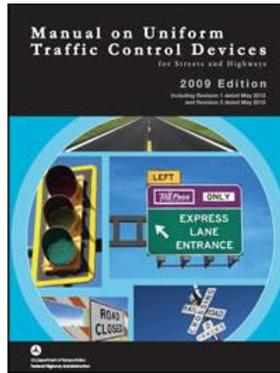


# 2009 MUTCD, Part A Sections 1, 3 and 4



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## PART 1 GENERAL



## Traffic Control Devices for Toll Plazas, Managed Lanes, and Preferential Lanes

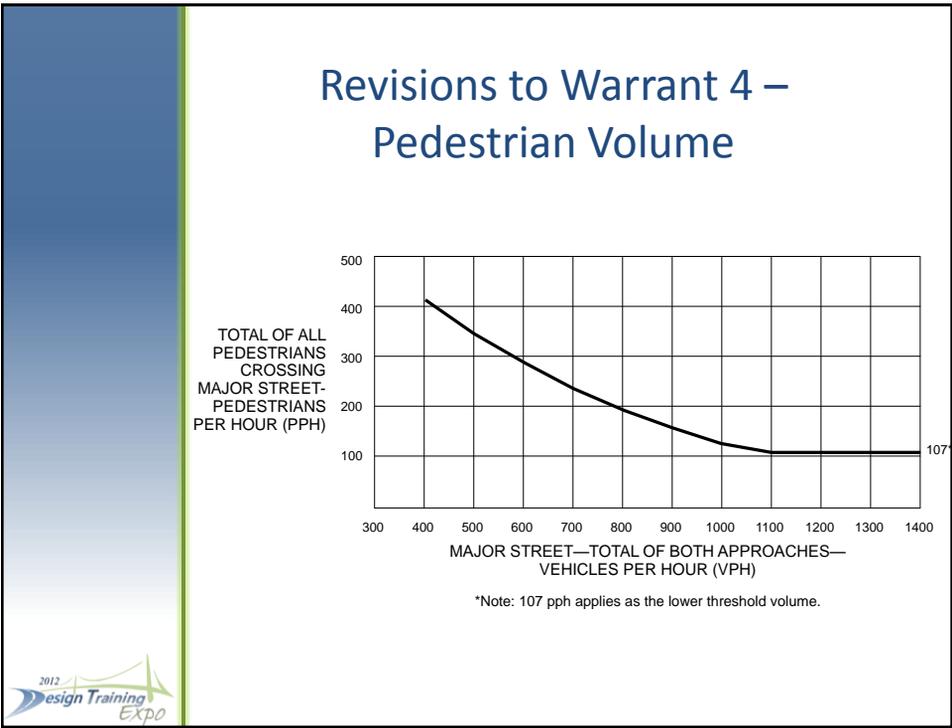


## New Purple Color for “Electronic Toll Collection Only” Signs and Pavement Markings

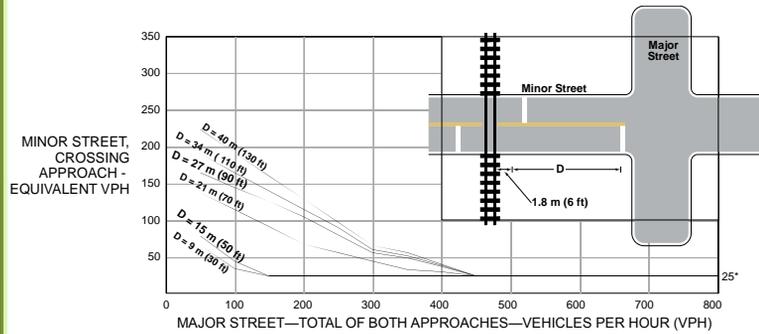


# PART 4

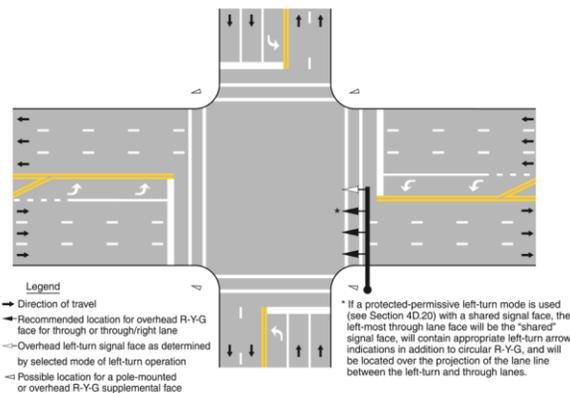
## HIGHWAY TRAFFIC SIGNALS



## Warrant 9 added for intersections near grade crossings



## Approaches with speeds > 40 mph: recommended number, location, and design of signal faces



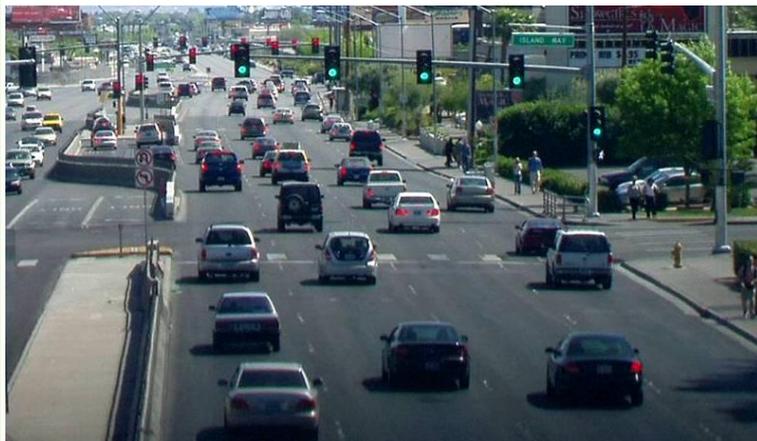
- Notes:
1. Signal faces for only one direction and only one possible set of geometrics (number of lanes, etc.) are illustrated.
