LOCKHEED MARTIN CORP

Moderator: Courtney Chambers
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Courtney Chambers: Okay, now I'll give you today's speaker on the Model Review Process and Lessons Learned. Amanda Maxemchuk is an environmental scientist and ecologist for Battelle Environmental Solutions where she has become involved with all aspects of managing quality assurance reviews of ecosystem planning models developed by USACE. She has conducted 13 model reviews for the Ecosystem Restoration Planning Center of Expertise as well as several independent external peer reviews of USACE decision documents. In addition to her model review work Ms. Maxemchuk also conducts ecological risk assessments, site investigations and site characterizations of Superfund, RCRA and other hazardous waste sites as well as estuarine and marine benthic assessments and toxicity testing. More information about Amanda can be found in her bio posted on the Learning Exchange with the rest of today's meeting document. We're very thankful for her willingness to share with us today.

Okay at this time Amanda I'm going to give you the presenter rights and you can begin.

Amanda Maxemchuk: Thank you Courtney. Thank you for that introduction and thank you everyone for joining today's presentation and discussion of USACE Planning

Model Quality Assurance Review Process Lessons Learned from the Contractor Perspective. The purpose is to provide some insight on how the model review process has evolved over time and ways to conduct a more efficient review with high quality results.

To the right of this title slide is an overview of the model review process which we will get into a little bit in the presentation. During our discussion today we will be briefly reviewing the objective and purpose of the model quality assurance reviews. And I'll also provide a brief overview of the new process external to USACE. And then we will get into a discussion of lessons learned from our experience managing model reviews over the past four years.

As several of you probably already know in 2003 the USACE Planning Models Improvement Program was established in order to assess the state of planning models used by USACE and to make recommendations to ensure that high quality methods and tools are available to enable informed decisions on investments in the nation's water resources and infrastructure in a natural environment. The main objective of the PMIP is to carry out a process to review, improve and validate the analytical tools and models for USACE to support business programs.

The purpose of a review is to evaluate the technical quality, system quality and usability of planning models and methods in accordance with engineer circular assuring the quality of planning models, which was updated in March 2011, and the protocols for the certification or approval of planning models which is provided as an attachment to that document.

USACE contracts out model reviews for several reasons. First of all there is increased independence of reviewers. USACE generally lacks sufficient staffing to manage the reviews and does not have the in-house independent

expertise needed for the review. Contractors have the ability to subcontract experts for these reviews for a high quality review and high quality results.

The USACE Project Manager serves as the point of contact for the contractor and ensures the quality of the review by providing all relevant information needed to conduct the review and by rapidly responding to any questions and information requests submitted by the reviewers through the contractor.

And the review process consists of three general phases, the planning phase, the review execution phase and the comment response phase.

The planning phase consists of three tasks as outlined in the USACE statement of work for reviews. Task one is a kickoff meeting with the contractor and USACE to discuss the review goals, the approach and the schedule. Task two is the preparation of a work plan and the charge to the model review panel by the contractor. The charge is what guides the review. And task three is the recruitment and subcontracting of subject matter experts needed for review.

The review execution phase consists of two tasks, the model assessment and the preparation of a draft report with the model review findings and the final panel assignments that identify the key issues and concerns identified during the review by the experts.

The comment response phase also consists of two tasks including conducting a teleconference with the model review panel and USACE model proponents to discuss the review finding and preparation of the final report which includes formal documentation of the USACE model component proponent responses to final panel comment and the model review panel back check responses.

This graphic shows the comment response process which is the third phase that I just presented from the submission of the draft report to USACE for comment. So the contractor submits the Draft Planning Model Quality Assurance Review Report. We also provide a template and guidance for developing evaluator responses to the final panel comments in the report. Those are the key issues that are identified during the review.

The model proponents provide draft evaluator responses to the contractor. The contractor distributes the draft evaluator responses to the model review panel. The model review panel provides draft back check responses to the contractor. And then we all get on the phone to discuss the final panel comments and the draft responses. This provides an opportunity to clarify anything that needs to be clarified and allows the model review experts and the USACE model proponents to interact directly.

Model proponents are then asked to provide final evaluator responses to the contractor after that teleconference. The contractor distributes this final evaluator responses to the model reviewers. The model review panel develops final back check responses to the contractor.

