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FEATURED TOP STORY

Climate scientists, La Conner officials discuss preparing for future flooding

By KIMBERLY CAUVEL @Kimberly_SVH Oct 22, 2017

La Conner's waterfront is set to see more flooding due to climate change. A raised boardwalk and a wall in some places were built to help prevent floods, but larger projects are being discussed.

Scott Terrell / Skagit Valley Herald

LA CONNER — Someday, the waterfront businesses along La Conner's First Street may be raised to allow coastal floodwater to wash under them. A barrier along the east edge of the street could keep the water from pushing farther into town.

That was an idea generated recently by town officials and Skagit Climate Science Consortium scientists who together brainstormed ways to handle the town's flood risks, which are increasing as the global climate warms.

"We wouldn't defend against that area, we would allow water to flow through," La Conner Town Administrator John Doyle said of the concept.

While the idea is to give water from storm surges — events where storms push water abnormally high through coastal areas — somewhere to go that would cause minimal damage, details including how it could be done and what it could look like have yet to be explored.

"There are a lot of caveats to that and we need to do a lot of design and engineering work," Doyle said.

The five-member La Conner Planning Commission, all of whom attended the discussion Oct. 13 at Maple Hall, will use that idea and others to help shape the town's next comprehensive plan.

"We have a big opportunity right now to use the information gathered today to inform the comprehensive plan, which we're working on updating right now," planning commissioner Liz Theaker said during the discussion.

Representatives of the Skagit Climate Science Consortium, a group that studies the effects of climate change in the region, said they will provide the planning commission with data that may be useful in drafting the comprehensive plan.

Comprehensive plans are required under the state Growth Management Act. The plans outline local rules for development, including topics such as land use and new construction.

Doyle said La Conner's comprehensive plan must be updated by the end of 2018.

The floods will come

La Conner is a former fishing town that was built on the east bank of the Swinomish Channel just north of where the north fork of the Skagit River meets Skagit Bay.

Much of the town is at elevations of 14 feet above sea level or less.

As the climate changes, storm surge, a rise in sea level and more intense rain — meaning more will fall in shorter periods of time — will bring more frequent and longer-lasting flooding to the town.

“We’re sort of the canary in the mine for storm surge in the state because we’re in a very low area,” Doyle said.

La Conner officials and consortium scientists said the town is already seeing an increase in the frequency of storm surge events.

The town sees roads, parking lots and shoreline areas in a handful of locations flood when tides reach 12.8 feet.

Since 2006, tides have reached between 12.8 and 14 feet several times, according to data compiled by U.S. Geological Survey scientist Eric Grossman.

“These events used to be one every three or four years. Now we get maybe four a year,” Doyle said.

The frequency and duration of flooding will continue to get worse in part because of a rise in sea level and also because of an increase in rainfall, which is projected to become 22 percent more intense by the 2080s, Grossman said.

With sea level projected to rise 1 to 2 feet throughout the Puget Sound region by 2100, Grossman said flooding that lasts a matter of hours in La Conner could in the future last days or weeks.

“His data shows this the most clearly and effectively, and it was shocking to us when we first saw it,” Doyle said.

La Conner’s future flood risks could also be amplified if more frequent storm surge events overlap with flooding on the nearby Skagit River, Grossman said.

The river will flood more frequently as rainfall becomes more intense due to climate change.

“Having those (flood) events magnified is going to put a tremendous burden on the community,” Doyle said.

Temporary protections

Four parts of town are the first to flood. They include the Nell Thorn Restaurant parking lot and the area around an abandoned wooden warehouse at the end of Caledonia Street, Doyle said.

Water sometimes flows out along the road near the warehouse, as seen in a photo from Feb. 2, 2006 — one of a dozen images of local floods that were taped to the walls at Maple Hall during the discussion.

The town boat launch north of Rainbow Bridge is another area that regularly floods.

“Our parking lot is on many of these photos. It floods every year,” said Jenna Friebel, who works at the state Department of Fish & Wildlife’s La Conner office near the boat launch.

In 2016, the town raised Sherman Street about 18 inches where it curves near the boat launch. Doyle said that has prevented flooding in the industrial area to the southwest, but has not kept water from going toward the Fish & Wildlife office.

In another effort to reduce flooding, the town built 2-foot walls along portions of the waterfront in 2015 as part of its boardwalk project.

That has prevented businesses on First Street from flooding, but sometimes with just inches to spare.

“The issue is that over time, because now those extreme low-pressure (storm surge) tides are just up to the frames of those buildings, with just a few more inches the water will be in those buildings,” Doyle said.

Infrastructure issues

It’s not just the waterfront that is at risk of flooding more often because of climate change.

