CHRIS GALE, PE
Project Manager

Chris is a project manager with experience working on a wide variety of environmental projects. He has more than 12 years of experience in project design, management and construction for both municipal and private clients. Project experience includes water and wastewater treatment and distribution and collection systems for both new and rehabbed systems. Prior to joining HNTB, Chris worked for the Indiana Department of Environmental Management (IDEM) as a permit review engineer for the Office of Water Management. His project experience includes:

SR 62 at Fulton Avenue Water Main, Evansville, IN (2007-2008) – Project manager for design engineering, easement preparation, bid assistance, construction engineering and resident representative services for replacement of a 24-inch water main in the water distribution system.

Kratzville Road Water Main, Evansville, IN (Nov. 2007-present) (#46769) - Project manager for design of improvements to the Kratzville Road water main. In the fall of 2006, HNTB was asked by the Evansville Water and Sewer Utility in Indiana to conduct water modeling evaluations to develop alternatives to better serve one of their largest industrial users. The industry, along with many residential customers, experienced low pressure problems and in some cases water quality problems. A variety of system deficiencies were identified as a result of the modeling efforts. Numerous alternatives were developed and presented to the Utility to improve conditions. The Utility reviewed the alternatives and has now contracted with HNTB to design approximately 20,000 feet of 12-inch water main improvements to enhance service to industrial users and hundreds of residents. Scope included survey, design and preparation of easements.

Mooresville Wastewater Treatment Plant Improvements, Mooresville, IN (Nov. 2007-present) – Project manager for improvements to the Town of Mooresville's wastewater treatment plant. HNTB has designed the improvements for every project at the WWTP since 1970. The most recent project is phase three of four, identified in a Facility Plan developed by HNTB in 2003, which includes the modification of the treatment system to add ultraviolet disinfection and rehabilitation of the existing 35-year-old clarifiers. The switch to UV from chlorine gas will improve safety at and near the plant, and reduce overall operating costs.

Evansville Pigeon Creek Water Main Design, Evansville, IN (Jan.-Aug. 2008) (#47134) – Project manager for design, easement preparation and bidding for a 36-inch water main crossing Pigeon Creek in Evansville.

CHRIS GALE, PE

Firm
HNTB Corporation

Education
BS, Civil Engineering, 1995, Purdue University

Professional Registrations
Professional Engineer: IN, 2000 (#10001138)

Professional Affiliations
American Water Works Association, Member, Engineering Computer Applications Committee
Indiana Water Pollution Control Association
Water Environment Federation
National AWWA Water Supply and Distribution Facilities Committee

Hire Date with HNTB
September 1996

Years of Experience with other Firms
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Honda Infrastructure Improvements, Greensburg, IN (2008) (#44236) – Engineer responsible for modeling for this project in which HNTB is serving as the City of Greensburg's engineer and planner of choice. HNTB helped the city to identify infrastructure costs for the new plant, to expand a tax increment financing district to fund improvements, to negotiate with Honda and ultimately to bring the newest U.S. assembly plant for the American Honda Motor Co., Inc. to Greensburg. HNTB personnel met with the mayor and city council members prior to negotiations with Honda and the state and attended the negotiation meetings. HNTB will work on the water and wastewater projects associated with the assembly plant. The plant is expected to generate more than 2,000 jobs in the region and presents positive growth opportunities for the City of Greensburg and the state of Indiana.

Westside Interceptor Sewer, Westfield, IN (Mar. 2002–present) (#36753) Project manager during the planning, design, permitting and construction of approximately 25,000 feet of 48- to 60-inch interceptor sewer on the west side of the Town of Westfield. Preliminary design was first completed to allow for adequate time for educating property owners of the project and acquiring the necessary easements. The project was identified through the development of the Town's sewer master plan to meet the demands of residential and commercial development in this growing community. Recently, the town was located in the tenth fastest growing county in the country. Construction began in July 2007 and is anticipated to be complete January 2009.

Evansville Water Treatment Plant Improvements – Division I – Roof and Masonry, Evansville, IN (Sept.2005–Apr. 2007) (#42862) - Project manager for the design and construction of improvements to the roofing and masonry of the buildings within the treatment plant campus. Portions of the plant were originally constructed in 1886 with improvements being made almost each decade since. Original deteriorated slate roofing was replaced with an environmentally-friendly synthetic slate. The synthetic slate allowed the project to be completed more quickly, at a reduced cost while maintaining the look and integrity of the building. The project was completed to bring the buildings back to their original look while making necessary improvements and repairs.

