

ROAD & BRIDGE - STATE OF THE DEPARTMENT

Administration

9-1-1 Addressing/GIS

Compliance

Environmental/Septic

Engineering

Floodplain Management

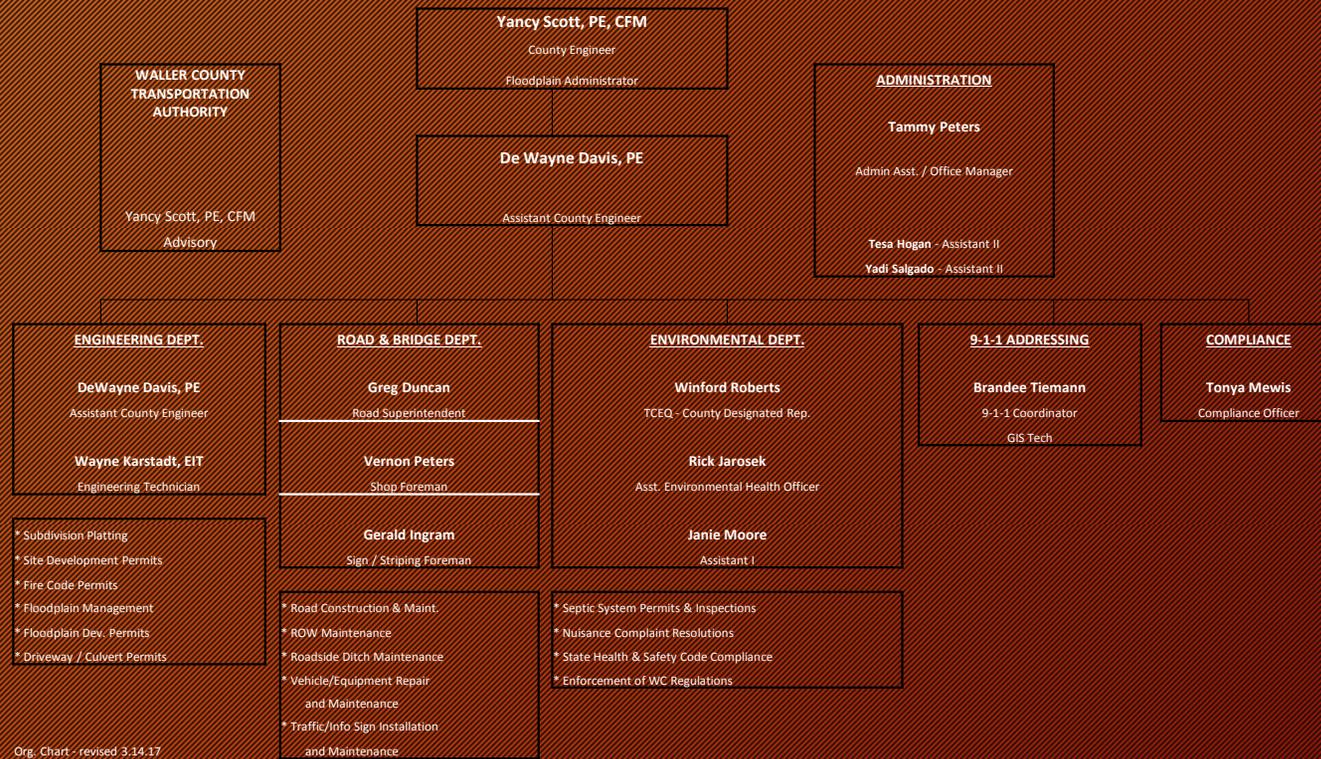
Road & Bridge

Shop

Sign/Striping



Department Structure



Pillars

SAFETY

CUSTOMER SERVICE

PRODUCTIVITY

TRUST



Road & Bridge Generated Revenue

9-1-1 Addressing

2016 - \$8,130.00
2017 - \$2,550.00
Total - \$10,680.00

Driveway/Culvert

2014 - \$81,180.00
2015 - \$95,300.00
2016 - \$76,860.00
2017 - \$26,480.00
TOTAL - \$279,820.00

Engineering

2014 - \$36,582.09
2015 - \$32,885.92
2016 - \$33,187.25
2017 - \$30,218.00
Total - \$132,873.26

Env/Septic

2014 - \$58,220.00
2015 - \$61,090.00
2016 - \$71,800.00
2017 - \$14,710.00
Total - \$205,820.00

Fire Code

2014 - \$18,375.15
2015 - \$43,383.50
2016 - \$32,591.65
2017 - \$12,260.95
Total - \$106,611.25

2014 - \$194,357.24
2015 - \$232,659.42
2016 - \$222,568.90
2017 - \$86,218.95
Total - \$735,804.51

Administration

PAST

- Lobby only capable of helping one customer at a time
- Space wasn't very functional
- 3 Admin Asst.



