

Date: August 7, 2024

To: Mark D. Israelson, City Manager
Cc: Jack Carr, Deputy City Manager

From: B. Caleb Thornhill, Director of Engineering Department

Subject: Engineering Proposed FY 2024-2025 CIP Budget

This memorandum accompanies the Regular Open Meeting Community Investment Program (CIP) presentation scheduled for the Plano City Council on Monday, August 12, 2024.

Requested Action:

Provide direction to Engineering Department regarding the proposal of projects totaling \$132,603,822 for the FY 2024-25 CIP Budget.

Background:

When developing the list of CIP projects, the department focuses on the replacement existing infrastructure and the renovation of existing facilities to improve safety and security, while also concentrating on preservation of infrastructure to avoid any unnecessary degradation. All while continuing to support needs of all City of Plano departments by adding mission supporting capacities and technologies.

Projects consist of the following:

- City Facilities
- Residential and Collector streets
- Intersections
- Alleys
- Sidewalks and correction of non-compliance issues
- Bridge Evaluation and Maintenance
- Erosion Control and Drainage Improvements
- Water Facilities and Pipelines
- Wastewater Facilities and Pipelines

In addition, these improvements may include the acquisition of land. The recommended list of projects aligns with this focus, with the highest priority given to projects that address aging infrastructure and revitalize existing assets. The proposed Engineering CIP budget was presented to and reviewed by the Planning and Zoning Commission on Monday, August 5, 2024.

The 2024-2025 Engineering CIP includes five sections:

- Street Improvements Projects - \$44,950,900
- Transportation Projects - \$17,304,882
- Drainage Improvement Projects - \$12,836,000
- Water Improvement Projects - \$14,560,000
- Wastewater Improvement Projects - \$22,980,000

The 2024-2025 Engineering - Facilities CIP includes two sections:

- Facilities Bond Projects - \$13,728,729
- Facilities Capital Maintenance Projects - \$6,243,311

Engineering CIP

STREET IMPROVEMENTS PROJECTS - \$44,950,900

15th Street Reconstruction – Municipal Ave to Jupiter Rd \$535,000

Includes funding to complete the design and begin construction for the 15th Street improvements, including a new street section with on-street parking, wider parkways and sidewalk, and concrete street pavement replacement between Municipal Ave and Jupiter Rd.

Alley Reconstruction \$250,000

Funding to analyze, design, and provide construction solutions to locations that have significant alley pavement deterioration and increased maintenance costs. Locations are ranked and prioritized.

Alley Reconstruction – Duke Ct, Kentucky Dr, Versailles Ln, Wyvones Way \$135,000

Funding for the design of concrete alley removal and replacement at four locations, including 6,430 square yards of pavement replacement.

Alley Reconstruction – Oak Shores Dr, Sunflower Ln, Winding Brook Dr, Westmoreland Dr, Sandpiper Cir, Cherrywood Ln \$1,455,000

Funding for the construction of concrete alley removal and replacement at six locations, including 8,212 square yards of pavement replacement. The project also includes the removal and replacement of sidewalk, barrier free ramps and 520 linear feet of 6' high brick screening wall adjacent to the Winding Brook Dr alley location.

Barrier Free Ramps & Sidewalks \$1,000,000

Funding to analyze, design, and provide construction solutions to locations that have significant sidewalk pavement deterioration and are out of standard compliance for pedestrian facilities. Locations are ranked and prioritized.

Bridge Improvements – Plano Parkway and Spring Creek \$200,000

Includes funding to complete a study of the creek hydraulics at this location and determine the feasibility of replacement of the two existing bridges on Plano Parkway. Improvements will include new bridge structures, a trail in Spring Creek underneath the new bridge structures, and utility adjustments to city infrastructure.

Bridge Repairs Phase IV \$200,000

Includes funding to complete the design phase for the fourth project to address maintenance and improvements to existing bridges across the city. Locations are reviewed based off the biannual TxDOT bridge reports and ranked and prioritized based off severity of maintenance issues and available project funding.