And then the contractor submits the final Model Planning Quality Assurance Review Report which includes the final evaluator and final back check responses.

So for the remainder of today's discussion we will focus on lessons learned. And if at any point in time you have a comment or question please feel free to speak out. I don't know that I'll necessarily notice things in the chat window there.

Courtney Chambers: I'll try to help you with that Amanda.

Amanda Maxemchuk: Yes?

Courtney Chambers: If you would like I can call out those questions.

Amanda Maxemchuk: Okay thank you. Sorry about that.

Courtney Chambers: You're welcome.

Amanda Maxemchuk: The first lesson learned to be - lessons learned to be covered relate to the information provided in USACE's Statement of Work. The information the SOW provides is the basis for planning the review. And planning is much smoother and easier when the information presented in the SOW is clear, complete and specific to that particular review. Specifically the SOW should clearly indicate whether a model is being certified or approved for national or regional use.

USACE will certify models that are developed by USACE for national or regional application and for models developed by others, USACE approves it for regional or national use. For models used on specific projects USACE approves those models for single use on that particular project.

Also be very clear on the intended user audience. This information and whether the model is being certified or approved helps guide the assignment of significant levels to issues or concerns.

The contractor can provide clear guidance to the model review panel on the determination of significance levels - assigned to any issues or concerns identified during their review.

Issues are generally determined to be less significant for users who are most familiar with models and methods being used for planning studies especially for the individual who develop the model or method or those who have access to training and technical support.

For some reviews that I've done significance has been assigned to the issues identified if the intended user audience is more specific than the user audience to which the model is actually available, for example a model that might be available through a public Web site.

Also in the SOW when defining the selection criteria for experts to serve on the model review panel it's important to consider the specific expertise that was required to develop the model or method under review. The expertise of the reviewers is generally very similar.

It's also important to consider any software that individuals will need to access in order to support their review of the materials provided.

And an example is the (HEC GEO-EFM) which requires access to ArcGIS 9.3. And many GIS experts that can be contacted today have already upgraded to Version 10 and would need a license for 9.3 as well.

Providing this information on the experts insurers that the most qualified experts are selected to perform the review and that they can perform it thoroughly.

Most SOWs provide a general list of charge questions that can be considered for any model review. And it is helpful if the SOW provides more specific charge questions to the review that will be conducted.

In preparation of the SOW the review of the general charge question to determine whether any USACE policy is introduced or whether any of the questions should be eliminated, added or revised including additional assessment criteria and charge questions that are specific to reviews involving software or spreadsheet is very helpful.

This improves the efficiency of charge preparation additional assessment criteria, and charge questions that are specific to reviews involving software or spreadsheets is very helpful. This improves the efficiency of charge preparation by eliminating the need for discussion during the kickoff teleconference because this is always one of the questions that we've always asked during a kickoff meeting and also by minimizing the review comments from USACE on the draft charge that is submitted.

A review involving software should include an assessment of the user interface design and software or spreadsheet usability as opposed to the model usability.

And when a review involves software or spreadsheets it's also recommended that the charge clearly define the term model as the underlying theoretical basis for the method that has been implemented in the software.

Lastly it's helpful if the SOW indicates whether there are any critical deadlines that need to be met so that the contractor can determine if a press review schedule is necessary early in the planning phase.

The biggest lesson learned regarding review materials is that it's easiest when USACE provides the contractor with a complete package of review materials that is organized by materials for review, reference and background materials

including any test files or example studies and USACE guidance. This is preferred to receiving review materials little by little over a longer period of time of maybe weeks to months, or receiving all of the materials in one file directory without any indication of what is contained in each file, or whether it's intended for review, or for background or reference.

And the benefit to providing the contractor with a complete organized review package is that it is perfectly clear what is contained in the files provided and what needs to be reviewed. It's also helpful if the contractor is provided with a brief demonstration or tutorial of any spreadsheets or software that will be reviewed so that the contractor is familiar with the review materials before they are provided to the model review panel.

Okay. This is just a figure that is a screenshot of a well organized model review package that was recently provided, provides files that contain diagnostics. This is for background information, the install packages for the software that will be reviewed, publications showing the application of the model for background, a reference, user guidance that is for the software that is supposed to be reviewed as well as USACE guidance for the conduct of model reviews and the certification report.

