We consider a matrix Lax equation which describes the probability law of solutions of a scalar hyperbolic conservation law with convex flux function $f$ where the initial data is a monotone Markov process taking values in a fixed, finite set. In this talk, we show how to solve the Lax equation explicitly. This is accomplished by means of a change of variable which maps an open, dense subset of infinitesimal generator matrices to an associated set of algebro-geometric data consisting of a nodal curve $C$ and a set of complementary variables which can be interpreted as the gluing data of an eigenvector bundle over the normalization of $C$. (Received August 20, 2018)