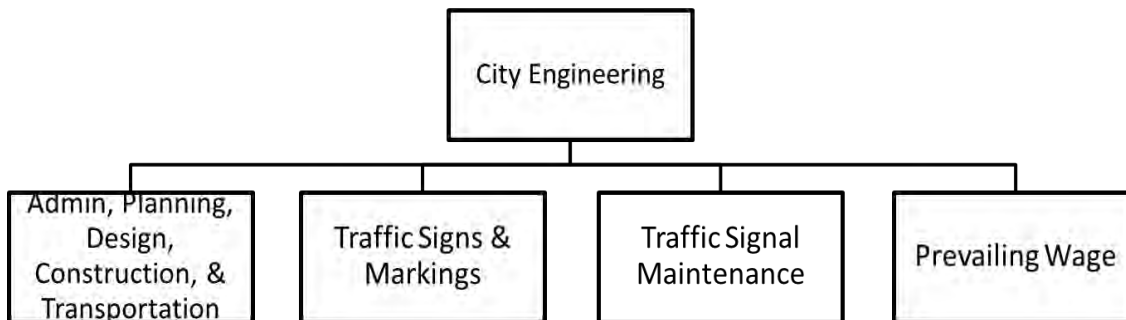


CITY ENGINEERING

Mission Statement

The City 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 City Engineering Division is a key aspect of improving the quality of life for all citizens of Memphis. Engineering is responsible for ensuring that projects are properly planned, designed, and constructed for Memphians in a timely cost-efficient manner. The division has a variety of departments that work to improve and expand the City's infrastructure, manage the design and construction of the City's capital projects, and review private development proposals; all to ensure the required standards, codes, and safety procedures are being followed for public safety. This year Engineering has continued its service to Memphis through public outreach initiatives that concentrate on the youth, public safety, government, jobs, and neighborhoods.

Operating Budget

Category:	FY20	FY21	FY21	FY22
	Actual	Adopted	Forecast	Adopted
Expenditures				
Personnel Services	\$8,745,838	\$8,434,851	\$8,433,097	\$8,779,484
Materials and Supplies	4,464,680	3,084,944	4,832,606	5,146,907
Capital Outlay	33,646	85,000	85,000	85,000
Expense Recovery	(5,526,149)	(4,185,300)	(6,667,650)	(4,185,300)
Service Charges	74,392	75,000	75,000	75,000
Misc. Expense	0	0	1,242	0
Total Expenditures	\$7,792,407	\$7,494,495	\$6,759,295	\$9,901,091
Total Revenues	\$2,238,377	\$1,570,307	\$2,725,727	\$1,570,307
Net Expenditures	\$5,554,030	\$5,924,188	\$4,033,568	\$8,330,784
Authorized Complement				124

Performance Highlights

Traffic Engineering

Traffic Engineering is a key element in the safety and quality of life within the Memphis city limits. The 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 continued its service by completing the following:

Signs and Markings

The Signs and Markings department installs and maintains proper signage and pavement markings for both vehicular traffic and pedestrians. They aid in providing safety measures and requirements that are necessary for Memphians to operate safely within city limits. This year the department completed the following:

Lane Miles Restriped – 1,326.8

Traffic Signs Replaced – 13,782

Design and Fabricate ADA signs for City Buildings

Traffic Signal Maintenance

Traffic Signal Maintenance is responsible for Maintaining the following which makes up the City of Memphis

Traffic Signal System.

Signalized intersections: 787

Flashers (Intersections, Crosswalks, Fire Stations): 84

School Flashers: 167

Hawk Pedestrian Crossing Signals: 3

Performance Highlights *(continued)*

RRFB Controlled Crosswalks: 23 (46 Units)

Bluetooth Detection Units: 78

These safety measures aid 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 the year, they completed the following:

Planned maintenance Actions: 650

Count Down Pedestrian Signal Installations: 15

Total Maintenance Actions (Maintenance Ticket Generated): 8,257

Underground Locate Actions Performed (Maintenance Ticket Generated): 2,441

Installed Speed Humps at 76 locations.