When a model review involves a review of model spreadsheets or software if available it's recommended that the review materials include a complete packet identical to what would be distributed to the users, the source code, all test artifacts including test plans, test suites, test results and any automation, all model or method documentation including internal documents and user documents, user documentation in Word format make it easier for the reviewers to comment.

Pictorials including the files users would generate by running the exercises for the tutorials and any application files that were used to generate the figures for the user documentation. Reviewers generally like to try to reproduce the examples that are provided in the documentation using the software packages. And this is all based on feedback from the software and spreadsheet experts that we've had over the past years.

Providing any of these materials -- and we do realize that they're not always all available -- it allows the spreadsheet and software experts to provide a more thorough and informed review.

Also based on feedback from one of our software and spreadsheet experts it was suggested that USACE might benefit from either a code review, a spreadsheet review preparation or tool review preparation prior to conducting the model review as this could reduce the number of comments received during the Model Quality Assurance review.

A lesson learned regarding the review schedule is that delays in receiving the contract award or the review materials can affect the project schedule. A delay in receipt of the review materials can also affect the overall cost especially if the experts that are chosen for the review panel are no longer available when the review starts. And the contractor needs to identify and subcontract new experts. Awarding the contract and providing review materials by the desired review start date helps to maintain project schedule and budget.

Although a schedule was prepared at the beginning of the project and included in the work plan panel members and model component - panel member and model proponent availability can necessitate changes to the schedule, usually minor but potentially affecting milestones and deliverables dates.

During recruitment Battelle requests and reviews information on subcontractor schedules to make sure that the selected model reviewers are available when they need to be.

Teleconference meetings throughout the review are scheduled during the kickoff with the model review panel to make sure that critical dates are reserved. And when USACE cannot meet a deadline the availability of model reviewers cannot be guaranteed.

This example schedule shows the coordination of tasks and activities for the model review panel, the contractor and USACE. And it's intended to emphasize how each step of the process affects the sequential steps in the review process. Impacts to the scheduled tend to magnify as the review progresses.

Prior to the identification of subject matter experts for the model review panel it is important that USACE review the conflict of interest screening criteria that are prepared by the contractor to ensure the COI criteria for screening candidate model review panel members. In other words the subcontractors are comprehensive. This minimizes the potential for undisclosed COI that could result in additional level of effort and cost to find replacement panel members.

The panel has also learned that having at least one model review panel member that is already participated in a planning model quality assurance review helps model reviews run more smoothly especially those with aggressive schedules because the repeat panel member can serve as a mentor to those who are new to the model review process.

Well that covers the key lessons learned for the planning phase of the external model review process. And for the next few minutes we will be discussing lessons learned for the review execution phase.

Feedback from the model proponent is critical to a successful review. And the individuals who are most experienced with the model for method development and or application of the model should participate in all meetings involving USACE from the kickoff meeting right through the findings teleconference. This ensures that any questions regarding the model or method are quickly answered and answered thoroughly.

Because during the review process there is continuous interaction of the model review panel members with each other and with the contractor and because feedback from the model proponents is so important 100% attendance for all teleconferences is necessary in order to make sure that everyone receives the same information and has the same understanding of the model or method and the review process. This in turn ensures that deliverables are submitted and milestones are accomplished on schedule.

After the model reviewers have completed their review - their review of the materials provided, it's important that they are continuously available for the development of the final panel comments that identify the key issues or concerns identified during the review.

The development of final panel comments involves continuous feedback from the contractor and response from the model reviewers in order to ensure that high quality documentation is produced and the review schedule is maintained.

During the review execution both the contractor and USACE project managers need to be diligent in reminding members of the model review panel and model proponents team of upcoming milestones, pending request for information and or review teleconferences.

Timelines cannot be understated or undervalued. And reminders about the next steps at each step of the review process helps to keep the review on schedule.

Rapid response by the model proponents to information request from the model reviewers is essential to ensure that they have all of the information to perform a thorough high quality review within the required schedule. Any failure to fulfill information request during the review period can result in review comments that either reflect a lack of information or a lack of understanding.

When possible USACE should conduct quality assurance reviews of planning models or methods prior to an independent external peer review of decision documents involving studies in which the model or method was applied.

We recognize that this is not always possible. And when a model review and an IEPR need to be conducted concurrently the contractor should conduct each review completely independently of the other in order to minimize confusion regarding the charge to each panel.

