MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Field study for pedestrian signals

OCTOBER 4, 2018

Site 1 — Ped Activated 12” HIB

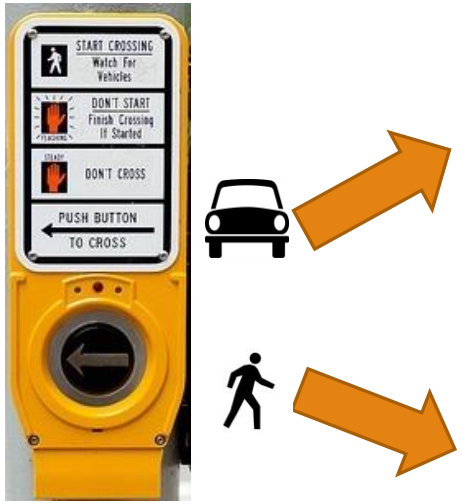
MD 500 @ Jamestown Rd/Northwest Branch Trail

An upgrade to 12-12-8 inch signal with APS/CPS is planned.

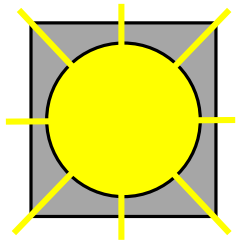
West Hyattsville Metro station

MD 500 @ Jamestown Rd/Northwest Branch Trail

Site 1 — Ped Activated 12” HIB

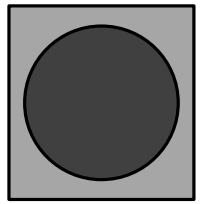


Button pushed



Flashing yellow for cars: 40 sec

N/A

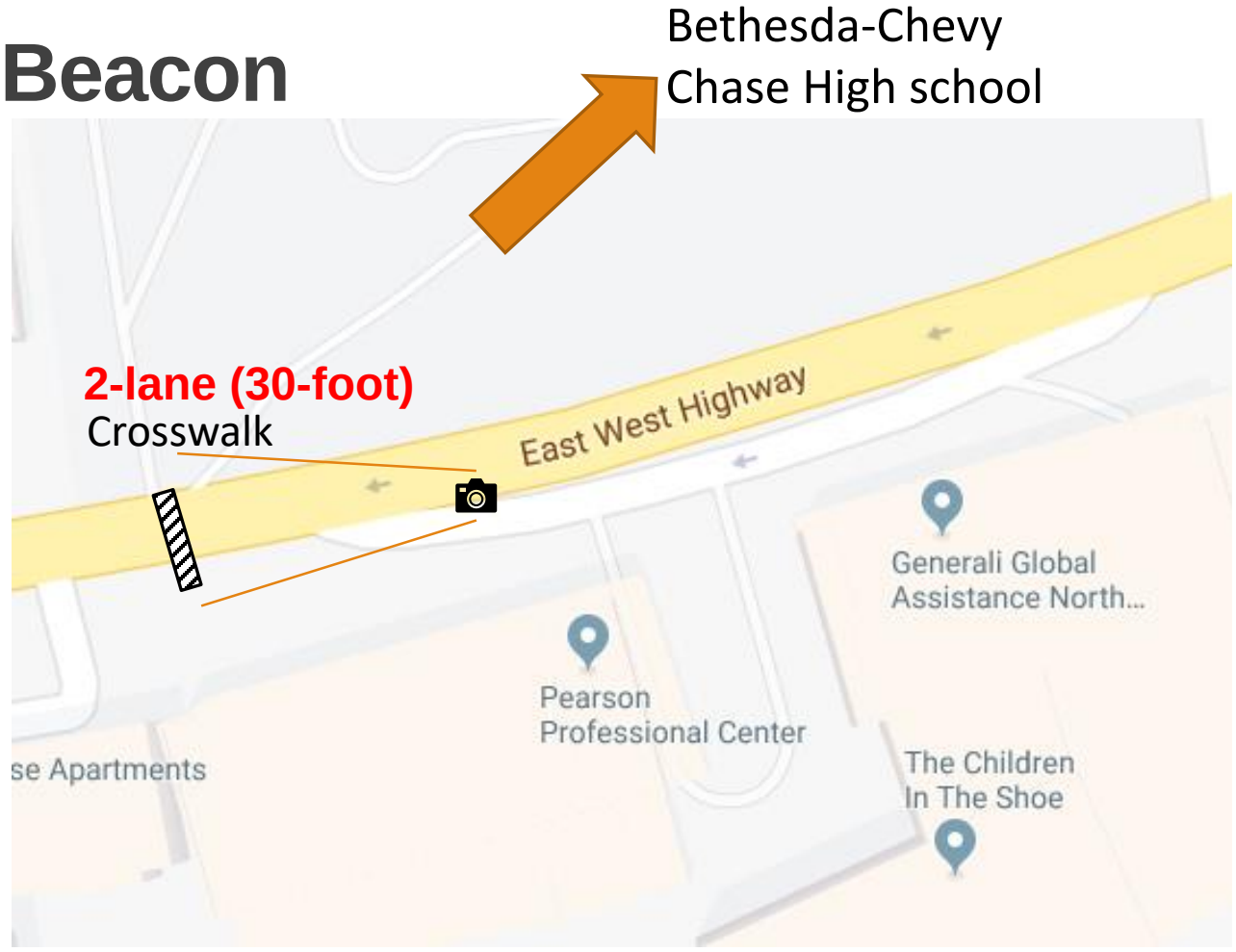


Back to dark

- Flashing duration would not be extended if the button is pushed within flashing time.
- Minimum interval between flashing yellow: 8 seconds.