Administration

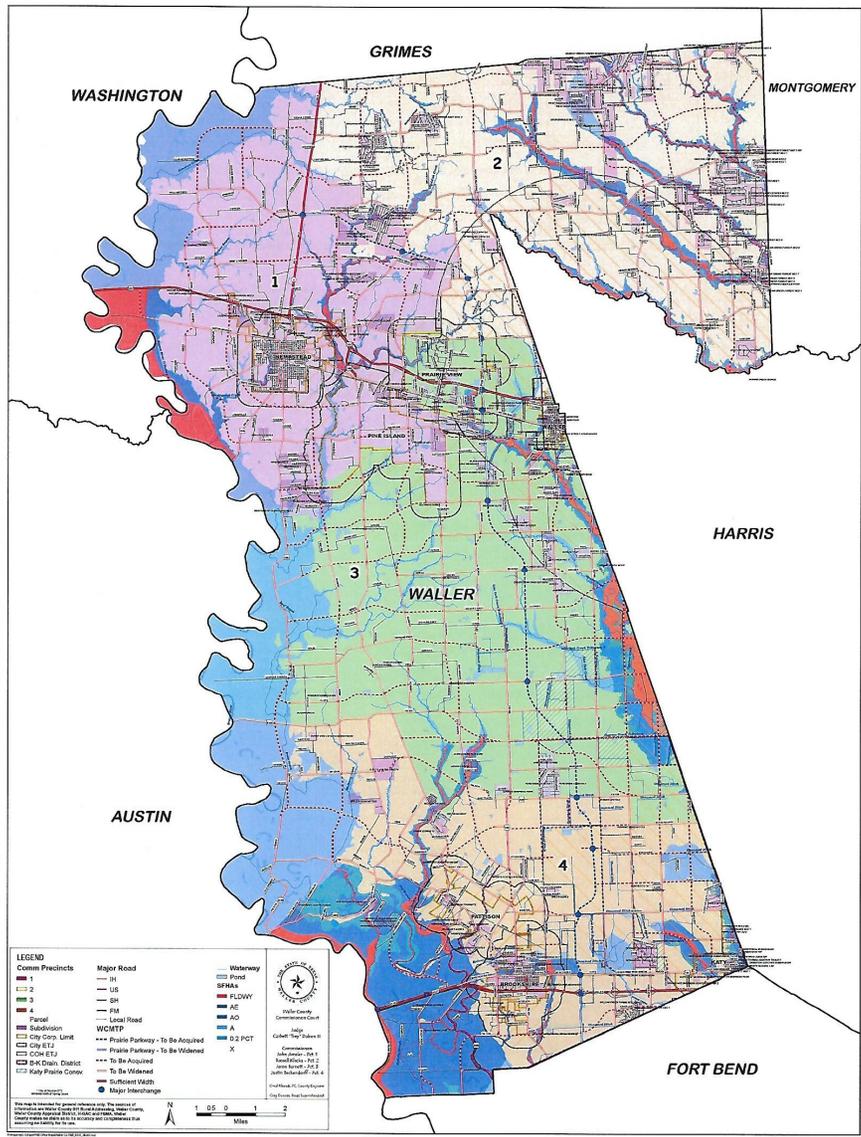
PRESENT

- 1 Officer manager
- 2 Administrative Assistants (1 Engineering, 1 Road & Bridge)
- New remodeled lobby with ADA compliance counter and ramp
- Newly installed security devices for employee and property protection

FUTURE

- Training and inner office cross training
- Create meeting room rental policy
- Improve Employee Job Descriptions with Tiers and Pay Scales





9-1-1 Addressing / GIS



PAST

One team member
H-GAC programming 1990's
Resolution adopted April 14, 1997
Adopted sign fee - March 1, 2016

~ ~ ~ ~ 2016 ~ ~ ~ ~

| | |
|-------------------|-----|
| Violations Issued | 107 |
| Turned over to DA | 13 |



9-1-1 Addressing / GIS



PRESENT

- One Team member
- Issuing of 9-1-1 addresses
- Making and issuing of 9-1-1 reflective signs
- GIS mapping for various entities and customers

