

## Springdale, Arkansas

### Street Improvement Bond Program

McGoodwin Williams & Yates was selected as the design professional for the following two separate projects being constructed under the first phase of the city of Springdale's 2003 Street Improvement Bond Program.

**Silent Grove Road Improvements:** The scope of the Silent Grove Road improvements included widening and reconstructing approximately 3,000 linear feet of the existing Silent Grove Road from a two-lane road to a three-lane collector street. An existing natural channel conveying off-site drainage flows is parallel with and near to the existing road, and a primary consideration for the project was accommodating the channel. Alternatives reviewed included altering the existing street alignment to allow the channel to remain natural while accommodating the widening of the street and satisfying safety conditions. In addition, replacement of the ditch with a box culvert was considered.

Original Opinion of Probable Cost was approximately \$1.6 million. Construction was completed in 2006 at an approximate construction cost of \$1.3 million.

**Southern East/West Corridor Study:** In the year 2000, MWY was selected to perform a study for the southern east/west corridor, located approximately one mile south of U.S. Highway 412 in Springdale. The purpose of the study was to provide recommendations regarding a specific route selection for the 5.5-mile corridor, which included existing streets as well as undeveloped areas where streets were proposed. The scope of the study included an analysis of different route alternatives, including preliminary drainage design and opinions of probable cost for construction of the proposed improvements.

The following were goals for the establishment of the recommended route:

- Provide east/west travel across the southern portion of the city without having to travel through existing neighborhoods and developments to access schools, recreational facilities, and major employment areas.
- Provide a facility that maximizes traffic flow and safety by limiting access along the facility.
- Provide a facility that mitigates the impact on existing neighborhoods through design, location, and appropriate land use controls.

Preliminary route selection began with identifying several alternate routes in areas where the construction of the proposed roadway would significantly affect property owners. In order to gather public comments regarding the alternative routes, three sets of public hearings were held and public comments were compiled and analyzed.



### **Southern Corridor - 40<sup>th</sup> Street to 48<sup>th</sup> Street:**

This project, which is comprised of a portion of the proposed corridor shown in the previous Southern East/West Corridor Study performed by MWY in 2001, includes the design of a new parkway-type boulevard with four lanes and a landscaped median.

MWY began by performing an *Alignment Study* to determine exact alignment of the new east/west street, which would connect two existing north/south streets. Challenges in setting horizontal and vertical alignment included mitigating conflicts with existing utilities, including a high-pressure gas line parallel with the street. Rolling topography was also an issue, and providing somewhat balanced cut/fill calculations for economy while maintaining an aesthetic vertical alignment to reduce the "roller coaster effect" was a challenge.

Construction began in mid-2006. In addition to performing detailed design of the street and storm drainage structures, MWY also coordinated geotechnical services and traffic signal warrant studies for the two intersections. The opinion of probable cost was approximately \$2.4 million. Low bid was approximately \$2.1 million and the final construction cost was under \$2.1 million.

**McRay/Gutensohn Drainage Improvements:** At the request of the city of Springdale, in 2001 MWY provided a drainage study including recommendations and opinions of probable costs for drainage improvements upstream of Gutensohn Road. MWY subsequently provided detailed plans and specifications for the project which was divided into the following two phases:

**Phase I** consisted of improving an existing drainage channel between Campbell Street and Gutensohn Road. The improvements included construction of an eight foot wide by 1,400 linear foot long rectangular concrete ditch with a transition structure to an existing box culvert at Gutensohn Road. Construction of Phase I was completed in early 2003 at a cost of approximately \$350,000.

**Phase II** consisted of the construction of a storm drainage system upstream of the channel in Phase I. This phase included several thousand feet of 54-inch and 60-inch drainage pipe, as well as inlets, utility relocations and street reconstruction. Specially designed inlets and junction boxes were required in some locations to mitigate conflicts with existing utilities. The project was completed in 2005 at an approximate construction cost of \$1.6 million.



**Har-Ber Meadows Development:** Har-Ber Meadows is a 450-acre, residential development with supporting commercial, recreational, and education facilities. MWY designed all streets, storm sewer, sanitary sewer and water distribution systems. There are approximately 10 miles of local and secondary streets within the development and two miles of primary collectors on the perimeter of the property. Preliminary planning for this project began in early 1994 and work was essentially complete in 1997.

Extensive drainage studies were required in order to design storm drainage facilities that consisted of reinforced concrete pipe ranging from 18" to 60" in diameter with accompanying structures and two multiple span decorative bridges. Interior lakes which were provided for aesthetic purposes also provide flood mitigation and retention. Har-Ber Meadows cost an estimated \$20 million.



