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Running Dry? The Sequel: Creating a Hydraulic Model User Interface

Without water, a city cannot survive. The most immediate source of water may not sustain the population. Water engineers must compare the needs of a growing population against the current supply and bring in additional water if required. The calculations required can be overwhelming, necessitating a simple planning tool. The goal of this year's project was to turn previous work on calculating water flow amounts into a graphically intuitive user interface. Another goal of this project was to compare the applicability of VBA macros vs. HTML for this tool. HTML lacked slider bars, graphical tools, and a tool kit that made the interface intuitive. Excel macros had these options, making it better suited for the project. The tool provided a way to immediately visualize how much water is needed as the population grows vs. how much water is delivered. Engineers that reviewed the tool found it useful and intuitive. The current model assumes a gravity fed channel with a smooth flow. Future enhancements to include laminar vs. turbulent flow and pressure fed pipes would increase the model's applicability in a broader range of situations.