Collector Street Construction \$634,670

Funding to analyze, design, and provide construction solutions to locations that have significant street pavement deterioration and increased maintenance costs. Locations are ranked and prioritized.

Douglass Sidewalks \$60,000

Includes funding to acquire over 30 sidewalk easements within the Douglass community to allow construction of a new accessible sidewalk path and route through the neighborhood between the new DART Red Line station on the south end and the downtown area on the north end of the community.

Future Bridge Inspection/Repair \$500,000

Funding to analyze, design, and complete construction for projects associated with bridge inspection, maintenance, and repair. Includes analyzing the latest biannual TxDOT bridge reports,

updated the bridge inventory database and program, which ranks and prioritizes the severity of maintenance issues.

G Avenue Paving and Water Improvements \$250,000

Includes funding for the design of G Avenue paving improvements, including a new street section with on-street parking, wider parkways and sidewalk, and concrete street pavement replacement between 14th St and 15th St. Intersection improvements at G Ave and 15th St are included as part of the project to update the traffic signal and adjust lane configurations at the intersection.

Intersection Improvements \$8,155,608

The following locations include design and construction funding for adding capacity to various arterial intersection locations that warrant additional improvements based on levels of congestion and existing traffic volumes. In addition, safety enhancements are included at high accident locations, pedestrian facilities are upgraded and brought into Americans with Disabilities Act (ADA) compliance, and traffic signal improvements are made to upgrade the citywide signal system.

- **Intersection Improvements - 14th St at Shiloh Rd, 14th St at Plano Pkwy, Parker Rd at Archerwood St, Corporate Dr at Tennyson Pkwy, Corporate Dr at Legacy Dr, Legacy Dr at SH 121**

- **Intersection Improvements - McDermott Rd and Coit Rd, Legacy Dr and Hedgcoxe Rd, W Spring Creek Pkwy and Windhaven Pkwy, and Jupiter Rd and Los Rios Blvd**

- **Intersection Improvements - Ohio Dr at SH 121, Ohio Dr at Plano Pkwy, Legacy Dr at Archgate Dr, Legacy Dr at Chase Oaks Dr**

- **Intersection Improvements – Ohio Dr at Park Blvd, Custer Rd at USA Dr, Custer Rd at Ridgeview Dr, 18th St at Jupiter Rd**

- **Intersection Improvements - Parkwood Blvd Corridor**

- **Intersection Improvements – Spring Creek Pkwy Corridor**

- **Legacy Drive Corridor Improvements**

- **Parker Rd Corridor Improvements**

Miscellaneous CIP Projects - \$552,335

Projects consisting of improvements in median Right of Way, street lighting improvements, improvements due to Neighborhood Park projects or redevelopment within City of Plano.

Parker Rd at Pittman Creek Bridge Replacement (TxDOT) \$135,000

Includes the City of Plano portion of construction funding of an agreement with TxDOT to replace the Parker Rd bridge at Pittman Creek as part of the state’s bridge replacement program.

Neighborhood Paving Improvements

The following locations include design and construction funding in 2024-2025 for the removal and replacement of concrete pavement, including streets, sidewalks, alleys, driveways, and barrier free ramps in areas where pavement deterioration and maintenance costs have increased significantly. Locations are ranked and prioritized as part of the city’s asset management program.

- **Paving and Waterline Reconstruction – Kingston Dr, Duchess Trl, Lorraine Dr, and Willow Dr** **\$372,000**
- **Paving and Waterline Reconstruction – Middle Cove Dr, Lookout Trl, Westridge Dr, Carrington Dr, and Early Morn Dr** **\$3,540,000**
- **Paving and Waterline Reconstruction – Oak Grove Drive and Santa Fe Trail** **\$2,035,000**
- **Paving and Waterline Reconstruction – Rigsbee Dr, Peppertree Pl, Laurel Ln, and Trailridge Dr** **\$550,000**
- **Paving and Waterline Reconstruction – Monarch Dr, Charter Oaks Dr, White Oak Dr, Desert Garden Dr** **\$780,000**
- **Paving Improvements – Pinehurst Dr, Royal Cir, Granada Pl, Grand Canyon Dr, and Glen Canyon Dr** **\$200,000**

Plano Event Center Street Improvements \$2,865,000

Funding for construction to complete the improvements of a new concrete street grid system, on-street parking, lighting improvements, median landscaping, and underground utility facilities on the north side of the existing Plano Event Center to facilitate development in this area.

