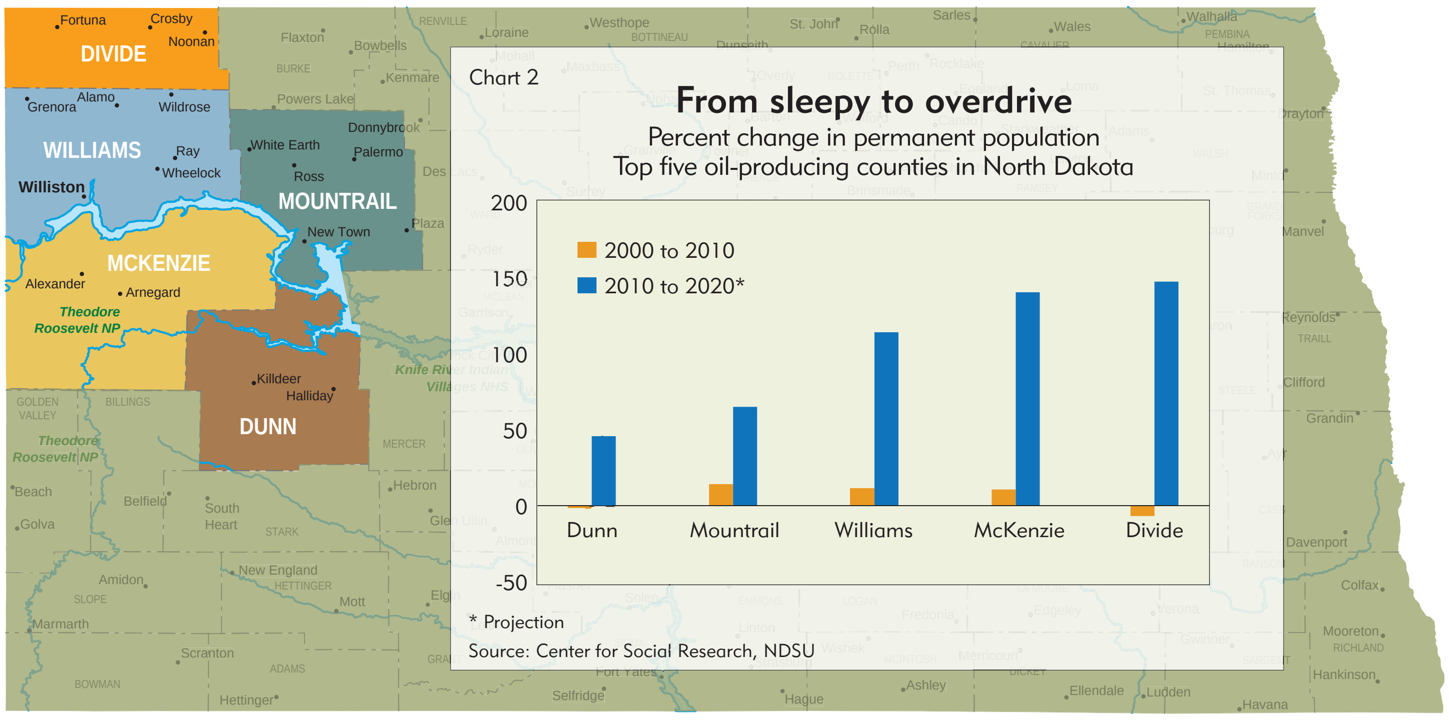

> The city of Arnegard "is smack in the middle of the Bakken" with a population just over 100 people. But it has a service population of 1,600. "They don't have public water; their sewer system is overrun and outdated. They were less than underprepared" for the deluge of service demands.
>
> *—Deb Nelson*
> *Vision West ND*

From Yay! to OMG!

There are several stages of community response to shale oil development, according to Richard Gardner, a consultant with Bootstrap Solutions of Boise, Idaho, and senior fellow at the Rural Policy Research Institute at the University of Missouri. He has done work for communities grappling with the effects of energy development from North Dakota to Pennsylvania to Texas.

Gardner said the first development stage is enthusiasm (we struck oil!), followed by uncertainty (is this for real?), then crisis (we need a plan) and finally adaptation (here's the plan). "Sometime in the last year or two, there has been a transition from uncertainty to crisis," Gardner said.

A population rise of 1 percent to 3 percent per year is considered robust, said Gardner. At 4 percent to 5 percent, "things are busting at the seams," he said. "You've got McKenzie County growing 8 percent per year for the next 10 to 15 years. How can they possibly keep up?" In 1983, school enrollment in the McKenzie County School District was just over 1,000. By 2008, it had slowly eroded to 512. This year, enrollment is back to 868. February estimates by NDSU project school enrollment almost doubling by the 2016-17 school year to more than 1,600 students. In a very rural county, Gardner said, "they have low capacity in everything, and they can't keep up with this."

Oil patch communities also do not have the benefit of time, Gardner said. These communities "are suddenly doing a 180, and they are very rapidly being thrust from a sleepy community to an industrial region overnight."

The response to the boom by individual communities is often uneven, depending on factors like staffing and financial capacity. As local communities race to expand infrastructure and other services, some "are bonded to the gills" and don't have the capacity to take on necessary upgrades to city infrastructure, said John Phillips, a real estate project developer with Lutheran Social Services and former planner for the city of Beulah.

In January, a report commissioned by the city of Williston looked at infrastructure needs six years out. It identified more than $625 million in infrastructure upgrades, including $102 million for storm water, $110 million for drinking and wastewater and $259 million for transportation. The city was rewarded for that planning effort by having its bond rating lowered by Standard & Poor's only months later over fears of projected budget deficits that could deplete cash reserves.

It's even worse for small communities, because it doesn't take much to overwhelm their capacity, and they get very little funding because formula-based state aid goes mostly to counties and regional centers like Williston and Dickinson. So they are left to hope that some aid passes down the ladder from the county, said Deb Nelson, manager, Vision West ND, a 19-county consortium of governments and other interests created expressly to help the region cope with oil impacts.

The city of Arnegard "is smack in the middle of the Bakken" with a population just over 100 people. But it has a service population of 1,600. "They don't have public water; their sewer system is overrun and outdated. They were less than underprepared" for the deluge of service demands, said Nelson. "The needs are so much greater than the funding. Unless you're here and experience it, you don't have a good idea of what's going on."

Hodur, from NDSU, called western North Dakota "a socio-economic petri

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Oil taxes 101

Oil and gas revenues in North Dakota are generated in several forms. The largest of these comes from an 11.5 percent severance tax on the gross value of oil and gas produced at the wellhead.

This tax is actually two separate taxes; a 6.5 percent extraction tax and a 5 percent production tax. Technically, the production tax is not a severance tax but rather a substitute for local property taxes, and helps fund direct aid to producer counties. However, the percentage of tax revenue that is returned to producer counties is small, and as such it acts more like a severance tax because most of the money stays at the state level.

The state also receives money from oil activity on state-owned land. First, the state receives lease-bonus revenue — one-time payments from producers for exclusive rights to drill on designated parcels of public land. Once production starts, the state (actually, a state trust) earns royalty payments equal to 12.5 percent to 18.75 percent of gross production value, depending on the county of extraction. Producers then pay severance taxes to the state on the remaining percentage of production value. So a $100 barrel of oil produced on state lands in core Bakken counties would incur a royalty payment of 18.75 percent, along with an 11.5 percent state severance tax on the remaining value of $81.25.