Conducting the IEPR after the model review also allows some of the reviewers from the model review panel to serve on the IEPR panel. And this could potentially result in a better review because those individuals have a better understanding of the model or methods intended purpose and limitations for the project.

For reviews involving the review of multiple models it's recommended that the contractor either stagger reviews if the review schedule allows and use the same subject matter experts across all of the reviews that have similar expertise requirements or appoint separate project managers for the review of each model when individual models are used simultaneously over the very close or overlapping deliverable dates. This allows each project manager to focus on the tasks and the demands of the single review and results in a higher quality review results. It also makes reviews more manageable, may reduce costs. And there is more consistency in the results of the reviews.

The last phase of the external review process is the comment response phase. So if you consider the graphic in the early part of this discussion which showed the process by which the draft and final model proponent responses, the final panel comments and the draft and final back check responses from the model reviewers are submitted to the contractor. To facilitate this process the contractor should provide a template for responses in Microsoft Word format to make providing the responses to individual comments and tracking of responses easier. This also ensures that responses to each of the final panel comments are received and provided in a consistent format.

It's also best if responses to comment statements in the final panel comments start with concur or non-concur indicating that there is agreement or disagreement with the issue or concern identified followed by an explanation of the response.

Responses to each individual recommendation for resolution of issues should start with adopt or not adopt indicating the model proponents' response to the recommended action.

Starting responses in this manner makes the model proponents position regarding each issue clear and allows the panel to come to consensus on their responses more rapidly and decisively.

These next two slides have actually been added to the original presentation that was posted. And I've added them as an example to illustrate the response format being described. This is an example of a final panel comment that would be provided in the Draft Model Quality Assurance Review report. Specific model references in this example have been removed to make it more generic.

Final panel comments are provided in five part forms and each form presents a single issue or concern identified during the review.

This figure shows the first three parts of the form including the comment statement, which is up at the top, the relevant model assessment criteria, which relate to the criteria in the protocols for the certification of planning models, and the basis for the comment.

The concur or non-concur response would be provided in direct response to the comment statement in that first line.

Courtney Chambers: Amanda?

Amanda Maxemchuk: Yes?

Courtney Chambers: We had a question from Fort Worth regarding that topic.

Amanda Maxemchuk: Okay.

Courtney Chambers: It was "Why don't we use Doctor Checks for the response function in model reviews?"

Amanda Maxemchuk: Doctor Checks has not been used for model reviews because it's not - it doesn't follow the same process that IEPR's do. It doesn't have the same requirements.

We did adopt a very similar format to that used for IEPR's because it seems to work. And even recently the comment response process for IEPR's for some of the reviews are not being documented in doctor checks.

Does that answer the question?

Woman: Yes ma'am.

Amanda Maxemchuk: Okay.

Woman: Thanks.

Amanda Maxemchuk: This slide shows Parts 4 and 5 of the final panel comment and includes the significance of the comment statement and the recommendations for resolving the issue identified. The highlighted part of this form is what is added to create a template for providing responses. And in this case responses have been provided.

In this case the USACE model proponent agreed with the comment statement and is adopting the recommended action. The model review panel agreed with the response obviously. Had this comment had more than one recommendation there would still be only a single concur or non-concur

response in response to the comment statement. But there would be a response of adopt or not adopt to each of the numbered recommendations.

It is possible to have a concur with a comment statement but not adopt for one or more of the recommendations for various reasons.

During that comment and response phase it has been determined that face to face discussions are more effective than email because statements and questions can be clarified immediately and a team culture can be fostered.

A recent revision to the model review process has resulted in adding final USACE model proponent respondents to final panel comments. And the final model review panel back check responses to the final report.

Previously the comment response process was recorded in notes from the findings teleconference discussion only. And including the responses in the final report provides a more formal record of comments and responses that is reviewed by the panel.

Throughout the course of the reviews communication is key. It's critical for managing possible disruptions in project progress. And failure to communicate project progress and schedule changes could lead to either a reduction in the quality of the results say for example when a review is too rushed or when it's dragged out over too long a period of time, can also result in missed deadlines, for example when the schedule and quality for a planning project hinges on the results of a planning model review. And it could also result in failure to use funding within the required period of performance.