- Developing Addressing Resolution Update
- Considering Addressing Interlocal Agreement

~ ~ ~ ~ 2017 ~ ~ ~ ~

| | |
|-------------------|---|
| Violations Issued | 9 |
| Turned over to DA | 5 |



9-1-1 Addressing / GIS



FUTURE

- Posting of Reflective Address signs will reduce the response time for emergency responders. Also help all other delivery personnel (mail or packages)
- Part time employee / intern
- Tablet for field work
- Community Outreach
- Interactive GIS website for the public and County Employees
- Add block # to street name signs



Compliance



PRESENT

- 1 Compliance Officer
- Enforces all Waller County Development Regulations

FUTURE

- ****Communication****
- Organize procedure with all courts on the enforcement and fines of violators on county regulations
- Communicating with citizens on rules/regulations
- Ensure violations corrected in timely manner through communication of all departments
- Be visible after regular business hours



Environmental/Septic

PAST

1984 application processes started

2016

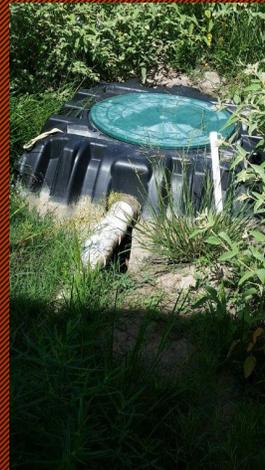
| | |
|-------------------|-----|
| Permits Issued | 314 |
| Septics Installed | 282 |
| Violations Issued | 55 |
| Court Cases Filed | 290 |
| Court Convictions | 158 |



Environmental/Septic

PRESENT

- Staff
 - 1 Environmental Health Officer
 - 1 Asst. Environmental Health Officer
 - 1 Admin. Asst.
- Abatement Procedure



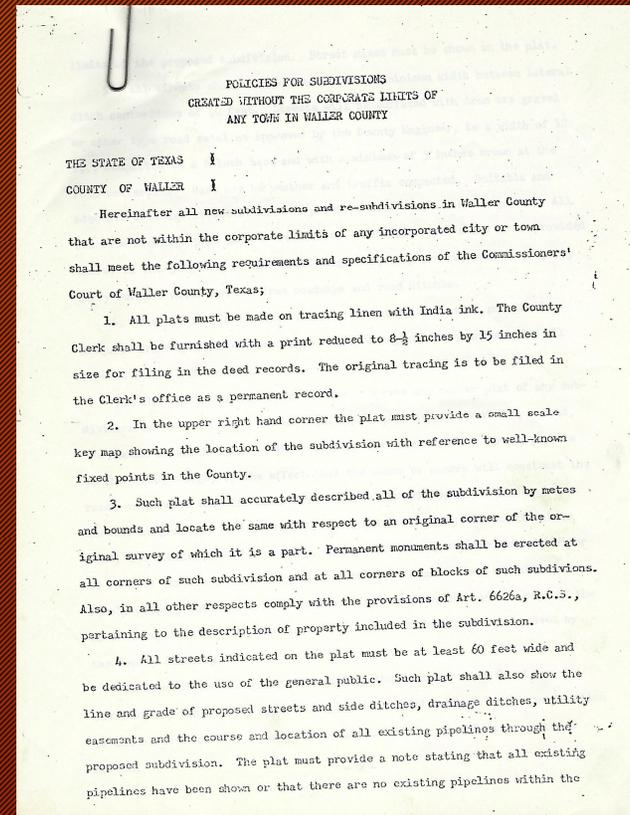
| 2016 | | | | | | | | | | | | Installs | Installed |
|------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|------|------------|-----------|
| July | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | June | Installs | Installed |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 59 | 59 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 119 | 119 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 68 | 68 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 314 | 282 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 25 | 7 |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 18 | 18 |
| 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 35 | 35 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 196 | 196 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 47 | 47 |
| 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 35 | 35 |
| 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 9 | 9 |
| 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 74 | 74 |
| 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 3 | 3 |
| 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 314 | 282 |
| 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 2 | 2 |
| 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 01/04/2017 | 11:32 |
| 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 3 | 3 |
| 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 314 | 282 |
| 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 2 | 2 |
| 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 3 | 3 |
| 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 314 | 282 |
| 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 2 | 2 |
| 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 3 | 3 |
| 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 314 | 282 |
| 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 2 | 2 |
| 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 3 | 3 |
| 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 314 | 282 |
| 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 2 | 2 |
| 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 3 | 3 |
| 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 314 | 282 |



