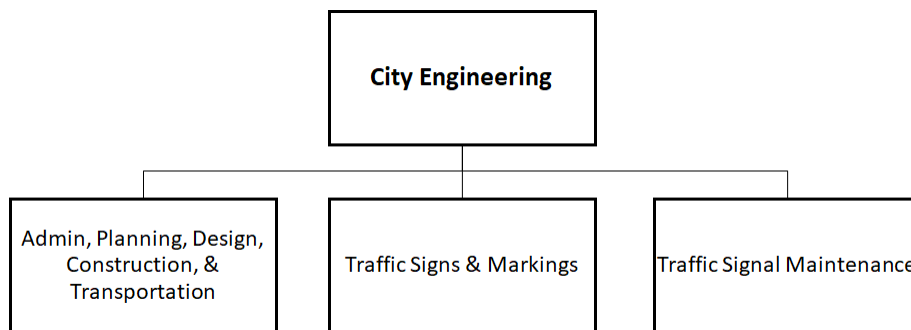


CITY ENGINEERING

Mission Statement

The Engineering Division's mission is to improve the quality of life and safety for the citizens of the City of Memphis by providing exceptional engineering services through civil design, land development, and traffic operations.

Organization Structure



Services

The Engineering Division provides planning, design, and construction administration to constantly improve and expand the City's infrastructure. The Division designs and manages the construction of all the City's capital projects. The Engineering staff reviews all private development proposals to ensure the required public improvements are included.

Operating Budget

Category	FY 2019 Actual	FY 2020 Adopted	FY 2020 Forecast	FY 2021 Adopted
EXPENDITURES				
Personnel Services	\$ 8,414,455	\$ 8,251,986	\$ 8,841,092	\$ 8,434,851
Materials and Supplies	4,243,026	4,570,108	4,635,478	3,084,944
Capital Outlay	17,695	85,000	85,000	85,000
Expense Recovery	(4,124,827)	(4,185,300)	(4,185,300)	(4,185,300)
Service Charges	85,288	75,000	96,000	75,000
Misc Expense	100	0	0	0
Total Expenditures	\$ 8,635,737	\$ 8,796,794	\$ 9,472,270	\$ 7,494,495
Total Revenues	\$ (2,684,716)	\$ (1,755,763)	\$ (2,247,198)	\$ (1,570,307)
NET EXPENDITURES	\$ 5,951,021	\$ 7,041,031	\$ 7,225,072	\$ 5,924,188
Authorized Complement				118

Performance Highlights

Traffic Engineering

This department designs, operates, and provides maintenance supervision services for all permanent and temporary traffic control devices within the public rights-of-way. This year Traffic Engineering completed the following:

- Improved the traffic signal at 6 (Six) intersections
- Installed rapid flashing beacons at 2 (two) intersections
- Installed reduced speed flashing beacons at 1 (one) intersection
- Completely modernized (i.e. re-constructed) the traffic signal at 10 (ten) intersections
- Completed LED lamp replacement work at 239 intersections
- Completed RR safety improvements at 6 (six) grade crossings
- Installed speed humps at 41 locations

Bike-Ped Highlights:

- Shared Mobility: Completed the first year of the City's permanent Shared Mobility Program, which included up to five permitted operators and over 700,000 trips taken by bike share or e-scooters in calendar 2019.
- The Hampline: Completed substantial construction on the Hampline, a two-mile corridor with significant bicycle and pedestrian safety features that connects Overton Park to the Shelby Farms Greenline. The opening represents the culmination of 10 years of public engagement, planning, and design, as well as community advocacy for the project.

- Central Library Pedestrian Crossing: Completed construction on an enhanced pedestrian crossing on Poplar Avenue in front of the Benjamin L. Hooks Central Library.
- Dr. Martin L. King, Jr. Avenue: Partnered with the Memphis Medical District Collaborative to install pedestrian, bicycle, and traffic calming safety enhancements as well as aesthetic improvements along Dr. Martin L. King, Jr. Avenue from Fourth St. to Peabody Ave.
- Bikeways: Installed approximately 25 miles of new on- and off-street bikeways at various locations.
- COVID-19 Response: Published a report verifying a two- to three-fold increase in the number of people walking, jogging, and bicycling during the COVID-19 crisis. The findings proved helpful to multiple private partners (i.e. Overton Park Conservancy, Wolf River Conservancy, etc.) in the daily operations and long-term planning of their facilities.
- Economic Impact Study: Completed participation in a national, first-of-its-kind study on the economic impacts of streets improvements that prioritize pedestrian and bicyclist safety ([Full Report](#) and [Summary of Local Findings](#)). Memphis was one of seven cities that participated.