During a review all review participants should also use a standard constant subject heading for all email communication associated with an individual

review as this minimizes the potential that critical communications will get lost in in-boxes. It also helps people organize and track information when dealing with multiple reviews of projects. And in line with good communication, maintaining a positive team culture is also key to a successful review.

We maintain a high level of independence on reviews to avoid the appearance of collaboration between the USACE model proponents and the model review panels. And because of this separation it's sometimes difficult to cultivate and maintain a team mentality throughout the duration of the review.

Interactions between USACE model proponents and model review panels have the potential to become contentious because of this if comments provided are perceived as critical or if USACE decides not to adopt a recommendation provided by the review panel.

In order to maintain a positive team culture Battelle invites the model reviewers and model proponents to introduce themselves to each other during the kickoff teleconference.

We also make sure that any discussions between the model proponents and model review panel are between them and that Battelle maintains their independence by stepping back and letting them have their discussion. We're just there to facilitate.

We also emphasize that at the beginning of all teleconference discussions that we are all part of the same team with the common objective of ensuring that the highest quality models and tools are being used for project planning.

We discourage the use of any language that might be perceived as unnecessarily critical during the development of comments and responses. And lastly remind model reviewers that USACE is under no obligation to adopt those recommendations and it is ultimately USACE's decision on how to move forward.

We've found that fostering a positive team culture results in a more effective and productive discussion for a successful review.

And I have looks like plenty of time for questions.

Courtney Chambers: Excellent. Thank you Amanda. I do have a few questions that have been sent to me both privately as well as to everyone over here in the chat feature.

Amanda Maxemchuk: Okay.

Courtney Chambers: So if you don't mind, right quick we had just a comment in response to the discussion of using (Dr. Checks) from Rock Island.

They said that comments and responses for the IEPR and model reviews were typically longer than the field size, so they would typically attach a word document to the doctor checks comment. The (Dr. Checks) output was not particularly useful as it does not print out info in the attachments.

Amanda Maxemchuk: Right.

Courtney Chambers: So that was just some commentary there regarding their experience.

But then from Memphis we had the question how are the IEPR panels to be tasked to review our model since WRDA 2007 Section 2034 says that in the

scope of the IEPR. They said that you had mentioned that there may be some utility if the model review team member is also selected for the IEPR.

What happens when differing academics on both the IEPR and the model review team disagree regarding the model?

So yes...

Man: What I was looking for is a lesson learned there as that happened.

Amanda Maxemchuk: I have not seen it happen. We do typically try to make sure that the same reviewers are used on the IEPRs as were used for the model review panel just because as I mentioned they have a better understanding of the tools that are being used.

I have also run into a situation where the IEPR panel members were different but had the exact same opinion as the model reviewers who looked at the model independent of the IEPR - independent of the decision document.

Man: Okay, so the situation you're not aware that it's happened yet?

Amanda Maxemchuk: No, no.

Man: Okay, fair enough.

Amanda Maxemchuk: Usually because it's a review of the application of the models the review of the model itself is a lot less detailed. So I don't necessarily know that it would even get all of the same comments just because they're looking at it from either - it's the nuts and bolts perspective versus the application perspective.

Man: Thank you.

Courtney Chambers: All right, Amanda, we did have another question from LRC. And they wanted to know does the model review panel perform a back check review of the model after changes are incorporated?

Amanda Maxemchuk: No. There have been instances where - I've had one instance where we've invited a review panel back to review a model after it was revised. But it went through a pretty major overhaul based on comments from the first model review. But typically once the comments are made it's up to the model developers and the model development team to determine what needs to be done and how to move forward.

Courtney Chambers: Okay thank you. And then another question was have any environmental models been certified or approved for national use?

Amanda Maxemchuk: I believe that they have. I'm trying to remember how many I have learned, actually been certified for widespread use.

Almost all of them, out of the 13 reviews I think it's like 27 different models because some of the reviews included multiple models, most - almost all of them have been approved for use on a specific project. But I do believe that one or two of them have been certified for widespread use across the nation.

Courtney Chambers: Great. Thank you.

At this time you're welcome to ask more questions via the chat or if you'd like to ask a question over the phone line please just remember to remove your phone off of mute first.

Amanda Maxemchuk: So did you, Courtney, did you get feedback on how many people have actually conducted model reviews?

Courtney Chambers: Yes ma'am. And we could at this time if anybody didn't hear our question at the beginning you're welcome to respond.

