

control systems have historically exhibited a high rate of deterioration, primarily due to owner or mechanic tampering in an attempt to improve driveability. There have also been indications that the use of leaded gasoline in about 10% of automobiles equipped with catalytic converters has reduced the overall effectiveness of the FMVCP since lead destroys the capability of the catalyst to perform its function.

To ensure that the control systems continue to function as designed, a number of major urban areas have adopted or plan to adopt a system of frequently inspecting automobiles, and requiring proper maintenance on those vehicles that fail to meet the emission standards. Such programs automatically incorporate an allowance for deterioration which is dependent upon vehicle age and is taken into account during the inspection. This system is frequently referred to as Inspection and Maintenance (I&M) and is required by the Clean Air Act Amendments of 1977 to be implemented in all areas that cannot meet the national ambient air quality standards by 1982.

The effectiveness of an I&M program is dependent upon many factors, including the degree of stringency, the frequency of inspections, the training of inspectors, etc. However, an effective I&M program can provide between 10% and 25% more emission reduction for HC and CO than possible through the FMVCP only. Reductions for NO_x through I&M are somewhat lower but generally an estimated 5% to 10% improvement is possible.

Inspection costs run between \$5 and \$10 per car and the repair cost have averaged just under \$30 for each car that failed the inspection. Generally, systems in operation at the current time have been designed around a 30% failure rate. The annualized cost of an I&M program to meet current U.S. air quality standards by 1987 is estimated to be around \$400 million. Potential fuel savings as a result of maintaining proper tuning of the cars may reduce this cost to approximately \$250 million.

B.3.2.2.2 Transportation Control Measures

If emission reductions beyond those achievable with tailpipe standards are required, transportation measures can be used. These measures involve a host of possible alternatives ranging from simple cost-saving programs such as carpooling to extensive major rerouting of traffic, gasoline rationing or mass transit systems. Because of the variety of options, it is difficult to estimate the cost of such programs. However, there are indications that the simple and inexpensive options do offer some emission reduction potential (maybe 5%). Generally, these less expensive options also offer some form of fuel savings.