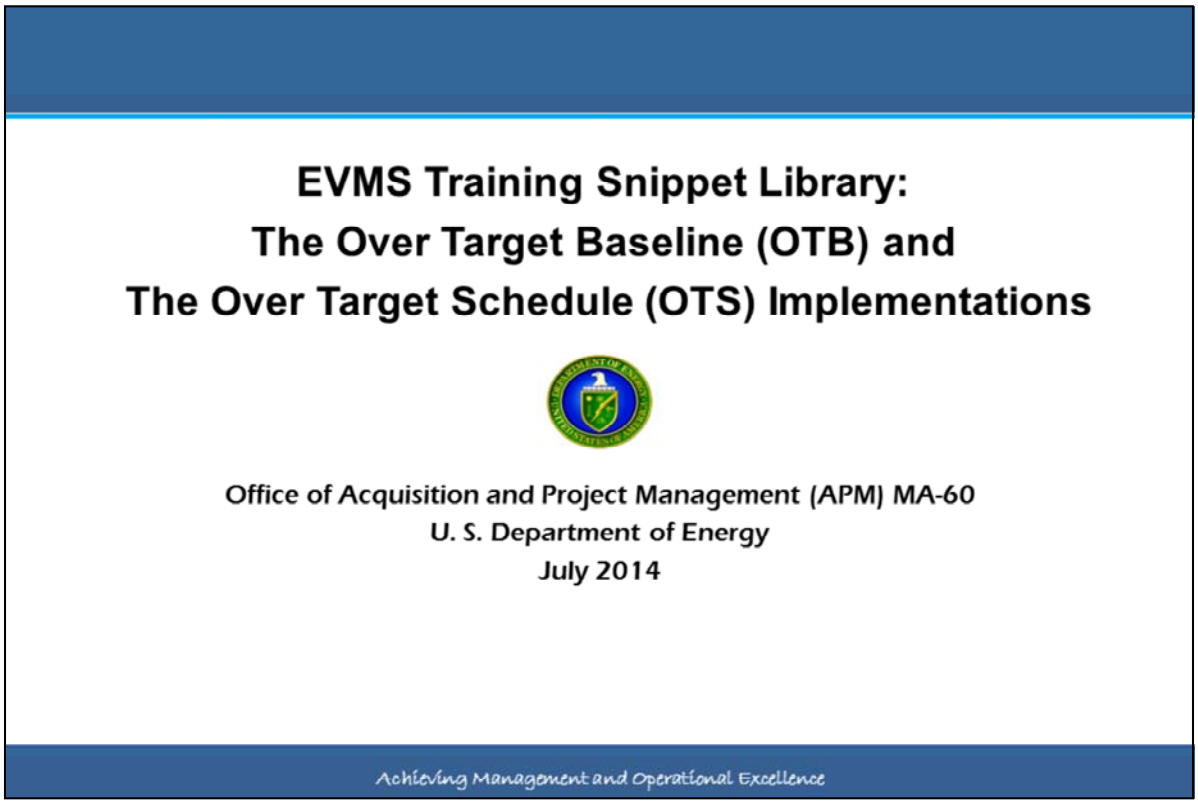
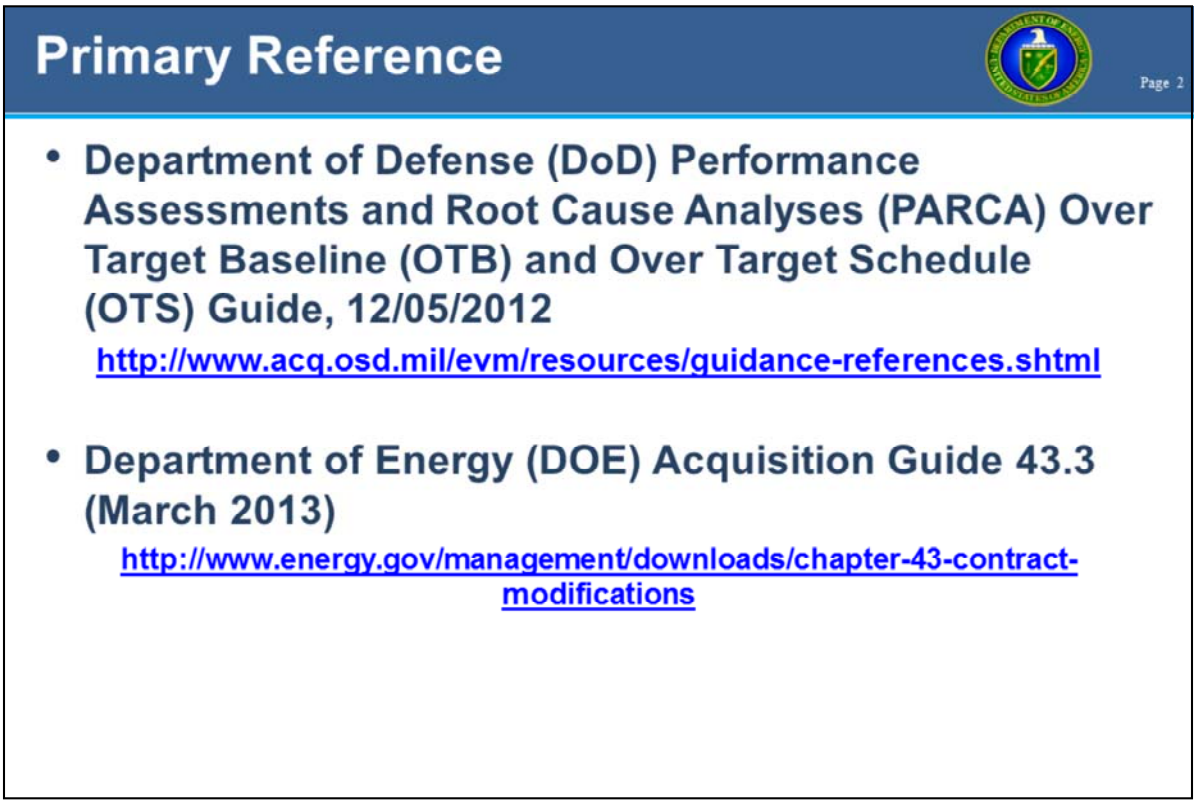
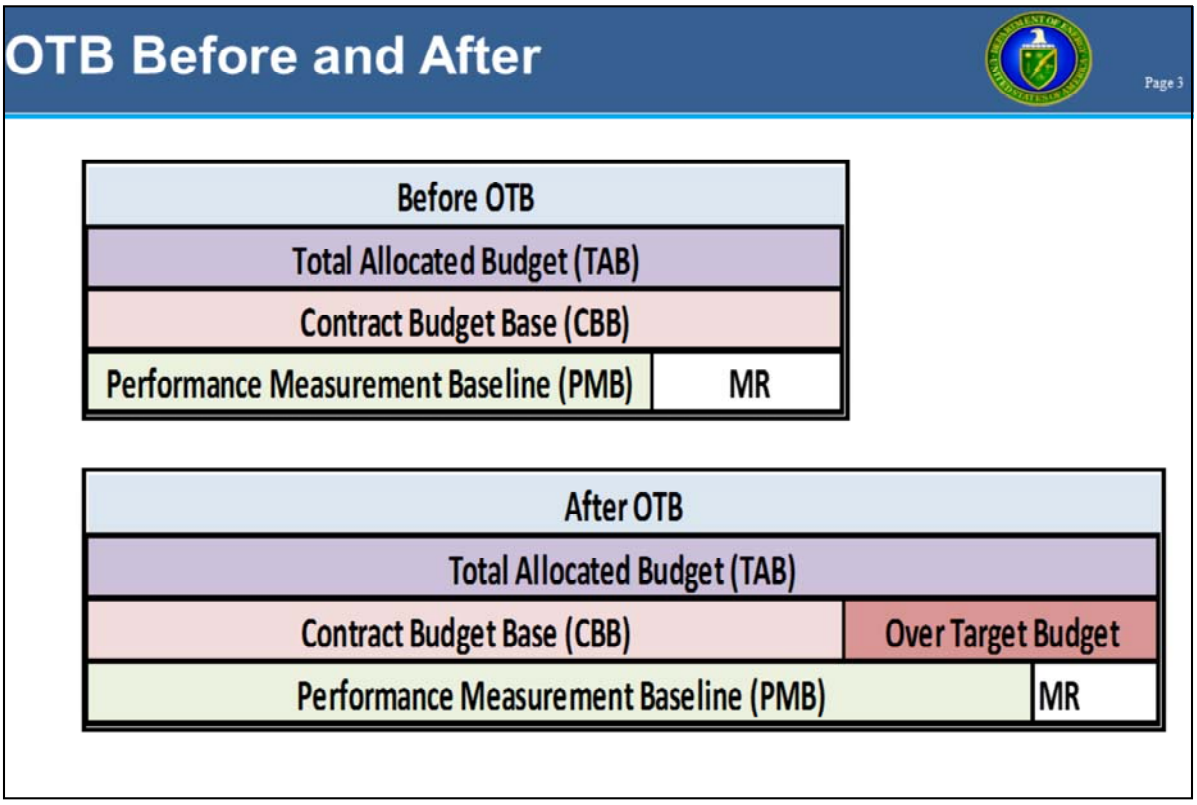


This EVMS Training Snippet, sponsored by the Office of Acquisition and Project Management (OAPM) covers Over Target Baseline and Over Target Schedule implementations.



