

# Engineering Services Monthly Report

May 2011

## Roadway Construction Projects

### **Custer Road [FM 2478] (CIP05-0028)** Stonebridge to US 380

**Project Manager:** Jason Brodigan

**Project Description:** *Replace the existing two-lane asphalt roadway with a six-lane concrete divided roadway. Project includes paving, drainage, and signals.*

**Project Update:** *Contractor is constructing the southbound Wilson Creek bridge, installing stormwater infrastructure, and grading the southbound lanes.*

**Construction End:** 2/1/2012

**Estimated Construction Cost:** \$132,000

### **Eubanks Street (CIP08-0006)** Fifth Street (Parkwood Blvd) to BNSF RR

**Project Manager:** Tin Nguyen

**Project Description:** *Replace the existing two-lane asphalt roadway with a two-lane concrete roadway. Project includes paving and drainage.*

**Project Update:** *Construction is complete. Contractor is completing punch list items.*

**Construction End:** 5/27/2011

**Estimated Construction Cost:** \$554,266

### **FM 423 [Middle] (CIP03-0109)** Stewart Creek to Eldorado Pkwy

**Project Manager:** Jason Brodigan

**Project Description:** *Replace the existing two-lane asphalt roadway with a six-lane concrete divided roadway. Project includes paving and drainage.*

**Project Update:** *Contractor, Austin Bridge & Road, is installing stormwater infrastructure and stabilizing subgrade for southbound lanes.*

**Construction End:** 9/4/2012

**Estimated Construction Cost:** \$30,000,000

### **Legacy Road (CIP09-0013)** Warren Parkway to Lebanon Road

**Project Manager:** Jason Brodigan

**Project Description:** *Widen the existing four-lane divided concrete roadway to a six-lane divided concrete roadway and reconstruct intersection at Lebanon Road.*

**Project Update:** *Contractor is currently working on the 3rd of four intersection quadrants. Each quadrant is expected to take four to six weeks to complete.*

**Construction End:** 8/27/2011

**Estimated Construction Cost:** \$3,246,965

### **NTTA - SH 121/DNT Interchange (CIP09-0007)**

**Project Manager:** Jason Brodigan

**Project Description:** *NTTA construction of direct connectors to existing three level interchange.*

**Project Update:** *NTTA contractor is hanging bridge beams and has begun pouring bridge slabs.*

**Construction End:** 1/31/2012

**Estimated Construction Cost:**

### **Preston Road [SH 289] (CIP05-0031)** Main St to US 380

**Project Manager:** Jason Brodigan

**Project Description:** *Replace the existing two-lane asphalt roadway with a six-lane divided concrete roadway. Project includes paving and drainage.*

**Project Update:** *Paving of northbound lanes from Main St to north of Eldorado is expected to begin in May.*

**Construction End:** 2/1/2012

**Estimated Construction Cost:** \$10,166,838

**Rolater Road (CIP05-0021)** Independence Parkway to Custer Road

**Project Manager:** Tin Nguyen

**Project Description:** *Widen the existing two-lane concrete roadway to a four-lane divided concrete roadway. Project includes paving, drainage, bridge, sidewalks, signals, lighting, landscaping and irrigation.*

**Project Update:** *Traffic was switched to the northbound side of Rolater on 4/22/2011 so Sinacola can finish the box culvert and pavement repair on the eastbound lanes.*

**Construction End:** 10/31/2011

**Estimated Construction Cost:** \$3,103,194

**Stonebrook Parkway (CIP05-0030)** Legacy Drive to Fighting Eagles

**Project Manager:** David L Chacon

**Project Description:** *Construct a new four-lane divided concrete roadway including a bridge over Stewart Creek. Project includes paving, drainage, water, wastewater, signals, sidewalk, lighting, landscaping and irrigation.*

