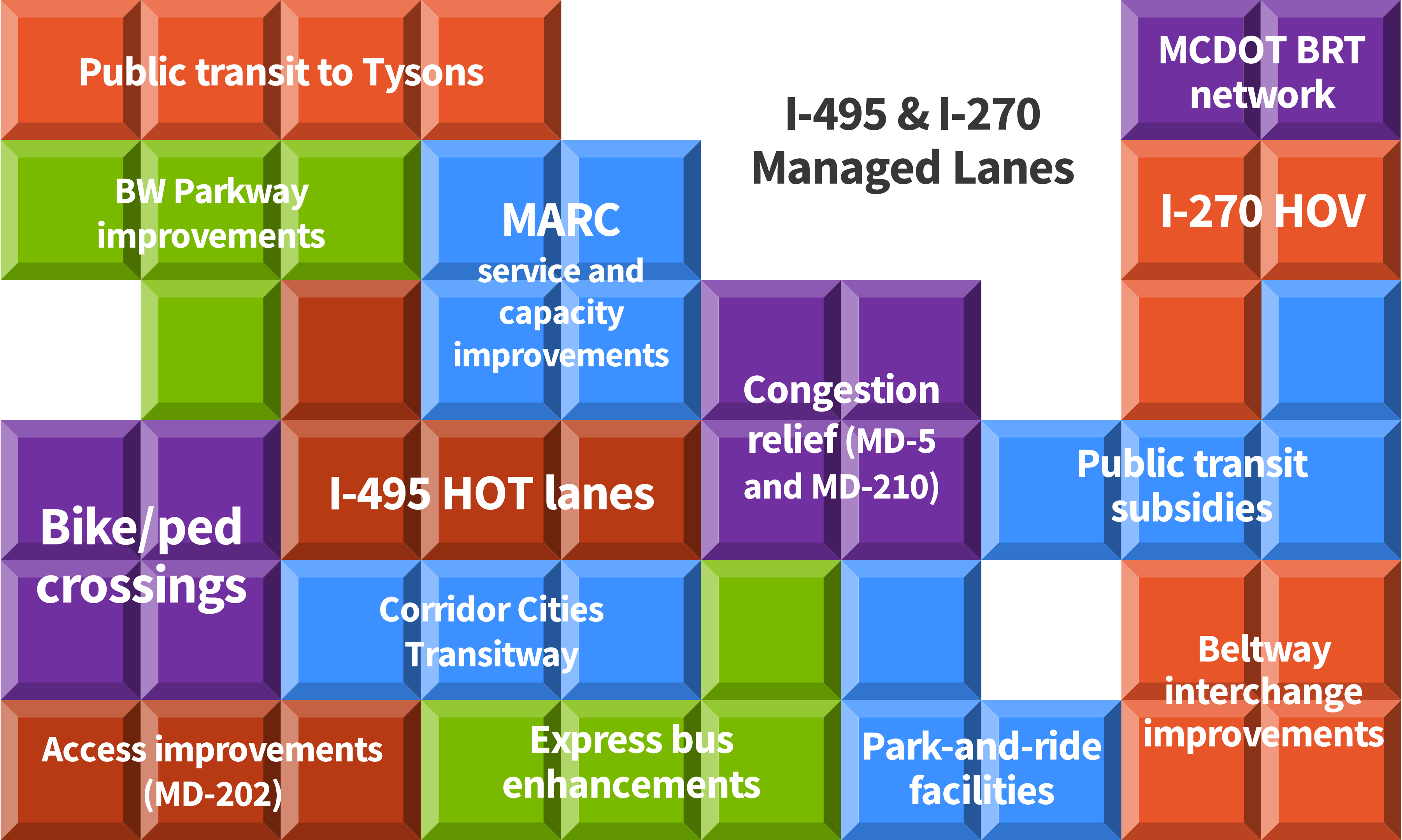




I-495 & I-270 Managed Lanes Study





Alternative Review Process

- Technical Review of Alternatives – transportation and NEPA process
- Function versus form – should it be studied, **not whether appropriate to implement or degree of impact**
- NEPA Requirements
- Fatal Flaws as identified by staff
- Screening down to nine alternatives to advance to the next stage – Alternatives Retained for Detailed Study (ARDS)

Fatal Flaws – General Principles

1. Adding general purpose lanes
2. Re-purposing general purpose lanes into HOV lanes or ETL/HOT lanes
3. Re-purposing existing peak period, peak direction (3 hours max) HOV lanes into 24/7 ETL/HOT lanes (legal concerns) –
 - 23 US Code § 129, Toll roads, bridges, tunnels, and ferries.
 - “Tolling U.S. Highways”, Report R43575, Congressional Research Service, August 26, 2016.
4. HOV lane(s) plus ETL/HOT managed lane(s) along same corridor operationally difficult
5. Contrary to transportation best practices

Alternatives Reviewed

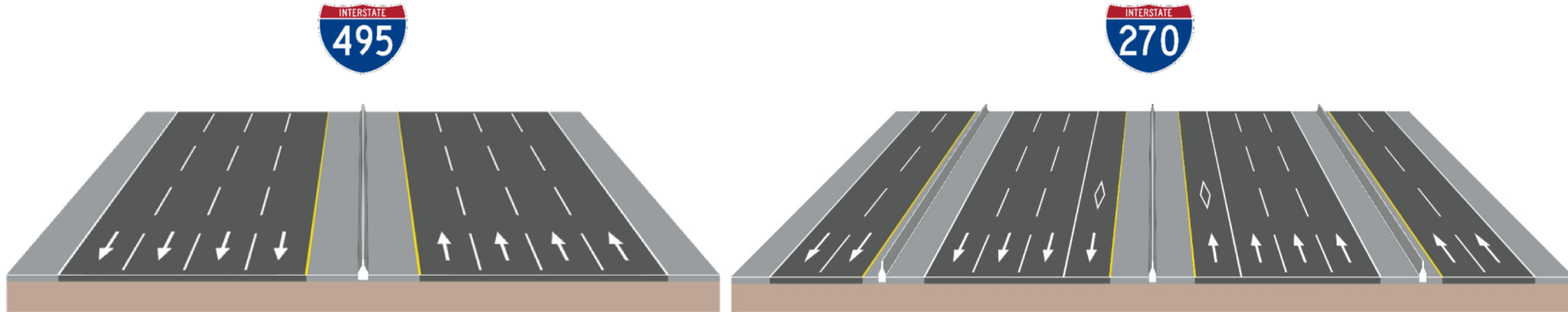
- **Nineteen Alternatives Total**





Alternatives Reviewed

- Nineteen Alternatives Total
- **Two Alternatives required by NEPA – Alt 1 & Alt 2**

