A nowhere-zero $k$-flow for a directed or undirected graph is a vector in the nullspace of the incidence matrix of the graph such that all the entries of the vector are from the set \{±1, ±2, …, ±(k − 1)\}. We consider the problem of finding a basis consisting of nowhere-zero $k$-flows for the nullspace of the incidence matrix. For a variety of graphs—including the complete graphs—we find such bases with $k = 2$ or $k = 3$. We conjecture that all directed graphs with no cut-edge have such a basis with $k = 5$. If true, this would strengthen Tutte’s celebrated conjecture on nowhere-zero 5-flows. (Received September 19, 2016)