Signs and Markings

The Signs and Markings department installs and maintains proper signage and pavement markings for both vehicular traffic and pedestrians. This year the department completed the following:

- Installed 150 high-visibility crosswalks thermoplastic
- 1,358.99 bike lanes restriped
- 14,095 traffic signs replaced
- Design and fabricate ADA signs for city buildings
- 1,229 raised pavement markers (RPMs) replaced

Traffic Signal Maintenance

Traffic Signal Maintenance is responsible for maintaining the traffic signal system.

These safety measures aide in keeping the pedestrians, motorists and goods moving by maintaining existing traffic signals and installing new signals at intersections throughout the City of Memphis. Through the first eleven months of FY20 Traffic Signal Maintenance completed the following:

- Planned 650 maintenance Actions
- Installed 28 count down pedestrian signal installations
- Generated 6,317 Total Maintenance Actions
- Performed 2,441 underground locate actions performed

Civil Engineering

Civil Engineering is responsible for providing Memphis with timely and quality engineering services in the design of Capital Improvement Program for roadway, drain, and bridge construction projects and the review of private developments to protect the safety of the public. The following are projects that were facilitated by Civil Engineering:

- **Shelby Drive @ Mill Branch Culvert Repair Project** - Awarded construction contract to be completed in 265 calendar days (9 months).

- **N. Watkins Street over Wolf River and N. McLean Boulevard over Wolf River Bridge Repairs** - Awarded construction contract to be completed in 200 working days (approximately 1 year).
- **Miscellaneous Drainage Repairs/Improvements**- Completed ten (10) drainage/repair improvements through the Division’s on-call maintenance contract.

Sewer

The Sewer department provides quality and timely sewer design services, plan review, capacity analysis, and maintains accurate sewer plan records so that sanitary sewer services can be provided to new developments.

- Issued 18 sewer availability letters this fiscal year (41 for 2019 calendar year). These letters report if sewer capacity is available in the system for new developments or new/existing industries.
- Reviewed 10 sanitary sewer easements and sewer plans project for SARP10 and Administrator of Environmental Construction.
- Reviewed 29 TDOT, city traffic signal and resurfacing, and Shelby County projects during FY20.

Mapping Department

The Mapping Department maintains and researches over one million essential engineering infrastructure records. These Historical Infrastructure Records are critical to the ongoing community development and for the maintenance and repairs to city infrastructure (i.e., roads, bridges, sewers, drainage, etc.).

- Customer Service Information Requests: Researched and answered more than a thousand “External & Internal” infrastructure related information requests (e.g., Sanitary Sewers; Street Plan & Profiles; Grading & Drainage; Off-Street Drainage; ROW; SAC; Easements; Unrecorded Plats; etc.).
- Special Projects Research with GIS Analysis, Support, and Maps: GIS analysis and mapping support for several high-profile projects (e.g., Loews Hotel; New Brooks Museum; De-Annexations; Truck-Route Map; Convention Center Expansion project; etc.) which also includes researching, scanning, and sending thousands of mapping records.

Land Development

The Land Development Department (LDD) is responsible for insuring that all private development within the City of Memphis integrates properly with the City’s infrastructure including roads, sewer, and storm water drainage.

By the end of FY20, the LDD will have approved permits for nearly 500 5G nodes in the City compared to 200 approved sites at the end of FY19.

Building Design and Construction

Building Design and Construction (BD&C) is responsible for providing quality engineering and architectural services in support of City facilities building projects.

Construction Inspections

Construction Inspections work on the City’s behalf to protect the public’s safety interest by inspecting all construction activities within public rights-of-way and easements. This year the Department completed the following objectives:

- Resurfacing: Completed 28 resurfacing projects
- Speed Cushions: Completed 39 speed cushion projects

- ADA Curb Ramps: Constructed 597 ramps
- Completed construction of Wolf River Greenway along McLean from Chelsea to James. (Phases 5A & 5B)

Survey

- Completed over 75 survey projects, including drainage studies, design surveys, sewer as-built plans, drainage as-built plans, and construction staking projects.
- Established 50 new City of Memphis benchmarks using a consulting firm to do the field work with the oversight remaining with the Survey Manager, along with the City of Memphis's own survey crew

Issues & Trends

Engineering is committed to serve Memphis by providing exceptional engineering services and aiding in initiatives that improve the quality of life for all Memphians. The Division is anticipating a substantial increase in construction activities related to bridge projects which require CEI services (construction inspection), surveying work to be performed during and/or after construction, and increases in unfunded mandates related to small cellular networks. Solving Drainage issues remain a priority. The combination of decreased staffing and increase initiatives/programs/projects remain a challenge for the division project managers and staff.

