C-470 Express Lanes Feasibility Study

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Introductions

Agenda

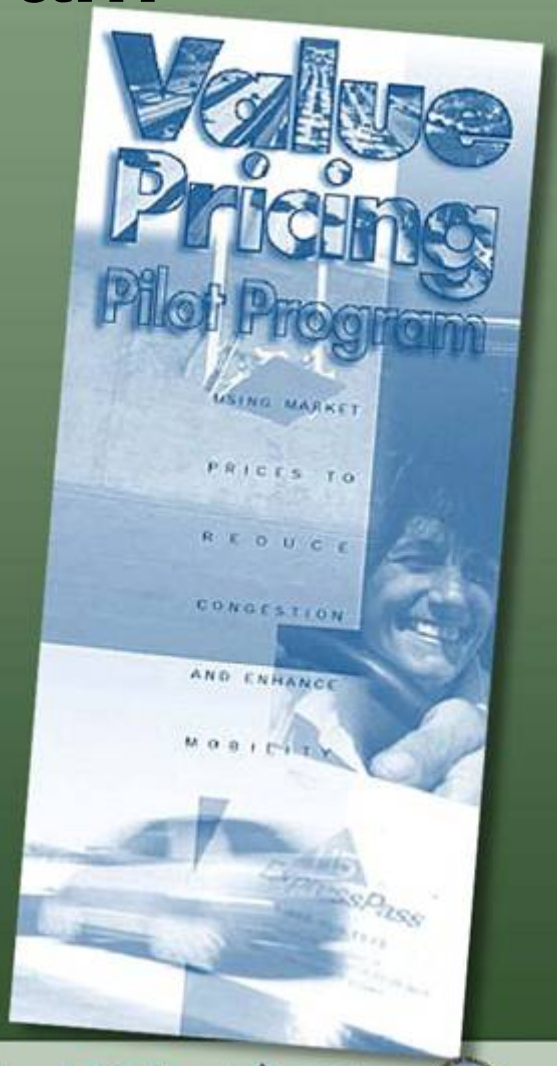
- Express Lanes Basics
- Questions
- C-470 Express Lanes Feasibility Study (ELFS)
- Questions

Project Need

- **Rapid population and employment growth in south metro Denver results in:**
  - **Heavy congestion and delay**
  - **Unreliable travel times**

Value Pricing Pilot Program

- Authorized by Transportation Equity Act for the 21st Century
- FHWA grant program for implementing and evaluating pricing programs
- Goal – to develop pricing concepts to achieve lasting reductions in congestion



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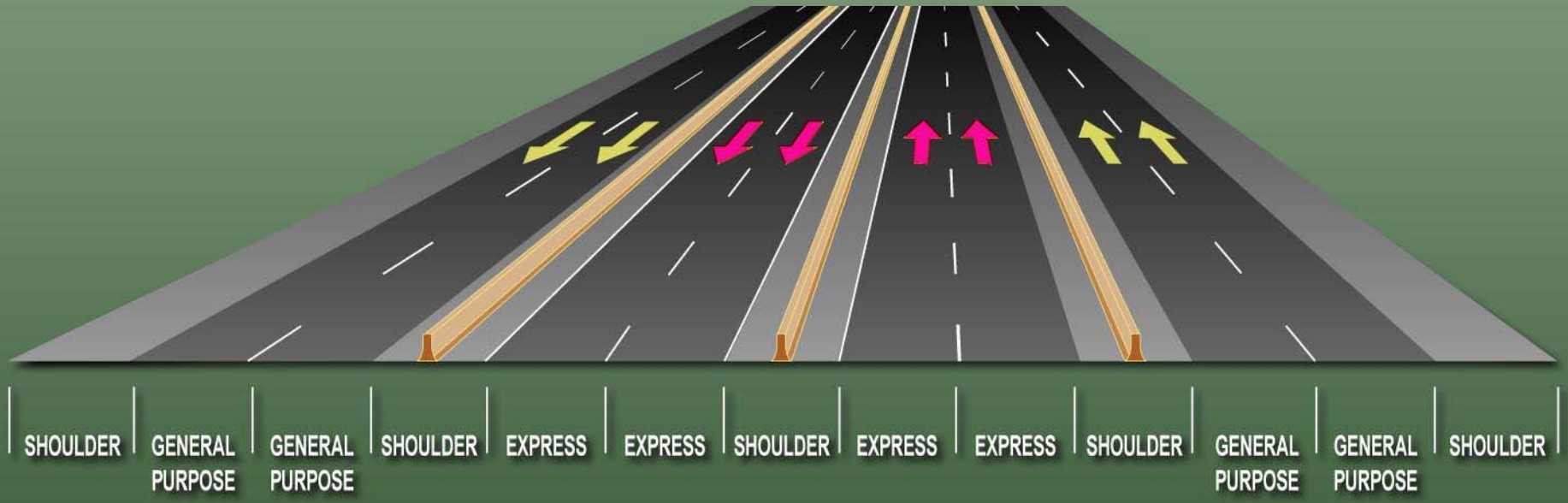
The Concept of Managed Lanes

- A strategy to manage congestion
- Provides a separate, reliable facility as option to congestion
- Tolling provides funding source and regulates traffic

Typical Managed Lanes Facility



4 Express Lanes + 4 General Purpose Lanes

Managed Lanes Basics

What are Managed Lanes,
and how do they work?

