

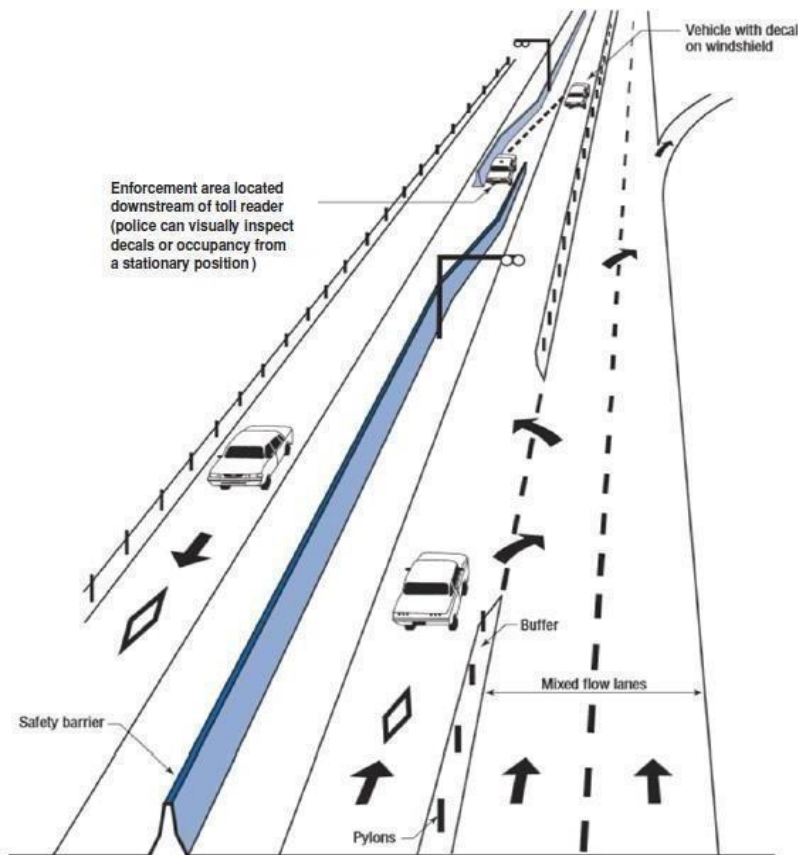
Literature Review on the state of the art of Managed Lanes