**Project Update:** *Project is approximately 25% complete*

**Construction End:** 11/4/2011

**Estimated Construction Cost:** \$6,507,989

**Stonebrook Parkway (CIP09-0014)** FM 423 to 4th Army

**Project Manager:** Toyin Fawehinmi

**Project Description:** *Construct a new four-lane divided concrete roadway from FM 423 to Teel Parkway, and widen the existing two-lane concrete roadway to a four-lane divided concrete roadway from Teel Parkway to 4th Army. Project includes paving, drainage, wastewater, signals, lighting, landscaping and irrigation.*

**Project Update:** *All paving work is complete. Streetlights, traffic signals and landscape work in progress*

**Construction End:** 7/29/2011

**Estimated Construction Cost:** \$4,446,613

## **Roadway Design Projects**

**Coit Road (CIP10-0002)** Main Street to Eldorado Parkway

**Project Manager:** Toyin Fawehinmi

**Project Description:** *Replace the existing two-lane asphalt roadway with a four-lane divided concrete roadway. Project includes paving, drainage, water, lighting, landscaping, and irrigation.*

**Project Update:** *Design is 60% complete*

**Construction Begin:** Not Scheduled

**Estimated Construction Cost:** \$6,076,938

**CR 710 [Sanctuary Drive] (CIP10-0008)** Peaceful Lane to Rogers Road

**Project Manager:** David L Chacon

**Project Description:** *Replace the existing two lane asphalt/gravel roadway with a two lane concrete roadway from Peaceful Lane to Rogers Road*

**Project Update:** *60% plans submitted by engineer.*

**Construction Begin:** 7/22/2011

**Estimated Construction Cost:** \$970,000

**Eldorado Parkway (CIP05-0006)** Preston Road to Custer Road

**Project Manager:** Toyin Fawehinmi

**Project Description:** *Widen the existing two-lane concrete roadway to a six-lane divided roadway from Preston Road to Fragrant Drive, and widen the existing four-lane divided concrete roadway to a six-lane concrete roadway from Fragrant Drive to Custer Road. Project includes paving, drainage, sidewalks and signals.*

**Project Update:** *Design is 60% complete*

**Construction Begin:** Not Scheduled

**Estimated Construction Cost:** \$8,380,018

**FM 423 [North] (CIP03-0056)** Eldorado Parkway to US 380

**Project Manager:** Jason Brodigan

**Project Description:** *Replace the existing two-lane asphalt roadway with a six-lane divided concrete roadway. Project includes paving, drainage, signals and lighting.*

**Project Update:** *Final design plans are anticipated to be submitted to TXDOT in Summer 2011. TXDOT has begun Right of Way acquisition.*

**Construction Begin:** 1/2/2012

**Estimated Construction Cost:** \$0

**Independence Parkway (CIP10-0004)** Main Street to North City Limits

**Project Manager:** Tin Nguyen

**Project Description:** *Widen the existing two-lane concrete roadway to a four-lane divided concrete roadway. Project includes paving, drainage, water, sidewalks, lighting, landscaping and irrigation.*

**Project Update:** *Design is complete. Right of Way acquisition is ongoing.*

**Construction Begin:** 8/1/2011

**Estimated Construction Cost:** \$3,286,667

**Lebanon/Dallas Pkwy Intersection Imp. (CIP05-0026)** Starwood Dr to 1100' east of DNT

**Project Manager:** Art Hartle

**Project Description:** *Scope: Construction of additional lanes of traffic for Lebanon to accommodate the NTTA bridge widening. This project will increase the lanes on the EB and WB approaches to the tollway.*

**Project Update:** *Design is approximately 95% complete.*

**Construction Begin:** 7/14/2011

**Estimated Construction Cost:** \$1,505,096

**Main Street [FM 3537] (CIP03-0108)** Preston Road to Custer Road

**Project Manager:** Jason Brodigan

**Project Description:** *Replace the existing two-lane asphalt roadway with a six-lane divided concrete roadway. Project includes paving, drainage, signals, lighting, landscaping and irrigation.*

