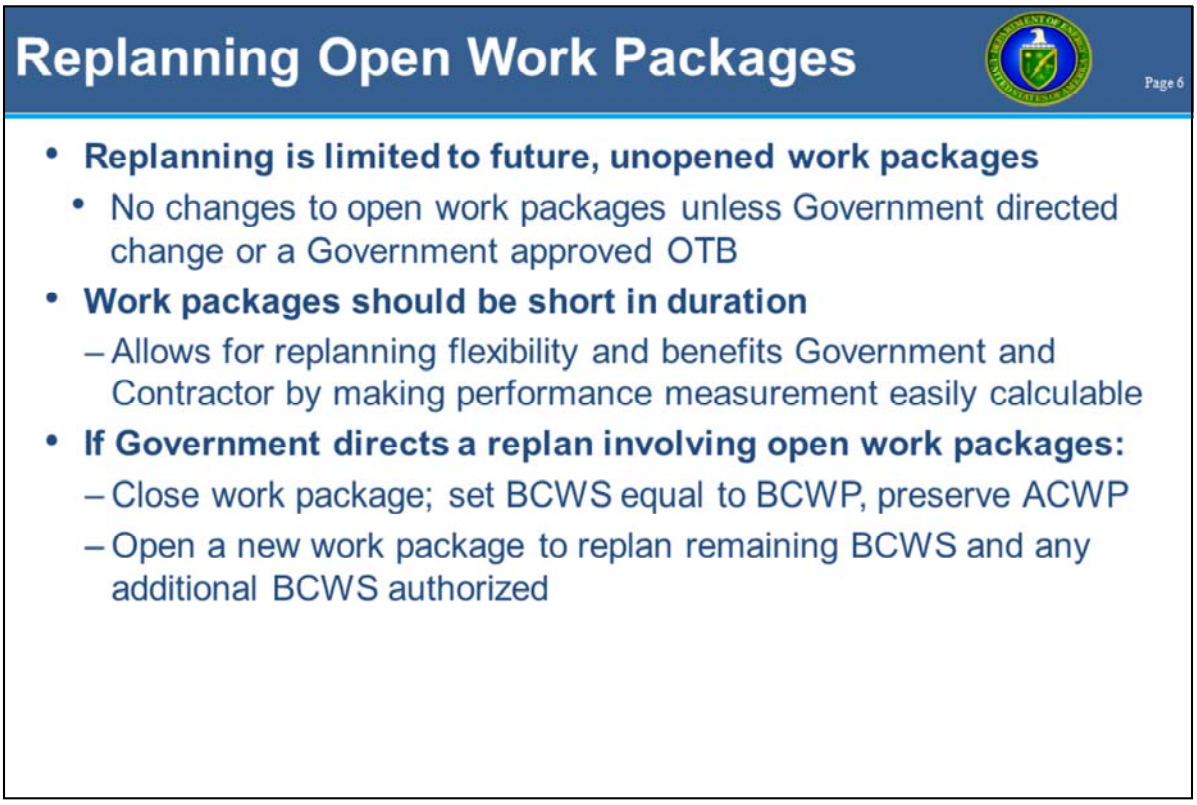
- Budget Change Request – PMB (BCR-P): A type of BCR used by the contractor to maintain configuration control of the PMB for re-planning actions for remaining work scope. It is a normal project control process accomplished within the scope, schedule, and cost objectives of the project's PMB. A BCR-P requires Project Manager approval prior to implementation. A BCR-P is used for all internal changes with the exception of management reserve.
- Budget Change Request – MR (BCR-M): A type of BCR used by the contractor to allocate MR to Control Accounts within the PMB for authorized purposes. A BCR-M requires Project Manager approval prior to implementation. A BCR-M does not modify the contract.
- Budget Change Request – Contingency (BCR-C): A type of BCR used by the FPD to allocate project contingency to the contract for a change in scope to the contract. It results in a change to the CBB (project level) and requires Contracting Officer action to modify the contract.



