

# Managed Lanes and HOV Access



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DENVER REGIONAL COUNCIL OF GOVERNMENTS

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# What are Managed Lanes

## ◆ Many types:

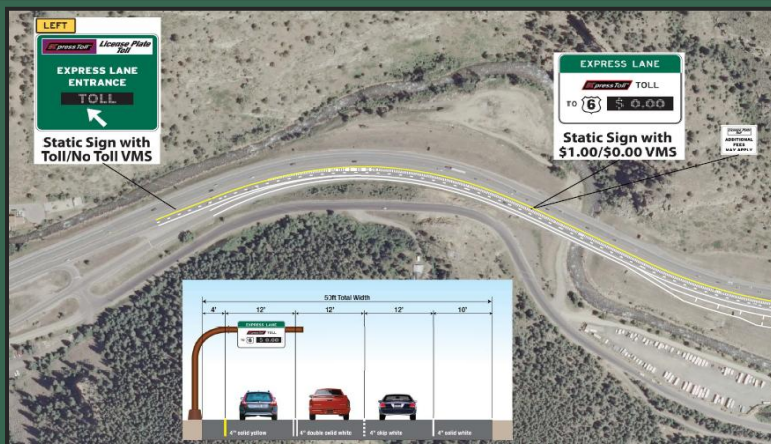
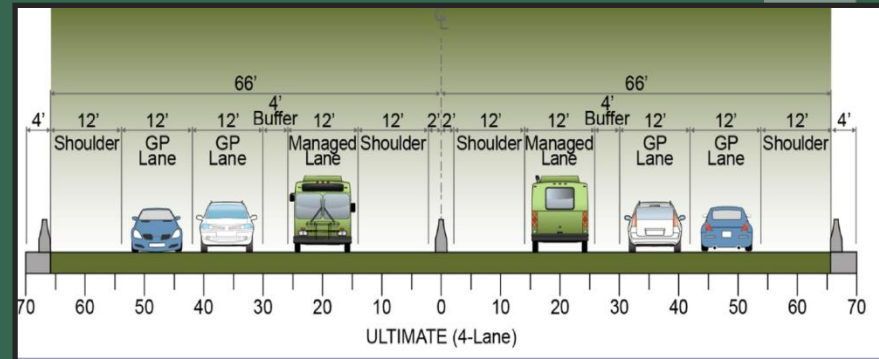
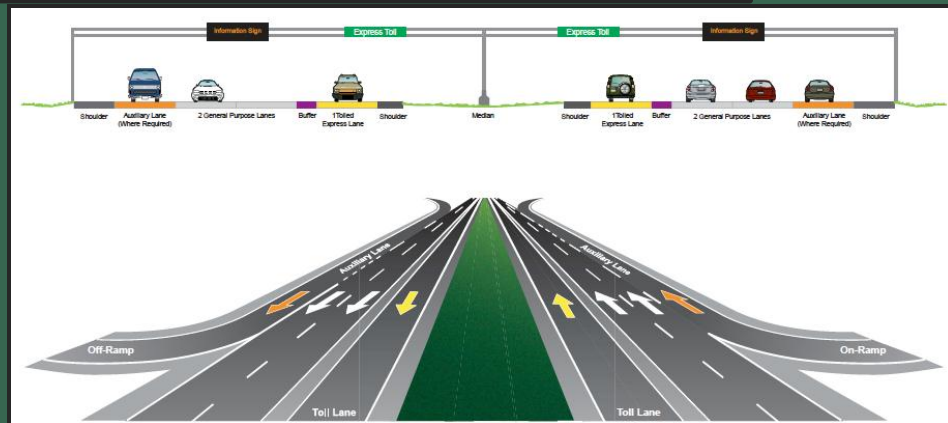
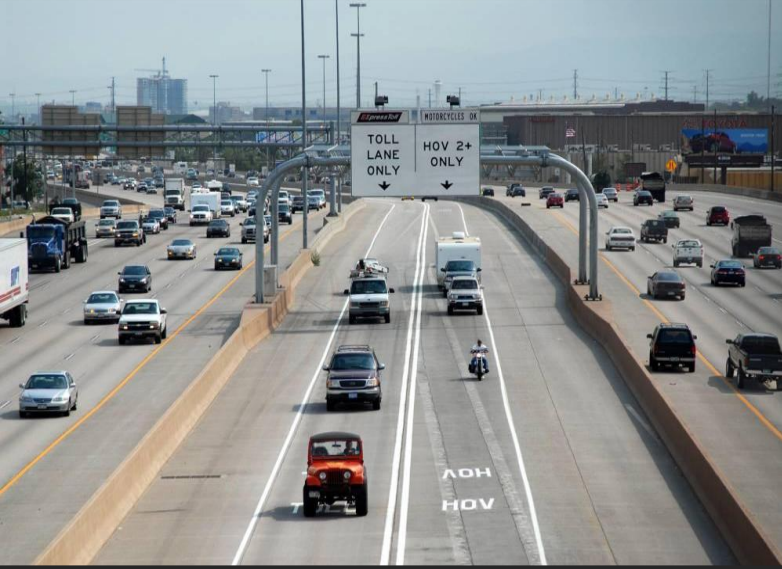
- ◆ Toll/Express 24/7: (North I-25, US-36)
- ◆ Peak hour shoulder use: (I-70 Mountain proposal)
- ◆ HOV-only, peak periods: (Santa Fe Drive)
- ◆ Bus-only, peak periods: (Broadway/Lincoln)
- ◆ HOV-only, 24/7 (Salt Lake City)