The Move Towards Tolling Highways in the United States

- America's first toll bridge – Newbury, MA (1656)
- America's first turnpike – Alexandria, VA to Blue Ridge Mtns (1785)
- Available funding continues to shrink
- Gas tax revenues not sufficient
- Projects being deferred
- Tolling creates alternative funding source

Tolling in the United States

- 30 states have toll facilities
- 16 states participating in FHWA's Value Pricing Pilot Program
- Draft congressional legislation expands use of tolling
- Tolling will continue to evolve as alternative funding source

Types of Toll Facilities

- Toll Roads
- Bridges/Tunnels
- Managed Lanes

Managed Lanes

An emerging tolling strategy that manages congestion and provides an alternative to continued expansion of highway lanes.

Managed Lanes Characteristics

- Provides a reliable, free-flow alternative to congested lanes
- Free congested lanes or tolled uncongested lanes
- An alternative to adding more lanes

Managed Lanes Characteristics

- Fast, reliable option for all vehicles
- Allows express bus service to operate
- Fast, reliable emergency response
- Alternate route in event of major incident

Managed Lanes in United States

- North I-25 HOT Lanes in Denver, CO (Spring, 2005)
- SR 91 in Orange County, CA
- I-15 in San Diego, CA
- I-10 in Houston, TX
- US 290 in Houston, TX
- I-394 in Minneapolis, MN (Dec., 2004)
- Cape Coral Bridges in Lee County, FL
- Bridges in NJ and NY

Tolling Demographics

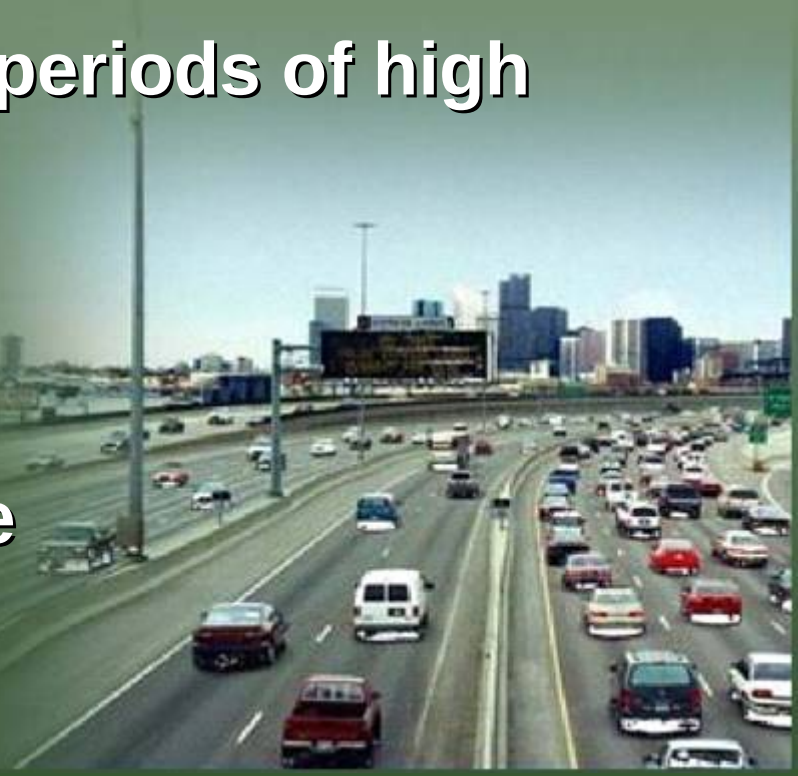
- Express Lanes not just for the rich
- Surveys generally show all regular users will use them some of the time
- Everyone has an occasional need to use them
- Running late for important appointment
- A nominal toll may be preferable to a more expensive consequence

Toll Pricing Schemes

- **Fixed Price – price does not change**
- **Variable – varies based on time of day**
- **Dynamic – varies to maintain certain volume**

Variable/Dynamic Toll Pricing

- Volume is managed by charging a variable toll
- The toll will be higher in periods of high demand
- The toll will be lower in periods of less demand
- Goal is to control volume for free-flow, reliable conditions



Method of Toll Collection

- No toll booths, no cash
- Electronic toll collection
- EXpressToll Transponders – compatible with E-470 and Northwest Parkway
- Potential reduced rate for public transit buses
- General purpose lanes remain free

Managed Lanes Video

Questions?

Clarifications?

Comments?