Site 2 — Pedestrian Hybrid Beacon

- MD 410 WB at Bethesda Chevy Chase High School
- High ped volume when the school is over at 2:30 pm
- A service road for the nearby office buildings
- MDOT SHA's 1st PHB (activated in October 2017)



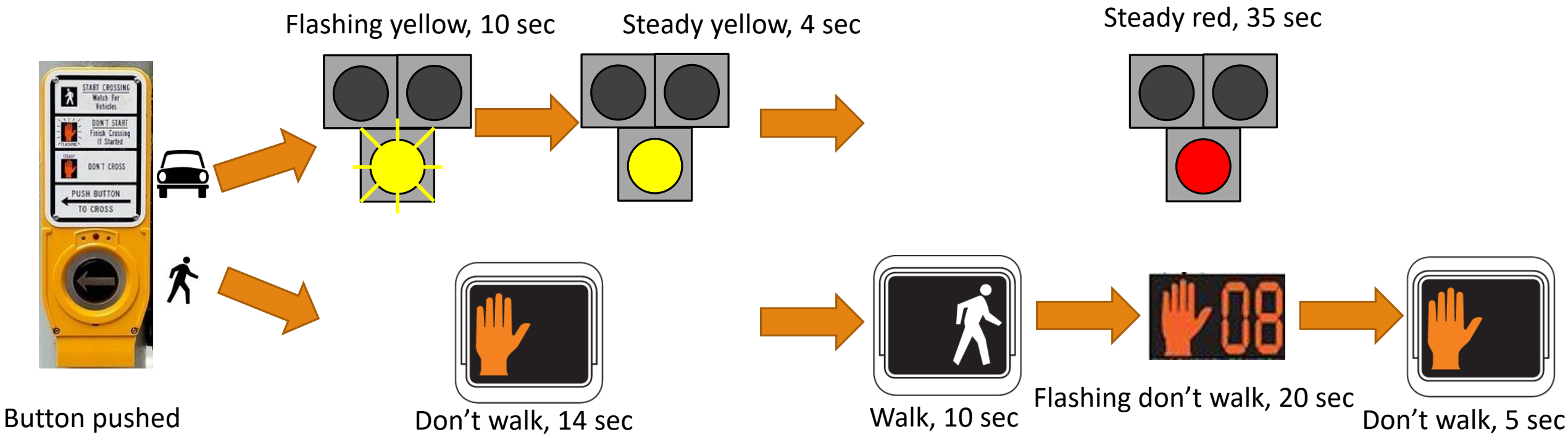
MD 410 WB at Bethesda Chevy Chase High School

Before

MD 410 WB at Bethesda Chevy Chase High School

After

Site 2 — Pedestrian Hybrid Beacon



- Ped walking duration would not be extended if the button is pushed within the activation time.
- Minimum interval between activations: 30 seconds

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Findings at ***both*** sites

- Most vehicles (more than 75%) stop properly for pedestrians.
- About 10% of vehicles do not stop when they should.
- Only half of the pedestrians push the button.
- PHB feels safer because pedestrians have a clear signal to follow.

Data from video – MD 500 (Ped Activated 12” HIB)

Observation Date : May 2, 2018 (Wednesday) time: 1:15 pm – 3:45 pm

To the metro station

	arrival not during flashing yellow		arrival during flashing yellow	
	Pushed	Not pushed	Pushed	Not pushed
NB	24 (37%)	41 (63%)	10 (30%)	23 (70%)
SB	27 (53%)	24 (47%)	4 (17%)	20 (83%)
Total	51 (44%)	65 (56%)	14 (25%)	43 (75%)

Only includes the first car on each lane

	stopped properly	ran over flashing yellow within 5 sec	ran over flashing yellow after 5 sec
WB	62 (69%)	17 (19%)	11 (12%)
EB	111 (82%)	10 (7%)	15 (11%)
Total	173 (77%)	27 (12%)	26 (12%)

Data from video – MD 500 (Ped Activated 12” HIB)

Observation Date : May 2, 2018 (Wednesday) time: 1:15 pm – 3:45 pm

Bike stats

	arrival not during flashing yellow		arrival during flashing yellow	
	Pushed	Not pushed	Pushed	Not pushed
NB	1	12	1	7
SB	2	11	0	0
Total	3	33 (92%)	1	7(88%)

Among those, 8 bikes have not decelerated at all.

- Bicyclists are less willing to push the button.

Findings at Site 1 (Ped Activated 12” HIB)

- More than half (56%) of the pedestrians do not push the button.
- Bicyclists are less willing to push the button (~90%).
- When the signal is flashing, less (25%) pedestrians push the button.
- Some (12%) vehicles could not stop safely during the first several seconds of flashing yellow.