## ◆ Some type of roadway operational variation:

- ◆ Rules for different types of vehicles
- ◆ Price variation by time or level of congestion
- ◆ Time-of-day of operation
- ◆ Choice for road users (general purpose lanes vs. toll or HOV)

## ◆ Manage the flow of traffic – new technologies

HOV = High Occupancy Vehicle (transit, carpool)



# Staff Research: Toll Managed Lanes

- ◆ Dozens (hundreds?) of studies – wide range of “results” drawing different conclusions
- ◆ Studies do not provide conclusive guidance
- ◆ Quality and objectivity is questionable on many studies, authors often at odds

# HOV Policies – Free use by carpool HOVs:

- ◆ Will decrease overall revenues (all else being equal) compared to charging all cars and trucks
  - ◆ If a certain level of revenues are required (to operate & maintain, or to pay off bonds), then tolls must be raised for other users
- ◆ Requires higher enforcement costs (police, equipment)
  - ◆ Costs usually imbedded within the tolls
  - ◆ Fines do not offset costs, and usually do not go to the operating agency

# Other Impacts on Toll Managed Lanes

## ◆ If HOVs are allowed free access:

- ◆ Existing carpools will divert from adjacent general purpose lanes to the toll managed lanes
- ◆ Some new carpools will form (small % of corridor travelers)

## ◆ Likewise, if policy changes for an existing facility (e.g. from 2+HOVs-free to 3+ HOV):

- ◆ Most 2 person HOVs will move to general purpose lanes
- ◆ Some 2 person HOVs will stay in toll lane
- ◆ Some 2 person HOVs will attract a 3<sup>rd</sup> occupant
- ◆ Some carpoolers will divert back to to SOVs (single occupant vehicles)
  - E.g. 1% - 2% decrease
- ◆ Some carpoolers will change to transit \*\*

# Who Uses The Toll Managed Lanes?

- ◆ People of all incomes (drivers and passengers)
- ◆ Greater share of higher income users compared to total population of region
  - ◆ Should compare to the highway corridor users – not general pop.
- ◆ Rebates or vouchers provided to low-income persons? – cost to administer
  - ◆ E.g. toll bridges back east: Staten Island V-N Bridge, Tappan Zee?
- ◆ People can use adjacent general purpose lanes
  - ◆ Will have less congestion after toll lanes added (all users benefit)
    - Duration and severity of congestion decreases (if designed well)
  - ◆ 80% - 90% of hours in a week: little time differential between general purpose and toll lanes.

# Conclusion – Studies are inconclusive

## ◆ Sample Bibliography:

- ◆ HOV Express Lanes User Survey, Corona Research, 2008
- ◆ Denver HOV/Express Lanes Occupancy Analysis, RSG Inc., 2012
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- ◆ Managed Highway Lanes in Colorado, SWEEP, 2014
- ◆ The Five Classical HOV Lane Fallacies, AJM Engineering, 2002
- ◆ Can Carpooling Clear the Road and Clean the Air, Vanderbilt U., 2012
- ◆ HOT Lane Enforcement Cost Recovery, Texas DOT, 2009
- ◆ Investment Grade Traffic and Revenue Study US 36, Wilber Smith Ass. 2011
- ◆ HOV Lanes in California, Legislative Analyst's Office , 2000
- ◆ Policy Considerations for Express Toll Lane Implementation, WDOT, 2013
- ◆ A Domestic Scan of Congestion Pricing and Managed Lanes, FHWA, 2009