



SANDY CITY PUBLIC WORKS

RYAN KUMP
PUBLIC WORKS DIRECTOR

MONICA ZOLTANSKI
MAYOR

SHANE E. PACE
CHIEF ADMINISTRATIVE OFFICER

To: Sandy City Council

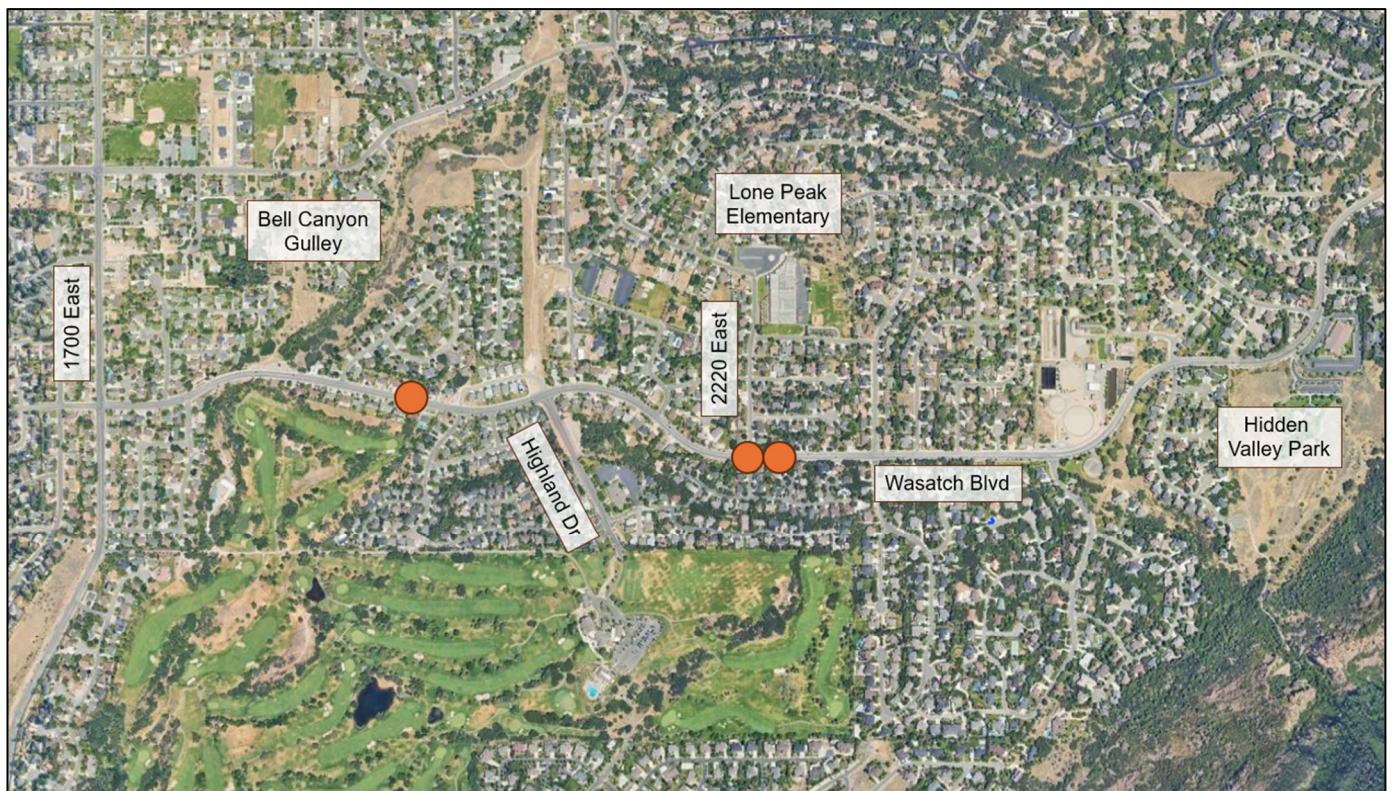
From: Ivan Hooper, PE, Transportation Engineer

cc: Britney Ward, PE, City Engineer/Assistant Director

Date: September 10, 2025

Re: Wasatch Boulevard HAWK Location Recommendation

The Engineering Division of the Public Works Department has studied three potential pedestrian hybrid beacon, commonly known as HAWKs, locations on Wasatch Boulevard at approximately 1950 East (mid-block), 2220 East (intersection) and 2250 East (mid-block), as shown on the figure below. We recommend that the location at 2220 East be prioritized for implementation because it has the highest utilization potential and meets AASHTO and MUTCD requirements.