Key Performance Indicators

Performance Indicator	FY19 Actual	FY20 Goal	FY20 Actual	FY21 Goal	Category
ADMINISTRATION					
Review and return land development plan submittals to developers within 10 working days of submission	90%	92%	85%	92%	Government
Number of plan reviews performed monthly	101	100	104	100	Government
Approved private development projects with 3 review cycles or less	N/A	80%	73%	80%	Government
Cumulative average time to execute all construction contracts after the bid opening	130	120	126	120	Government
Review private development sewer drawings within 7 calendar days	90%	92%	97%	95%	Government
Cumulative number of drainage design projects initiated annually	8	10	11	10	Government
Cumulative number of drainage design projects completed annually	5	3	6	5	Government
Cumulative number of months until a decision is reached (approval/rejection) on speed hump requests	22.2	12	21.3	12	Government
Cumulative number of months between approval of a speed hump request and installation	8.9	6	12.6	10	Government
SIGNS AND MARKINGS					
% of curb ramps in the city that are ADA compliant	66%	69%	69%	71%	Public Safety
Number of traffic signs repaired/installed annually	16,517	13,000	12,580	13,000	Public Safety
% of city streets re-striped annually	57%	57%	51%	55%	Public Safety
SIGNAL MAINTENANCE					
Complete preventative maintenance on 100% of traffic signals (998) annually	65%	65%	56%	60%	Public Safety
% of down/malfunctioning traffic signals responded to within 24 hours	100%	100%	100%	100%	Public Safety
% of minor traffic signal improvement projects completed within 2 months of assignment	N/A	90%	100%	100%	Public Safety
Reduce backlog of "shovel ready" traffic signal modernization projects	N/A	10%	0%	10%	Public Safety
% of intersections with pedestrian countdown signals	20%	22%	23%	25%	Public Safety

City Engineering • Division Detail

Category	FY 2019 Actual	FY 2020 Adopted	FY 2020 Forecast	FY 2021 Adopted
PERSONNEL SERVICES				
Full-Time Salaries	\$ 5,143,568	\$ 6,671,744	\$ 6,350,000	\$ 6,607,138
Holiday Salary Full Time	304,504	0	0	0
Vacation Leave	412,273	0	0	0
Bonus Leave	51,670	0	0	0
Sick Leave	309,530	0	0	0
Overtime	351,440	141,200	414,000	141,200
Out of Rank Pay	12,891	35,757	37,842	35,757
Longevity Pay	6,734	0	6,500	3,400
Shift Differential	9,040	12,360	12,360	12,360
PTO Final Pay	54,959	101,000	100,000	101,000
Pension	337,798	382,432	355,000	401,386
Social Security	8,772	0	8,600	0
Pension ADC	666,974	592,922	592,922	690,016
Group Life Insurance	13,763	16,818	15,000	16,489
Unemployment	8,720	8,720	8,720	8,960
Medicare	92,778	95,887	96,236	95,801
Long Term Disability	19,184	18,782	22,503	19,267
Health Insurance - Choice Plan	421,506	445,152	464,808	510,648
Benefits Adjustments	0	11,768	0	18,925
Health Insurance-Select Plan	397,036	477,144	510,807	439,704
Salaries - Part Time/Temporary	141,484	207,800	145,000	444,550
On the Job Injury	27,748	32,500	15,000	30,000
Expense Recovery - Personnel	(377,917)	(1,000,000)	(314,206)	(1,141,750)
Total Personnel Services	\$ 8,414,455	\$ 8,251,986	\$ 8,841,092	\$ 8,434,851
MATERIALS AND SUPPLIES				
Document Reproduction - City	\$ 1,975	\$ 0	\$ 0	\$ 0
City Storeroom Supplies	1,949	4,640	1,000	5,140
Facility Repair & Carpentry	0	0	0	1,500
City Shop Charges	243,477	250,627	300,000	280,440
City Shop Fuel	117,035	121,974	109,000	121,974
City Computer Svc Equipment	10,986	37,230	18,000	38,530
Pers Computer Software	4,628	0	0	0
City Telephone/Communications	175	0	0	0
Printing - Outside	0	820	820	820
Supplies - Outside	25,987	36,958	21,500	38,958
Hand Tools	12,241	11,000	11,000	11,000
Clothing	26,004	30,533	29,350	30,633
Safety Equipment	8,890	11,365	14,600	12,500
Outside Postage	7,025	1,575	1,100	6,475

