Model Review

Objectives

- Provide an overview of the Model Review processes
- Provide information on timing, cost, and schedule for Model Review

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Model Certification

- Process to review, improve, validate analytical tools and models
- Toolbox - Ensure high quality methods and tools available to enable informed decisions
- Technical quality
  - ► Theory
  - ► Computational correctness
- System Quality
- Usability

Model Certification References

- Information Quality Act (PL106-544)
- OMB Information Quality Bulletin for Peer Review
- Report of the Planning Models Improvement Task Force
- Engineer Circular 1105-2-407
- Engineer Circular 1105-2-412(N**ew!)**
- Protocols for Certification of Planning Models
- HQ Memo Policy Guidance on Certification of Ecosystem Output Models, Aug 08

Model Certification Basics

- Definition - any model or analytical tool used to
  - ▶ Define problems and opportunities
  - ▶ Formulate alternatives
  - ▶ Evaluate effects
  - ▶ Support decision-making
- Planning models, not engineering models
- Review is cost-shared
- In-house or contracted

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Model Basics

Stages of Model Development

- Requirements stage
- Development stage
- External Testing
- Implementation

Model categories

- Corporate
- Regional/local
- Commercial off-the-shelf
- Models developed by others

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Certification vs. Approval for Use

- **Certification**
  - ► Regional Models
  - ► Models to be used on multiple projects
  - ► Increased rigor of review for Certified Models

- **Approval for Use**
  - ► Single-use models
  - ► As part of ATR or IEPR of a specific project
  - ► Increased rigor of review for single-use models used on large, controversial projects

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Model Documentation

- Provided by model proponent/Home PDT
- Outline in EC 412 Appendix A, Table 2
- Documentation includes
  - ► Background
  - ► Theory, assumptions, analytical requirements, formulas
  - ► Software/hardware, testing/validation process,
  - ► Availability of input data, usefulness to support project analysis, tech support, training
- Software/spreadsheets also provided

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Model Review Team

- Planner/Formulator
- Functional Field Expert(s) (internal and/or external)
- Software programmer/spreadsheet auditor

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Model Certification Process

- Develop Model Certification Plan
- Assemble Review Team (In-house/Contract)
- Charge to Reviewers
- Kick-off Meeting
- Conduct Review
- Draft Model Review Report
- Meeting to discuss findings
- Final Model Review Report
- Revise model, as needed (lather, rinse, repeat!)
- PCX recommend that HQ certify model

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Scheduling and Timing

Schedule

- Start SOW to Notice to Proceed – 8-12 weeks
- NTP to Final Model Review Report – 15-18 weeks
- Revise model – depends on PDT
- PCX recommendation to HQ – 4 weeks
- HQ review and certify - ?

Timing

- Requirements and/or development stage
- Identify models at (prior to) Feasibility Scoping Meeting
- Initiate model review prior to Alternative Formulations Briefing

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Model Certification Cost

- ATR – 3 reviewers extra time to review model

- In-house - $30-50k

- Contract - $80-140k

- PCX labor ~$10-15k

- Model proponent labor

  - ▶ Prepare model documentation

  - ▶ Assist in Model Cert contract

  - ▶ Revise model and documentation

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Model Certification Experience

See certified/approved models on Ecosystem Restoration Gateway Model Library

All published USFWS Habitat Suitability Index models approved for use (see Ecosystem Restoration Gateway Tools tab)

Many reviews of single use models

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How can the model proponent help?

- Identify models early (Review Plan or not later than FSM)
- Prepare model documentation
- Test/validate model
- Check software
- Identify expertise needed
- Be open to process
- Pool funds for multiple-use models

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Model Certification Resources

- **HQ Website, Models**
  - ► http://www.usace.army.mil/CECW/PlanningCOP/Pages/models.aspx
  - ► Protocols for Certification of Planning Models
- **ER Gateway, Tools**
  - ► List of approved HSI Models, links to other models
  - ► http://cw-environment.usace.army.mil/tools.cfm?CoP=Restore
- **ER Gateway, Learning**
  - ► Webinar on Model Certification (5/5/09)
  - ► http://cw-environment.usace.army.mil/webinar.cfm?CoP=Restore&Id=8
- **IWR will be assisting in review of Ecosystem Planning Models – Shawn Komlos**

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How to help PCXs, help you

- Workload Planning
  - ► Respond to Headquarters data call on review needs
  - ► Let us know of upcoming FY Model Review needs
  - ► PCX may not be able to meet your review needs if we don't tell us.
- Manage the project
  - ► If the PCX is a critical path for your project, push us now, rather than later.