

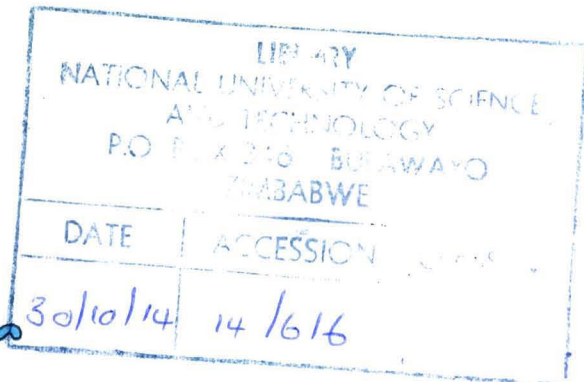
# CONTROL STRATEGIES FOR BULAWAYO CITY CENTRE ROAD TRAFFIC

By

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# Abstract

This project uses a simulation approach to investigate the possible advantages of restructuring the Bulawayo city centre road system. Envisaged advantages include the reduction of traffic jams, accident rates and average travel times of motor vehicles as they manoeuvre the city centre. The scope of this project dwells mostly on manipulation of intersections and road lane orientation, i.e. the types of road intersections (give way signs and traffic lights) and orientation of roads (one way roads or two way roads). Five control strategies are tested, one in which the three major traffic jam prone intersections are changed into robot intersections, two in which the city roads are composed of parallel one way roads and two way roads that are perpendicular to the one way roads, and two strategies in which the one way road strategies are enhanced with traffic light phase coordination. The Visual Basic.Net 2010 software development environment is used to create a windows operating system based program that simulates the current scenario as well as the five road system restructuring strategies. Road system performance assessment and comparison suggests that the optimal strategy is changing all the streets into one way roads and applying traffic light coordination. This strategy reduces traffic jam volumes and travel times of motorists.