1 No Build (Existing)

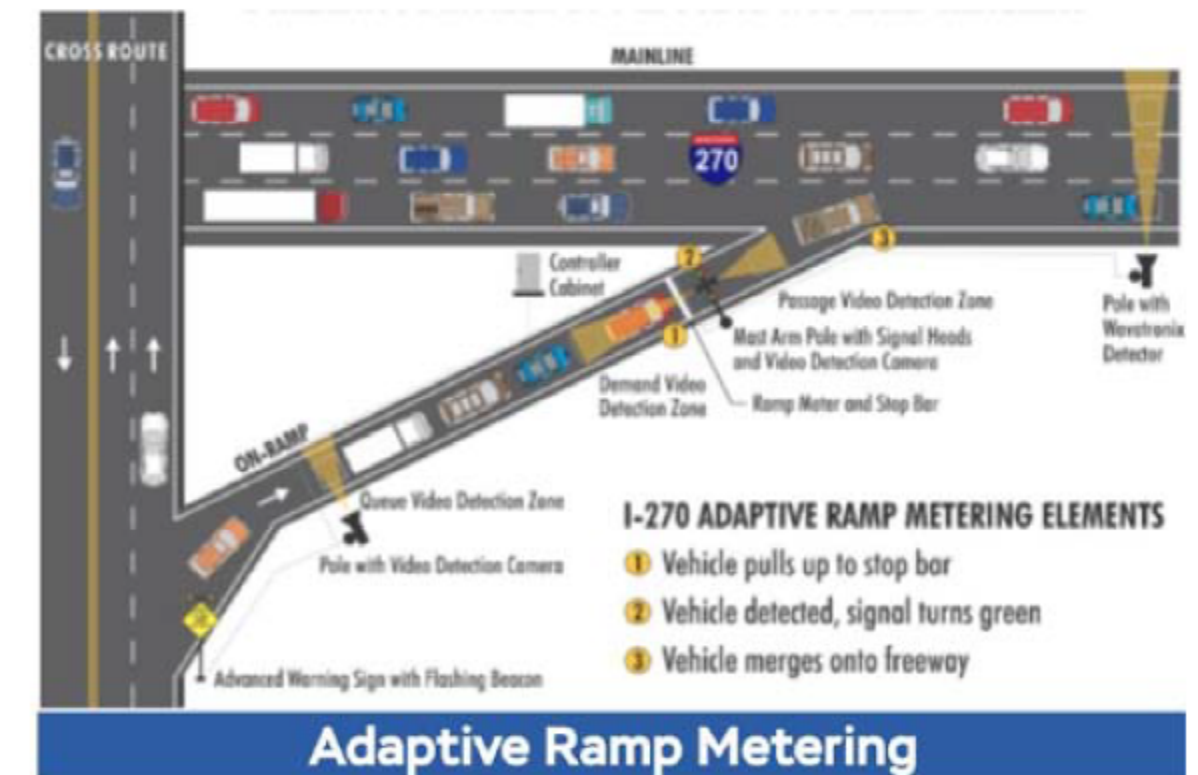
All projects in Constrained Long-Range Plan (CLRP) including I-270 Innovative Congestion Management (ICM) Improvements



Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

2 Transportation System Management (TSM) / Travel Demand Management (TDM)

Solutions along **I-495 and I-270**: restriping within existing pavement, peak period shoulder use, ramp metering and Active Traffic Management (ATM) strategies



Transportation Systems Management (TSM): operating strategies that improve the operation and coordination of transportation facilities

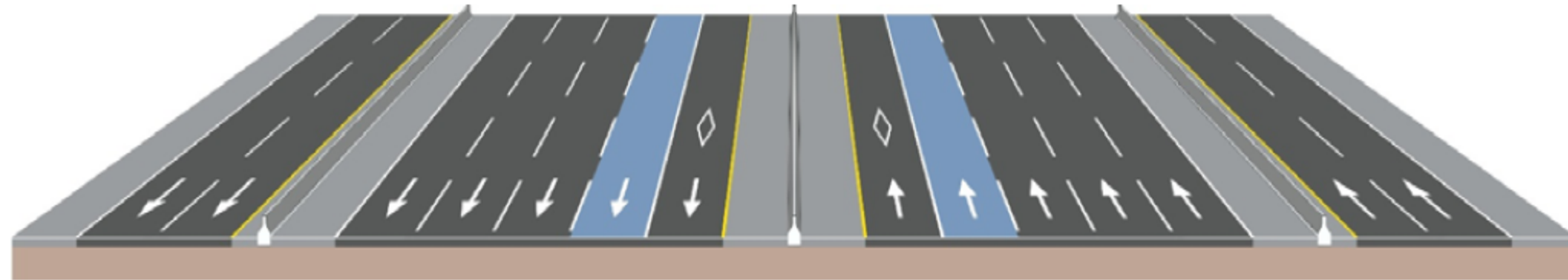
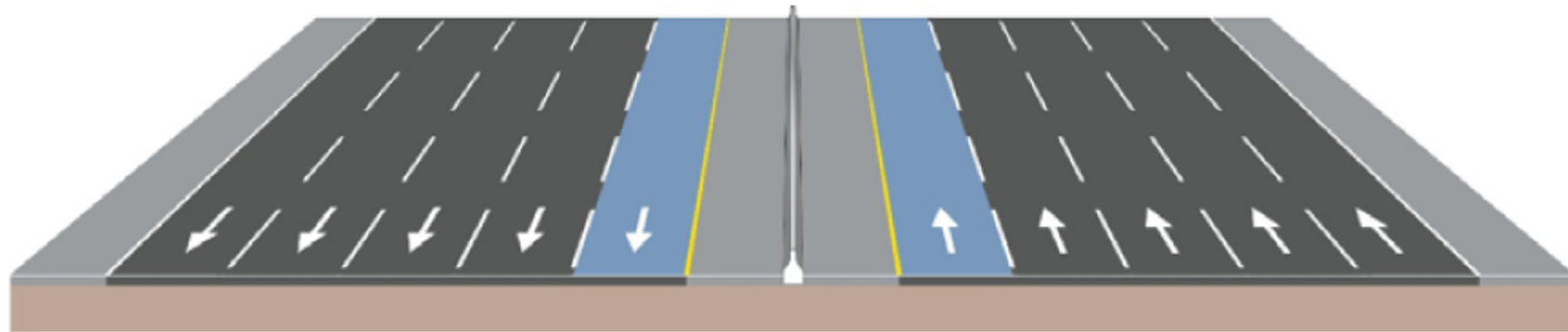
Travel Demand Management (TDM): strategies or incentives to provide the most efficient and effective use of existing transportation services and facilities (e.g., rideshare and telecommuting promotion, managed lanes, preferential parking, road pricing, etc.)