The primary reason that the 2220 East location will be utilized more is due to Lone Peak Elementary School, located a couple blocks north of Wasatch Boulevard. The school's safe walking route plan has all students living south of Wasatch Boulevard crossing at the dedicated school crosswalk at 2220 East. Historically, there have been approximately 15-20 school-related pedestrians that cross Wasatch Blvd at this intersection during school crossing times. The proposed HAWK crossing would replace the school crosswalk and those students would become users of the HAWK. The HAWK would not affect any school bus routes or stops, although it would provide a safer crossing of Wasatch Blvd for middle and high school students accessing the school bus stop at 2220 East. Additionally, the Reduced Speed School Zone (RSSZ) would continue to operate along with the assigned crossing guard.

There are several community facilities available along Wasatch Blvd, including Bell Canyon Gulley, Hidden Valley Park, various hiking trails and trail heads, a water tank park, a pocket park, Hidden Valley Country Club, and a Church of Jesus Christ of Latter-Day Saints church. Most residents accessing facilities along Wasatch Blvd come from neighborhoods on the north side of Wasatch Blvd because it is more densely populated. While each studied location provides increased access, the western location does not seem to offer "built-in" users like the eastern locations do. The western location is more attractive to Bell Canyon Gulley recreational users; however, it would typically be used by people traveling to/from the east because the HAWK would be about 1,100 feet east of the trail access on Wasatch Boulevard and people traveling to/from the west would use 1700 East as their crossing location.

The eastern locations are more attractive to users of Hidden Valley Park and the numerous nearby hiking trails. Hidden Valley Park is east of all proposed HAWK locations and residents frequently request a Wasatch Blvd crossing to access it. However, installing an at-grade crossing at the park is not feasible due to restricted sight visibility from the surrounding roadway geometry. Just to the west of the park are additional recreational facilities including the water tank park and a pocket park on the south side of Wasatch Blvd. Furthermore, the eastern HAWK locations are centrally located between Hidden Valley Park and Highland Dr, which is the primary access to Hidden Valley Country Club. Just to the east of Hidden Valley Park is the church and parking lots for both. However, the 2220 East HAWK crossing is recommended over the 2250 E location because it is a more direct route for pedestrians and an existing established crossing location. Mid-block crossings, like 2250 East, require at least some out-of-direction travel or backtracking.

MUTCD HAWK Warrant Analysis

Chapter 4J of the MUTCD describes guidelines in which a HAWK crossing could be justified for installation:

- A minimum of 20 pedestrians per hour crossing the major street
 - Met: The number of pedestrians crossing during school times meets this threshold
- Crossing speed of pedestrians is less than 3.5 ft/s
 - Met: Children are likely to walk at a reduced rate of speed
- To facilitate pedestrian crossings at a location that does not meet traffic signal warrants
 - Met: A traffic signal is not currently warranted at this location. However, the

intersection will need to be re-evaluated in the future if Highland Drive is extended and a traffic signal is installed.

