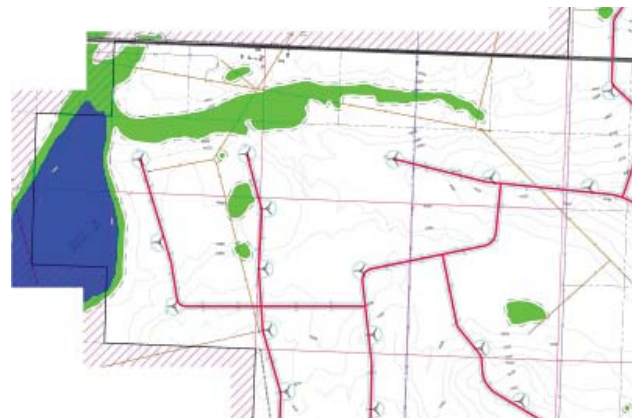


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Enhanced Pre-Construction Efforts Ensure Confidence in the Project's Feasibility

In today's competitive wind energy market, developers have to design smarter, build faster, and stretch their dollars further. One strategy being employed more frequently is to invest more into the pre-construction phase to enhance the process for cost estimating, permitting, and scheduling. While final designs are generally left to the general contractor to complete, true cost and time savings can be achieved by providing contractors with appropriate design and logistical details acquired throughout the pre-construction phase.

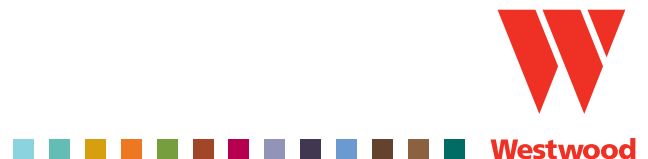
A wind developer will generally provide a contractor with little more than a turbine array, GIS mapping, turbine specifications, and interconnection details for initial pricing. The contractor will then spend considerable effort researching the project area, visiting the site, and designing preliminary turbine access roads, foundations, and electrical infrastructure. This approach may work well when negotiating with an experienced contractor, but not in a competitive bidding scenario. The fewer details provided to competing contractors, the more assumptions they need to make and the more variable each contractor's project price will be. Developers can thus end up comparing apples to oranges, making it difficult to make a well-informed decision regarding quality and value.



Providing the preliminary design of infrastructure (such as the access roads and collection system shown here) ensures that contractors are estimating based upon the same quantities and scope of work.

Increasing the level of effort in pre-construction to include more detail and design adds value to a project beyond the preparation of a Request for Proposals for bidders. In some cases, a developer may be able to combine historic construction costs with the pre-construction design details for a current project to arrive at an accurate cost estimate. Resolving construction logistical challenges such as delivery route planning and aggregate source identification are also key to accurate pricing and overall confidence in the project's feasibility. Other benefits can be achieved during the environmental, state, and federal permitting processes by providing agencies with more design detail. These details often shorten permit review times and reduce the number of resubmittals, ultimately saving time and money.

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