Bachelor's Thesis von Hicham Bourkkadi

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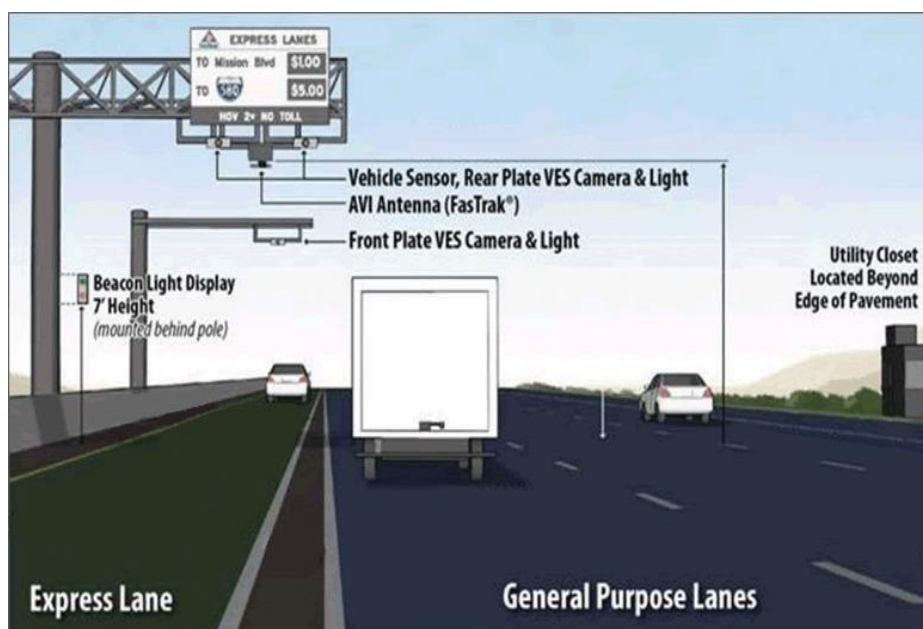
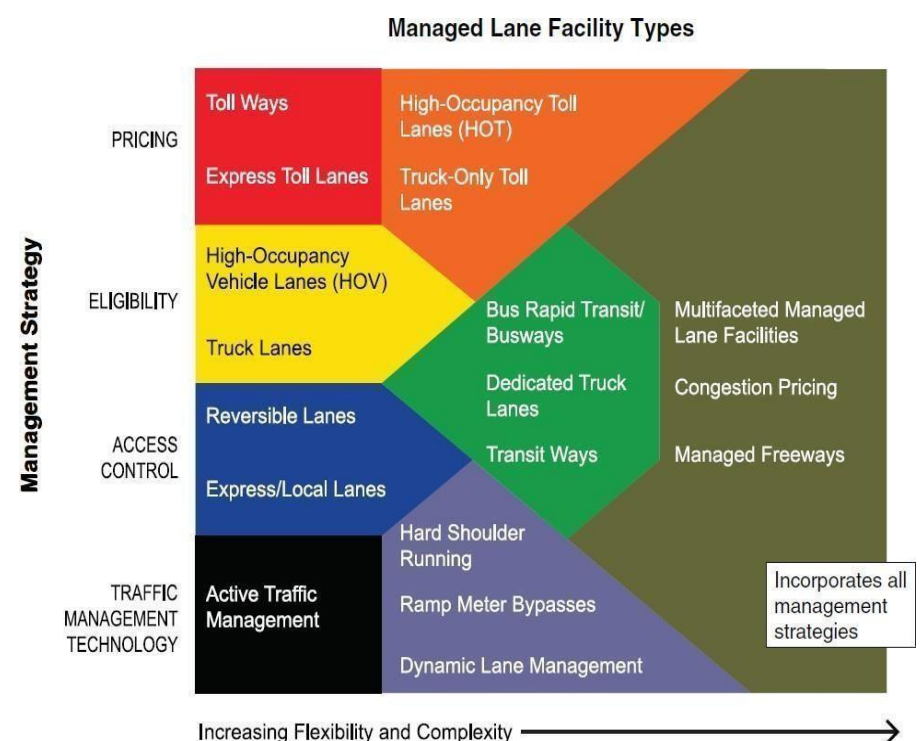
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The earliest and most common managed lane facility type is the High-Occupancy Vehicle lane (HOV), which relies solely on vehicle eligibility to regulate demand. These facilities later evolved into High-Occupancy Toll lanes (HOT), additionally incorporating pricing as a management strategy as electronic toll collection technology emerged. Exclusive Lanes grant usage to certain high-occupancy vehicles, designated by vehicle type, while other facilities additionally use access control as a strategy to manage traffic flow. Various intelligent transportation system strategies, such as dynamic advisory speed limits and pricing information are also implemented alongside managed lanes to optimize active traffic management.

Managed Lanes refer to a set of lanes where operational strategies, such as vehicle eligibility, access control, pricing, or a combination of these strategies are proactively implemented in response to changing traffic and roadway conditions

One way of dealing with congestion is to expand existing roadways and introduce more lanes. However, as additional traffic is added, congestion becomes a recurring issue. In this sense, Managed Lane facilities are a highly effective traffic management strategy for optimizing traffic flow and limiting congestion issues. The premise of managed lane facilities is to maintain free-flow travel speeds through the implementation of various design and operational strategies, depending on the expectations/ objectives to be achieved.



Travelers place value on both time savings and reliability when choosing a route for a trip. The Value of travel time savings (VTTS) and value of reliability (VOR) are two major quantities to consider when investigating the potentials and benefits of managed lane facilities. The two main data sources used to conduct VTTS and VOR studies are Stated Preference (SP) and Revealed Preference (RP) surveys. These surveys are conducted to study travelers' behavior toward different travel situations. Factors including age, gender, traveler's income, and trip purpose all affect the value travelers place on time savings and reliability.

Implementing managed lanes in a corridor provides several benefits that include travel time savings, trip time reliability, reduced vehicle hours traveled, increased person throughput, efficient use of capacity, enhanced corridor mobility, and reduced levels of greenhouse gas emissions and fuel consumption.