



DOE PROJECT MANAGEMENT NEWS

Promoting Project Management Excellence

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Director's Corner

I hope everyone had a safe, enjoyable Thanksgiving. With a new year just around the corner, I wanted to express my gratitude and wish each of you, and your families and friends, the very best this Holiday Season.

This month, we take a look at a new Construction Industry Institute (CII) initiative, the Federal Facility Data Analytics Research & Application Project (FF-DARAP). DOE is one of six participating federal agencies that include the Department of Commerce, Department of State, Naval Facilities Engineering Systems Command (NAVFAC), the U.S. Army Corps of Engineers (USACE), and the Smithsonian Institution. The goal is to improve access to a variety of new information that will better inform our cost, schedule, and risk assessments on DOE capital asset projects. See page 2 for more information on this initiative.

The Project Management Executive (PME) grants an authorization to proceed at each critical decision (CD). This authorization is limited to proceeding to the next CD (i.e., at CD-0 the PME authorizes the project to proceed to CD-1). However, once the PME has approved CD-1, the project

is authorized to plan and develop a budget for the project through CD-4. With CD-1 approval, the project team should establish and maintain a summary-level life-cycle integrated master schedule (IMS) with critical path and a performance measurement baseline (PMB) for the project through CD-4 using the high end of the approved cost range. Over time, the plan and budget should be refined as requirements are finalized, the design matures, and the total project cost is established. For more insight, see the article on page 3.

In response to COVID-19 and the department's shift to a maximum telework posture, our Professional Development Division (PM-40) shifted all Project Management Career Development Program (PMCDP) courses to virtual deliveries. This was done to ensure developmental opportunities would remain available to federal project directors (FPDs) and federal integrated project team (IPT) members. Now, we are asking for your feedback regarding the effectiveness of current, virtual course offerings, as well as the development of potentially new courses or webinars to support earning continuous learning points. For more information, see the article on page 6.

Be sure to enjoy the holidays; by all accounts, 2021 will be another interesting and exciting year!

Keep charging!
Paul Bosco

CII's Federal Facility Data Analytics Research & Application Project (FF-DARAP)

Peter Bako, Office of Project Analysis (PM-20)

DOE's Office of Project Management (PM) recently joined the Construction Industry Institute's (CII's) Federal Facility Data Analytics Research & Application Project (FF-DARAP). DOE is one of six participating federal agencies that include the Department of Commerce, Department of State, Naval Facilities Engineering Systems Command (NAVFAC), the U.S. Army Corps of Engineers (USACE), and the Smithsonian Institution.

The initial research efforts of the FF-DARAP will establish the benchmarking framework and metrics tailored for the participating federal agencies. This will include the development of definitions for comparable and project-specific data, internal benchmarking features, and the launch of a data warehouse suitable for the benchmarking of federal facilities. This project will provide a secure way to input data from each agency's data systems into the CII Data Warehouse, to support benchmarking and aggregated comparisons.

This project also includes the ability for each agency to connect to the data warehouse to automate data submission, which will facilitate cost comparisons for agencies' past and current projects. It will support the evaluations of the costs to design, construct, and renovate facilities relative to costs experienced by other federal agencies and organizations. FF-DARAP will also enable the evaluation and benchmarking of facilities' operational performance and lifecycle costs – a well-established objective of many government agencies.

The FF-DARAP, which kicked off in August 2020, is a three-phase, three-year research and development of a methodology, distributed computing system and machine learning algorithms to create an advanced data warehouse and project analytics capability for capital projects.



US Army Corps of Engineers®

Smithsonian



The project is divided into three phases:

Phase 1: Framework Development and Initial Data Warehouse Launch (Aug 20 – May 21)

This phase builds upon the legacy of CII's benchmarking and metrics program that began in 1995. The framework will provide the capability to identify similar projects between participating government agencies for benchmarking. This will include specific project metrics for cost, schedule, change, rework, safety, best practices and many other aspects of evaluating projects. This provides a solid foundation for development of a framework and the initial launch of the data warehouse, which will be located at the University of Texas at Austin's state-of-the-art Texas Advanced Computing Center (TACC).

