

**CLIENTS:**

Wyoming Department of Transportation (WYDOT)  
City of Cheyenne

**PROBLEM:**

Decreasing traffic efficiency and increasing safety risks threatened the Central/Yellowstone Road Intersection, a major artery in Cheyenne, Wyoming. With traffic counts of 30,000 per day and high accident and injury reports, a major redesign of this 1.1 mile thoroughfare was necessary to alleviate long traffic jams and ensure safety for motorists and pedestrians.

**RESOLUTION:**

The intersection redesign now has two lanes available from south bound Central Avenue onto Yellowstone Avenue, eliminating hazardous “weaving” of motorists from both the southbound and northbound legs of Central onto northbound Yellowstone Road. By including the design and construction of a fully lit pedestrian/bicycle underpass and a 10-foot wide walkway, BME vastly improved the safety of pedestrians and cyclists.



CHEYENNE, WYOMING

CENTRAL AVENUE

Challenges	Solutions
Site access was either prohibited by adjacent properties (Cheyenne Airport, Airport Golf Course and Lions Park/City of Cheyenne)  Because this intersection is the main artery to the airport and multiple public events, there was heavy traffic and limited detour options	Construction phasing was carefully planned (pre-design) to stage the entire project around rush hours and tourist events and precisely coordinated throughout project, ensuring limited motorist inconvenience and accommodating adjacent property restrictions. (The pedestrian walkway was designed to wrap around an existing tee box.)
Airport NAVAID safety requirements banned the use of metal in certain areas	Meticulous coordination of the FAA, airport officials and construction company was critical, plus the completion of this phase was accelerated. BME also designed a special wooden fence to withstand jet blasts and adhere to NAVAID requirements.
Drainage issues — flat roadway created ponding, and vertical adjustments were limited due to adjacent property restrictions	Storm sewer lines were installed underneath Central Avenue to direct run off into nearby lakes, and the storm system was enhanced.
Environmental considerations — BME anticipated future EPA regulations pertaining to storm sewer run-off into lakes with fish habitat, and the client mandated limited damage to and preservation of surrounding landscape	A Vortech filtrations system was added to the storm sewer system to screen out silt and other pollutants from lakes with fish habitat. BME also designed a landscaped median including 70 new trees.

**RESULTS SUMMARY:**

In addition to resolving the primary issue of motorist safety and traffic efficiency, BME also vastly improved the safety of pedestrians and cyclists, resulting in a highly functional, multi-use interchange that is also aesthetic and environmentally compliant. Due to unique circumstances of the location and client/end-user sensitivity, this project required more thoughtful planning and coordination than any other project designed by BenchMark Engineers.

In spite of the technical challenges of this four-phase, \$7.9M project, it was still completed in twelve months, and the final cost was within 2% of the original estimate of \$8.13M; nearly \$300,000 under budget.