**Project Update:** *Design plans are complete. Right of Way acquisition and utility relocations are underway.*

**Construction Begin:** 3/5/2012

**Estimated Construction Cost:** \$1,321,100

**Miscellaneous Pavement Rehab (CIP10-0003)** Meadow Creek & Grayhawk

**Project Manager:** Art Hartle

**Project Description:** *Street pavement removal and replacement for Talley Lane and west end of Shadybrook in Meadow Creek and Polo Heights Drive in Grayhawk from Spirit Falls Drive west.*

**Project Update:** *Design is underway. Bid opening is tentative set for May 19, 2011.*

**Construction Begin:** 6/1/2011

**Estimated Construction Cost:** \$770,380

**Phillips Creek Ranch Hike & Bike Trail (CIP11-0009)**

**Project Manager:** Jason Brodigan

**Project Description:** *Through TxDOT grant, install median landscaping and hike and bike trails along Stonebrook Parkway and Lone Star Parkway.*

**Project Update:** *TxDOT agreements have been approved and executed. Design is approximately 30% complete.*

**Construction Begin:** 2/1/2012

**Estimated Construction Cost:** \$5,400,000

**Preston Rd (SH 289) Landscape (CIP10-0027)** Main St to US 380

**Project Manager:** Jason Brodigan

**Project Description:** *Install median irrigation and landscaping. Project to be constructed by TxDOT.*

**Project Update:** *Design is 60% complete.*

**Construction Begin:** 3/1/2012

**Estimated Construction Cost:** \$724,000

**Rockhill Road (CIP08-0007)** CR 26 to Dallas Parkway

**Project Manager:** David L Chacon

**Project Description:** *Construct a new six-lane divided concrete roadway. Project includes paving, drainage, water, lighting, landscaping and irrigation.*

**Project Update:** *Design is 60% complete. Easement acquisition process has commenced.*

**Construction Begin:** Not Scheduled

**Estimated Construction Cost:** \$7,977,176

**Rockhill Road (CIP10-0015)** Dallas Parkway to Preston

**Project Manager:** David L Chacon

**Project Description:** Construct a new six-lane divided concrete roadway including a bridge over the BNSF Railroad. Project includes paving, drainage, water, lighting, landscaping and irrigation.

**Project Update:** Design is 60% complete. Easment acquisition process has commenced.

**Construction Begin:** Not Scheduled

**Estimated Construction Cost:** \$14,187,117

**Stonebrook Parkway (CIP10-0024)** Fighting Eagles to Longhorn Trail

**Project Manager:** David L Chacon

**Project Description:** Construct a new four-lane divided concrete roadway including a bridge under the BNSF Railroad. Project includes paving, drainage, water, wastewater, sidewalk, lighting, landscaping and irrigation.

**Project Update:** Corp of Engineers Permit has been submitted. BNSF railroad agreement package submitted to BNSF for their review. Plans have been submitted for city review.

**Construction Begin:** 1/16/2012

**Estimated Construction Cost:** \$14,257,471

**Stonebrook Pkwy (CIP05-0015)** Dallas Parkway to SH 289 [Preston Road]

**Project Manager:** Art Hartle

**Project Description:** Scope: Install 36 inch waterline, reconstruct westbound lanes to widen roadway to 6 lanes.

**Project Update:** Design is approximately 95% complete.

**Construction Begin:** 8/1/2011

**Estimated Construction Cost:** \$5,646,000

**US 380 (CIP10-0017)** CR 26 to Coit Rd

**Project Manager:** Jason Brodigan

**Project Description:** Widen the existing five-lane roadway to a freeway section including frontage roads and grade separated intersections at DNT and Preston Road.

