

Plan view of proposed underpass under Highway 17



Highway 17 Underpass

A major point of potential conflict along Highway 17 through Madrid is the crossing of the High Trestle Trail. Although there has not been a single recorded accident at this location, there are many “close calls” that go unrecorded. The intersection is plagued with the following issues:

- Most cyclists fail to completely stop when crossing the road to properly access oncoming traffic.
- Vehicular traffic may stop on one side of the road to let cyclists through, which can cause issues with the opposite lane or vehicles coming up behind the stopped vehicle.
- According to a 2014 study by Snyder & Assoc., 98% of cyclists did not stop when vehicles weren't present.

These boards propose three design solutions that need to be studied further to understand which solution is appropriate and discussed further with the Iowa DOT.

All three design improvements include another key design change that should be implemented regardless of which route is chosen for the trail crossing. The entry drive to the trailhead parking to the east is far too close to the trail crossing. This creates additional conflict and confusion at this location. The design team recommends putting further distance between that entry drive by shifting the drive further south.

This design, illustrated on this page, would be the most expensive option proposed in this plan, but would also be the safest because it removes potential conflict between vehicular and pedestrian/cyclist traffic. The underpass, as illustrated, would be partially below the existing grade of the trail. The Highway's grades would be adjusted to meet the top of the underpass, splitting the grade difference between the two routes. This improvement would require some construction easements, and potentially some land acquisition to allow for the grade changes.

Madrid

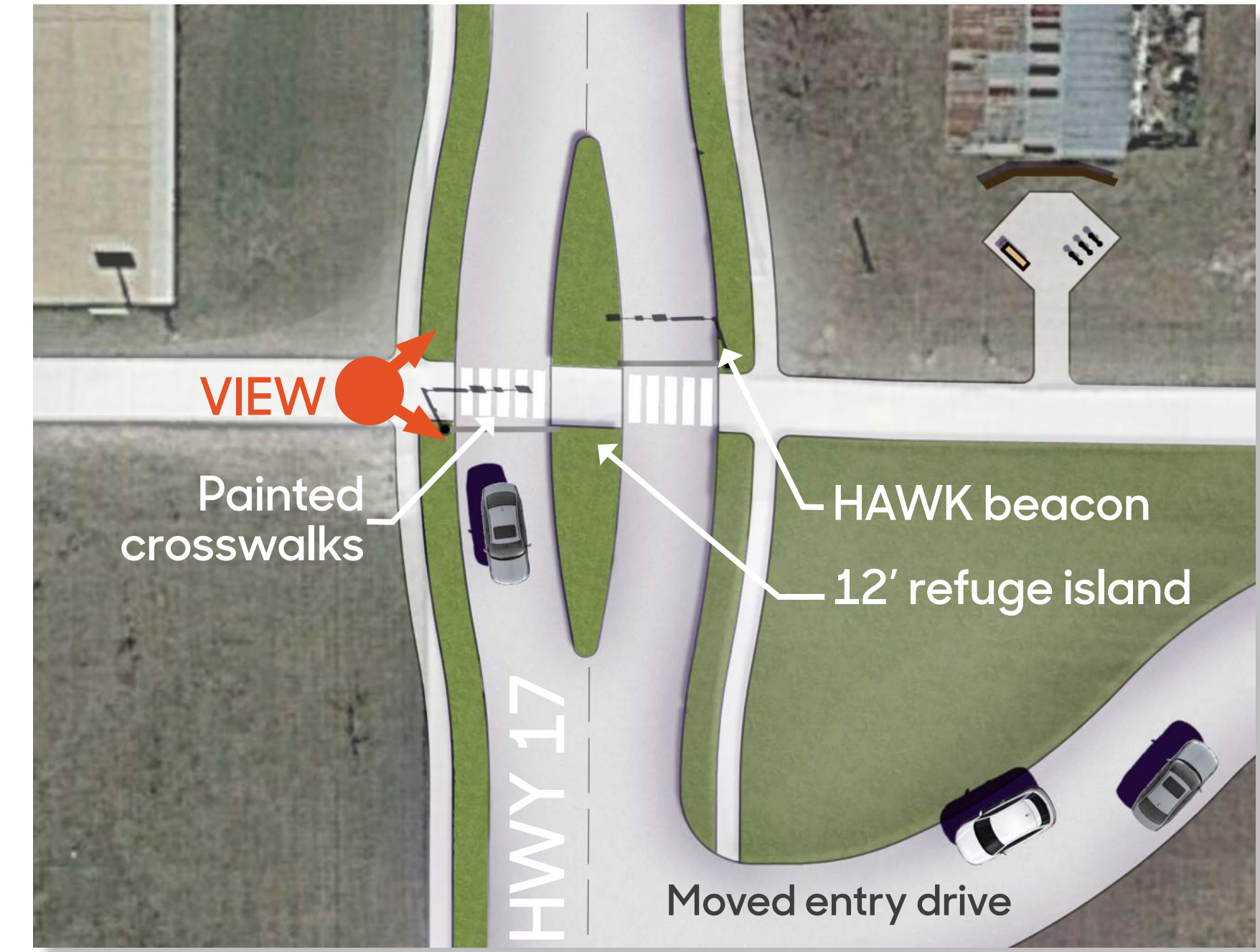
Highway 17 Underpass

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Plan view of proposed median at Highway 17



Highway 17 Median

This design, illustrated on this page, includes two of the three solutions. The first improvement is a 12-foot-wide refuge island in the middle of Highway 17. This improvement would allow a place of refuge in situations where a driver stops to wave through cyclists or pedestrians. The change in traffic pattern also works as a traffic-calming measure. This concept needs further study to ensure pedestrians and cyclists won't back up into the lanes of traffic from the median.

The second improvement shown is a High-Intensity Activated Crosswalk (HAWK) beacon. This beacon is the same style as the one located at West First Street and the High Trestle Trail in Ankeny. The beacon is pedestrian-activated and first warns traffic on Highway 17 that a "Stop" is coming shortly. Once traffic on the highway is stopped, pedestrians and cyclists will have a timed period to cross. Vehicular traffic is allowed to cross once the crosswalk has been cleared of traffic. The beacon can be programmed to have a specific reset period to ensure traffic along the highway does not become congested. Further study is needed to ensure both pedestrian and vehicular traffic hourly counts require this improvement.



Existing view of intersection looking east