**Johnson Road, 2.25 Miles:** The Johnson Road street improvements begin at the northern corporation limits of the city of Johnson. These improvements consist of widening the existing street from a two-lane to a four-lane curb and gutter street with sidewalks on each side and provide turn lanes at all major intersecting streets. In addition, storm drainage improvements both along the street as well as offsite will be provided. Preliminary design of the project was completed in 1999. Construction of the project was delayed until matching funds from the state became available. Estimated construction cost in 1999 was approximately \$4.5 Million.



**40<sup>th</sup> Street and Gutensohn Road, 2.25 Miles:**

These projects include the reconstruction and widening to three lanes of approximately 2.25 miles of major and minor arterial streets. Complete drainage studies were required in order to size and design a 62-foot, two-span bridge and a storm water drainage system. Utility relocations for Gutensohn, including approximately 7,000 linear feet of 8 and 12-inch waterlines, 2,200 linear feet of sanitary sewer, were also required.

The cost for utility relocation was approximately \$700,000. Utility relocation for 40<sup>th</sup> Street included 7,700 linear feet of 12-inch waterline and 7,500 linear feet of sanitary sewer at a cost of \$640,000. The construction cost for both projects including utility relocation exceeded \$5.5 million. Construction of improvements to 40<sup>th</sup> Street was completed in 1998, while construction of improvements to Gutensohn were completed in 2001.

## Rogers, Arkansas

### CAPITAL IMPROVEMENTS PROGRAM



2009 Engineering Excellence Winner for Transportation, Large Projects – American Council of Engineering Companies of Arkansas.

#### Pauline Whitaker Parkway:

McGoodwin Williams & Yates worked with the city of Rogers on the Pauline Whitaker Parkway. The parkway, completed in 2008, connects Champions Drive and Pinnacle Hills Parkway to the new Perry Road Interchange on I-540 near the Pinnacle Hills Promenade.

The project was completed in 2008 for an approximate construction cost of \$3.28 million, less than the original budget of \$3.45 million and the original construction bid of approximately \$3.37 million.

The Arkansas/Oklahoma Chapter of the American Concrete Pavement Association (ACPA) awarded the Parkway project top honors for “Excellence in Concrete Pavements”.

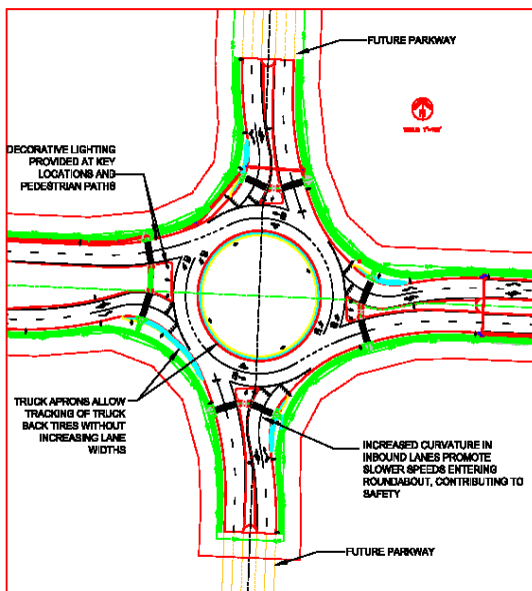


FIGURE 2 - PLAN OF ROUNDABOUT AT PAULINE WHITAKER PARKWAY

The project included a large, two-lane roundabout intersection that is one of the first of its kind in Northwest Arkansas; and includes specialized lighting for safety and aesthetics. The east-west parkway begins directly across from the entrance to the Pinnacle Country Club on Champions Drive; and a specialized intersection was designed to accommodate the existing median and guard house with few necessary modifications. Overall, special care was taken to provide a functional municipal street design while yielding a signature parkway and roundabout that serves as a focal point in the surrounding commercial district.

**Street Overlays:** The Rogers Overlay Program involved the overlay of 23 street segments totaling approximately 40,000 linear feet of street. The scope of the project included street milling at selected locations, installation of paving fabric, a leveling course, and the placement of a 2-inch ACHM driving surface.

The scope also included the removal and replacement of several drainage culverts, the construction approximately 1,375 feet of new curb and gutter on Sunset Drive, the raising of over seventy manholes and water valves, and numerous spot street repairs.