Worked with the City Court Clerk's Office to establish an Automated Speed Enforcement Program to improve safety adjacent to various School Zones and Roadway Curves.

Bike-Ped Highlights

The Hampline: The City finished construction on the Hampline, a Federal grant-funded project that was the first of its kind in Memphis. The nearly two-mile bicycle and pedestrian high-comfort corridor connect Overton Park with the Shelby Farms Greenline and passes through Binghampton and the Broad Avenue Historic Arts District. The project includes the first bicycle traffic signals in the city. The Hampline was recognized as one of "America's Best New Bikeways in 2020" by PeopleForBikes.

300 Miles: The City reached a milestone at the end of 2020 when the 300th mile of bikeway was completed in the city. As recently as 2010, Memphis offered less than two miles of bike lanes citywide.

User Count Data: In March and April of 2020 staff completed a study of bicyclist and pedestrian count data utilizing automatic counters located around the city. The results verified that residents were walking, jogging, and bicycling at higher-than-normal rates during the first months of the COVID-19 pandemic. At many locations, counters were up to three times higher than expected from previous years' data. The study proved a useful resource for community partners as they adapted programs and budgets to reflect the increased number of pedestrians and cyclists, i.e., Overton Park Conservancy, Shelby Farms Park Conservancy, etc.

Dr. Martin L. King, Jr. Avenue: Together with the Memphis Medical District Collaborative, we placed the finishing touches on the streetscape and safety improvements along Dr. MLK Jr. Avenue. The project was another successful collaboration that leveraged public and private funding to enhance the safety and aesthetics of a public street beyond Engineering's typical capacity.

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.

These duties provide an important base for the growth and development of new neighborhoods and businesses.

One sewer extension project has been bid this calendar year and it is constructed.

One project is designed in-house while waiting for easements to be bid.

Performance Highlights *(continued)*

Two sewer relocation projects due to conflict with the Tennessee Department of Transportation (TDOT) projects have been designed and submitted to the Tennessee Department of Transportation, those projects will be bid by TDOT (Move- into TDOT project) one of them is designed in-house and the other one is designed by an Engineering Firm.

The department prepared a plan and profile (in-house) for a "20" Nonconnah Force Main Relocation at Cherry Road" that is under construction by the City's environmental maintenance.

Reviewed 10 sanitary sewer easement projects for SARP10 and Administrator of Environmental Construction. Eight of them are approved by City Engineering which sends it to the real state department for acquisition.

Reviewed 18 TDOT projects during this year for a conflict with the existing sewer.

Land Development

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

This effort results in numerous plan reviews being performed by the LDD. Even though FY21 has been under the shadow of COVID-19, plan reviews have increased nearly 40% compared to FY20 with 1,900 reviews expected to be performed by the end of FY21 compared to 1378 reviews conducted in FY20.

The Land Development Department is also leading the efforts in establishing a Small Cell 5G network throughout the City of Memphis. This effort involves reviewing and approving hundreds of permits to install 5G Nodes throughout the City. By the end of FY21, the LDD will have approved permits for over 550 5G nodes throughout the City.

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. Notable projects under construction in FY21 being managed by BD&C include improvements to L.E. Brown, McFarland, and May Parks, Frayser & Raleigh Tennis Court improvements, Wolf River Greenway, Whitehaven Community Center improvements, Public Works Drain Maintenance Facility, Stiles Treatment Plant Laboratory renovations, Police Academy Gym renovations, and the new Fleet Maintenance Facility for General Services.

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: Hollywood, Walnut Grove, Raleigh Millington, Raleigh LaGrange, National, Grahman, Goodlett, Grove Road, Autumn Creek, Evergreen, Belvedere, Mt. Moriah, Ridgeway Road, Winchester, Briarcrest, Perkins Road Semmes.

