



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

November 15, 2023 AGENDA ITEM #4

Discuss and consider amending the FY 2024 Capital Budget to fund the various toll collection and intelligent transportation system (ITS) projects


Strategic Plan Relevance:	Innovation, Safety, Stewardship
Department:	Operations
Contact:	Tracie Brown, Director of Operations Greg Mack, Director of IT & Toll Systems
Associated Costs:	\$0 net change to the approved FY24 Capital Budget
Funding Source:	FY24 Capital Budget
Action Requested:	Consider and act on draft resolution

Background: The Fiscal Year 2024 Annual Operating Budget contains revenue estimates and departmental spending plans for the fiscal year beginning July 1, 2023, ending June 30, 2024. The estimated revenues of \$257.2 million include Operating Revenue of \$231.1 million and Other Revenue of \$26.1 million. Total estimated operating expenses are \$72.7 million and \$96 million of bond and loan debt service. In addition to the department level budget estimates, the FY24 Budget includes the Authority's Capital Budget, System Operating Budget, and Debt Service Schedule for FY24.

The major initiatives anticipated in the FY24 Operating Budget include installing key intelligent transportation system (ITS) assets to assist customers in making informed decisions and convey future planning efforts and expanding violation enforcement to mitigate revenue loss and enhance collections. The operating Capital Budget of \$31.9 million includes data platform system enhancements, roadway violator detection technology, a future headquarters property, safety technology and expansion of the traffic incident management center. The Renewal and Replacement component of the Capital Budget of \$36.4 million includes electronic toll collection roadside system replacements, existing system upgrades, metal beam guard fence improvements, a wall monitoring system, maintenance yard expansion and improvements, and other paving and safety improvements along the corridors.

Current Action: The approved FY24 Capital Budget anticipates two projects related to safety technology and toll violation technology. The specific items are outlined on page 42 of the FY24 Budget and referenced in Figure 1 and Figure 2:

Figure 1. CTRMA Fiscal Year 2024 Approved Capital Budget



Capital Budget

Capital Budget

Data Platform System Enhancements		1,154,000
Enterprise Resource Planning System		650,000
Automated Incident Detection Cameras - Safety Technology		4,776,900
Automated License Plate Reader Technology - Toll Violation		3,238,200
Traffic Incident Management Center Expansion and Technology		6,760,000
Pay By Mail Vendor Procurement		300,000
Headquarters Building		15,000,000
Snow Equipment		35,000
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		31,914,100

Renewal and Replacement

General Fund

Roadside Systems (ETCS) Implementation		27,533,200
290E Toll System Replacement	12,396,000	
SH 71 Toll System Replacement	11,109,500	
MoPac Toll System Replacement	4,027,700	
Existing System Upgrades		
Central Host Upgrades		1,000,000
Wall Monitoring Equipment - System		300,000
Maintenance Yard Improvement		800,000
Metal Beam Guard Fence Improvements/ 183A Phase I and II		3,000,000
290E Maintenance Yard Expansion		85,000
290E Maintenance Yard Pond Expansion		35,000
System Delineators		77,900
Lobo Point Repair		405,000
45SW at RM1626 Pavement Repair		1,300,000
		<hr/>
		34,536,100

MoPac General

MoPac Delineators		69,500
MoPac Surface Repair and Fog Seal		1,800,000
		<hr/>
		1,869,500
		<hr/>
		36,405,600

The approved budget amount for these programs is \$8,015,100.


Staff proposes to replace these programs with alternate projects. These substitute initiatives enhance the Authority’s safety, revenue collection, toll mitigation, and technology programs. The projects also provide for more efficient use of the organization’s limited financial and human resources. Modifying the list of projects requires three separate budget amendment items.

ITS Project	Budget Amount	Safety	Revenue Collection / Violation Mitigation	Technology Improvement
Roadside ALPR Trailers (2)	500,000		X	X
RekorOne - Enhancement: Improved Image Attachments to Events	25,025	X		X
RekorOne - Enhancement: Roadway Sensor Integration	192,785			X
183A Toll Signal Upgrades	287,500	X		X
Roadway Weather Information Systems (RWIS) for Toll Facilities	355,000	X		X
TIM Ctr Video Management Software	596,600	X		X
Cabinet Standardization Effort - 290 Toll	1,496,790			X
CCTV Camera Replacements w/ Heaters (systemwide)	825,000			X
Shared-Use Path (SUP) Safety Program	600,000	X		X
Fixed Camera Array Upgrades	1,500,500			X
Mobile Operations and Maintenance Safety (MOMS)	82,500	X		X
TOTAL	\$ 6,461,700			

The proposed budget for the alternative list of Operations / IT -related capital projects totals \$6,461,700.

