1062-13-212   **Gwyneth R Whieldon*** (`whieldon@math.cornell.edu`), Cornell University, Mathematics Department, 114 Malott Hall, Ithaca, NY 14850. *Resolutions of Nerves of Graphs.*

The nerve $\mathcal{N}(\Delta)$ of a simplicial complex Δ is a simplicial complex whose vertices correspond to facets of Δ and whose faces correspond to intersections of facets in Δ. We examine $\mathcal{N}(G)$, considering the graph as a simplicial complex, and identify structures and properties of the original graph G recognizable in the resolutions of the Stanley-Reisner ideal of $\mathcal{N}(G)$. Specifically, via the (multi)graded betti numbers of $I(\mathcal{N}(G))$, we enumerate all spanning trees of G, all maximal matchings of G, and numerous other features of our graph. Additionally, we produce new classes of edge ideals $I_{G'}$ with bounded regularity and other highly proscribed invariants. (Received August 09, 2010)