Screening Wall Improvements \$11,809,010

The following projects include the design and construction for the replacement of COP standard brick and mortar screening walls, including foundations, and adjacent sidewalk and alley replacement for various locations in the city.

- **Screening Wall Replacement – Legacy Drive**
- **Screening Wall Replacement – Marsh Lane**
- **Screening Wall Replacement – Park Blvd, Parker Rd, Independence Pkwy, 14th St and 15th St**
- **Screening Wall Replacement – Parkwood Blvd, Nassau Dr, and Willow Bend Dr**
- **Screening Wall Replacement – Stone Creek Estates**

Sidewalk Improvements – Plano Pkwy (Independence Pkwy to Alma Dr) \$1,270,000

The project includes construction funding to complete the takeover contract for new sidewalk and hike and bike trail along the Plano Parkway corridor. The project includes widening the trail section of bridge over Pittman Creek along Alma Drive, and two pedestrian bridges across Prairie Creek and Pittman Creek along Plano Parkway.

Sidewalks \$571,203

Funding to analyze, design, and provide construction solutions to locations where sidewalks are non-compliant or gaps in the sidewalk system exist across the city.

Street Reconstruction \$1,348,674

Funding to analyze, design, and provide construction solutions to locations that have significant street pavement deterioration and increased maintenance costs. Locations are ranked and prioritized.

Neighborhood Water Rehabilitation \$5,045,000

The following locations include construction funding in 2024-2025 for the replacement of concrete pavement, including streets, sidewalks, alleys, driveways, and barrier free ramps associated with the replacement of neighborhood antiquated cast iron water systems in areas of increasing maintenance frequency.

- **Water Rehabilitation – River Bend Phase 1**
- **Water Rehabilitation – Steeplechase Estates**
- **Water Rehabilitation – Los Rios Addition and Ranch Estates**
- **Water Rehabilitation – Parkway Estates and Whiffletree Addition**
- **Water Rehabilitation – Creekside Estates**
- **Water Rehabilitation – Douglass Community**
- **Water Rehabilitation – Kimberlea Additions**

TRANSPORTATION - \$17,304,882

The following projects include funding in 2024-2025 for the improvement to the City of Plano’s transportation system. Signal upgrades, fiber expansion, CCTV expansion and other projects will assist in safety and congestion improvements city-wide.

- **Citywide Signal Retiming - \$499,000**
Citywide development, implementation, and fine-tuning of new AM and PM peak coordinated timing plans. Project should reduce overall travel times and motorist delays, stops, fuel consumption, and emissions.
- **2023 Traffic Signal Construction - \$2,100,000**
New warranted traffic signal construction at 8 intersections. Project will improve traffic safety.
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- **Historic Downtown Guide Signs - \$123,000**
Addition of brown Historic Downtown guide signs along US 75 and PGBT. Project initiated by Historic Downtown Association.
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- **Traffic Cabinet, Local Controller, and Central System Software - \$3,800,000**
Upgrade of antiquated end-of-life traffic cabinet hardware, central system software, as well as traffic signal controller hardware and software.
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- **Fiber Expansion - Phase IV - \$3,700,000**
Continuation of citywide traffic signal system communications system from leased cellular communications to fiber optic communications. Communications reliability, bandwidth, reduced latency, security, and future-proof technology greatly enhanced for traffic management.
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- **SH 121 Signal Upgrade (TIP 19007) - \$383,000**
Federally-funded upgrade of antiquated end-of-life traffic cabinet hardware and traffic signal controller hardware/software at nine interchanges along SH 121.
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- **CCTV Expansion (TIP 19005) - \$1,700,000**
Federally-funded citywide expansion of CCTV cameras at signalized intersections. Project will allow remote viewing of intersection operations which will significantly improve traffic management center staff response times, identification/verification of traffic signal hardware issues, and assist with traffic incident management.
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- **Transportation Technology Program Management Contract (Stantec) - \$214,000**