Data from video – MD 410 (Pedestrian Hybrid Beacon)

Observation Date : May 14, 2018 (Monday) time: 1:30 pm – 3:15 pm

		Push and wait	Push and go (without waiting)	Go during Walk Time	Go during FDW	Not pushed or jaywalk
Total	SB	16	34	81	104	52 (18%)
	NB	9	7	4	3	18 (44%)
Peak 15 mins	SB	4	32	67	88	38 (17%)
	NB	2	0	2	1	4 (44%)

To the high school

		Stopped properly	Ran red	Improper blocking
Total	MD 410	52	6 (10%)	--
	Service road	6	2 (13%)	8
Peak 15 mins	MD 410	14	4 (22%)	--
	Service road	1	0 (0%)	5

Data from video – MD 410 (Pedestrian Hybrid Beacon)

When excluding those who arrived at the crosswalk during an activation…

		Push and wait	Push and go (without waiting)	Not pushed or jaywalk
Total	SB	16 (16%)	34	52 (51%)
	NB	9 (26%)	7	18 (53%)
	Total	25 (18%)	41	70 (51%)
Peak 15 mins	SB	4 (5%)	32	38 (51%)
	NB	2 (33%)	0	4 (67%)
	Total	6 (8%)	32	42 (53%)

Findings at site 2 (Pedestrian Hybrid Beacon)

- About 50% of pedestrians do not push the button.
- About 30% of pedestrians push the button and do not wait during the 10-sec "Flashing Yellow" and 4-sec "Solid Yellow" phases until they see the "Walk" signal.
- Almost no pedestrians stop for the "Flashing Don't Walk" signal.
- Drivers become less patient and run red during the peak 15-min interval with the highest pedestrian volume when the school ends at 2:30 pm.
- Some drivers get confused during the "Dark" phase.

Site 2 Video Clip — Dark signal causing driver confusion

- One driver kept stopping after the signal turns dark, other vehicles not honking.
- The driver opened the door and checked the signal before he proceeded.
- It indicates the possible confusion caused by “dark” signal

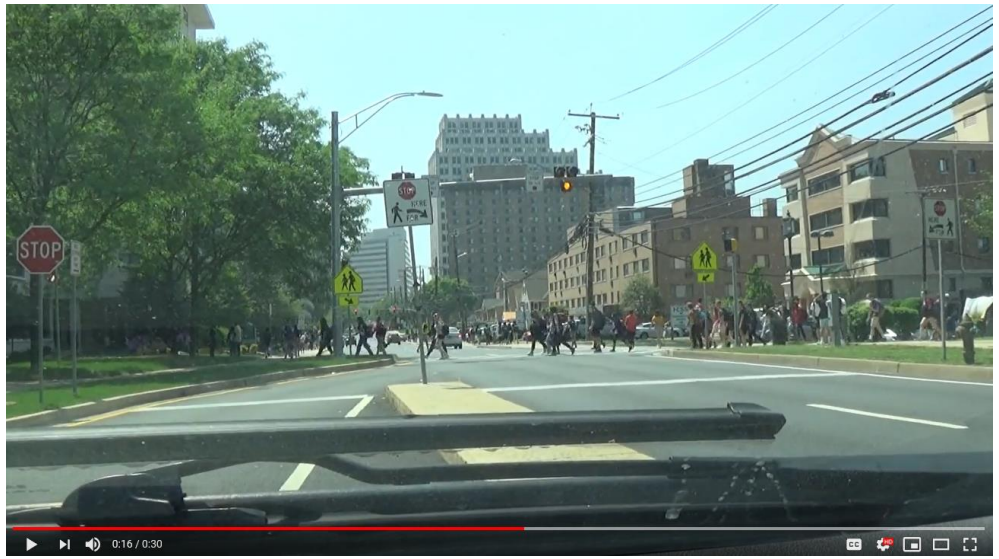
Site 2 Video Clip — Improper blocking by vehicles from the service rd

- Vehicles from the service road may block traffic on MD 410
  - Drivers from the service road are more aggressive when queue on MD-410 is long.

Site 2 Video Clip — Impatient peds during the flashing/solid yellow

During the 15-min peak time, pedestrians are more likely to start crossing before the walk signal.

- Due to the large pedestrian volume, vehicles are forced to stop.



Signing at site 2

The stop sign may be confusing not reflecting the solid red phase of PHB.

Existing

Recommended

Next STEPS

For Site 1, conduct an after-period observation after an upgrade from 12” HIB to 12-12-8 inch signal

For Site 2,

- Consider shortening the 10-sec flashing yellow phase
- Consider making the 35-sec solid red phase variable time-of-day or allowing vehicles to proceed during the alternating flashing red phase
- Change the “STOP HERE FOR PED” sign to “STOP HERE ON RED”
- Check changes in drivers/pedestrians compliance over time in spring/summer 2019

Select Site 3 with 12-12-8 inch pedestrian signal (e.g., US 1 @ Hartwick Rd in College Park) and collect data