Sea level rise and storm surge also increase the risk of flooding at the La Conner wastewater treatment plant on the east edge of town.

The plant relies on gravity to bring wastewater into the system and to send it into the Swinomish Channel after it is treated.

Treatment plant manager Kelly Wynn said storm surges have already caused flooding at the plant.

“If the wind conditions are right and the tidal conditions are right, here it comes,” he said while describing how the facility flooded in 2016.

The flooding occurs because high water levels in the channel prevent treated water from flowing out of the plant, while wastewater continues to flow into the facility.

This overwhelms the treatment plant, flooding it even though it’s located in one of the higher-elevation areas in town.

Time to prepare

The first storm surge that caused flooding in La Conner took officials by surprise.

“Back in 2006 I was coming to work and there was a mild storm event coming through town but I looked at the south end of town and it was all flooding,” Doyle said. “There wasn’t a high tide and it didn’t appear to be a particularly severe storm, but that whole side of town was flooding.”

That flooding did not cause costly damage, but it served as a warning.

“It was really unprecedented because there was no way we could have predicted it, and that’s what really shocked us,” Doyle said.

While more frequent and more extreme flooding is not an immediate or deadly threat, it could be costly for the town, businesses and residents.

“We have something that’s not going to kill us, but we have some choices about what we’re going to do to resist and adapt to it,” said Steve Moddemeyer, a consultant who helped lead the discussion.

Town residents said they want to ensure La Conner remains intact for future generations.

“The water is going to come, so what can we do to stop it, or to learn to live with it?” Moddemeyer said.

The group came up with ideas such as building a higher wall along parts of the waterfront and leaving other areas exposed, giving the water a place to go where it would cause little or no damage.

Some envision rebuilding the bases of waterfront buildings to enable them to float rather than be inundated during floods.

Others suggested rerouting or pumping floodwater to nearby Sullivan Slough.

While those ideas — raising buildings along the waterfront, putting a barrier on the east side of First Street and pumping the water to the slough — would be expensive, planning commissioner Bruce Bradburn said they would likely cost less than repeated flood damage.

“It’s going to cost you money anyway, and if you don’t do it (adapt), it’s really going to cost you,” he said.

The group discussed how to fund these types of waterfront projects. Ideas included seeking government grants and the establishing a local taxing district.

One way or another, the town needs to find solutions.

“At six inches of rise (in the channel) we’re into the buildings, so within the next 50 years it’s really up to us to develop a strategy to protect the buildings along First Street,” Doyle said.

Seeking a solution

La Conner is not the only place in the state that is threatened by sea level rise and an increase in storm surge.

“This picture is very characteristic of a lot of places around Puget Sound,” Grossman of the USGS said while pointing to a photo of La Conner’s flooded waterfront.

More frequent coastal flooding is being seen in other parts of the U.S., from Louisiana to Florida, and other parts of the world such as Venice, Italy.

Moddemeyer said Venice has dealt with more frequent flooding by developing a warning system that gives those in areas hit hardest by flooding an hour to lift carpets and furniture before the water comes in.

When parts of the city are under water, the city provides raised walkways and rubber boots to enable pedestrians to get around.

Those involved in the discussion in La Conner said they hope the town will develop its own solutions to protect residents, businesses and infrastructure.

Derrick Hiebert of the state Department of Emergency Management said the discussion was a good place to start.

“Long-term risk reduction planning where the local community is in control of the outcome is incredibly important,” he said.

La Conner Mayor Ramon Hayes said these types of discussions are more important than ever in the face of climate change.

“With the onset of really clear climate science ... this should be happening all over the state,” he said.

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Facing more frequent flooding

Due to its low elevation and location, the town of La Conner is vulnerable to sea level rise, storm surge and river floods — all of which will become more problematic as the climate warms.

The impacts:

— Sea level is projected to rise 1-2 feet by 2100

— Storm surge and related coastal floods will become more frequent and last longer

— 100-year floods on the Skagit River are projected to occur every 22 years by 2040

— Rainfall is projected to become 22 percent more intense by the 2080s

Ideas for adapting:

— Create a climate action plan

— Look for grants to help with waterfront projects

— Develop a local revenue stream for waterfront projects, such as a taxing district

— Find ways to better forecast storm surge and keep the town on alert

— Create flood-based attractions, such as outdoor art that interacts with the water or events such as boat races

— Invite the community to participate in a design contest for protecting the waterfront

— Redirect flood water to areas where it will cause the least damage

— Rebuild the waterfront to allow the buildings to float during floods

— Encourage higher density development in the areas of highest elevation

— Require new construction on the waterfront to be raised above the anticipated flood levels

— *Information from the Skagit Climate Science Consortium and recent discussion with La Conner officials.*

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