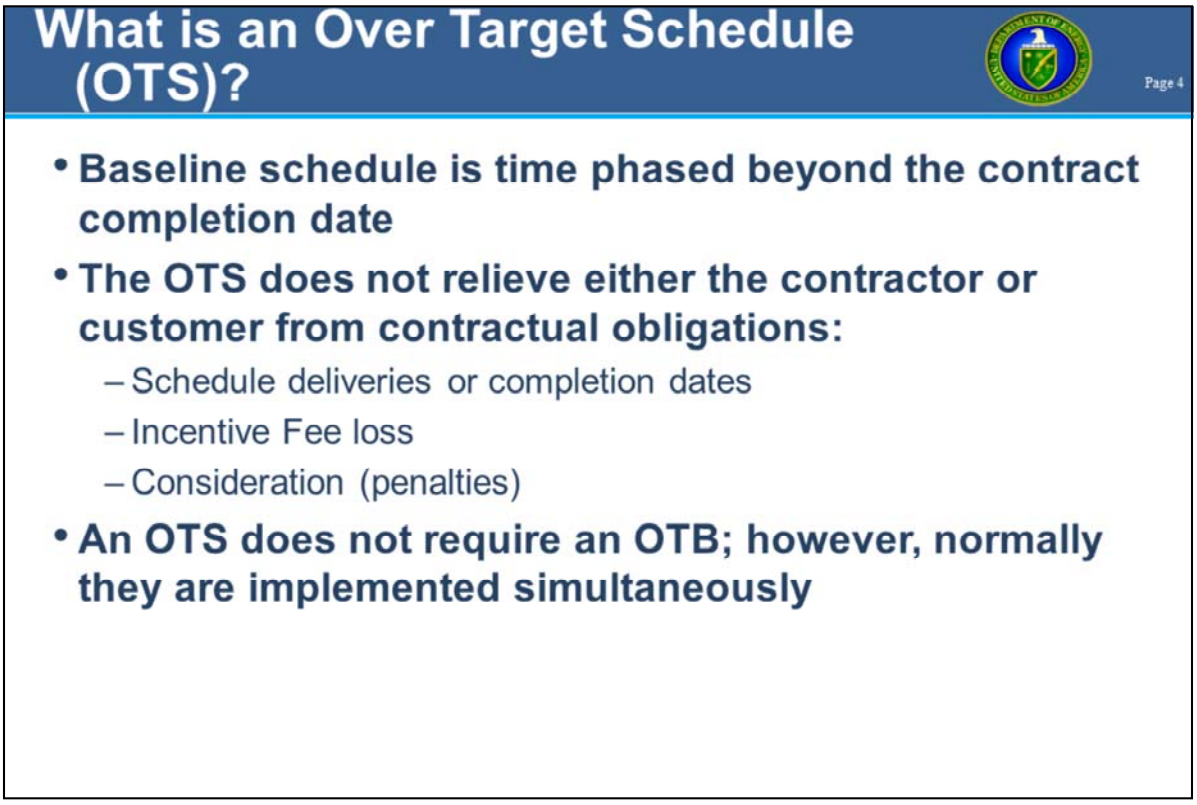
There are two primary references for this Snippet. DOE follows DOD's approach to Over Target Baselines and Over Target Schedules as stated in the OTB OTS Guide dated 12/05/2012, issued by PARCA, the policy making organization for Earned Value Management within the Department of Defense.

The second reference is DOE's Acquisition Guide Chapter 43.3 (March 2013) entitled "Maintaining Alignment of Project Management with Contract Management for Non-Management and Operating Cost Reimbursement Contracts for Capital Asset Projects, Environmental Remediation, Decontamination and Decommissioning, Facility Operations, and Other Major Projects". OTB and OTS principles apply to projects/subcontracts under Management and Operating (M and O) contracts with appropriate Federal Project Director and Contracting Officer involvement.



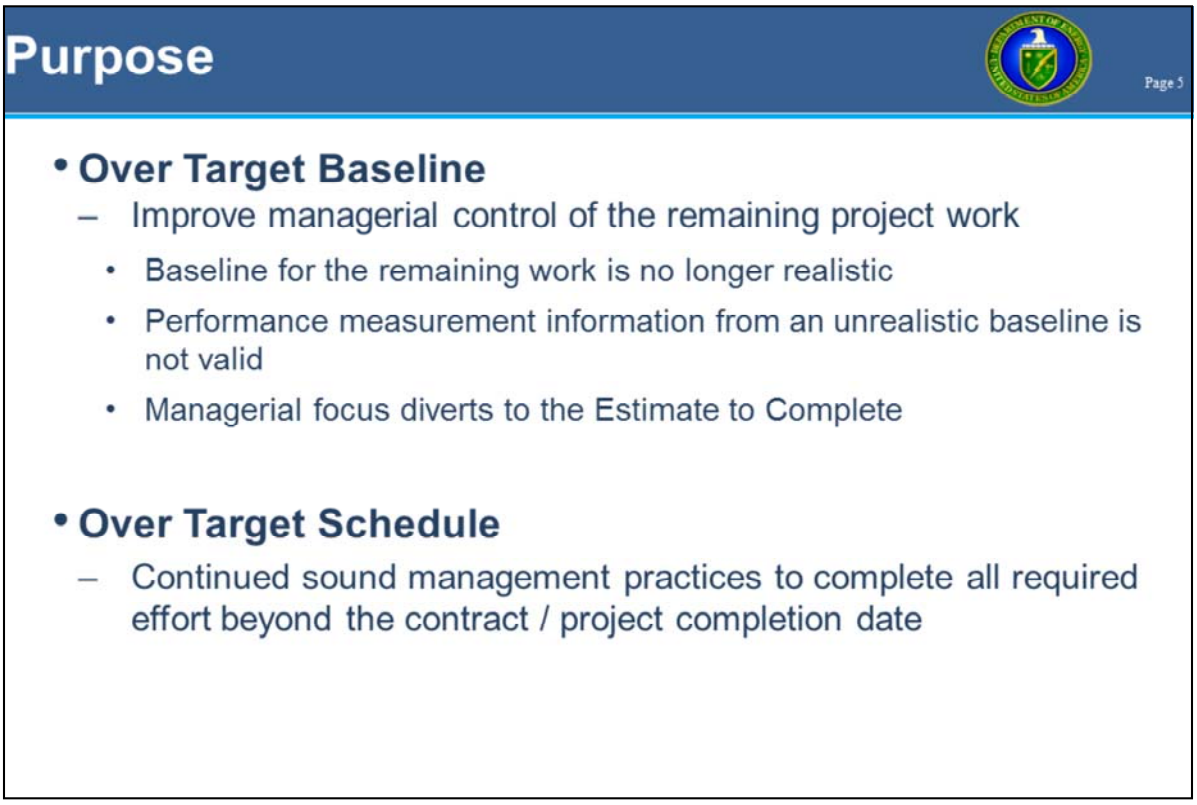
This chart looks at the cost building blocks before and after an over-target baseline. Let's begin at the bottom of the graphics. We are performing the OTB to create an executable plan. So after the OTB, the PMB and MR are increased by the total value of the OTB. In contrast the CBB or project target for incentives is unchanged. Total Allocated Budget (TAB) is above the CBB and includes the CBB plus the OTB. This graphic illustrates the baseline target (CBB) is unchanged and the PMB is changed to create additional budget to create an executable baseline based on the recognized significant overrun.

An OTB may not affect all of the work in the baseline. A partial OTB does not affect all work breakdown structure (WBS) elements in the PMB and/or does not make across-the-board cost/schedule variance adjustments. However, because the total of all budgets assigned to the baseline is greater than contract value, the final result is still considered an OTB and a bilateral contract modification issued by the Contracting Officer is required before implementation of the OTB and in accordance with Acquisition Guide Chapter 43.3 (March 2013).



An OTS is when the baseline schedule is time-phased beyond the project completion date. When the planned completion date for all remaining contract work results in a forecasted date well beyond the Contract Completion Date, an Over Target Schedule should be considered and may require a contract modification by the Contracting Officer if implemented in accordance with Acquisition Guide Chapter 43.3 (March 2013). The OTS does not relieve either the contractor or customer from contractual obligations such as schedule deliveries or completion dates, incentive fee loss, or penalties.

