

# City of Carrollton South Main Street Reconstruction



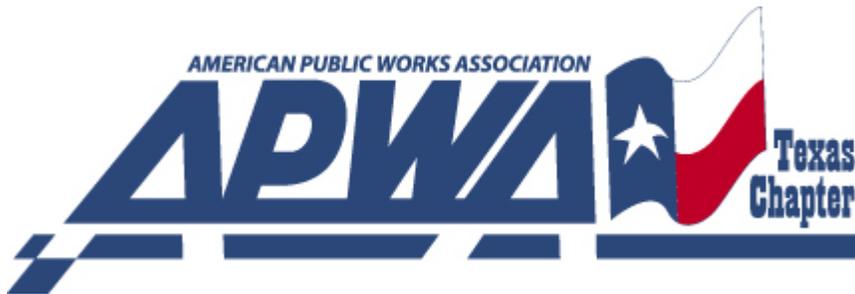
*American Public Works Association—Texas Chapter*



*Where Connections Happen*

**Public Works  
Project of the Year  
Nomination**

*May 2011*



## Texas Chapter Public Works Project of the Year (page 1)

### 2011 TPWA Awards Program Supporting Data Form

Please address each of the following areas in your supporting documentation, adhering to the below sequence when possible.

- Completion date contained in contract. Any time extensions granted should be addressed in the submittal.
- Construction schedule, management, and control techniques used.
- Safety performance including number of loss-time injuries per 1,000 man-hours worked and overall safety program employed during the construction phase.
- Environmental considerations including special steps taken to preserve and protect the environment, endangered species, etc., during the construction phase.
- Community relations – a summary of the efforts by the agency, consultant and contractor to protect public lives and property, minimize public inconvenience, and improve relations.
- Unusual accomplishments under adverse conditions, including but not limited to, adverse weather, soil or site conditions, or other occurrences over which there was no control.
- Additional considerations you would like to bring to the attention of the project review panel such as innovations in technology and/or management applications during the project.

**NOTE: Supporting documentation is limited to twenty (20) pages, exclusive of photographs and nomination form. This submittal will not be returned. When possible, please provide original photographs (black and white or color), as photographs (black and white or color), as photographs will be used for promotional purposes by TPWA. Original submittal and all copies should include nomination form and supporting documentation. Four copies of submittal are required.**

<b>Nominated By</b>	<u>Marc Guy</u>	<u>Assistant City Manager</u>
	Name	Title
	<u>City of Carrollton</u>	
	Agency/Organization	
	<u>1945 E. Jackson Road</u>	
	Address (if post office box, include street address)	
	<u>Carrollton</u>	<u>TX 75006</u>
	City	State Zip-Postal Code
	<u>(972) 466-3011</u>	<u>(972) 466-3252 marc.guy@cityofcarrollton.com</u>
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## Texas Chapter Public Works Project of the Year (page 2)

### 2011 TPWA Awards Program Nomination Form

**Deadline**                      May 1, 2011

**Project Name**                City of Carrollton South Main Street Reconstruction

April 2009

**Project Completion Date – Must be reported**

**Public Agency**                City of Carrollton

**Project Category**             Structures     Transportation             Environment

Historical Restoration/Preservation

Disaster or Emergency Construction//Repair

**Project Cost:**                 Less than \$2 million  \$2-\$10 million  \$10-\$100 million

Greater than \$100 million

**Managing Agency**            Thomas Geier                      C.I.P. Manager

**Name**                                      **Title**

City of Carrollton

**Agency/Organization**

1945 E. Jackson Road

**Address (if post office box, include street address)**

Carrollton                              TX                                      75006

**City**                                      **State**                                      **Zip-Postal Code**

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This project is especially important as it established the TOD image and streetscaping standards for the City's three stations integrated into the Dallas Area Rapid Transit (DART) Green Line expansion. Sustainability and low impact development were key components of the design effort.

