



FISCAL YEAR 2019 BUSINESS AND CAPITAL PLANS

LOWER COLORADO RIVER AUTHORITY

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The Board of Directors is composed of 15 members appointed by the governor. Directors represent counties in LCRA's electric and water service areas. The directors meet regularly to set strategic corporate direction for the general manager and staff, to approve projects and large expenditures, and to review progress on major activities and industry issues.

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These business and capital plans present a long-term vision and summary of operational plans for LCRA and its nonprofit corporations. The business and capital plans should not be used as a basis for making a financial decision with regard to LCRA or any of its securities or other obligations. These business and capital plans are intended to satisfy the official intent requirements set forth in IRS Treasury Regulations Section 1.150-2. For more complete information on LCRA and its obligations, refer to LCRA's annual financial report, the official statements relating to LCRA's bonds, and the annual and material event disclosures filed by LCRA with nationally recognized municipal securities information repositories and the State Information Depository pursuant to Rule 15c2-12 of the U.S. Securities and Exchange Commission. The information in this report and within each of the documents referenced applies only as of the report's date. The business and capital plans include forecasts based on current assumptions used for planning purposes only and are subject to change. Copies of the documents referenced in this report may be obtained from Stephen Kellicker, senior vice president of Financial Planning and Analysis, LCRA, 3700 Lake Austin Blvd., Austin, TX 78703.

LCRA's Mission

To enhance the quality of life of the Texans we serve through water stewardship, energy and community service.



MY COLORADO COMMITMENT

I will make every LCRA
endeavor outstanding.

Working to Support Growth in Texas

Supporting growth in our state

Texas continues to experience significant economic growth, and LCRA has crafted its business and capital plans to keep pace with that growth in the coming years.

Working hand-in-hand with our mission to enhance the lives of Texans and our Colorado Commitment to make every LCRA endeavor outstanding, LCRA's vision and objectives are:

Vision: We will operate and grow our business to support growth in Texas.

Objectives:

- **Excel in execution.**
- **Provide competitive products.**
- **Deliver exceptional customer service.**
- **Strengthen the bottom line.**

While our mission describes why we exist – to enhance the lives of the Texans we serve – our vision gets to the heart of what we need to do as an organization, and our objectives give us a roadmap for how we'll achieve our vision.

All of LCRA's business units have a role to play in achieving our vision and objectives. To that end, we've created specific visions for each business unit that tie to the overall vision and objectives for LCRA:

- **Wholesale Power: Improve our competitive position.**
- **Transmission: Maximize value to our stakeholders through an uncompromising commitment to safety, our employees and system performance.**
- **Water: Increase and preserve the region's water supplies.**
- **Public Services: Continue providing public services while achieving financial self-sufficiency for those services.**

The following pages also lay out our specific objectives that describe how we'll achieve our vision in each business unit.

Serving Texans

We at LCRA are honored to provide a multitude of vital services – including water, power and public services – to help our state continue to grow and prosper. We're dedicated to continuing to provide these services in a safe, reliable and economical manner. We remain committed to our mission of enhancing the quality of life of the Texans we serve.

LCRA's Vision and Objectives

LCRA

Vision: We will operate and grow our business to support growth in Texas.

Objectives:

- Excel in execution.
- Provide competitive products.
- Deliver exceptional customer service.
- Strengthen the bottom line.

Wholesale Power

Vision: Improve our competitive position.

Objectives:

- Keep the safety of our employees and the public our top priority; nothing we do is so important it can't be done safely.
- Minimize our wholesale power rate while keeping rate fluctuations low and maximizing the net margin of our generation fleet.
- Strive to perform all of our activities in the most rigorous and effective manner possible.
- Provide exceptional service to our wholesale power customers and our internal customers.
- Help our wholesale power customers gain more load, and acquire new customers for LCRA WSC Energy.

- Avoid duplication of efforts, and eliminate activities that do not support business objectives.
- Empower our team members to be proactive and accountable to make every LCRA endeavor outstanding.

Transmission

Vision: Maximize value to our stakeholders through an uncompromising commitment to safety, our employees and system performance.

Objectives:

- Keep the safety of our employees and the public our top priority; nothing we do is so important it can't be done safely.
- Optimize and grow assets to support transmission needs in Texas.
- Provide cost-effective transmission and telecommunication products and services.
- Achieve targeted levels of system availability, performance and efficiency.
- Maintain strong financial health.
- Focus on the fundamentals while applying constant and never-ending improvements.
- Expand production flexibility and capabilities through the effective use of outside services.
- Avoid duplication of efforts, and eliminate activities that do not support business objectives.
- Empower our team members to be proactive and accountable to make every LCRA endeavor outstanding.

LCRA's Vision and Objectives (Continued)

Water

Vision: Increase and preserve the region's water supplies.

Objectives:

- Keep the safety of our employees and the public our top priority; nothing we do is so important it can't be done safely.
- Expand the region's water supplies, and work to meet the long-term water needs for existing and future customers.
- Minimize costs for customers by efficiently operating and maintaining equipment and infrastructure and pursuing low-cost, innovative measures for new water supplies.
- Revise and update the state-approved Water Management Plan, and submit it to the Texas Commission on Environmental Quality for approval.
- Maintain and invest in LCRA's system of dams to ensure their continued safe and effective operation, which is critical for water supplies and flood management in the basin.
- Monitor and protect the water quality and the health of the lower Colorado River basin.
- Focus on water conservation by providing technical assistance, cost-sharing grants and irrigation evaluations.
- Avoid duplication of efforts, and eliminate activities that do not support business objectives.
- Empower our team members to be proactive and accountable to make every LCRA endeavor outstanding.

Public Services

Vision: Continue providing public services while achieving financial self-sufficiency for those services.

Objectives:

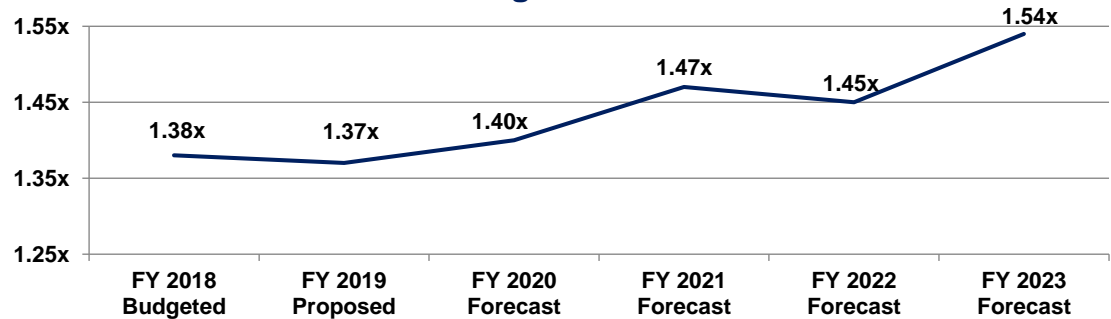
- Keep the safety of our employees and the public our top priority; nothing we do is so important it can't be done safely.
- Provide outdoor adventure, river access and natural science education to communities throughout the Colorado River basin through LCRA's system of parks, recreation areas, natural resource areas and river access sites.
- Contribute to LCRA's land stewardship mission through soil, water and wildlife conservation on LCRA lands and through support of the Colorado River Land Trust.
- Improve public safety through law enforcement and emergency assistance during floods and other disasters that may affect the communities LCRA serves.
- Help protect critical infrastructure – including dams and the Texas power grid – from potential cyberattacks and physical threats.
- Identify and implement opportunities to increase revenue and decrease costs as appropriate to achieve greater financial self-sufficiency for the Public Services we provide.
- Empower our team members to be proactive and accountable to make every LCRA endeavor outstanding.

LCRA Financial Summary

- Approval of this business plan authorizes LCRA to spend \$333.7 million for operations in fiscal year 2019.
- Debt service coverage, a widely used measure of financial performance, is forecast to be 1.37x in FY 2019.
- Debt service coverage is projected to remain between 1.37x and 1.54x over the five-year planning horizon.
- Stable debt service coverage reflects LCRA's commitment to growing revenue and managing costs.

Note: GenTex 1 is the original portion of the Lost Pines 1 Power Project from which energy is sold directly to wholesale electric customers.

LCRA Debt Service Coverage



(Dollars in millions)

	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenues ¹	\$ 884.8	948.8	973.8	991.2	1,029.3	1,084.9
Expenses ¹	482.6	522.7	527.4	542.3	573.2	593.3
Net Operating Margin	402.2	425.7	447.8	449.1	456.4	491.2
Less: GenTex 1 Funds ²	(0.1)	(2.3)	(5.8)	(3.0)	(0.1)	(1.6)
Net Margin for Debt Service, Adjusted	402.2	423.9	440.5	445.9	456.0	490.1
Debt Service	\$ 291.1	308.5	315.7	303.3	315.4	318.8
Debt Service Coverage	1.38x	1.37x	1.40x	1.47x	1.45x	1.54x
Net Margin After Debt Service³	111.1	117.7	130.6	145.6	140.7	172.8

¹ Revenues and expenses are net of intracompany transfers. Revenues include interest income. Expenses exclude the LCRA TSC capital charge, which is a capital expense for LCRA consolidated.

² Includes adjustments related to GenTex 1 capital funding and reserve funding.

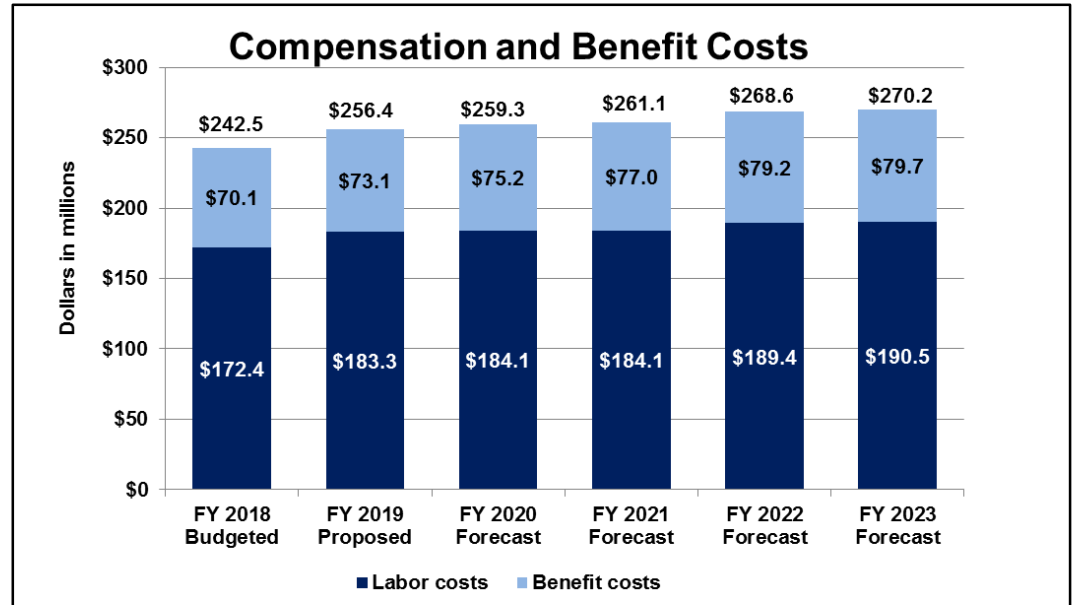
³ Net margin after debt service includes funds dedicated to GenTex 1.

