

PAGOSA DAILY POST

Gently Down the Stream, Part One

Bill Hudson | 6/24/08

We have enjoyed taking our daughter's dog Hank for walks along the San Juan River, ever since Ursula received him as a birthday present last year. And somewhere in my collection of digital photos, I have a great shot of Hank standing on a dark gray, sandy beach, with the Hot Springs bridge in the background.

The remarkable thing about the photo: that dark gray, sandy beach did not exist three years ago. Three years ago, that spot on the San Juan was still a prime fishing hole.

That may be a real problem for the Town of Pagosa Springs.

At the Town Council work session last week, hydrologist and former Pagosa resident Dave Rosgen gave his theory about the origins of that dark gray, sandy beach — and other pending problems, if the Town goes forward with some questionable river enhancement plans.

“I got up about four in the morning to be here for this meeting,” Rosgen began. “There has been a lot of discussion about the river, especially over the past three years, and a lot of it has been one-sided. Let me give you a bit of history, a bit of background, about what went on in the river.”

A dozen years ago, consultant Rosgen and his Wildland Hydrology firm — [click here to visit his company website](#) — was hired to restore the San Juan River. I remember the activities well, because we had only recently moved here, and we suddenly noticed huge boulders appearing in certain locations all along the downtown stretch of the San Juan. At that time, the San Juan was a fairly lifeless looking river; according to the stories I heard from local historians, the townspeople had purposely removed all of the boulders and large rocks from the San Juan following a series of floods early in the 1900s, leaving the downtown stretch without much character — and without any good fishing holes to speak of.

Rosgen’s job was to restore the San Juan to health, so to speak.

As Rosgen noted for the Council last Thursday, the San Juan has a fairly gradual slope through the whole downtown stretch, less than half the drop of some other area rivers such as the Animas in Durango, one of the more popular kayaking rivers in the region. As I understood Rosgen’s story, a restored San Juan is well suited for fishing — perhaps less suitable for white water recreation.

“When we first started the river restoration,” Rosgen told the Council, “we went to a lot of public meetings and asked the people what they really wanted, what their objectives were for the river restoration. We had the Fishing is Fun grant, and I spent a lot of time studying the river. I moved here in 1985, so I spent 18 years studying the San Juan — sediments and flows and river stability.”

Rosgen's training as a hydrologist, and his long study of the San Juan, helped him make the decisions about how to best use the Fishing is Fun grant. He designed a series of massive "V" and "W" shaped structures in the river, between Town Park to the east, down to the Sixth Street bend in the river.

"Part of the work I did was to assess the current condition on the river. There was a lot of bank erosion. The river was wide and shallow; some of you who have been here for many years know what I'm talking about. And the fishing habitat was quite poor. We had water quality issues, we had sediment issues. We had some flood issues."

"So whatever I designed as supposed to meet numerous objectives: bank erosion, addressing flood issues, moving the sediment through so it didn't fill up, improve fish habitat to improve recreational fishing, and to improve recreational boating. Those were the key objectives."

Rosgen did not get up at four in the morning and drive to Pagosa Springs, merely to tell an entertaining history to the Council. The hydrologist was here to warn the Council about the proposed San Juan River enhancements, designed by another firm and currently on the drawing board and tentatively scheduled to change the course of the downtown San Juan.

Those river enhancements started under the direction of former Town Manager Mark Garcia, in March 2005. Working with a white water recreation engineering company, Recreational Engineering and Planning — click here to visit the [REP website](#) — Garcia and a crew of volunteers moved into the San Juan and removed several of Rosgen's fishing and boating enhancements, claiming "safety issues."

They then installed a rock and concrete check dam, a white water feature that would supposedly help turn the mild mannered San Juan into an exciting boating river. The new feature was christened "The Davey Wave" after volunteer Davey Pitcher, who had provided the heavy equipment for the work.

Garcia's plan was curious on many levels. For one, REP had apparently done almost no studies of the river hydrology, before building the Davey Wave and sketching a series of additional drops for other spots on the river. For another, the Town — which has something of a reputation for carefully soliciting public input before commencing large projects — had failed conducted any well-attended meetings about the river changes, and had relied on input from a small handful of interested people.

For another, the Town had no permit to perform the work.

The Army Corps of Engineers was upset. The Colorado Division of Wildlife, which had funded the Rosgen-designed Fishing is Fun structures ten years earlier, were upset. The fishermen in town were upset.

DOW and the Army Corps of Engineers demanded that Garcia stop work immediately on the river project, and three long years of negotiations, charges and counter charges ensued. Still,

Garcia's river plans, drawn up by REP, lingered as the Town's official river restoration policy — scheduled to be built at some point in the future.

Now Rosgen was standing before the Council, trying to help them understand what had gone wrong — perhaps seriously wrong — when the Davey Wave was installed in March 2005.

And why I have a photo of Hank standing on a gray, sandy beach that was not there three years ago.

Gently Down the Stream, Part Two

Bill Hudson | 6/25/08

“Part of the process was to educate the land owners, who lived along the river and who had to give their permission and easements, to do this work. Which was done. This was not an easy undertaking. People were telling us, oh, this is all going to wash away, it’s going to be unstable, you don’t know this river.”

Hydrologist Dave Rosgen stood before the Town Council last Thursday afternoon and outlined the difficulties he faced installing the massive rock “Fishing is Fun” structures in the downtown stretch of the San Juan River in 1995.

Besides giving the Council — many of whom are newly elected or appointed — some background history, Rosgen was explaining why the Town's proposed white water park, designed by Recreational Engineering and Planning (REP), might not be such a good idea — despite the fact that the Town finally has a permit for the work after three years of negotiations with the Army Corps of Engineers.