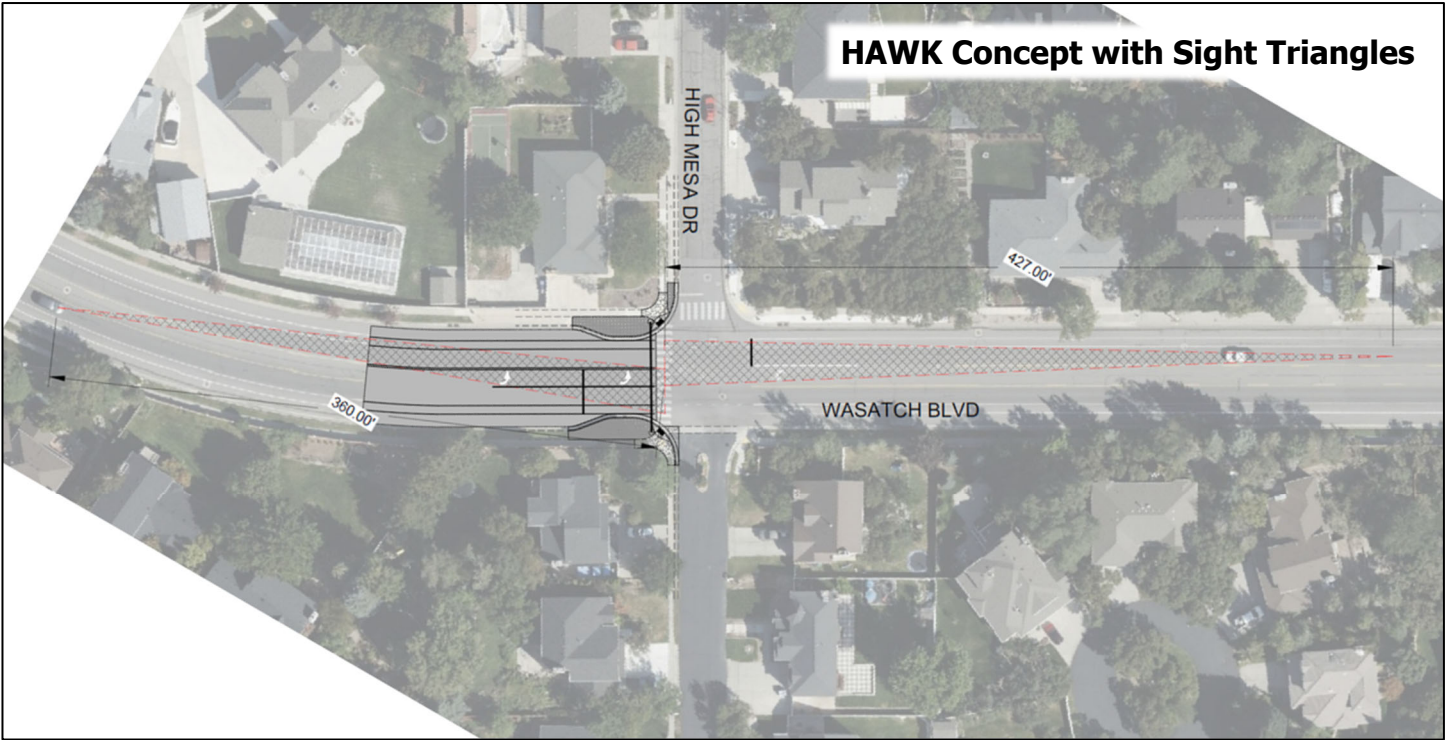
- Adequacy of gaps between vehicles
 - Met: There are times of day when gaps between vehicles are not large enough to allow a pedestrian to safely cross
- Posted speed limit
 - Met: Utilizing the existing crosswalk length (60 ft), vehicle volume per hour (950 VPH), and 85th percentile speed (above 35 mph), the plotted point on MUTCD Figure 4J-2 falls above the minimum line
- High pedestrian delay
 - Met: There are times of day when gaps between vehicles are not large enough to allow a pedestrian to safely cross, requiring pedestrians to wait an extended amount of time, which may cause them to take greater risks
- Presence of a raised median
 - Engineering consideration: A raised median is not currently present and cannot be installed at the recommended location
- Engineering judgment
 - Demographics, setting, history, researched safety, roadway geometry and cross section, landscaping, vehicle types on road, surrounding zoning, weather conditions, community events, surrounding transportation facilities, etc