Compensation and Benefits

Compensation and benefits are key drivers of LCRA's budget.

- Budgeted positions for FY 2019 are 1,978¹, which is an increase of 67 positions (3.5 percent) from the FY 2018 budget.
- To support and sustain growth in the Transmission business, Transmission is adding 35 new positions to support engineering, construction and operations of the transmission system. Another 27 positions are joining Safety, Project Management, Supply Management and other Enterprise Support functions primarily to support the Transmission business.
- FY 2019 compensation and benefit costs will increase by \$13.9 million, reflecting:
 - Planned 3.5 percent labor increases and labor adjustments to retain talent.
 - Additional Transmission and support staff.
 - Additional overtime to support capital and maintenance projects.

¹ Excludes seasonal workers.



- An additional 3.5 percent labor cost increase is planned in FY 2022, with all other years assuming a flat labor budget.
- LCRA continues to manage benefit costs, which range from 40 to 42 percent of labor costs for the next five years.

Wholesale Power – Financial Summary

Wholesale Power shows continued financial strength for a sustainable business.

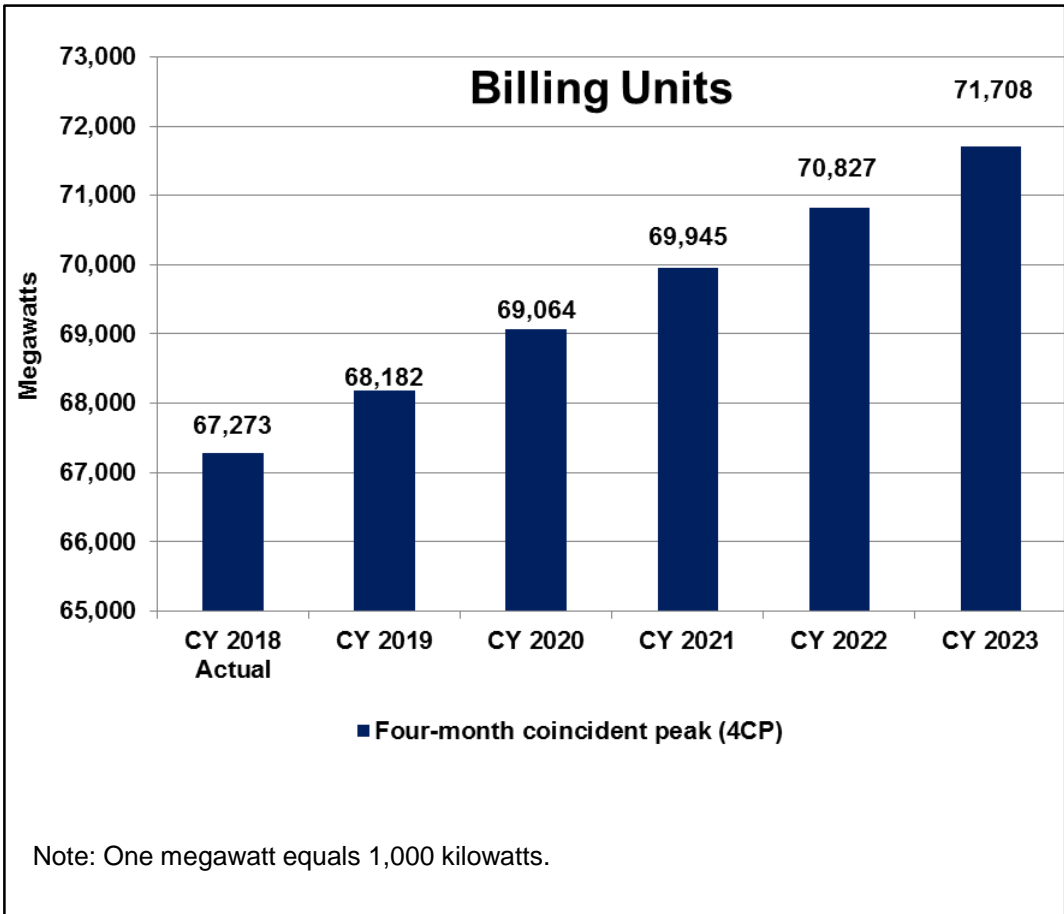
- Debt service coverage is projected to range between 1.25x and 1.38x over the five-year planning horizon.
- Financials remain strong and support the objective of minimizing our wholesale power rate while keeping rate fluctuations low and maximizing the net margin of our generation fleet.
- All capital expenditures in the plan are forecast to be revenue-funded and are not funded through debt.

Confidential competitive electric information has been removed from this version of the document.

LCRA TSC – Billing Units

LCRA TSC's billing unit is the four-month coincident peak (4CP) in the ERCOT market.

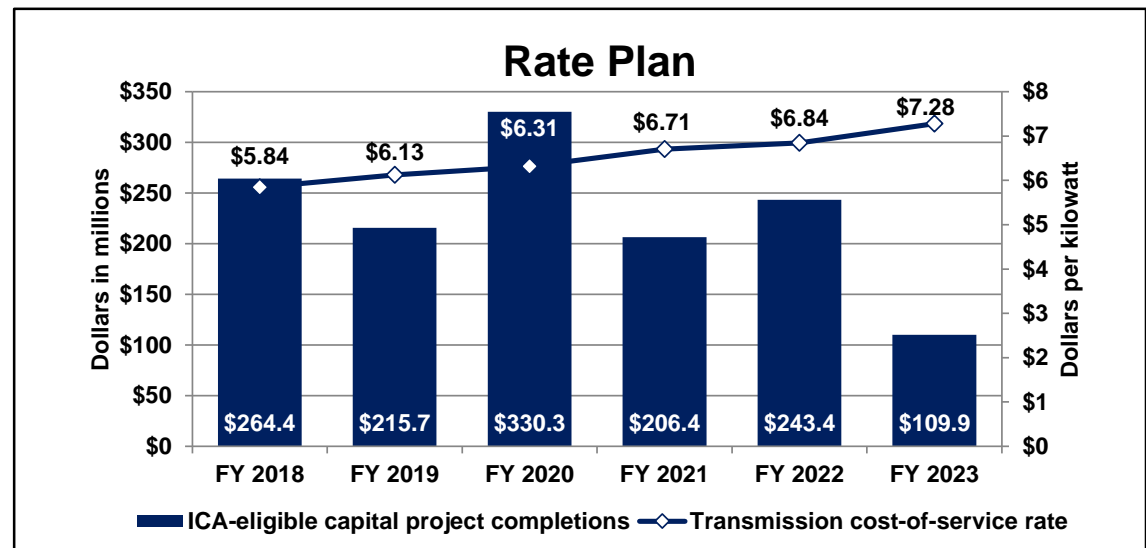
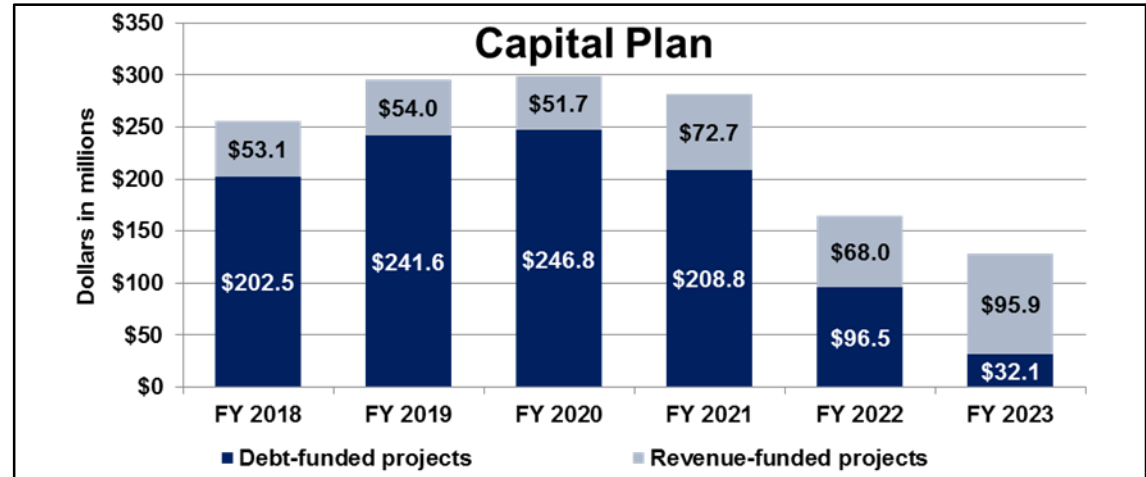
- 4CP is the average of the peak ERCOT electrical demands (measured in kilowatts) during the months of June, July, August and September of the previous calendar year.
- The Public Utility Commission of Texas approves the average of these four ERCOT system peaks each year to establish a 4CP for the following calendar year.
- Temperatures can have an effect on electrical demands. In calendar year 2017, the average of the high temperatures on the days ERCOT electrical demand peaked during the months of June through September was 98.5 degrees compared with a historical average of 98 degrees.
- 4CP is forecast to grow about 1.3 percent per year across ERCOT.



LCRA TSC – Capital and Rates

We're growing the transmission system to meet customer needs:

- LCRA TSC plans to spend about \$1.2 billion on capital projects over the five-year planning period to support the needs of the ERCOT and LCRA TSC systems.
- LCRA TSC plans to recover about \$1.5 billion of capital costs for projects that are completed and energized through interim capital addition (ICA) filings in FY 2019 through FY 2023. Additionally, LCRA TSC plans to file a transmission cost of service rate case using a FY 2021 test year with new rates going into effect in FY 2023.
- LCRA TSC will continue to recover costs associated with additional projects beyond FY 2023 after they are completed and energized.