Five years after Rosgen’s new “V” and “W” shaped river enhancements were added to the San Juan, the Town asked Rosgen to do a “very detailed monitoring” of the river — a “survey of the longitudinal profile, following major floods,” Rosgen told the Council. “Although we had not used concrete or grout in our structures, only native materials,” Rosgen said, “our survey showed that we needed to replace only about three rocks — and that was after five years, and some major floods.”

Three years ago, REP’s Gary Lacy —to substantiate his own sketches for a white water park, as requested by then-current Town Manager Mark Garcia — submitted a report to the Army Corps of Engineers, claiming that the “W” weirs installed by Rosgen in 1995 were, unstable and had high maintenance costs...

“...and I have never had an opportunity to formally counter those claims, even though this was submitted to the Corps of Engineers,” Rosgen told the Council. “A copy of my comments submitted to the [Pagosa Springs SUN] was never released.”

“If you look at all our monitoring reports, you will see that very little maintenance has been required in all these years, how long has it been, 13 years?”

“You can’t just throw a bunch of structures in the river, without looking at the way the stream is going to adjust,” Rosgen told the Council. He handed out color photos of kayakers and boaters playing in the downtown river from the years prior to the removal of several of his structures and their replacement by the so-called “Davey Wave.”

Clarissa and I have lived downtown for 15 years, and I well remember watching the installation of Rosgen’s river enhancements in 1995. The project was funded by the state of Colorado through a federal grant, as well as by donations from local Pagosa businesses and individuals. At the time, I was disappointed in the appearance of the new structures; to my artistic eye, the rock formations looked highly artificial, like they were designed by an engineer, rather than by an artist. The simple fact is, yes, they were designed by an engineer, and yes, they still look highly artificial, a dozen years later. But Rosgen is correct in saying that they have held up admirably after many seasons of high water in the San Juan River.

He is also correct in saying that his structures attracted numerous kayakers and boaters, over the many years before the Davey Wave was installed. I have no hard data to support my claim, but I would suggest, as a casual observer, that the number of kayakers and boaters has actually declined since several Rosgen structures were removed and replaced by a single, cross channel drop. Yes, the new Davey Wave is a very popular feature, but previously, the whole stretch of river had been popular.

“We have a .005 slope in the San Juan, that’s a half percent slope; that’s like a Class 3 kayaking river — it’s not a real steep gradient. I’m a paddler myself, have been for many years, but when you have a half percent slope, the only way you’re going to create recreational boating as well as fish habitat — and move sediment — is you have to pinch the river in, to a certain width. Not too much, so you still have a capacity for flood flows. You still have to maintain enough velocity to move this coarse sediment that we have here in the river.”

“So, whatever you do, you’ve got to route sediment, you’ve got to decrease bank erosion... because if you use a cross channel structure — we call them check dams — and you use that to raise elevation, that makes the river wide and shallow, and it aggrades the stream headward. And that’s exactly what has happened [with the Davey Wave structure.]”

As I mentioned in Part One, the collection of sediment, in the pools and along the banks, upstream of the Davey Wave are very evident three years after its installation. Rosgen also noted the accelerated erosion problems all along the southern banks of the river, particularly along the Springs Resort property.

“We can predict these things if we just look at the sediment and hydraulics... And one of the things we had to do [in 1995] — by law — we had to have a engineering analysis of the hydraulics of all these structures, to prove through FEMA [Federal Emergency Management Agency] that we didn’t raise flood stage, before we ever did this project.”

Listening between the lines, one could easily hear the implication that Gary Lacy at REP, and former Town Manager Mark Garcia, had not gone through this FEMA process when the Davey

Wave was installed. The further implication, of course, was that the Davey Wave had, in fact, raised the river's flood stage, as well as increasing sediment collection and destroying fishing habitat.

“When new work is done on the river, that analysis has to be done, to make sure the flood stage has not been raised. And that was the problem associated with the changes that were made [by the Davey Wave installation.] There was no analysis done; no one called me and asked how the new work would effect the work I had done previously under the 404 permit.”

Rosgen also noted that the Town failed to contact all of the landowners along the river, whose property could be affected by erosion or flooding. During Rosgen's 1995 project, I understand, agreement was reached with all the affected riverfront properties, before the project was approved.

It seems the current river enhancement project has been lax about getting property owner approvals; three years after the Davey Wave was installed, at least five key property owners have yet to approve the necessary project easements.

Councilor Jerry Jackson asked Rosgen to compare the San Juan stretch through downtown Pagosa with the Animas River in Durango. “Are we trying to make something... do they naturally have a better situation over there?” Jackson asked.

“The Animas is a two-and-a-half times larger river, in terms of discharge, and it also has almost twice the slope. So, yes, it has more volume and it's also steeper, and it has a higher potential for kayaking for those two reasons.” Rosgen also noted that recent Animas River enhancements did not use cross-channel drops such as the Davey Wave, but rather used deflectors similar to those Rosgen installed in 1995.

In his summary, Rosgen suggested that the REP plan had focused on one single river use — white water boating — and had neglected to consider a well-rounded approach to river upgrades.

“ Whenever we push one objective, rather than pursuing multiple objectives, then we get in trouble. We need to look at any river restoration as a way to help fisheries, help land owners, reduce risk from flood levels, reduce erosion, move the sediment — and still have good recreational boating.”

At the end of Rosgen's presentation, interim Town Manager Tamra Allen noted, for the Council's consideration, that the Army Corps of Engineers and the Colorado Division of Wildlife have signed off on the REP plans, which indicates some level of approval at least.

Whether the Army Corps of Engineers and the DOW are in any way *enthused* about the current REP design, Allen did not say.