Speed Cushions: Autumn Grove, Emerald, Powers, Princeton, Harvard, Twin Woods, Hester, Stage Coach, Brightwood, Kenosha, Josephine, Stage Park, McKellar, Cotton Plant, Henry, N. McNeil, Gauge, Rich, Sea Isle, Shady Grove, Thistle Brook, Burwood, Frayser School, Evelyn, Kimball, burrow, Benten, Graham, Baskin, Firestone, Suggs, Windsor, Galloway, Monroe, Given, May, Cloudett, Kimberwood, Creston, Claybrook, Gray Oak, Belle Forrest, Manassas, Wagon Gap, Ronnie, Oakwood, Brownlee, Dunn, Tully, Pearce.

Performance Highlights *(continued)*

ADA Curb Ramps: Constructed 532 ramps throughout the city.

Poplar Widen Phase III: Completed widening Poplar from I40 to Yates westbound.

Patterson Realignment: Completed the realignment of Patterson on the U of M campus.

Mansfield Improvement: Completed the improvement at Mansfield and Jackson Ave.

Survey

The Survey Service Center this year has completed over 75 survey projects including drainage studies, design surveys, sewer as-built plans, drainage as-built plans, and construction staking projects. We have a Benchmark GIS System that has over 250 benchmarks currently, that when completed will be available online.

Civil Engineering

Civil Engineering is responsible for providing Memphis with timely and quality engineering services in the design of the Capital Improvement Program for roadway, drain, and bridge construction projects and the review of private developments to protect the safety of the public. This year civil engineering has focused on several aspects of service.

Mapping Department

The Mapping Department has over a million Engineering related infrastructure records – which are maintained and researched by the department. The Mapping Department's FY21 highlights for projects; charity work; internships; and public outreach efforts include the following this year:

Special Projects Research with GIS Analysis, Support, and Maps: The Mapping Department provided GIS analysis and mapping support for several high-profile projects (e.g., De-Annexations; Updated Memphis City Limits; Updated City Council Districts; Truck Routes; Railroad Bridge Overpasses; Storm Water Drainage; ADA Curb Ramps; Speed Humps; Fairgrounds TDZ; Street Closures; Fire Station Address Maps; etc.).

Customer Service Information Requests: During FY21, the Mapping staff has 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.).

Community Involvement / Charity Work: Mapping staff members actively participate in each of the various City of Memphis fund-raising initiatives (e.g., Operation Feed; United Way; Angel Tree Program; Junior Achievement; etc.).

Summer Youth Interns: For nearly 15 years, the Mapping Department has represented the Engineering Division by taking the leadership role of working with the MAPS Summer Youth Internship Program. leadership role with the MAPS Summer Youth Internship Program as soon as the pandemic subsides. The Mapping Department also provides support to the Urban Fellows within Civil.

Issues & Trends

The Division of Engineering's current Traffic Signal and Signs and Markings Maintenance program, funding, and staffing are not adequate to address deferred maintenance. The combination of decreased staffing and increase initiatives/programs/projects remains a challenge for the division project managers and staff.

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 an increase in unfunded mandate related to small cellular networks.

Drainage Masterplans reports are being finalized with design projects and construction activities to follow.