LCRA TSC – Financial Summary

- LCRA continues to expand the Transmission organization, adding staff and equipment needed to increase its current capacity to operate and construct facilities for LCRA TSC and provide customer services.
- Transmission plans to manage costs to maintain its debt service coverage ratios between 1.36x and 1.50x.

(Dollars in millions)

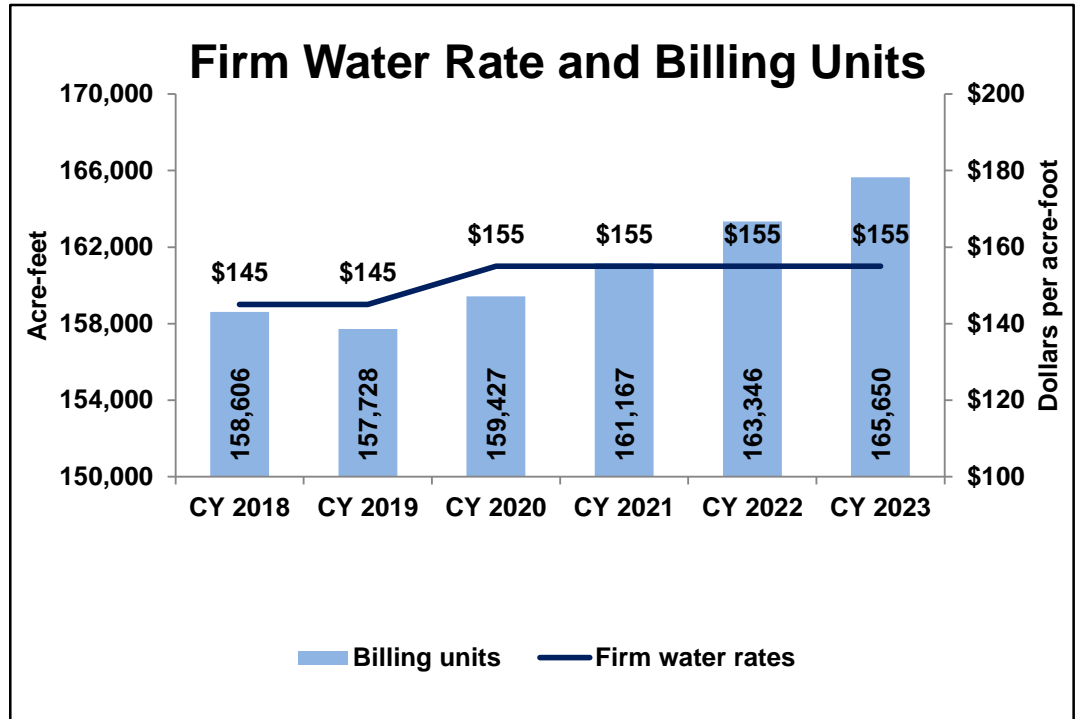
	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenues	\$ 409.7	425.8	446.2	475.5	495.5	536.0
Operations and Maintenance	110.9	110.9	116.1	120.3	123.6	126.6
Net Operating Margin	298.8	314.9	330.1	355.3	371.9	409.4
Plus: Interest Income	2.6	3.8	5.5	6.0	6.1	5.1
Less: Assigned Enterprise Expense	44.2	48.1	47.2	48.9	55.8	58.1
Public Service Fund	12.3	12.8	13.4	14.3	14.9	16.1
Resource Development Fund	8.2	8.5	8.9	9.5	9.9	10.7
Net Margin Available for Debt Service	236.7	249.3	266.1	288.5	297.4	329.6
Debt Service	\$ 173.9	180.4	195.0	205.9	217.2	220.4
Debt Service Coverage	1.36x	1.38x	1.36x	1.40x	1.37x	1.50x
Net Margin After Debt Service	\$ 62.8	68.9	71.1	82.6	80.3	109.2

Water – Firm Billing Units and Rates

The firm water rate of \$145 per acre-foot is projected to increase to \$155 per acre-foot beginning with the January 2020 billing period.

We are managing costs with a one-year delay in a planned firm water rate increase.

- Billing units are forecast to be relatively flat through calendar year 2019 and then grow at an average of 1.3 percent annually through the plan period.
- Arbuckle Reservoir is expected to begin operations in early calendar year 2019.
- LCRA is identifying funding for the construction of future new regional water supply projects.
- The firm water rate is projected to increase to \$155 per acre-foot beginning with the January 2020 billing period.

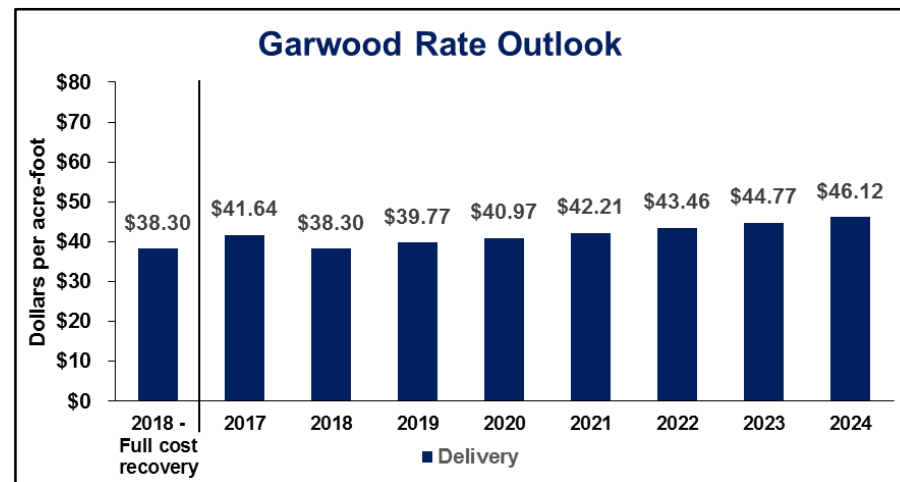
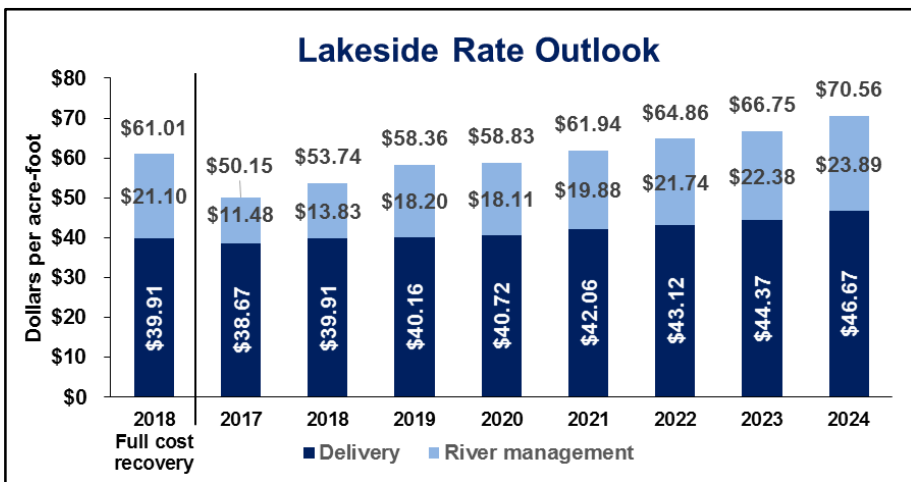
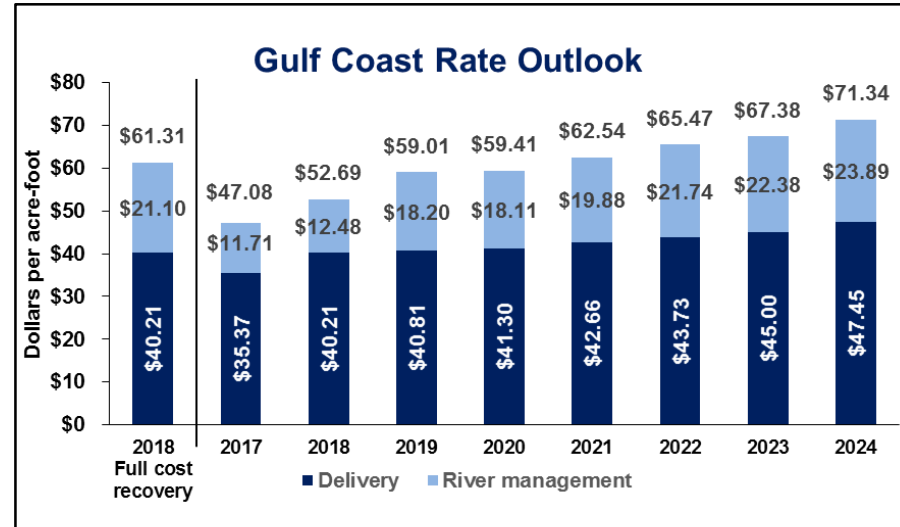


Note: Water supplies managed by LCRA are divided into firm and interruptible water. Firm water is available even during a severe drought. During water shortages, interruptible water is cut back or cut off.

Water – Interruptible Rates

Full cost recovery assumes a gradual approach.

- The Board approved rates for calendar year 2018 in January 2018.
- Rates for Gulf Coast and Lakeside irrigation divisions are projected to increase to gradually recover the divisions' fully allocated shares of river management costs by calendar year 2022, assuming full water availability. The Garwood division is not subject to river management costs. Rates for Gulf Coast, Lakeside and Garwood irrigation divisions are based on full recovery of delivery costs associated with operation of the divisions.
- The rates for 2019 and beyond are subject to change based on actual and projected costs and billing units.



