

Firm: Commonwealth Engineers

Project: City of Decatur Biosolids Facilities

Owner: City of Decatur

The City of Decatur was operating antiquated Anaerobic Digestion facilities constructed in the 1950s. In 2007, Commonwealth Engineers, Inc. completed a planning report which identified cost effective options to implement state of the art technologies to update the Wastewater Treatment and Biosolids treatment facilities. As a result of this study, Commonwealth Engineers designed modifications to the existing Biosolids treatment structures to incorporate a new Class A Biosolids treatment process. The design scope required blending dewatered Class A Biosolids with the existing city compost material from yard wastes thereby eliminating disposal of the Biosolids to local landfills. The four key issues addressed in the design were: utilized the existing tank structures to minimize construction costs; provided process automation to minimize both operator requirements and energy usage; provided nitrification/denitrification treatment of the thermally treated Class A Biosolids to reduce ammonia recycle to secondary treatment; and provided new storage structure for the final product.

Firm: Janssen & Spaans Engineering

Project: Columbus Roundabout Traffic Study & Design

Owner: City of Columbus, Mayor Fred L. Armstrong, Steven T. Ruble, P.E., City Engineer

In order to create space for a new Senior Citizens Center in the downtown area, the City of Columbus considered realigning a segment of 8th Street to create the needed building space. Realigning 8th Street would redirect traffic entering the downtown area to pass through the existing signalized intersection at Brown Street, Lindsey Street, and 11th Street. Re-design of this congested, complex intersection presented many unique planning, design and construction challenges. Instead of a complicated, multi-phase signalized intersection, Janssen and Spaans Engineering and Traffic Engineering Inc. proposed a non-standard roundabout design. The roundabout design addressed many roadway geometric, railroad preemption and intersection operational issues. The roundabout has become a distinct entryway into Columbus' downtown.

Firm: Greeley and Hansen

Project: Filter Upgrades at Gene Gustin Way Water Pollution Control Plant

Owner: City of Anderson

Treatment capacity of the Gene Gustin Way Water Pollution Control Plant in Anderson, Indiana, will be more than doubled as a result of the innovative, cost-effective filter upgrades designed by Greeley and Hansen. By replacing the filter media, installing a new simultaneous air and water filter backwash system, and repairing cracks within the effluent filters, the 30-year-old plant's capacity was increased from 21 million gallons per day (mgd) to 54 mgd in a cost-effective and sustainable way. Upgrades have improved treatment reliability, contributed to improved water quality in the White River, and afforded operators a safer working environment.

Firm: Applied Engineering Services

Project: Indiana University Bloomington Campus Master Plan

Owner: Indiana University

Applied worked in conjunction with JJR, LLC, architects and planners, to provide professional engineering services for the preparation of a Campus Master Plan for Indiana University's Bloomington Campus. The Applied team provided engineering analysis of the utilities systems. The purpose was to develop and document a recommended campus master plan for specific time periods over the next 20 years. The master plan projects an overall build-out increase of approximately 4.2 million square feet.

Utilities included in the Master Plan were steam and condensate, chilled water, electrical power, and telecommunications. The Applied team worked closely with the architects, planners, utilities service providers, and University facilities engineers to identify and quantify the extent and configuration of upgrades and modifications for each utility system.

Firm: Wessler Engineering

Project: Lake Sullivan Outfall Structure Rehabilitation Project

Owner: City of Indianapolis Department of Public Works

The Lake Sullivan Outfall Structure manages flows from a 20-square-mile watershed. It suffered from substantial structural deterioration that caused Flooding of the Lake Sullivan Sports Complex and sedimentation of Lake Sullivan. The Project consisted of: new concrete headwalls over existing headwalls; outfall pipe repair; new flap gates/slucce gate; trash racks installation; hand railing, walkways, and concrete stairway construction. This innovative project completely rehabilitated the structure without taking it (or the roadway above it) out of service. The project restored the outfall structure and Lake Sullivan at a substantially lower cost than complete replacement. Today, the structure and the lake are safe and usable.