**Project Update:** Conceptual design is 95 percent complete.

**Construction Begin:** Not Scheduled

**Estimated Construction Cost:** \$78,000,000

## **Wastewater Construction Projects**

**4th Army 16" Wastewater Force Main (CIP08-0014)** Stewart Creek WWTP to Morgan Hill Drive

**Project Manager:** Art Hartle

**Project Description:** Install new 16-inch force main.

**Project Update:** Contractor working on change order and punch list items prior to project close out.

**Construction End:** 6/1/2011

**Estimated Construction Cost:** \$859,050

**Cottonwood Branch Wastewater Line Rehab (CIP09-0003)** N. County and First to 1146 LF East

**Project Manager:** David L Chacon

**Project Description:** Sewer replacement beginning northeast of First Street and North County Road intersection. Sewer begins on east side of North County Road and running east from North County Road for 1,144 feet to end of project.

**Project Update:** Construction is 90% complete

**Construction End:** 7/29/2011

**Estimated Construction Cost:** \$397,792

**Panther Creek WWTP Expansion (Phase 2) (CIP08-0011)** Expand from 5MGD to 10 MDG

**Project Manager:** Art Hartle

**Project Description:** NTMWD expansion of the treatment plant from 5 MGD to 10 MGD.

**Project Update:** Project is 90 percent complete.

**Construction End:** Not Scheduled

**Estimated Construction Cost:**

## **Wastewater Design Projects**

### **Panther Creek Sewer Interceptor Phase 2 (CIP10-0013)**

**Project Manager:** David L Chacon

**Project Description:** *Install new 24" wastewater line.*

**Project Update:** *Design is 60 percent complete. Currently acquiring easements.*

**Construction Begin:** Not Scheduled

**Estimated Construction Cost:** \$3,253,434

## **Water Construction Projects**

### **Preston 24" Water Line (CIP10-0009)** Stonebrook to Main

**Project Manager:** Art Hartle

**Project Description:** *Construct 24" water line on the west side of Preston Road across First United Method Church property .*

**Project Update:** *Construction is approximately 90% complete.*

**Construction End:** 5/31/2011

**Estimated Construction Cost:** \$1,337,592

### **Teel Water Tower Driveway (NW EST) (CIP09-0006)** East of Teel Parkway & north of Panther Creek Parkway

**Project Manager:** Art Hartle

**Project Description:** *Construct 15' wide concrete access road to Teel EST*

**Project Update:** *Construction contract awarded to Bowman Construction in March. Construction is expected to begin in May.*

**Construction End:** 9/1/2011

**Estimated Construction Cost:** \$130,000

## **Water Design Projects**

### **Legacy EST Replacement (2MG) (CIP10-0019)**

**Project Manager:** Art Hartle

**Project Description:** *Construct replacement EST for existing 0.5MG EST*

**Project Update:** *Engineering study underway of alternatives.*

**Construction Begin:** Not Scheduled

**Estimated Construction Cost:** \$3,300,000

### **Main Street Waterline Relocations (CIP09-0011)** Preston Road to Custer Road

**Project Manager:** David L Chacon

**Project Description:** *Relocate existing waterline outside of the proposed right of way in preparation for Main Street construction.*

**Project Update:** *Bid set review scheduled for May 2011.*

**Construction Begin:** 8/1/2011

**Estimated Construction Cost:** \$4,137,000

## Engineering Highlights – Elizabeth Metting:

- **Construction Inspections** – Construction Inspectors have 173 current projects that are at various stages of construction.
- **Pre-construction Meetings** – Staff held 9 pre-construction meetings for new projects:
  1. Miramonte Phase 1 Acs
  2. Frisco Lakes by Del Webb, Village 13
  3. Meadowbrook Addition, Block 7, Lot 1
  4. Christie Ranch, Phase 2C
  5. Frisco Trails, Block A, Lot 5
  6. Grayhawk Elementary School, BI A, Lt 1
  7. Teel Water Tower Driveway (NW EST)
  8. Frisco West, BI A, Lt 4 - Legacy Montess
  9. FISD Middle School #13, BI A, Lt 1
- **Project Final Acceptances** – There were 0 projects accepted.