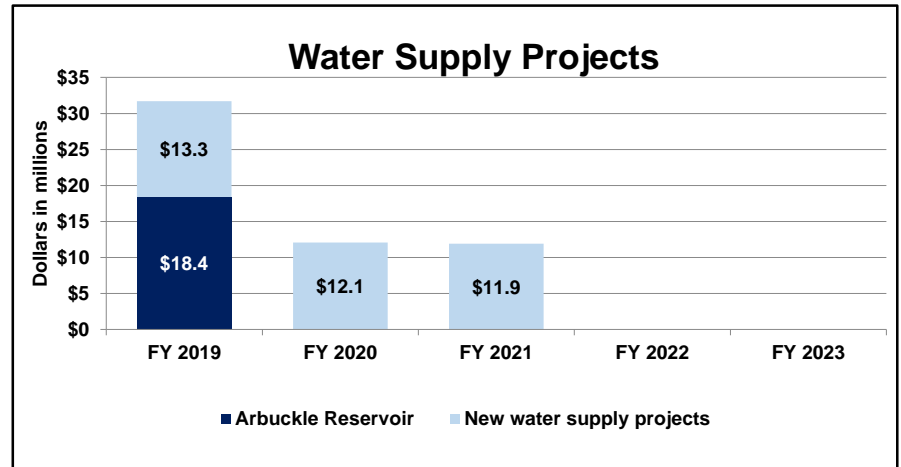
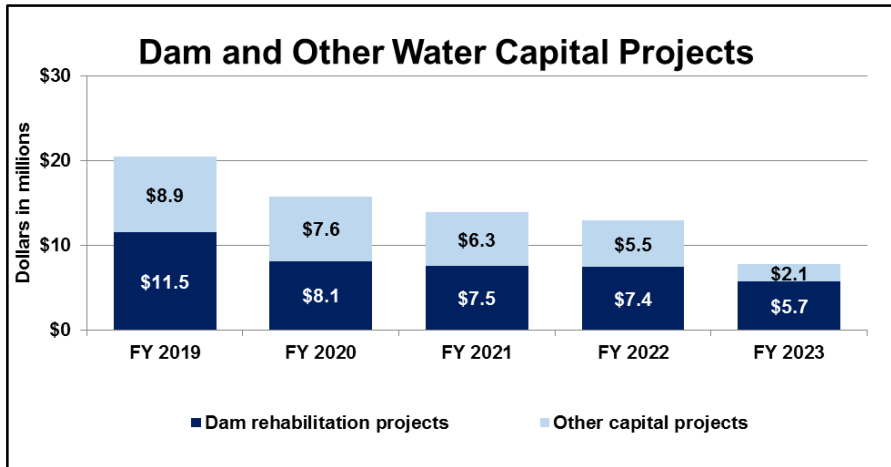
Water – Capital

Dam rehabilitation and other capital projects:

- LCRA plans to spend \$40.2 million on dam rehabilitation projects over the next five years for their continued safe and effective operation. This total excludes projects that are strictly for hydroelectric power generation.
- As the projects continue, the costs to rehabilitate the dams could increase.
- LCRA will issue debt to pay for these projects and recover the costs in the firm water rate.

New water supply capital projects:

- Capital spending for the Arbuckle Reservoir will continue through FY 2019.
- LCRA plans to issue debt to cover more than \$37 million in costs over the next five years for new regional water supply projects prior to the construction phases (e.g., permitting, engineering, etc.).
- Timing and funding for the construction phases have not yet been identified.



Note: Other capital projects include capital for irrigation and minor capital needs for Water.

Water – Financial Summary

Providing long-term water supply at a lower rate.

- FY 2019 revenues reflect the current firm rate of \$145 per acre-foot.
- A portion of firm revenues is deferred to a rate stabilization fund, which is excluded from revenues until the fund is used.
- The financial summary assumes agricultural water deliveries in every year using rolling historical averages for acres.
- Annual debt service includes the Texas Water Development Board Arbuckle Reservoir debt paid from the Resource Development Fund.

(Dollars in millions)

	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenue						
Firm Water	\$ 17.9	20.0	23.5	26.4	26.6	27.0
Agricultural	11.8	11.0	11.4	11.8	12.3	12.7
Other	2.0	2.1	2.1	2.1	2.1	2.1
Total Revenues	31.6	33.1	37.0	40.2	41.0	41.8
Operations and Maintenance	16.9	18.1	17.8	16.6	16.9	17.0
Net Operating Margin	14.7	15.0	19.2	23.7	24.1	24.8
Plus: Interest Income	1.1	1.1	1.4	1.7	1.5	1.5
Less: Assigned Enterprise Expense	2.5	4.2	5.1	5.3	6.0	6.4
Public Service Fund	0.9	1.0	1.1	1.2	1.2	1.3
Net Margin Available for Debt Service	12.3	10.9	14.4	18.9	18.4	18.7
Debt Service	\$ 14.4	16.0	16.3	19.4	19.7	20.0
Debt Service Coverage	0.85x	0.68x	0.88x	0.97x	0.93x	0.94x
Plus: Resource Development Fund	10.2	10.3	10.5	12.8	12.9	12.9
Debt Service Coverage, Adjusted	1.56x	1.32x	1.53x	1.63x	1.59x	1.58x

Public Service Fund

LCRA uses the Public Service Fund on statutory programs that do not fully recover their costs.

- Public Service Fund activities include:
 - Parks.
 - Natural science centers.
 - Natural resource protection.
- These services provide some revenue but require annual support to cover the costs of operations, Enterprise Support and capital.
- The PSF includes \$1 million annually for the Community Development Partnership Program.
- Fund sources include contributions from the following operations:
 - 3 percent from budgeted nonfuel Wholesale Power costs.
 - 3 percent of budgeted GenTex 1 revenue.
 - 3 percent of budgeted Transmission revenue.
 - 3 percent of budgeted Water revenue.
 - 3 percent from budgeted Strategic Services revenue.

(Dollars in millions)

	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenue	\$ 3.7	4.5	4.7	5.1	5.2	5.3
Total Operating Expense	17.8	18.3	17.9	18.1	18.6	18.8
Operating Fund Requirement	14.1	13.8	13.2	13.0	13.4	13.5
Capital Spending	1.7	1.7	2.5	2.4	2.3	2.2
Assigned Enterprise Capital	0.3	0.2	0.4	0.3	0.3	0.6
Reserves	0.0	0.1	0.0	0.0	0.1	0.1
CDPP	1.0	1.0	1.0	1.0	1.0	1.0
Total Funding Requirement	\$ 17.1	16.8	17.1	16.8	17.1	17.4

(Dollars in millions)

	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Sources						
Public Service Funds						
Wholesale Power	\$ 7.2	7.6	7.4	6.4	6.5	6.6
LCRA WSC Energy	0.0	0.0	0.0	0.0	0.1	0.0
GenTex Power Corporation	0.8	1.1	1.3	1.2	1.1	1.0
Water	0.9	1.0	1.1	1.2	1.2	1.3
LCRA TSC	12.3	12.8	13.4	14.3	14.9	16.1
Strategic Services	0.5	0.4	0.4	0.4	0.4	0.5
Subtotal	21.7	22.8	23.5	23.5	24.2	25.4
Uses						
Public Service Activities	17.1	16.8	17.1	16.8	17.1	17.4
Resource Development Fund	1.0	1.0	1.0	1.0	1.0	1.0
Strategic Reserve Fund	3.6	5.0	5.4	5.7	6.1	7.0
Subtotal	21.7	22.8	23.5	23.5	24.2	25.4
Remaining PSF Funds	\$ 0.0	0.0	0.0	0.0	0.0	0.0

Strategic Services

Strategic Services includes external services that people pay LCRA to provide.

- Strategic Services primarily includes:
 - Transmission Customer Service.
 - LCRA Environmental Laboratory Services.
 - Telecommunications radio sales.

	Budgeted		Proposed	Forecast		
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
(Dollars in millions)						
Revenues	\$ 18.2	14.4	15.5	15.8	16.6	17.6
Expenses	13.6	9.4	10.3	10.3	10.1	10.2
Net Operating Margin	4.6	5.0	5.2	5.6	6.5	7.4
Less: Assigned Enterprise Expense	3.0	2.3	2.3	2.3	2.4	2.4
Public Service Fund	0.5	0.4	0.4	0.4	0.4	0.5
Resource Development Fund	0.2	0.1	0.2	0.2	0.2	0.2
Net Margin Available	0.9	2.2	2.4	2.6	3.4	4.3

Enterprise Support

Enterprise costs consist of essential functions that support business operations across LCRA.

- Enterprise Support includes:
 - Digital Services.
 - Facilities.
 - Legal.
 - Financial.
 - Regulatory.
 - Others.
- FY 2019 costs increase due to budgeted merit increases and the Enterprise Financial Operations Re-engineering Project.
- Some costs are direct-charged when specific services are performed for a product line.
- Most other costs are assigned based on a three-factor formula of assets, labor hours and revenue.

(Dollars in millions)

	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Net Enterprise Costs	103.1	107.5	106.2	108.0	111.3	112.7
Cost Assignment						
Wholesale Power - Nonfuel	25.4	26.1	25.4	26.0	26.8	27.0
Wholesale Power - Fuel	0.5	0.5	0.5	0.5	0.5	0.5
GenTex Power Corporation	1.4	1.3	1.1	1.2	1.4	1.3
LCRA WSC Energy	0.3	0.1	0.1	0.1	0.1	0.1
LCRA TSC	44.2	48.1	47.2	48.9	55.8	58.1
Water	2.5	4.2	5.1	5.3	6.0	6.4
Public Service Fund Activities	3.2	2.8	2.7	2.8	2.9	2.9
Strategic Services	3.0	2.3	2.3	2.3	2.4	2.4
Capital/Other	22.5	22.3	21.9	20.9	15.4	13.9
Total	\$ 103.1	107.5	106.2	108.0	111.3	112.7
Capital Expenditures						
Debt-Funded	0.0	0.0	0.0	0.0	0.0	0.0
Revenue-Funded	11.4	13.5	22.3	19.1	18.6	20.6
Third Party or Proceeds-Funded	4.3	3.4	0.0	0.0	0.0	0.0
Total Capital	15.7	16.9	22.3	19.1	18.6	20.6

LCRA Capital Plan – by Status

- Approval of this capital plan authorizes the initiation of all recommended projects at their individually stated lifetime budgets as shown in the plan.
- Board approval of this plan also authorizes the proposed \$368.2 million budget for fiscal year 2019 capital spending, which includes \$81.8 million for recommended projects and \$286.4 million for projects the Board approved previously.
- The plan includes spending on future water supply projects in FY 2019 that will need additional Board authorization after this plan is approved.

FY 2019-FY 2023 Capital Spending for Recommended, Approved and Future Projects

LCRA Total (Including Austin Energy's Share and the City of San Marcos' Share)

(Dollars in millions)

	Budgeted	Proposed	Forecast					Five-Year Total	Lifetime
			FY 2018	FY 2019	FY 2020	FY 2021	FY 2022		
Recommended Projects	\$	81.8	148.6	42.2	-	-	272.6	273.9	
Approved Projects		286.4	112.5	122.7	79.7	6.8	608.1	1,166.3	
Subtotal Recommended and Approved		368.2	261.1	164.9	79.7	6.8	880.7	1,440.2	
Future Projects		11.9	118.9	181.3	135.8	171.7	619.7	641.3	
Total FY 2019 Capital Plan		380.1	380.0	346.2	215.5	178.5	1,500.4	2,081.5	
Less: Co-owners' Shares		0.7	3.6	0.4	3.2	1.8	9.6	17.8	
LCRA's Share		379.4	376.4	345.9	212.3	176.7	1,490.7	2,063.6	
Comparison to Previous Plan									
Total FY 2018 Capital Plan (with co-owners)		386.8	389.2	258.2	261.6	214.0	1,509.8	2,009.8	
Difference*	\$	n/a	9.1	(121.8)	(84.6)	(1.5)	9.4	(71.7)	

* Difference for five-year total is based on spending for FY 2019-FY 2023 from the current plan compared to FY 2018-FY 2022 from last year's plan.

