

Thread the Needle: The Split Diamond Interchange

S.R. 0079, Section P10, I-79 Meadow Lands Interchange Project
Washington County, Pennsylvania

Category H: Transportation

Executive Summary

Avoiding impacts to Chartiers Creek, relocating 835 feet of a creek tributary, relocating a side road, avoiding an archaeological site, avoiding impact to a golf course, closing off an old mine pond to re-establish low flow back into the tributary, mitigating noise with a noise barrier, grouting mine voids, rehabilitating the bridge over Chartiers Creek, and closing a local road – the list of challenges for the I-79 Meadow Lands Interchange Improvements goes and on.

Originally designed in 1966, the partial-access I-79 Meadow Lands Interchange in Washington County, Pennsylvania, serves two communities, South Strabane and Chartiers Townships, which have grown by 15 percent, collectively, since 2000. Because of this population increase, along with commercial and industrial growth, the partial-access interchange no longer met the travel demands of the region, and needed improvements to provide better access to and from the interstate.

Located between Chartiers Creek and a large, steep hillside, the options for reconfiguring the 50-year-old interchange to full-access, while minimizing impacts, were limited. The project team arrived at an innovative decision, determining that a split diamond interchange configuration provided the best solution.

As part of the new, split diamond design, the existing half-diamond interchange ramps were reconstructed and new ramps and connector roadways were built. In addition, four new signalized interchanges were added.

In the end, the project provided full-access, simplified navigation, reduced through traffic, improved access to commercial and industrial facilities, and improved intersection operation, while conforming to the complex site and minimizing environmental impacts.