HAWK/RRFB Webinar Questions

Submitted by attendees during Nov 30 webinar. Responses provided by webinar presenters: Kay Fitzpatrick, Richard Nassi, and Ron Van Houten.

1. Can a HAWK signal be coordinated with upstream/downstream stop and go traffic signal?

   Yes, a number of them are connected into the central control system to fit into the AM and PM peak hour progressions. Late at night and on weekends they usually run free.

2. At School Bus Stops and Railroads with flashing reds, drivers are required to continue stopping. When allowing drivers to proceed at a HAWK with a flashing red, is there any concern with drivers proceeding on flashing red at School Bus Stops and/or Railroads?

   Regarding railroads…the flashing red means the same as a STOP sign – stop, yield the right-of-way, and go when it is safe. The addition of gates at a railroad crossing restricts drivers to stop and stay stop until the crossing gates are all the way up. Not all railroad grade crossings have gates. Vehicles can legally proceed across the tracks on the railroad signals' flashing reds after a full stop (if there are no gates), and some vehicles will do that right after the train has passed if they can see that no more trains are coming.

   Regarding school buses, the context is very different. Do the flashing red beacons on stop signs at an intersection encourage drivers to pass a school bus that is stopped with it stop signs extended out and red lights flashing?

   We have not experienced or heard of any evidence of such problems described in this question with pedestrian hybrid beacons in the numerous States where they are in operation.

3. I have heard concerns about using HAWK in locations near or adjacent to at-grade RR crossings (particularly LRT), is there any evidence to support that this is a problem?

   No problems have been observed or reported

4. What were the pedestrian volumes using the treatment and reference sites?

   See Table 1 of the Research Report (http://www.fhwa.dot.gov/publications/research/safety/10042/10042.pdf)

5. What was the % of pedestrians activating the HAWK in the after period?

   The method used In the TCRP 112 / NCHRP 562 study is documented in Chapter 6 and 7. (http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_562.pdf). For the yielding study, data were for staged pedestrians. Therefore, 100 percent activated the HAWK.

   That data would not have been collected for the safety study.

6. Can the HAWK be incorporated into a coordinated signal system so that activation will only occur at specific times when upstream/downstream signals create gaps in the platoons of vehicles?

   Yes, see question 1

7. In Indiana, we are thinking of using the HAWK as a signalization measure to comply with the forthcoming ADA PROWAG requirement to signalize all multi-lane pedestrian crossings at roundabouts. However, it was mentioned that a change in the MUTCD requiring stop signs on the crossroad was potentially going to be implemented. If that's the case, are roundabouts excluded from HAWK use, unless the multi-lane approach to be signalized is one-way? Please advise, as we have many roundabouts (including roundabout interchanges) we're designing on a forthcoming project.

   HAWKs are not excluded from use at roundabouts. The STOP sign is for the standard minor street intersection.

8. Is the spacing requirement for HAWKs similar to guidance for adjacent signalized intersections?

   A brief review of the MUTCD did not reveal a spacing requirement for the Pedestrian Hybrid Beacon within section 4F; however, it does refer the reader to 4D and 4E which states that a "midblock crosswalks shall not be signalized if they are located within 300 ft from the nearest traffic control signal unless the proposed traffic control signal will not restrict the progressive movement of traffic"

9. Can you coordinate the HAWK device with an adjacent traffic signal to improve flow?

   Yes, see question 1.

10. What is the traffic flow improvement by having a HAWK instead of a standard signal light?

    In general, there is improvements. If specific values are desired, research would be needed to answer the question.

11. With a HAWK on a three-lane street with raised median, how beneficial is an **overhead** beacon?

    That is an engineering judgement call. Most likely just the side mounts will be adequate with a back to back head on the island

12. Is there research that demonstrates improved driver compliance with these pedestrian-activated beacons vs. the 'standard' pedestrian signals and/or no pedestrian signal? Is there a difference between the HAWK and the RRFB?

    The question identifies additional areas needing research.

13. What are the estimated costs for each type of system?

    Varies by location and design. Cost may range from $50K to $150K

14. What type of enforcement campaigns were conducted around these treatments? Was enforcement directed toward pedestrians as well as motorists?

    Yes, both. Initial enforcement was more "educational", no tickets--flyers passed out, new releases etc.. After 2+- weeks ticketing started since the RED signal is a standard indication

15. Any studies on rear-end crashes related to installation of HAWK and RRFB?

    Additional research is needed to examine the impact of the Pedestrian Hybrid Beacon on crash type. The distribution of the crash type for the 21 treated sites included in the recent FHWA study is provided in Table 5 and Figures 7 and 8.
    (http://www.fhwa.dot.gov/publications/research/safety/10042/10042.pdf)

    To date, there has not been a crash study on the RRFB.

16. Lack of funding often prevents communities from installing a large number of HAWKS. Even on roads with 45 mph speed limits, wouldn't it be better to install a RRFB than to do nothing at a bus stop or other location that generates crossings?

    Engineering judgement call, as a start at least set up a program to improve the crossings to what is needed.

17. Are all of the compliance numbers cited in the studies based on just the pedestrians who chose to actuate the device?

    In the TCRP 112 / NCHRP 562 study, we are reporting values for several different treatment types and different locations. We used staged pedestrians who would activate the device if one was present. (http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_562.pdf)

18. The in-street signage appears to be a highly effective complement to the HAWK or RRFB. Shouldn't this be part of the standard design? Would the posted speed be a factor?

    In-street signing is only applicable for lower speed, more narrow roads.

19. Do radio control and solar options interface with new APS hardware systems required for ADA accessibility?

    They should not interfer, however your point is well taken and the governmental authority needs to confirm with the mfg. that they do not

20. Are there set requirements for placement of on street marked pedestrian crossing in relation to distance from present on street pedestrian crossings? What dictates adding a pedestrian raised island?

    These an more issues are covered under Charle Zegeer's research on marked vs. unmarked crosswalks

21. Is it usual to use HAWK or RRFB onto rural roads or the roads outside building areas with higher speeds at frequent pedestrian crossing locations?

    No, some HAWKs are being used in such areas to call attention the fact that there may be unusual pedestrian crossing activity and the driver has not encountered a conflict crossing for some time.

22. Any specific issues regarding use of RRFB vs HAWK at intersections?

    HAWKs should only considered at minor intersections where pedestrian activity warrants its installation. At busier intersection where the side street meets an Interruption warrant a semi-actuated signal should be considered.

23. Is there data available for HAWKS and RRFB for two-lane facilities? Or is there a low statistical significance of improvement?

    In Tucson, HAWKs were installed at the busier crossings, wider streets and higher speed limits. For two-lane, low speed crossings there was usually not need. See Zegeer's study on the marked vs. unmarked crossings as a basic start to answer such a question.

24. Can you define “yielding” and “conflict”, and how they were measured for these studies?

    The method used In the TCRP 112 / NCHRP 562 study is documented in Chapter 6 and 7. (http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_562.pdf)

25. What is the spread of collision reductions between different types of crossings? It seems most of the safety benefits are in mid-block type crossings.

    All of the treated sites in the HAWK safety study were at intersections or driveways.