



*An aerial image of the current Water Reclamation Facility in Mason City, Iowa.*

## **Mason City, Iowa Water Reclamation Facility Improvements**

The City of Mason City, Iowa has experienced significant growth in recent years, not only in population growth but also industrial growth. Major food production industries such as Kraft, Curries, and Sunny Fresh Foods are located in Mason City, all contributing a large amount of organics to the wastewater system. Mason City is taking the proactive approach of expanding the treatment facility in order to replace aging equipment, meet new state-regulated water quality standards, and have adequate capacity for both population growth and accommodating additional food production industries in town.

WHKS was hired by the City of Mason City to evaluate the existing wastewater treatment facility and determine what improvements would be needed to add capacity for future growth, as well as continuing to meet effluent standards as regulated by the Iowa Department of Natural Resources. The proposed improvements include a new intermediate clarifier and primary digester, larger sewage lift pumps, upgrades to the existing sludge thickening facilities, and a new ultraviolet radiation system for disinfection of the treated wastewater prior to being discharged to the Winnebago River. In addition, several buildings at the treatment facility would be expanded to accommodate the additional equipment. The Administration Building will also be renovated.

WHKS completed the design of the facility expansion and construction began this summer. The project is expected to be completed in September 2009. The City of Mason City is funding the project primarily through a loan from the Iowa Finance Authority's State Revolving Fund.

## WHKS Assists with Industrial Area Re-Development in Dubuque

WHKS is assisting US 151/61 Development LLC with the site design for re-development of a 40-acre former meat packing property on 16th Street in Dubuque, Iowa. The property had been vacated for nearly four years until the developers purchased the property in 2004 and began making plans for a commercial development. WHKS completed the Traffic Impact Study in 2005, which estimated the impact of traffic that would be generated by the proposed development at 9 existing intersections and 2 new intersections that would serve the new development.

In early 2008, WHKS was hired to provide site design and plan development for the utility and street improvements for the site. The site design follows the recommendations of City of Dubuque Ordinance 22-05 and the Traffic Impact Study conducted by WHKS. The work includes the topographic survey, design, final plans and bid documents and construction services. The project will include the design of right and left hand turn lanes and design and reconfiguration of Sycamore Street. The project also includes the design for two signalized intersections and modifications to the signals at 16th Street and Kerper Boulevard and 16th Street and Elm Street intersections.

"The redevelopment of the former Dubuque Pack site is strategically located along the Highway 151/61 corridor and serves as a critical component in the revitalization of Dubuque's downtown, warehouse district and riverfront," said Dubuque Mayor Roy D. Buol. "Historically, the site served as an employment center for that part of town and, in fact, the community. It is my hope that the transformation of this former industrial site into a commercial development will again make the site a core part of the neighborhood, providing liveable wages for Dubuque families. This project will serve as an example for other cities of an adaptable and sustainable reuse of a former industrial site."

The project requires extensive coordination with the developers, the City of Dubuque and the utility companies. This initial phase of the project is expected to be complete late Fall of 2008.



*The first phase of the site work is underway.*

## Intersection Improvements to IA 58

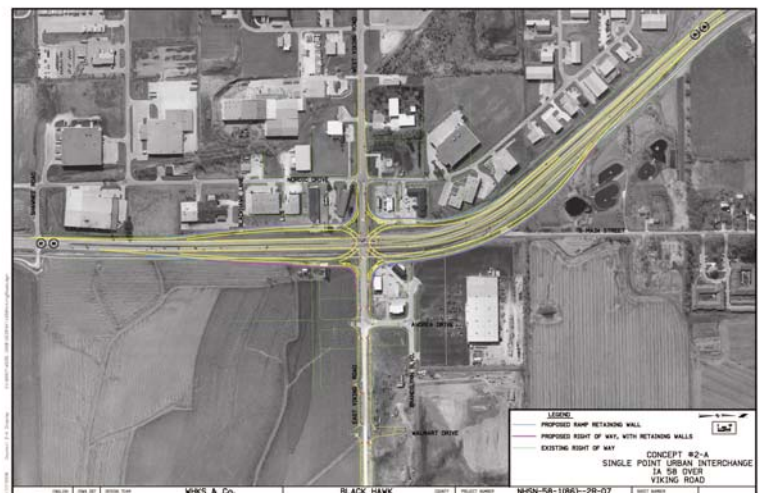
Due to the continued growth of the Cedar Falls Industrial Park and housing and retail developments in the area, the intersection of IA Hwy 58 and Viking Road in Cedar Falls, Iowa has experienced a significant increase in traffic. WHKS was retained by the Iowa Department of Transportation (Iowa DOT) District 2 to look into concepts for reconstruction of the intersection to improve traffic flow and safety at this location.

WHKS provided long-range and short-range planning level concept developments for possible intersection improvements. Improvements ranged from adding or lengthening turn lanes to providing complete access control on IA 58 utilizing a tight diamond interchange or a single point urban interchange.

The engineering services provided by WHKS for the project included correlating the metropolitan area traffic model with past site traffic impact studies to project future traffic volumes, determining the preferred typical sections, alignments, geometric configurations, approximate right of way needs and project costs.

Another facet of the project was to provide concept alignments that will improve traffic flow along IA Highway 58, the Cedar Falls Industrial Park, and surrounding developments from Greenhill Road to U.S. Hwy. 20. The analysis was a planning level effort providing approximate geometric configurations and project costs.

