

Comments: The Red River of the North Team faces challenge because of unique river geology

By Donald P. Schwert, Ph.D.

The Regional/Urban Design Assistance Team faces many challenges during their analysis of the Red River corridor, and the people of Fargo-Moorhead should welcome the innovation and freedom of their approaches to community planning.

As part of the development of any longterm plan for the Red River corridor, the RUDAT team needs to first recognize the extremely poor geologic conditions of which Fargo and Moorhead are built: conditions that are tied both to weak, plastic soils that underlie the region and to the susceptibility of the corridor itself to regular flooding. No easy engineering remedies exist for either of these conditions. A final development plan should therefore address ways in which the impact of these conditions can be minimized while, at that same time, making the corridor an asset for both cities.

As a geologist and a resident of a neighborhood adjacent to the "corridor," I would ask RUDAT to consider the following points:

- That we are so severely affected by flooding is mostly a consequence of our failure to develop a regional zoning plan restricting residential and other construction in flood-prone areas. With five of the 13 great, historic floods of the Red River having occurred only within the past 20 years, the statistical validity of the present limits of the "100-year flood" must be questioned.

Regardless, the time has come to limit new construction within the presently designated "100-year flood" to non-residential structures specifically designed to be floodable. No special flood protection, including diking, should be afforded such new structures.

- Many of the natural pooling areas for flood waters within the corridor have been either filled or encroached upon by development and diking. Such development artificially exacerbates an already severe flood problem. With flood waters constricted by dikes and with natural pool areas removed, upstream flood levels are increased.

A development plan should therefore recognize that further infilling or restriction of existing basins be minimized and be utilized only to protect residential and commercial structures. All riverside parklands should remain undiked and totally floodable.

- Given the poor soil engineering factors of our region, bank slippage along the river is an inevitable process and one that has regrettably been accelerated by the construction of heavy, permanent structures in areas of potential instability. Areas susceptible to failure are easily mappable, and such mapping should lead to a zoning away of all but recreational development.

- The construction of low-level dams may be the least expensive and most esthetic approach to retarding existing bank destabilization. One should, however, seriously question the impact of each dam (existing or proposed) on upstream flood pool levels.

For example, will raising the elevation of an ex-

isting dam, as has been proposed for that at Main Avenue, increase flood levels and flood susceptibility in south Fargo? Here, I would like to see RUDAT adopt a philosophy of "What can the communities do to minimize or even reduce existing flood levels with the region, while making the corridor more attractive?"

Finally, the severity and pervasiveness of these poor geologic conditions inhibits development of the Red River corridor to any extent that approaches that of, let's say, the model at San Antonio, Texas. Our civic leaders may have to face the fact that the only practicable option for corridor parklands and natural woodlands.

But, then again, cannot the expansion and more-innovative utilization of corridor parklands be considered assets in which both communities can take pride?

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