  2. One or more pole-mounted or overhead supplemental faces should be strongly considered, based on the geometrics of the approach, to maximize visibility for approaching traffic.
  3. Any left-turn and/or right-turn signal faces, as determined by Sections 4D.17 through 4D.24, should be overhead for each exclusive turn lane.
  4. All signal faces should have backplates.



Approaches with speeds > 40 mph:  
recommended number, location, and  
design of signal faces



Should Also be Considered for  
40 mph or Lower

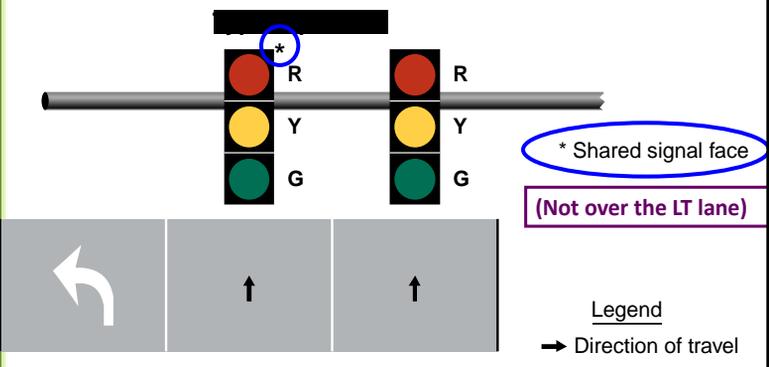




Circular Green Indications for Permissive LTs Should Not be Located Over or In Front of the LT Lane



### Shared signal face for permissive-only mode left turns

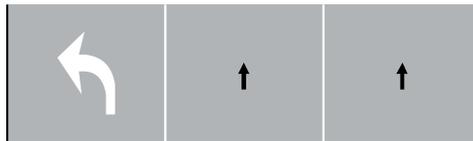
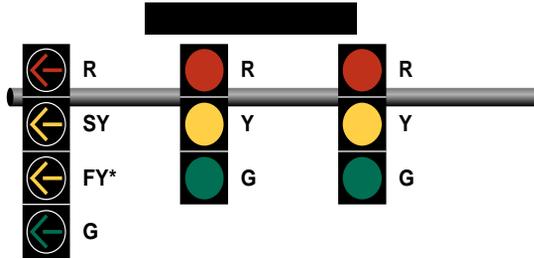