**Project Reviews** - Staff has completed Twenty-Four (24) engineering reviews.

## Transportation Highlights – Brian Moen:

- **Development/CIP Plan Reviews** – Staff reviewed 54 sets of development and CIP plans this month. Staff also reviewed and processed two TxDOT driveway permit applications.
- **SH 121 and DNT Tollway Construction** – NTTA is constructing a full interchange at SH 121 and the Dallas North Tollway (including direct-connect ramps in all directions), which is expected to be complete in January 2012. The Engineering Services website has a link to NTTA's current report on the status of the project. Road closures and traffic switches continue to be communicated through the City's normal announcement system.
- **Intersection Improvement Projects**
  - 1) **Legacy & Lebanon** – Project will reconstruct the intersection of Legacy Drive and Lebanon Road to eliminate the existing bump and widen each approach to have two left-turn lanes, three through lanes, and a right-turn lane (except northbound Legacy which will not have a right-turn lane). Project will also widen Legacy Drive to six lanes between Lebanon Road and Warren Parkway and add eastbound left-turn lanes on Lebanon Road at Compass Drive and

Village Boulevard. Construction started in October 2010 and is expected to take about a year to complete.

- 2) **Legacy & SH 121** – Project will construct two southbound right-turn lanes on Legacy Drive at SH 121. Project is being constructed as part of the Legacy & Lebanon Project described above. Construction on this part of the project is underway and is expected to be complete in mid 2011.
- **Citizen Inquiries** – Staff has responded to several citizen inquiries that came into the department by telephone, email, and the Q&A Message Board on the City website.
  - **Miscellaneous Traffic Studies** – Staff continues to update the crash database (based on police reports) and is in the process of reviewing responses to an RFP for purchasing new software to facilitate more efficient crash analysis of intersections. This month staff conducted one neighborhood speed study and two stop sign studies at the request of citizens.
  - **Roadway Lighting Projects**
    - 1) **Legacy Drive (Warren to Academy)** – The Legacy & Lebanon Intersection Improvement project (see status above) includes new roadway lighting on this section of Legacy Drive. Construction on the overall project has begun and the lighting is expected to be completed in late 2011.
    - 2) **Lebanon Road (Rock Creek Pkwy to Legacy)** – The Legacy & Lebanon Intersection Improvement project (see status above) includes new roadway lighting on this section of Lebanon Road. Construction on the overall project has begun and the lighting is expected to be completed in late 2011.
    - 3) **Lebanon Road (Dallas Parkway to Coit)** – Plans are complete and the project was bid in January. Construction began in April and is expected to be completed in August.
    - 4) **Stonebrook Parkway (Dallas Parkway to Preston)** – New roadway lighting is being added to this section of Stonebrook Parkway as part of the road reconstruction and waterline project (see status in “Engineering Highlights” above). The entire project is still under design.
    - 5) **Stonebrook Parkway (FM 423 to 4<sup>th</sup> Army Memorial)** – Roadway lighting is being added to this section of Stonebrook as part of the road construction project (see status in “Engineering Highlights” above). Construction on the overall project has begun and the lighting is expected to be completed in late 2011.
    - 6) **Preston Road (SH 121 to Gaylord)** – Under design.
    - 7) **Preston Road (Main to US 380)** – Under design.
    - 8) **Warren Parkway (Preston to Ohio)** – Under design.
    - 9) **Gaylord Parkway (Preston to Ohio)** – Under design.
    - 10) **Ohio Drive (SH 121 to Warren)** – Under design.
    - 11) **Hillcrest Road (Eldorado to Haversham)** – Under design.
    - 12) **Rolater Road (Independence to Custer)** – Construction on the overall road reconstruction project is underway and the lighting is expected to be completed in late 2011.

13) **FM 3537 (Preston to Custer)** – Under design.