Alternatives Reviewed





- Nineteen Alternatives Total
- Two Alternatives required by NEPA – Alt 1 & Alt 2
- **Eleven Alternatives have fatal flaws – Alts. 3, 5, 6, 7, 8, 9, 10 without modification, 11, 12A, 12B, & 15**

3 Add 1 General Purpose (GP) Lane

Add one general-purpose lane in each direction on **I-495** and **I-270**



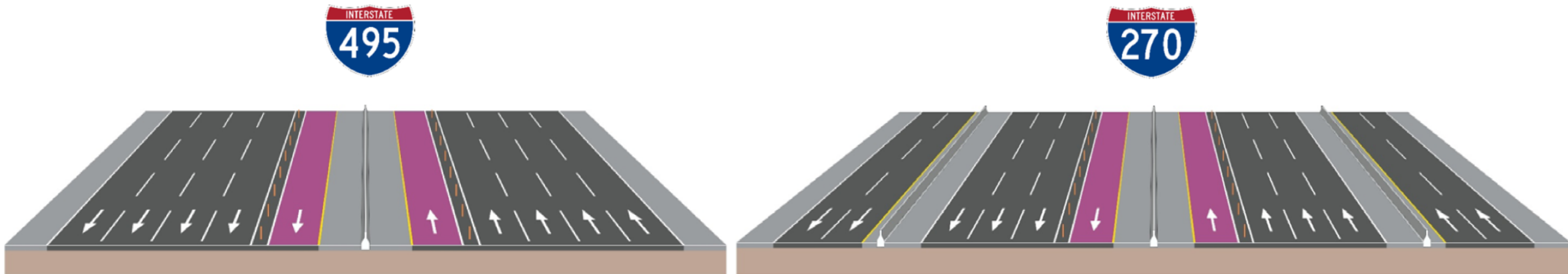
General Purpose (GP) Lanes: freeway or expressway lanes open to all motor vehicles

Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

5





1-Lane, Priced Managed Lane Network

Add one priced managed lane in each direction **on I-495** and convert one existing HOV lane in each direction to a price managed lane **on I-270**



Priced Managed Lanes combines two highway management tools:

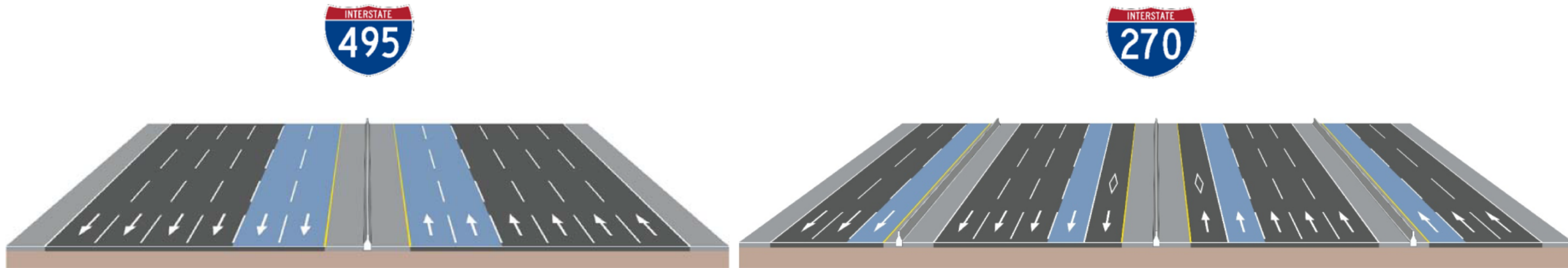
- *Congestion Pricing*: use of road user pricing that varies with the level of congestion and/or time of day to control traffic demand during peak periods, providing incentives for some motorists to shift trips to off-peak times, less-congested routes, or alternative modes
- *Lane Management*: approach that restricts access to designated highway lanes based on occupancy or vehicle type in designated lanes to maintain a desirable level of traffic service





Legend	
	New GP Lanes
	New HOV Managed Lanes
	New Priced Managed Lanes
	Contraflow Lanes

* **Note:** Managed Lanes Could Include Buses

6 Add 2 General Purpose (GP) Lanes

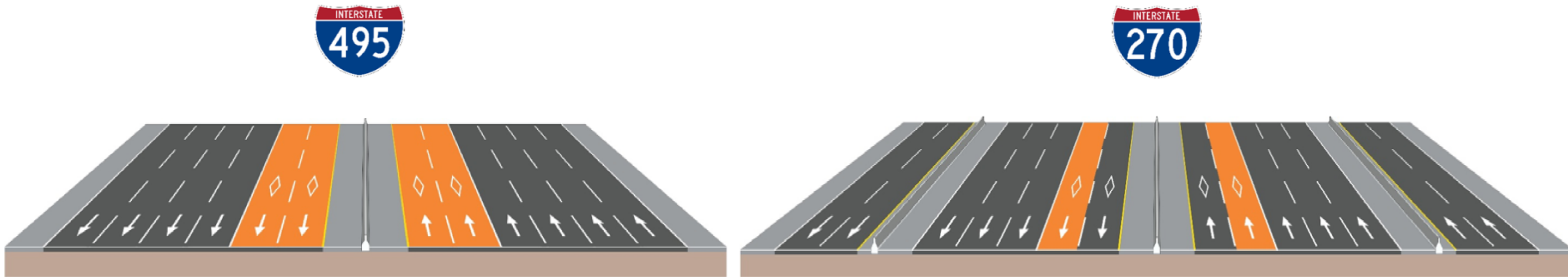
Add two general-purpose lanes in each direction **on I-495 and I-270**



Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	





7 2-Lane, High-Occupancy Vehicle (HOV) Managed Lane Network

Add two HOV managed lanes in each direction **on I-495** and retain one existing HOV managed lane and add one HOV lane in each direction **on I-270**



High-occupancy Vehicle Lanes (HOV): lanes reserved for high-occupancy vehicles, a motor vehicle carrying at least two or more persons including carpools, vanpools, and buses

Managed Lanes: highway facility or set of lanes where operating strategies are used to control number of vehicles using the lanes

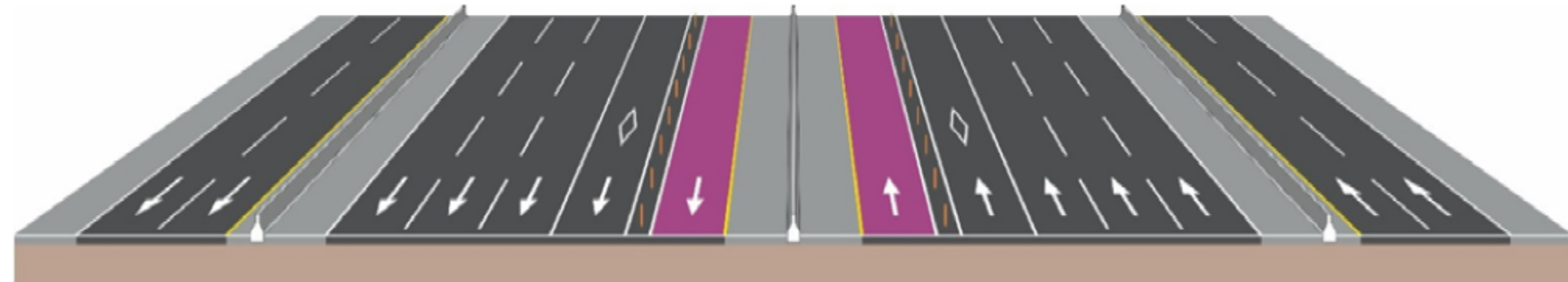
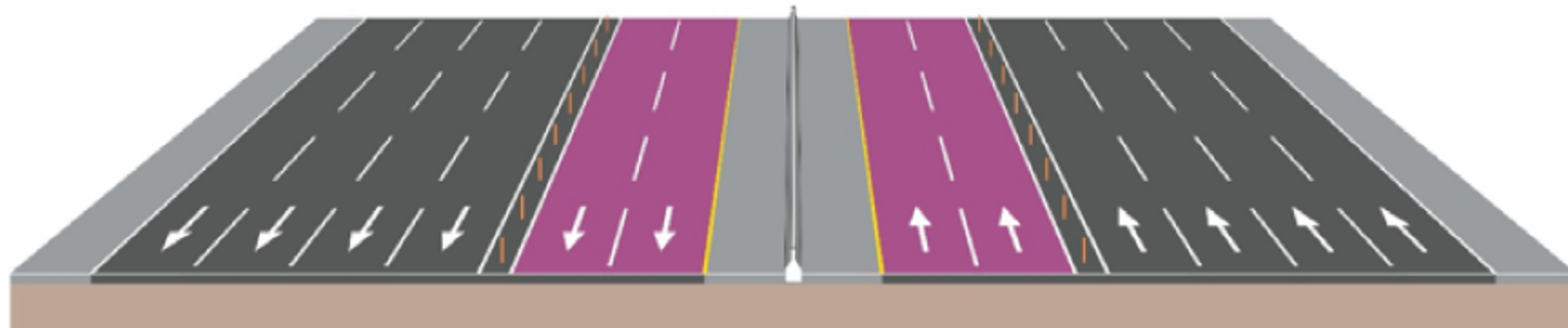
Legend	
	New GP Lanes
	New HOV Managed Lanes
	New Priced Managed Lanes
	Contraflow Lanes

* **Note:** Managed Lanes Could Include Buses

8

2-Lane, Priced Managed Lanes Network on I-495, 1-Lane Priced and 1-Lane, HOV Managed Lane Network on I-270 Only:

Add two priced managed lanes in each direction **on I-495** and add priced managed lane and retain one HOV lane in each direction **on I-270**



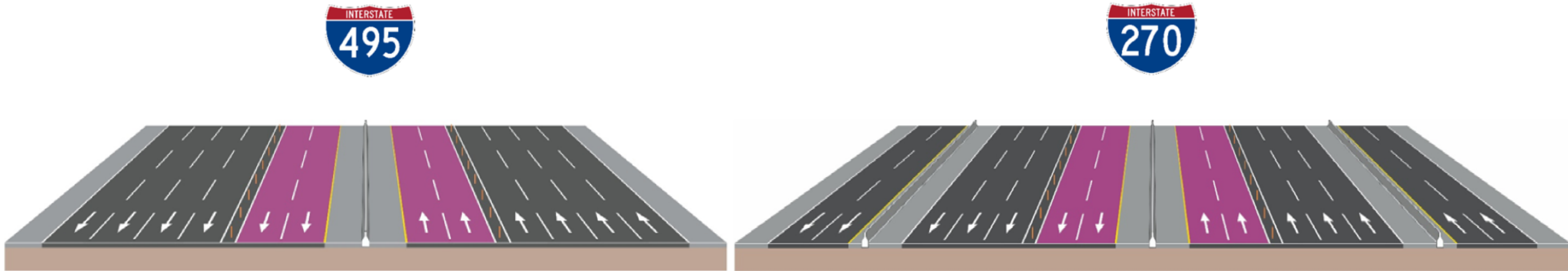
Legend





- New GP Lanes
- New HOV Managed Lanes
- New Priced Managed Lanes
- Contraflow Lanes