\* Shared signal face  
(Not over the LT lane)

Legend  
→ Direction of travel



## Optional use of flashing yellow arrow signal face for permissive turns



- Legend
- Direction of travel
  - SY Steady yellow
  - FY Flashing yellow



## Min. 2 Signal Faces Required For Straight-Thru Movement if it Exists, Even if Not the Major Movement on the Approach



**2<sup>nd</sup> face for thru movement is required**



## Optional Yellow Retroreflective Borders Around Backplates



## Protected-Only Mode Left-Turn Faces Must Use Red Arrow

- Applies to left turn signals but not to right turn signals



## Back-Up Power Should be Provided for Signals with Railroad Preemption



## Overlaid Pedestrian Symbols Are Allowed



**One Section**



## New Meaning of Flashing Upraised Hand When Pedestrian Countdown Signals Are Present



Ped may enter the intersection on the flashing upraised hand when a countdown pedestrian signal indication is present if they are able to travel to the far side of the traveled way by the time conflicting traffic receives a green signal



## Countdown Displays Required for All New Pedestrian Signals



If walking person (Walk) or flashing upraised hand (flashing Don't Walk) is displayed...

- Any conflicting vehicular movement perpendicular to the crosswalk must be displayed a steady red or flashing red.



## Slower Walking Speed for Calculating Pedestrian Clearance Time

~~Ped. Clearance Time  
based on 4.0 feet  
per second~~

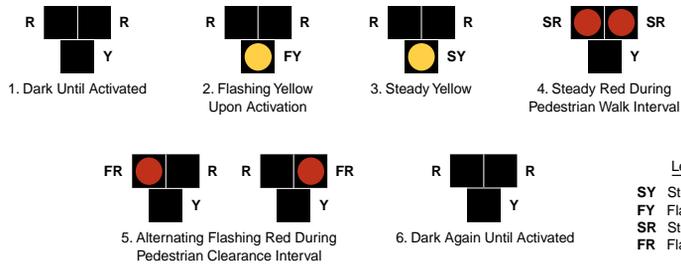
Ped. Clearance Time  
based on **3.5** feet per  
second



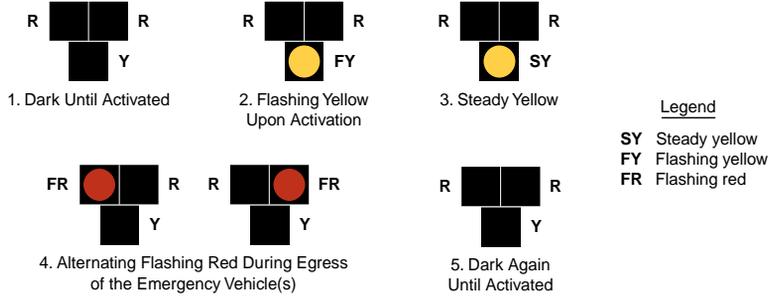
## Recommended Operation of Optional Leading Pedestrian Interval



## New Pedestrian Hybrid Signal



## New Emergency-Vehicle Hybrid Signal

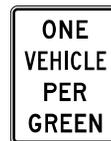


## Ramp Control Signals



Clarified design requirements and options

Recommended regulatory and warning signs



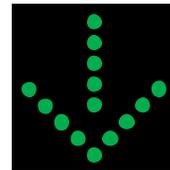
## New Chapter 4K – Highway Traffic Signals at Toll Plazas



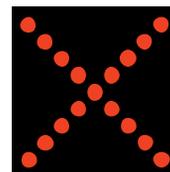
## Lane-use Control Signals at Toll Plazas