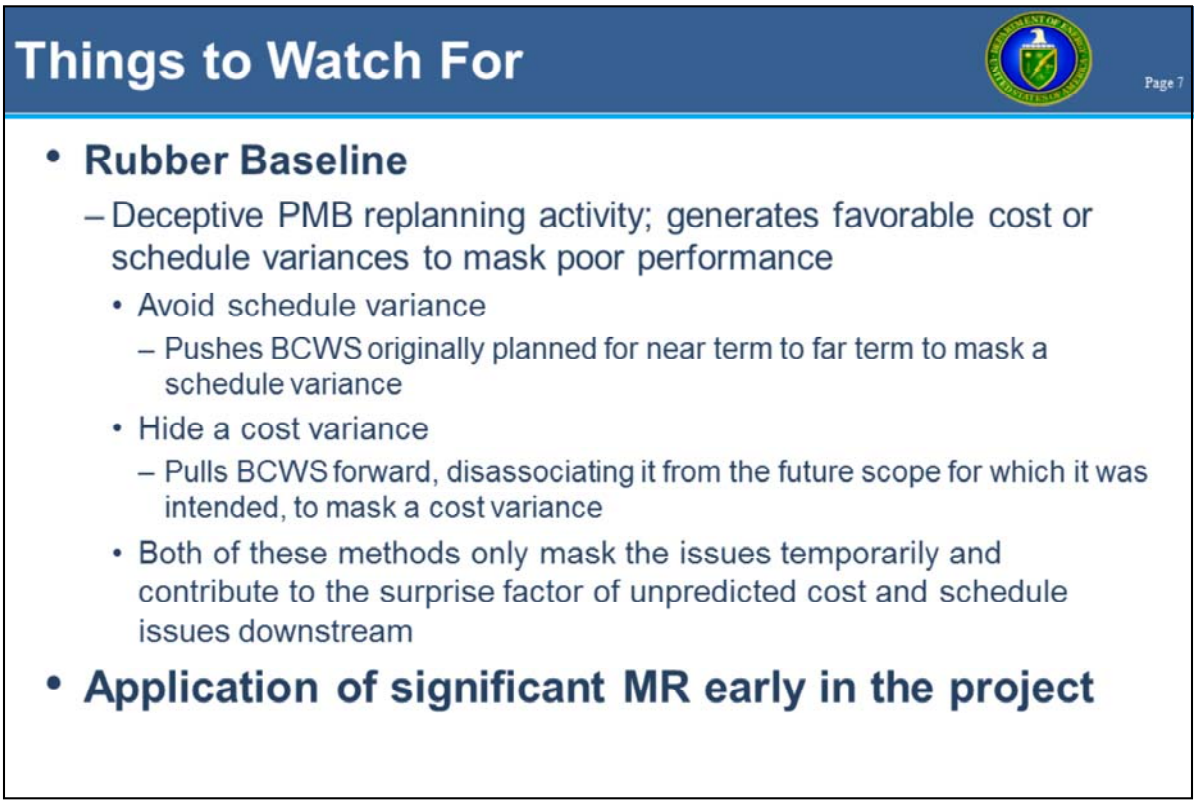
These are some of the most common reasons for internal re-planning. There may be a change in the make or buy decision or a schedule change that does not affect contract milestones. Reorganization might cause a significant change in the responsibility an organization has on the project. In all cases, the scope of work and the budget are re-planned together.

Often these types of re-planning do not require prior approval by the CO unless the change impacts the contract work statement which would result in a contract modification issued by the CO. Significant internal re-planning changes must simply be explained to the customer via the CPR or IPMR Format 5. This is so the customer will not be alarmed by changes evident in the time-phasing on Format 3 or in the BAC elements at the reporting levels in Formats 1 or 2.

Note that an internal re-plan can be accomplished at the total contract level, a specific WBS, or control account/work package level. The same constraints and guidelines apply at whatever level of the project a change is implemented.



