

FRA headquarters staff and field inspectors visited and evaluated this system at two locations: Rochelle, IL, and Warm Springs, CA. Following these evaluations, FRA made the following recommendations:

- Before camera assisted RCL operations are permitted at highway-rail grade crossings, a Crossing Diagnostic Team should evaluate the crossing. The Diagnostic Team should have representatives from the railroad, FRA, the State Department of Transportation (or another state agency having jurisdiction over the highway), and local government authorities. The Diagnostic Team should evaluate the suitability of each crossing for remote camera operations. They should consider factors such as average daily traffic counts; number of highway lanes; highway speed limits; number of railroad tracks; volume of school bus, transit bus, emergency vehicle, large truck and hazardous material traffic over the crossing; minimum RCL operator sight distances of roadway approaches to the crossing; and other relevant factors that could effect the safety of the crossing. The Diagnostic Team should also consider the appropriate number of cameras and appropriate camera angles needed to provide for the remote operation of RCLs' over the crossing.
- Remote cameras should only be used at crossings equipped with warning lights, gates, and constant warning and motion sensor devices.
- The cameras should be arranged so as to give the RCO a view of the rail approaches to the crossing from each direction to accurately judge the locomotive's proximity to the crossing.
- The cameras should be arranged so as to give the RCO a clear view of all highway approaches to determine the speed and driver behavior (e.g. speeding, driving erratically) regarding any approaching of motor vehicles.
- Either, the camera resolution should be sufficient to determine whether the flashing lights and gates are working as intended or the crossing should be equipped with a remote health monitoring system that is capable of notifying the RCO immediately if the flashing lights and gates are not working as intended.
- The railroad should notify local FRA offices when this type of protection has been installed and activated at a crossing to ensure that FRA grade crossing specialists and signal inspectors can monitor these operations.

We also suggested, that if a highway-rail crossing were equipped with supplemental safety devices that prevent motorists from driving around lowered gates, then perhaps some of the above recommendations may not be necessary to permit the safe remote operation of RCLs. However, a Diagnostic Team should make such determinations. FRA recognizes that camera assisted remote operation of RCLs may not be a viable alternative at all highway-rail grade crossings.