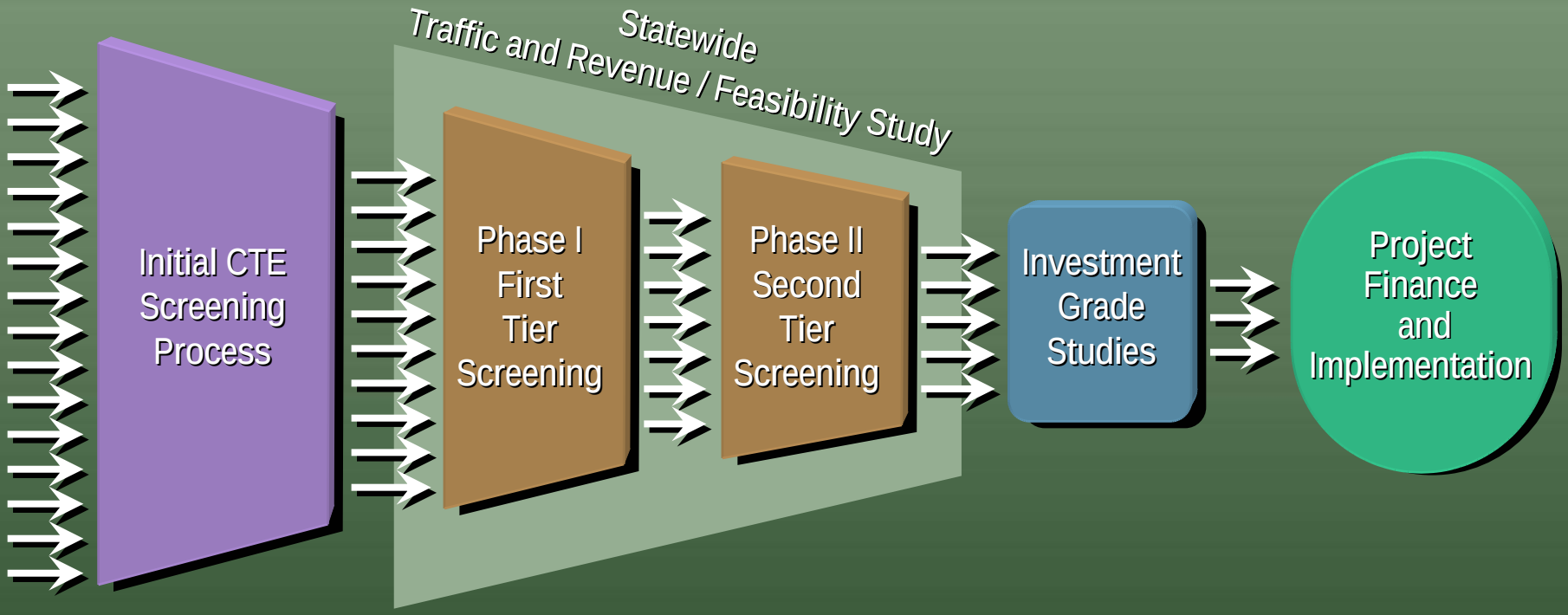
C-470 Express Lanes Feasibility Study

A closer look at investigating Express Lanes on C-470

Colorado Tolling Enterprise (CTE)

- Formed in 2002 to finance, construct, operate and maintain toll highways
- State legislation allows CTE to issue bonds for construction of toll lanes
- Provides funding mechanism for new or additional highway capacity toll projects
- Projects must demonstrate financial feasibility

Toll Facility Implementation Process



CTE Statewide Feasibility Study

- Objectives
  - Refine toll feasibility evaluation process
  - Coordinate with other ongoing studies
  - Identify most viable toll facility candidates
- Started with 79 candidate corridors
- Screening has reduced from 39 to 12
  - 7 corridors in Metro-Denver
  - 5 corridors outside Metro-Denver
- Final Screening Report – July/Aug, 2004

C-470 Express Lanes Feasibility Study

- A detailed evaluation of Express Lanes on the C-470 Corridor
- CDOT received Federal funding to conduct study through FHWA's Value Pricing Pilot Program

Vicinity Map

- Southwest portion of Denver beltway
- 26-miles long
- More than half of beltway is toll road

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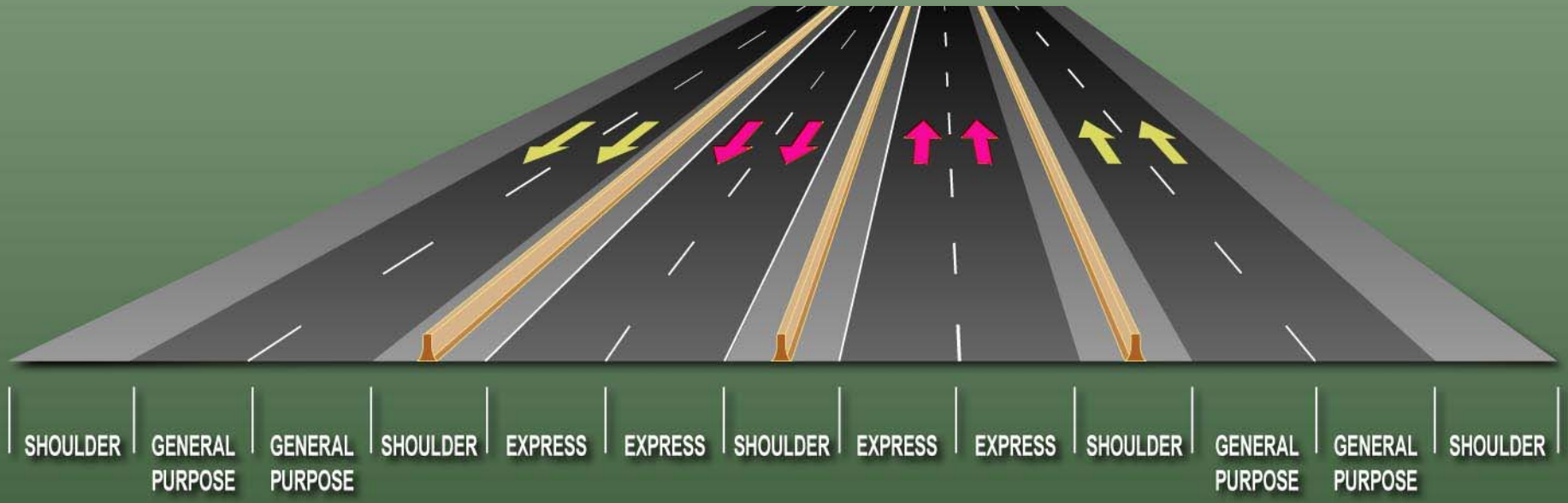
Study Objectives