* **Note:** Managed Lanes
Could Include Buses

9 2-Lane, Priced Managed Lane Network

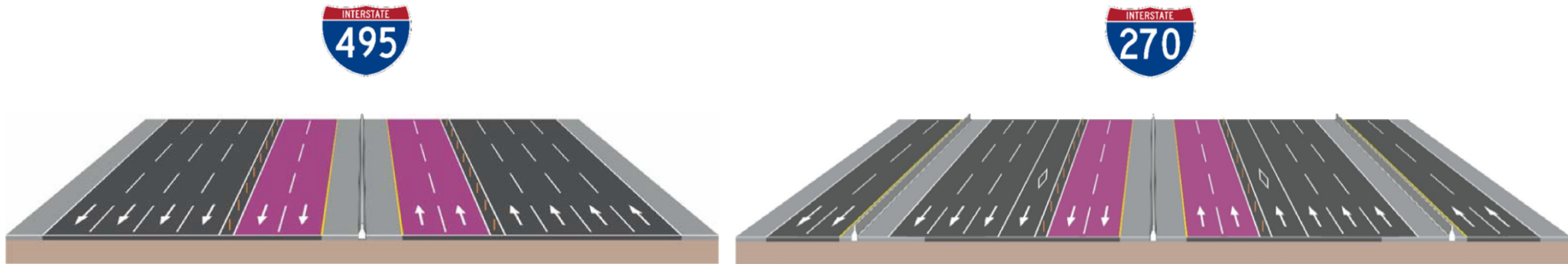
Add two priced managed lanes in each direction **on I-495** and convert one existing HOV lane to a priced managed lane and add one priced managed lane in each direction **on I-270**







Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

10 2-Lane, Priced Managed Lane Network and 1-Lane HOV Managed Lane Network on I-270 Only

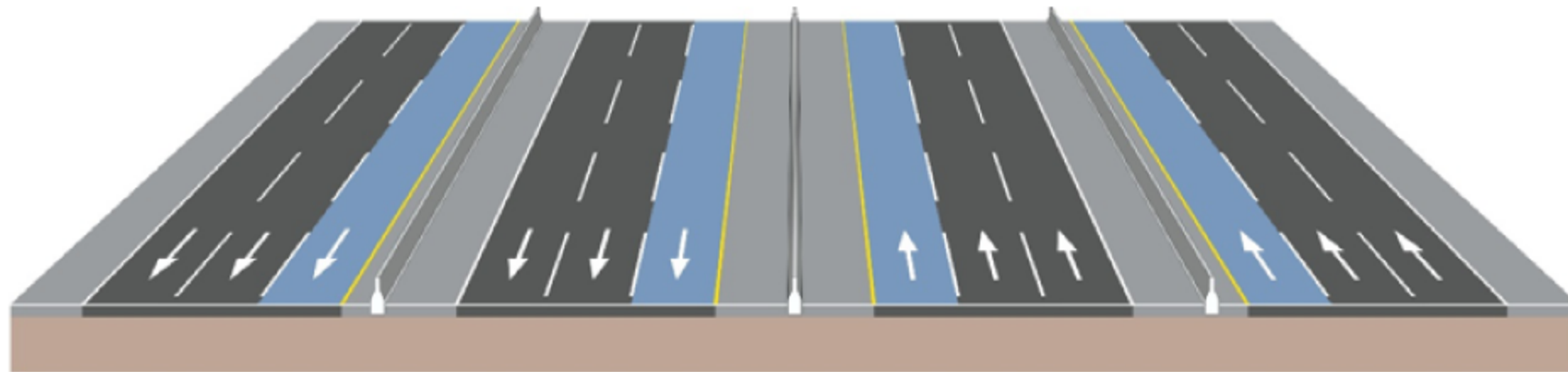
Add two priced managed lanes in each direction **on I-495 and on I-270** and retain one existing HOV lane in each direction **on I-270 only**



Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

11 Collector/Distributor on I-495

Physically separate traffic using collector-distributor (C-D) lanes, adding two GP lanes in each direction **on I-495**; retain existing lanes and **on I-270**



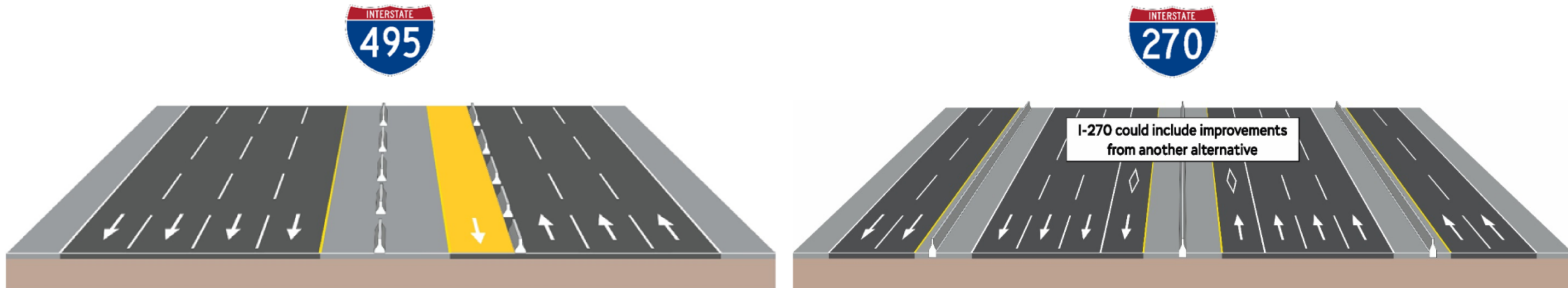
Legend

- New GP Lanes
- New HOV Managed Lanes
- New Priced Managed Lanes
- Contraflow Lanes





* **Note:** Managed Lanes
Could Include Buses

12A Contraflow on I-495

Convert existing general-purpose lane **on I-495** to contraflow lane during peak periods