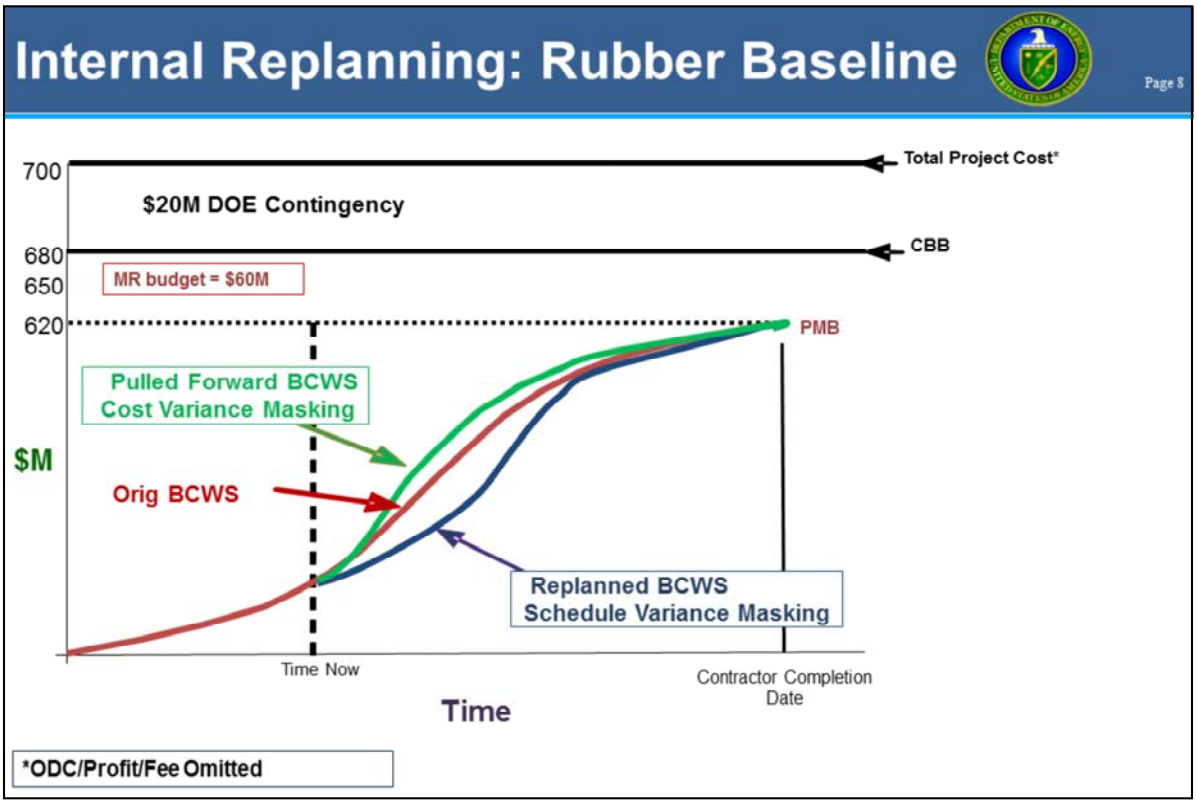
Because replanning is limited to future (unopened) work packages, long work packages that stretch six months to a year into the future limit the contractor's flexibility to re-plan the effort. If that same long work package was identified into several shorter-span work packages, replanning would be allowable for those unopened ones existing in the future. So short-span work packages benefit the supplier by virtue of the additional flexibility they provide, and they benefit both the Government and the contractor by making performance measurement more easily calculable. If the Government approves re-planning of open work packages in the case of directed changes or an Over Target Baseline, the work package should be closed, setting BCWS equal to BCWP, preserving the ACWP. Then a new work package is opened to replan the remaining BCWS, and in the case of this discussion, incorporating a legitimate use of MR. The use of MR must be carefully identified to ensure it is being applied to future tasks and that the change in scope is documented.



