

WHKS & CO.

ENGINEERS ■ PLANNERS ■ LAND SURVEYORS
Shaping the Horizon

October 2010

“Community on the March” Instrumental to Revitalization



Preliminary Illustrative Rendering of Federal Avenue in Mason City, Iowa (Image Courtesy of RDG Planning and Design)

Mason City, Iowa is often referred to as a “community on the march”. City officials and other members of this community have been “instrumental” in revitalization and development in the City, spurred by a \$9.0 million award from Vision Iowa for seven distinct projects. Mason City made a \$2.4 million commitment to fund streetscape improvements to the Federal Avenue and Plaza area, which was designed by the WHKS team. The improvements include a new street, parking areas, sidewalk, plaza, lighting, landscaping, street furniture and other amenities. Along with the streetscape, the City has committed \$1.3 million to making necessary infrastructure upgrades, including sanitary sewer mains and lateral lining, water main installation, and storm sewer improvements.

WHKS, in association with RDG Planning and Design and Waggoner and Wineinger Architects, worked with the City to develop a safe, functional, sustainable and visually dynamic design for the project area. The public was extensively involved through a committee comprised of local business owners, City staff, and local interest groups. Two design workshops held on site allowed public input into the design development.

WHKS documented and analyzed the city underground utilities. Utility replacements posed several challenges. The existing sanitary sewer main was installed in bedrock by hand tools over a hundred years ago. Because replacement would have caused unsafe working conditions for the contractor, without major rock excavation, it was decided that lining would provide a cost-effective alternative. The service laterals were also lined to minimize excavations. Supplying continuous water and fire protection to a commercial district also provided design challenges. The existing water main will be left in place while a new line is installed in a parallel trench.



Utility replacements posed challenges.

WHKS incorporated innovative and sustainable elements in the project design and construction. Synthetic turf was incorporated into the design for maintenance, snow removal and storm water management considerations. The synthetic turf, combined with permeable pavers, will allow water to infiltrate to a granular collection system under the plaza, alleviating the need for a conventional storm water retention system.

The project has an aggressive time schedule in order to meet Vision Iowa funding requirements and to significantly complete construction before winter. Coordination with other contractors working on building restorations in the vicinity of the project created unique design challenges for the WHKS/RDG team.

WHKS & Co. publishes this newsletter for our clients and friends. For more information about our company, please contact us:

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Funding Application Assistance for Midwest Communities

We know the financial challenges that municipalities often face when considering infrastructure improvements in their communities. WHKS has been successful in assisting many municipalities in Iowa and Minnesota in obtaining financial assistance through various funding sources, including Community Development Block Grants (CDBG), State Revolving Fund (SRF) low-interest loans, Minnesota Small Cities grants, USDA Rural Development grant/loan packages, and FEMA disaster-recovery related flood grants and hazard mitigation grants.

WHKS routinely assists communities in not only determining the feasibility of proposed infrastructure improvements, but also in identifying possible funding resources that may be available to complete the project, according to application eligibility requirements. Our municipal project managers have developed excellent working relationships with grant administrators and regional planning agencies in the Upper Midwest to assist in facilitating the grant application and project funding process. Grant applications are carefully selected to match the strengths of proposed infrastructure projects, resulting in a high success rate for obtaining funding for municipalities.



WHKS assisted the City of Edgewood, Iowa to obtain CDBG funding for Water Treatment Facility improvements.

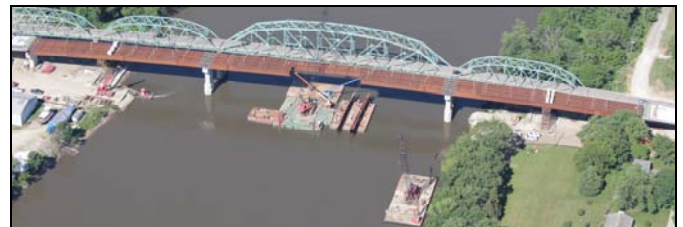
Upon successful completion of the funding application, WHKS can provide design and construction administration services for project improvements such as street reconstruction, well and water storage / distribution system improvements, sanitary sewer collection and treatment system improvements, and storm water management. In addition to these services, we also work closely with the grant administrators and funding agencies to provide the necessary technical assistance to administer the project's grant / loan funding package. For more information on how WHKS can assist your community, please contact one of our office locations.

Spanning the Illinois River

Contractor Edward Kraemer & Sons retained the structural engineering services of WHKS to analyze and prepare a steel erection procedure for the replacement bridge carrying IL Route 170 over the Illinois River at Seneca. The main unit of the replacement bridge crossing the river consisted of welded steel plate girders approximately 9 feet tall with three spans of 282 feet, 370 feet, and 282 feet in length.