- Define and evaluate system characteristics
- Assess public support for Express Lanes
- Determine preliminary financial feasibility
- Provide input to C-470 Environmental Assessment (EA)

Current Status

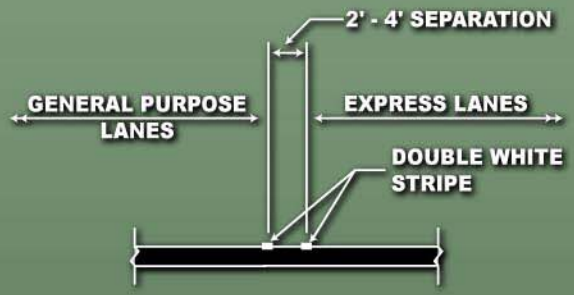
- Considering various types of separation
- Evaluating potential access locations
- Evaluating potential access types
- Evaluating results of User Survey

Express Lanes Typical Section

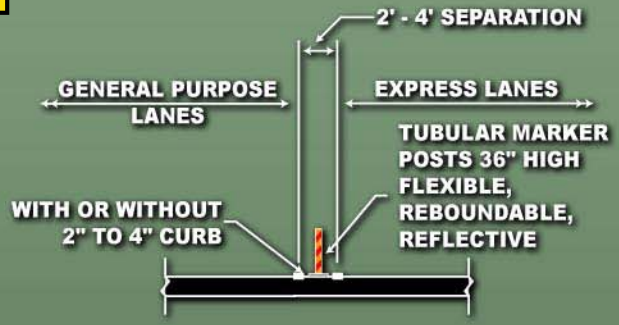


4 Express Lanes + 4 General Purpose Lanes

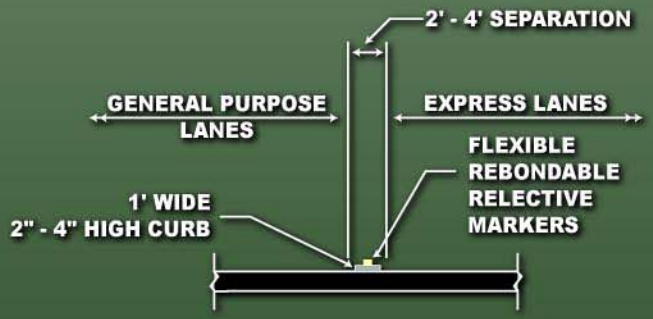
Methods of Separation



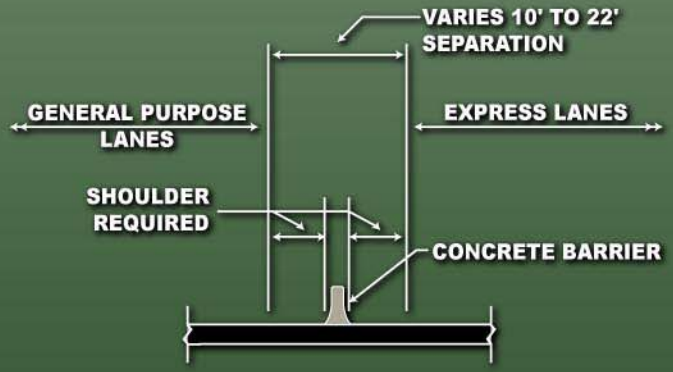
PAINT STRIPE SEPARATION
(NO PHYSICAL SEPARATION)



TUBULAR MARKER POSTS
(SEMI-PHYSICAL SEPARATION)