LCRA Capital Plan – by Business

- LCRA's share of the total FY 2019 capital budget for recommended and approved projects, not including future projects included in the table to the right, is \$367.5 million. LCRA estimates it will fund about 25 percent of that amount with revenue.
- LCRA's share of the five-year total capital budget, including recommended, approved and future projects, is \$1.5 billion. LCRA estimates it will fund about 39 percent of that amount with revenue.
- Previously reserved funds are being used to fund and accelerate certain critical infrastructure capital projects throughout the organization.

(Dollars in millions)

	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
LCRA Capital Expenditures						
<u>Revenue-Funded</u>						
Wholesale Power and Nonprofit Corporations	\$ 7.1	11.2	24.4	17.1	14.0	18.1
LCRA TSC	53.1	54.0	51.7	72.7	68.0	95.9
Water	5.7	2.2	4.6	9.4	8.5	7.8
Enterprise Support	11.4	13.5	22.3	19.1	18.6	20.6
Public Services	1.7	1.7	2.5	2.4	2.3	2.2
	79.1	82.6	105.5	120.8	111.4	144.6
<u>Debt-Funded</u>						
LCRA TSC	202.5	241.6	246.8	208.8	96.5	32.1
Water	93.1	44.9	20.0	12.2	3.3	0.0
	295.6	286.5	266.8	220.9	99.8	32.1
<u>Third Party or Proceeds-Funded</u>						
Wholesale Power and Nonprofit Corporations	4.6	1.9	0.0	0.0	0.0	0.0
LCRA TSC	0.2	0.0	0.8	-	-	-
Water	2.5	5.0	3.3	4.1	1.1	-
Enterprise Support	4.3	3.4	-	-	-	-
	11.6	10.4	4.2	4.1	1.1	0.0
Total LCRA Capital	\$ 386.2	379.4	376.4	345.9	212.3	176.7

LCRA Capital Plan – Approach

Capital Planning Approach

LCRA includes projects in the capital plan with the goal of ensuring LCRA can continue to offer its customers energy, water and public services in a reliable, competitively priced, environmentally responsible and safe manner. Each project undergoes a thorough review by LCRA's Asset Management work group and other staff members who separate the projects into three categories: recommended (projects management has reviewed and recommended for Board approval); approved (projects the Board approved previously); and future (projects staff may recommend implementing within the next five years).

Staff does not submit future projects for Board approval at this time but includes them in this document for strategic planning purposes. The cost and timing of future projects presented in this document could change. For this reason, LCRA repeats the capital planning process annually and updates the plan as necessary. LCRA will bring future projects back to the Board for approval.

Determining Need and Financial Analysis

Capital plan projects must support the goals of the business plan within financial parameters established by LCRA's Board and chief financial officer.

LCRA includes projects based on multiple factors such as current and anticipated demand for LCRA's services and the need to maintain or build facilities or infrastructure to meet those demands. Other factors include compliance with applicable state and federal regulations, safety and security needs, the potential for increased revenues, and better management and protection of natural resources.

Staff has rigorously reviewed and analyzed the recommended projects. The project criteria may vary, but will typically involve either a "payback period" test, net present value analysis or other analyses to ensure the project is the most cost-effective approach. Executive management reviews each project to ensure the project warrants funding and inclusion in the capital plan. When appropriate, affected customers and stakeholders have the opportunity to review and comment on the proposed project scope and budget.

LCRA Capital Plan – Approach (Continued)

Developing Project Estimates

LCRA staff develops project cost estimates using one of three estimating levels: preliminary, budgetary or final.

An estimate's accuracy is based on identifying the work and resources necessary to complete the project objectives. Cost estimates are revised and become more accurate as more information regarding the scope and deliverables is available.

The capital planning cycle involves these steps:

- Developing and refining a list of business needs based on planning criteria and asset owner input.
- Defining the scope and approach necessary to address those needs.
- Obtaining cost estimates and performing business analyses to establish a proposed project budget and to evaluate affordability, economic viability, portfolio prioritization and risk.
- Seeking approval of the capital plan to validate strategic direction, establish lifetime and fiscal year budgets, and allow business planning for the future.

LCRA generally recommends projects to the Board for approval using a budgetary estimate. LCRA may recommend some projects using preliminary estimates because of the timing in determining the specific technology that would be implemented. Projects recommended in this plan at a preliminary estimate are noted in the project description.

Regardless of the estimating level or the method used to generate the cost estimate, LCRA Board Policy 301 – Finance and LCRA TSC Board Policy T301 – Finance require LCRA and LCRA TSC to bring previously authorized projects to the Board for additional review and approval if staff expects the projects to exceed the Board-approved lifetime budget by 10 percent and \$300,000. Note that the LCRA TSC Board has delegated this authority to the LCRA TSC president and chief executive officer through Dec. 31, 2018.

Project Prioritization

LCRA reviews and prioritizes its projects based on criteria that include safety, cost, reliability, competitiveness, environmental considerations and other factors. The appropriate executive reviews staff recommendations.

LCRA Capital Plan – Approach (Continued)

Project Prioritization (Continued)

Projects that are essential to ensure the continued reliable and cost-effective delivery of LCRA services, concern public safety or limit interruption of services receive the highest priority. LCRA also assigns higher priority to projects with regulatory issues that may result in substantial financial impacts for noncompliance, projects already in progress that have a substantial cost to stop, and projects with contractual requirements that could have substantial financial impacts to LCRA.

Medium priority projects include those in progress that have a moderate financial impact associated with stopping them or have contractual, regulatory or reliability issues that would have a moderate to minimal financial or health and safety impact to LCRA, customers and stakeholders.

A lower priority project is not unimportant to LCRA or to stakeholders. Staff may assign lower priority rankings to projects that have a more moderate monetary or stakeholder impact and would have minimal impacts to safety, the environment, contractual obligations or revenue if they were stopped or delayed.

Project Approval and Monitoring

LCRA brings each capital project recommended to begin in the next fiscal year to the LCRA Board for approval with this plan. Board approval authorizes the release of funds to execute the identified projects. However, executives may authorize funding in stages or all at once for the entire project.

From time to time, conditions change rapidly and may create a need for immediate action. The LCRA TSC president and LCRA chief executive officer, under LCRA Board Policy 301 – Finance and LCRA TSC Board Policy T301 – Finance, has the authorization to approve any capital project with a lifetime budget not to exceed \$1.5 million, provided that the new projects remain within fiscal year spending limits. Asset management staff provides quarterly capital project reports to the Board that includes any new projects approved by the LCRA TSC president and LCRA general manager and chief executive officer. Projects exceeding the LCRA TSC president and LCRA general manager and chief executive officer authorization limits will be presented to the Board for approval.

LCRA Capital Plan – Approach (Continued)

Project Approval and Monitoring (Continued)

Project management staff provides to LCRA's executives quarterly capital project status reports on approved projects. Reports include cost variances, estimated completion dates, comparisons of work completed to budget spent, fiscal year spending forecasts and project estimates at completion compared to the current capital plan. The reports also highlight any significant changes to the capital program, including project cancellations, delays and budget-to-actual expenditures.

Contingency

Contingency refers to a dollar amount added to a project's spending estimate to address items that are unknown when the estimate is prepared. This dollar amount is often based on a percentage of total construction or project costs, and the percentage is often based on the amount of planning and scope definition available at the time of the estimate. LCRA staff estimates and manages many different types of projects, including those for major wholesale power facilities, new electric transmission lines, dam and hydroelectric upgrades, water delivery and utilities, telecommunication facilities, software system installations, park developments and facility improvements. Despite this diversity of project types, LCRA has arrived at certain standards for estimating, reporting and managing contingency for all of LCRA's capital projects.

LCRA discloses contingency amounts for all capital projects other than general additions and minor capital, which include multiple projects that may have different contingency amounts. Staff also discloses contingency for each recommended and approved project to the chief financial officer during the annual planning process. LCRA submits the capital plan, including the contingency amount in each recommended project lifetime budget, for Board review and approval as shown in the following pages.

Individual project managers manage contingency amounts included in the lifetime budgets in accordance with LCRA standards as part of the overall budgets for the projects. LCRA staff monitors the status of contingencies on all projects and provides reports at least quarterly to executive management.

LCRA Capital Plan – Approach (Continued)

Capital Plan Approval and Reporting

LCRA Board approval of this capital plan authorizes the initiation of all recommended projects at their individually stated lifetime budgets. These recommended projects include annual budgets for general additions and minor capital. General additions are small capital additions or replacement projects that do not exceed \$300,000. Minor capital budgets are used to fund purchases of equipment that is ready to place in service upon delivery, such as fleet assets or technology hardware.

Board approval of this plan also authorizes the proposed \$368.2 million budget for FY 2019 capital spending for recommended and approved projects.

LCRA incorporates spending projections in the capital plan into the financial performance and rate impacts shown in the business plan. Upon approval and throughout FY 2019, LCRA will provide to the Board regular reports on project progress and compliance with the project budgets and fiscal year spending constraints established in the plan.

The following pages include specific project details and proposed lifetime budgets for recommended projects, as well as annual spending projections for approved and future projects. At this time, LCRA is not seeking Board approval for future projects. LCRA will bring any future project determined to require initiation in FY 2019 to the Board for approval individually.

Wholesale Power Projects

Information about Wholesale Power capital projects included in the capital plan is considered confidential and has been removed from this version of the document.

Transmission Projects

The LCRA capital plan includes all capital projects approved separately in the LCRA TSC capital plan by the LCRA TSC Board of Directors. The transmission projects address transmission electric system reliability requirements, respond to ERCOT system needs, meet projected area load growth, respond to existing customer needs and connect new generators to the LCRA TSC electric system.

Recommended and approved transmission projects total \$295.6 million in FY 2019 and \$770.9 million over the next five years through FY 2023. Future projects total \$398.1 million through FY 2023.

LCRA TSC FY 2019 Recommended Projects

Autotransformer Monitoring – FY 2019 Substation Upgrade – The project will increase the reliability of substation equipment by installing additional apparatus monitoring equipment and establishing online monitoring capabilities at the Sandy Creek, Cuero, Marion and Fayetteville substations in Dewitt, Fayette, Guadalupe and Llano counties. The recommended project completion date is June 30, 2019.