Evansville Water Treatment Plant Improvements – Division II – Process Improvements, Evansville, IN (Sept. 2005–present) (#42862) - Project manager for the planning, design and construction of process related improvements at the Evansville water treatment plant. The project includes increasing chemical storage and feed equipment, replacement of 136 filter valves and actuators, ranging from 6- to 48-inch, and improvements to chemical feed application points and piping throughout the plant. Coordination of filter shutdowns and construction sequencing was critical to minimize the impact to providing and adequate water supply to the community. The project is currently under construction and should be complete by early 2008.

Washington Woods Lift Station and Sewer, Westfield, IN (Mar. 2002–present) (#36753) - Project manager during the planning, design and construction of approximately 9,000 feet of 10- and 16-inch force mains, 5,000 feet of 12-inch gravity sewer and a 1.25 MGD lift station. The project was designed to allow for expansion to serve the majority of the east side of the Town. The list station is expandable to 14 MGD and will become a regional lift station for the town as development continues in the area. The force main was installed with open cut construction, as well as directional drilling in paved areas to minimize impact to newly paved roads.

Evansville Water Master Plan, Evansville, IN (-Dec. 2007) – Project manager for this project, which includes work on two major deliverables, the water master plan update and the CIP geodatabase. HNTB is updating the water master plan and completing an initial distribution system analysis for the city of Evansville, IN. This update will develop a comprehensive 10-year capital improvements plan (CIP) that will address the continued growth of the Evansville drinking water system while simultaneously balancing regulatory priorities and system rehabilitation needs. HNTB will also deliver the CIP geodatabase, which will be developed and maintained as a layer in the city's geographic information system (GIS). (HNTB previously completed the last water master plan update in 1999.)

Updating the water master plan will include identifying progress made since the 1999 water and sewer master plan and 10-year capital plan; identifying existing and future system growth demands, upcoming regulatory requirements, system deficiencies, and management, operations and maintenance initiatives; identifying proposed projects from the 1999 master plan and the 2004 water treatment plant pilot study and creating new

projects that will address growth demands, system deficiencies and initiatives; prioritizing and categorizing system needs and associated projects; developing and analyzing program and project alternatives; creating the capital improvements plan and associated geodatabase; creating GIS layers depicting the water infrastructure for the entire distribution system through a combination of digitizing both digital orthophotos and hard-copy quarter-section maps and converting data from CAD to GIS format; documenting the planning and evaluation activities of the update.

Maple Knoll Elevated Storage Tank, Westfield, IN (Mar.-May 2005) (#41975) – Project manager for the design of a 1.5-MG elevated composite storage tank. The tank was identified as part of the Town's master planning to provide additional storage to one of the most rapidly growing areas within the state. The tank will initially operate within a lower pressure zone until additional development extends water mains to connect the tank to a higher pressure zone.

WWTP Headworks and Sludge Handling Improvements, Mooresville, IN (Nov. 2004–Aug. 2006) (#32411) – Project manager for the design and construction of a new headworks facility and sludge handling building. The new headworks facility includes upsizing the influent flow capacity and the addition of a mechanical fine screen and aerated grit tank. Rotary drum thickeners were provided to reduce the sludge production of the plant to reduce hauling requirements and to prepare for future expansion of the plant. The project was identified in a Facility Plan that was developed to meet future demands and to address sludge removal needs identified in and Agreed Order issued by IDEM.

General Engineering Services, Westfield, IN (Jan. 1997-present) (#38713) [previous job #15277] – Environmental engineer for this general engineering services project for the Town of Westfield, Indiana. HNTB has served as Westfield's town engineer since the 1980s. Engineering services include supporting the Department of Public Works by providing planning, design and construction engineering and operating consulting services on projects of limited scope as requested by public works personnel. The areas of service include: waste and drinking water treatment, stormwater, water mains and sewers, traffic/streets, standards development and developer reviews. Chris is responsible for water and sewer line services.

Evansville Water Treatment Plant Pilot Test, IN (Apr. 2003-Feb. 2004) (#30137) – Project manager for the analysis and testing of a combined conventional and membrane pilot testing program, which accurately replicates a reduced-scale version of the existing and proposed treatment plant processes. The goal of the study was to verify and recommend a number of water treatment processes that were well-suited to maintain the specific finished water quality and hydraulic capacity up to and beyond the 10-year planning period specified in the 2000 Master Plan. The conventional treatment and membrane filter pilot testing program also investigated the ability to meet current and upcoming water quality and regulatory issues.