City Engineering • Division Detail *(continued)*

Category	FY 2019 Actual	FY 2020 Adopted	FY 2020 Forecast	FY 2021 Adopted
Paints Oils & Glass	378,586	400,000	400,000	425,000
Steel & Iron Products	110,084	150,000	179,049	172,000
Pipe Fittings & Castings	4,608	7,000	5,000	7,000
Lime Cement & Gravel	543	1,000	250	1,000
Chemicals	653	0	0	0
Materials and Supplies	239,069	324,047	242,000	300,000
Maintenance Traffic Signal System	187,514	240,000	298,764	250,995
Outside Vehicle Repair	804	4,840	1,800	5,040
Outside Equipment Repair/Maintenance	57,355	55,029	55,029	63,029
Internal Repairs and Maintenance	244,875	228,694	195,000	215,000
Advertising/Publication	0	1,000	1,000	1,000
Outside Phone/Communications	31,924	32,310	32,310	35,000
Janitorial Services	6,597	8,000	8,000	12,879
Seminars/Training/Education	10,607	37,911	25,500	30,000
Misc Professional Services	993,269	1,280,650	1,800,500	30,150
Travel Expense	2,935	4,750	6,000	4,750
Unreported Travel	0	400	0	400
Mileage	143,774	188,351	145,000	170,384
Utilities	193,409	195,608	195,608	195,608
Insurance	57,414	55,818	55,818	54,761
Claims	2,479	300,000	25,000	250,000
Lawsuits	0	23,630	23,630	23,630
Dues/Memberships/Periodicals	15,177	13,348	6,850	13,348
Radio Trunking Lease	0	2,000	2,000	2,000
Misc Services and Charges	981,423	535,000	450,000	550,000
Urban Art Maintenance	20,320	35,000	36,000	35,000
Equipment Rental	163,050	0	0	0
Expense Recovery - M & S	(63,815)	(61,000)	(61,000)	(311,000)
Total Materials and Supplies	\$ 4,243,026	\$ 4,570,108	\$ 4,635,478	\$ 3,084,944
CAPITAL OUTLAY				
Prod/Constr/Maint Equipment	\$ 4,379	\$ 44,000	\$ 44,000	\$ 44,000
Equipment	13,316	41,000	41,000	41,000
Total Capital Outlay	\$ 17,695	\$ 85,000	\$ 85,000	\$ 85,000
EXPENSE RECOVERY				
Expense Recovery - State Street Aid	\$ (4,124,827)	\$ (4,185,300)	\$ (4,185,300)	\$ (4,185,300)
Total Expense Recovery	\$ (4,124,827)	\$ (4,185,300)	\$ (4,185,300)	\$ (4,185,300)
SERVICE CHARGES				
Credit Card Fees - Expense	\$ 85,288	\$ 75,000	\$ 96,000	\$ 75,000

