

Maine Forest Economy Growth Initiative

Maine Wood Supply Projections Request for Proposals

Issue Date: May 18, 2017

Questions and Answers

The following answers were provided to questions submitted regarding the Wood Supply RFP.

1. There is a scientific framework for modeling wood supply, and it tends to fall into the camp of simulation or optimization. Which camp is your project? Moreover, what model framework do you and the committee have in mind? Software platform? It appears to be a very short turnaround on the work, which suggests there may be something missing. Seems like there is an entire planning component that should precede the yield curve development that is absent from the rfp. Could you kindly fill me in on these observations as it will help me understand the context and goals of the project.

The purpose of this project is to take current timber inventory, which we have in the FIA data and project that inventory forward. We therefore need yield functions that can grow the forest in its present condition and model responses to current silvicultural practices. We will also model current harvest levels and several alternative harvest (consumption) levels against this growth. The report period is twenty to thirty years.

Therefore, it is not an optimization project so much as a short term description of how much fiber is available from inventory and growth vs. harvest levels. We will want to know if we have surplus fiber growth in some species (most likely) and perhaps deficits in others. This will inform the global market study group on development opportunities.

One might do this in a spreadsheet, but if it were me, I would build a basic Woodstock model with a relatively simple set of yield curves and silvicultural actions and transitions. We will of course need yield curves for broad forest types that have broad species groups, and we will need to constrain the model in some obvious ways.

The project has a very short timeline because it is not particularly complex, and we need some accurate starting inventories and broad projections for the global supply study, which starts up late in the summer.

The next phase of the project, which will be a separate RFP, is a more detailed model that will answer many more questions. It will look at regional wood flows, and describe the forest more accurately. We view this as an optimization project that will also have an evergreen component so that our successors can review assumptions and results and then recalibrate and rerun the model.

2. Please define the megaregion referenced in the first paragraph of Section 1.4

The Maine Forest Service has megaregions for which it reports FIA inventory data. They are larger than counties, and divide the state into a small number of parts. We will probably look for roughly five divisions of the state: north, Downeast, central, western and southern. MFS will provide current inventories for these regions as well as the state as a whole.

3. The first sentence of the third paragraph of Section 1.4 refers to management regimes. Is this referring to naturally managed forests of even and uneven ages as mentioned in the next sentence or something else?

Yes. We will mostly need curves for shelterwood management systems, which include a commercial thinning (or two), shelterwood entry and overstory removal. This takes place on the majority of managed acres.

4. Is it correct to interpret that a unique yield curve is required for each management/silvicultural regime that is applicable to each of the six species?

It can be done that way, or the yield curve can be made up of yields for those species which add up to total volume.

5. The fifth paragraph of Section 1.4 alludes to several alternative consumption levels based upon the Maine Forest Service Wood processor report with input from the committee. It also references consideration of spruce budworm outbreaks and regional wood flow variations due to ownership patterns. All of this together could result in quite a lot of demand scenarios (and yield curves). Can you shed any more light on the expectations with regards to the number of scenarios and prioritize which are most important? Can you shed any more light on the other potential scenarios as they relate to spruce budworm outbreaks and regional wood flow variations due to ownership patterns? Is the latter one referring to potential changes in ownership patterns or something else?

For Phase I, the most important scenarios will be two or three alternative consumption levels to simulate new wood using facilities. The other scenarios are possibilities, and will only be run if time allows.

6. With regards to the 6th paragraph of Section 1.4, are these examples of things that should be considered when developing the forecast or additional scenarios that should be tested?

Southern Maine properties are often harvested less intensively than northern properties. This may or may not be possible to model, but should be considered. We will need to account for regulated acres – primarily acres along great ponds, large streams and rivers, zoned deer yards and high elevation areas.

7. With regards to the 7th paragraph of Section 1.4, does the reference to silvicultural activity mean the deliverable should include projected inventory, removals, and growth rates for each silvicultural/management regime or does it mean something else?

The projections should provide inventory levels and growth rates for the entire modeled area. Outputs should have treated acres and volume removals by management regime.

8. Previously, I asked if you could reveal the grant value that has been awarded/allocated at this stage. I ask because the scope, if I'm interpreting it correctly, could be quite large with all the different combinations of species and demand scenarios. Scope also affects schedule and while it is certainly possible for us to provide initial projections by the end of July, that could be a tight schedule if work isn't awarded until July 1, and the scope includes numerous demand scenarios and high levels of granularity for outputs.