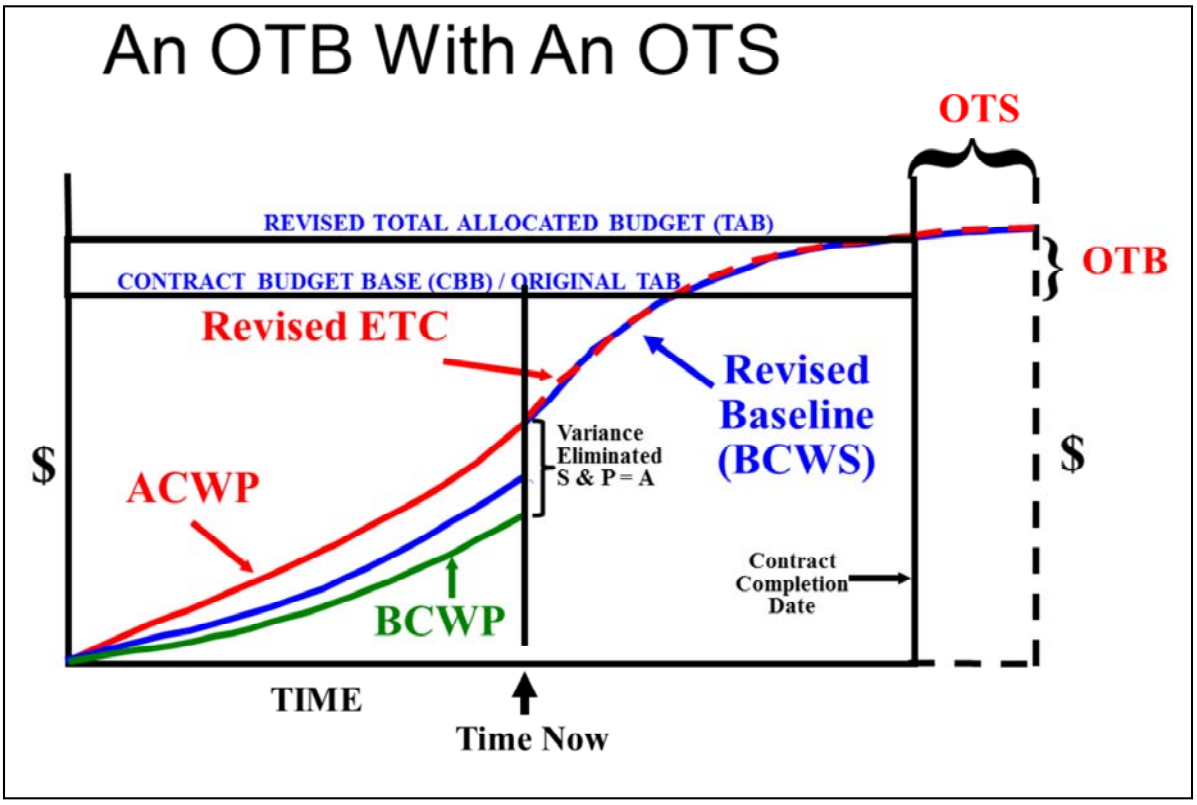
While an OTS may be implemented without adding addition budget via an OTB, this is not normally the case. Typically an increase in schedule will also require an increased budget allocation. Therefore, an OTS and an OTB are normally implemented simultaneously.



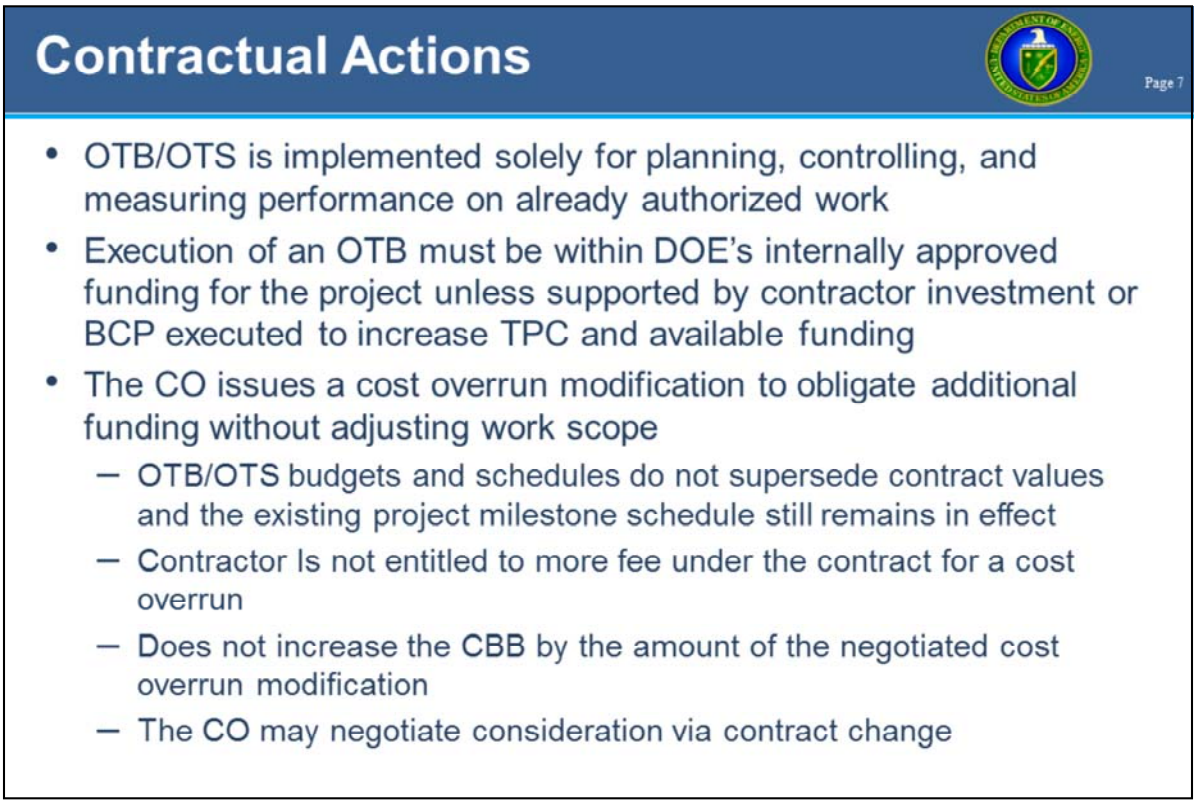
The primary purpose for implementing an Over Target Baseline is that it improves managerial control over the remaining project. While it results in a new baseline that is now over the contract budget base, it has been proven that it improves control of the remaining contract work. Indications that an OTB should be considered include:

- The original baseline is no longer realistic and managers cease to recognize it as an achievable goal.
- The performance measurement information from an unrealistic baseline is not valid so should not be used for decision making.
- All attention is directed toward the ever-increasing Estimate at Completion with little interest or sensitivity to the schedule or newly developing, potentially correctible cost and schedule problems.

The purpose of an over target schedule is to facilitate continued sound management practices to complete all work beyond the contract / project completion date.



This is an illustration of both an Over Target Baseline and an Over Target Schedule. Notice the Performance Measurement Baseline from Time Now to planned completion. In this example, the decision was made to eliminate both cost and schedule variances, so BCWS and BCWP were set equal to ACWP. Note: As explained later in this Snippet, this is not a preferred option. As shown, the baseline to accomplish all authorized work extends well over the Contract Budget Base, as well as beyond the Contract Completion Date.