- Program management consultant contract to assist City staff with moving Plano's extensive traffic technology improvement program forward. Basic services include review of other consultant plans, specifications, and estimates as well as construction support services.
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- **Vehicle Detection System - \$4,200,000**
- Upgrade of antiquated end-of-life traffic signal vehicle detection hardware. Project improvement all but eliminates frequent detection hardware failures and reduces detection errors due to morning and evening sun glare.
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- **Diamond Intersection Safety Improvements – CMAQ - \$480,000**
- Design project to standardize signing, pavement markings, signalization, ADA pedestrian facilities for 64 mostly freeway located signalized intersections. The construction portion of this project is funded with a \$5.1 million federal grant.
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- **Traffic Calming Implementation - \$100,000**
- This project prioritizes and constructs various neighborhood traffic safety improvements submitted by homeowners and HOAs. This multiyear project is funded through the 2021 Bond Program.
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- **Preston/McDermott Lighting - \$180,000**
- Design and construction project to add street lighting along Preston Road south of SH 121 and along McDermott Road east of Preston Road. Project will improve traffic and pedestrian safety.

DRAINAGE IMPROVEMENT PROJECTS - \$12,836,000

- **Collin Creek Mall Culvert Improvements \$4,010,000**
- Construction funding to complete the reinforcement of the three-culvert system running beneath the Collin Creek Mall Development area along Spring Creek.
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- **Drainage Improvements – Rockbrook Dr, Flintstone Dr, Brandon Ct, Eden Valley Ln, and Russell Creek Park \$460,000**
- Funding to complete the design and begin construction for local drainage improvements to creek outfalls that are failing, small drainage systems that are under capacity, and other improvements to the drainage systems at these locations.
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- **East Side Drainage Improvements \$700,000**
- Funding to analyze, design and provide construction solutions to areas of localized flooding on the east side of Plano as they are discovered.
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- **Erosion Control \$1,000,000**
- Funding to analyze, design, and provide construction solutions to locations of erosion as they are ranked and prioritized.
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- **Erosion Control – Pecan Hollow Golf Course Holes 6 and 7 \$2,565,000**
- Construction funding to address erosion in Rowlett Creek that is threatening the adjacent golf course and cart paths at these specific locations.
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- **Erosion Control – Willow Creek and Ports O'Call \$1,645,000**
- Construction funding to address erosion by stabilizing the creek bank at these locations.
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- **Miscellaneous Drainage Improvements \$1,000,000**
- Funding to analyze, design, and provide construction solutions to areas of localized flooding locations as they are discovered.
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- **Stream 2D8 Flood Study \$26,000**

- Funding to complete the Letter of Map Revision (LOMR) for the analysis and study of this tributary to Rowlett Creek on the east side of Plano.
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- **Citywide Streambank Study \$120,000**
- Funding to complete the citywide streambank assessment and inventory and program development to address erosion and drainage issues in the entire creek system in the city.
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- **Texas Water Board of Development – FIF Grant Application \$10,000**
- A project that assists staff in the preparation of nearly \$2,000,000 in grant funding applications to assist with creek studies in the city.
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- **Winding Hollow Drainage Improvements \$2,850,000**
- Design and construction funding to replace the culverts at this location to alleviate localized flooding during heavy rain events.
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- **Collin Creek Culvert Mitigation \$900,000**
- Funding to study alternatives and complete the design to relieve the Collin Creek Mall Ring Road from overtopping based on analysis of Spring Creek near the existing culverts.

WATER IMPROVEMENT PROJECTS - \$14,560,000

15th Street Reconstruction – Municipal Ave to Jupiter Rd \$950,000
 Construction funding allocated to the replacement of 3,188 linear feet of antiquated cast iron water lines in association with the replacement of the 15th Street pavement and reconstruction project.

Oak Grove Drive Paving, Waterline, and Trail Improvements \$820,000
 Construction funding allocated to the replacement of 6,209 linear feet of antiquated cast iron water lines in association with the replacement of the Oak Grove Dr pavement and reconstruction project.