**Bellview Road:** In 2007 MWY was selected by the city of Rogers to design the widening of Bellview Road from two-lanes to four lanes for 7300 linear feet. The project is part of the Rogers 2010 Bond Program.

## Jonesboro, Arkansas

### **Matthews Avenue, 6.4 Miles:**

The Matthews Avenue improvement project began in rural west Jonesboro, extending through the heart of the downtown area, and ending in the southeast part of the city. The total length is approximately 6.4 miles. The improvements vary from simple overlay of existing pavements to the construction of two-lane, three-lane, and five-lane facilities. In addition, the project varies from improvements through new locations to improvements on existing streets through intensely developed areas. At least two existing single-span bridges required replacement. No street now exists between Highland Drive and Race Street. Thus, this part of the project involved construction on a new location.

Construction of this project was completed at an approximate cost of \$6 million.



### **North Church Street (Arkansas Highway 141), 3.3 Miles:**



The location of this improvement project encompasses both an intensely developed urban area and a developed suburban area. Because this is a state highway, the design meets requirements set forth by the Arkansas Highway and Transportation Department. The total length is approximately 3.3 miles. The sections of improvements are four-lane with curb and gutter and four-lane with shoulders and open side ditches. Two existing bridges require replacement, one with a multiple reinforced box culvert and the

Lost Creek Bridge with a multiple span (three 31-foot continuously reinforced concrete spans). The existing single-span bridge near the north end of the project was replaced with a

double 10' X 8' reinforced concrete box culvert. The Lost Creek Bridge was designed for AASHTO Seismic Performance Category "B" in compliance with Act 1100 of the 1991 Arkansas Legislature.

Final construction plans for the roadway portion of North Church Street, Arkansas Highway 141, were completed in the spring of 1997. The Lost Creek Bridge replacement was completed in 1999.

The total cost of the North Church Street – Arkansas Highway 141 North Project, including the lost Creek Bridge, was approximately \$4 million.

## Fayetteville, Arkansas

### **Broyles Road:**

Broyles Road, originally an unimproved gravel county road, was realigned and reconstructed in conjunction with the construction of the new West Side Wastewater Treatment Plant (WWTP) for Fayetteville, Arkansas. The new Broyles Avenue was constructed to city standards as a major collector, including single directional lanes plus a center turning lane, with adjacent right-of-way for future expansion to four lanes plus a center turn lane.

At just over 5, 800 linear feet, the new alignment included the relocation of a major overhead electric transmission line, a 12" water distribution line, a 4" high pressure gas transmission line, along with fiber optic and analog phone lines. The new Broyles Avenue also traversed two large drainages, Owl Creek and Goose Creek and one minor tributary to Goose Creek. With a COE-mandated "no-rise" design for the 100 year storm event, the three drainages required significant bridge structures, including a 6-bay 12' by 4' box culvert structure at Goose Creek and a 5-bay 12' by 4' box culvert structure at Owl Creek.

The construction involved the permanent alteration of existing wetland and wet prairie sites that were adjacent to the original road as well as the new alignment. Therefore, the project included the coordination of work with the adjacent wetland mitigation site, also being constructed in conjunction with the new WWTP. Because the construction of Broyles road occurred at the same time as the construction of the WWTP and as well as the existing road serving as the only means of ingress and egress for local residents, a highly managed and coordinated construction schedule was required.

The new Broyles Avenue is not only a showcase entry way for the city of Fayetteville's new WWTP facility, it also created a safe and attractive transportation corridor for both the residents of Fayetteville and Farmington.





**Walton Arts Center Parking Facilities:** This was a \$2.4 million project to provide the Walton Arts Center with 474 parking spaces adjacent to the facility. Representative work included demolition of buildings, grading, drainage, paving, lighting, landscaping and irrigation, as well as the construction of a pavilion and associated spring garden area. Design work also included upgrading an undersized drainage system for a 190-acre commercial and residential drainage basin.

Drainage construction included 1,250 linear feet of double 6' X 6' reinforced concrete box culvert and 1,430 linear feet of drainage piping ranging from 15" to 48" in diameter and 36" X 58" arch pipe. Two of the sites received full depth asphalt sections totaling 2,800 tons. The third site, with over 109,000 square feet of parking area, utilized an asphalt surface course over a compacted granular base material.

This project was completed on a fast-track basis with all work being performed in a four-month period.

**Mud Creek Bridge (Reinforced Concrete and Steel Bridge, Just East of Highway 265):**

This project included hydraulic analysis of the drainage basin upstream as well as structural design and construction management services. The design of the bridge utilized standard precast concrete spans and parapet rails in order to reduce the road-closed construction period on a heavily traveled street with very inconvenient detour route availability. The project was completed in 1991 at an approximate cost of \$250,000.