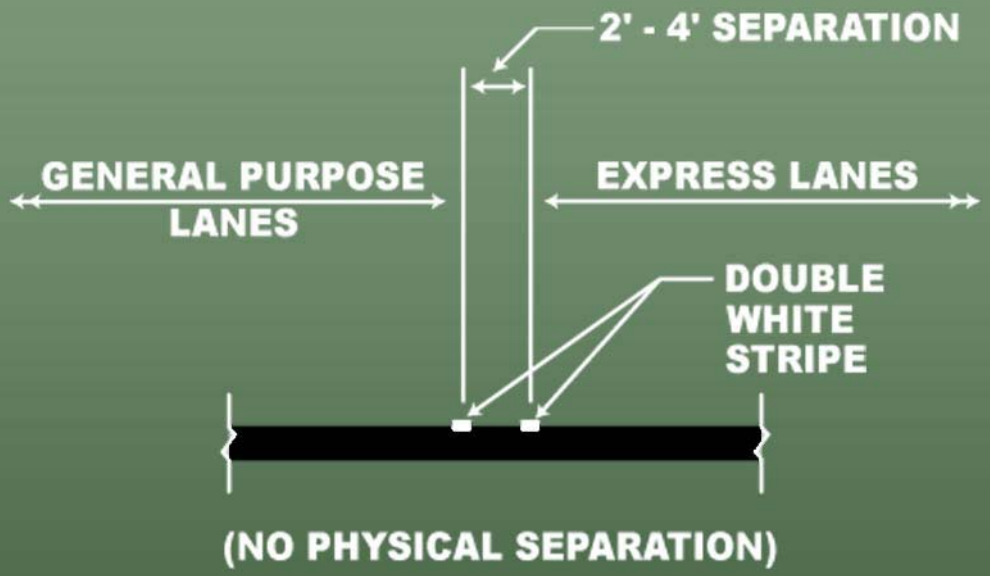


CURB & MARKER SEPARATION
(SEMI-PHYSICAL SEPARATION)



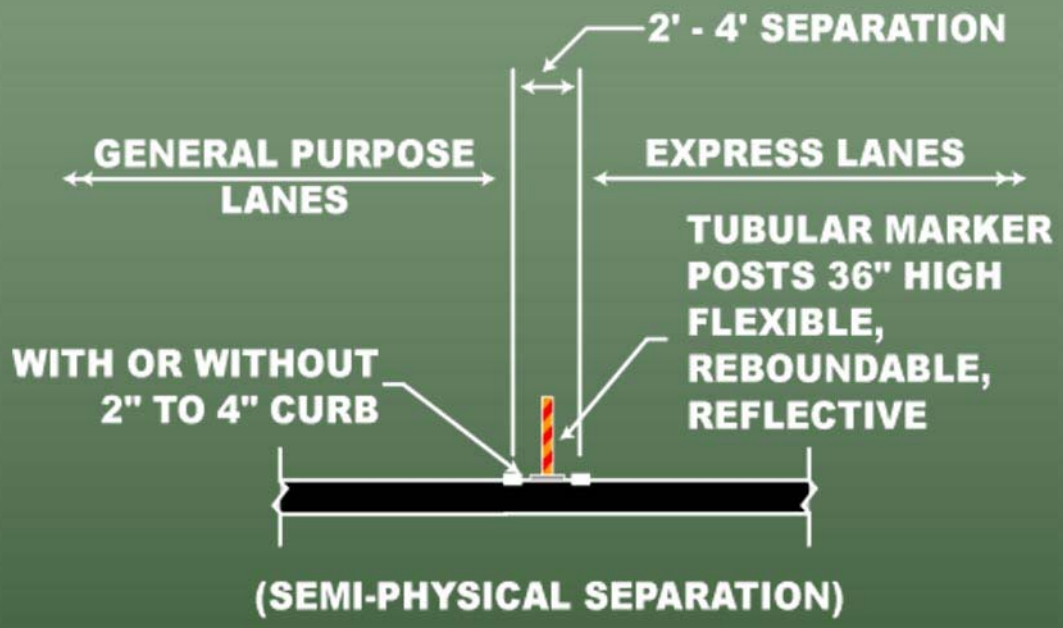
CONCRETE BARRIER
(PHYSICAL SEPARATION)

Paint Stripe Separation



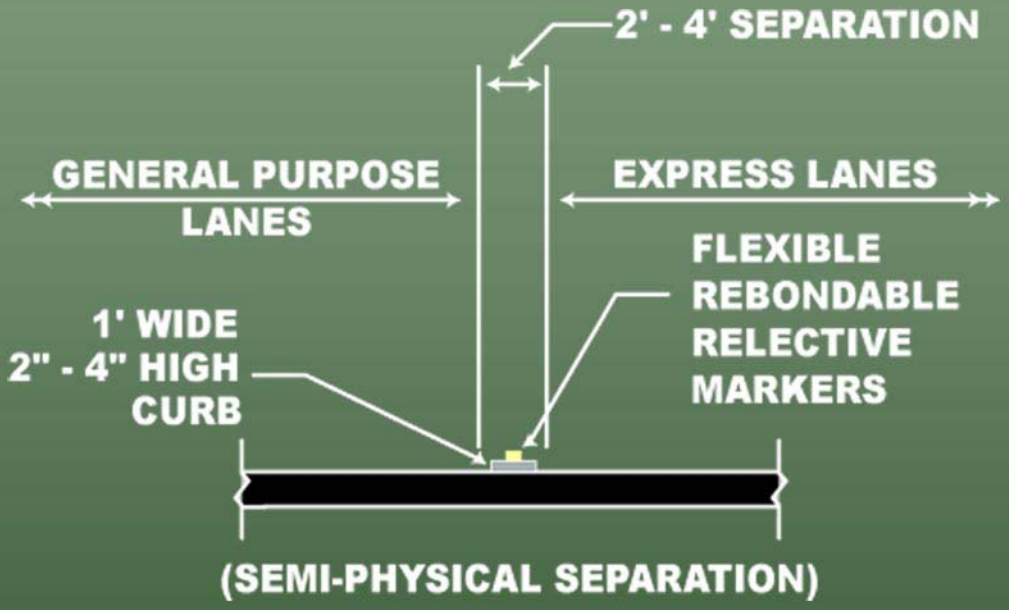
- Lower installation costs
- Reduced roadway width
- Less desirable safety aspects
- Less desirable enforcement aspects
- Lower maintenance costs

