

Design of a Light Rail System in Metropolitan Memphis

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Abstract: The Memphis Metropolitan Area has been looking at an alternative to implement a transit system on a fixed guide way for more than two decades. Around the late 90's and early 00's it was decided that it might be feasible to implement a light rail transit system. The Memphis Area Transit Authority (MATA) has done studies suggesting different routes such as to the Memphis International Airport or to the southeastern part of Shelby County to the suburbs of Germantown and Collierville. Although these corridors have been developed, the only construction of a possible light rail system was the construction of the Madison Avenue Trolley Line through the medical district in 2003. Some of the reasons for this are due to the lack of matching funds from the federal government and some disagreement as to which way to extend this line. No design work has been performed for proposed corridors.

The purpose of this project is to visualize what the "starter line" of a light rail project would look like. The chosen corridor would be along Poplar Avenue. The route would start at the end of the Madison Avenue line and follow East Parkway south to the old fairgrounds. Then the route would run parallel to the Norfolk Southern freight line and be located within existing right-of-way. The route would end west of the center of Collierville.

The project includes the design of the main line, sidings, stations, parking lots, and any other structures. The geometry of the track such as horizontal and vertical curvature and cross sections are designed given existing ground data. Any geotechnical and drainage work is also included. Finally, safety concerns, historical/environmental issues, cost estimates and feasibility are also addressed.

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