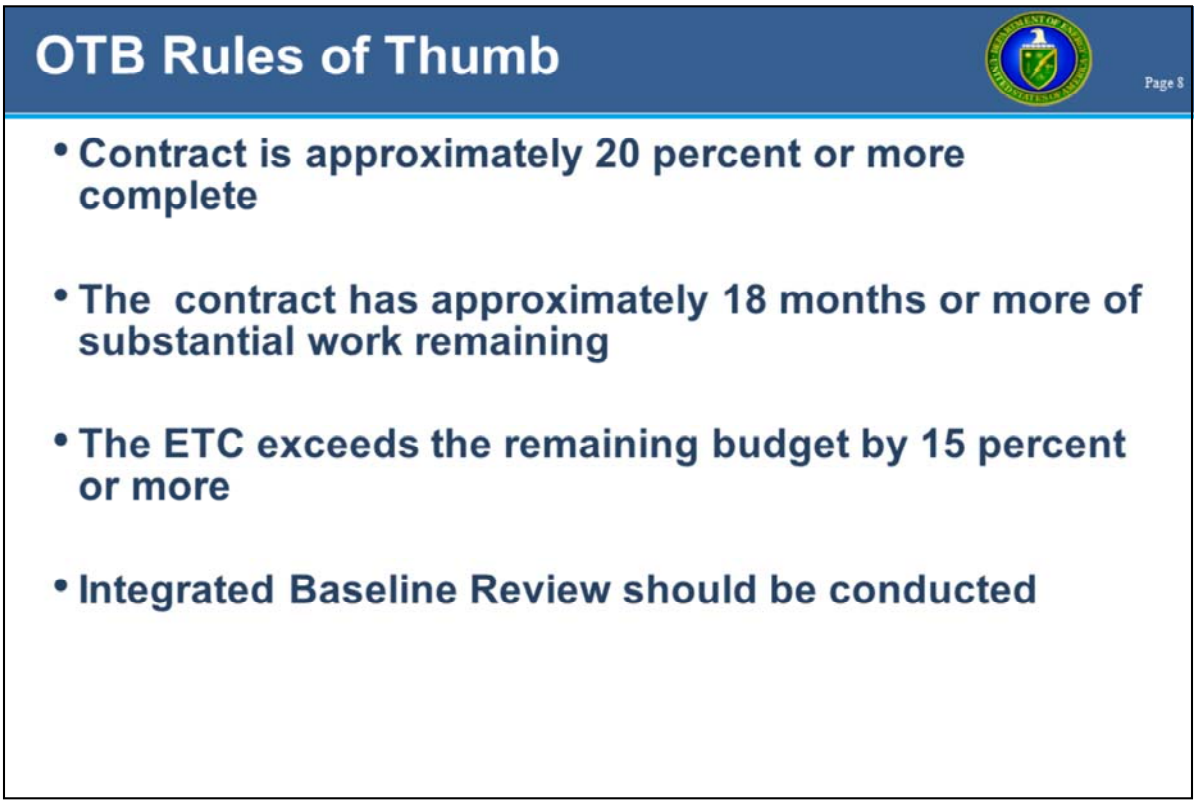
The OTB/OTS is implemented solely for planning, controlling, and measuring performance on already authorized work. As stated in the referenced OTB/OTS Guide, the contractor's execution of an OTB must be affordable and within the customer's internally approved funding for the project unless supported by contractor investment. The determination of the OTB value by the contractor does not require current funding to be in place before approving or implementing an OTB/OTS. However, if the resulting EAC exceeds the current funding or authorization levels, the Federal Project Director (FPD) must decide whether to de-scope the contract and/or project, or seek additional funds by executing a Baseline Change Proposal (referred to as a BCP) to increase the Total Project Cost (TPC).

An OTB in excess of the authorization does not constitute an Anti-Deficiency Act violation, but the FPD must take action to prevent a potential violation. The estimate at completion (EAC) in excess of either CBB or TPC would drive the need for additional funding and may be used to start the process to utilize contingency or execute a BCP.

As stated in the Acquisition Guide 43.3 (March 2013), if the FPD requests authorization of an OTB and/or OTS, the CO will need to issue a cost overrun modification to obligate additional funding without adjusting work scope. The cost overrun modification is for funding only. The contractor is not entitled to more fee under the contract for a cost overrun, and the contractor does not increase the CBB by the amount of the negotiated cost overrun modification.

An OTB/OTS does not change the contract estimated cost, fee, and/or contract schedule. If the planned schedule results in an OTS situation, both parties must recognize that the existing contract milestone schedule still remains in effect for purposes of contract

administration and execution. The new dates in the OTS are for performance measurement purposes only and do not represent an agreement to modify the contract fee, schedule, terms or conditions. The CO will only issue a modification for the cost overrun. The OTB is the sum of CBB and the recognized overrun. The customer may negotiate consideration via a contract change.



These are a few of the considerations and existing conditions to help guide the decision whether to proceed to an OTB. These recommendations are provided from DOD's OTB/OTS Guide and are based on benchmarking and experience.

Wait for a short period--let the dynamics of a risky project dampen--it is potentially premature to begin discussing an OTB any sooner than 20% of project completion.

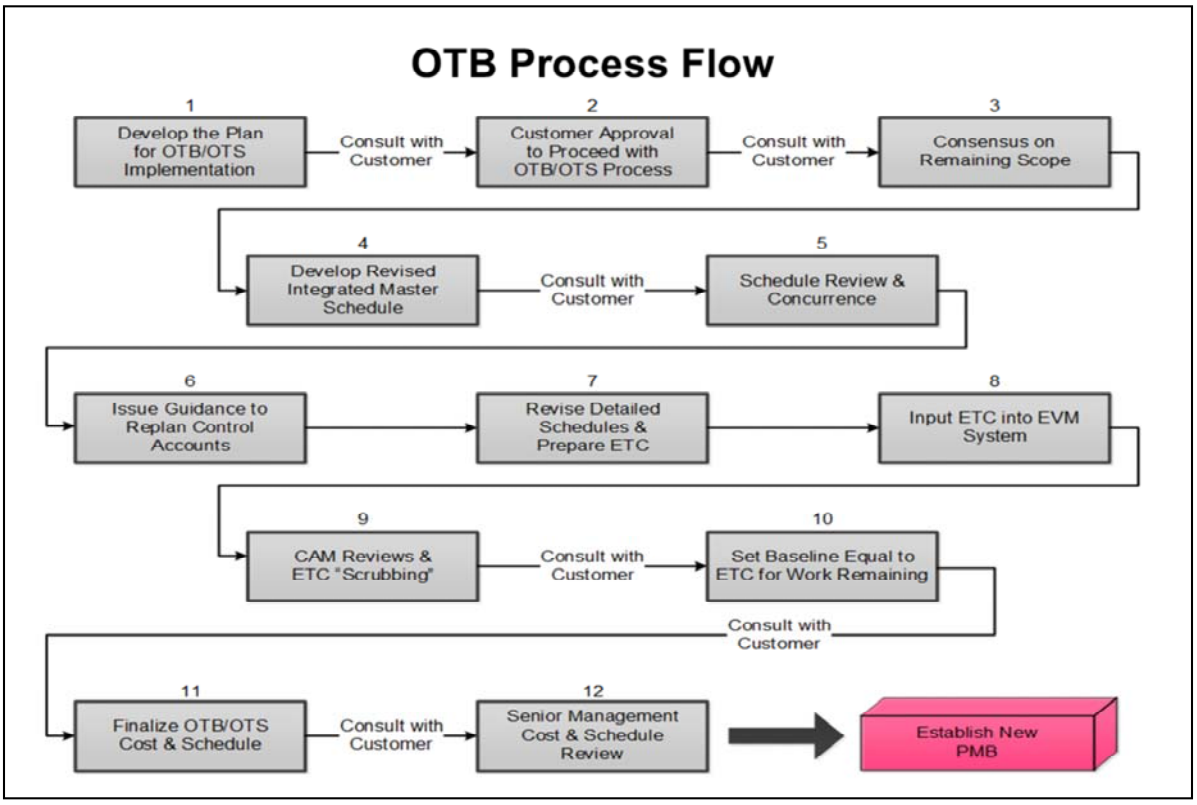
While too soon is a factor to consider, too late is another. There should be substantial work and time remaining. Eighteen months remaining is a suggested amount to allow time to establish and implement the OTB with at least 12 months to execute the resulting Performance Measurement Baseline.

Of course, the estimate to complete the remaining work should be substantially more than the Budgeted Cost for Work Remaining—called the BCWR. How much should the ETC be over and above the BCWR? A good parameter is 15%.

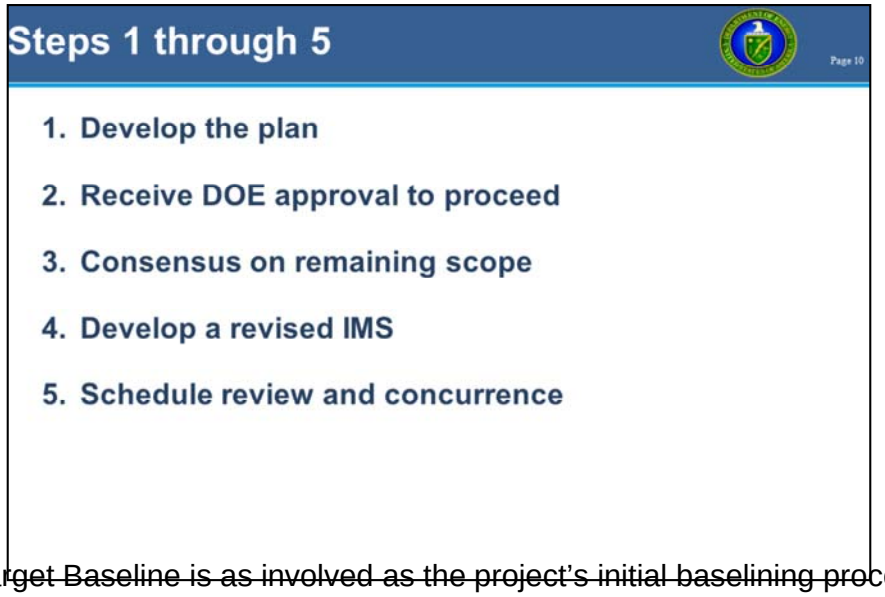
These rules of thumb are based on the cost tradeoffs involved with a total project OTB decision. An OTB is costly in that it takes up to six months to implement, and requires a total project reassessment of the future to a new schedule and resource plan. So there should be time remaining and adequate budget where performance measurement benefits outweigh the cost of implementation.