- **School Zones** – Staff meets monthly with representatives of Fisd to discuss any school zone, crossing guard, or sidewalk issues. This month staff attended a training session for putting together a Safe Routes to School program and grant request. This month we conducted our annual pedestrian counts at all crossing guard locations in April.
- **Special Events** – As part of the Special Events Review Committee, staff reviews all pending special event applications for any traffic control needs. Staff continually coordinates with the Police, Fire, Communications, and Public Works Departments regarding any special events that affect traffic flow or parking in the City. Staff also coordinates with Pizza Hut Park and Dr Pepper Arena staff regarding large events at those venues, which sometimes requires coordination with NTTA. This month, staff provided traffic management support for the Easter Eggstravaganza, Fido 5K run, the Friday Night Lights events downtown, the Earth Day Extravaganza, the Dallas Cup at Pizza Hut Park, and the FC Dallas Soccer Games.
- **Staff** – Two of our traffic engineer positions are currently frozen.
- **Thoroughfare Standards Ordinance** – Staff is currently editing a draft update to the Thoroughfare Standards Ordinance based upon ongoing research as well as coordination with other departments. Staff is currently involved in the update of the entire set of Engineering Standards and the rewrite of the Zoning Ordinance and is coordinating changes with the Thoroughfare Standards. Once these changes are incorporated, staff will address and respond to comments from the Frisco Developers Council.
- **Traffic Count Map** – The traffic count map is available on the City's website at [maps.friscotexas.gov](http://maps.friscotexas.gov). It provides daily traffic volume counts (and the date of each count) on multiple segments of every major roadway. Staff conducts an annual traffic count program which updates the volumes collected on each major roadway segment every two or three years. The 2011 traffic count updates were collected in February, which included counts on 87 roadway segments..
- **Traffic Control** – Each month, staff designs the installation of new and/or replacement signs and pavement markings as needed. Each month, staff reviews the traffic control plans for new and ongoing construction zones. Staff is coordinating with TxDOT on major detours and weekend closures of sections of Preston Road, Custer Road, and FM 423 during those widening projects and with NTTA on major detours during the construction of the DNT/SRT interchange. This month staff monitored the shifting of traffic on Lebanon at FM 423, Stonebrook at FM 423, and Del Webb at FM 423 to the temporary pavement as well as the shifting of traffic on Lebanon Road and Legacy Drive to allow the next phase of reconstruction of that intersection, and the shifting of traffic onto the new pavement of Rolater Road west of Custer Road.
- **Traffic Signal Construction**
  - 1) **Eldorado & Parkway Towne Crossing (Target)** – Construction began in February and was completed in April. The signal became operational on April 27.

