WASTEWATER COLLECTION

McGoodwin Williams & Yates has been providing engineering services for the planning, design and construction management for most of the wastewater treatment facilities and interceptor sewer projects constructed in Northwest Arkansas during the past six decades, as well as several facilities in cities outside Northwest Arkansas.

MWY has assisted cities in the preparation of state Revolving Loan Fund (RLF) program loan application documents, and has provided design and construction management services for several RLF projects in Northwest Arkansas. The following is a brief description of interceptor sewer projects, force mains and lift stations along with wastewater treatment facilities.

SPRINGDALE, ARKANSAS

Northside Water and Sewer Facilities Improvements

Project Description

The project included two phases of construction of facilities recommended in the *Preliminary Engineering Report* for the northwest side of Springdale and much of Lowell, including major interceptor sewers and the force main for the Benton Farm Lift Station constructed under Contract Section II of Phase I (see Lift Stations Section). With the new facilities, Lowell and the northwest side of Springdale is in excellent shape for future growth, including a large newly annexed area west of Interstate 540.

Project Scope - Phase I

The project consisted of approximately 4.5 miles of gravity sewer lines, 8 inches to 36 inches in diameter, and approximately 2 miles of a 16-inch force main with provisions for a future 24-inch force main. Also included was the abandonment of two small lift stations which became obsolete after the improvements were complete.

A summary of pipe sizes and lengths for the gravity sewers are set out below:

Phase I - Northside Sewer Interceptor Sewer Construction

Pipe Diameter	Pipe Material	Approximate Length
8 inch	PVC	5,000 LF
12 inch	PVC	430 LF
18 inch	PVC	4,300 LF
20 inch	DIP	2,000 LF
21 inch	PVC	4,900 LF
24 inch	PVC	2,500 LF
30 inch	DIP	4,000 LF
36 inch	DIP	600 LF

Project Costs, Contract Time and Project Performance

Date Bid:	July 15, 2004
Amount Bid:	$4,298,745.00
Final Contract Amount:	$4,319,277.26
Notice to Proceed:	November 2004
Final Completion:	November 2005
Contractor:	Journagan Construction Co., Inc.
Engineer:	McGoodwin, Williams and Yates, Inc.
Engineering Services:	Planning, Design, Plans and Specifications, Bidding, Construction Observation and Coordination Services during Construction Phase

Project Scope - Phase II

Phase II consisted of approximately 3.8 miles of gravity sewer lines, 15 to 24 inches in diameter. The new sewer lines generally followed Puppy Creek and serve the city of Lowell as well as northwest Springdale. A summary of pipe sizes and lengths for the gravity sewers are set out below:

Phase II - Northside Sewer Interceptor Sewer Construction

Pipe Diameter	Pipe Material	Approximate Length
15 inch	PVC	1,500 LF
18 inch	PVC/DIP	1,800 LF
21 inch	PVC	6,800 LF
24 inch	PVC/DIP	10,100 LF

Project Costs, Contract Time and Project Performance

Opinion of Probable Cost:	$3.7 million
Date Bid:	July 2006
Amount Bid:	$3,588,405
Notice to Proceed:	September 15, 2006
Final Completion:	July 2008
Contractor:	Kraus Construction Co., LLC; Fort Smith, AR
Engineer:	McGoodwin, Williams and Yates, Inc.
Engineering Services:	Planning, Design, Plans and Specifications, Bidding, Construction Observation and Coordination Services during Construction Phase

ROGERS, ARKANSAS

Project Description

A facilities plan for wastewater system improvements was completed in May 1994 and submitted to ADEQ for review. Following approval, plans and specifications were completed by MWY to comply with the funding requirements for financing the construction of the wastewater collection system and treatment facilities improvements. This provided a mechanism for growth in the city of Rogers and facilitated the transport of excessive extraneous water during periods of high rainfall.

Construction was begun in October 1995 and completed in April 1997. The collection system improvements included five flow diversion structures with adjustable weirs to divert flow to new gravity interceptor sewers in order to mitigate bypasses and overflows in the wastewater collection system.

The project also eliminated every major lift station and made the wastewater collection system totally gravity flow.

Environmental Challenges

The gravity interceptor sewers passed through wetlands, crossed extraordinary quality waters of the state and passed through habitat containing at least two known endangered species. The Engineer and an environmental consultant worked with the Corp of Engineers, the U.S. Fish and Wildlife Service and the ADEQ to secure the necessary 404 permit and established project conditions to meet the terms of the responsible regulatory agencies.

Project Scope

The project consisted of construction of approximately 19 miles of 8-inch through 42-inch gravity interceptor sewers, 19 major highway crossings, and one railroad crossing as set out below.

Pipe Diameter	Pipe Length
42 inch	10,800 LF
36 inch	8,800 LF
30 inch	7,100 LF
24 inch	27,600 LF

Costs, Contract Time and Project Performance

Date Bid:	July 1995
Amount Bid:	$12,276,180
Final Contract Amount:	$11,183,662
Notice to Proceed:	October 1995
Final Completion:	April 1997
Contractor:	Kenko, Inc.
Project Performance:	Positive Certification
Engineer:	McGoodwin, Williams and Yates, Inc.
Engineering Services:	Planning, Design, Plans, and Specifications and Construction Management

BENTONVILLE, ARKANSAS

Project Description

The project consisted of a Gravity Flow Interceptor Sewer constructed around the west side of Bentonville, and a force main from a new lift station to the existing wastewater treatment plant. The project eliminated five lift stations. The depth of the sewer varied from five feet to 25 feet. Much of this was in rock, which made excavation difficult.