In addition to modifying the list of capital projects, with this action item staff requests to add \$1.5 million to the amount approved in the Renewal & Replacement section of the FY24 Capital Budget related to the Kapsch Central Host upgrade.

Figure 2. CTRMA Fiscal Year 2024 Approved Renewal & Replacement Budget



Capital Budget

Capital Budget	
Data Platform System Enhancements	1,154,000
Enterprise Resource Planning System	650,000
Automated Incident Detection Cameras - Safety Technology	4,776,900
Automated License Plate Reader Technology - Toll Violation	3,238,200
Traffic Incident Management Center Expansion and Technology	6,760,000
Pay By Mail Vendor Procurement	300,000
Headquarters Building	15,000,000
Snow Equipment	35,000
	<u>31,914,100</u>
Renewal and Replacement	
General Fund	
Roadside Systems (ETCS) Implementation	27,533,200
290E Toll System Replacement	12,396,000
SH 71 Toll System Replacement	11,109,500
MoPac Toll System Replacement	4,027,700
Existing System Upgrades	
Central Host Upgrades	1,000,000
Wall Monitoring Equipment - System	300,000
Maintenance Yard Improvement	800,000
Metal Beam Guard Fence Improvements/ 183A Phase I and II	3,000,000
290E Maintenance Yard Expansion	85,000
290E Maintenance Yard Pond Expansion	35,000
System Delineators	77,900
Lobo Point Repair	405,000
45SW at RM1626 Pavement Repair	1,300,000
	<u>34,536,100</u>
MoPac General	
MoPac Delineators	69,500
MoPac Surface Repair and Fog Seal	1,800,000
	<u>1,869,500</u>
	<u>36,405,600</u>

The Kapsch Central Host captures and receives the toll transaction information related to the 183A Toll, 290 Toll, 45SW Toll, 183 Toll and MoPac Express Lane and forwards it to the Data Platform System (DPS). (As of September 2023, tolls transaction information related to the 71 Toll is being captured by the ETC Toll System Host.) The DPS is then responsible for routing the information to our interoperable partners for posting to a pre-paid transponder or license plate account. If the toll transaction is not posted to one of these accounts after three attempts, then the transaction is routed to the Authority's Pay By Mail vendor to begin the invoicing process.

The Kapsch Central Host is aging. It is imperative that it continue to function at a high level until the 2-year plan to transition toll processing responsibilities from Kapsch to

ETC has been completed. The additional \$1.5 million funding request covers additional professional services and software licenses related to the Kapsch Central Host upgrade not known or anticipated before the FY24 budget approval in June 2024. The additional funds requested by today's action bring the total amount needed for the Kapsch Central Host Upgrade to \$2.5 million.

The third and final amendment adds \$53,400 to the MoPac General Fund capital budget to fund a safety initiative. The Intelligent Management of Integrity Levels of Expressway or iMile project will monitor lane diving behavior using video analytics to provide information for monitoring and evaluation. The goal is to discourage unsafe traveler behavior and provide accurate data to the Mobility Authority for long-term safety initiative planning. If successful, the technology will help establish a framework for enforcing lane diving violations.

It is important to note that the proposed amendments to the FY24 Capital Budget and Renewal and Replacement Budget do not increase the overall adopted FY24 Operating Budget amount. This action merely reallocates the approved funds to different purposes in the case of the Capital Budget and adds funding to the Renewal and Replacement budget. **The net change to the approved operating budget related to the proposed amendments is \$0.**

Staff Recommendation: Staff requests the Board's approval to amend the Fiscal Year 2024 Capital Budget to fund alternate ITS projects and increased funding for the Central Host upgrades.

Backup provided: Draft resolution

Draft Capital Budget amendment

IT/Operations Technology Project Detail

**GENERAL MEETING OF THE BOARD OF DIRECTORS
OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

RESOLUTION NO. 23-0XX

AMENDING THE CAPITAL BUDGET FOR FISCAL YEAR 2024

WHEREAS, by Resolution No. 23-039 dated June 26, 2023, the Board of Directors adopted the operating budget for fiscal year 2023-2024 (the “FY 2024 Budget”); and

WHEREAS, the FY 2024 Budget includes \$8,015,100 in funding for safety technology and toll violation technology; and

WHEREAS, staff proposes replacing safety technology and toll violation technology funding with various toll collection intelligent transportation system (ITS) projects totaling \$6,461,700; and

WHEREAS, staff proposes increasing the Renewal & Replacement section of the FY24 Budget by an amount of \$1,553,400 related to the Kapsch Central Host upgrade and a MoPac lane safety technology pilot program; and