The Integrated Baseline Review (IBR) is a proven tool to assess the remaining technical scope, cost, and schedule risks associated with the integrated PMB. The IBR approach includes an integrated assessment of the achievability of the baseline plan for

accomplishing the remaining work which is a key to determining the need for an OTB/OTS. Snippet 4.2 provides additional detail on IBRs.



This process flow is from the OTB OTS Guide. We will follow this flow as we examine the Guide's recommended 12 steps to execution of the new PMB. The flow chart steps refer to contractor actions and identifies when customer interaction is essential. Note that early involvement and frequent interaction with DOE is critical.



Implementing an Over Target Baseline is as involved as the project's initial baselining process, if not more so.

During Step 1, the contractor develops an implementation plan and schedule. The plan identifies ground rules and assumptions, scope, impact, plans to adjust variances, potential reporting changes, documentation recommendations, and planned dates for implementation. The DOE FPD documents expectations, such as special reporting or coordination requirements from senior management.

In Step 2, the contractor submits the formal request for approval to initiate the OTB to the DOE Contracting Officer. The request includes a top-level projection of potential cost and/or schedule growth, recommendation of whether or not performance variances will be retained, and an implementation schedule.

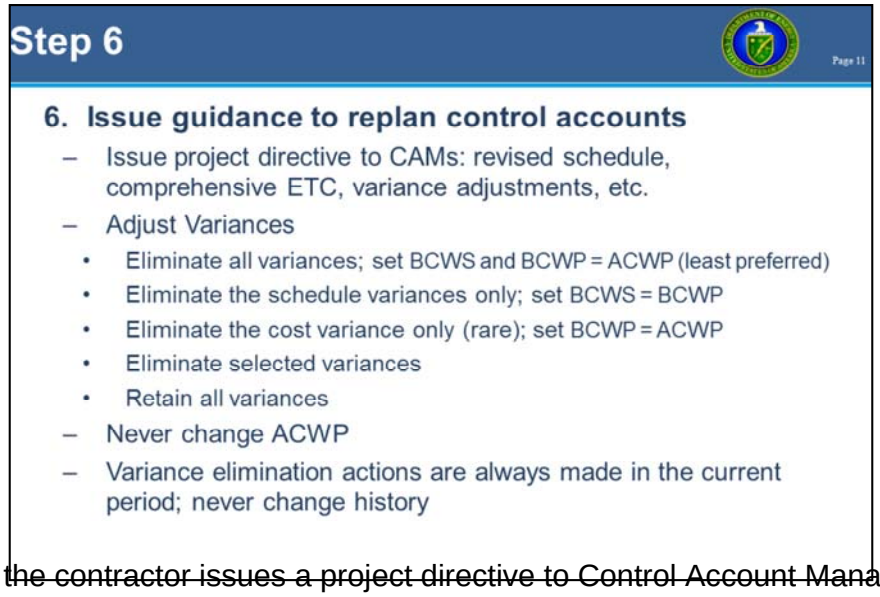
Upon approval from the Contracting Officer, the contractor and DOE will proceed to Step 3. This step is where the parties reach consensus on the scope of the remaining effort as supported by the ground rules and assumptions for the comprehensive estimate to complete. This validation should not result in a scope change to the contract. The level of scope review should be done at the work package/planning package level. Any changes to the scope of the contract identified during the validation requires a bilateral modification by the Contracting Officer and should be tracked separately from the OTB process for contract budget base reconciliation purposes.

During Step 4, the contractor should base all revised planning on a complete, integrated, and realistic schedule. Logic, durations, and completeness of the new schedule should be validated whether an Over Target Schedule is required or not. If contractual completion dates are affected, then an OTS is required. The new dates in the OTS are for performance measurement purposes only and do not represent an agreement to modify the contract fee, schedule, terms or conditions. The CO will only issue a modification for the cost overrun in accordance with Acquisition Guide Chapter 43.3 (March 2013).

The new schedule should be integrated not only with related key events, but also with the key vendors, suppliers, and subcontractors as well. This scheduling process, just as it was done at the original contract planning, is very time consuming and requires a strong, experienced scheduling support team.

Step 5 is the Schedule review and concurrence. This is where contractor and DOE project teams assess the logical sequencing of schedule, validate the activities and durations, and verify horizontal and vertical schedule integration and traceability.

Upon approval of the IMS, the contractor proceeds to Step 6.



Step 6 is the point where the contractor issues a project directive to Control Account Managers (CAMs) defining remaining scope of work to be estimated, revised schedules, variances to be adjusted, and an overall schedule for completing the comprehensive estimate to complete. This document should be provided to the DOE FPD and DOE Contracting Officer to ensure awareness of the impact to the proposed final cost.

It involves the entire project team, including the control account managers, the CAMs. The CAMs are the managers who must take ownership of the new schedule and budget. The comprehensive ETC, also known as the complete bottom-up, across the entire project, now should be accomplished. This step should already be clearly described in the contractor's EVM System Description Document--and be initiated preferably by a Project Manager Guidance Directive. There should also be a kick-off meeting. The adjustment of cost and schedule variances, or which OTB will be used, is involved at this point; any adjustment requires a contract modification issued by the Contracting Officer.

A key consideration in implementing an OTB is to determine what to do with the variances against the pre-OTB baseline. A Single Point Adjustment (or SPA) refers to eliminating cumulative performance variances, replanning the remaining work, and reallocating the remaining budget to establish a new PMB. Either cost or schedule variances, or both, can be set to zero during an SPA depending on the Government's requirements to retain certain historical variances for visibility. It is expected that an OTB has some form of SPA; however, it is possible to implement an OTB without adjusting past cost variances. An SPA can be implemented for the total project or selected sub-elements.

There should be a cost/benefit analysis to support a decision to remove cost variances. The perceived benefit of starting over is offset with the cost of implementation and the distortion of common EVM metrics. If implemented, metrics will need to be recalculated from the point of OTB implementation forward.

There are five different approaches for adjusting the variances. The first is to eliminate both cost and schedule variances. The BCWS and BCWP are set equal to ACWP. Although this has been used in the past in DOE, it is the least preferred and is discouraged because it does not accurately reflect the work performed at closeout and invalidates the use of the Cost Performance Index (CPI) which is used in evaluating revised estimates at completion.

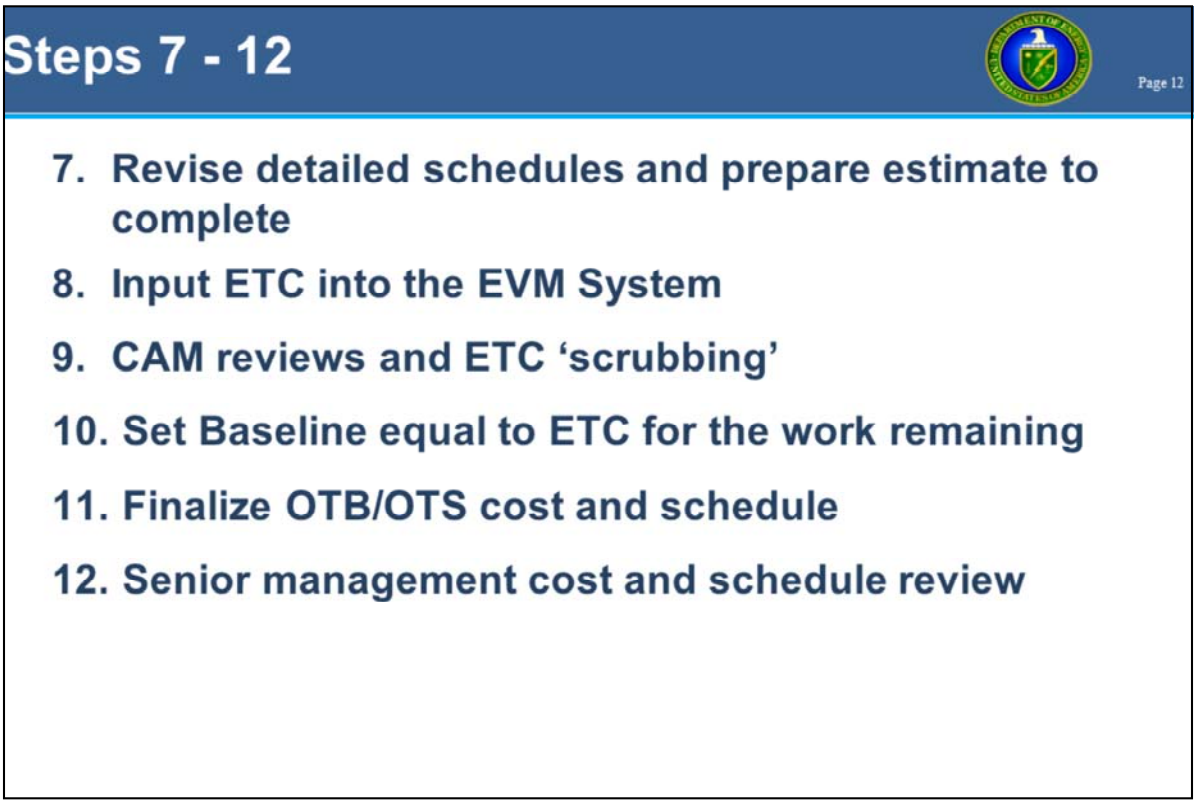
A better approach is the option which only eliminates the schedule variance. The BCWS is set equal to the BCWP, or said another way the budget is set equal to the performance earned. The remaining BCWS is then available for replanning into future periods as part of the replanning exercise. This is a logical approach as the budget corresponds to the revised scope of work, provides a valid basis for measuring performance on the revised work, and historical records of actual costs associated with work performed have not been lost.