Boerne Cico-Comfort-Kendall Transmission Line Upgrade – The project will increase the transmission capacity and reliability of the 17-mile Boerne Cico-Comfort transmission line and the 1.1-mile Comfort-Kendall 138-kilovolt transmission line in Kendall County. The project's scope includes installing new higher-capacity conductor and upgrading bus and terminal equipment to alleviate ERCOT-identified congestion in the area. The recommended project completion date is May 31, 2020.

Burnet-Wirtz Transmission Line Overhaul – The project will help maintain safe and reliable operation of the transmission network by replacing deficient structures on the 6.1-mile Burnet-Wirtz 138-kV transmission line in Burnet County. The new structures will meet PUC storm hardening requirements. The project's scope also includes installing new optical ground wire. The recommended project completion date is May 31, 2019.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Castle Mountain Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Crane County by converting Castle Mountain Substation to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The recommended project completion date is May 31, 2020.

Cedar Hill Substation Upgrade – The project will convert the low-side voltage of the power transformer at Cedar Hill Substation in Bastrop County from 12.5 kV to 24.9 kV, which allows Bluebonnet Electric Cooperative to convert its distribution system voltage and prepare for future load growth. The project's scope also includes upgrading the obsolete power transformer differential and 138-kV bus differential relays. The recommended project completion date is Dec. 31, 2018.

Colton Power Transformer Addition – The project will serve load growth anticipated by Bluebonnet Electric Cooperative by adding a new power transformer, associated equipment and metering facilities to the Colton Substation in southeast Travis County. The recommended project completion date is May 31, 2020.

Columbus Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Colorado County by rebuilding and converting the Columbus Substation from 69 kV to a 138-kV substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The recommended project completion date is Nov. 30, 2019.

Coupling Capacitor Voltage Transformer (CCVT) Replacement – FY 2019 Substation Upgrade – The project will increase the reliability of substation equipment by replacing aging transformers that have an increased risk of failure at Garfield, Marion and Salem substations in Bastrop, Guadalupe and Washington counties. The recommended project completion date is May 31, 2019.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Culberson-Kunitz Transmission Line Overhaul – The project will help maintain the safe and reliable operation of the transmission network by replacing deficient structures on the 27.9-mile Culberson-Kunitz 138-kV transmission line in Culberson County. The recommended project completion date is May 31, 2020.

Dimmit Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Dimmit County by converting the Dimmit Substation to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The project will require an easement acquisition for property expansion. The recommended project completion date is May 31, 2020.

Easement Enhancement – FY 2019 System Upgrade – The project will help ensure the safe and efficient operation of the LCRA TSC transmission system by acquiring new transmission line easements and amending existing ones along three LCRA TSC 69-kV transmission lines in Hays and Caldwell counties. The recommended project completion date is June 30, 2020.

Fayette Area Transmission Line Upgrades – The project will increase transmission line capacity to achieve a higher rating on the 20-mile Fayetteville-Glidden and 19.6-mile Flatonia-Plum 138-kV transmission lines in Fayette and Colorado counties by replacing conductor and structures as necessary to achieve a minimum 380-megavolt ampere (MVA) rating. The project scope also includes upgrading bus and terminal equipment, replacing oil circuit breakers with gas circuit breakers and installing optical ground wire. The recommended project completion date is May 31, 2020.

Fayette Power Project 138-kV-La Grange Transmission Line Overhaul – The project will increase the reliability and capability of the transmission network by replacing structures on the 7.9-mile FPP 138-kV-La Grange transmission line in Fayette County. The new structures will meet PUC storm hardening requirements. The project's scope also includes replacing an existing static wire with optical ground wire. The recommended project completion date is May 31, 2020.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Fayetteville-Winchester Transmission Line Upgrade – The project will increase the transmission capacity and capability of the 18.8-mile Fayetteville-Winchester 138-kV transmission line in Fayette County by replacing conductor, upgrading bus and terminal equipment, and replacing oil circuit breakers with gas circuit breakers to achieve a 470-MVA rating to avoid thermal overloads and increase reliability. The project scope also includes installing optical ground wire. The recommended project completion date is May 31, 2020.

Garfield Battery Bank Substation Upgrade – The project will increase the reliability and safety of substation equipment by installing new batteries, battery charger equipment and a stand-alone battery house at the Garfield Substation in Bastrop County. The recommended project completion date is June 30, 2019.

General Additions – The project will fund required but unplanned system improvements to accommodate load increases, failed equipment, substation reliability enhancements, customer requests or changing system conditions as needed through June 30, 2019.

Goldthwaite-Lampasas Transmission Line Overhaul – The project will help ensure the safe and reliable operation of the transmission network by replacing deficient structures on the 25.4-mile Goldthwaite-Lampasas 138-kV transmission line in Mills, Lampasas, Coryell and Hamilton counties. The new structures will meet PUC storm hardening requirements. The project's scope also includes installing optical ground wire. The recommended project completion date is May 31, 2020.

Gonzales-Harwood Transmission Line Overhaul – The project will increase the reliability and capability of the transmission network by replacing deficient structures with 138-kV-capable structures and 795 aluminum conductor steel-reinforced Drake conductor on 10 miles of the 53.9-mile Cuero-Luling 69-kV transmission line in Gonzales County. The new structures will meet PUC storm hardening requirements. The project's scope also includes installing optical ground wire. The recommended project completion date is May 31, 2020.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Highway 36 Substation Upgrade – The project will resolve transmission system overloads following area outages by reconfiguring the bus configuration at the Highway 36 Substation in Washington County. The project's scope also includes installing two new circuit breakers. The recommended project completion date is May 31, 2020.

Hurricane Response System Upgrade – The project will increase the safety and reliability of the transmission network and repair storm damage on the 18.2-mile North Padre Tap-Port Aransas 69-kV transmission line and 7.4-mile Fulton-Rockport 69-kV transmission line in Nueces and Aransas counties. The project's scope includes replacing damaged hardware, conductor and braced post and dead-end assemblies damaged during Hurricane Harvey, as well as installing new wire vibration dampers. The recommended project completion date is May 31, 2020.

La Grange-Plum Transmission Line Overhaul – The project will help ensure the safety and reliability of the transmission network by replacing deficient structures on the 8.4-mile La Grange-Plum 138-kV transmission line in Fayette County. The new structures will meet PUC storm hardening requirements. The project's scope also includes installing, reinforcing and replacing A-frame static masts in substations and installing additional optical ground wire. The recommended project completion date is May 31, 2020.

Lakeway (AE)-Marshall Ford Transmission Line Storm Hardening – The project will help ensure the safety and reliability of the transmission network by replacing deficient structures on the 2.4-mile Lakeway (Austin Energy)-Marshall Ford 138-kV transmission line in Travis County to meet PUC storm hardening requirements. The project's scope also includes replacing existing under-capacity 36-count optical ground wire with 72-count optical ground wire. The recommended project completion date is May 31, 2019.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

LCRA TSC Fiber Build-out – FY 2019 Telecommunications Upgrade – The project will increase the reliability and capability of the fiber network in Bastrop, Colorado, Columbus, Lee, Fayette, Schulenburg, Travis, Wharton and Williamson counties by adding optical ground wire and related telecommunication equipment to 10 transmission lines. The recommended project completion date is Dec. 31, 2020.

Lexington Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Lee County by converting the Lexington Substation to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The project's scope also includes implementing physical security improvements and requires property expansion. The recommended project completion date is May 31, 2020.

Lockhart Substation Upgrade – The project will increase the capacity and reliability of equipment at the Lockhart Substation in Caldwell County by upgrading the 22.4-MVA power transformer to a 33.6-MVA power transformer to accommodate anticipated load growth. The project's scope also includes upgrading protective relaying equipment. The recommended project completion date is May 31, 2020.

Magnolia Mercer Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Caldwell County by converting the Magnolia Mercer Substation to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The project's scope also includes implementing physical security improvements and requires an easement acquisition for property expansion. The recommended project completion date is May 31, 2020.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Marshall Ford-McNeil Transmission Line Relocation – The project’s scope includes relocating transmission facilities on the Marshall Ford-McNeil transmission line in Travis County to accommodate Austin Energy’s Hamilton Substation upgrade. The recommended project completion date is May 31, 2019.

McCamey Area CCN System Upgrade – The project will modify LCRA TSC’s certificate of convenience and necessity and allow LCRA TSC, where warranted, to install the second circuit on existing double-circuit-capable structures on eight transmission lines in Crane, Crockett, Pecos and Upton counties. The recommended project completion date is June 30, 2020.

Menger Creek Power Transformer Addition – The project will increase transformation capacity to serve anticipated load growth by adding a new 33.6-MVA power transformer, associated equipment and metering facilities at the Menger Creek Substation in Kendall County. The recommended project completion date is May 31, 2020.

Minor Capital – The scope of minor capital projects is to purchase equipment that is ready to place in service upon delivery for projects related to transmission lines, substations or related equipment.

Most Limiting Series Element – FY 2019 Substation Upgrade – The project will improve system reliability and increase the capacity of transmission line terminal equipment such as breakers, switches and jumpers at the Geronimo, Granite Mountain, Lakeway, Marble Falls, Marshall Ford and Piney Creek substations in Burnet, Fayette, Guadalupe and Travis counties. The recommended project completion date is May 31, 2019.

Multiprotocol Label Switching Network Core Telecommunications Upgrade – The project will improve the performance of the LCRA TSC telecommunications transport network. The project’s scope of work includes replacing end-of-life Multiprotocol Label Switching (MPLS) network core routers with appropriately scaled equipment that is supported by the manufacturer at the System Operations Control Center and the General Office Complex. The recommended project completion date is June 30, 2019.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

New Bremen Circuit Breaker Addition – The project will improve reliability of transmission facilities in Austin and Fayette counties by converting the New Bremen Substation to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The project's scope of work also includes implementing physical security improvements and requires real estate acquisition. The recommended project completion date is May 31, 2020.

Northwest Microwave Ring Telecommunications Upgrade – The project will improve the performance of LCRA TSC's telecommunications transport network in Burnet, Lampasas, San Saba and Brown counties. The project's scope of work includes replacing nearly end-of-life microwave radio equipment with upgraded equipment. The existing radio equipment currently is used in the relaying and communication of Competitive Renewable Energy Zones circuits. The upgraded equipment will provide the Ethernet connectivity necessary to support the radio system migration to Multiprotocol Label Switching (MPLS) at these sites and upgraded alarm monitoring and system management functionality. The recommended project completion date is June 30, 2019.