Acid Storage Handling Review, Knauf Fiberglass, Shelbyville, IN (Mar.-May 2002) (#36602) – Project manager for reviewing the existing and desired future use of Toluene Sulphonic Acid in their manufacturing process. The acid was used on a small scale and it was their desire to expand the use, requiring the facilities to store and transport bulk quantities. Recommendations detailing the proper storage (6,000 to 8,000 gallons), containment, piping, and valving for the material were made. Knauf Fiber Glass is a leading US manufacturer of thermal and acoustical fiberglass insulation for residential, commercial, industrial, marine, original equipment manufacturer and metal building applications. Knauf Fiber Glass is a member of the family of building materials companies owned by the Knauf family of Iphofen, Germany.

Evansville Water Distribution System Improvements, IN (Sept. 2002-present) (#37546) – Project manager for the planning, design and construction of improvements to the City's water distribution system to improve water pressure and service to outlying areas of the service system. The project included approximately 55,000 feet of 30- and 36-inch water main, 16,000 feet of 16-inch water main, the installation of a new 5 MGD below ground booster station and the rehabilitation of a second 5 MGD booster station. The projects are part of an overall capital improvements plan as recommended by HNTB's water master plan completed in 1999.

Vulnerability Assessment, Bloomington, IN (Dec. 2002-March 2003) (#37788) – Project manager for a vulnerability assessment of Bloomington's public water supply system as required by the Bioterrorism Act of 2002. The method utilized to complete this effort, Risk Assessment Methodology of Water (RAM-W), was developed by Sandia National Labs for use in evaluating the potential risk to all public water supply systems in the classified states serving a population of more than 3,300. The assessment was completed and submitted to the EPA by March 31, 2003--on time, under budget and exceeded the client's expectations.

181st Street East Lift Station and Force Main, Westfield, IN (Mar. 2002-present) – Project manager during the planning and design of a 5-MGD lift station and approximately 10,000 feet of parallel 8- and 12-inch force main. The project was identified as part of the Town's overall master plan and will serve the northern portion of the service area.

Water Distribution System, Bloomington, IN (Jan.–Dec. 2002) – Project manager for the preparation of a SCADA System Master Plan, which included control and monitoring of the water and wastewater treatment plants, lift stations, booster pump stations, water storage tanks and two control centers. The work included instrument and equipment selection, programmable controllers, PC-based operator interface systems, conduit and wiring layout, fiber-optic communication, digital radio modems, standby generator interface, leased line telephone network, and control strategies for implementation of future projects.

Long-Term Control Plan, Fairmount, IN (Nov. 2001-Jan. 2003) – Project manger for the preparation of the town's combined sewer overflow (CSO) long-term control plan (LTCP). The study included CSO flow monitoring, SWMM modeling of the collection system and public involvement to analyze alternatives to reduce overflows during wet weather. The LTCP was prepared to meet the conditions of the town's NPDES discharge permit issued by the Indiana Department of Environmental Management.

Long-Term Control Plan, Rensselaer, IN (Nov. 2001-Apr. 2002) – Project engineer for the preparation of the city's combined sewer overflow (CSO) long-term control plan (LTCP). Chris worked with city personnel to conduct flow monitoring and lead Citizen's Advisory Committees to analyze alternatives to reduce overflow to the Iroquois River.

Dillman Road Headworks Improvements, Bloomington, IN (Oct. 2001-present) – Project manager for the design of the Dillman Road wastewater treatment plant headworks pump station upgrade. The project included the replacement of the dry pit submersible pumps along with new electrical and instrumentation and control for the new pumps. The project also involved replacement of a traveling screen, conveyor system and controls at the influent chamber.

Monroe Low Service Intake Structure, Bloomington, IN (Apr. 2001-present) – Project manager for the preparation of a Preliminary Engineering Report for IDEM funding and the design of the rehabilitation of the city of Bloomington Utilities 20 MGD low service intake structure at its water treatment plant.

Master Plan Phase I Water and Sewer Extension, Westfield, IN (Jan. 2001-Oct. 2002) – Assistant project manager for the planning, design and construction of approximately 13,500 feet of 8-inch and 10-inch sewer, 1 MGD lift station, 5,000 feet of force main and 3,000 feet of water main. The new water and sewer extensions were constructed to serve future commercial and light industrial customers.