An engineering report will be prepared and submitted to the Iowa DOT and the City of Cedar Falls that will summarize the concepts, approximate right of way needs and project costs. WHKS will also brief the Iowa DOT and City of Cedar Falls staff on the findings of the study.



*Concept 2-A, Single Point Urban Interchange at IA 58 and Viking Road in Cedar Falls, Iowa.*

## WHKS Providing Structural Engineering Services for Building Construction in Ames, Iowa

WHKS is providing structural engineering services to Story Construction Company/Story Design Ltd. for two buildings in the Ames, Iowa area.

The first project consists of a \$6.1 million, 36,000-s.f. addition to the Sauer-Danfoss manufacturing facility. The two-story office expansion is framed with structural steel and precast concrete exterior walls. The new building features large open office space, a cafeteria and kitchen, and two unique glass-enclosed stairwells. It was also designed to accommodate possible further expansion in the future. Some challenging aspects of the project design



*Glass stairwell at the Sauer-Danfoss facility.*

included utilization of several unique footings, including drilled shafts, where the proximity of the existing building footings precluded the use of typical spread footings. The project was also on an extremely fast-tracked schedule, with the entire design and plan development process completed in less than 3 weeks. WHKS provided complete design, plan development, and ongoing construction engineering support for the project.

WHKS also provided structural engineering services for the construction of a large 140,000-s.f. new manufacturing facility for Colorbiotics, a division of Becker-Underwood Co. The \$11.5 million pre-engineered building development includes an office area and a large manufacturing area. WHKS provided the foundation design as well as all other structural items not designed by the pre-engineered supplier. One of the unique items included a 9-ft. deep, 2700-s.f. equipment pit designed for dead, live, soil, and hydrostatic loading and analyzed using 3-D computer modeling. The pit also included steel framing and grating to support pedestrian traffic over the pit. Other unique aspects designed by WHKS included structural masonry walls, a 550-ft long foundation/dock wall, a steel mezzanine structure, and a steel canopy accenting the main building entrance. WHKS also provided ongoing construction engineering support and design as aspects were added or changed.

Check out our newly re-designed website:  
[www.whks.com](http://www.whks.com)

## WHKS & Co. Bridge Inspection Program

WHKS & Co. has inspected and rated county and city bridges in Iowa since 1973. The firm is currently responsible for inspecting approximately 1,100 bridges in Cerro Gordo, Greene, Mitchell, Story, Worth, and Winnebago counties, as well of the cities of Ames, Clear Lake, Decorah, Mason City, Waverly and the smaller communities in each of the counties. Every bridge longer than 20 feet must be inspected at least every 24 months and the Structural Inventory and Appraisal forms, stored in a database at the Iowa Department of Transportation (Iowa DOT), must be updated as part of the inspection project. Each client is provided a report that summarizes the condition of each bridge and provides recommendations for maintenance, if necessary.

The Federal Highway Administration (FHWA) and Iowa DOT require the National Bridge Inspection Standards (NBIS) be followed. The NBIS recently underwent major changes and Iowa DOT has required all cities and counties to adopt the changes in order to continue to be eligible for state and federal funding of bridge repair and replacement projects. As part of the changes, WHKS is required to have the company's Program Manager, or a qualified Team Leader, at the bridge site at all times during the inspection. The Program Manager must, at a minimum, be a registered engineer with ten years of bridge inspection experience and FHWA-approved training. The Team Leader must have five years of bridge inspection experience and completed a two week FHWA-approved training course.

The goal of the bridge inspection program is to insure the safety of the traveling public by inspecting, evaluating, and properly documenting the results for every bridge. For more information on county and city bridge inspection, please contact a WHKS office.



*Kevin Boehmer, a WHKS NBIS-Certified Inspector, performs a bridge inspection.*

# What's Happening at WHKS

## **Representative projects currently underway:**

### **Mason City, Iowa**

Construction Administration for 19<sup>th</sup> Street SW Overpass

*Client: City of Mason City, Iowa*

Construction Observation and Coatings-Related Construction Support Services for Bridge Painting Projects in Iowa

*Client: Iowa Department of Transportation*

### **Ames, Iowa**

2008 Bridge Inspections

*Client: Greene County, Iowa*

Traffic Signal Replacement for Grand Avenue and 13<sup>th</sup> Street Intersection Improvements

*Client: City of Ames, Iowa*

### **Dubuque, Iowa/East Dubuque, Illinois**

Site Design for New Walgreens Development in Dubuque

*Client: Simonson Architects*

Intersection Improvement and Bridge Replacement over Kickapoo River near West Peoria, Illinois

*Client: Illinois Department of Transportation, Region 3, District 4*

### **Rochester, Minnesota**

Warren Ave. Street Reconstruction

*Client: City of Zumbrota, Minnesota*

Final Design for 1st Avenue NE 60" Relief Sewer

*Client: City of Rochester, Minnesota*

### **Springfield, Illinois**

Plans for the Reconstruction of Illinois Route 61 over the LaMoine River

*Client: Illinois Department of Transportation, Region 3, District 4*

Bridge Replacement and Grade Raise Plans for TR 36 over Macoupin Creek

*Client: Montgomery County Highway Department*

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



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