Engineering

PAST

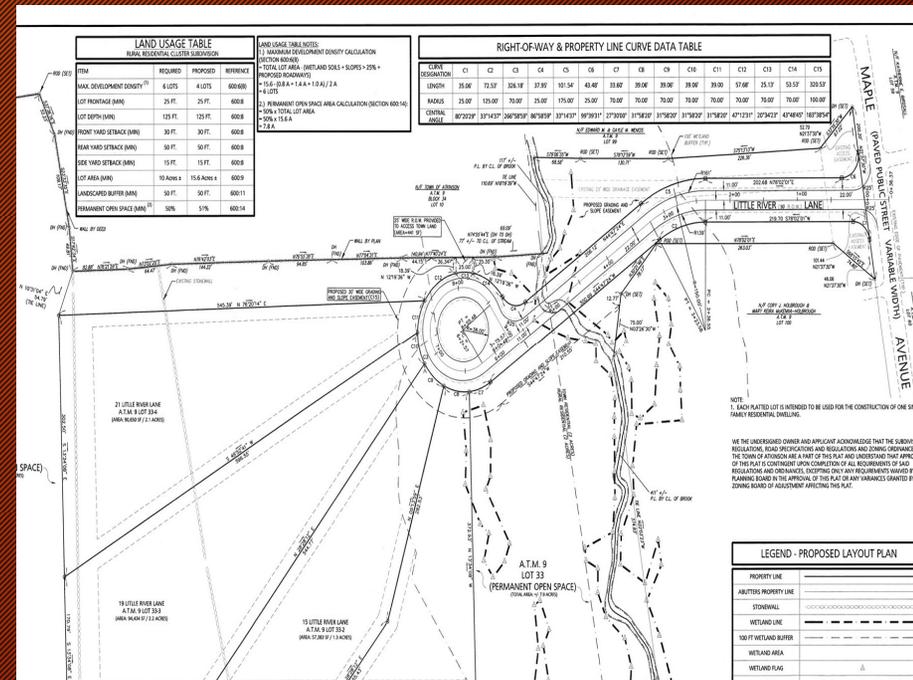
- 1 - County Engineer (early 80's)
- 1 - Engineering Tech (late 90's)
- 1970 - 1st Subdivision Regulations
- 1981 - Major Subdivision Regs. revision
- 2007 - Major Subdivision and Developments Regs updated, included detention requirements
- 2013 - Updated Subdivision Regs. and Fees
- TACERA membership



Engineering

PRESENT

- 1 - County Engineer
- 1 - Assistant Engineer
- 1 - Engineering Tech
- Update Regulations
- Continue Drainage Studies
- Procure Tablets (for out of office work)
- Preparing revisions to interlocal agreements with Cities (platting) and School Districts
- Training

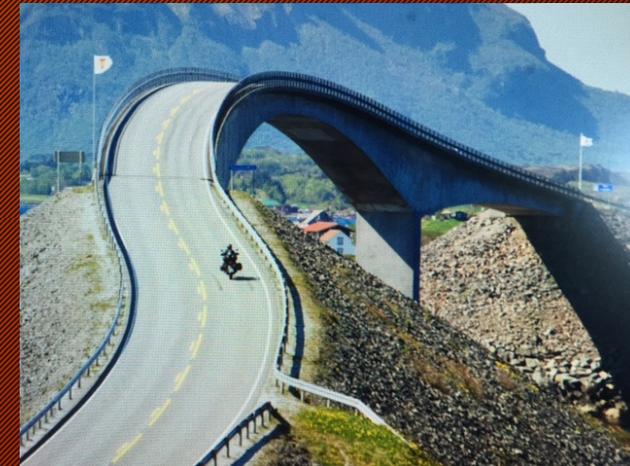


Engineering

FUTURE

Short Term

- Current Staffing is adequate
- Exploring Intern options
- Variance Request Process
- Update Development Regulations (all)
 - Plat Filing protocols need updating
- Update/Add development fees
- Continue Cooperative Purchasing efforts
- Encourage Training
- Update Major Thoroughfare Plan (with Strategic and Mobility Plans results in view)
- City of Houston Planning Commission (COH ETJ)
- Interlocal Agreements (City ETJs, School Districts)
- Electric Provider Coordination (Permits and Platting)
- Emergency Preparation, Response, and Recovery (Protocols and Procedures)



Engineering

FUTURE continued...