Evaluation of Secondary Main Alternatives, Bloomington, IN (Feb. 2001-Feb. 2002) – Project manager for the evaluation of possible routes of future water supply, tank locations and booster stations within the water distribution system. As the city of Bloomington continues to grow and water demands increase, CBU is continually looking for new alternatives to meet the additional demand. The study evaluated several alternatives for their ability to provide water to a central pressure zone in the event of a shut down at the main booster station.

Wastewater Treatment Plant Improvements, Mooresville, IN (Oct. 2000-Dec. 2001) – Project manager for the planning, design, and construction of treatment plant improvements to increase sludge thickening capabilities and

upgrade hydraulic capacity to 1.5 MGD. The design incorporated many existing structures and equipment and converted the existing trickling filter facilities to the oxidation ditch type activated sludge process.

Stream Reach Characterization and Evaluation Report (SRCER), Fairmount, IN (Sept. 2000-June 2001) – Project manager for the preparation and planning for stream and combined sewer overflow sampling and characterization. The report was prepared to meet the Town's NPDES requirements for combined sewer operations. Chris worked with the town to begin planning for the Combined Sewer Overflow Long Term Control Plan.

Houston Subdivision Water Main Extension, Rensselaer, IN (Mar. 2000-Feb. 2002) – Project engineer during the planning, design, and construction of the Houston Subdivision Water Main Extension. He worked with city officials to gain approval and funding from the State Budget Agency. The project consisted of the construction of the approximately 16,000 feet 8- and 12-inch water main. The new water main was to alleviate health concerns associated with contaminated wells in the subdivision.

Water and Sewer Master Plan, Westfield, IN (Sept. 2000-Jan. 2001) – Project engineer for developing future growth projections and water and sewer service needs. Chris developed water and sewer routes and timing for plant upgrades for the town to serve the area selected in their Comprehensive Plan.

Drexel Parkway Sanitary Sewer, Rensselaer, IN (Feb. 2000-July 2001) – Project engineer in the design of a sanitary sewer extension for the Drexel Parkway industrial area. He worked with city personnel and contractor to expedite the construction to serve newly constructed facilities in the industrial area.

Linglebach Booster Station – Bloomington Utilities, Bloomington, IN (Oct. 1999-Jan. 2003) – Project engineer during planning, design, and construction of a new booster station to serve a portion of the Indiana University housing units. The existing booster station was to be removed after completion of the project. The new station allowed for improved fire flow and pressure to the service area.

Water System Master Plan, Evansville, IN (Aug. 1999-Mar. 2000) – Project engineer to estimate and analyze future system demands. He utilized existing water model to evaluate possible infrastructure improvements and coordinated future system and plant improvements with utility planning budget.

Water Distribution System Evaluation, Mapping, and Modeling, Peru, IN (Oct. 1997-July 1998) – Updated and electronically formatted water line base map to furnish accurate representation of the distribution network. Chris developed computer model to evaluate pressure and flow rates in various scenarios of emergency and future demand conditions.

Water System Master Plan, Westfield, IN (Apr. 1997-Jan. 1998) – Updated and calibrated existing water distribution system computer model. He incorporated field test results of high service pumps and fire hydrants, and assisted with the study of projected needs for demand, supply, storage, and distribution of water using the model. He developed distribution main and storage tank layout to service future town development.

Evaluation of Water Distribution System, Greensburg, IN (Mar.–July 1997) – Constructed and calibrated a water distribution system computer model for the City of Greensburg. Chris incorporated field test results of high service pumps and fire hydrants. He also evaluated the impact on the city's water distribution system by rural water connections and needed improvements and developed system improvements for areas with low-pressure problems.

Monroe Water Treatment Plant, Bloomington Utilities, Bloomington, IN (Feb.-Oct. 1999) – Calibrated high service pumps and transmission main in an existing computer water model. Chris incorporated field testing results into the model for pump and transmission main calibration. A hydrant flushing/testing program was in place in the city and Chris used that data to conduct an overall system calibration and review.

Compliance Plan, Peru, IN (June-Nov. 1997) – Assisted the Peru Utility staff in writing a compliance plan in response to an Indiana Department of Environmental Management issued Agreed Order. He developed plans and improvements to meet regulatory requirements for the wastewater treatment plant.