Key Performance Indicators

ADMINISTRATION	FY20 ACTUAL	FY21 GOAL	FY21 ACTUAL*	FY22 GOAL	CATEGORY
Review and return land development plan submittals to developers within 10 working days of submission	90%	92%	97%	95%	Government
Number of plan reviews performed monthly	115	100	152	125	Government
Approved private development projects with 3 review cycles or less	72%	80%	67.90%	75%	Government
Cumulative average time to execute all construction contracts after the bid opening	126	120	122	120	Government
Review private development sewer drawings within 7 calendar days	97%	95%	98%	95%	Government
Cumulative number of drainage design projects initiated annually	11	10	7	10	Government
Cumulative number of drainage design projects completed annually	6	5	4	5	Government
Cumulative number of months until a decision is reached (approval/rejection) on speed hump requests	20.6	12	13	12	Government
Cumulative number of months between approval of a speed hump request and installation	12.6	10	12.9	10	Government
SIGNS AND MARKINGS	FY20 ACTUAL	FY21 GOAL	FY21 ACTUAL*	FY22 GOAL	CATEGORY
% of curb ramps in the city that are ADA compliant	69%	71%	71%	73%	Public Safety
Number of traffic signs repaired/installed annually	13,782	13,000	14,164	13,500	Public Safety
% of city streets re-striped annually	58%	55%	40%	55%	Public Safety
SIGNAL MAINTENANCE	FY20 ACTUAL	FY21 GOAL	FY21 ACTUAL*	FY22 GOAL	CATEGORY
Complete preventative maintenance on 100% of traffic signals (998) annually	61%	60%	79%	65%	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	111%	100%	52%	60%	Public Safety
Reduce backlog of "shovel ready" traffic signal modernization projects	0%	10%	0%	10%	Public Safety
% of intersections with pedestrian countdown signals	24%	25%	25%	27%	Public Safety

* FY21 Actual numbers as of 5/31/2021

City Engineering • Division Detail

<u>Category:</u>	FY20	FY21	FY21	FY22
<u>Expenditures</u>	Actual	Adopted	Forecast	Adopted
Personnel Services				
Full-Time Salaries	\$5,233,252	\$6,607,138	\$6,291,729	\$6,888,401
Holiday Salary Full Time	306,328	0	0	0
Vacation Leave	305,907	0	0	0
Bonus Leave	97,406	0	0	0
Sick Leave	371,552	0	0	0
FFCRA Regular	23,423	0	28,645	0
OT Straight Retro	0	0	708	0
Overtime	393,759	141,200	353,920	141,200
Out of Rank Pay	8,701	35,757	35,757	35,757
Longevity Pay	6,453	3,400	6,959	6,959
Shift Differential	11,224	12,360	12,360	12,360
PTO Final Pay	51,460	101,000	133,567	121,000
Pension	349,917	401,386	401,385	394,179
Social Security	9,992	0	11,357	0
Pension ADC Funding	592,920	690,016	690,016	546,498
Group Life Insurance	14,589	16,489	16,489	16,758
Unemployment	8,720	8,960	8,960	8,640
Medicare	96,619	95,801	97,089	95,570
Long Term Disability	22,980	19,267	22,127	18,614
Health Insurance - Choice Plan	502,107	510,648	522,960	478,584
Health Insurance - Select Plan	501,382	439,704	447,420	445,584
Salaries - Part Time/Temporary	163,203	444,550	444,550	659,730
On the Job Injury	14,709	30,000	31,283	30,000
Benefits Adjustments	0	18,925	18,926	21,400
Bonus Pay	250	0	0	0
Expense Recovery - Personnel	(341,015)	(1,141,750)	(1,143,110)	(1,141,750)
Total Personnel Services	\$8,745,838	\$8,434,851	\$8,433,097	\$8,779,484
Materials & Supplies				
City Hall Printing	\$235	\$0	\$456	\$0
City Storeroom Supplies	3,043	5,140	5,140	5,140
Facility Repair & Carpentry	0	1,500	1,500	1,500
City Shop Charges	288,558	280,440	293,915	271,840
City Shop Fuel	94,651	121,974	121,974	121,974
City Computer Svc Equipment	18,423	38,530	47,355	37,530