Firm: RW Armstrong

Project: Little Calumet River Watershed Management Plan

Owner: City of Gary

The Gary Storm Water Management District (GSWMD) sponsored a watershed management plan for the Little Calumet River that reached across political boundaries and approached the plan on a watershed basis. RW Armstrong was selected by the steering committee to guide the development of the plan and assist with the data gathering and plan production. This watershed management plan was developed over the course of 15 months and seeks to reduce bacteria, sediment, and nutrient loads to the Little Calumet River and to restore and protect existing natural areas. Critical areas were identified within the watershed where efforts will be focused to have the greatest impact on water quality.

Firm: Infrastructure Engineering, Inc.

Project: MSDLT Athletic Fields Improvements at Lawrence North and Lawrence Central High Schools

Owner: Metropolitan School District of Lawrence Township

Infrastructure Engineering, Inc. (IEI) was selected by School Board for the design and construction administration of the replacement of the existing natural turf fields with synthetic turf for Lawrence North and Lawrence Central High Schools. The schools desire was to increase the aesthetics of the fields in conjunction with a lower cost of maintenance resulting in selection of synthetic turf as the most feasible option. The school required the fields to be completed prior to the season kick-off game day for each of the schools which allowed less than two months to complete design and approval process with two separate municipalities. IEI proposed an aggressive schedule for design and construction requiring mobilization of extra resources by the contractor at both fields simultaneously. The project was completed within schedule and budget.

Firm: GRW Engineers, Inc.

Project: Phase III & IIIB Wastewater Collection and Treatment Project

Owner: Twin Lakes Regional Sewer District

GRW was selected by TLRSD to provide professional engineering services for a project to provide new low pressure sewer service to more than 1,800 customers located within of two counties covering over a 7-square-mile service area. GRW was also responsible for designing and developing a new wastewater treatment facility and 5 new regional booster pump stations for the project. As part of the collection system design, GRW developed a customer questionnaire and billing database for TLRSD and laid out more than 66 miles of low pressure sewers connected to over 1,300 individual or shared grinder pump units. The \$23.6 million project was delivered 10 percent under budget allowing a \$1,500 reduction in the service connection fee to each household.

Firm: Beam, Longest & Neff

Project: Realignment and Resurfacing of Willow Road and Multiuse Pathway

Owner: Zionsville Town Council

A new precast 3-sided structure that has a 24' span and 8' rise was constructed to carry Willow Road over Cross Branch Ditch. Due to the road relocation, approximately 445 feet of Cross Branch Ditch was realigned. The pathway connected the existing Town sidewalk system on the southern limits of the project, to a previously constructed multiuse pathway at Templin Road. A pedestrian bridge consisting of a prefabricated steel pony truss bridge consisting of three spans at 58' with a clear pathway width of 12' was required to cross Eagle Creek. The structure was constructed adjacent to the existing Willow Road vehicular bridge over Eagle Creek. The final phase of the project consisted of the milling and resurfacing of Willow Road from U.S. 421 to Elm Court.

Firm: Beam, Longest & Neff

Project: Reconstruction and Realignment of 106th Street

Owner: Town of Zionsville

Beam Longest & Neff focused on improving the local mobility along 106th street within the project corridor. This was accomplished by providing an improved route for accessing U.S. 421 from the town of Zionsville and improving the poor existing geometrics of the existing 106th Street alignment to accommodate heavy truck traffic. The new alignment corrected the various horizontal curves along the existing section of 106th Street, including two 90-degree turns, thereby providing an improved route between Zionsville and U.S. 421. The new alignment is also a component of the town of Zionsville's Redevelopment Commission Economic Development Plan.

Firm: Butler, Fairman and Seufert

Project: Rehabilitate Runway 9-27

Owner: City of Elkhart Board of Aviation Commissioners

The runway, which is 6500' by 120' with 8' paved shoulders (884,000 SF), was reopened, with a new 10" concrete surface, after a remarkable 48 days of runway closure. The accelerated schedule was accomplished by utilizing an innovative design approach of a concrete overlay placed on an engineered variable depth milled surface.

