This talk will give an overview of a procedure for constructing a system of functions termed “wavelets” on a Hilbert space associated to a finite, higher rank graph C*-algebra, where we emphasize the case where the $k$-graph in question is strongly connected and aperiodic. This work generalizes some results of M. Marcolli and A. Paolucci for the finite directed graph case, and is joint with C. Farsi, E. Gillaspy, and S. Kang. (Received August 25, 2015)