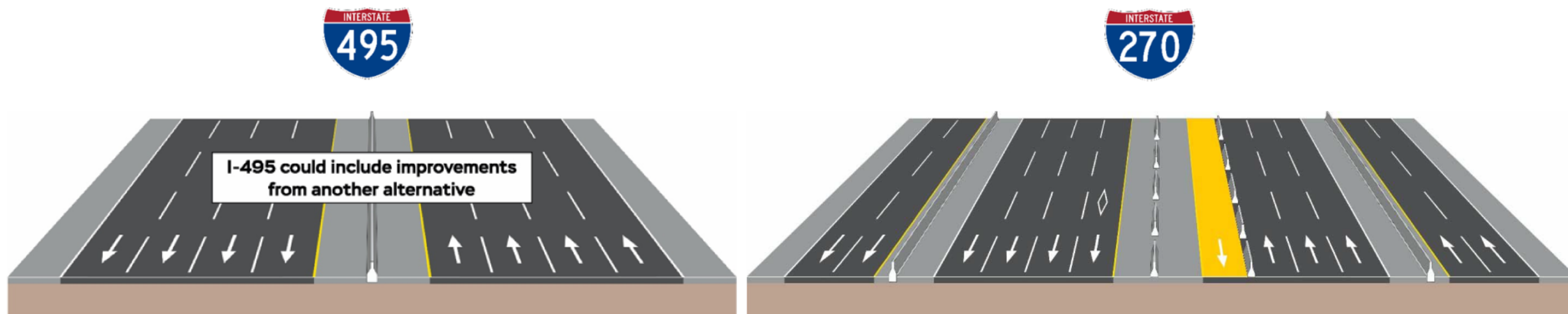






Contraflow Lanes: lanes operating adjacent to but in the opposite direction of the normal flow of traffic during peak-direction travel; usually separated by pylons or movable barrier

Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

12B Contraflow on I-270

Convert existing HOV lane **on I-270** to contraflow lane during peak periods



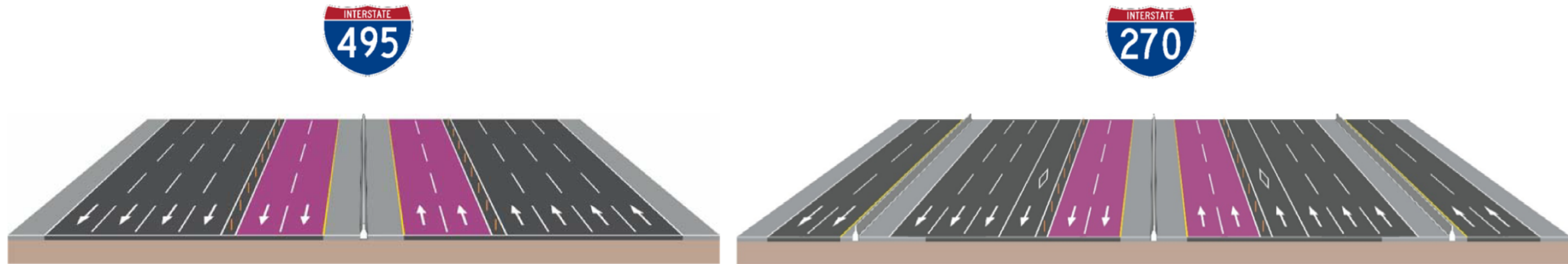
Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

Alternatives Reviewed





- Nineteen Alternatives Total
- Two Alternatives required by NEPA – Alt 1 & Alt 2
- Eleven Alternatives have fatal flaws – Alts. 3, 5, 6, 7, 8, 9, 10 without modification, 11, 12A, 12B, & 15
- **Two Alternatives need revision to advance to Alternatives Retained for Detailed Study (ARDS) – Alt 10 and Alt 14C**

10 2-Lane, Priced Managed Lane Network and 1-Lane HOV Managed Lane Network on I-270 Only

Add two priced managed lanes in each direction **on I-495 and on I-270** and retain one existing HOV lane in each direction **on I-270 only**



Modification: Convert peak-period HOV lanes to General Purpose lanes

Legend	
	New GP Lanes
	New HOV Managed Lanes
	New Priced Managed Lanes
	Contraflow Lanes

* **Note:** Managed Lanes Could Include Buses

Bus Transit

14C

Fixed Guideway Bus Rapid Transit (Off Alignment): This alternative considers fixed guideway bus rapid transit (BRT) along a new alignment parallel to the existing I-495 and I-270 corridors



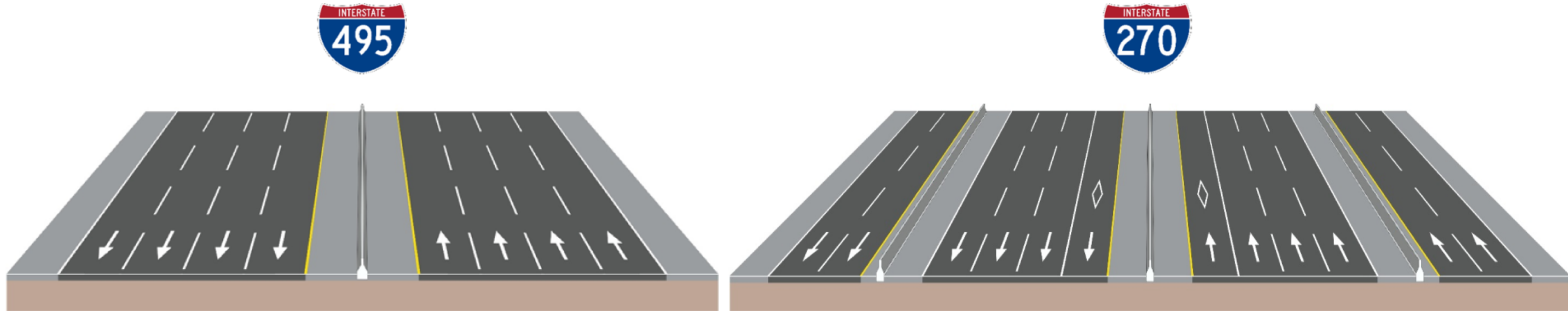
Modification: Relocate from Off-Alignment onto I-495 and I-270;
could optimize use of Managed Lanes network





Alternatives Reviewed

- Nineteen Alternatives Total
- Two Alternatives required by NEPA – Alt 1 & Alt 2
- Eleven Alternatives have fatal flaws – Alts. 3, 5, 6, 7, 8, 9, 10 without modification, 11, 12A, 12B, & 15
- Two Alternatives need revision to advance to Alternatives Retained for Detailed Study (ARDS) – Alt 10 and Alt 14C
- **Nine Alternatives recommended to advance to the ARDS process**