Obsolete Circuit Breaker Replacement – FY 2019 Substation Upgrade – The project will increase the safety and reliability of substation equipment at Hunt, Kendall, Marshall Ford, Pittsburg, Schulenburg and Sheriff's Posse substations in Comal, Fayette, Kendall, Kerr, Llano and Travis counties. The project's scope of work includes replacing obsolete oil circuit breakers, surge arrestors and associated equipment with appropriately rated gas circuit breakers and associated equipment. The recommended project completion date is May 31, 2020.

Physical Security – FY 2019 Substation Upgrade – The project will improve security by implementing physical security measures and related telecommunication system improvements for 22 LCRA TSC-owned substations in various counties throughout LCRA TSC's service area. The recommended project completion date is Dec. 31, 2020.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Protective Relaying – FY 2019 System Upgrade – The project will provide for compliance with new North American Electric Reliability Corporation standards and increase the safety and reliability of transmission facilities at 11 substations in Williamson, Travis, Guadalupe, Caldwell and Nolan counties. The project's scope of work includes replacing obsolete relays with new microprocessor-based relays and upgrading associated communications equipment at Bitter Creek, McNeil, Howard Lane, Gilleland Creek, Harris Branch, Buttercup, Clear Springs, Zorn, Marion, Austrop and Lytton Springs substations. The recommended project completion date is May 31, 2020.

Ranch Road 12 Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Hays County by converting the Ranch Road 12 Substation to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The project's scope also includes implementing physical security improvements. The recommended project completion date is May 31, 2020.

Remote Terminal Unit MPLS Migration – FY 2019 Telecommunications Upgrade – The project will upgrade telecommunications equipment used to connect to 77 remote terminal units that allow the System Operations Control Center to remotely control and monitor substation equipment. This project will allow for the retirement of legacy telecommunications equipment at substations in 23 counties. The recommended project completion date is June 30, 2019.

Remote Terminal Unit Upgrades – FY 2019 Substation Upgrade – The project will improve the System Operations Control Center's ability to remotely control and monitor substation equipment by upgrading obsolete and less functional remote terminal units and associated telecommunication equipment at 24 sites in 12 counties. The recommended project completion date is June 30, 2019.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Rim Rock-Turtle Creek Transmission Line Storm Hardening – The project will increase the safety and reliability of the transmission network by replacing deficient structures to meet PUC storm hardening requirements. The project's scope also includes replacing the existing conductor with higher capacity conductor to achieve a minimum 128-MVA rating and installing optical ground wire. The recommended project completion date is May 31, 2020.

Riverside Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Fayette County by converting the Riverside Substation to a substation with breakers in a ring bus configuration. The project's scope also includes implementing physical security improvements and requires real estate acquisition. The recommended project completion date is May 31, 2020.

Round Rock Transmission Line Relocation – The project's scope includes relocating transmission facilities on the Chief Brady-Round Rock and Round Rock-Wells Branch transmission lines in Williamson County to accommodate Oncor's Round Rock Substation upgrade project. The recommended project completion date is Nov. 30, 2018.

Salem-Winchester Transmission Line Overhaul – The project will improve the reliable operation of the transmission network by rebuilding portions of the 37.2-mile Salem-Winchester 138-kV transmission line in Fayette and Washington counties and installing optical ground wire. The new structures will meet PUC storm hardening requirements. The recommended project completion date is May 31, 2020.

San Angelo Maintenance Facility Acquisition – The project will improve reliability by establishing a new LCRA TSC maintenance facility in San Angelo that reduces response time for transmission system events in West Texas. The project also includes making facility improvements and requires real estate acquisition. The recommended project completion date is June 30, 2019.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Soda Lake Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Crane County by converting the Soda Lake Substation from an an to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The recommended project completion date is May 31, 2020.

Switch Replacement – FY 2019 Substation Upgrade – The project will upgrade switches at sites in Hays, Lampasas, Llano, and Travis counties by installing switches that are appropriately sized for future load growth. The project's scope also includes replacing obsolete, ineffective and/or under-rated transmission and distribution switches at Buchanan Dam, Lakeway (Austin Energy), Lampasas and McCarty Lane substations. The recommended project completion date is May 31, 2019.

System Operations Control Center Media Facility Upgrade – The project will provide operators at the System Operations Control Center with increased situational awareness and an ergonomic environment. The project's scope includes replacing the existing projectors, audio/visual equipment, operator consoles, carpeting and related items at the SOCC with more efficient and modern equipment. The recommended project completion date is June 30, 2019.

Telecommunications Asset Transfer Facility Acquisition – The project will improve reliability by clarifying the ownership and streamlining the categorization of telecommunications transport network assets that support transmission functions. The project's scope includes transferring certain existing telecommunications transport network assets from LCRA to LCRA TSC, consistent with a 2015 asset transfer. The recommended project completion date is June 30, 2019.

Transport Network Power – FY 2019 Telecommunications Upgrade – The project will increase the reliability of LCRA TSC's transport network by replacing obsolete battery charger systems at eight locations in Washington, Gillespie, Kendall and Travis counties. The project's scope also includes adding battery banks at two high-importance facilities and adding a generator docking port at one critical facility. The recommended project completion date is June 30, 2019.

Transmission Projects (Continued)

LCRA TSC FY 2019 Recommended Projects (Continued)

Turtle Creek Substation Upgrade – The project will improve the reliability of transmission facilities in Kerr County by removing three obsolete oil circuit breakers from service and upgrading the 138-kV bus to a more reliable ring bus configuration. The project’s scope also includes making improvements to protective relaying, telecommunications and physical security. The recommended project completion date is May 31, 2020.

Upton County Capacitor Bank Additions – The project will provide more system voltage support by adding two 138-kV capacitor banks and associated terminal equipment to LCRA TSC’s Benedum and Roadrunner substations. Significant load increases on Oncor’s system in Upton County is driving the need for the project. The recommended project completion date is May 31, 2019.

Weimar Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Colorado County by converting the Weimar Substation to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The project’s scope also includes implementing physical security improvements and requires real estate acquisition. The recommended project completion date is May 31, 2020.

Welcome Circuit Breaker Addition – The project will improve the reliability of transmission facilities in Austin County by converting the Welcome Substation to a substation with breakers in a ring bus configuration that allows parts of the substation to be de-energized for maintenance and repairs. The project’s scope also includes implementing physical security improvements and requires real estate acquisition. The recommended project completion date is May 31, 2020.

Transmission Projects (Continued)

LCRA Transmission Services Corporation FY 2019 Capital Plan Recommended Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year	
							Total	Lifetime
Recommended								
Autotransformer Monitoring – FY 2019 Substation Upgrade	0%	485	-	-	-	-	485	485
Boerne Cico-Comfort-Kendall Transmission Line Upgrade	0%	1,031	13,063	-	-	-	14,094	14,094
Burnet-Wirtz Transmission Line Overhaul	0%	3,472	-	-	-	-	3,472	3,472
Castle Mountain Circuit Breaker Addition	0%	71	1,662	-	-	-	1,733	1,733
Cedar Hill Substation Upgrade	0%	591	-	-	-	-	591	591
Colton Power Transformer Addition	0%	131	1,954	-	-	-	2,085	2,085
Columbus Circuit Breaker Addition	0%	284	3,824	-	-	-	4,108	4,108
Coupling Capacitor Voltage Transformer (CCVT) Replacement – FY 2019 Substation Upgrade	0%	544	-	-	-	-	544	544
Culberson-Kunitz Transmission Line Overhaul	0%	247	565	-	-	-	812	812
Dimmit Circuit Breaker Addition	0%	284	4,824	-	-	-	5,108	5,108
Easement Enhancement – FY 2019 System Upgrade	0%	967	3,180	-	-	-	4,147	4,147
Fayette Area Transmission Line Upgrades	0%	1,012	12,108	12,537	-	-	25,657	25,657
Fayette Power Project 138-kV-La Grange Transmission Line Overhaul	0%	422	1,331	-	-	-	1,753	1,753
Fayetteville-Winchester Transmission Line Upgrade	0%	649	11,879	-	-	-	12,528	12,528
Garfield Battery Bank Substation Upgrade	0%	251	-	-	-	-	251	251
General Additions	0%	4,000	-	-	-	-	4,000	4,000
Goldthwaite-Lampasas Transmission Line Overhaul	0%	648	5,423	-	-	-	6,071	6,071
Gonzales-Harwood Transmission Line Overhaul	0%	490	6,539	-	-	-	7,029	7,029
Highway 36 Substation Upgrade	0%	133	1,106	-	-	-	1,239	1,239
Hurricane Response System Upgrade	0%	456	2,737	-	-	-	3,193	3,193
La Grange-Plum Transmission Line Overhaul	0%	423	1,773	-	-	-	2,196	2,196
Lakeway (AE)-Marshall Ford Transmission Line Storm Hardening	0%	438	-	-	-	-	438	438
LCRA TSC Fiber Build-out – FY 2019 Telecommunications Upgrade	0%	1,894	8,395	21,609	-	-	31,898	31,898
Lexington Circuit Breaker Addition	0%	487	3,336	-	-	-	3,823	3,823
Lockhart Substation Upgrade	0%	114	1,927	-	-	-	2,041	2,041
Magnolia Mercer Circuit Breaker Addition	0%	225	4,906	-	-	-	5,131	5,131

Transmission Projects (Continued)