Cool Creek Circle Addition Water Main and Sewer Extension, Westfield, IN (Dec. 1999-Nov. 2000) – Project engineer for the design and construction of water and sanitary service to a subdivision on the southern edge of the town. The project included about one mile of water main, 4,000 feet of sewer, and lift station. The project was constructed to help town residents with failing wells and septic tanks.

Southern Indiana Operational Treatment Center, Indiana-American Water Co. Inc., Jeffersonville, IN (Mar.–Dec. 1997) – Calculated the hydraulics of process piping for this water treatment facility project which involved design of a 31-MGD ground water treatment plant, and regional administrative and distribution center. The fast-track, design/build project consisted of an iron and manganese removal plant incorporating the latest control and telemetry systems with leading edge chemical oxidation and oxide-coated media filtration technologies to provide improved water quality to meet future capacity and regulatory requirements. He evaluated the long-term cost-effectiveness of backwash lagoons and backwash holding tanks.

Ramsey Water Company, System Waterworks Improvements, Ramsey, IN (Jan. 1998-Mar. 2000) – Updated existing water distribution system computer model for this design-build (contractor Bowen Engineering) project with 12 miles of new water distribution and transmission mains, new SCADA system and 3 MGD pump station, 400,000-gallon elevated storage tank. Using the model, he evaluated the performance of newly proposed water mains, booster station, and an elevated storage tank.

Distribution System Upgrade, Evansville, IN (Oct. 1997-Apr. 1999) – Converted an existing model from a proprietary version of modeling software and updated the model to reflect existing conditions. The project involved working with utility personnel to run field tests for calibration of the booster pumps and mains. The model was used to help determine the location of a new elevated storage tank using estimated future development and demands in the northern service area.

Water Master Plan, Model Conversion, Greenfield, IN (May–Oct. 1998) – Converted an existing model to a newer version of modeling software. Chris updated the model to show existing water mains and demands and worked with city personnel to determine projected needs for demand, supply, storage, and distribution of water. Chris developed distribution main and storage tank layout to service future City development.

Peru Wastewater Plant Improvements, Peru, IN (Jan.-June 1998) –Worked with the utility staff to evaluate the wastewater collection system and treatment plant. He compiled recommendations for the plant and collection system for the utility for their use in future planning.

Northwest Utility Corridor Water System, Peru, IN (Jan. 1998-Sept. 1999) – Project engineer for the design of nearly 20,000 feet of 12-inch through 18-inch diameter Sanitary Sewer main, a 2-MGD pump station, a 300 lineal foot jack and bore crossing of a four-lane highway, and 1,500 lineal feet of force main. The project included the preparation of a loan application and preliminary engineering report to secure State Revolving Loan Fund financing for the $2.3 million project.

Phase I & II – Main Street Combined Sewer Separation Project, Arcadia, IN (Dec. 1997-Feb. 2000) – Project engineer for the design of new storm sewers for phase I and the design of new storm sewers and evaluation of existing combined sewer for the removal of a CSO for Phase II. Developed the PER to receive SRF funding for the project. He reviewed sewer televising to recommend the installation of 2,900 feet of cured-in-place pipe. The rehabbed pipe ranged in size from 15 to 24-inch.

Westfield Water Distribution System Improvements, Westfield, IN (Mar. 1999-Jan. 2000) – Project engineer for the design of two package booster stations. The two stations allowed the utility to increase pressures and operate on one pressure zone instead of two. He worked with booster station manufacturer to expedite the design and delivery to meet client's needs.

Metro Water Services: Kinhawk/Huntington Ridge Water Storage Tanks, Nashville, TN (Aug. 1999-June 2001) – Project engineer for the design of two 3MG prestressed concrete water storage tanks including all site work with provisions to add a 2-MG storage tank at the same site in the future. He converted an existing water distribution system model and evaluated the performance of the new tank and piping.

Elevated Water Storage Tank, Evansville, IN (Aug. 1998-June 1999) – Using a water distribution system model and growth projections, Chris worked with utility staff to size a new 1.5-MG elevated storage tank for the Northern Pressure Zone in Evansville. He worked as the project engineer during the design and bidding phases of the project.

Water Model Update and Calibration, Indiana-American Water Co. Inc., Crawfordsville and Newburgh, IN (June–Aug. 1999) – Converted water models for both cities from an older version of modeling software to Cybernet. He updated the model with major changes that had taken place within the distribution system and he conducted spot evaluations to check for model accuracy.