The engineered variable depth milled surface saved both time and money in the construction process as well as with the FAA Approach Procedures office. The highly accurate engineered variable depth mill allowed the longitudinal and transverse grade to be corrected with no wedge and level, while preserving a solid construction platform for the contractor to work from. Typically, a concrete overlay of greater than 6" would have resulted in an 18-month process, in which the FAA requires new aircraft approach procedures to the runway be written. The engineered variable depth mill allowed the project to hit critical elevations at the runway thresholds and touchdown zones, thus not requiring the FAA to write new approach procedures to the runway.

Firm: Burgess & Niple

Project: Replacement of the Bridge Carrying Lafayette Road over Eagle Creek

Owner: City of Indianapolis, Department of Public Works

The Lafayette Road over Eagle Creek Bridge Project replaced an existing three-span closed spandrel concrete arch bridge. During inspection, it was determined the level of deterioration was well beyond the extent of a typical rehabilitation. The project scope was revised to replace the bridge with a new 65' wide and 232 feet long structure to meet modern safety standards including wider lanes and shoulders.

The new bridge was constructed entirely within existing Right-of-Way; eliminating the costs and delay of land acquisition, relocation of the overhead electric transmission lines, and mitigation of the adjacent wetlands and park. In addition, this bridge was built with decorative railing to enhance the sense of community and was 20 percent under estimate saving the City \$500,000.

Firm: DURHAM Engineering, Inc.

Project: Transportation Evaluation for the City of Elwood

Owner: City of Elwood

Prior to 2005, the City of Elwood's existing transportation infrastructure had not been maintained and the local streets were deteriorating. Most of the streets are asphalt over existing bricks streets with limestone curbs built in the early part of the 20th century. After numerous years of faithful service, the streets had deteriorated significantly. DURHAM Engineering, Inc. came up with a unique and cost effective way to establish a paving program with a durable, efficient, cost savings design that made the transportation infrastructure an asset for generations to come.

The annual paving program has exceeded the City of Elwood's expectations. Not only does it meet their potential needs, but has provided a functional paving program for years to come. The paving program over the past four years has brought complements from local residents and businesses and has been recognized by outside businesses wishing to relocate within the City of Elwood.

Firm: Biagi, Chance, Cummins, London, Titzer, Inc.

Project: University of Southern Indiana Parking Lot Expansions

Owner: University of Southern Indiana

The continued expansion of the University of Southern Indiana campus required additional parking lots to be constructed prior to the fall 2009 school session. The storm water management system chosen for Parking Lot E was pervious concrete pavement with under slab retention/infiltration and detention storage in a gravel base. In the Valley Parking Lot expansion, where a practice soccer field had been constructed, the natural beauty and slope of the area was re-established through a terraced parking lot with plantings, underground storm water retention/infiltration and detention systems were provided within the median areas. The parking lot development accomplished the goals set out for this project, including the functional, aesthetic, and most importantly, effective storm water quality management. The site adaptive components and innovative engineering features applied enhance the campus, offers a civil engineer educational tool on campus for the School of Engineering and its graduates moving forward, and provides environmentally conscious engineering applications for future campus development.

Firm: Beam, Longest & Neff

Project: Walnut Street over the Jordan River Bridge Reconstruction

Owner: Monroe County

This project included the design for the replacement of the existing Monroe County Bridges 902 and 917, the antiquated tunnel system and a portion of the tunnel adjacent to Walnut Street with a new precast concrete three-sided structure carrying 1st Street and Walnut Street over the Jordan River. This project presented many challenges from the traffic volume, maintenance of traffic, utility relocation and construction phasing. Through strong communication between BLN, Monroe County, the City of Bloomington and the City of Bloomington Utilities, the project was completed on schedule and on budget.