The project was essentially completed in two phases. Although coordination with the franchise utilities started long before the project was bid, they were not completed by the time the contractor was ready to start, so work began on the parking lot while they finished. The parking lot is not your average lot. To show potential TOD developers what the City would expect in future developments, the lot was paved with concrete pavers supplied by Pavestone with the parking spaces covered by Grasscrete pavers, reducing stormwater runoff. Due to subbase problems, the construction lasted approximately four months. The cost of the parking lot was approximately \$455,000.

The street project began in May and almost immediately ran into utility problems as City records were inaccurate as to the location and existence of existing lines. Then, as new waterlines were being installed, the lines being connected to were found to be in worse condition and not of the sizes they were thought to be, so replacement limits were extended beyond the original project limits. The TOD standards incorporated into the street included twelve-foot wide sidewalks with paver and landscape areas and antique style street poles with LED lights. The total cost of the street project and amenities was approximately \$1,300,000.

In total, the project consisted of the design and construction of the following components:

- 800 LF of 12, 18 & 21-inch, and 4'x 2' RCP Storm Sewer Mains
- 630 LF of 8, 10 & 12-inch PVC Sanitary Sewer Mains
- Replacement of 0.33 lane miles of deteriorating pavement
- 400 LF of 8-inch PVC Water Mains
- Traffic Control
- Erosion Control
- Coordination with Dallas Water Utilities, DART (Dallas Area Rapid Transit), and several franchise utility companies
- In addition, before construction even started, property acquisition and site cleanup activities were initiated and completed

The total project cost was about \$250,000 (4.66%) over the original bid price. The increased costs were due to the increased sub-grade cost in the parking lot and the additional water line installation which improved the infrastructure in this area of the City.



*The Completed Street*

# Background

Carrollton has been planning for the arrival of DART for over ten years. With that, Master Planning has been underway around the three train stations to determine the kinds of development that would be conducive to these areas. Part of that planning has been to develop street and streetscape standards that would enhance new developments and be sustainable. Also included was utility, drainage and transportation planning that would accommodate the projected buildout populations.

Funding for the first TOD projects was included in the City's 2007 Bond Referendum. Voters approved the sale of \$2.5 million for the first TOD streets although the project was not specifically identified at that time. When an agreement was reached with a developer for the City's first residential/commercial TOD development, South Main Street which extends from Belt Line Road to Fourth Street in Old Downtown Carrollton was selected for the first TOD street reconstruction project. Bridgefarmer & Associates was selected to prepare the Plans and Specifications for the project while Caye Cook & Associates was their subconsultant for the amenities design. The actual roadway design was fairly simple but the incorporation of the new streetscape standards and project amenities presented more of a challenge. Although standards had been developed as part of the Master Planning, details had to be worked out and specific streetscape items had to be selected. Included in the project was the reconfiguration of a small City park (Pioneer Park). The Parks and Urban Development Departments provided input on various park components including types of trees to be

planted, tree lighting and other amenities while the Public Works Department was involved with street components. The focal point of the park was an existing oak tree where a sign wall and seating area were designed around it. DART right-of-way bordered the west side of this park so coordination with them was also included in the work.

The existing street had several utility poles along it but these would be eliminated for the new street. Therefore, coordination with the various franchise utility companies to go underground with their current facilities while upgrading to serve the new 300 unit residential/commercial development was also part of the work.

With the future planned TOD developments, parking was sure to become more of an issue than it already was, so land for potential parking areas had been investigated over the previous couple of years. The City finally decided on a tract one block south of the Old Downtown Square. After the land was purchased and buildings removed, the parking lot part of the project was designed in-house by City engineers and planners. The design incorporated existing trees and the use of concrete pavers with solid pavers in driving lanes and Grasscrete pavers in parking spaces. Since most of the downtown area is paved, the City wanted to provide some green space and did so using the Grasscrete pavers. Because of the grass, the parking lot had to have an irrigation system to keep it alive and the sidewalks around the parking lot had the same design elements as Main Street to provide continuity.