The overall budget for Phase 1 of the project, which includes several initiatives including Phase 1 and Phase 2 wood supply as well as a global market analysis, is \$1.25 million.

This phase has a very short timeline because it is not particularly complex, and we need some accurate starting inventories and broad projections for the global supply study, which starts up late in the summer. The next phase of the project, which will be a separate RFP, is a more detailed model that will answer many more questions. It will look at regional wood flows, and describe the forest more accurately.

9. In addition to responding to the RFP as stated, would the committee consider an option for 25-year projections with an annual increment, if there was a significant discount?

Phase 1 has a very short and is deliberately not particularly complex because we need some accurate starting inventories and broad projections for the global supply study, which starts up late in the summer.

The next phase of the project, which will be a separate RFP, is a more detailed model that will answer many more questions. It will look at regional wood flows, and describe the forest more accurately. We view this as an optimization project that will also have an evergreen component.

If I understand the question, and you are offering to do something simple for a lower price, we are fine with the idea of two separate proposals from you.

10. How many megaregions are desired? Will the committee formulate these or are you looking for a suggestion in the proposals?

We will start with the megaregions as defined by the Maine Forest Service in their reports. We may decide to further condense these regions once we get started.

11. If megaregions are given by the committee, what is the basis for your delineation (e.g.: counties or groups of counties, or something else)?

The Maine Forest Service has megaregions for which it reports FIA inventory data. They are larger than counties, and divide the state into a small number of parts. We will probably look for roughly five divisions of the state: north, Downeast, central, western and southern. MFS will provide current inventories for these regions as well as the state as a whole.

12. On major species groupings: a) are all pines to be tallied together?, b) on hardwoods and other softwoods – only the commercial species or all?

Pine can be lumped together. We only want commercial species. The FIA inventory data is species specific, but we assume that yield curves require lumping of similar species.

13. How many demand scenarios does the committee envision, and will these be formulated by the committee or are you looking for a suggestion in the proposals?

For Phase I, the most important scenarios will be two or three alternative consumption levels to simulate new wood using facilities. The other scenarios are possibilities, and will only be run if time allows.

14. There are numerous points of interaction with the committee (i.e.: approving yield curves, reviewing consumption scenarios, etc.), yet you are asking for a price with a not to exceed. What processes does the committee have in mind to have these interactions be efficient both in terms of cost and timeframes?

We expect the consultant to bring viable data and methods to the project. The committee's role is to ensure this, but not to get into the weeds for alterations.

Project staff will work with the consultant to facilitate regular feedback and communication with the committee as appropriate. Please describe in your proposal the schedule and mechanism (conference calls, in person meetings, etc) you would recommend.

15. Can you say more about what specific process and deliverable you are expecting from the following: "The contractor will use the FIA data for inventory and yield curve calibration"?

We assume that the consultant will calibrate their model to the inventory data provided by the MFS. Growth rates generated by the model's yield curves at the start need to be reasonable and within the range seen in the FIA data.

The purpose of this project is to take current timber inventory, which we have in the FIA data and project that inventory forward. We will therefore need yield functions that can grow the forest in its present condition and model responses to current silvicultural practices. We will also model current harvest levels and several alternative harvest (consumption) levels against this growth. The report period is twenty to thirty years.

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16. How complex does the committee foresee the management regimes and therefore the yield curve construction (this can go from simple state-wide broad regimes, to very complex)? Will these be negotiated with the successful contractor, given by the committee, or are you looking for suggestions in the proposals?

One might do this in a spreadsheet, but if it were me, I would build a basic Woodstock model with a relatively simple set of yield curves and silvicultural actions and transitions. We will of course need yield curves for broad forest types that have broad species groups, and we will need to constrain the model in some obvious ways.

17. Given that this is a request for a state-wide and mega-region model(s) and specifics of FIA plot ownership data are no longer public, how does the committee envision breaking out the FIA plot data by large commercial versus NIPF landowner, and then assigning differing management regimes? Or are you looking for suggestions of how to do this in the proposals?

FIA does generally indicate the type of landowner. We are just looking for a general distinction between private industrial, private, non-industrial, and public. We will need to make assumptions by geography (southern vs northern Maine is an example). We do not expect highly precise distinctions.

18. Depending on when the answers to these questions can be sent back out, would there be any consideration for moving the response date later than June 9th?

No, June 9 is the response date.