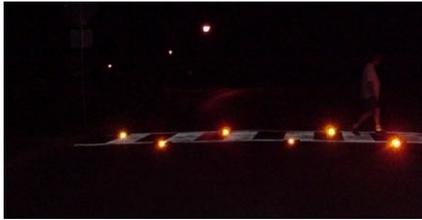
Lane open



Lane closed



## In-Roadway Lights



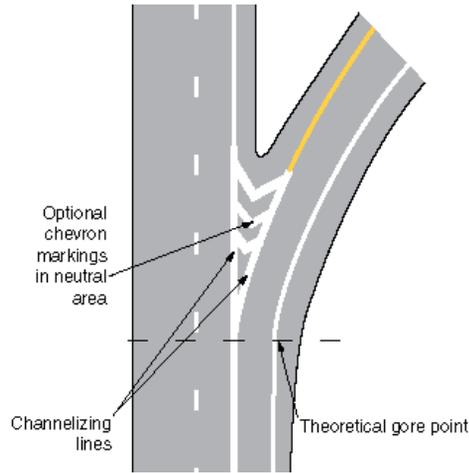
**New sign required if lights are actuated by push buttons**



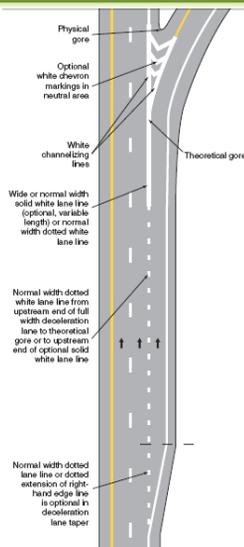
## PART 3 MARKINGS



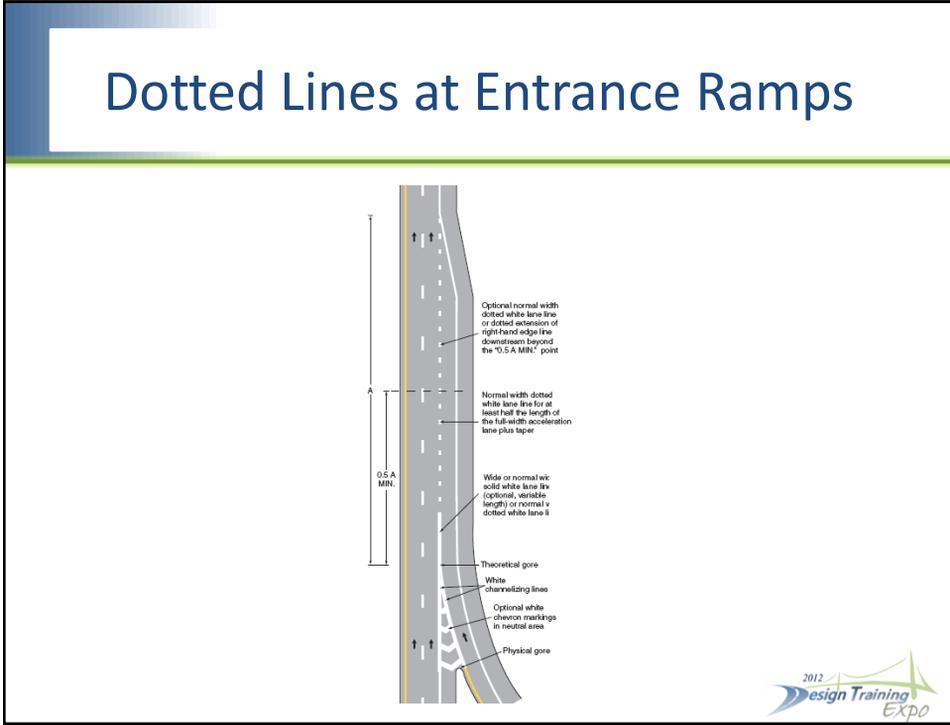
## Definitions of Neutral Area, Physical Gore, and Theoretical Gore as Applicable to Markings