Paving and Waterline Reconstruction – Middle Cove Drive, Lookout Trail, Westridge Dr, Carrington Dr, Early Morn Dr, and Early Morn Ct \$1,040,000
 Construction funding allocated to the replacement of 4,551 linear feet of antiquated cast iron water lines in association with the replacement of the Middle Cove Dr, Lookout Trl, Westridge Dr, Carrington Dr, Early Morn Dr and Early Morn Ct pavement and reconstruction project.

Paving and Waterline Reconstruction – Rigsbee Dr, Peppertree Ln, Laurel Ln, and Trailridge Dr \$300,000
 Construction funding allocated to the replacement of 5,334 linear feet of antiquated cast iron water lines in association with the replacement of the Rigsbee Dr, Peppertree Ln, Laurel Ln, and Trailridge Dr pavement and reconstruction project.

Paving and Waterline Reconstruction – Monarch Dr, White Oak Dr, Charter Oak Dr, and Desert Garden Dr \$750,000
 Construction funding allocated to the replacement of 6,592 linear feet of antiquated cast iron water lines in association with the replacement of the Monarch Dr, White Oak Dr, Charter Oak Dr, and Desert Garden Dr pavement and reconstruction project.

Water Infrastructure Renovation \$190,000
 Funding to analyze, design, and complete construction solutions for locations of deteriorating or failing water pipelines in the city’s water system as they are prioritized.

Water Rehabilitation – Park Blvd Phase 1 (Preston Rd to US 75) \$2,510,000
 Funding for construction to replace 8,983 linear feet of antiquated 6”-12” cast iron water mains and associated pavement along the Park Boulevard corridor between Preston Rd and US 75. The

majority of the pipe replacement construction includes pipe bursting to provide less invasive construction operations.

Water Rehabilitation – Park Blvd Phase 2 (US 75 to East City Limits) \$2,540,000

Funding for construction to replace 10,803 linear feet of antiquated 6"-12" cast iron water mains and associated pavement along the Park Boulevard corridor between US 75 and the east city limits. Methods to replace the pipe include open cut, where applicable, and pipe bursting to provide less invasive construction operations.

Neighborhood Water Rehabilitation \$5,460,000

The following locations include design and construction funding in 2024-2025 for the replacement of neighborhood antiquated 4"-8" cast iron water systems in areas of increasing maintenance frequency and costs.

- **Water Rehabilitation – River Bend Phase 1 (14,240 linear feet)**
- **Water Rehabilitation – Steeplechase Estates (6,825 linear feet)**
- **Water Rehabilitation – Los Rios Addition and Ranch Estates (13,780 linear feet)**
- **Water Rehabilitation – Parkway Estates and Whiffletree Addition (14,400 linear feet)**
- **Water Rehabilitation – Creekside Estates (11,890 linear feet)**
- **Water Rehabilitation – Douglass Community (10,400 linear feet)**
- **Water Rehabilitation – Kimberlea Additions (13,160 linear feet)**

WASTEWATER IMPROVEMENT PROJECTS - \$22,980,000

Aerial Crossings \$2,350,000

Funding to analyze, design, and complete construction solutions to locations of erosion or the replacement of aerial crossings as they are ranked and prioritized.

Dallas North Trunk – Phase 2 \$5,350,000

Remaining design and construction funding to complete the third phase of the replacement of 6,065 linear feet of 36" and 42" sanitary sewer interceptor pipeline along the southern portion of the city between Coit Rd and Prairie Creek along Plano Parkway.

Plano Parkway Parallel Interceptor \$10,220,000

Construction funding to complete the second phase of the replacement of 7,100 linear feet of 36" and 42" sanitary sewer interceptor pipeline along the southern portion of the city between Prairie Creek to east of Custer Road along the President George Bush Turnpike (PGBT).

