

Permissive Only FYA with POOFYA

Nick Erpelding, PE, PTOE

NCITE Intersection Traffic Control Committee

May 21, 2021

Problem Statement

- Desire to use more Permissive Only FYA operation to reduce delay during low volume times of day
- Desire to use POOFYA in some locations to eliminate left turn / pedestrian conflicts
 - POOFYA = Omit FYA during conflicting pedestrian phase
- Permissive Only operation not compatible with POOFYA
 - Potential for skipped phases
 - Stuck pushbutton could omit phase indefinitely

Proposed Solution

- Program signal to operate as Protected/Permissive
 - No omitted phases, AP special function bits / Protected Only phases
 - Free or Coord operation
- Use alternate Detector Plan to prevent left turn calls
 - Result = Permissive Only operation

Proposed Solution (cont.)

- Use logic to allow left turn detectors to call left turn phase upon receipt of conflicting ped call
 - Combine with POOFYA logic or Ped Protect programming
 - Result = Protected Only phases as needed
- Compatible with Dynamic FYA Detection method
 - (not compatible with “4 Detector Plan” method)

Action Plan Setup

Lead or lag

```

ACTION PLAN...[ 51]          v
PATTERN.....FREE SYS OVERRIDE.... NO
TIMING PLAN.....1 SEQUENCE.....1
VEH DETECTOR PLAN.1 DET LOG.....NONE
    
```

```

ACTION PLAN...[ 52]          v
PATTERN.....FREE SYS OVERRIDE.... NO
TIMING PLAN.....1 SEQUENCE.....1
VEH DETECTOR PLAN.1 DET LOG.....NONE
    
```

```

ACTION PLAN...[ 60]          v
PATTERN.....FREE SYS OVERRIDE.... NO
TIMING PLAN.....1 SEQUENCE.....1
VEH DETECTOR PLAN.2 DET LOG.....NONE
    
```

```

PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
MAX 3  . . . . .
CS INH . . . . .
OMIT . . . . .
SPC FCT . . . . . (1-8)
    
```

```

PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
MAX 3  . . . . .
CS INH . . . . .
OMIT X . X . X . X .
SPC FCT . . . . . (1-8)
    
```

```

PHASE 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
MAX 3  . . . . .
CS INH . . . . .
OMIT . . . . .
SPC FCT . . . . . (1-8)
    
```

```

VEH DET PH ASSIGN VEH DET PLAN [ 1 ] > v
[ ADDITIONAL PHASE CALLS ]
DET PH 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 T
1 1 X . . . . . S
2 2 . X . . . . . S
3 3 . . X . . . . . S
4 4 . . . X . . . . . S
5 5 . . . . X . . . . . S
6 6 . . . . . X . . . . . S
7 7 . . . . . . X . . . . . S
8 8 . . . . . . . X . . . . . S
    
```

```

VEH DET PH ASSIGN VEH DET PLAN [ 1 ] > v
[ ADDITIONAL PHASE CALLS ]
DET PH 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 T
1 1 X . . . . . S
2 2 . X . . . . . S
3 3 . . X . . . . . S
4 4 . . . X . . . . . S
5 5 . . . . X . . . . . S
6 6 . . . . . X . . . . . S
7 7 . . . . . . X . . . . . S
8 8 . . . . . . . X . . . . . S
    
```

```

VEH DET PH ASSIGN VEH DET PLAN [ 2 ] > v
[ ADDITIONAL PHASE CALLS ]
DET PH 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 T
1 0 . X . . . . . S
2 2 . X . . . . . S
3 0 . . . X . . . . . S
4 4 . . . X . . . . . S
5 0 . . . . . X . . . . . S
6 6 . . . . . X . . . . . S
7 0 . . . . . . X . . . . . S
8 8 . . . . . . . X . . . . . S
    
```

Protected/Permissive

Permissive Only

Permissive Only w/ POOFYA

Other Programming

```

VEH DETECTOR [62]  VEH DET PLAN [ 2 ]
TYPE: N-NTCIP
TS2 DETECTOR..... X ECPI LOG..... NO
DET PH - 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
62 7      . . . . . X . . . . .
CALL OPTION.... YES DELAY TIME... 0.0
EXT OPTION. PASSAGE EXTENSION TIME. 0.0
USE ADDED INITIAL . CROSS SWITCH PH.. 0
LOCK IN..... NONE NTCIP VOL . OR OCC .
PMT QUEUE DELAY- NO
    
```

One dummy detector

+

```

LP#: 61 COPY FROM: 61 ACTIVE:M FALSE
IF DET PED 8 IS ON F
OR PED ON PH WALK 8 IS ON F
OR PED ON PH PED CLR 8 IS ON F
AND DET PLAN NUM IS 2 T

THEN LP SET LOGIC FLAG 7 ON
    
```

```

LP#: 62 COPY FROM: 62 ACTIVE:M FALSE
IF DET 7 IS ON F
OR DET 7 IS ON F
AND LP FLAG 7 IS ON F

THEN DET SET VEH 49-64 62 ON
    
```

```

LP#: 63 COPY FROM: 63 ACTIVE:M TRUE
IF CTR PHASE TIMING 7 IS OFF T
AND CTR PHASE TIMING 8 IS OFF T

THEN LP SET LOGIC FLAG 7 OFF
    
```

Three logic statements per FYA phase
(plus POOFYA logic, if not using checkbox)