1033-05-15 **R. Douglas Chatham*** (d.chatham@moreheadstate.edu), Dept. of Mathematics and Computer Science, Morehead State University, Morehead, KY 40351, and **Gerd H. Fricke**, **Joe Harless**, **R. Duane Skaggs** and **Nick Wahle**. *Transit graphs.* Preliminary report.

Let $F$ be a family of graphs on the same set $V$ of vertices. We define the *transit graph* $G$ for $F$ so that $ab$ is an edge of $G$ iff there is a path from $a$ to $b$ in one of the elements of $F$. We relate the transit graph to similar, previously-known concepts such as edge subcoloring and covering a graph by equivalence relations. We discuss previously known and new results on $eq(G)$, the minimum size of a family for which $G$ is the transit graph. (Received July 11, 2007)