

ALTERNATIVE TECHNOLOGIES FOR GOODS MOVEMENT

Introduction

The I-710 Environmental Impact Report/Environmental Impact Statement (EIR/EIS) is the first major transportation corridor study in the nation to include an analysis of zero tailpipe emission alternative technologies for moving goods through a region. Two families of technologies have been identified for possible application in the I-710 Corridor: (1) Advanced Technology Fixed Guideway Systems and (2) Zero Emission Trucks. An Initial Feasibility Study has evaluated environmental impacts and benefits of these technologies, identified potential routes or alignments, and defined general features to be considered.



Advanced Technology Fixed Guideway Systems include Magnetic Levitation (or Maglev) and Exclusive Contact Guideways. Both of these technologies require a separate guideway or track. Maglev vehicles “float” either around or above a large rail-type guideway using magnetic resistance to propel the vehicle. On Exclusive Contact Guideways, the “freight cars” pick up power from an electrical power conduit embedded in the guideway.

Zero Emission Trucks look somewhat similar to the standard trucks being used today for freight movement. While within the freight corridor, they can be powered by electrical overhead catenary wires, embedded pavement electrical systems, linear induction systems, or a combination of these. While traveling off of the freight corridor, the truck can be powered by electrical batteries, CNG, or LNG in a hybrid, dual-powered application. There are buses in operation today using the dual-mode or electric/overhead catenary wire technology.



Special Requirements for Advanced Technology Fixed Guideway Systems

One of the major differences between the Advanced Technology Fixed Guideway Systems and Zero Emission Trucks is that the guideway technologies must operate on a guideway system at all times. Unlike Zero Emission Trucks, guideway technologies cannot operate on freeways or local arterials. They also require a large network of station tracks (where goods are loaded and unloaded from port and inland intermodal facilities onto and off of the guideway). These station tracks require land acquisition, thus increasing project costs and impacts.

Speed and Capacity

Although the Advanced Technology Fixed Guideway Systems can move much faster than trucks, the capacity of the Fixed Guideway Systems is limited by the speed at which cranes can load and unload cargo containers at each end.

Side-by-Side Comparison: Initial Study Findings

An initial study of the use of alternative technologies for goods movement in the I-710 corridor has analyzed different system characteristics such as emissions, infrastructure requirements, capacity, and cost. Preliminary findings are:

	Fixed Guideways	Zero Emission Trucks
Meets Zero Emission Requirement	Yes	Yes
Requires New Guideway	Yes, including 31-37 station "tracks"	No, but if built today, catenary wires (or other systems) would be required for travel greater than 30 miles
System Capacity	16,000 containers/day	67,000 containers/day
Estimated Construction Cost	\$8.2-11.3 billion	\$3.8-3.9 billion
Estimated Operation & Maintenance Cost (first year)	\$252-367 million	\$36-41 million
Other	Land required at each end for loading/unloading stations	No additional land required

Study Conclusions

The study's preliminary findings suggest that Zero Emission Trucks have the capability of moving more containers while generating fewer impacts than Advanced Technology Fixed Guideway Systems. The study also shows that Zero Emission Trucks and supporting infrastructure are less expensive to build, maintain and operate. Based on these findings, one of the options recommended for study in the EIR/EIS includes the use of Zero Emission Trucks. This option also considers an opportunity to modify such a system in the future to incorporate an Advanced Technology Fixed Guideway System.

For more information on the I-710 Corridor Project EIR/EIS, please visit our website at www.metro.net/710 or contact us in one of the following ways:

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