WHEREAS, the total amount of the FY 2024 Budget is not changed by the proposed amendments; and

WHEREAS, the Executive Director recommends that the FY 2024 Budget be amended as described in Exhibit A hereto, to replace safety technology and toll violation technology funding with various toll collection ITS projects and to increase the Renewal & Replacement section of the FY24 Budget related to the Kapsch Central Host upgrade and MoPac lane safety technology pilot program.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors hereby amends the FY 2024 Budget as shown in Exhibit A to replace safety technology and toll violation technology funding with various toll collection ITS projects, totaling \$6,461,700 and to increase the Renewal & Replacement section of the FY24 Budget by the amount of \$1,553,400 related to the Kapsch Central Host upgrade and MoPac lane safety technology pilot program.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 15th day of November 2023.

Submitted and reviewed by:

Approved:

James M. Bass
Executive Director

Robert W. Jenkins, Jr.
Chairman, Board of Directors

Exhibit A

Capital Budget

Data Platform System Enhancements	1,154,000	
Enterprise Resource Planning System	650,000	
Automated Incident Detection Cameras - Safety Technology	4,776,900	
Automated License Plate Reader Technology - Toll Violation	3,238,200	-
Traffic Incident Management Center Expansion and Technology	6,760,000	
Pay By Mail Vendor Procurement	300,000	
Headquarters Building	15,000,000	
Snow Equipment	35,000	
Roadside ALPR Trailers (2)		500,000
RekorOne - Enhancement: Improved Image Attachments to Events		25,025
RekorOne - Enhancement: Roadway Sensor Integration		192,785
183A Signal Upgrades		287,500
Roadway Weather Information Systems (RWIS) for Toll Gantry		355,000
TIM Center Video Management Software		596,600
Cabinet Standardization Effort - 290 Toll		1,496,790
CCTV Camera Replacements w/ Heaters (systemwide)		825,000
Shared-Use Path (SUP) Safety Program		600,000
Fixed Camera Array Upgrades		1,500,500
Mobile Operations and Maintenance Safety (MOMS)		82,500
	31,914,100	<u>30,360,700</u>

Renewal and Replacement

General Fund

Roadside Systems (ETCS) Implementation		27,533,200
290E Toll System Replacement	12,396,000	
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MoPac Toll System Replacement	4,027,700	
Existing System Upgrades		
Central Host Upgrades	1,000,000	2,500,000
Wall Monitoring Equipment - System	300,000	
Maintenance Yard Improvement	800,000	
Metal Beam Guard Fence Improvements/ 183A Phase I and II	3,000,000	
290E Maintenance Yard Expansion	85,000	
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System Delineators	77,900	
Lobo Poind Repair	405,000	
45SW at RM1626 Pavement Repair	1,300,000	
	34,536,100	<u>36,036,100</u>

MoPac General

MoPac Safety Technology		53,400
MoPac Delineators	69,500	
MoPac Surface Repair and Fog Seal	1,800,000	
	1,869,500	<u>1,922,900</u>
	36,405,600	<u>37,959,000</u>

68,319,700 68,319,700



B.R.O.W.N. (Bettering Regional Operations With New Technology) IT / Operations Technology Project Budgeting

Fiscal Year	Project Title	Project Description	Budget Estimate	Funding	Bucket	Prioritization
FY23-24	Roadside Automated License Plate Readers (ALPR) Trailers (2)	Add two (2) additional ALPR law enforcement trailers to the fleet. Cost includes two additional trailers (\$250,000) and system server upgrades for existing trailers (\$250,000)	\$ 500,000.00	Ops	Capital	High
FY23-24	RekorOne - Enhancement: Improved Image Attachments to Events	RekorOne, enhancement to existing system - Add the ability to copy and paste an image to the "files" section of an event, in addition to existing "browse" and "drag and drop" functionality - one time fee.	\$ 25,025.00	Ops	Capital	High
FY23-24	RekorOne - Enhancement: Roadway Status Upgrade	Rekor's "Roadway Status" feature harnesses the power of RVSD or Rekor's proprietary cameras, allowing agencies to seamlessly tap into these technologies in real time. By providing instant access to analytics data for road segments, this feature empowers agencies to make informed decisions based on real-time insights.	\$ 192,785.00	Ops	Capital	High
FY23-24	183A Signal Upgrades	Signal cabinet controller upgrades at the five (5) existing intersections under CTRMA management along the 183AToll. Existing infrastructure (City of Cedar Park) includes TS2 traffic cabinets with legacy traffic controllers. Upgrades would include removal, replacement, and installation of (5x) signal controller, (5x) cellular modem, (5x) network switches, and relocation/installation of existing DVAS cameras from the 71 Toll gantry.	\$ 287,500.00	Ops	Capital	High
FY23-24	Roadway Weather Information Systems (RWIS) for Toll Gantry	Systemwide deployment of roadway weather information systems (RWIS) at toll gantry locations with environmental sensors for ambient temperature, humidity, precipitation quantity and intensity, precipitation type, wind speed and direction. The deployment will include an map-based graphical user interface (GUI) to allow users to view weather status at each location in real-time. Sensors will be installed on existing toll gantries with connection to existing cabinet assemblies; new cabling to be installed. Approximately 12 toll gantries total (1-71, 1-45SW, 2-183, 2-290, 3-183A, 3-MoPac).	\$ 355,000.00	IT	Capital	High