Phase 2: Data Acquisition and Project Analytics Functionality (Jun 21 – May 22)

Phase 2 expands the initial launch of the data warehouse to leverage data resident in various building information modeling (BIM) packages and construction management software. It will expand the capacity to import new types of data into the data warehouse and will also incorporate the capability for individual users to create their own comparisons using business intelligence (BI) software.

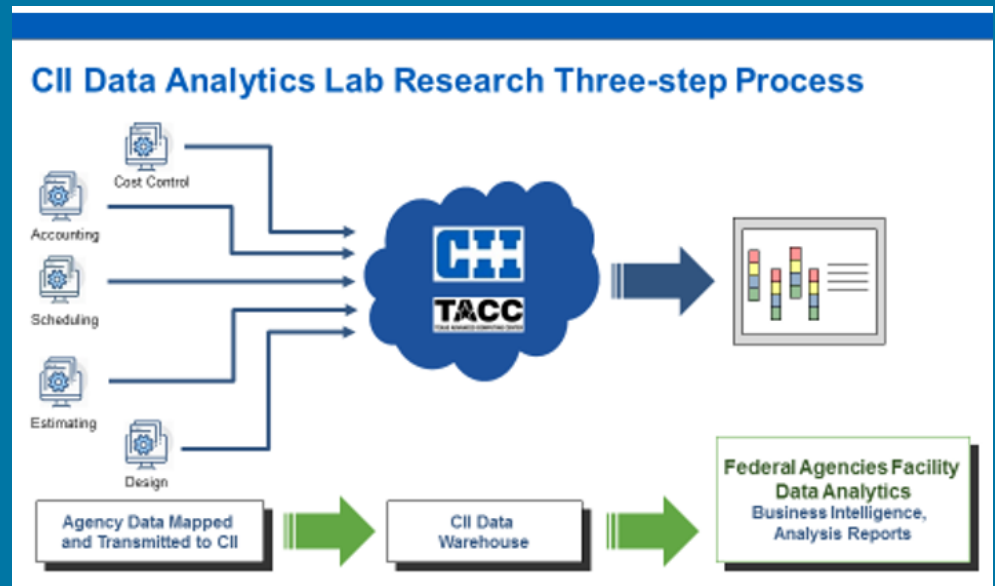
Phase 3: Reporting and Creation of Initial Machine Learning Algorithms (Jun 22 – May 23)

The final phase will provide algorithms, models, and simulations that organizations can use with the resident data to make projections about their projects. An initial set of use cases will be created using data collected in Phase 2 to demonstrate the application of machine learning techniques and the resulting data analyses. The experiences gained in Phases 1 and 2 will inform how functionality should be provided.

Continued on Page 3.

Successfully implemented, the FF-DARAP will provide the following capabilities to DOE and other participating agencies:

- Leverage existing CII performance metrics as appropriate for federal buildings (e.g., cost and schedule growth, cost per square foot, and project definition rating index (PDR) scores for comparison with other organizations)
- Develop a common set of building-specific key performance metrics that can be used for benchmarking and performance comparisons
- Provide a set of relevant, aggregated data for use as external benchmarks and performance assessment comparison targets
- Create analyses, support and presentation materials for federal agencies to use to justify facility development and modernization plans to funding authorities
- Deploy comparisons for agencies' capital projects that incorporate operational performance metrics, including building lifecycle cost analysis methodologies



The aim of PM's participation in the FF-DARAP is to improve access to a variety of new information that will better inform its cost, schedule, and risk assessments on DOE capital asset projects. While the full value is yet to be determined, this effort ultimately should help produce more reliable independent cost estimates for the Department.