Something to watch for with internal replanning is to ensure the contractor is not causing what is referred to as a rubber baseline. A rubber baseline is a deceptive PMB replanning activity. It generates favorable variances by adjusting the budgeted cost for work scheduled (BCWS) time phasing. A rubber baseline is indicated when one of two actions occur. To mask schedule slippages, near term work is pushed from the current and near term to the far term, i.e. later in the project. When BCWS is pushed forward, then the anticipated schedule variance is no longer visible until later in the project.

To mask cost variances, BCWS from far term work packages or planning packages is pulled forward to current or near term work packages without moving the associated work scope. Therefore, the earned value for the work accomplished, i.e. the BCWP, is greater since the budget associated with the near term work is now greater. When the actual cost of work performed (ACWP) is compared to the inflated earned value, the overrun disappears – for now. However, downstream when there is insufficient budget to perform the remaining scope, the overrun will reappear and increase at a high rate, thus resulting in unforeseen overruns near project completion.

Internal replanning for significant or repeated applications of management reserve early in the project must be monitored. For example, if the project schedule is 5 years long, using up most of the MR in the first 18 months to minimize variances instead of identifying the actual issues and correcting the root causes, has a significant probability to result in uncontrollable cost growth later in the project.

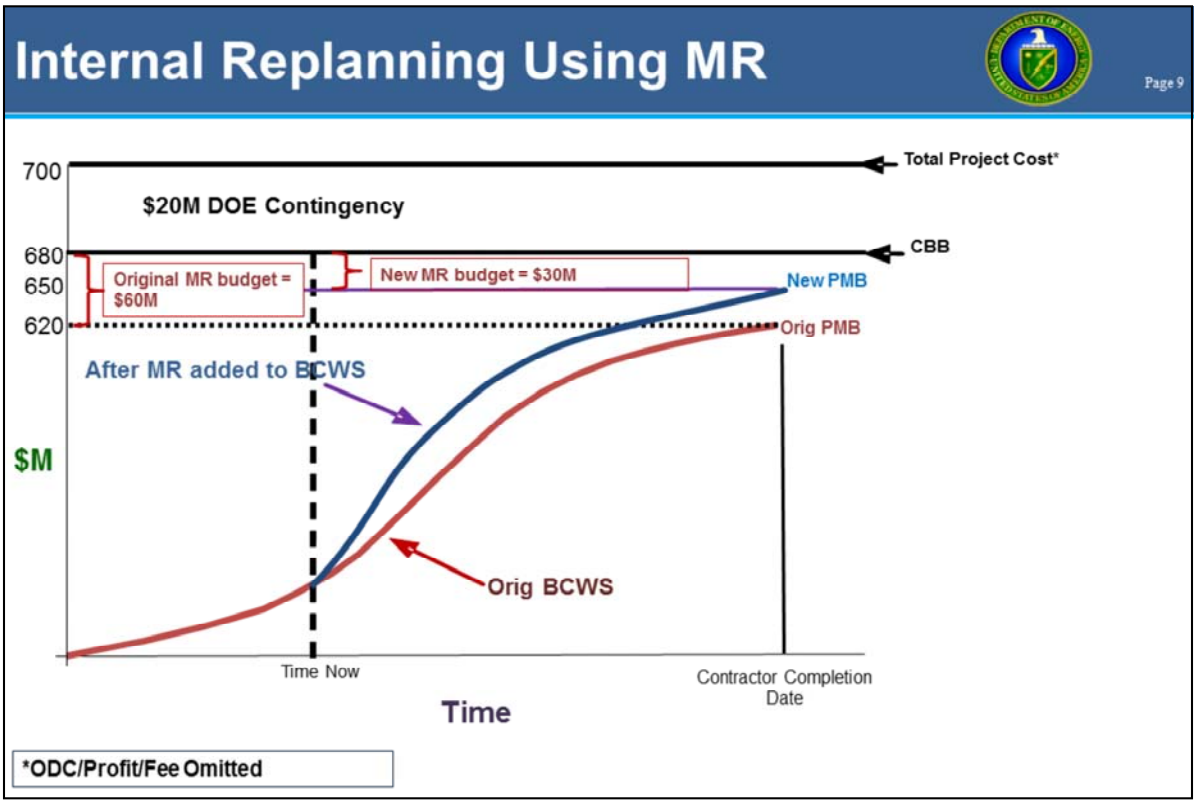


Here is a chart showing a picture of all the relationships in internal replanning. Note that the internal replan is performed within the CBB. In the case illustrated here, a budget change request was approved to set the BCWS equal to the BCWP at time now. The caution when seeing this is to fully understand why it was done. No management reserve was used in this example; only the BCWS time phasing was changed.

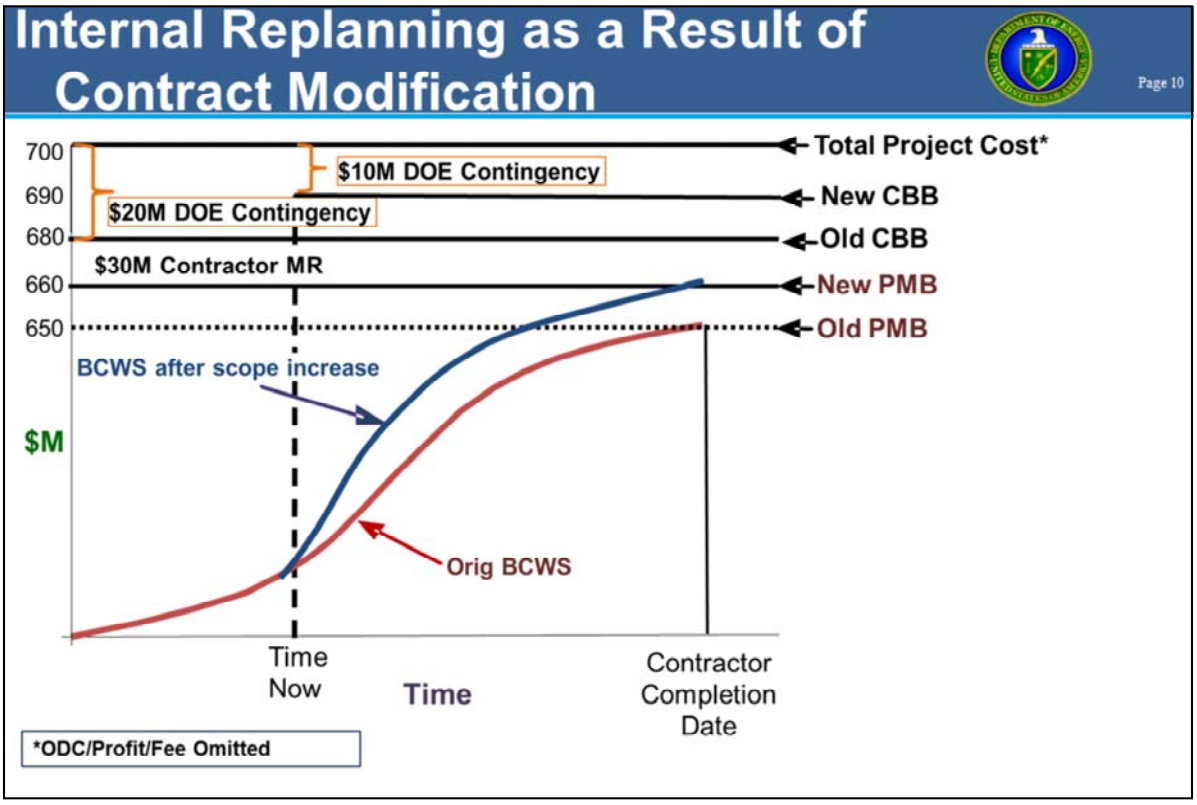
The situation shown here could be thought of as a type of “rubber baseline” depending on how and when the revision took place. The revised baseline we show here in blue moved work from “Time Now” into the future. In other words, scheduled work was pushed out in time without changing the schedule’s end date, likely to avoid a schedule variance.