Sanitary Sewer Improvements: Legacy Drive, Ohio Drive, Prestonwood Country Club, and Timbercreek Drive \$1,410,000

Construction funding to complete locations of erosion stabilization failures at existing aerial wastewater crossings and point repairs to deteriorating wastewater pipe as analyzed by the Public Works department during system inspections.

Sewer Improvements – Frito Lay, Tennyson Pkwy, Abbott, White Rock Creek, Bandolino Ln, Evans Park, Country Place, Laurel Ln, and Shawnee Park \$1,000,000

Remaining design and construction funding to complete numerous point repairs of system failures or deteriorating wastewater pipe as analyzed by the Public Works department during system inspections.

Sewer Improvements – Shiloh Road (Plano Parkway to 14th Street) \$500,000

Design and construction funding to rehabilitate or replace portions of the existing wastewater line along the west side of Shiloh Rd, crossing under the existing Union Pacific/DART railroad.

Spring Creek Interceptor Phase 1, 2, and 3 \$2,150,000

Funding for the design and construction of three phases to replace the large sewer interceptor lines both up- and downstream from the Collin Creek Mall Development. Phase 1 is downstream of Plano Parkway, connects to the existing NTMWD Spring Creek Lift Station No. 2, and will begin construction in 2024-2025. Phases 2 and 3 have design funding allocated to begin analyzing the possible replacement of these wastewater lines upstream of the Collin Creek Mall along Spring Creek.

Wastewater System Model \$250,000

Funding to complete necessary updates to the existing wastewater system model, to develop anticipated locations for sewer system replacement and the correction of system surcharges.

ENGINEERING - FACILITIES

The following items outline the projects of the recommended Engineering - Facilities FY 2024-25 CIP budget. The department estimates a corresponding Operations and Maintenance (O&M) cost of \$26,924.

FIRE AND PUBLIC SAFETY PROJECTS - \$8,025,666

Fire Station 5 Remodel - \$6,403,569 (Total Bond \$12,000,402)

The remodel of Fire Station 5 supports expansion to add a medical unit to the station, expansion of sleeping capacity, expansion of apparatus storage by two bays, added hazardous material response supplies storage, storm shelter, and over all refresh of whole station and technologies.

Fire Station 8 Remodel - \$775,000 (Total Bond \$8,165,000)

Just like the remodel of Station 5, The remodel of Fire Station 8 supports expansion to add a medical unit to the station, expansion of sleeping capacity, expansion of apparatus storage by two bays, storm shelter, and overall refresh of whole station and technologies.

Fire Station 3 – Re-Roof (\$175,000)

Fire Station 7 Replace Overhead Doors (\$380,000)

Fire Station 4 Restroom Remodel (\$292,097)

LIBRARY PROJECTS - \$730,000

The following locations include design and construction funding in 2024-2025 for the necessary improvements at library facilities.

- **Schimelpfenig Library - Upper Parking Lot**
- **Haggard Library - Replace all windows and frames**
- **Parr Library - Replace Exterior Lighting**

MUNICIPAL FACILITIES PROJECTS - \$1,235,838

Municipal Center – City Council Chamber Renovation - \$1,235,838 (Total Bond \$5,715,128)

The purpose of the renovation to the Council Chamber is improve accessibility, audio and acoustics, technologies, safety and over all meeting experience.

SERVICE CENTER FACILITIES PROJECTS - \$3,737,225

High Point Fuel Station - \$3,737,225 (Total Bond \$4,130,001)

The addition of a City-owned and operated fueling location will ensure reserve fuel in crisis/severe weather events, bulk loading of city fuel truck to support field operations, direct purchase fuel cost savings, and technologies to better track fleet performance.

FACILITIES CAPITAL MAINTENANCE FUND - \$6,243,311

Safety and Security \$1,896,166

Generators, back-up power systems, and security upgrades to various facilities

Preservation of Infrastructure \$3,338,668

Equipment replacement (HVAC, fire alarm, energy management, and furniture), replacement of old finishes, and water proofing projects.

Support of City Mission \$883,477

Projects that support departmental needs whether through growth or new programs

Environmental Sustainability \$125,000

Support of the City's photo-voltaic (solar) systems and yearly analysis on energy saving improvements.