Authorization to Plan and Budget vs Authorization to Proceed Through the Critical Decision (CD) Gate Life-cycle Process (A Critical Insight into Budgets vs Funds)

David Kester, Office of Project Controls (PM-30)

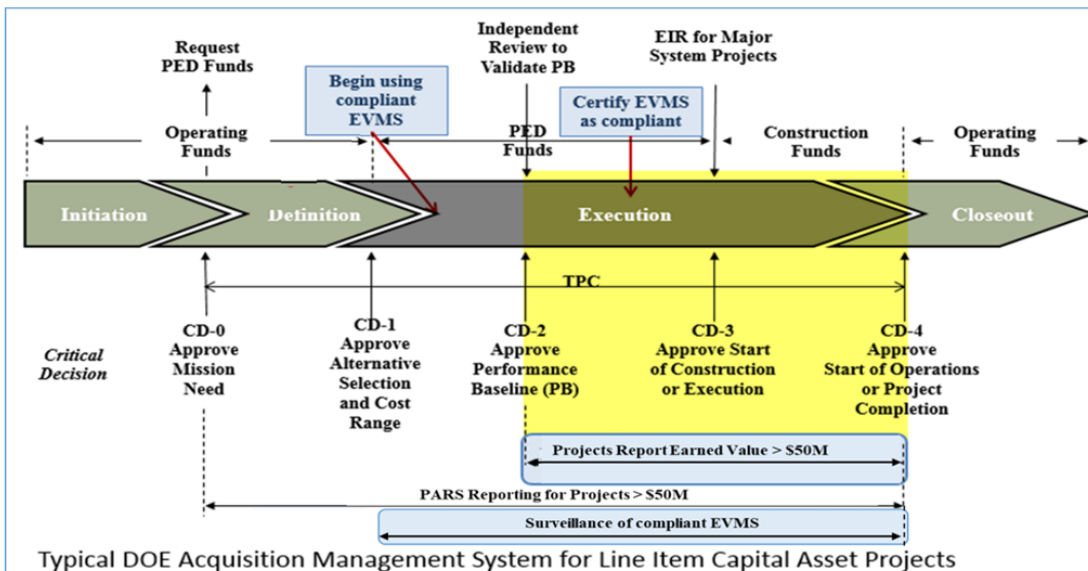
As defined in DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*, all projects have a start defined by critical decision-0 (CD-0) and finish defined by CD-4, two chronological boundaries established to define and monitor the work to be accomplished. For projects greater than or equal to \$50M, the development of the performance measurement baseline (PMB) for the selected alternative's project or multiple subprojects coincides with the development of the preliminary design which begins after CD-1. The implementation of an EIA-748 compliant earned value management system (EVMS) at this same time prior to CD-2 provides specificity to the project's PMB by defining what "done" looks like and what "done" will cost.



As a project moves through successive CD gates, the specificity of the PMB is better articulated through progressive elaboration of the project's design and execution planning, and the level of confidence increases that the PMB can achieve mission objectives within defined constraints – schedule, cost, performance, and quality.

Continued on Page 4.

The incremental development of a project's PMB, using a compliant EVMS, is the major component in establishment of the performance baseline (PB) inclusive of total project cost (TPC) at CD-2. Thus, starting after CD-1 and prior to CD-2, the contractor will establish and maintain a summary-level life-cycle integrated master schedule (IMS) with critical path and PMB for the project to CD-4 using the high end of the approved cost range. At CD-2 a detailed IMS with critical path aligns to the ready to execute PMB for the project through CD-4. Throughout this initial process and all the way through CD-3 to CD-4, changes to the project's plan and budget (IMS and PMB) are made using the EVMS change control process. This is summarized in the following diagram.



DOE Order 413.3B uses the term “project” holistically for describing a life-cycle endeavor. There is an especially important distinction about authorization to proceed (ATP) on a project and its authorization to plan and budget (ATP&B) through CD-4 completion. A project's ATP is granted at each CD gate to expend funds to proceed to the next CD gate. For example, at CD-0 a project's ATP to CD-1 is granted by the Project Management Executive (PME), and at CD-1 an ATP is granted by the PME to proceed to CD-2, and so on. However, once a project achieves CD-1 approval, it is granted the ATP&B all work scope through CD-4 completion consistent with the project TPC (initially the high end of the approved CD-1 cost range). The ATP&B a project is not limited to the next CD gate, an annual funding limitation, a contract funding limitation, or contract period of performance which may end prior to the CD-4 date. Regardless of the possibility of multiple prime contractors involved in a project whether through joint execution, or hand off from one prime contractor to another based on a separable design/construct strategy, whereas the ATP&B

considers the budget and resources for the full period of performance of a project's life-cycle.