Tubular Marker Posts



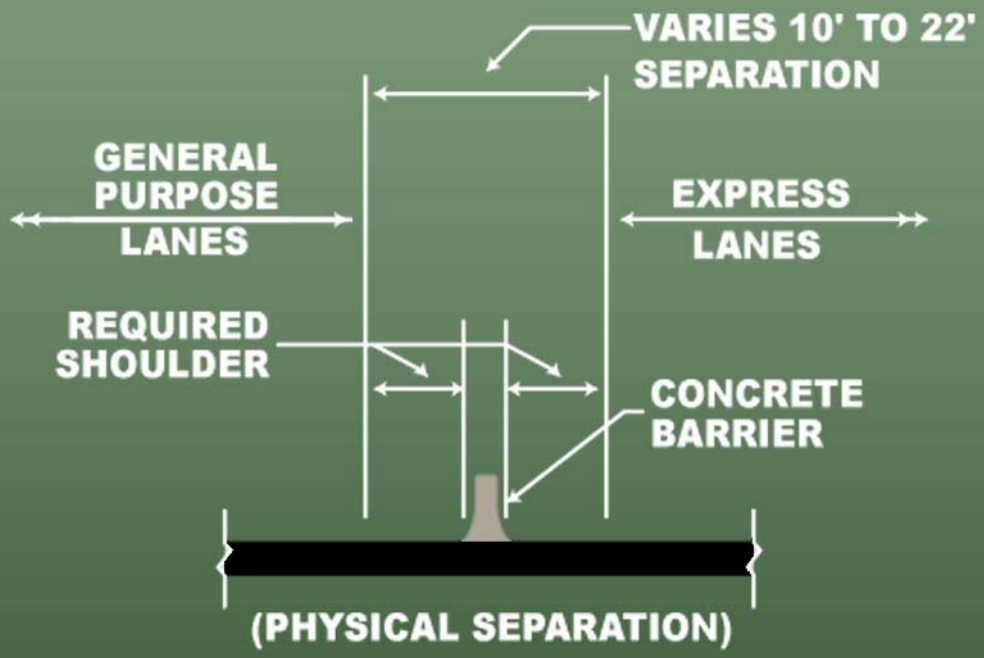
- Lower installation cost
- Reduced roadway width
- Less desirable safety aspects
- Less desirable enforcement aspects
- Higher maintenance due to potential for snowplows and vehicles striking posts

Curb and Marker Separation



- Lower installation cost
- Reduced roadway width
- Less desirable safety aspects
- Better enforcement potential aspects
- Higher maintenance due to potential for snowplows and vehicles striking curb and markers

Concrete Barrier



- Higher installation cost
- Increased roadway width due to shoulders
- More desirable safety aspects
- Good enforcement aspects
- Lower maintenance costs

Potential Access Locations

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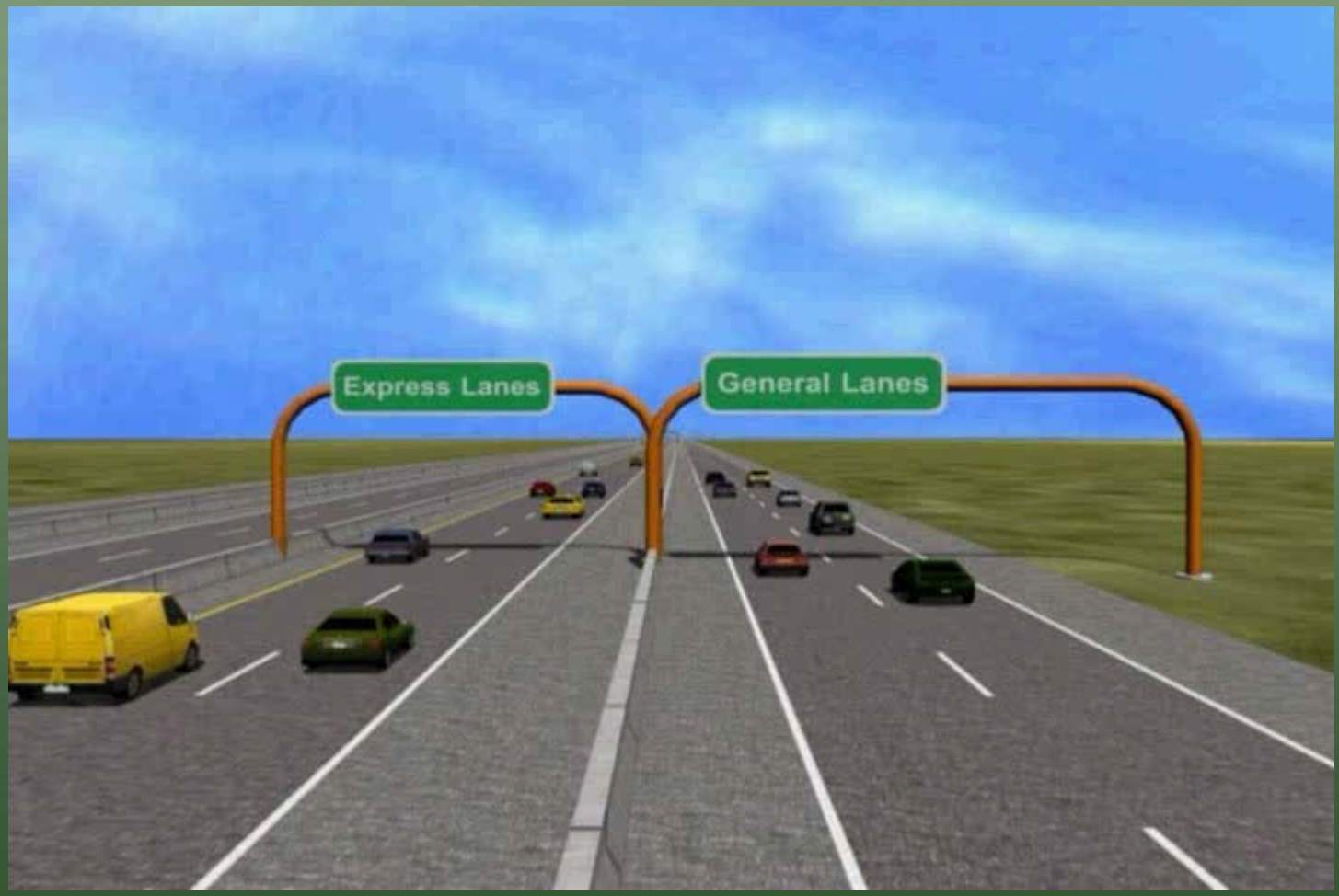
Access Ramp Types