## Prairie Grove, Arkansas

**Cleveland Street:**

This project consisted of three phases. Phases I and II were completed in 1991 and 1993, respectively, at a cost of \$435,000. Those projects included approximately 1,700 linear feet of concrete street with a pavement width of 26 feet. Also included were approximately 3,000 linear feet of 15-42 inch storm sewer together with reconstruction of water and sewer lines. Phase III, consisting of about 1,000 linear feet of street, together with storm sewers and utility relocations, was completed in 1999 for approximately \$300,000.

## State of Arkansas

**U. S. Highway 67, Pocahontas South, 10 Miles:**

Our firm was selected by the Arkansas State Highway and Transportation Department to provide design services in connection with the widening of a 10-mile section of U. S. Highway 67 south of Pocahontas in Randolph County. The project included two multiple span bridges. This project was completed for approximately \$20 million. This was a two-phased project with Phase II completed in October 1996.

## **Miscellaneous Services and Special Projects**

### **Utility Relocation Projects**

MWY has extensive experience in providing the engineering services required to adjust water and sewer facilities when highways are to be relocated. This experience dates back over many years. Examples of such projects are set out below.

1. Relocation of water and sewer facilities for Springdale Water Utilities in connection with reconstruction of Gutensohn Road. Construction was completed in 2005 for approximately \$1.6 million.
2. Water and sewer adjustments for Springdale Water Utility necessitated by reconstruction of Elm Springs Road. Project was completed in 1992 at an approximate construction cost of \$656,000.
3. Relocation of water and sewer facilities for the Clarksville Light and Water Commission in connection with improvements to Arkansas Highway 123. This project was completed in 1999 for approximately \$675,000.

### **Funding of Improvement Projects**

Over the years, MWY has made every effort to stay abreast of the latest information regarding funding sources; and in many instances has assisted client cities in securing available funds for public improvement projects.

The \$22 million Carroll-Boone Regional Water System completed in the early 1980s offers a good example of the firm's experience in helping to obtain financing for projects of this nature. Funding for the Carroll-Boone project included a combination of federal loans and grants and commercial bond issues.

MWY currently has projects under way which involve financing by various agencies. These include the Arkansas Economic Development Commission, the Arkansas Department of Environmental Quality (Revolving Loan Fund), the Farmers Home Administration and the Economic Development Administration.

In addition, MWY has worked with several investment bankers in the state (most recently Stephens, Inc. and Morgan Keegan) in the development of revenue bond issues. This work frequently includes rate analyses, development of operation and maintenance budgets, and cash flow projections.

## **Special Projects**

MWY staff members are especially pleased to have been selected to provide engineering services in connection with two projects located in the city of Springdale that were made possible through the interest and generosity of a private citizen. In each case, the work was done in cooperation with other professionals who provide services in the area of their particular qualifications and experience.

The first project is a development known as Har-Ber Meadows, which encompasses approximately 450 acres west of the city. The goal was to create a "village type" community, which includes not only residential units but also some commercial establishments as well as neighborhood parks, bike paths, and small lakes. Parcels were reserved for other types of community uses such as a church, an elementary school, a daycare center and a community center.

MWY was responsible for professional engineering advice in overall coordination of the project; design of water, sewer, street and drainage facilities, platting of the phases of the development, coordination of photogrammetry and geotechnical engineering services, boundary and topographic surveys, and other assistance as requested by the Owner.

Much the same services were provided for the Harvey and Bernice Jones Center for Families. This facility combines an ice-skating rink, a swimming pool and a gymnasium along with meeting rooms and community space. The complex is situated on a 34-acre campus-like setting. The site includes a 250,000 square foot activities building and a 50,000 square foot office complex to house family-oriented services.

This project required the planning and design of the typical infrastructure improvements of access drives, parking areas, water and wastewater facilities, storm drainage, area lighting, sidewalks, etc., all integrated into an atypical intensely landscaped setting.

Site planners and designers were charged with the responsibility of creating a pleasant outside environment among access and parking facilities for over 750 vehicles. All design elements were arranged in spaces with sufficient allocation to allow for intensely landscaped areas to minimize the impact of both parked and moving vehicles. A creative storm water drainage system was designed to improve the safety and comfort of pedestrians during periods of rainfall. All outside areas were lighted with a soft, low-intensity lighting system.