While a project's annual funding profile constrains the expenditure of costs on the execution of work scope (EIA -748 Guideline 1), the EVMS **does not** prevent authorizing and establishing a full project life-cycle IMS with critical path (Guideline 6 and 7) and PMB (Guideline 8). A funding profile (or a representation of the project costs over the life of the project) acts to prioritize and constrain spending by informing a project's plans, schedules, and budgets. The goal is to balance estimated budgeted amounts and actual funded and expended amounts. The use of the EVMS work authorization process (Guideline 9) starting at CD-1 plays a crucial role

in balancing the two. However, a distinction between funds and budgets (or an estimation of costs over a specified future period of time) must be made. Please refer to Snippet 3-1 [budget vs funds and the Performance Measurement Baseline \(PMB\)](#) for further details on this important and too often misunderstood topic.

For example, while the execution of a project's design and construction work

can span multiple years, the authorization to establish control account plans, schedules, and budgets must not be limited to yearly increments for the sole purpose of managing funds. While the importance of managing work and the expenditure of costs within annual funding limitations **should not be** diminished, at the same time the need to establish a complete and comprehensive life-cycle critical path project schedule and PMB should not be prevented because of this. The delicate balance to perform both activities must be understood and respected in the context of implementing the EVMS.

As a case in point, at CD-3 approval, a project is authorized to commit all resources necessary within the funds provided to complete procurement, construction, acceptance, and turnover activities. However, this is predicated on the establishment and authorization of a complete and comprehensive project IMS with critical path and PMB for the full project life-cycle beyond the current year's funding.

Continued on Page 5.

EIA-748 necessitates that the EVMS establish the PMB through a documented work authorization process at the control account level that considers a project's total cost value and full period of performance. Limiting this authorization to the current year's funding confuses the need to manage funds at the expense of establishing complete and comprehensive plans, schedules, and budgets, and precludes control account managers having responsibility for all life-cycle work scope. In so doing, it further limits the ability to identify and mitigate performance variances and risks (Guideline 23), and generate credible cost and schedule estimates at completion (Guideline 27) for the full project life-cycle.

Another set of EVMS snippets that help explain the differences and relationships between budget and funds in the reporting context are Snippet 2.1 [Contract Performance Report \(CPR\) / Integrated Program Management Report \(IPMR\): Purpose & Uses](#), Snippet 2.2 [CPR/IPMR: FPD Quick Check](#), and Snippet 2.4 [Contract Funds Status Report \(CFSR\) Overview & Reconciliation with IPMR/CPR](#). Unfortunately, the CFSR is not a widely required document yet within the DOE.

EVMS snippets can be located at <https://www.energy.gov/projectmanagement/evms-training-snippets>. For further information or questions on this or any EVMS topic, please contact [PM-30](#).

FPD Check-In! Level IV FPD, Shayne Farrell (EM)



Reported in October's issue, the Salt Waste Processing Facility (SWPF) located at the Savannah River Site in Aiken, SC received approval from Deputy Secretary Mark Menezes for critical decision (CD)-4 and authorization to operate on August 17, 2020. Shayne Farrell, pictured here receiving his Level IV FPD certificate from Ike White, at the commissioning ceremony earlier this year, was the Deputy FPD on the project.

Congratulations to our newly certified FPDs!



Level II
Steven Clemons (EM)

Level I
C. Scott Richey (NNSA)

Level I
Alexandria Harris (SC)

Level I
Walter Swasdiutra (SC)

PMCDP Lessons Learned from Virtual Deliveries: Make Better Lemonade

Linda Ott, Professional Development Division Director (PM-40)

When the pandemic caused DOE to exercise maximum telework starting in March 2020, the Project Management Career Development Program (PMCDP) acted quickly to replace our classroom courses with virtual deliveries to ensure developmental opportunities would remain available to FPDs seeking certification and to other members of the integrated project teams (IPTs). Most importantly, the quick pivot reduced risk to employees required to travel for training as well as the instructors who travel to deliver our courses.