Another concern is if the replanning was done to pull BCWS forward (robbing budget from future work effort) to temporarily hide a cost variance. Remember internal replanning only changes the shape of the PMB curve by adjusting the time phasing of the activities and does not impact the CBB or TPC. If the time phasing of activities is unrealistic, then so is the PMB.

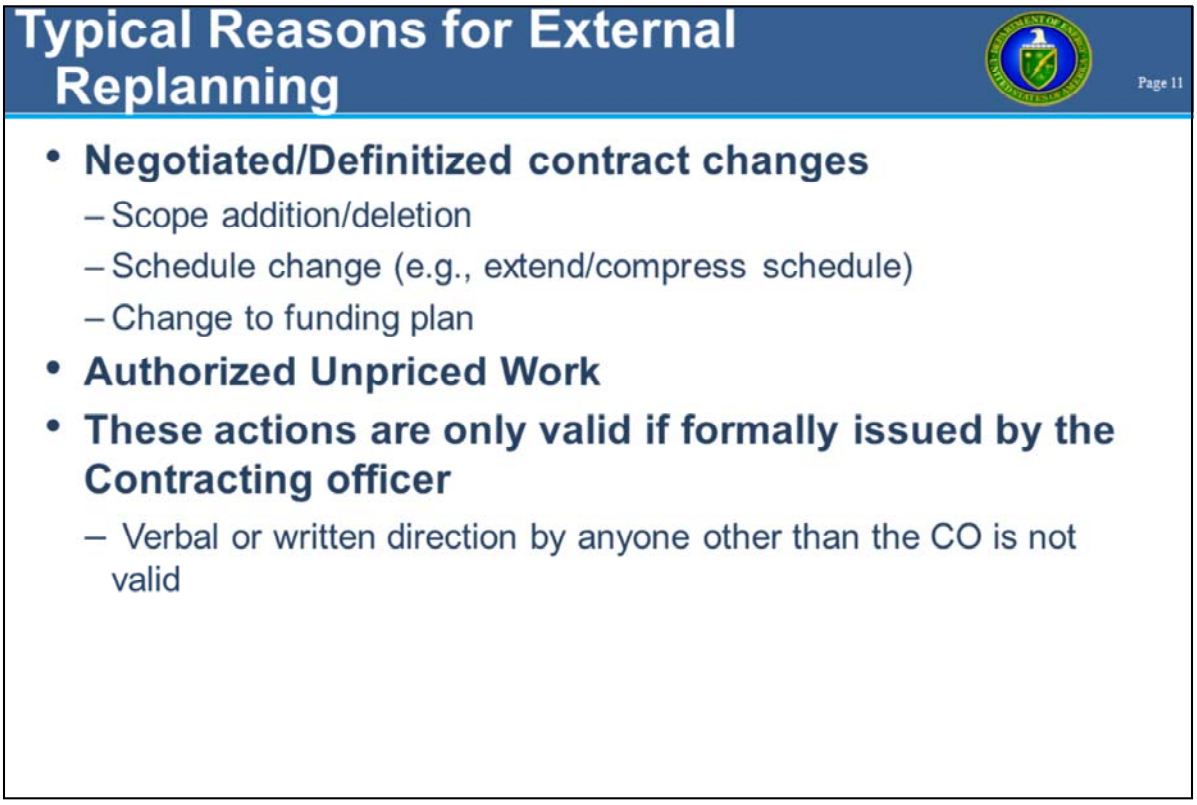
In both examples, the effect on the curve is a steep rise, either earlier than planned (green curve) or later than originally planned (blue curve). It would be logical to question the contractor regarding how it will provide the resources to support that curve. The schedule should also be reviewed for changes to task durations and the impact to the critical path. These, and other analyses, would indicate the realism of the revised baseline.