Project Scope

The project consisted of construction of approximately 12 miles of 15-inch through 24-inch gravity interceptor sewers and four major highway crossings as set out below:

Bentonville Interceptor Sewer Construction

Pipe Diameter	Pipe Length
14 inch	40,700 LF
18 inch	7,700 LF
16 inch	700 LF
15 inch	4,750 LF

Project Costs, Contract Time and Project Performance

Date Bid:	January 1994
Amount Bid:	$4,380,730
Final Contract Amount:	$4,539,785
Notice to Proceed:	February 1994
Final Completion:	September 1995
Contractor:	Garney Companies, Inc.
Project Performance:	Positive Certification
Engineer:	McGoodwin, Williams and Yates, Inc.
Engineering Services:	Planning, Design, Plans, and Specifications and Construction Management

BENTONVILLE, ARKANSAS

West Growth Area Sanitary Sewers

Project Description:	**Construction of approximately 9,000 linear feet of 12-inch, 15-inch and 18-inch sanitary sewers.**
Date Bid:	February 1999
Amount Bid:	$641,672
Final Contract Amount:	$671,475
Contractor:	Kraus Construction
Scope of Services:	Design, Plans, Specifications, and Part Time Construction Management
RLF Participation:	100% (Excluding land cost)

Southwest Slope Sanitary System

Project Description:	**Construction of sanitary sewers to serve southwest Bentonville.**
Project Status:	Construction Beginning
Engineers Estimate Prior to Bid:	$880,000
Amount Bid:	$819,382
Contractor:	Forsgren, Inc.
Scope of Services:	Design Plans, Specifications and Part Time Construction Management
RLF Participation:	100% (Excluding land cost)

BATESVILLE, ARKANSAS

15-Inch Sewer Line to Serve Industrial Park

Project Description:	**Construction of approximately 14,000 L.F. of 15-inch diameter PVC sewer lines and 800 L.F. of 16-inch Ductile Iron sewer lines to serve a new industrial park site.**
Engineer's Estimate prior to Bid:	$966,000
Amount Bid:	$740,770
Final Contract Amount:	$699,456.00
Completion Date:	February 2000
Scope of Services:	Design, Plans, Specifications, and Part Time Construction Management

Wastewater Collection System and Pumping Facilities Improvements

Project Description:	**Miller Creek Interceptor Sewer and Collection System Improvements – Construction of approximately 12,800 L.F. of 18-, 12 and 8-inch diameter sewer line; 7,600 L.F. of 10-inch and 6-inch force main and 1,400 L.F. of 8-inch and 4-inch water line.**
Project Budget:	Construction by Batesville Water Utility
Project Status:	Under Construction
Scope of Services:	Design, Plans and Specifications

Eagle Mountain Sewer Line Improvements

Project Description:	**Replacement of existing 10-inch PVC sewer line with a new 12-inch DIP sewer line and the extension of the new sewer line approximately 2,000 L.F. to a new 12-inch interceptor sewer constructed under the Miller Creek Interceptor Sewer project.**
Project Budget:	Construction by Batesville Water Utility
Project Status:	Completed by Batesville Water Utility
Scope of Services:	Design, Plans and Specifications

A tabulation of other major interceptor sewer and force main projects is contained on the following two pages.

SELECTED MAJOR COLLECTION SYSTEM PROJECTS

OWNER	LENGTH (Approx. feet)	INTERCEPTOR SIZE	APPROXIMATE BID PRICE
Springdale Water Utilities (Phase II)	3.8 miles	24", 21", 18", 15"	$ 3,600,000 Under Bid
Springdale Water Utilities (Phase I)	4.5 miles	8", 12", 18", 20", 21", 24", 30", and 36"	$ 4,300,000
Clarksville Light & Water	10,000	8″ w/2 lift stations	$ 615,000
City of Bentonville	13,000	8″, 12″ and 18″	$ 850,000
Batesville Utilities	15,000	15″ w/lift station	$ 800,000
City of Bentonville	9,000	12″, 15″ and 18″	$ 600,000
Rogers Water Utility	100,000	12″ - 42″	$11,800,000
City of Bentonville	50,000	8″ - 24″	$ 4,380,000
City of Prairie Grove	14,000	8″, 15″ and 18″ w/lift station	$ 725,000
Springdale Water Utilities	10,700	8″ - 18″	$ 715,000
Springdale Water Utilities	8,500	8″ - 21″	$ 603,000
City of Bentonville	27,000 & 13,000	24″ w/lift station	$ 6,300,000
CWL – Jonesboro	19,000	24″	$ 1,300,000
CWL – Jonesboro	28,000	24″	$ 2,000,000
City of Harrison	3,400	24″	$ 300,000
Town of Lowell	56,000	8″ - 24″	$ 1,900,000
City of Rogers	30,000	24″	$ 1,800,000
Springdale Water Utilities	25,000	8″ - 16″	$ 1,100,000
Springdale Water Utilities	43,300	10″ - 21″	$ 1,400,000
City of Green Forest	5,500	18″	$ 370,000
CWL – Jonesboro	10,000	42″	$ 1,600,000