PMCDP's decision to make lemonade out of the lemons has made for an interesting year. The crisis inspired innovation leveraging limitations to see the possible. From the onset, PMCDP was strategic taking calculated risks with our customers in mind as we moved along. We already knew from participant feedback that the DOE project management community demanded quality. We learned a lot from the desktop deliveries launched in 2016. PMCDP makes decisions about delivery method understanding that the most important management competencies are best taught and learned in-person. The ability to develop interpersonal skills and emotional intelligence, and the ability to engage and influence others needed to remain intact. The virtual delivery approach begged many questions:

- Can we improve upon the way we use technology to foster engagement, networking, and collaboration across projects and sites?
- How can we make the exercises and discussions more thought-provoking and applicable to FPDs?
- In what ways can our instructors evolve their teaching techniques to improve the participant's experiences?

The PMCDP "can do" approach is illustrated in analysis and observations from the first virtual delivery of the Level III course, *Executive Communications*. This advanced course helps DOE participants hone their communication skills to effectively communicate powerful, positive messages to internal, public, media and congressional audiences. The course uses webcams, short video clips, text chats, and collaborative white boarding and breakout sessions to allow participants to practice techniques and gain confidence and get more comfortable when communicating up, down and across. Each participant is recorded while delivering a virtual media interview, a congressional briefing and a crisis scenario.

The participant then receives constructive feedback from expert coaches, journalists and other participants. The feedback focuses specifically on the communications principles and techniques learned in the course. A participant in the course commented: "Last week I was offered to take over as lead on the project I was discussing as my test case. This course helped me prepare to defend our project to my leadership going forward. I was thrilled to know I would put this practice to use so soon."

PMCDP will commit to virtual learning long term because we are not certain when we will get "back to normal" and what that will look like. The commitment requires continuous improvement in the design and delivery of our courses; reskilling instructors to improve virtual interaction with participants; and keeping subject matter experts (SMEs) and practitioners engaged and involved in content development and, in some cases, to co-facilitate the training deliveries by sharing their personal experiences and providing insights on solving complex challenges.

As we continue on this journey of continuous improvement, we invite you to help us strengthen our capabilities (make more --and better-- lemonade) in this time of unexpected change by:

- Providing detailed feedback as part of your course evaluations. We read and consider every comment as part of our "hot wash" process conducted after every course delivery.
- Helping us develop new courses by offering to be part of the development process or by participating in pilot deliveries to let us know if new course designs meet your needs and how they can be improved.
- Offering to co-facilitate a webinar or help to facilitate course breakout groups to share your knowledge and experience with the FPD community.
- Letting us know what training topics you would like to see available so that we can enhance our current courses or develop new content for you.
- Suggesting topics for webinars and other short opportunities to learn and earn continuous learning points (CLPs).



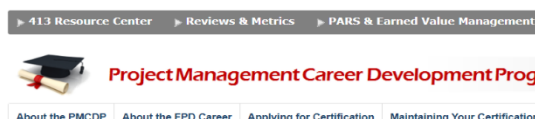
For more information or to provide feedback, contact any member of the PMCDP team: Linda Ott, Sigmond Ceaser, or Ruby Giles by email or phone.

How ESS PMCDP, PM-MAX, and FAITAS Interrelate



ESS PMCDP: The FPD application is completed and saved to be uploaded to...

FPD Continuous Learning Points are also reported here in the FPD CLP Tracker



PM-MAX along with certificates, FPD appointment letters and other supporting documents.

PM-MAX is where Approval Routing Workflow moves the candidate package through approval routine process:

1. CRB Secretariat initial review,
2. Independent Review, and
3. CRB approval

Once FPD certification is attained



FPD can apply for FAC-COR (unless FPD already has FAC-COR) in **FAITAS**. FPD is required to apply for and maintain FAC-COR in FAITAS

For FAC-COR Level 2, FPD provides FPD level I certificate and current COR appointment letter.

FOR FAC-COR Level 3, FPD provides FPD Level III certificate and current COR appointment letter.