- Slip Ramp

- Braided Ramp

- “T” Ramp

Slip Ramp

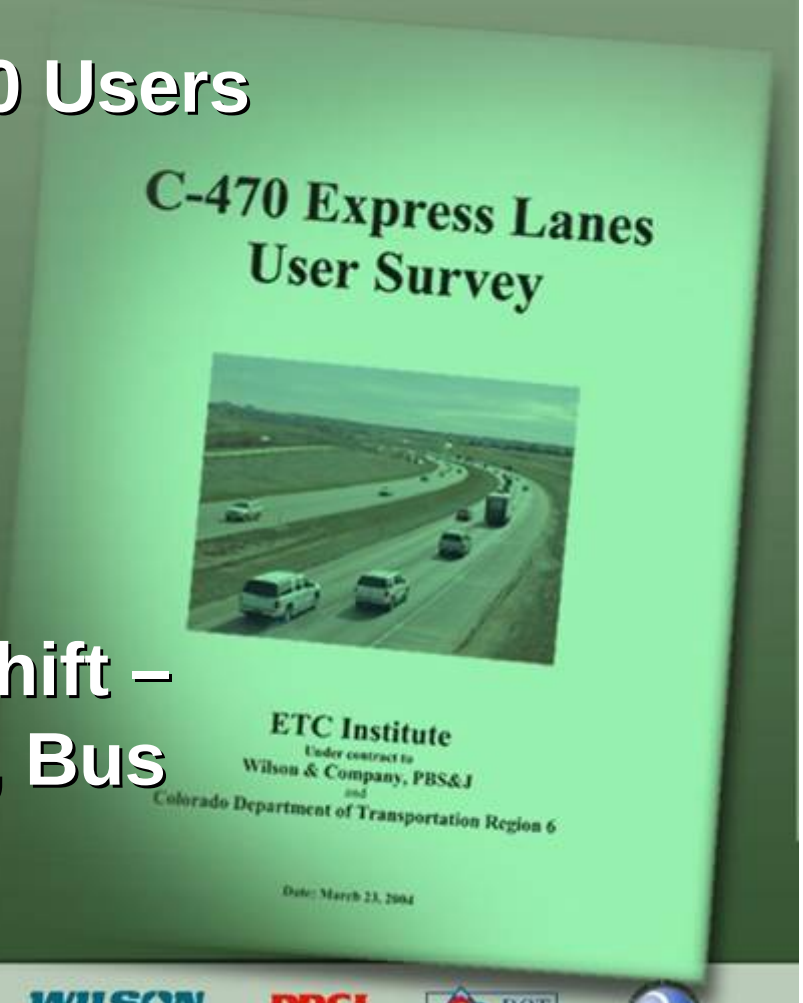


Braided Ramp

"T" Ramp

User Survey

- Survey of over 1,500 C-470 Users
- Trip characteristics and choice patterns
- Willingness to pay tolls, and price
- Assess interest in mode shift – High Occupancy Vehicles, Bus



Next Steps of Study

- Develop and evaluate alternatives
- Assess financial feasibility
- Carry feasible alternative(s) into C-470 EA