Another option is where only the cost variances are eliminated. This is rare but is done when the PM and FPD believe the schedule information is valid and want to preserve it.

The next approach is to eliminate selected variances. This would be appropriate when only certain WBS elements are causing the need for an OTB. An example may be that a single subcontractor is out of line with the baseline.

Another approach is to retain all variances when the contractor has been performing fairly well to the baseline plan to date with no significant variances; however, the contractor needs additional budget to complete the remaining effort. Any of the approaches recommended by the contractor would be subject to approval by the CO.

Note that in none of these examples is the ACWP adjusted. The ACWP should always be reconcilable to the actual accounting records. Also all adjustments are made in the current period. Changes to history are never authorized.



In step 7 the control account managers now must revise those detailed schedules, as applicable, from Step 4 and simultaneously prepare detailed estimates of all the resources required to complete the remaining contract work.

These new Estimates to Complete should be broken down into the staffing, the material, other direct costs (ODC), purchased services, and any other elements of cost. The remaining risk, its potential cost and/or schedule impact, probability of occurrence, and mitigation plans should all be considered in the detailed ETCs.

The detailed bottom-up ETC obviously has to include any applicable sub's OTB, which includes its detailed ETC.

The new amount of management reserve is based on several factors including consideration of the percentage of the project remaining, robustness of risk management processes and ability to identify risk, technical evaluation of future risks, and the amount of MR consumed to date compared to the percentage of cumulative BCWP.

The next step is number 8. Once the ETC has been prepared, reviewed, and approved, it can be input into the contractor's system as the new performance measurement baseline. It is not unusual for this process to take two accounting periods; one to input the information, and another period to perform error correction on the output from the system.

Step 9 is where each CAM reviews the new baseline to ensure no mistakes were made. Then the contractor PM conducts a review of the new baseline, ETC, and detailed schedules with each CAM. The DOE FPD may be included in these discussions to ensure

full understanding and communication. Finally the resulting EAC is reviewed and accepted by the DOE FPD.

At step 10, the ETC becomes the basis for the baseline plan for those control accounts involved in the OTB.

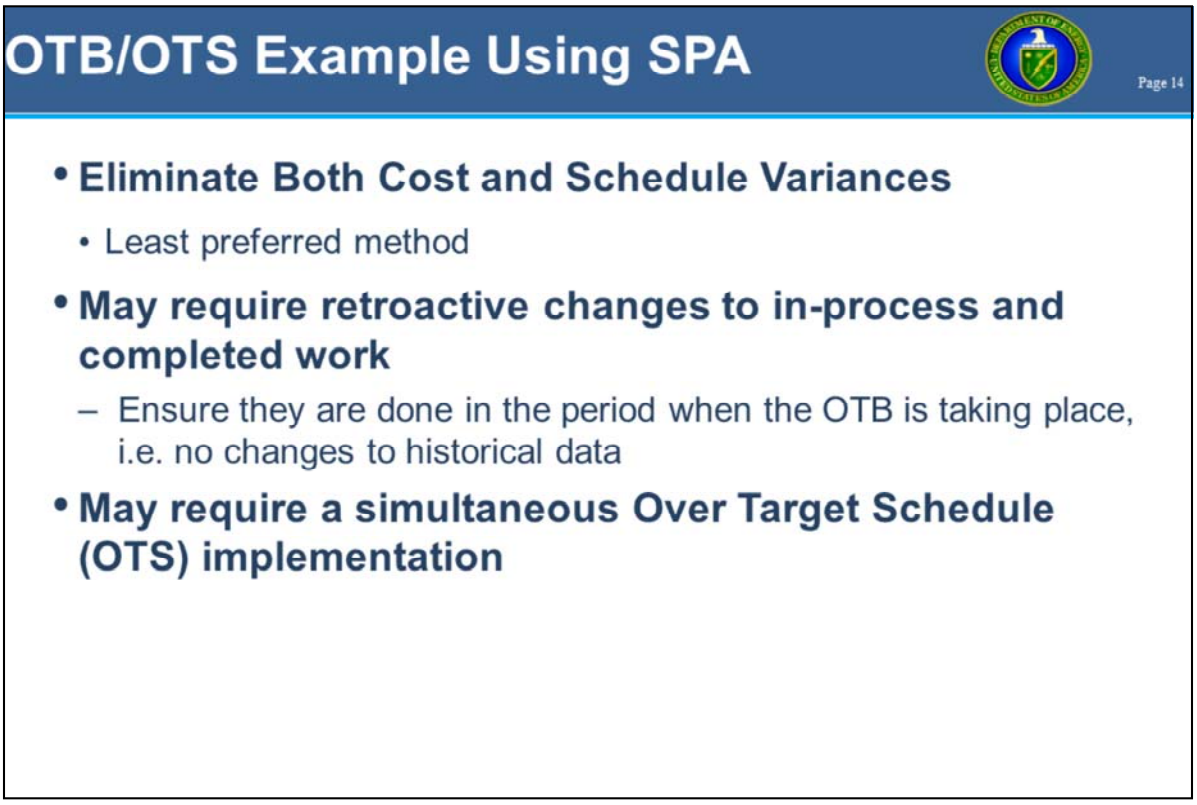
Step 11 is the point where any last changes are incorporated and the OTB and/or OTS is finalized.

The last step, number 12, is the senior management review and approval by both the contractor and DOE. This is also the opportunity for the parties to affirm their commitment to complete the effort within the cost and schedule plan. At this point the parties determine the timing for conducting the Integrated Baseline Review.

In summary, this process ensures that the PMB is equal to the latest forecast of completion so therefore, it is reasonable for assessment of performance.