1 No Build (Existing)

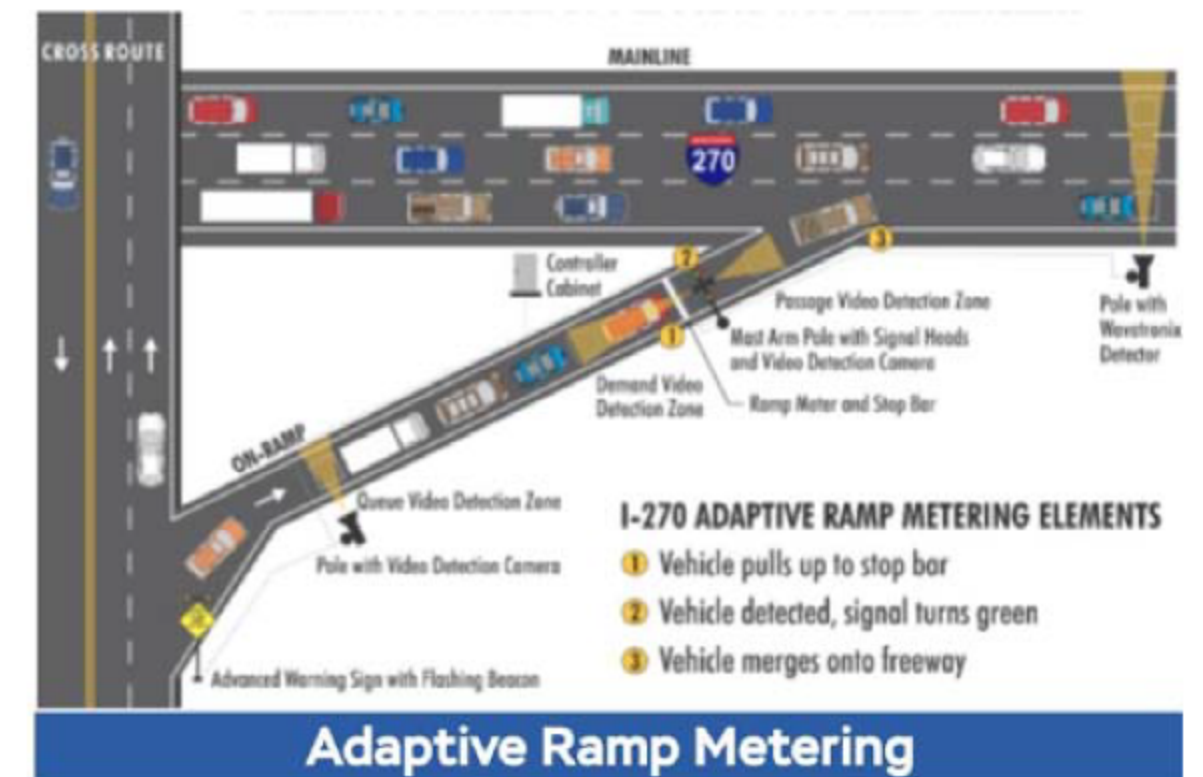
All projects in Constrained Long-Range Plan (CLRP) including I-270 Innovative Congestion Management (ICM) Improvements



Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

2 Transportation System Management (TSM) / Travel Demand Management (TDM)

Solutions along **I-495 and I-270**: restriping within existing pavement, peak period shoulder use, ramp metering and Active Traffic Management (ATM) strategies

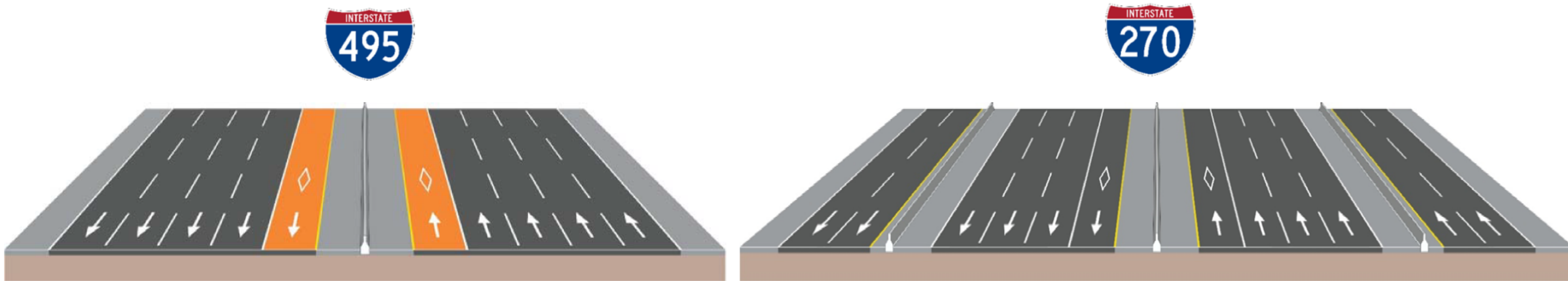


Transportation Systems Management (TSM): operating strategies that improve the operation and coordination of transportation facilities





Travel Demand Management (TDM): strategies or incentives to provide the most efficient and effective use of existing transportation services and facilities (e.g., rideshare and telecommuting promotion, managed lanes, preferential parking, road pricing, etc.)

4 1-Lane, High-Occupancy Vehicle (HOV) Managed Lane Network

Add one lane in each direction **on I-495** and retain existing HOV lane in each direction on **I-270**

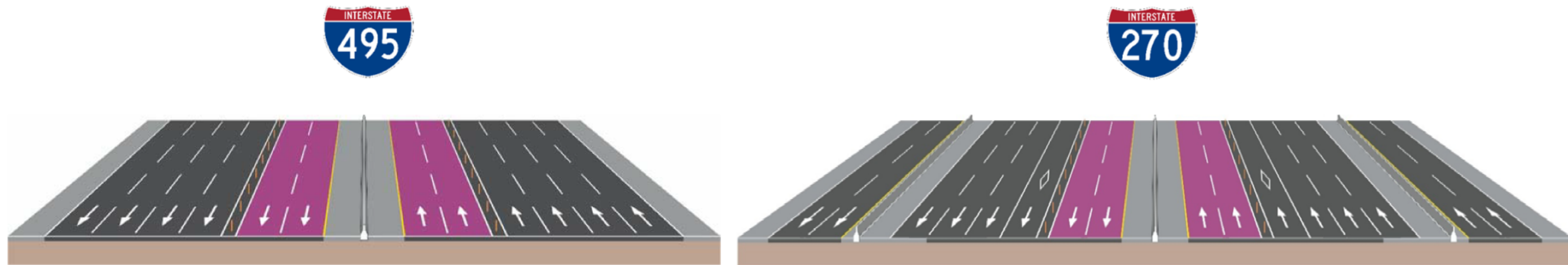


Managed Lanes: highway facility or set of lanes where operating strategies are used to control number of vehicles using the lanes





