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USING COMMUNITY GROWTH SCENARIOS TO EVALUATE POTENTIAL WATER QUALITY IMPACTS

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Many of the streams along Lake Superior's coast are designated trout streams, with several listed as impaired for a variety of reasons. As development continues in these coastal watersheds, the water quality problems are expected to increase. Communities are interested in protecting these natural resources, and many have explicitly stated in their community plans the importance of protecting water quality. However, making changes to existing ordinances regulating development is difficult, and communities are unable to fully evaluate the future impacts of today's decisions.

In order to help these communities better evaluate alternative development options, we used the Community Viz software to evaluate several scenarios of growth in three coastal communities in Minnesota: a rural township, a town, and a city. We used three scenarios: smart growth, where development was concentrated around existing infrastructure, conservation design, where protection of natural resources was given priority, and existing zoning. For each scenario, we evaluated the potential effects on water resources by calculating estimates of impervious surface and forest cover loss, and looked at other indicators, including open space and road lengths.

The information, maps, and 3-d graphics derived from this work were developed as a resource for coastal communities looking at future development possibilities, and were used in workshops in the various communities and as an online resource. The visuals were designed to help communities understand what different development patterns would look like "on the ground" in their community.

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