OTB/OTS Example

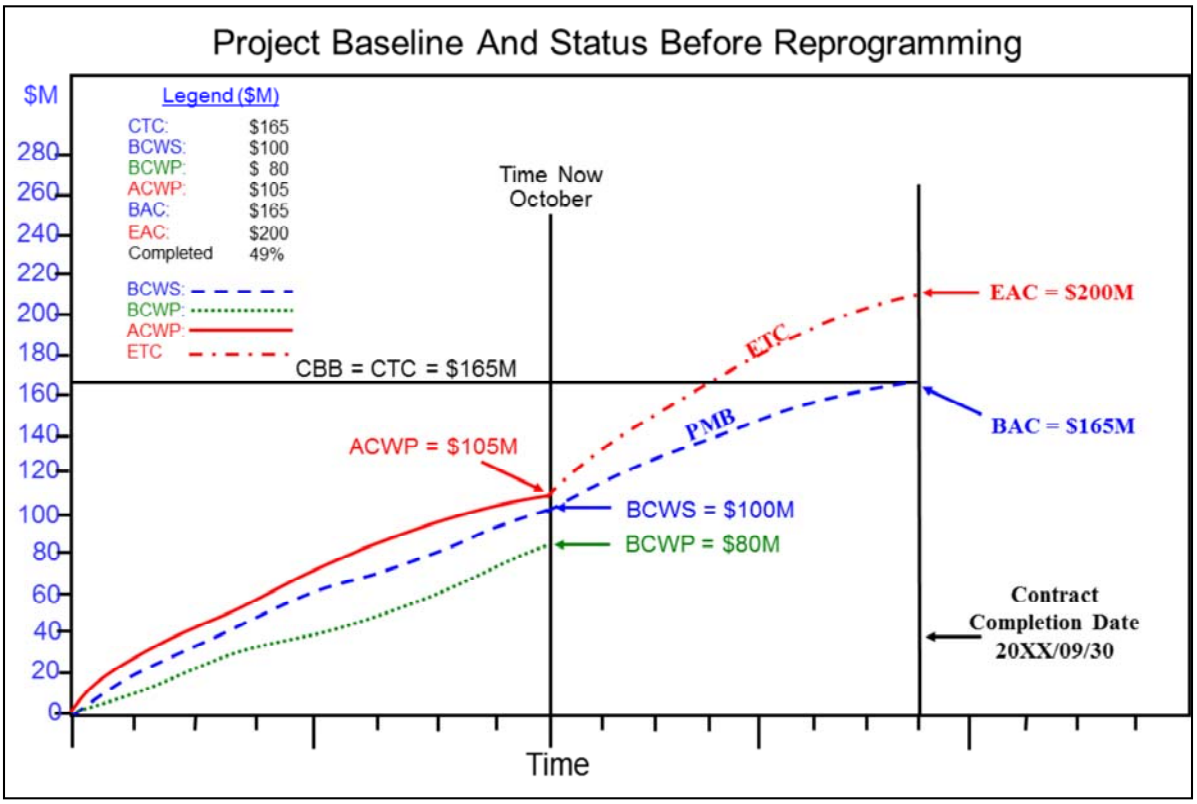
Let’s take a look at an example using the Single Point Adjustment method of eliminating variances and examine the before and after graphs.



The first example will show before and after using the Single Point Adjustment method, where both Cost and Schedule Variances are eliminated. It is the least preferred method, as both BCWS and BCWP are set equal to ACWP.

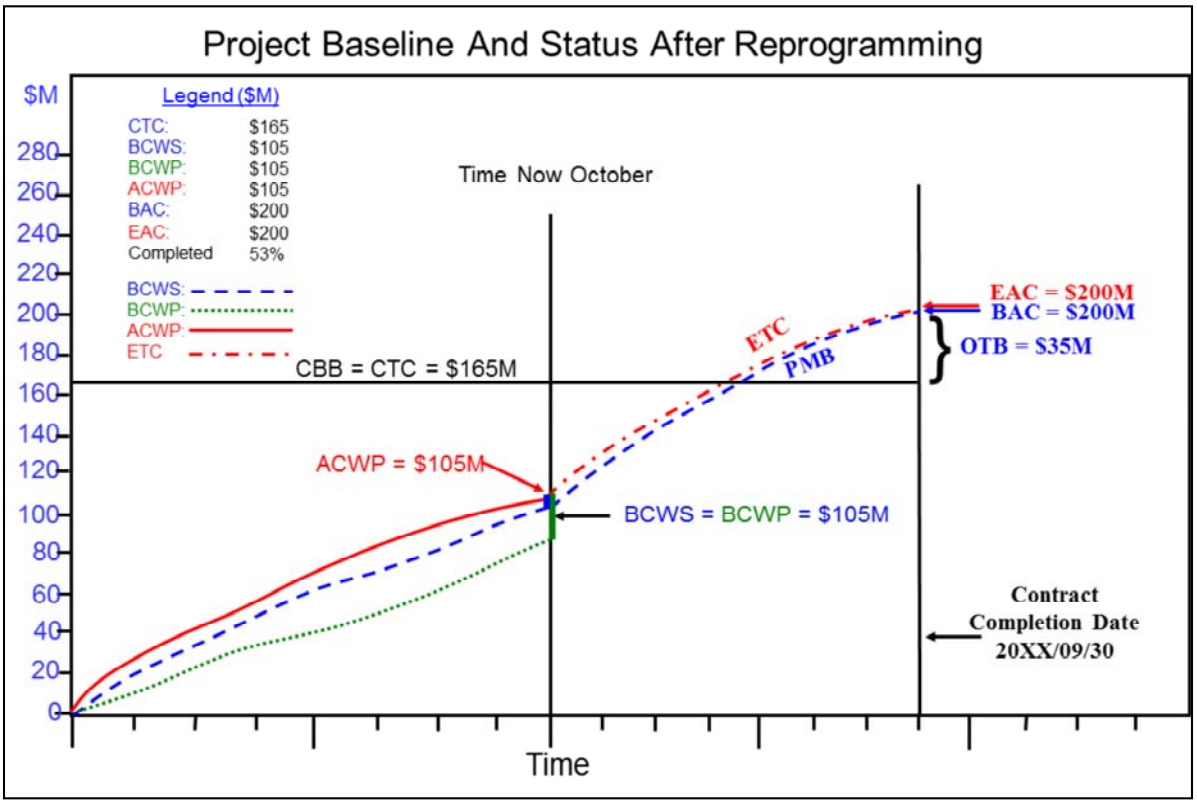
This Formal Reprogramming Method involves considerable effort, as adjustments are made to all work completed as well as to all work in process. Because of the many budget changes involved, retroactive changes to BCWS and BCWP will probably have to be undertaken also.

And, finally, if there is to be an Over Target Schedule implementation in concert with the OTB, there's considerable time and effort involved. Implementing an OTB and OTS with the Single Point Adjustment is at least as involved as the original project baseline effort.

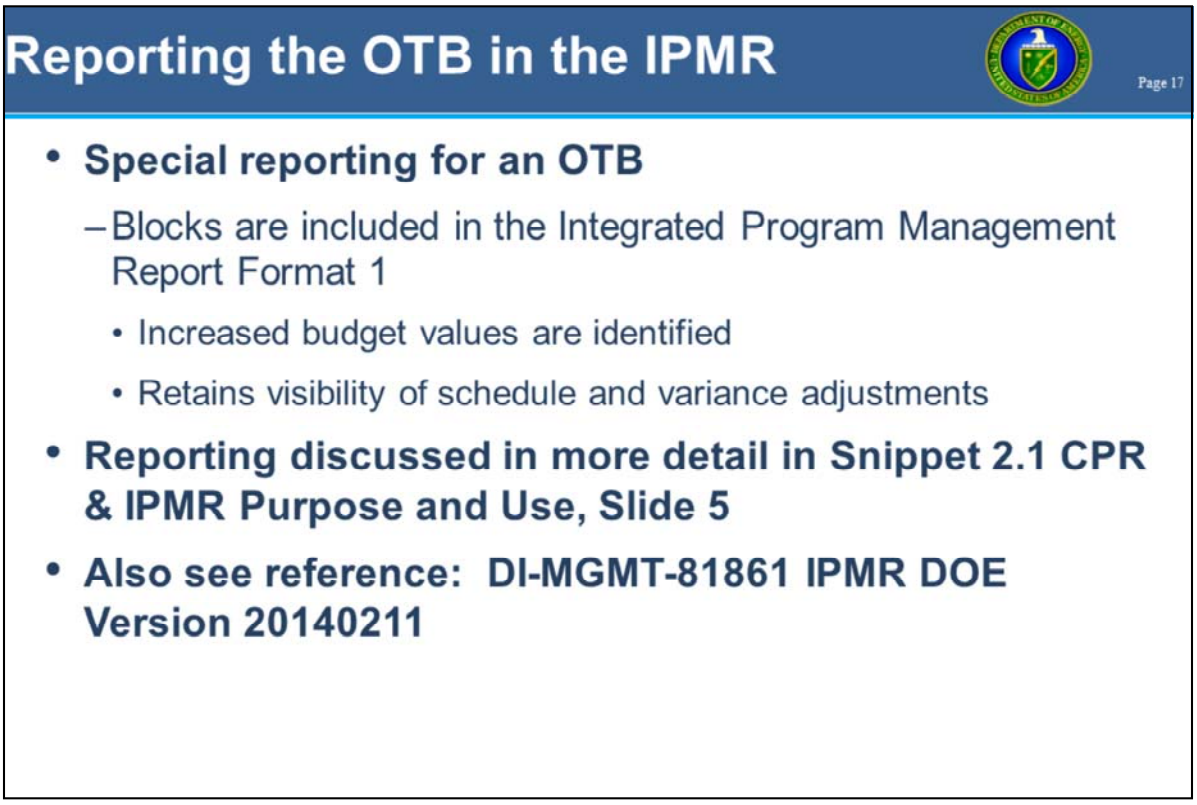


In this scenario, before reprogramming, the current overruns are not significant; however, notice that the estimate to complete the remaining effort is significantly more than the performance measurement baseline. This indicates that the baseline may not include all the tasks required to complete the effort.