# Parking Lot Construction

Parking lot construction began in October 2009 since franchise utility work was still underway for Main Street at the time notice to proceed was given. Almost immediately, it was determined that the subgrade for the lot was inadequate, most likely the result of improper compaction after the lot was purchased and structures were



*Paver Installation*



*Concrete Construction*



demolished. With that, additional subgrade work had to be performed which resulted in the project's first change order. This work was accomplished by removing several feet of the soft areas, compacting it in six inch lifts and then topping it off with a sand cement base and reworking the subgrade.

After this, work continued in a normal manner although some minor utility adjustments had to be made to accommodate construction. With the subgrade stabilized, the lot was laid out with some field adjustments to provide better drainage and walking areas. Concrete construction including curb and gutters and portions of the sidewalk were constructed first, which was followed



by paver installation. However, the biggest challenge of this parking lot has been working with the existing drainage patterns and storm sewers since the area is so flat. Several field changes were made during construction to eliminate some sidewalk steps and high curbs.



*Grasscrete  
Pavers*

# South Main Street Construction

South Main Street was designed as a 22-foot wide urban street with a 30 MPH speed limit which is typical of TOD areas. The project also included 20 head in parking spaces in its 676 LF length. Sidewalks were not the standard five foot wide sidewalk but a twelve foot wide sidewalk that was laid out in six foot by six foot grids from which trees and streetlights were spaced. The sidewalk consisted of landscaping grids, paver grids, and concrete grids which were scored to keep it from looking like a standard sidewalk. And last, but definitely not least, the focal point of this first TOD project had to be Pioneer Park, which as previously stated, was thought to be the smallest public park in Texas.



## *Working Around DART was Part of the Design and Construction Phases*



Street construction began in March 2010 and, almost immediately into utility installation, it was found that existing lines weren't exactly where they were thought to be. As a result, some of the lines had to be shifted to clear other lines; and the only way to fit all of the new lines in was to close the street entirely since the redesign now extended beyond the street centerline. The project, which was initially planned to allow one-way traffic south of Belt Line Road, needed to be

closed for construction. However, before anything was done, local merchants were notified of the construction problem and were agreeable to the closing. In the end, it would allow for construction to move at a faster pace since traffic wouldn't have to be accommodated. Of course, it was helpful that there were alternate routes for motorists.

As-built information in the Old Downtown area is sketchy at best, so some problems were expected. Water lines were thought to be in fairly good condition but when they were exposed for connections, it was found that they were not, so it was decided to go beyond the project limits and replace some more. It was also discovered that where a water main loop was thought to exist, in Fourth Street on the south end of the project, there wasn't a line at all, so that line was lengthened to create the loop. Water lines were the main change order item in the street construction part of the



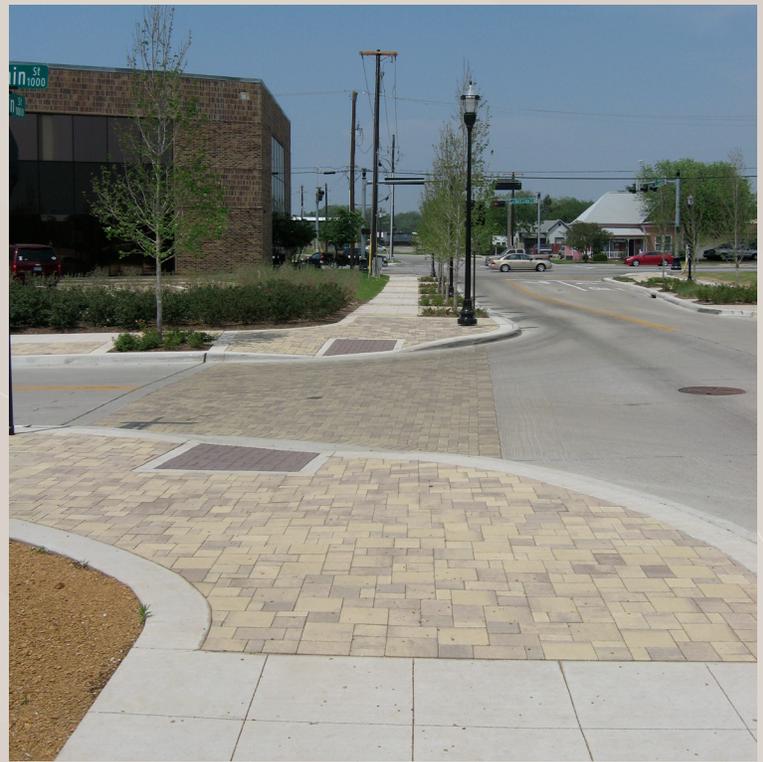
work. Although change orders are never desired, they did allow the City to “clean up” part of the water system while eliminating what would surely become maintenance issues in the future.