City Engineering • Division Detail *(continued)*

Category	FY 2019 Actual	FY 2020 Adopted	FY 2020 Forecast	FY 2021 Adopted
Total Service Charges	\$ 85,288	\$ 75,000	\$ 96,000	\$ 75,000
MISC EXPENSE				
Prior Year Expense	\$ 100	\$ 0	\$ 0	\$ 0
Total Misc Expense	\$ 100	\$ 0	\$ 0	\$ 0
TOTAL EXPENDITURES	\$ 8,635,737	\$ 8,796,794	\$ 9,472,270	\$ 7,494,495
LOCAL TAXES				
Fiber Optic Franchise Fees	\$ 1,368,247	\$ 800,000	\$ 1,172,272	\$ 592,407
Total Local Taxes	\$ 1,368,247	\$ 800,000	\$ 1,172,272	\$ 592,407
LICENSES AND PERMITS				
Sidewalk Permit Fees	\$ 34,367	\$ 88,000	\$ 36,000	\$ 36,000
Total Licenses and Permits	\$ 34,367	\$ 88,000	\$ 36,000	\$ 36,000
CHARGES FOR SERVICES				
Subdivision Plan Inspection Fee	\$ 183,186	\$ 170,000	\$ 173,898	\$ 150,000
Street Cut Inspection Fee	289,734	250,000	93,552	100,000
Traffic Signals	246,143	200,000	204,280	165,000
Signs-Loading Zones	40,348	15,000	45,000	45,000
Arc Lights	4,028	4,000	4,000	4,000
Rental Fees	194,413	200,000	499,670	450,000
MLG&W Rent	2,200	2,400	2,400	2,400
Total Charges for Services	\$ 960,052	\$ 841,400	\$ 1,022,800	\$ 916,400
OTHER REVENUES				
Sale Of Reports	\$ 7,857	\$ 26,363	\$ 8,000	\$ 19,000
Subdivision Sidewalk Fees	9,280	0	8,126	6,500
Recovery Of Prior Year Expense	4,913	0	0	0
Total Other Revenues	\$ 22,050	\$ 26,363	\$ 16,126	\$ 25,500
TRANSFERS IN				
Oper Tfr In - State Street Aid	\$ 300,000	\$ 0	\$ 0	\$ 0
Total Transfers In	\$ 300,000	\$ 0	\$ 0	\$ 0
TOTAL REVENUES	\$ (2,684,716)	\$ (1,755,763)	\$ (2,247,198)	\$ (1,570,307)
NET EXPENDITURES	\$ 5,951,021	\$ 7,041,031	\$ 7,225,072	\$ 5,924,188

Administration

Engineering Administration provides engineering services in the design of civil works/building projects and the review of private developments to protect the safety of the public.

Operating Budget

Category	FY 2019 Actual	FY 2020 Adopted	FY 2020 Forecast	FY 2021 Adopted
EXPENDITURES				
Personnel Services	\$ 3,951,727	\$ 3,745,272	\$ 4,250,768	\$ 3,905,642
Materials and Supplies	1,905,995	2,445,441	2,588,852	1,052,172
Capital Outlay	13,237	41,000	41,000	41,000
Expense Recovery	(1,003,240)	(4,185,300)	(4,185,300)	(4,185,300)
Service Charges	85,288	75,000	96,000	75,000
Misc Expense	100	0	0	0
Total Expenditures	\$ 4,953,107	\$ 2,121,413	\$ 2,791,320	\$ 888,514
Total Revenues	\$ (2,382,415)	\$ (1,755,763)	\$ (2,245,198)	\$ (1,570,307)
NET EXPENDITURES	\$ 2,570,692	\$ 365,650	\$ 546,122	\$ (681,793)
Authorized Complement				62

Signs & Markings

Signs And Markings improve safety and quality of life within the city of Memphis by installing and maintaining proper signage and pavement markings for pedestrian and vehicular traffic.

Operating Budget

Category	FY 2019 Actual	FY 2020 Adopted	FY 2020 Forecast	FY 2021 Adopted
EXPENDITURES				
Personnel Services	\$ 2,149,903	\$ 2,223,540	\$ 2,216,036	\$ 2,217,363
Materials and Supplies	1,028,154	992,033	884,084	1,037,696
Capital Outlay	3,424	22,000	22,000	22,000
Expense Recovery	(1,459,330)	0	0	0
Total Expenditures	\$ 1,722,151	\$ 3,237,573	\$ 3,122,120	\$ 3,277,059
NET EXPENDITURES	\$ 1,722,151	\$ 3,237,573	\$ 3,122,120	\$ 3,277,059

Authorized Complement	28
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Signal Maintenance

Traffic Signal Maintenance works to increase the safety of pedestrians, motorists, and goods movement by maintaining existing traffic signals and installation of new signals at intersections throughout the City of Memphis.

Operating Budget

Category	FY 2019 Actual	FY 2020 Adopted	FY 2020 Forecast	FY 2021 Adopted
EXPENDITURES				
Personnel Services	\$ 2,312,827	\$ 2,283,173	\$ 2,374,288	\$ 2,311,844
Materials and Supplies	1,308,874	1,132,634	1,162,542	995,077
Capital Outlay	1,034	22,000	22,000	22,000
Expense Recovery	(1,662,257)	0	0	0
Total Expenditures	\$ 1,960,478	\$ 3,437,807	\$ 3,558,830	\$ 3,328,921
Total Revenues	\$ (302,301)	\$ 0	\$ (2,000)	\$ 0
NET EXPENDITURES	\$ 1,658,177	\$ 3,437,807	\$ 3,556,830	\$ 3,328,921
Authorized Complement				28