The question was from Amanda "what is your level of involvement with conducting model quality assurance review?"

And then the multiple choice responses available were A, manage several reviews. We had three people indicate that. Answer B was managed one review. We had three responses that had managed one review. And C was going to be managing reviews. We had two people indicate that was their case. And then D was won't be managing reviews. And we had ten people indicate that they don't perceive themselves managing reviews in the future.

Amanda Maxemchuk: Okay.

Courtney Chambers: But we've - so far according to my accounting we've - we have 54 participants on our call. And so that was a pretty small subset of that group.

Amanda Maxemchuk: Okay well before I ask my questions I want to draw attention to the chat which indicates that a list of certified and approved models can be found on the ER Gateway Model Library.

So that's getting back to the last question.

Courtney Chambers: Okay was that - that was more of a statement correct?

Amanda Maxemchuk: That was a statement, yes.

Courtney Chambers: Okay great.

Amanda Maxemchuk: So did everybody see that?

Courtney Chambers: Yes.

(Stacy Gray): Amanda, this is (Stacy Gray) in Fort Worth.

Amanda Maxemchuk: Hi (Stacy).

(Stacy Gray): On Slide 20 we were talking about communication. And I don't think you will find a planner in the Corps or in any other federal agency that does not agree that face to face is the best form of communication.

Recently we've had a lot of restrictions put on our travel. I was wondering how you're dealing with those types of interactions on the model review teams in particular trying to get that feedback and that communication going between the team proposing the model and the team reviewing the model to make sure that they have all the communication necessary to do a good review?

Amanda Maxemchuk: It's funny because that was actually one of my questions. And I think you just provided a response to it without realizing it.

We have had comments primarily on the single use models, not so much for the models that are going to be certified for widespread use across the nation.

But a lot of the reviewers expressed interest in actually a field visit and having a face to face kickoff with the model development team in addition to a field visit of the site so that they have a better understanding of the project and what the model is going to be used for.

But we do understand that budgets are limited but if budgets do for some reason permit travel for review panels, the reviewers have expressed that this would be beneficial.

Courtney Chambers: Amanda, I received another question in the chat just stating that this discussion is largely focused on the process of model review. But they're wondering if you could comment on any technical lessons learned that are common?

Amanda Maxemchuk: Yes actually that's a segue. I'm actually going to be doing another presentation on the results of model reviews.

I have recently completed a review of 16 model review reports and all of their results to extract lessons learned and look for trends in the results of model reviews. And that's going to be presented at a separate time.

Courtney Chambers: Excellent. Thank you.

Another question, what about models other than ecosystem restoration, economic models for instance or flood risk management models?

Amanda Maxemchuk: I have not had any involvement with reviews of those models. All of the models that - of the model reviews that I have been involved with have been Ecosystem Restoration Planning Models.

Courtney Chambers: Thank you.

(Brian Hudges):   Amanda this is (Brad Hudges). Do you have a feel for time and cost, just general ranges?

Amanda Maxemchuk:The time to complete a model review these days now that we've added the final evaluator response and final back check response to the process it takes a little bit longer than they originally did but still within approximately a three month timeframe.

The cost depends on the size of the model, the amount of material that needs to be reviewed. But I'm thinking ranging anywhere from 100,000 to I want to say 130,000 guessing off the top of my head. Does that help?

(Brian Hudges):   Thank you.

Courtney Chambers: Any other questions today? Feel free to speak up.

Amanda Maxemchuk:I have a question for the people who are on the phone. I think this applies to most people since most people are either - have either conducted reviews or are going to be conducting reviews.

And I was wondering what the biggest difficulty encountered with model reviews is from your end and how you feel the contractor can help overcome any obstacles that you may run into?

(Stacy Gray):   Amanda, this is (Stacy) in Fort Worth again.

Amanda Maxemchuk:Hi (Stacy).

(Stacy Gray): I think the biggest problem I had is we have these models out there that have been used for eons before we passed 412. And the documentation just isn't there. And in a lot of cases the people that put those models together originally that would be able to develop that documentation have long since retired or otherwise moved on.

They're trying to recoup that knowledge and get the documentation for something that has been proven to work for us year after year after year is difficult.