Since the new DART Light Rail paralleled the project on the west side, coordination with them was ongoing throughout the project. The Pioneer Park



## *Road Construction*

trees were planned to stay out of DART right-of-way. Pavement construction started in May and took approximately six weeks to complete because of several rainy days. However, it was typical pavement construction and work proceeded without any problems. Sidewalk construction followed road construction and proceeded without problems.



*Completed Street  
and Sidewalk*

*Street Amenities Provided  
the Final Touches*



The last element of the street work was the installation of street amenities like benches and trash receptacles. The Parks and Urban Development Departments participated in this phase of the design.



# Pioneer Park

The focal point of the new Pioneer Park was an existing 36-inch diameter Oak tree that was what the park would be designed around. The tree would be surrounded by a sign wall and seating area and from that several layouts were developed. The final design included a radial layout of Pond Cypress trees spaced at 15 feet on center with LED uplights. The oak tree had two LED downlights installed in it to accent it. Since the ground under the trees would eventually see little sunlight, decomposed granite over a filter fabric was selected as the ground cover.



*Construction of Pioneer Park Wall*



*Completed Pioneer Park*



The sign wall was another element that went through several designs. From stone selection to letter style to type of lighting, each decision was thoroughly debated and discussed. In addition, lighting under the seating area was also selected. In the end, it definitely is the focal point of the project.



# Construction Summary

The original schedule included 285 days to complete all work by the end of July, which was based on the projected start date of the City's first TOD project. However, when that date became delayed due to the current economic crisis, October 22 became the new end date, as it was the date of the City's Festival at the Switchyard event held in Old Downtown Carrollton, off of Main Street. The contractor was actually finishing work the morning of the event. The delay had to do with the subgrade problems in the parking lot, franchise utility delays, the additional water line construction, coordination with DART and some of the changes incurred during construction.

Safety was a main concern in this project and no hours were lost during construction.

Environmental stewardship and concerns were addressed, but were not major issues as most of the work was contained within the existing road and City block. Erosion control consisted of inlet protection devices, good housekeeping and other construction best management practices.

Since the street is relatively short and there were close alternate routes, community relations included coordination with local businesses through the use of emails and telephone calls.

- Trying to maintain 2 lanes of traffic during construction – Since it was determined early that we couldn't, alerting motorists to take alternate routes was the main challenge.
- Although franchise utility coordination was part of the design phase, franchise utilities did not perform their relocations to their initial schedules.
- Coordinating with the contractor and his subs and getting them to speed up and keep on schedule.

## What Was Right?

Although there were many challenges and problems to overcome working in an older part of the City, several positive things also occurred including:

- Replacement of old pavement in what will become a vibrant area of the City.
- Replacement of old water and sewer lines and completing a water loop that was thought to exist. The water lines were a problem waiting to happen when the new development is constructed.
- Kept in contact with merchants during construction.
- Construction of a new parking lot to serve downtown customers.

## Special Challenges

This project included several challenges; although, every effort was made to minimize them before they could occur. These challenges included:

- Working in one of the oldest areas of the City was a challenge when dealing with existing utilities. As-built information is limited and when there is some, it is questionable. Although this was expected based on past experience, change orders must be expected when going into a project in older areas of the City.

## Post Construction

The new road has been in use for about seven months now and operates very nicely. Motorists seem to be adapting to the slower speeds needed to accommodate head-in parking but truck drivers are driving over curbs at the street corners. Pioneer Park truly is a nice improvement and the LED lights are another step towards becoming more green.