One of the things that can make this column very difficult for me to write is the matter of timing. I would very much prefer to write about completed projects and be able to stick to the facts rather than load up on maybes, supposed to, and other hedges necessary in discussing a work in progress.

Two weeks ago, I intended to write about the new wind turbine at the wastewater treatment plant. For all intents and purposes, the construction was complete. And, at 120 feet tall, it was quite visible and getting lots of attention and questions. But at the time it was under repair and supposed to be operational that Monday or Tuesday. Rather than write about it prior to completion of the repairs, I held off.

And I was glad I held off since the necessary repairs turned out more extensive than known at the time. So now, two weeks later, I am in the same position. The repairs are supposed to be completed this week, but I don't think I can continue delaying this column. So please bear with my including a few supposed to and maybes.

As part of the City's overall leadership in energy efficiency and renewable energy, the wind turbine was included in the planning for the upgraded wastewater treatment plant. A site study was conducted by Focus on Energy in March 2009. The study recommended several wind turbines of different sizes and manufactures, including the Northwind 100 manufactured by Northern Power.

The turbine project was put out for bids in late summer of 2009. Six contractors bid for the construction, giving prices for three different turbines. With some of the contractors placing multiple bids so the City would have an option among the towers, there were a total of twelve bids.

The bid from H&H Solar Energy Services, out of Madison, for the Northwind 100 was selected. Among the factors considered were the overall cost, the payback period based on predicted energy output, the availability of grants, maintenance, and warranty. The same turbine is in operation at Wausau East High School in Wausau and at Madison Area Technical College in Fort Atkinson.

Financing for the $594,000 turbine came from several sources. Focus on Energy provided a $150,000 grant. WPPI Energy provided a $25,000 grant. The City entered into a 13 year power pre-purchase agreement with WPPI Energy at 15 cents per kilowatt hour for $257,000. The balance of the cost is financed through a 10 year zero-percent loan from WPPI Energy.

The turbine is owned by the City's wastewater treatment utility, not the water and light department. The tower is 120 feet tall at its hub; the three blades each measure 37 feet. The low cut-in speed of 8 mph and high cut-out speed of 56 mph mean the turbine should be "turbining" on a pretty regular basis. Unfortunately, not over the last month and a half.

It was initially operational in late June but was deliberately taken out of service because of an internet communication problem. Although the manufacturer could see that the turbine had been "powered up" they were unable to actually monitor it. The warranty would not be in effect without the monitoring, so we decided to shut it down and reduce the chance of a mechanical problem until the communication issue had been fixed. After some internet and firewall settings were adjusted, it took a week to find an 18 inch cable that was bad – a quick and easy fix once it was found.

In mid July it was operating again. But only a few days later, the turbine had again stopped, this time because of some electronic or mechanical problem. Over the past couple weeks, several components have been replaced. And it is now supposed to be operating by this Wednesday.

The cause for the failure of these components is unknown for now. It may be some manufacturing defect; after all, the turbine was only operating a couple days. It may be related to the big electrical storm the night it stopped. It may be a combination of these factors. Or it may be something else.

The monitoring data from its operation up to when it stopped is being analyzed. The failed parts are being examined. We won't know just what happened until the investigation is completed. Depending on the cause, the cost of the repair work may be covered under the manufacturer's warranty or by the contractor's insurance.

A couple people have asked me for information about the turbine's power production to-date. I do not have actual production information yet. However, we do intend to post generation information on the City's website, hopefully making it available in real time. The turbine is expected to produce as much as 125,000 kilowatt hours annually, equivalent to 12 to 15 averages homes. With the multiple pieces of financing, the turbine has a payback period of about 20 years.

But for now my priority is to see it operating rather than worrying about how to get the data on the City's website.