2220 East HAWK Concept Design

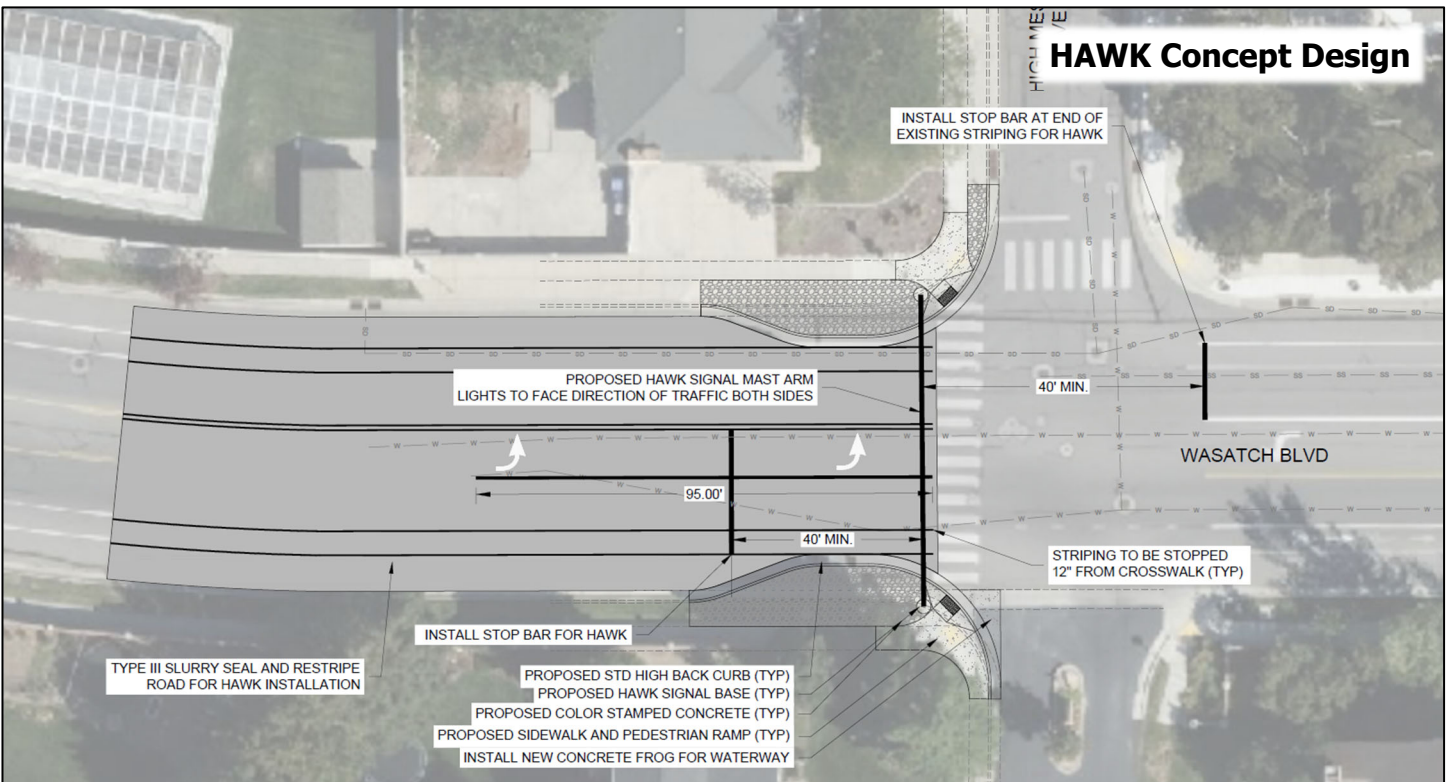
The figures on the following page show the 2220 East HAWK concept design. The first figure shows the general layout and the AASHTO Stopping Sight Distance triangles, which are the distances needed for a vehicle traveling at 45 mph to come to a stop at the crosswalk. While the posted speed limit is 40 mph, 45 mph was used to be conservative due to the higher 85th percentile speeds. The eastern (westbound) sight triangle is longer than the west (eastbound) because of the downhill slope, which increases the distance required for a vehicle to come to a stop. The eastbound sight triangle encompasses a portion of the westbound travel lane, which is not ideal but is deemed acceptable because the eastbound driver would be able to see the HAWK signal over the top of oncoming vehicles and would know whether they would need to stop or not.

The second figure shows a more detailed view of the concept design, including traffic-calming curb bulb-outs. Bulb-outs are traffic calming measures that visually and physically narrow the road to encourage vehicles to slow down. At mid-block crossings where there are not designated turn pockets, pedestrian refuge islands can be added within the Two Way Left Turn Lane (TWLTL) as an added barrier of protection.