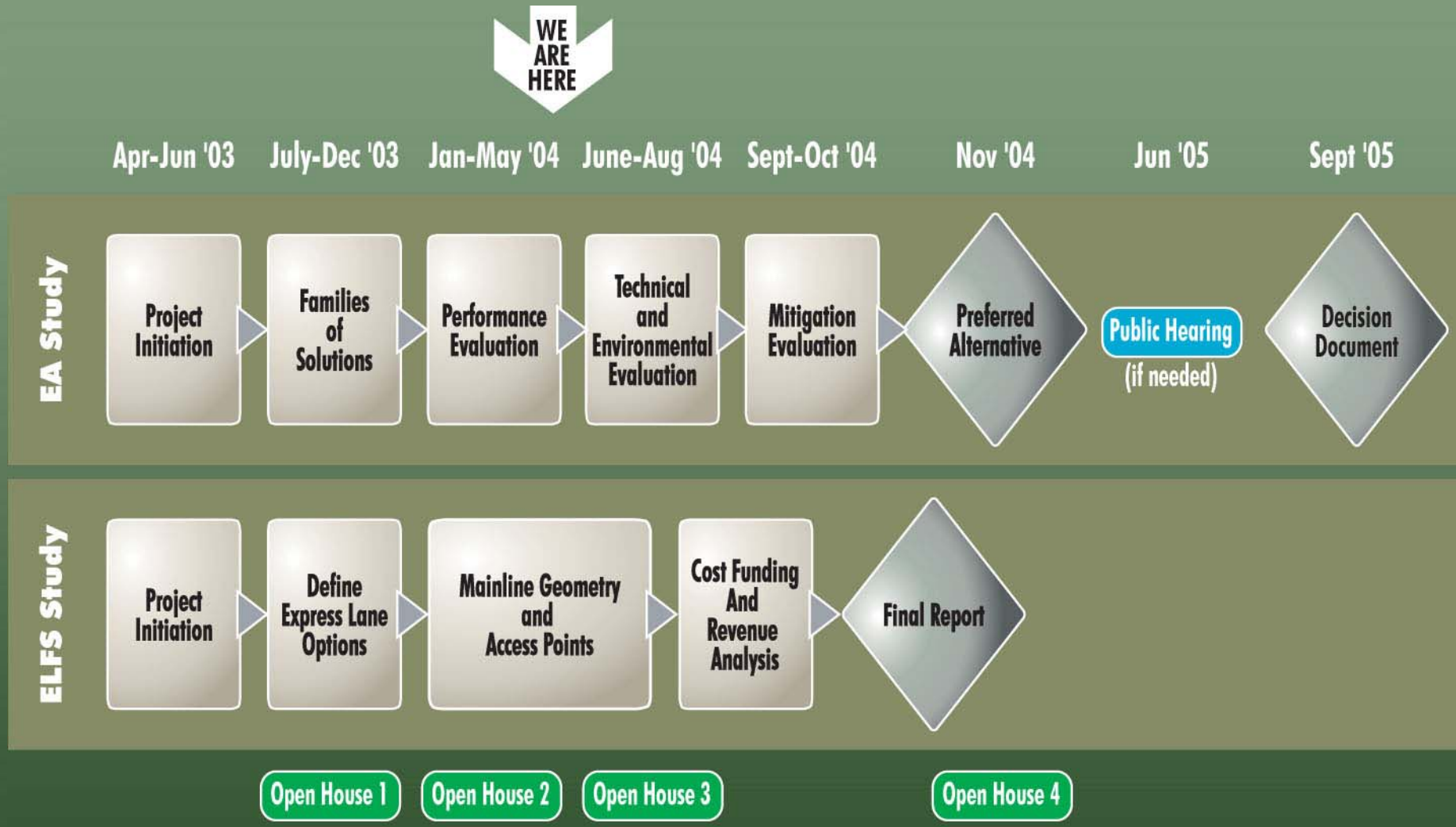
Integration of ELFS and EA

- ELFS and EA – concurrent but separate studies
- ELFS defines express lane alternative and determines economic viability
- Alternatives from ELFS carried forward into EA
- EA considers Express Lanes equally with other alternatives

C-470 EA Alternatives

- No Action
- General Purpose Lane widening
- Express Lanes
- All include Express Bus and Mobility Enhancements

C-470 Express Lanes Feasibility Study



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Next Steps – What Happens if the EA Selects Express Lanes?

- CTE would initiate design/build contract
- Conduct investment grade feasibility study
- Issue bonds
- Begin construction
- Open to traffic – possibly in a few years

Questions?

Clarifications?

Comments?

Presentation Evaluation

- Was the presentation helpful?
- Were all your questions answered?
- Any suggestions for improvement?
- Any other comments or questions?

Get Involved in the C-470 EA

- Upcoming Open Houses
  - June 29, 2004
    - 5:00 – 8:00 PM
    - Ken Caryl Ranch House
  - June 30, 2004
    - 5:00 – 8:00 PM
    - Highlands Ranch Metro Districts Office
- Mailing List
- Website – www.c470.info
- Speakers Bureau
- Comment Cards

Contact Information

- Project website: www.C470.info
- Project Phone: 303-297-2976
- ELFS Manager
  - Allan Brown – PBS&J
    arbrown@pbsj.com
- CDOT Project Manager
  - Ron Buck – CDOT
    ron.buck@dot.state.co.us
- Consultant Project Manager
  - Jim Brady – Wilson & Company
    james.brady@wilsonco.com

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