

Engineering Services Monthly Report

August 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 southbound Wilson Creek bridge and concrete paving southbound lanes.*

Construction End: 4/2/2012

Estimated Construction Cost: \$132,000

Eldorado at Teel Sidewalk Improvements (CIP11-0005) Northridge to Teel

Project Manager: Art Hartle

Project Description: *Construct 1800 feet of sidewalk from Northridge to Teel Parkway.*

Project Update: *The contractor, Estrada Concrete, has begun construction of the retaining wall.*

Construction End: 11/15/2011

Estimated Construction Cost: \$375,000

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 and Road, is preparing subgrade and concrete paving southbound lanes.*

Construction End: 9/4/2012

Estimated Construction Cost: \$30,000,000

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. ROW acquisition is ongoing. Bids have been opened and construction is expected to begin in August.*

Construction End: 6/1/2012

Estimated Construction Cost: \$3,286,667

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: *Intersection and additional lanes are complete. Contractor is completing lighting and landscaping.*

Construction End: 8/27/2011

Estimated Construction Cost: \$3,246,965

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: *Construction began in July.*

Construction End: 10/29/2011

Estimated Construction Cost: \$770,380

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: *Contractor, Mario Sinacola, has begun work on the southbound lanes south of Eldorado. The Eldorado/Preston intersection was fully opened on Tuesday, July 19.*

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 70% 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: *Streetlights and traffic signals work are complete. Landscape work is in progress*

Construction End: 8/31/2011

Estimated Construction Cost: \$4,446,613

Roadway Design Projects

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

Project Manager: Jason Brodigan

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: 4/2/2012

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 returned to consultant.*

Construction Begin: 10/21/2011

Estimated Construction Cost: \$970,000

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

Project Manager: Toyin Fawehinmi

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

Project Update: *Design is 60% complete*

Construction Begin: 1/2/2012

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: 9/4/2012

Estimated Construction Cost: \$0

Lebanon/DNT Intersection (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: 10/31/2011

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: *TXDOT opened bids for the project in June. ROW acquisition and utility relocations are ongoing.*

Construction Begin: 3/5/2012

Estimated Construction Cost: \$1,321,100

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. Easement 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 complete. Easement acquisition is underway.

Construction Begin: 2/14/2012

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

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: Project is in preliminary walkthrough for close out.

Construction End: 8/31/2011

Estimated Construction Cost: \$397,792

Wastewater Design Projects

Fairways LS Peak Flow Improvements (CIP11-0004) within Fairways LS property

Project Manager: Art Hartle

Project Description: Add new pump to increase flow capacity of lift station.

Project Update: Design is in progress.

Construction Begin: 10/1/2011

Estimated Construction Cost: \$400,000

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

Driveway to Teel 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 is 50% complete.*

Construction End: 9/1/2011

Estimated Construction Cost: \$130,000

Water Design Projects

Legacy EST (CIP10-0019)

Project Manager: Art Hartle

Project Description: *Construct new 1.5 million gallon elevated water tank to replace existing 0.3 million gallon 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: *Acquiring easements. Bid pending easement being acquired.*

Construction Begin: 11/1/2011

Estimated Construction Cost: \$4,137,000

Engineering Highlights – Elizabeth Metting:

- **Construction Inspections** – Construction Inspectors have 189 current projects that are at various stages of construction.
- **Pre-construction Meetings** – Staff held 12 pre-construction meetings for new projects:
 1. Villages at Willow Bay South Phase 2
 2. Knolls of Frisco, Phase 2B
 3. George and Debra Purefoy Elementary
 4. Miscellaneous Pavement Rehab
 5. Stonewater Crossing, Ph 1 - Fire Station
 6. Hillcrest Corners Addn, Blk A, Lt 3
 7. Preston Ridge Addn, Bl A, Lt 1R – CCCC
 8. Teel Parkway Detention Facility
 9. Old Hickory Square at Frisco Bl A, Lt 1
 10. Gene & Ruby Nichols Elementary
 11. Stonewater Crossing Ph 2
 12. Centre at Preston Ridge, Ph 2A, Lt 5R, 9
- **Project Final Acceptances** – There was 5 project accepted.
 - SH 121 & Independence Retail-Wingate
 - SH 121 & Independence Retail Lot 2
 - Kingdom Hall Church
 - Cobb Farms Ph 2
 - Frisco Bible Church

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

Transportation Highlights – Brian Moen:

- **Development/CIP Plan Reviews** – Staff reviewed 46 sets of development and CIP plans this month. Staff also processed one TxDOT driveway permit application.
- **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 are listed on NTTA.org and 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. Most of the paving work was completed in July and traffic was switched back to have the same number of lanes before construction began, plus additional through lanes. The additional turn lanes should be complete by August and the median lighting and landscaping should be complete by September.
- 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. The new turn lanes were opened in July and work on the retaining wall is being completed.
- 3) **Dallas Parkway & Eldorado** – Project will construct a third lane on the southbound frontage road (between Eldorado and the entrance ramp) which will allow us to provide dual right-turn lanes on eastbound Eldorado at Dallas Parkway. Project will also replace the temporary “span-wire” traffic signal with a permanent traffic signal and construct a third lane on the northbound frontage road between the exit ramp and Eldorado to improve traffic flow approaching the intersection. This project is currently under design and construction should start in early 2012.

- **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 has completed the RFP process and has selected a vendor for purchasing new software to facilitate more efficient crash analysis of intersections. This month staff conducted one neighborhood speed study and one stop sign study 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 is underway and last month the lights between Texas

Drive and Academy Drive were activated. The remainder of the lighting is expected to be completed in September 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 is underway and last month the lights west of Compass Drive were activated. The remainder of the lighting is expected to be completed in September 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) **Preston Road (SH 121 to Gaylord)** – Under design.
- 6) **Preston Road (Main to US 380)** – Under design.
- 7) **Warren Parkway (Preston to Ohio)** – Under design.
- 8) **Gaylord Parkway (Preston to Ohio)** – Under design.
- 9) **Ohio Drive (SH 121 to Warren)** – Under design.
- 10) **Hillcrest Road (Eldorado to Haversham)** – Under design.
- 11) **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.
- 12) **FM 3537 (Preston to Custer)** – TxDOT’s widening project for this roadway includes lighting on Main Street between Preston Road and Custer. The lighting will be completed near the end of the project which is expected to be in the Spring of 2014. Check the status of the overall project in the *Roadway Construction Projects* section of this report.

- **School Zones** – Staff meets monthly with representatives of FISD to discuss any school zone, crossing guard, or sidewalk issues. FISD has changed the start and end times of all of their schools for the upcoming school year in order to allow the same buses to serve elementary, middle school, and high school students. Therefore, this month staff oversaw the replacement of all of the time placards on every school zone sign in the City and has submitted an amended school zone ordinance for Council approval. Staff is also overseeing various sidewalk improvements during the summer to be completed before school starts.
- **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 Freedom Fest, the Police Department’s Safety

Palooza, and several FC Dallas Soccer Games and has been planning the traffic control for the Brad Paisley concert coming up on July 30.

- **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 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. 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 all approaches to the intersection of Lebanon and Legacy; the switching of traffic from the west side of Preston to east side between Main and Eldorado; the opening of the full intersection at Preston and Eldorado; and the reopening of Gary Burns Drive which had been closed for reconstruction.
- **Traffic Signal Construction**
 - 1) **Kyser & Main** – This signal is under design and construction is expected to begin in late 2011.
 - 2) **Legendary & Lebanon** – This signal is under design and construction is expected to begin in late 2011.
 - 3) **Stonebrook & Legacy** – This signal was bid in December and will be built as part of the eastern Stonebrook road construction project. The signal is projected to be operational by the end of 2011.
 - 4) **Eldorado & Woodsboro** – A traffic signal is being constructed at this intersection as part of the Costco project and is expected to be operational by September.
 - 5) **Eldorado & Hillcrest** – Construction of this signal will begin in early July and it is expected to be operational by the end of August.
 - 6) **Eldorado & Coit** – Construction of this signal will begin in early July and it is expected to be operational by the end of August.
- **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 46 pan-tilt-zoom (PTZ) traffic cameras that can be controlled remotely. A new HD PTZ camera was

installed this month on the police communication tower to view traffic along the DNT..

- **Traffic Signal Timing** – 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.
- **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. This month staff attended a workshop about the new federal requirements on monitoring and maintaining traffic sign retroreflectivity.
- **Traffic Signal Maintenance** – The City of Frisco currently operates and maintains 82 traffic signals within the City of Frisco, 77 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 335 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 Freedom Fest and the Police Department's Safety Palooza event. Crews also adjusted the traffic signal cameras and signal heads to account for the traffic switch at the intersection of Legacy and Lebanon, the traffic on Preston Road between Main Street and Eldorado, the opening of the full intersection at Preston and Eldorado, and the opening of Gary Burns Drive. 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.

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 and two pedestrian crossing flashers.

- **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	2183
Total lamp fixtures maintained by City	3740
Proportion of City lighting currently operating	99%

- **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.