HAWK Concept with Sight Triangles

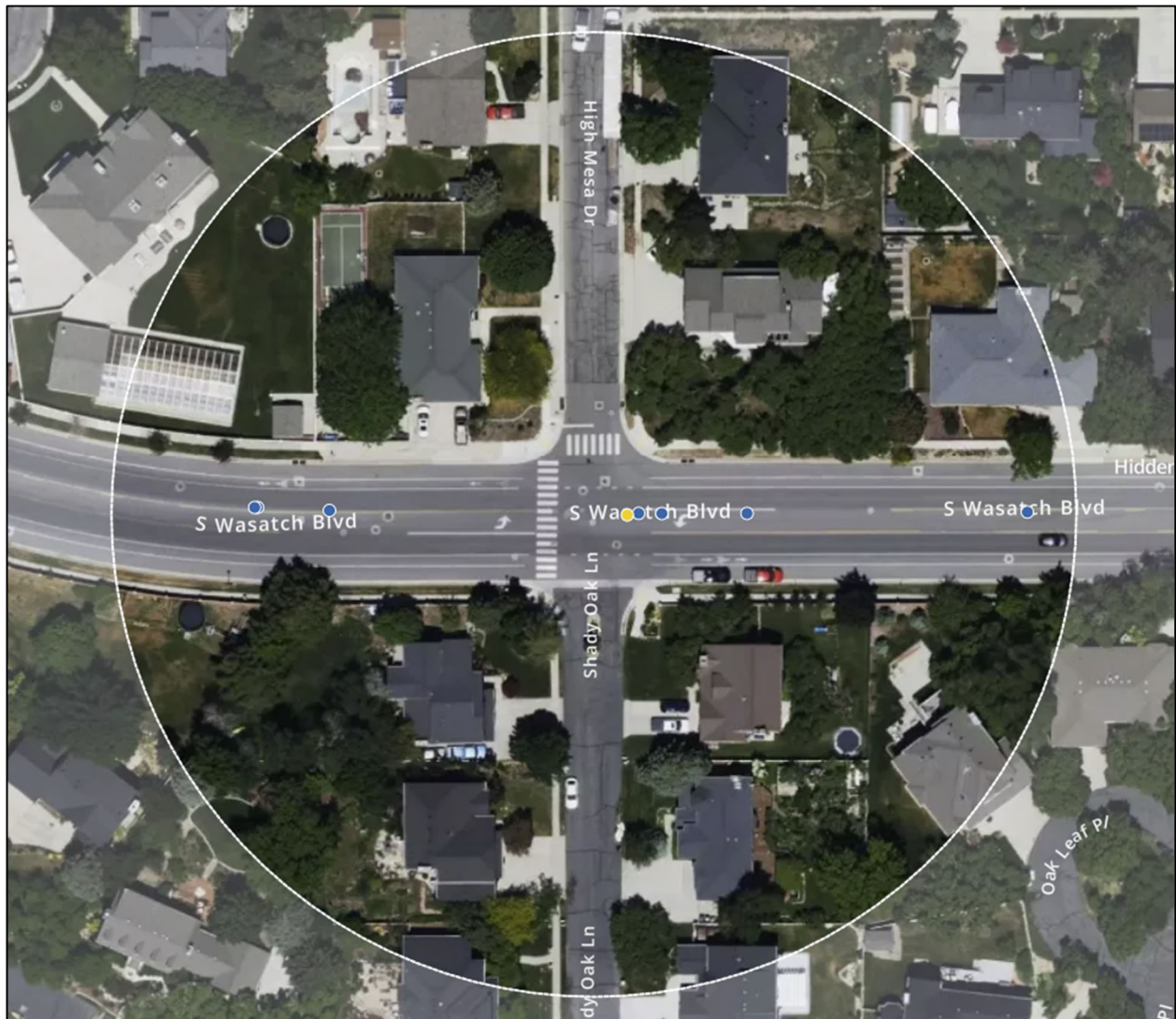


HAWK Concept Design



Intersection Crash Analysis

An analysis of crash history within the vicinity of the intersection shows that there have been eight reported crashes in the 10-year period from 2015 through 2024, which are shown in the figure below. Of those eight crashes, only one had a possible injury (shown in yellow), the other seven (shown in blue) were property damage only crashes. Six of the crashes were single vehicle collisions, one was a rear-end collision, and one was a sideswipe in the same direction. None of the crashes involved a pedestrian and half of the crashes occurred in wet or snowy conditions. The rear-end collision was the possible injury crash and it occurred when one vehicle slowed down upon entering the RSSZ and was hit by the following vehicle, which didn't slow down.





| Injury Level | | Crash Type | | Weather | |
|---------------------------------|---|-----------------------|---|-------------|---|
| Fatal | 0 | | | | |
| Broken Bones or Bleeding Wounds | 0 | | | | |
| Bruises or Abrasions | 0 | Rear-End | 1 | | |
| Possible Injury | 1 | Sideswipe – Same Dir. | 1 | Unspecified | 4 |
| Property Damage Only | 7 | Single Vehicle | 6 | Wet/Snowy | 4 |

With so many of the crashes being single vehicle crashes or during inclement weather, the HAWK signal will not substantially prevent those types of crashes; however, it will provide a higher level of pedestrian safety than the existing RSSZ and Rectangular Rapid Flashing Beacons (RRFBs). With an overhead red-light indication, HAWKs are more effective at getting vehicles to stop than the yellow flashing lights on the side of the road from the RSSZ and RRFBs. This is particularly noteworthy because of the posted 40 mph speed limit on Wasatch Blvd. Our most recent speed study in this area is from October 2024 showing that the eastbound 85th percentile speed was 40 mph and the westbound 85th percentile speed was 43 mph. The average speeds in both directions were slightly less than the posted speed limit, which is good and one indication of a properly set limit. 85th percentile speed represents the speed at which 85% of drivers are traveling **at or below**. It is **not** the average speed of 85% of drivers and **is** usually greater than the average speed of all drivers. The remaining 15% consists of outliers, including those making turns, parking, driving excessively fast, or rare errant readings. Transportation professionals commonly use the 85th percentile speed as it provides an overall view of traffic behavior. While these results indicate there is not a speeding issue, they can cause serious injury to pedestrians in the event of a collision. HAWKs are effective at increasing the number of vehicles yielding and stopping for pedestrians and therefore improve pedestrian safety.