Finding 2-connected subgraphs in planar graphs

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We consider the problem of finding a minimum-weight subgraph of a graph which has given vertex- or edge-connectivities between its pairs of vertices, and also the problem of adding a minimum-weight set of edges to an existing subgraph in order to increase the connectivity to the required levels. These problems include Steiner Tree and Hamiltonian Circuit problems, and are NP-hard in general. When the graph is planar and connectivities are at most 2, however, there exist polynomial-time algorithms for many versions of the problem.