City Engineering • Division Detail *(continued)*

<u>Category:</u>	FY20	FY21	FY21	FY22
	Actual	Adopted	Forecast	Adopted
City				
Telephone/Communications	\$0	\$0	\$0	\$4,452
Printing - Outside	0	820	820	820
Supplies - Outside	18,668	38,958	38,958	39,458
Hand Tools	11,302	11,000	11,000	11,000
Clothing	26,003	30,633	30,633	29,833
Safety Equipment	10,595	12,500	12,500	12,500
Outside Postage	391	6,475	6,783	4,625
Paints Oils & Glass	363,157	425,000	412,845	425,000
Steel & Iron Products	119,371	172,000	175,963	172,000
Pipe Fittings & Castings	4,208	7,000	7,000	7,000
Lime Cement & Gravel	249	1,000	1,000	1,000
Materials and Supplies	266,335	300,000	301,675	300,462
Maintenance Traffic Signal System	325,674	250,995	322,347	262,347
Outside Vehicle Repair	1,249	5,040	5,040	4,740
Outside Equipment Repair/Maintenance	55,781	63,029	63,529	68,729
Internal Repairs and Maintenance	200,400	215,000	215,000	215,000
Advertising/Publication	0	1,000	1,000	1,000
Outside				
Phone/Communications	35,688	35,000	35,000	38,016
Janitorial Services	7,190	12,879	14,000	18,379
Seminars/Training/Education	12,416	30,000	30,000	36,118
Misc. Professional Services	1,746,577	30,150	1,860,198	1,830,150
Travel Expense	4,883	4,750	750	4,750
Unreported Travel	0	400	400	400
Mileage	133,502	170,384	171,855	179,903
Utilities	194,901	195,608	196,248	196,208
Insurance	55,778	54,761	54,761	76,376
Claims	2,172	250,000	103,126	300,000
Lawsuits	0	23,630	0	23,630
Dues/Memberships/Periodicals	6,671	13,348	13,588	109,711
Radio Trucking Lease	0	2,000	2,000	2,000
Misc Services and Charges	498,931	550,000	550,000	609,316
Urban Art Maintenance	57,377	35,000	35,247	35,000
Expense Recovery - M & S	(99,699)	(311,000)	(311,000)	(311,000)
Total Materials and Supplies	\$4,464,680	\$3,084,944	\$4,832,606	\$5,146,907

City Engineering • Division Detail *(continued)*

<u>Category:</u>	FY20	FY21	FY21	FY22
	Actual	Adopted	Forecast	Adopted
Capital Outlay				
Prod/Constr/Maint Equipment	\$2,753	\$44,000	\$44,000	\$44,000
Equipment	30,893	41,000	41,000	41,000
Total Capital Outlay	\$33,646	\$85,000	\$85,000	\$85,000
Expense Recovery				
Expense Recovery – State Street Aid	(\$5,526,149)	(\$4,185,300)	(\$6,667,650)	(\$4,185,300)
Total Expense Recovery	(\$5,526,149)	(\$4,185,300)	(\$6,667,650)	(\$4,185,300)
Service Charges				
Credit Card Fees – Expense	\$74,392	\$75,000	\$75,000	\$75,000
Total Service Charges	\$74,392	\$75,000	\$75,000	\$75,000
Misc Expense				
Prior Year Expense	\$0	\$0	\$1,242	\$0
Total Misc Expense	\$0	\$0	\$1,242	\$0
Total Expenditures	7,792,407	7,494,495	6,759,295	9,901,091
<u>Revenue</u>				
Local Taxes				
Fiber Optic Franchise Fees	\$1,172,272	\$592,407	\$1,592,925	\$592,407
Total Local Taxes	\$1,172,272	\$592,407	\$1,592,925	\$592,407
Licenses and Permits				
Sidewalk Permit Fees	\$32,742	\$36,000	\$36,000	\$36,000
Total Licenses and Permits	\$32,742	\$36,000	\$36,000	\$36,000
Charges for Services				
Subdivision Plan Inspection Fee	\$172,079	\$150,000	\$259,585	\$150,000
Rental Fees	499,670	450,000	450,000	450,000
MLG&W Rent	2,400	2,400	2,400	2,400
Street Cut Inspection Fee	93,552	100,000	113,856	100,000
Traffic Signals	203,596	165,000	180,000	165,000
Signs-Loading Zones	42,943	45,000	40,000	45,000