Long Term

- 1 - Public Works Director
- 1 - County Engineer
- 1 - Assistant Engineer
- 2 - Engineering Tech

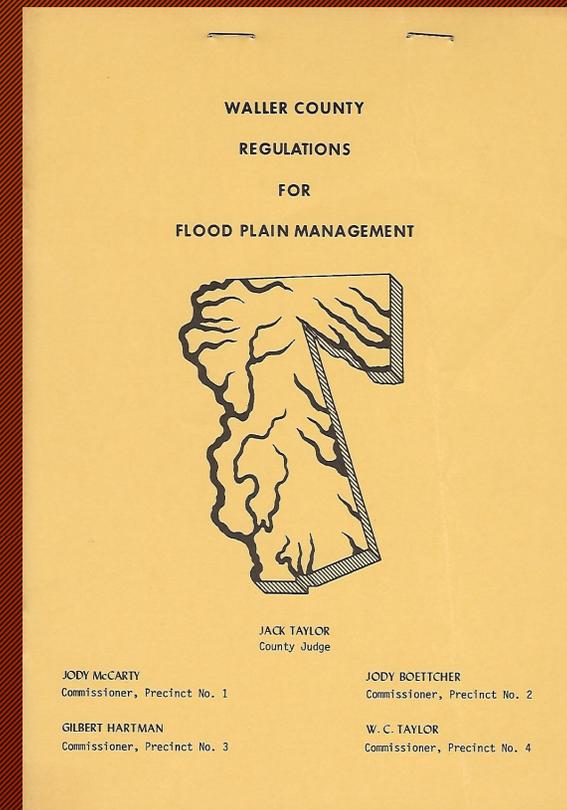
- Floodplain Coordinator/Field Inspector
 - (drainage issues & development inspections)
- Update Development Regulations
- Bond referendums for drainage and roads in the county
- Training
- Mobility - corridor preservation
- Drainage Districts



Floodplain Management

National Flood Insurance Program

- National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the county and community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.



Floodplain Management

Hydrology and Hydraulics Study History

1975

- Feb. 21st - Comm. Court adopted order requiring building permits for construction in the Floodplain.
- Flood Hazard Boundary Maps adopted.

1988

- In this countywide FIS, the detailed studied streams were included from the previous FISs for the unincorporated areas of Waller County dated May 4, 1988.

2009

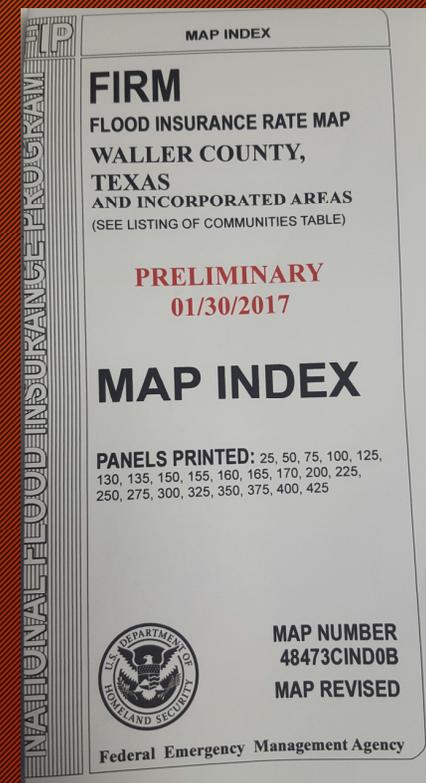
- The H&H analyses for Spring Creek, Cypress Creek/Mound Creek and Cane Island Branch were provided by the Harris County's Tropical Storm Allison Recovery Project (TSARP).
- Flood Insurance Rate Maps (FIRMs) digitized for use with GIS software for mapping purposes.
- Flood Damage Prevention Ordinance adopted with new maps and new freeboard of 18-inches required.
 - 100-ft Floodway Buffer added in 2013.



Floodplain Management

FUTURE

- Staff
 - 1 - Floodplain Administrator
 - 1 - Development Coordinator
- Outreach
- Flood Relief Policies and Projects
 - For example, No Buildable Lots in the FP, period.
 - Increase Freeboard to 2-ft.
 - Gauges at Creek crossings (with HCFCD)
 - Signage at Creek crossings



Road & Bridge

PRESENT

- Patch Truck and Crew for each pct.