- 2) **Kyser & Main** – This signal is under design and construction is expected to begin in late 2011.
  - 3) **Legendary & Lebanon** – This signal is under design and construction is expected to begin in late 2011.
  - 4) **Stonebrook & Teel** – The design of this signal is complete and it is being built as part of the project that will widen Stonebrook to the east and extend it to the west. The signal is expected to be operational by mid 2011.
  - 5) **Stonebrook & Legacy** – This signal was bid in December and will be built as part of the Stonebrook road construction project. The signal is projected to be operational by the end of 2011.
  - 6) **Preston & Hickory** – A traffic signal is being constructed at this intersection as part of the Walmart project. Construction on the signal began in December and it is expected to be operational in May.
  - 7) **Eldorado & Woodsboro** – A traffic signal is being constructed as this intersection as part of the Costco project and is expected to be operational by September.
  - 8) **Eldorado & Hillcrest** – This signal is under design and is expected to be operational by September.
  - 9) **Eldorado & Coit** – This signal is under design and is expected to be operational by September.
- **Traffic Signal System Communications** – The system provides communications to all of the traffic signals in the City, allowing staff to monitor and control their operation remotely. Staff can also view the traffic detection cameras at most of the traffic signals, as well as 41 pan-tilt-zoom (PTZ) traffic cameras that can be controlled remotely. A new PTZ camera was installed in the past month at Preston at Hickory. Two new PTZ cameras will be installed in the next month at Eldorado at Parkwood Towne Crossing (Target). Staff maintains a database to track citizen complaints about traffic signals and what adjustments have been made.
  - **Traffic Signal Timing** – DKS Associates has finalized the report for optimized signal timings for 58 traffic signals throughout the City. NCTCOG funds are paying for retiming 34 traffic signals along Main Street (FM 423 to Custer), Dallas Parkway (Gaylord to Eldorado), Preston Road (Gaylord to US 380), and Warren Parkway (Legacy to Preston). A federal stimulus grant is paying for the retiming of 24 traffic signals in the northwest and southeast quadrants of the City. Staff has completed the implementation and fine tuning of these signal timings. Post implementation evaluations of these new signal timings are currently ongoing with the results for each corridor expected to be completed by the end of April. On an ongoing basis, staff changes the operation of various traffic signals along Preston Road and Custer Road and FM 423 to coincide with TxDOT closures and traffic shifts as part of their widening projects. Staff also adjusts the operation of the traffic signal at Legacy & Lebanon based on the different phases of that intersection reconstruction project. This month staff created and activated the timing for the new traffic signal at Eldorado and Parkway Towne Crossing (Target).
  - **Training and Conference Attendance** – Staff attends the monthly local meetings of the Texas District of the Institute of Transportation Engineers (TexITE) and the American Society of Civil Engineers (ASCE). Joel Fitts is

currently the President of the Greater Dallas Section of TexITE and Brian Moen represents Greater Dallas on the Statewide Board of TexITE. Sean Merrell is an active committee member in both TexITE and the Texas Section of ASCE and is the Vice President of the ASCE Dallas Branch.

- **Traffic Signal Maintenance** – The City of Frisco currently operates and maintains 80 traffic signals within the City of Frisco, 75 of which have automatic battery backup power. City crews provide on-call maintenance seven days per week with a 45-minute response time.

A significant part of traffic signal maintenance relates to the 327 video cameras used to detect vehicles at each signal. Currently, 100% of the video detection is fully operational. Maintaining this video detection is very efficient due to the citywide communication system because diagnosing and troubleshooting detection issues can be performed from our central control center.

This month City crews programmed and set in place our electronic message boards to help direct traffic for the Easter Eggstravaganza. Crews put a new traffic signal into operation at Eldorado and Parkway Towne Crossing (Target). Battery backup systems are currently being installed in four water towers that communicate with our traffic signals and video cameras to ensure they will provide communication to our equipment in case of a power loss. The storm on April 11 caused damage to some of our signal equipment on the north side of the city. Repairs were made to this damaged signal equipment the next day.

Beyond responding to items that need to be constructed or repaired, city crews perform regular preventative maintenance on traffic signal equipment each month. This includes testing of each traffic signal's video detection cameras, "conflict monitor" equipment, and Opticom equipment (which provides emergency vehicle preemption of the traffic signal).

City crews also operate and maintain 118 school zone flashers, two pedestrian crossing flashers, and one special event sign flasher.

- **Roadway Lighting Maintenance** – In general, city crews operate and maintain roadway lighting along major thoroughfares and the power companies operate and maintain the street lights within neighborhoods. City crews performed lighting repairs at several locations during the month, including replacing bulbs and replacing poles that were knocked down.

Total light poles maintained by City	1924
Total lamp fixtures maintained by City	3222
Proportion of City lighting currently operating	98%

- **Wayfinding Project** – Staff kicked off the wayfinding project in July by meeting with the consultant team, stakeholder group, TxDOT, and NTTA. This project will assist staff in meeting the needs of our citizens and visitors who attend events at both public and private operated destinations in Frisco. The project will analyze our wayfinding needs and help with the design of the

signs. The project will also develop guidelines that staff can use when a request is made to determine which destinations qualify for signage. The first phase of the project will finish by early 2011. It is expected that implementation could occur by late 2011.