B.R.O.W.N. (Bettering Regional Operations With New Technology) IT / Operations Technology Project Budgeting

Fiscal Year	Project Title	Project Description	Budget Estimate	Funding	Bucket	Prioritization
FY23-24	TIM Ctr Video Management Software	Software or Softwares manage TIM Ctr video streams and displays, video sharing with region partners and third party vendors/applications.	\$ 596,600.00	Ops	Capital	High
FY23-24	Cabinet Standardization Effort - 290 Toll	Replacement of existing non-standard cabinet assemblies on the 290 Toll corridor with TxDOT Type 3 (pole mounted) and Type 4 (ground mounted) cabinets providing standardization across the network, as well as resiliency against severe weather, security, and scalability. Each cabinet assembly will include fiber optic patch panel, managed field Ethernet switch, uninterruptible power supply (UPS) with battery backup, and remote power management unit (RPMU). Installation will require minor infrastructure work (e.g., conduit sweeps, foundation), as well as modification or replacement of existing power service drops and fiber optic connections for future capacity. Approximately 17 total cabinet assemblies.	\$ 1,496,790.00	IT	Capital	High
FY23-24	CCTV Camera Replacements w/ Heaters (systemwide)	Systemwide replacement of external positioner, pan-tilt-zoom CCTV cameras to include internal heaters capable of operation in severe weather (e.g., icy) conditions. Approximately 50 cameras total; existing structures, cabinet equipment, and cabling to be re-utilized (42 deployed as of March 10, 2023).	\$ 825,000.00	Ops	Capital	High
FY23-24	Shared-Use Path (SUP) Safety Program	Video-based pedestrian detection platform that identifies pedestrians prior to at-risk roadway crossings and actuates a response from the infrastructure. Proposed responses include flashing signage, CV messaging, audible alert. Discussed locations include near Costco along the 183A Toll and on the northside of the 45SW Toll.	\$ 600,000.00	Ops	Capital	High
FY23-24	Fixed Camera Array Upgrades	Upgrade selected sites along the 183 Toll and 290 Toll facilities to the "ultimate" cctv camera upgrades. Upgrades to include cctv, ethernet switch, and other necessary upgrades.	\$ 1,500,500.00	Ops	Capital	High



B.R.O.W.N. (Bettering Regional Operations With New Technology) IT / Operations Technology Project Budgeting

Fiscal Year	Project Title	Project Description	Budget Estimate	Funding	Bucket	Prioritization
FY23-24	Mobile Operations and Maintenance Safety (MOMS) onboard units	Install connected vehicle on-board units in CTRMA maintenance vehicles. The maintenance vehicles will then act as a connected vehicle for testing communications with roadside units and third-party systems such as Waze.	\$ 82,500.00	IT	Capital	High
FY23-24	Kapsch Host Upgrades (Professional Services & Licensing)	Upgrades are needed to migrate the servers, the data, and bring the licenses into compliance: a) replace, configure and migrate the toll system production and backup servers operating systems to the new server hardware; b) replace, configure, and migrate data of the production and backup data storage locations to the new Powerstore solution; and c) bring the related Oracle licenses into compliance after the database migration. If the additional funding is approved, the total budgeted amount for this initiative in FY24 will be \$2.5M.	\$ 1,500,000.00	IT	R&R	High
FY23-24	iMile (Intelligent Management of Integrity Levels of Expressway) Lane Safety Project	Pilot project designed to provide an intergrated lane diving prevention system comprised of cameras, edge-computer processor, and vehicle-level blankout signs. The system will provide real-time information to the TIM Centter. Project benefits include discouraging unsafe motorist movement, providing accurate data for planning purposes, and establishing a framework for enforcing violations.	\$ 53,400.00	IT	MoPac	High
TOTAL			\$ 8,015,100.00			