City Engineering • Division Detail *(continued)*

<u>Category:</u>	FY20	FY21	FY21	FY22
	Actual	Adopted	Forecast	Adopted
Arc Lights	\$3,624	\$4,000	\$4,000	\$4,000
Total Charges for Services	\$1,017,864	\$916,400	\$1,049,841	\$916,400
Other Revenues				
Sale of Reports	\$7,373	\$19,000	\$19,000	\$19,000
Subdivision Sidewalk Fees	8,126	6,500	27,961	6,500
Total Other Revenues	\$15,499	\$25,500	\$46,961	\$25,500
Total Revenues	\$2,238,377	\$1,570,307	\$2,725,727	\$1,570,307
Net Expenditures	\$5,554,030	\$5,924,188	\$4,033,568	\$8,330,784

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

<u>Category:</u>	FY20	FY21	FY21	FY22
	Actual	Adopted	Forecast	Adopted
<u>Expenditures</u>				
Personnel Services	\$4,155,292	\$3,905,643	\$3,880,168	\$4,249,481
Materials and Supplies	2,526,348	1,052,171	2,732,112	3,065,207
Capital Outlay	30,893	41,000	41,000	41,000
Expense Recovery	(1,296,772)	(4,185,300)	(6,667,650)	(4,185,300)
Service Charges	74,392	75,000	75,000	75,000
Misc Expense	0	0	1,242	0
Total Expenditures	\$5,490,153	\$888,514	\$61,872	\$3,245,388
Total Revenues	\$2,237,061	\$1,570,307	\$2,725,727	\$1,570,307
Net Expenditures	\$3,253,092	\$681,793	\$2,663,855	\$1,675,081
Authorized Complement				66

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

<i>Category:</i>	FY20	FY21	FY21	FY22
<u>Actual</u>	<u>Adopted</u>	<u>Forecast</u>	<u>Adopted</u>	
<u>Expenditures</u>				
Personnel Services	\$2,132,407	\$2,217,364	\$2,013,382	\$2,162,281
Materials and Supplies	867,749	1,037,697	1,044,228	1,047,148
Capital Outlay	2,753	22,000	22,000	22,000
Expense Recovery	(1,924,712)	0	0	0
Total Expenditures	\$1,078,197	\$3,277,061	\$3,079,610	\$3,231,429
Net Expenditures	\$1,078,197	\$3,277,061	\$3,079,610	\$3,231,429
Authorized Complement				28

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:	FY20	FY21	FY21	FY22
	Actual	Adopted	Forecast	Adopted
<u>Expenditures</u>				
Personnel Services	\$2,458,139	\$2,311,844	\$2,539,547	\$2,249,296
Materials and Supplies	1,070,583	995,076	1,056,266	1,034,552
Capital Outlay	0	22,000	22,000	22,000
Expense Recovery	(2,304,665)	0	0	0
Total Expenditures	\$1,224,057	\$3,328,920	\$3,617,813	\$3,305,848
Total Revenues	\$1,316	\$0	\$0	\$0
Net Expenditures	\$1,222,741	\$3,328,920	\$3,617,813	\$3,305,848
Authorized Complement				28

Prevailing Wage

The Prevailing Wage Office monitors the City of Memphis Prevailing Wage Policy in accordance with City of Memphis Ordinance to ensure that all contractors and workers employed on City of Memphis qualified projects will be treated equitably, fairly, and compensated in conformity with the State of Tennessee Department of Labor. The Prevailing Wage Office monitors the proper reporting of Prevailing Wages and the resolution of employee wage violations.

Operating Budget

<i>Category:</i>	FY20	FY21	FY21	FY22
	Actual	Adopted	Forecast	Adopted
<u>Expenditures</u>				
Personnel Services	\$0	\$0	\$0	\$118,426
Total Expenditures	\$0	\$0	\$0	\$118,426
Net Expenditures	\$0	\$0	\$0	\$118,426
Authorized Complement				2

