Ripple Effect # 62

What Can LIDAR Do for You?

In a previous *Ripple Effect*, we looked at the technology used in Light Detection and Ranging (LIDAR) that produces highly accurate relief maps—typically to a minimum accuracy of 6 inches.

Now we'll begin answering the question, "So what's in it for me?" Or, from a larger perspective, "what's in it for the Red River Basin and its citizens?"

Second question first: What good can LIDAR mapping do for the Red River Basin?—especially when the Basin is mostly flat anyway? The answer: "it's because the Red River Basin IS flat that makes LIDAR mapping important to the Basin. Available topographical maps, which may suffice for other parts of the country or other areas of the state or province, offer little information for those of us who live in the Basin. If you think about it, how can a standard typographical map identify changes in elevation of one foot per mile, a typical elevation change for the Basin, when these maps have topographic lines only every 30 miles! Think of all the area of the Basin that these standard maps leave with undifferentiated elevations.

The result of depending on available topographical maps is lots of speculation—which easily turns into controversy. With no good ways to develop enough specific topographical data, speculation and controversy about waters issues, so vital to citizens in the Basin, can only continue!

But, you might ask, even if we adopt LIDAR mapping in the Basin, how could we put it to use?

Here's one example that's happening right now on the Minnesota Wild Rice, a watershed that has adopted LIDAR mapping. The LIDAR data has allowed the Wild Rice Watershed to move ahead with planning Project 42, a levy on the southern branch of the Wild Rice to control waters during flood events. Using LIDAR data, the engineers have been able to build the entire project VIRTUALLY. Yes, on computer - and to an accuracy that shows exactly where the waters will lie—and how deep. Goodbye to the guesswork.

In this instance, a landowner who feared being flooded out by the project was able to know with certainty that that his farm would not be affected by the project - and this before one shovelful of dirt was moved!

This example takes us back to our first question: What can LIDAR do for you?

Well, if you're a landowner, in addition to knowing ahead of time the impact a water management project will have for your land, you'll also be able to take advantage of

LIDAR data to define drainage capacities and to move towards more accurate (“micro”) drainage.

If you are a homeowner, you will have exact information on the elevation of your home and yard available, allowing you to know better how to protect it during flood events. Or, you might use LIDAR data to help you select a location for a new home in the Basin.

And if you are a water manager, you’ll have data to help you make and uphold the best decisions for your watershed, county or municipality.

Until the next Ripple Effect,

The Red River Basin Commission (RRBC)

The RRBC is a grassroots organization that is a chartered not-for-profit corporation under the provisions of Manitoba, North Dakota, Minnesota, and South Dakota law. Our offices in Moorhead, MN and Winnipeg, MB can be reached at 218-291-0422 and 204-982-7254, or you can check out our website at www.redriverbasincommission.org.