FUTURE

- Short Term
 - Revise Road Maintenance IAs with Cities
 - Road Conditions Assessment
 - Road Functional Classification
 - Annual Road Reports
- Long Term
 - Road Reconstruction process
 - Road Patching Methodology
 - ROW Maintenance

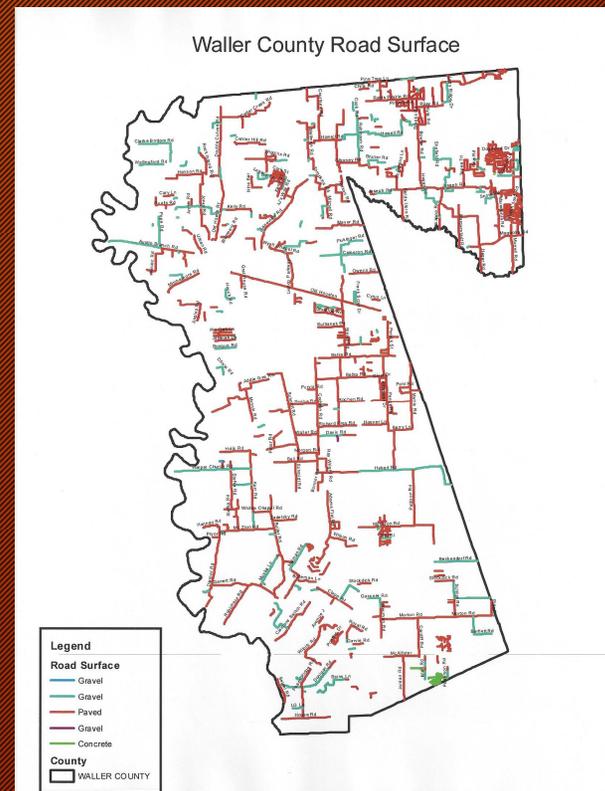
| Road Name | Precinct | Length Feet | Miles | City | Subdivision | Right-of-Way R.O. W Width |
|---------------------------------------|----------|----------------|-------|----------------------------|-------------------------------|------------------------------|
| A Street | 2 | | | Prairie View | | 60' |
| A Street | 3 | 4150' | 0.79 | Waller | Deerwood North | 60' |
| Abertown Way | 1 | 900' | 0.152 | off FM 2979 | | 79' |
| Adams Flat Road | 4 | | 4.2 | | Cope Addition | 60' |
| Adams Street | 4 | 469.1' | 0.09 | Katy | | 79' |
| Adams Oak Road | 3 | | 4.6 | Between FM 1887 & FM 359 | | 80' |
| Alabama Street | 4 | 475.10' | 0.09 | Katy | Cope Addition | 60' |
| Alphester Court | 2 | 261.64' | 0.05 | off FM 1774 | Mill Creek Estates S-6 | 60' |
| Alphester Lane | 2 | 1103.63' | 0.209 | off FM 1774 | Mill Creek Estates S-6 | 60' |
| Alpla Road | 2 | 3360' | 0.64 | Prairie View | Prairie Hills | 60' |
| Allen Drive (Road not Const. 9-18-86) | 3 | 1060' | 0.201 | off Harper Church Rd. | Pecan Grove | 60' |
| Allen Street | 1-3 | | | Hempstead | | 80' |
| Alliance Street | 3 | | | Waller | | 60' |
| Amariyas Street | 2 | 1560' | 0.3 | Prairie View | Prairie Hills | 60.06' |
| Andrew Road (off FM 1736) | 1 | | 0.02 | | | 28' |
| Artemis Street | 1 | 3706.7' | 0.702 | | Rolling Hills Colony S-6 | 60' |
| Ashe Court | 1 | 263' | 0.05 | | Deerwood East S-1 | 60' |
| Ashe Lane | 4 | 441.87' | 0.084 | off FM 359 & Pontiac Drive | Indian Oaks | 60' |
| Ashe Street | 2 | | | Prairie View | | 60' |
| Ashley Road | 2 | 848.94' | 0.161 | FM 1774 | Mill Creek Estates S-6 | 60' |
| Ash Lane (off Whit Loggins Rd.) | 1 | 1748.16' | 0.33 | off Whit Loggins Road | | 60' |
| Asilo Drive | 1 | 1527' | 0.301 | | Deerwood Lakes S-1 | 60' |
| Ashton Street | 1 | 3900' | 0.739 | off FM 1736 | Rolling Hills Colony S- 4 & 6 | 60' |
| Astoria | 1 | 600' | 0.11 | Hempstead | Annis S/D | 60' |
| Astoria | 4 | 950' | 0.18 | Katy | | 60' |
| Astoria | 3 | 625' | 0.12 | Waller | | 60' |
| Astoria | 3 | | | Waller | | 60' |
| Astoria | 4 | 600' | 0.11 | Katy | | 60' |
| Astoria Road | 1 | 1800' | 0.341 | Hempstead | | E. en |
| Astoria Road | 1 | | 5.1 | S. of 290 & Urban Rd. | | |
| Astoria | 1 | | | Hempstead | | |
| Astoria | 4 | 2062.50' | 0.39 | Pattison | | |
| Astoria | 2 | | | Prairie View | | |
| Astoria | 4 | 1725' | 0.33 | Pattison | | |
| Astoria | 2 | | | Prairie View | | |