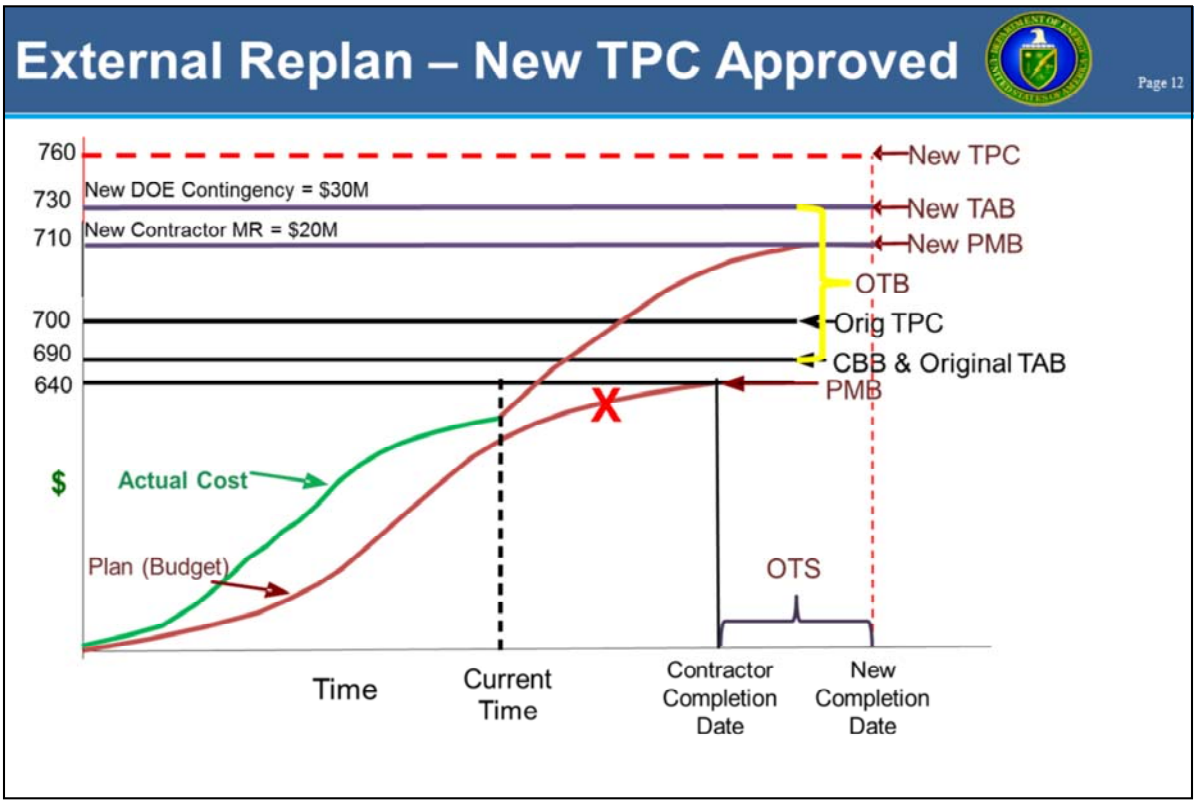
This graph shows the difference to the time phased budgeted cost for work scheduled after $30M of Management Reserve was added during an internal change. The CBB did not change. The PMB increased by $30M, from $620M to $650M. There is no change to the DOE contingency or to the TPC for internal applications of MR. You can see how the time phasing of the BCWS changed (blue line) after the injection of $30M of MR.



In this example we are showing the effects of a contract modification adding $10M worth of scope from the DOE Contingency. The CBB increased from $680M to $690M. The PMB increased from $650M to $660M. The DOE Contingency decreased from $20M to $10M. There was no change to the MR budget.