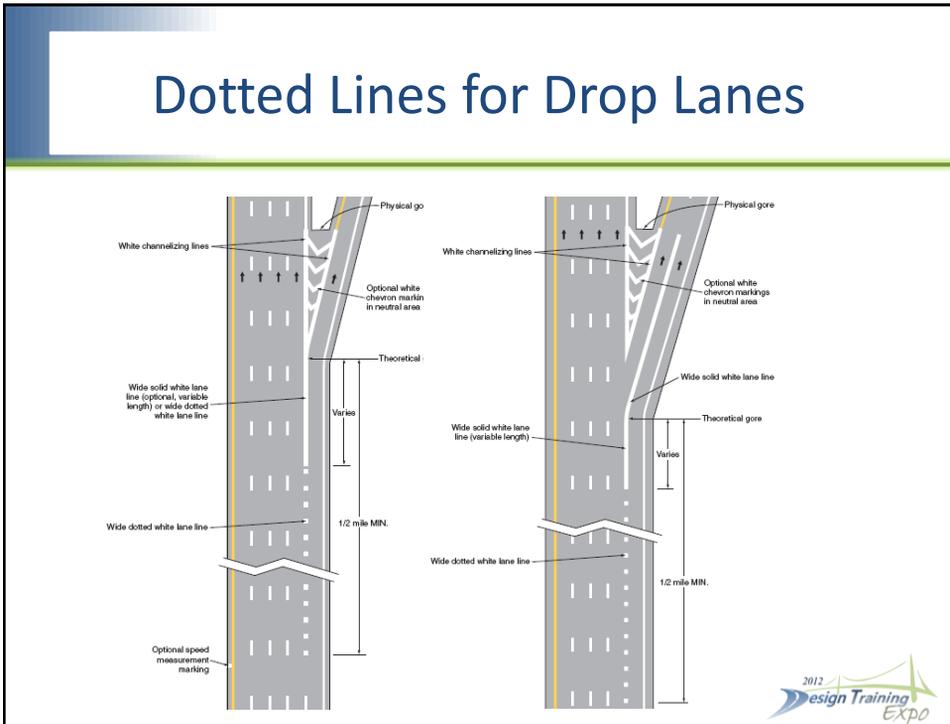
## Dotted Lines at Exit Ramps



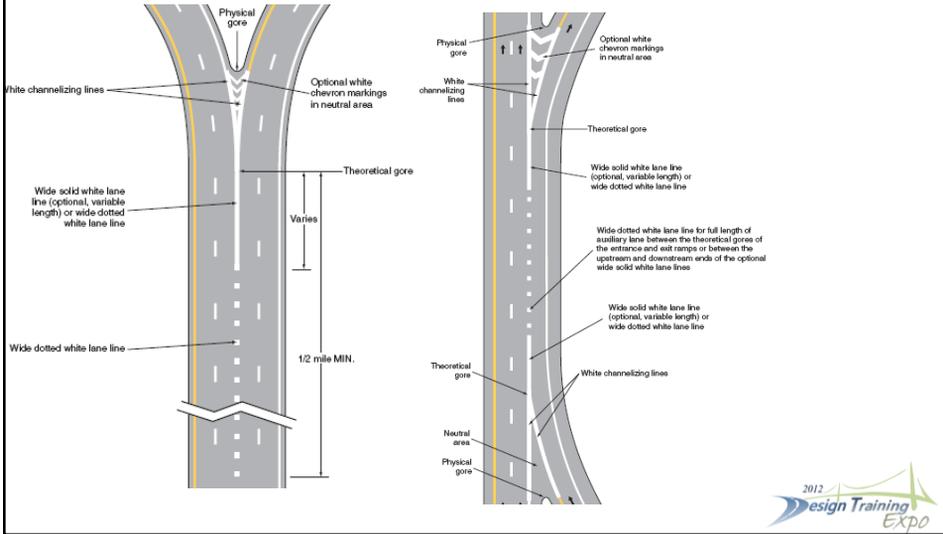
## Dotted Lines at Entrance Ramps



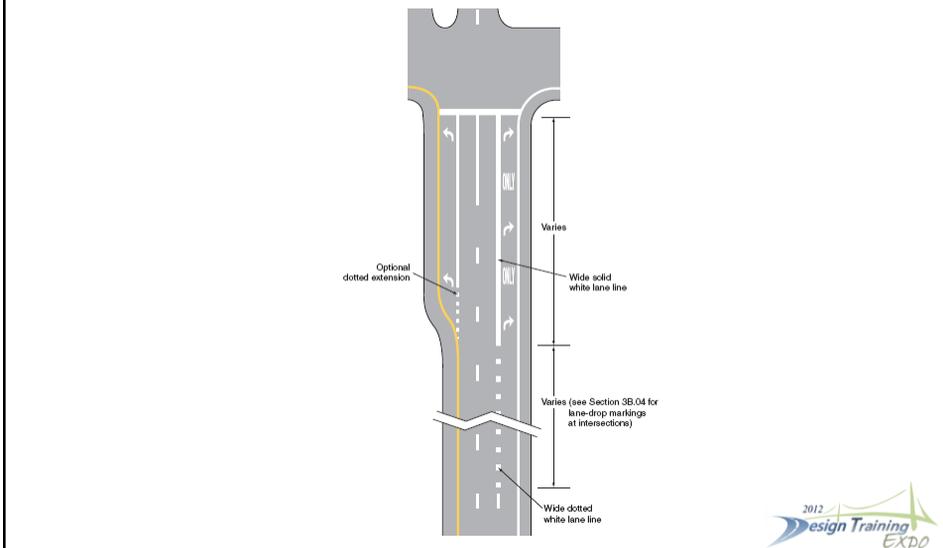
## Dotted Lines for Drop Lanes



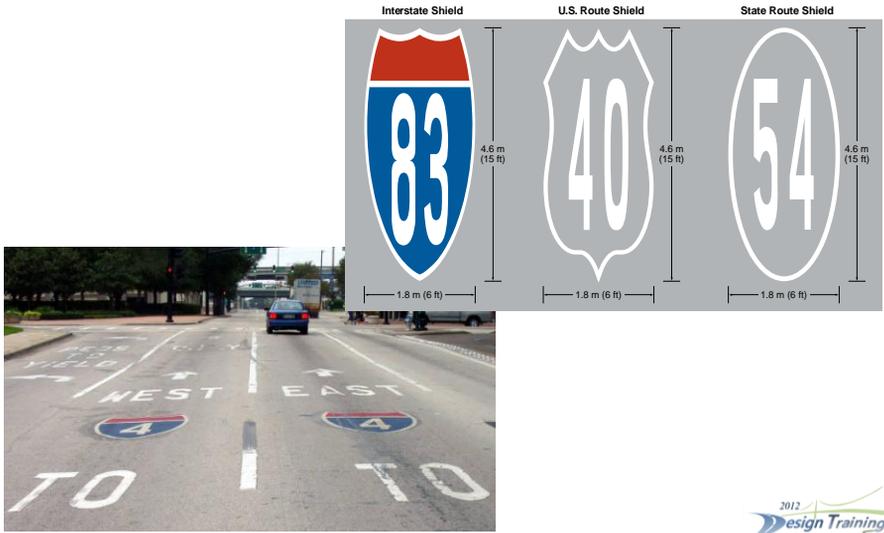
## Dotted Lines for Drop Lanes



## Dotted Lines for Drop Lanes



## Optional Route Shield Pavement Markings



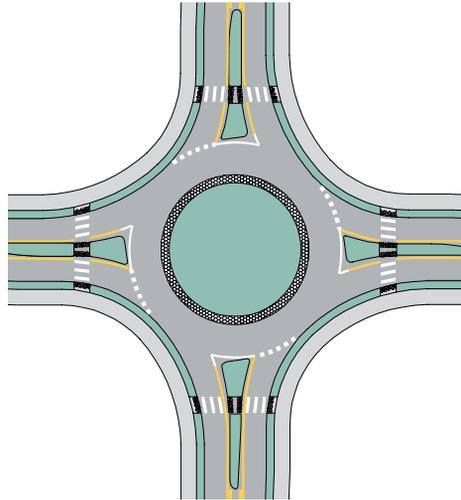
## Optional Purple Markings for ETC Only Lanes at Toll Plazas



[Note: should be reverse pattern of that shown in photo – white line with purple borders]



## New Chapter 3C – Pavement Markings at Roundabouts



## Optional Fish-hook Lane-use Arrows for Approaches to Roundabouts