Recall we previously stated that the primary purpose for implementing an Over Target Baseline is to improve managerial control over the remaining project. The remaining original baseline is no longer realistic and managers will cease to recognize it as an achievable goal. The performance measurement information from an unrealistic baseline is not valid so should not be used for decision making. All attention is directed toward the ever-increasing Estimate at Completion with little interest or sensitivity to the schedule or newly developing, potentially correctible cost and schedule problems. Therefore, in this scenario, the contractor and DOE decide to go to an OTB.



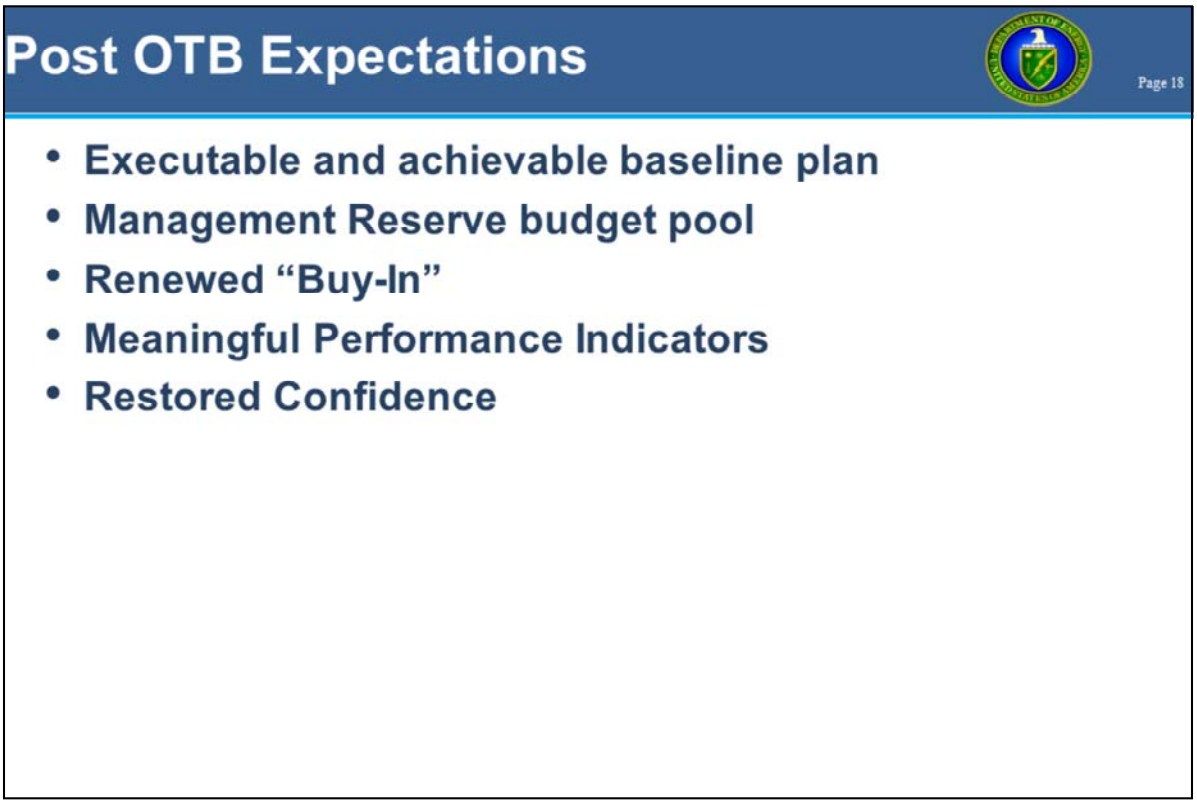
The baseline graph, After Reprogramming, illustrates the adjustments to BCWS and BCWP to now co-align with the ACWP at Time Now. In other words, a single point adjustment was done setting S and P equal to A. The resultant PMB and ETC curves are identical as is the BAC and EAC. In this example, there was no change to the completion date; therefore, an OTS was not necessary.



Special reporting is required for an OTB project via the Contract Performance Report or Integrated Program Management Report, whichever is on contract. Format 1 is used to reconcile the increased budget values to the CBB. Any pertinent details on the reporting of the OTB will be included in Format 5.

As we discussed previously in step 6 of the OTB process, there are several ways to adjust the variances. Although the variances may have been re-set in the OTB process, visibility of the variance adjustments is retained in the CPR or IPMR. If the contractor uses a portion of the additional budget to adjust or eliminate variances applicable to completed work, the adjustments made to the cost and schedule variances are also shown in Format 1.

For more information on reporting an OTB, see Snippet 2.1 entitled CPR and IPMR Purpose and Use, and refer to the data item description for the IPMR, DI-MGMT-81861 IPMR.



The OTB and or OTS route is a significant amount of work, so it should be carefully considered. What is the goal versus what is the cost? The ultimate goal of the process is improved project management control. The contractor should once again have an executable and achievable integrated scope, schedule, and resource baseline plan to work with and from which to measure performance.

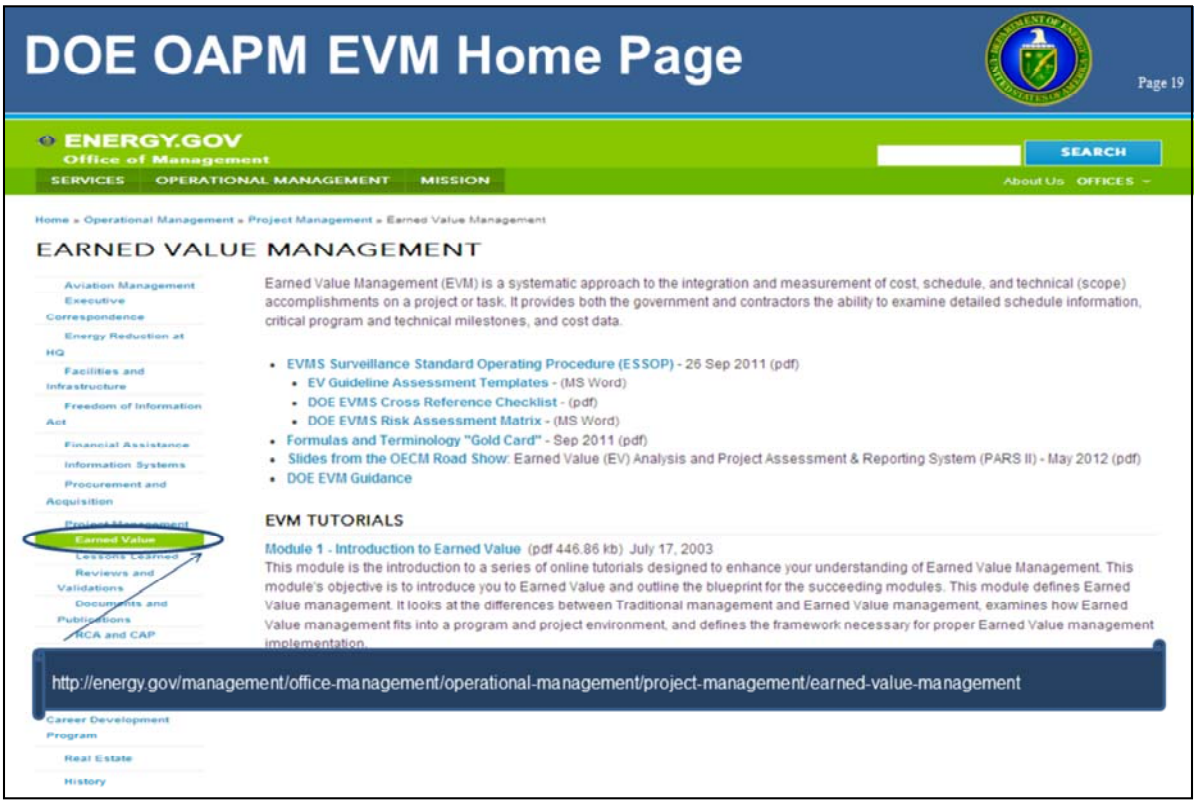
The contractor PM will re-establish an adequate pool of MR budget that is based on a thorough analysis of the risk in the remaining work. An adequate amount of MR is essential in order to maintain the integrity of the PMB as any risks in the remaining work are encountered.

An OTB and/or OTS should result in a common understanding between all stakeholders of the remaining effort and resources required to complete the work. The CAMs, IPT leaders and members, PM, corporate leadership, and DOE will have a renewed buy-in to the OTB project baseline plan.

As work is accomplished according to the new baseline plan, a more credible schedule, along with more accurate estimates, will provide the basis for more reliable performance indicators as measured against the OTB project plan.

Ultimately, all parties should have confidence in the baseline that is established for the remainder of the effort. This confidence should extend to the resulting analysis as the post-OTB indicators begin to establish new and reliable performance variance trends. Although the cost and schedule projections may be outside the bounds of the negotiated contract envelope, they represent a more credible basis for predicting the funds required for

continuing the project.



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