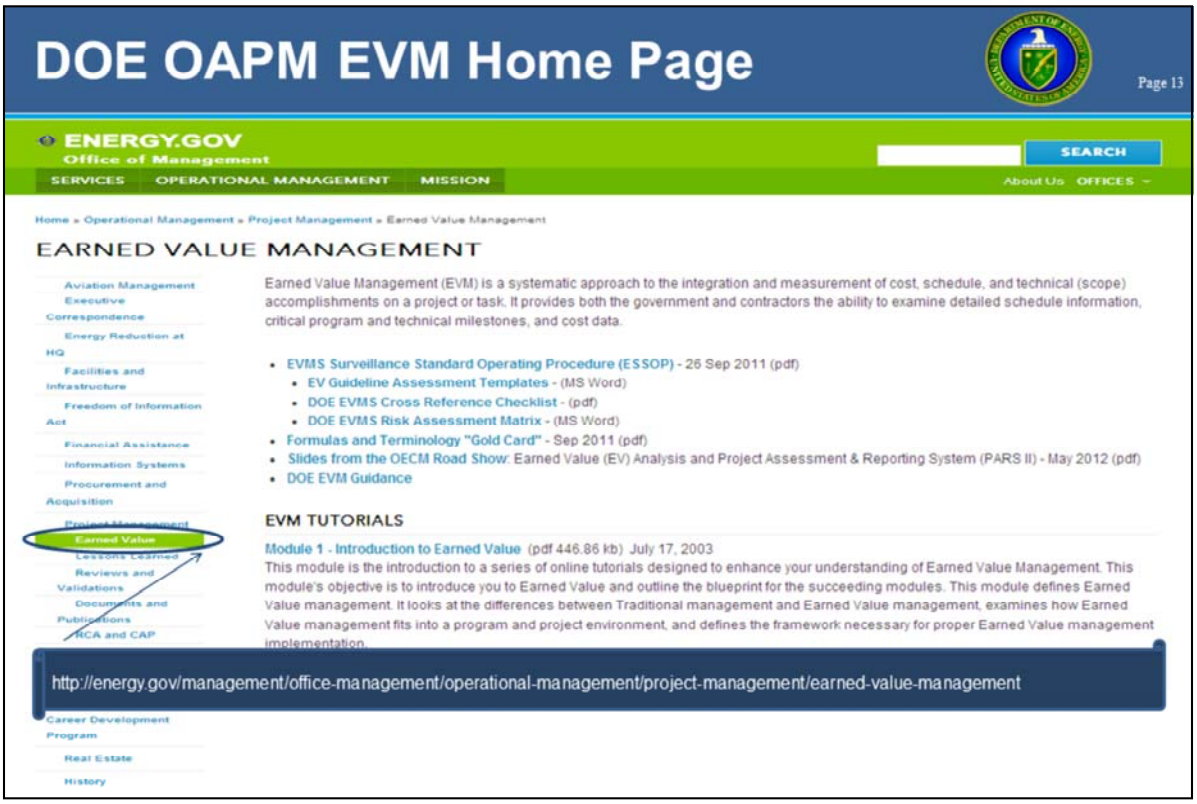


External replanning is driven by Contracting Officer direction only. Examples would be negotiated or definitized contract changes involving scope additions or deletions, a directed schedule change, or a change to the funding plan. Authorized unpriced work is an example of contractual direction to proceed with work prior to the final negotiations for the effort as stated in the Acquisition Guide 43.3 (March 2013). Contractual direction can only be authorized by the DOE Contracting Officer.



In this example, a BCP was approved and a contract modification issued to increase the Total Project Cost from $700M to $760M. The cause for this was an Over Target Baseline requested by the contractor and approved by the customer. The New TPC, TAB, PMB along with the Over Target Baseline (OTB) and Over Target Schedule (OTS) are shown on this slide.

For more information on Over Target Baselines and Over Target Schedules, please refer to Snippet 4.1.



For information relative to EVMS procedures, templates, helpful references, and training materials, please refer to OAPM's EVM Home page. Check back periodically for updated or new information.

Thank you