Road & Bridge

Roads Maintained by WC

| Surface Type | Mileage |
|------------------|--------------------|
| 38 Concrete | 6.3 miles |
| 100 Gravel | 104.5 miles |
| <u>414 Paved</u> | <u>409.6 miles</u> |
| 552 Roads | 520.4 miles |

(Interlocal Agreement roads not included)



Road & Bridge

Bridges 2017

Texas Department of Transportation (TXDOT) defines bridges as structures that are longer than 20' in length. At the present time, Waller County has 55 county maintained bridges which meet this criteria. Currently, the breakdown of county maintained bridges is as follows:

TYPE OF BRIDGES

Concrete: 24
Concrete/Timber: 1
Concrete/Timber/Steel: 3
Rail/Tank Car Pipes: 9
Timber: 6
Timber/Steel: 2
Concrete/Steel: 10



INSTALLED DATES

1940-1949: 5
1950-1959: 3
1960-1969: 4
1970-1979: 5
1980-1989: 9
1990-1999: 7
2000-2009: 12
2010-2017: 10

Road & Bridge

Bridges continued...

NOTE:

2 bridges are scheduled to be replaced in 2017/2018 – (Rice Rd @ Brushy Creek RD - TXDOT and Creek Bend Rd @ Threemile Creek - TXDOT).

LOAD POSTED BRIDGES

Waller County has 11 load posted bridges out of a total of 55 county maintained bridges.

LOOKING AHEAD

Waller County Engineering has contacted TXDOT about future bridge projects in the Off-System Bridge Replacement Program. In this program the local government is required to have an equivalent-match project in return for a waiver of the local match fund participation requirement on the approved federal Off-System Program. The date to submit bridges for this program will be in October 2017.

Road & Bridge - Budget

Materials Budget History, in \$M

| | |
|-------------|-------------|
| 2005 - 1.08 | 2011 - 1.62 |
| 2006 - 1.03 | 2012 - 1.54 |
| 2007 - 1.24 | 2013 - 1.50 |
| 2008 - 1.84 | 2014 - 2.00 |
| 2009 - 2.23 | 2015 - 2.00 |
| 2010 - 1.81 | 2016 - 2.30 |

(2009 - 2013 had a cumulative decrease of \$2.46M)

PRESENT Materials

\$2.5M

FUTURE

Short Term

| | |
|----------------------|------------|
| Additional Equipment | ~\$540,000 |
| Materials | ~\$3.2M |

Long Term

| | |
|------------------|------------|
| Mowing Equipment | ~\$350,000 |
| Materials | ~\$3.8M |

(7% every year for price increase)

Road & Bridge - Road Crew

PAST

- 1 Road Superintendent
- 4 Mowers - 1 foreman
- 2 Foreman's (1 precinct 1&2, 1 precinct 3&4)
- 4 Bridge crew - 1 foreman
- 4 Maintainer operators
- 1 Boom mower operator
- 2 Oil truck operators
- 1 Dozer operator
- 1 Grade shot man
- 4 Fence crew - 1 foreman
- 2 Grade-all crews (8 total workers)
- 5 Dump truck operators
- 2 Patch crews (4 total workers)
- 1 Loader operator

Total of 45
crew members



Road & Bridge - Road Crew

PRESENT

- 1 Road Superintendent
- 4 Maintainer operators
- 2 Boom mower operators
- 2 Gradall crews (8 total workers)
- 1 Grade shot man
- 5 Dump truck operators
- 1 Loader operator
- 4 Patch Crews - (8 total workers)
- 1 Rock box & lay down machine operator