Is there a group somewhere that's really good the kind of - I hate to use the term reverse engineering, but to try to get back to the fundamentals of those models to track through the spreadsheets and say this is the key piece that we need to be aware of?

Amanda Maxemchuk: Are you talking about specifically about the spreadsheets?

(Stacy Gray): It goes so far beyond that, the one that I dealt with was actually the Missouri River Model. And it has both an economic and an environmental component to it. Its water supply navigation, all of that is fed into this same model. And they've been using it for literally decades and very successfully. And now they're having to go back and redo the documentation simply because - or redo the model simply because they don't have the documentation to back it up.

Amanda Maxemchuk: I could see how that would be an issue. It's obviously a bigger issue for models that are released to users outside of the intended user group.

(Stacy Gray): Right.

Amanda Maxemchuk: But typically any comments that would be received on model reviews of models such as that are - have less significance because it's being used by a very specific group of people who know the model, know what it's supposed to do.

It's - I do see how it makes it difficult for an external review of that model to be conducted because the reviewers do not have as an in depth understanding of the nuts and bolts of the model.

For spreadsheets regarding the reverse engineering situation, we have received feedback from one of our software and spreadsheet experts that that is something that's possible but it is something that takes a great deal of time also.

(Stacy Gray): Thanks.

(Jody Stabell): This is (Jody Stabell) or (Cresswell) whatever my last name is now, we have had someone, one of the districts go back and pay a contractor to pull together some documentation for a model.

Amanda Maxemchuk: I'm sorry (Jody) was that a question?

(Jody Stabell): It was a statement in response to when the situation where you don't have model documentation because, you know, the individuals who developed it are no longer there.

We have had a case where Rock Island went back and paid a contractor to pull together some of the documentation and some supporting literature for a model that was not well documented.

Courtney Chambers: All right, thank you (Jody).

(Sean Phillips):   Amanda, this is (Sean Phillips) from Memphis.

Hi (Sean).

(Sean Phillips):   I will tell you, this really has - it's not ecosystem restoration in particular but we've dealt with models that have gone to different PCXs. And we've noticed, you know, it's such a new program that different PCXs seem to be at different stages in their learning curve on how they're going to implement, how they are implementing this for '12.

And that's been a little bit, you know, when we in the district set up our schedules and expect to have something by a certain date based upon the lessons we've learned through working with the eco-PCX but another PCX is maybe double that time amount or whatever it's made it difficult for us.

I mean that's more a coordinates to learn that lesson itself. But it seems like there is a little bit of difference in how they're - different PCXs are doing these model reviews. That's been our observation.

(Jody Stabell):   (John), this is (Jody). In response to that the PCXs have developed a scope or standard operating procedure for the review. And so we are trying to get a little more consistent with that.

(Sean Phillips):   Okay, thank you.

Courtney Chambers: Anybody else like to share challenges that they've encountered in this model review process for Amanda?

Amanda Maxemchuk: From a contractor perspective not just looking at difficulties that have been encountered but the external review process for those of you who have gone through this, has it met all of USACEs needs for these model reviews or are there other ways that these reviews can meet additional needs as well?

If anybody thinks of anything we're always looking for feedback for improving the process on our end.

Courtney Chambers: Okay. Thank you Amanda. Do you have your contact information somewhere on one of your slides?

Amanda Maxemchuk: Surprisingly I don't think I do. I can provide that though.

Courtney Chambers: Okay. If you wanted to you could go down to the bottom right-hand corner and type in the chat. And if you would select to send it to everyone then everyone will be able to view that.

Courtney Chambers: Okay thank you. Then maybe as people are thinking on that question they could provide you some response via email.

While she's sharing that though if there are any other final questions please feel free to ask those before we wrap up for the day.

Amanda Maxemchuk: I think I just sent it to you by accident. I'm sorry.

Courtney Chambers: That's okay. I can repost it.

Amanda Maxemchuk: And that's my phone number there also if people would prefer to call and chat.

Courtney Chambers: Okay great. Thank you everybody if you could see that down there at the bottom Amanda Maxemchuk at Battelle. It's 781-952-5384 and maxenchuka@battelle.org.

Okay well if there aren't any other questions at this time I guess we'll - I'm sorry, did somebody have something to say? No. Okay. Well then we'll go ahead and begin wrapping up here. Amanda we do want to thank you for sharing today and thank you participants for joining us.

END