Legend	
	New GP Lanes
	New HOV Managed Lanes
	New Priced Managed Lanes
	Contraflow Lanes
* Note: Managed Lanes Could Include Buses	

10 2-Lane, Priced Managed Lane Network and 1-Lane HOV Managed Lane Network on I-270 Only

Add two priced managed lanes in each direction **on I-495 and on I-270** and retain one existing HOV lane in each direction **on I-270 only**



Modification: Convert peak-period HOV lanes to General Purpose lanes

Legend		
	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

13A Priced Managed, Reversible Lane Network on I-495

Add two priced managed reversible lanes **on I-495**



I-270 could include improvements
from another alternative

Reversible Lanes: lanes where direction of traffic flow can be changed to match peak direction of travel, typically inbound in the morning and outbound in the afternoon

Legend

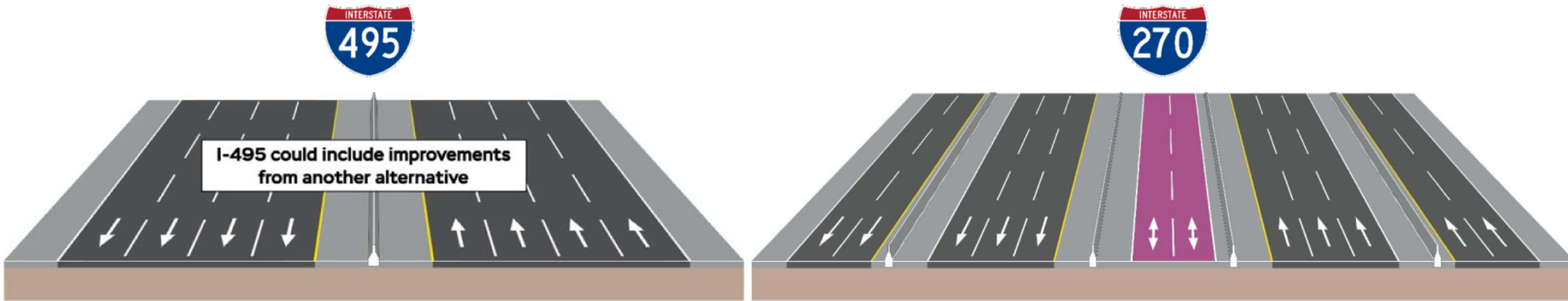
- New GP Lanes
- New HOV Managed Lanes
- New Priced Managed Lanes
- Contraflow Lanes

* **Note:** Managed Lanes
Could Include Buses


13B

Price Managed, Reversible Lane Network on I-270:

Convert existing HOV lanes to two priced managed reversible lanes **on I-270**



Legend

	New GP Lanes	* Note: Managed Lanes Could Include Buses
	New HOV Managed Lanes	
	New Priced Managed Lanes	
	Contraflow Lanes	

Fixed Guideway Transit

14A

Heavy Rail: This alternative considers heavy rail transit parallel to the existing I-495 and/or I-270 corridors



14B

Light Rail: This alternative considers light rail transit parallel to the existing I-495 and I-270 corridors, such as the Purple Line currently under construction



Alt 14A – Fixed Guideway Transit (Heavy Rail/Metro)

Alternative developed by MDOT SHA has NO detail. Staff recommendation for detailed study:

- Heavy rail – 3rd track and operational improvements – Brunswick Line
- Metro – extend Red Line to Metropolitan Grove
- Metro – extend Red Line to Germantown Transit Center

Alt 14B – Fixed Guideway Transit (Light Rail)

Alternative developed by MDOT SHA has NO detail. Staff recommendation for detailed study:

- Light rail – Extend Purple Line to Tysons
- Light rail – Extend Purple Line to Largo Town Center
- Light rail – Extend Purple Line to National Harbor
- Light rail – Extend Purple Line to Alexandria
- Light rail – Shady Grove Metro to Germantown Transit Center

Bus Transit

14C

Fixed Guideway Bus Rapid Transit (Off Alignment): This alternative considers fixed guideway bus rapid transit (BRT) along a new alignment parallel to the existing I-495 and I-270 corridors



Modification: Relocate from Off-Alignment onto I-495 and I-270;
could optimize use of Managed Lanes network

Staff Recommendation – Alternatives to Advance to ARDS

1. Alt 1 – No Build
2. Alt 2 – TSM/TDM
3. Alt 4 – 1-Lane Managed (HOV) Network
4. Alt 10 modified – 2-Lane Managed (ETL/HOT) Network
 - Current HOV lanes converted to GP lanes
5. Alt 13A – Reversible Managed Lanes on I-495
6. Alt 13B – Reversible Managed Lanes on I-270
7. Alt 14A – Fixed Guideway Transit (Heavy Rail/Metro)
8. Alt 14B – Fixed Guideway Transit (Light Rail)
9. Alt 14C modified – Express Bus/BRT Network

Next Steps

A. Inter-Agency Working Group (IAWG) Process

Monthly meetings among Lead, Sponsoring, Cooperating and Participating Agencies to collaboratively identify and resolve issues that could delay the environmental review process or affect approvals required for the project under NEPA.

B. Immediate Project Milestones

1. 1/23/19 – Through IAWG process, MDOT SHA seeking agency concurrence with comment on the selection of ARDS prior to public release late-January/early-February
2. Spring 2019: Mandatory Referral prior to selection of Preferred Alignment will serve as M-NCPPC concurrence/concurrence with comment to MDOT SHA selection of Preferred Alignment