Coast Guard requirements for the project prohibited the placement of any temporary shoring towers in the river within the limits of the center span. WHKS worked to devise an erection procedure for the steel framing that allowed portions at each end of the structure to be separately assembled, followed by the erection of a "gate girder segment" near the middle of the center span that spliced each end of the structure together.

WHKS sequentially analyzed the various stages of the erection procedure using the structural analysis program LARSA-4D to monitor changes in deformations and stresses in the girders and cross frames as the steel framing was being assembled. The sequential analysis allowed WHKS to identify steps in the erection procedure that required the use of temporary lateral bracing for the structural steel framing to ensure girder stability, thereby allowing the Contractor to successfully complete the steel erection procedure.



Aerial view of gate girder segments being erected to join the north and south ends of the proposed structure being constructed adjacent to the existing truss bridges.

Chad E. Hodel, P.E., S.E., WHKS Structural Engineer, was a speaker this fall at the 2010 Bridge Seminar that was jointly sponsored by the Illinois DOT and the American Council of Engineering Companies. He presented the analysis procedure used in developing the erection procedure and discussed the challenges with assembling long span steel bridges.

WHKS Develops Strategic Plan

The WHKS Board of Directors and Associates participated in a series of Strategic Planning work sessions to determine future growth strategies and shape the future of the firm. The Strategic Plan revolves around the identification and establishment of the firm's mission, vision, and goals. Specific goals and visions were established for information technology, human resources, project management, operations, and marketing and business development.

During the work sessions, many topics, goals and objectives were discussed and formulated into a five-year action plan. The Board of Directors is currently finalizing the plan and is excited to begin implementation of the objectives that will shape the horizon of WHKS for both current and future clients and employees.

WHKS Providing Phase I and II Engineering Services to the Illinois Department of Transportation District Two



Existing IL 84 Bridge in Hanover, Illinois

WHKS is providing Phase II structural and roadway engineering services to the Illinois Department of Transportation to remove and replace the decks on six (6) bridges to the maximum width allowable using the existing superstructure. The bridges are located along US 20, from East Dubuque to just northwest of Galena.

In addition, WHKS is providing engineering services to the Department to replace the existing IL 84 bridge over the Apple River in Hanover, Illinois. The Phase I study will include tasks such as alternative geometric analysis, accident analysis, intersection design studies, Location Drainage Study, bridge inspections, public involvement, a Structure Geotechnical Report, TS&L drawings, and a Project Report. Phase II of the project will include the preparation of final roadway, drainage and bridge drawings.

Improvements at the Dubuque Regional Airport

WHKS is a part of a multi-discipline consulting team that is providing professional services for the construction of a new airport terminal and related improvements at the Dubuque Regional Airport in Dubuque, Iowa.

WHKS is providing survey and engineering services for the design and layout of an airport entrance road and intersection with US Highway 61, including turn lane design and intersection geometry improvements. The project also includes related site design improvements. The project is being designed according to Iowa Department of Transportation design guidelines and polices.

In addition to the roadway improvements, WHKS is responsible for the water and wastewater improvements at the site, preparing erosion control plans, and survey.

Design and survey services are underway. The project is expected to be constructed in phases, beginning in 2011.

What's Happening at WHKS

Representative projects currently underway:

Mason City, Iowa

South Monroe Avenue Street, Storm Sewer and
Intersection Improvements

Client: City of Mason City, Iowa

Concept and Design for Repairs to Bridge 0-133 on 320th Street over
Little Cedar River

Client: Mitchell County, Iowa

Ames, Iowa

ALTA/ACSM Land Title Survey
Client: Cardinal Capital Management

Bridge Replacement of Grant 162110 on County Road E53 over
Buttrick Creek

Client: Greene County, Iowa

Dubuque, Iowa / East Dubuque, Illinois

Gear Street Reconstruction
Client: City of Galena, Illinois

Facility Plan for Wastewater Treatment
Facility Improvements

Client: City of Holy Cross, Iowa

Rochester, Minnesota

Street Improvement Projects
Client: City of Plainview, Minnesota

Wastewater Treatment Facility Improvements
Design & Construction Phase Services

Client: City of Algona, Iowa

Springfield, Illinois

County Highway 4 Bridge Replacement
Client: Sangamon County Highway Department

Structural Design for Taco Bell Restaurant
Client: JH Petty & Associates

For additional information on any WHKS projects, please contact our offices.

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