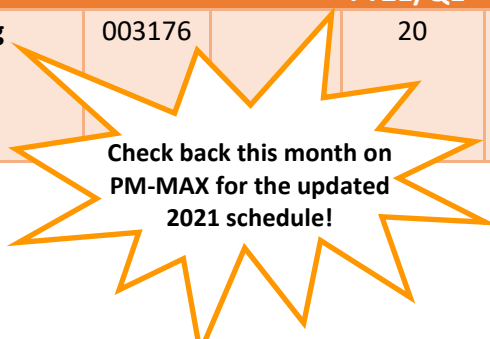
PMCDP FY20 Training Schedule

The training schedule is posted on PM MAX. Save the direct link to the Project Management Career Development Program PMCDP Training Schedule to your favorites: <https://community.max.gov/x/BgZcQw>

PMCDP is looking at a different and better training schedule for FY2021. In March 2020, PMCDP quickly shifted all courses to virtual delivery in response to COVID-19. Guiding the training schedule and delivery of classes in FY 2021 are the following:

- Understanding it is difficult to predict when air travel and gathering in groups of more than ten will be considered safe, PMCDP will continue to design and develop courses to support the DOE dispersed program and project management workforce.
- Every new and converted course will be delivered online (self-paced), or via an instructor-led distance learning format.
- Course materials, the learning equipment, the visual aids, the audience engagement, and even the time zones will be given careful consideration. For example, audience engagement will go far beyond polling questions and asking participants to agree or disagree by a show of hands (raise your hand icon).
- The courses delivered in webinar format will leverage subject matter experts and master practitioners who will parachute into the delivery to lecture and offer expert knowledge and experience about topics. You can look for this concept to be piloted in the updated Advanced Risk Management course.

Class Name	LN Code	Days	CLPs	Dates	Delivery Method
FY21/Q1					
Front-End Planning	003176		20	Dec 1-17, 2020 Tuesday/Thurs 2-4pm (3 weeks)	Desktop Adobe Connect



Find up-to-date information and resources anytime! PM axi

All PMCDP Course Descriptions and Course Materials can be found in the Course Catalog on Save the direct link to your favorites: <https://community.max.gov/x/UAT3Rw>



Or download the Interactive Curriculum Map: <https://community.max.gov/x/sQd1Qw>

Have a question, found a bug or glitch in a PMCDP online course, or want to provide feedback? Submit your questions through PMCDPOnlineCourseSupport@hq.doe.gov.

Contact Us!

The Office of Project Management welcomes your comments on the Department's policies related to DOE Order 413.3B. Please send citations of errors, omissions, ambiguities, and contradictions to PMpolicy@hq.doe.gov. Propose improvements to policies at <https://hq.ideascale.com>.

If you have technical questions about PARS, such as how to reset your password, please contact the PARS Help Desk at PARS_Support@Hq.Doe.Gov. And as always, PARS documentation, Frequently Asked Questions (FAQs) and other helpful information can be found at <https://pars2oa.doe.gov/support/Shared%20Documents/Forms/AllItems.aspx>.

The current PARS reporting schedule is located in PM-MAX at the following link <https://community.max.gov/x/m4IIY>.

Need information to apply for FPD certification? The Certification and Equivalency Guidelines (CEG) can be found here <https://community.max.gov/x/IQd1Qw>.

Can't put your finger on a document or information you were told is available on PM-MAX? Looking for information on DOE Project Management? Submit your questions and queries to PMWebmaster@doe.gov. Check out the links below for information related to FPD Certification and Certification and Equivalency Guidelines.

To reach the Professional Development Division team:



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Sigmond Ceaser — Alternate Delivery Platforms, PMCDP Review Recommendations Lead, PMCDP Curriculum Manager, Sigmond.Ceaser@hq.doe.gov



Ruby Giles — PMCDP Budget Manager, PMCDP Training Coordinator and Training Delivery Manager, Course Audit Program, Ruby.Giles@hq.doe.gov

If you would like to contribute an article to the Newsletter or have feedback, contact the Editor at Linda.Ott@hq.doe.gov.