Total of 31
crew members



Road & Bridge - Road Crew

FUTURE

- 1 Road superintendent
- 4 Maintainer operators
- 4 Patch Crews - (8 total workers)
- 2 Boom mowers
- 2 Gradall crews (8 total workers)
- 5 Dump truck operators
- 1 Loader operator
- 2 Oil truck operators
- 4 Mower operators, 1 Foreman, 2 weed eater men
- 1 Drainage Foreman
- 2 Grade shot men

Total of 40
crew members



Shop

PAST

- Staff
 - 1 Shop Foreman
 - 7-8 shop employees
 - 4 Mechanics (1 Sheriff Department - 3 Road & Bridge)
 - 1 Tire man, 1 Fuel truck operator
- Vehicles and equipment were on some-what of a rotation schedule and the heavy equipment was on a buy-back program.
- There were no computers or diagnostic tools or software, everything was hand written and done manually.
- Shop building, facilities and tools were in poor condition.

Shop

PRESENT

- Staff
 - 1 Shop Foreman
 - 4 Shop Employees
- Vehicles and equipment are going over on mileage and hours, before getting replacements. Need a better rotation schedule for replacement vehicles and equipment. Vehicles and equipment need to be brought in for maintenance service on a regular schedule, too many times they are way over on hours and mileage.
- Shop lights have been updated, leaking roof has been repaired and large fans installed to update the shop facilities.
- Shop has new computers, printer and diagnostic tools and equipment. FleetMate Software is utilized for all Road and Bridge vehicles and equipment maintenance, repairs and documentation.
- Shop personnel are attending training classes once a month.



Shop

FUTURE

Short Term

- Staff
 - 1 Shop Foreman (with Admin. Support), 1 Fuel truck operator, 1 Tire man, 5 Mechanics (2-Law Enforc., R&B)
- Process
 - Track mileage for routine maintenance
 - Vehicle/Equipment replacement program based mileage/hours/yrs
- Equipment
 - Vehicle Lifts
 - Tools and Software
- Budget (ideas)
 - Create a single vehicle/equipment repair line for ALL County vehicles
 - ALL Law Enforc. Vehicles use Shop for maintenance items ONLY. Shop ONLY performs routine maintenance.
 - Equipment Auction with going to R&B budget

Long Term

- Staff
 - 1 Shop Foreman (with Admin. Support), 1 Fuel truck operator, 1 Tire man, 5 Mechanics (2-Law Enforc., R&B)
- Process
 - Revise vehicle/equipment replacement program thresholds

Road & Bridge - Sign/Striping

The Sign Department consists of a Foreman and two employees. There are over 8,000 signs in Waller County and our small team conducts inspections, produces and replaces damaged or stolen signs and assists the Road & Bridge Department with daily requests for signs in work areas (fresh oil, loose gravel, men working, etc.). We also assist with repairs of damaged guard rails and did all striping of roads.

PAST

- Staff
 - 1 Sign man
- Process
 - Our department had outdated technology (computer software), an outdated computer, and outdated plotter - which made making signs difficult and time consuming.
 - We only replaced signs that were stolen or heavily damaged. Faded or non-reflective signs were not replaced.
- Equipment
 - The Sign Department owned one old truck that had many mechanical issues.



Road & Bridge - Sign/Striping

PRESENT

- Staff
 - 1 Sign Foreman
 - 2 Sign men
- Process
 - Updated software (Flexisign), updated computer (Windows 10) and updated printer (HP Latex 360) and new laminator - have increased productivity, sign quality and made it possible to be in compliance with the retroreflectivity issues.
 - Night inspections have been conducted and non-reflective signs were identified.
- Equipment
 - We own three trucks; however, two of them are pick-ups not designed as work trucks. Overall, we are in extreme need for proper work trucks for each man in this department.



Road & Bridge - Sign/Striping



FUTURE

- Staff
 - 1 Sign Foreman
 - 3 Sign men (one with computer drafting experience)
- Process
 - Additional night inspections need to occur on a regular basis to ensure compliance of retroreflectivity guidelines and public safety. Additionally, security cameras are needed in areas where signs are stolen repeatedly to help stop the thefts and cut down on the high cost of replacement.
 - Stay up-to-date on upgrades and don't let the equipment and software become outdated as in the past.
- Equipment
 - All trucks need to be equipped with safety lights (white LED lights) for both employee and public safety. Currently, only two trucks have these lights.
- Continue looking for training opportunities

Road & Bridge - State of the Department

Thanks for your time and we trust you will take the issues we have raised under careful consideration.