

Northfield Booster Station

Northfield, MN

The City of Northfield has constructed a new water supply booster station at the intersection of North and Cedar Avenues in the northwest corner of the City. The City of Northfield is growing at a rate exceeding previous projections as supported by the City's statements that the lower limits of 2020 growth expectations have already been met. The recent construction of a hospital in the northwest part of the city along North Avenue has placed increased demands on the system and the relative high elevation in this area of development has led to the occasional low water pressures during high-demand events. Progressive Consulting Engineers, Inc. completed a water model analysis and design report that recommended the construction of the booster station. PCE was then directed by the City to complete final plans and specifications. The project was bid in late spring of 2006. The bid was awarded to Magney Construction, the low bidder on the project.



The booster station includes one 50-gpm pump and three 375-gpm pumps (one being a spare). One pump is on all the time to maintain the discharge pressure. The 375-gpm pumps are equipped with variable frequency drives, which operate to maintain the desired pressure. The station is equipped with a pressure relief valve, which opens up if the pressure exceeds a set point bleeding the pressure to the suction side. Process piping and motor control center (MCC) controls have been designed and constructed to allow installation of a 1,050-gpm pump to meet future demands. The booster station constructed at this location will boost the pressure to the high-pressure zone (HPZ), thus ensuring adequate and consistent pressure to the medical campus. The booster station design incorporates a check valve so that during emergencies when the booster station is out of commission, water from the normal service area will enter the HPZ essentially providing the pressure, which presently exists. The booster station has been equipped with a permanent generator set to operate the station during a power loss. Booster station controls are incorporated into the City's existing SCADA system.



The booster station went on line in December 2006 on schedule and the clients have experienced uninterrupted service. Change orders for the construction of the booster station totaled less than 1% of the bid amount.

Client: City of Northfield
Client Contact: Doug Lien
Year Completed: 2006
Bid Amount: \$528,600.00
Construction Cost: \$532,950.00



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