LCRA Transmission Services Corporation FY 2019 Capital Plan Recommended Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year	
							Total	Lifetime
Recommended (continued)								
Marshall Ford-McNeil Transmission Line Relocation	0%	986	-	-	-	-	986	986
McCamey Area CCN System Upgrade	0%	524	1,574	-	-	-	2,098	2,098
Menger Creek Power Transformer Addition	0%	102	2,381	-	-	-	2,483	2,483
Minor Capital		5,855	-	-	-	-	5,855	5,855
Most Limiting Series Element – FY 2019 Substation Upgrade	0%	645	-	-	-	-	645	645
Multiprotocol Label Switching Network Core Telecommunications Upgrade	0%	477	-	-	-	-	477	477
New Bremen Circuit Breaker Addition	0%	202	4,134	-	-	-	4,336	4,336
Northwest Microwave Ring Telecommunications Upgrade	0%	707	-	-	-	-	707	707
Obsolete Circuit Breaker Replacement – FY 2019 Substation Upgrade	0%	1,129	1,150	-	-	-	2,279	2,279
Physical Security – FY 2019 Substation Upgrade	0%	7,491	6,766	8,027	-	-	22,284	22,284
Protective Relaying – FY 2019 System Upgrade	0%	981	518	-	-	-	1,499	1,499
Ranch Road 12 Circuit Breaker Addition	0%	297	3,655	-	-	-	3,952	3,952
Remote Terminal Unit MPLS Migration – FY 2019 Telecommunications Upgrade	0%	1,834	-	-	-	-	1,834	1,834
Remote Terminal Unit Upgrades – FY 2019 Substation Upgrade	0%	1,477	-	-	-	-	1,477	1,477
Rim Rock-Turtle Creek Transmission Line Storm Hardening	0%	362	8,260	-	-	-	8,622	8,622
Riverside Circuit Breaker Addition	0%	352	3,942	-	-	-	4,294	4,294
Round Rock Transmission Line Relocation	0%	446	-	-	-	-	446	446
Salem-Winchester Transmission Line Overhaul	0%	601	6,483	-	-	-	7,084	7,084
San Angelo Maintenance Facility Acquisition	0%	1,972	-	-	-	-	1,972	1,972
Soda Lake Circuit Breaker Addition	0%	93	1,755	-	-	-	1,848	1,848
Switch Replacement – FY 2019 Substation Upgrade	0%	378	-	-	-	-	378	378
System Operations Control Center Media Facility Upgrade	0%	2,784	-	-	-	-	2,784	2,784
Telecommunications Asset Transfer Facility Acquisition	0%	341	-	-	-	-	341	341
Transport Network Power – FY 2019 Telecommunications Upgrade	0%	263	-	-	-	-	263	263
Turtle Creek Substation Upgrade	0%	230	5,038	-	-	-	5,268	5,268
Upton County Capacitor Bank Additions	0%	2,153	-	-	-	-	2,153	2,153

Transmission Projects (Continued)

LCRA Transmission Services Corporation FY 2019 Capital Plan Recommended and Approved Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year	
							Total	Lifetime
Recommended (continued)								
Weimar Circuit Breaker Addition	0%	204	3,295	-	-	-	3,499	3,499
Welcome Circuit Breaker Addition	0%	244	4,389	-	-	-	4,633	4,633
Recommended Subtotal		52,879	143,872	42,173	-	-	238,924	238,924
Approved								
Airline Transmission Line Relocation		375	-	-	-	-	375	1,324
Asphalt Mines Substation Addition		1,798	-	-	-	-	1,798	2,416
Bakersfield-Solstice Transmission Line Addition		844	8,913	20,758	10,420	66	41,001	46,446
Bellville South-Glidden Transmission Line Storm Hardening		5,034	-	-	-	-	5,034	6,589
Bellville South-Waller Transmission Line Storm Hardening		10,720	-	-	-	-	10,720	13,162
Brady Asset Purchase Addition		1,017	101	-	-	-	1,118	1,647
Camp Wood-Leakey Transmission Line Overhaul		5,532	19,906	38	-	-	25,476	29,609
Castle Mountain Substation Addition		1,157	-	-	-	-	1,157	3,139
Cedar Canyon Substation Addition		6,834	3,884	-	-	-	10,718	10,718
Colton Circuit Breaker Addition		112	-	-	-	-	112	12,431
Cooks Point Substation and Transmission Line Addition		768	9,741	10,549	13,332	1,724	36,114	39,457
Crosswinds Substation Addition		2,863	1,685	-	-	-	4,548	4,861
Cypress Creek Circuit Breaker Addition		3,238	14	-	-	-	3,252	3,826
Darst Creek Circuit Breaker Addition		3,754	22	1	-	-	3,777	4,249
Desert Mesa Circuit Breaker Addition		5,012	7	-	-	-	5,019	5,090
Energy Management System Upgrade – Phase 4 System Upgrade		3,357	552	-	-	-	3,909	8,000
Environmental Permitting System Upgrade		434	17	-	-	-	451	1,350
Esperanza Substation Addition		3,914	1,943	-	-	-	5,857	7,318
Fayetteville-Salem Transmission Line Storm Hardening		602	-	-	-	-	602	912
Flatonia-Hallettsville Transmission Line Upgrade		1,864	4,908	531	-	-	7,303	7,740
Flood Mitigation – FY 2018 System Upgrade		4,917	6	-	-	-	4,923	5,510
Flood Remediation Substation Upgrade		1,913	-	-	-	-	1,913	8,395

Transmission Projects (Continued)

LCRA Transmission Services Corporation FY 2019 Capital Plan Approved Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year	
							Total	Lifetime
Approved (continued)								
Fourmile Circuit Breaker Addition		4,273	25	-	-	-	4,298	4,679
FPP Bus Tie Substation Upgrade		596	-	-	-	-	596	6,258
Georgetown-Rivery Transmission Line Upgrade		2	782	-	-	-	784	1,642
Glidden Area Transmission Line Upgrade		7,810	1,236	4	-	-	9,050	10,300
Hamilton Road-Uvalde Fiber Addition		112	-	-	-	-	112	10,154
Hays Energy Substation Upgrade		1,958	-	-	-	-	1,958	4,767
Heines Substation Addition		1,867	1	-	-	-	1,868	4,312
Hext Substation Upgrade		948	-	-	-	-	948	983
Horse Crossing-Rio Pecos Transmission Line Addition		1,024	-	-	-	-	1,024	2,399
Jim Briley Substation Addition (formerly Stempel Substation Addition)		2,954	1,073	-	-	-	4,027	4,480
Kimbrow Substation Addition		1,932	255	-	-	-	2,187	4,510
King Mountain Circuit Breaker Addition		5,120	136	-	-	-	5,256	5,657
LCRA TSC Fiber Build-out – FY 2018 Telecommunications Upgrade		8,008	20	-	-	-	8,028	20,686
Leander-Round Rock Transmission Line Addition		32,273	9,097	-	-	-	41,370	43,867
Meadow Lake Substation Addition		224	1,159	-	-	-	1,383	2,963
Megastar Microwave Telecommunications Upgrade		253	-	-	-	-	253	2,033
Mountain Home Substation and Transmission Line Addition		1,060	13,014	35,935	24,311	103	74,423	79,089
Navigation Substation Addition		1,628	-	-	-	-	1,628	2,235
Noelke Substation Addition		4,315	-	-	-	-	4,315	9,475
Physical Security – FY 2018 Substation Upgrade		2,711	-	-	-	-	2,711	16,496
Pinnacle Substation Addition		6,291	-	-	-	-	6,291	12,852
Pinto Creek Substation Addition		935	-	-	-	-	935	5,379
Potential Transformer Substation Upgrade		514	-	-	-	-	514	2,587
Power Transformer Bypass Capability Substation Upgrade		28	-	-	-	-	28	2,523
Protection System Upgrades – Substation Upgrade		271	-	-	-	-	271	6,125
Roadrunner Substation Addition		4,313	-	-	-	-	4,313	5,650

Transmission Projects (Continued)

LCRA Transmission Services Corporation FY 2019 Capital Plan Approved and Future Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year Total	Lifetime
Approved (continued)								
Robbins Switch Circuit Breaker Addition		4,595	2	-	-	-	4,597	5,044
Shiner Circuit Breaker Addition		2,083	-	-	-	-	2,083	2,632
Sim Gideon Substation-Smithville Transmission Line Storm Hardening		2,413	-	-	-	-	2,413	3,845
Soda Lake Substation Addition		1,628	6	-	-	-	1,634	3,548
Sonne Substation Addition		2,527	-	-	-	-	2,527	3,810
Study Butte Substation and Transmission Line Addition		989	14,509	45,751	24,034	28	85,311	87,127
System Operations Control Center HVAC Facility Upgrade		553	-	-	-	-	553	631
Transmission Line T485 Modification		173	-	-	-	-	173	1,041
Tumbleweed Substation Addition		7,405	824	-	-	-	8,229	16,984
Twelvemile Substation Addition		4,327	-	-	-	-	4,327	8,857
Warda Circuit Breaker Addition		3,045	19	-	-	-	3,064	3,776
Weltner Road Substation Addition (formerly FM 758 Substation Addition)		1,571	-	-	-	-	1,571	1,881
Winchester Autotransformer Additions		23,285	7,774	1	-	-	31,060	32,721
Zorn-Marion Transmission Line Addition		30,669	-	-	-	-	30,669	83,346
Approved Subtotal		242,742	101,631	113,568	72,097	1,921	531,959	751,533
Future								
Backbone Bandwidth Telecommunications Upgrade		-	500	500	-	-	1,000	1,000
Bastrop Power Transformer Addition		-	-	-	-	1,800	1,800	1,800
Bellville South-Prairie View Transmission Line Upgrade		-	27	1,127	-	-	1,154	1,154
Blewett Circuit Breaker Addition		-	-	1,500	1,500	-	3,000	3,000
Brenham North Power Transformer Addition		-	-	-	2,500	-	2,500	2,500
Brenham South Power Transformer Addition		-	-	-	-	2,500	2,500	2,500
Colorado County Area Transmission Line Upgrades		-	-	198	2,668	5,134	8,000	8,000
Condor Conductor Remediation – FY 2022 Transmission Line Upgrade		-	-	-	2,000	-	2,000	2,000
Condor Conductor Remediation – FY 2023 Transmission Line Upgrade		-	-	-	-	2,000	2,000	2,000
Constellation Microwave Radio Telecommunications Upgrade		-	720	-	-	-	720	720

Transmission Projects (Continued)

LCRA Transmission Services Corporation FY 2019 Capital Plan Future Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year	
							Total	Lifetime
Future (continued)								
Coronado-Ferguson Transmission Line Overhaul	-	400	16,826	-	-	-	17,226	17,226
Deer Creek-Luling Transmission Line Upgrade	-	-	-	-	750	6,638	7,388	7,388
Dobyville-Graphite Mine Circuit Breaker Addition	-	500	2,500	-	-	-	3,000	3,000
E. Babe Smith-Naruna Circuit Breaker Addition	-	500	2,500	-	-	-	3,000	3,000
Easement Enhancement – FY 2021 System Upgrade	-	-	2,000	-	-	-	2,000	2,000
Easement Enhancement – FY 2022 System Upgrade	-	-	-	-	2,000	-	2,000	2,000
Easement Enhancement – FY 2023 System Upgrade	-	-	-	-	-	2,000	2,000	2,000
Energy Management System Upgrade – Phase 5 System Upgrade	-	-	-	-	1,000	-	1,000	1,000
Four Point Substation Addition	-	-	-	-	200	-	200	200
Frelsburg-Mockingbird Circuit Breaker Addition	-	500	2,500	-	-	-	3,000	3,000
Gabriel Substation Upgrade	-	500	6,500	-	-	-	7,000	7,000
Gabriel-Gabriel Split Transmission Line Upgrade	-	5,465	-	-	-	-	5,465	5,465
Gabriel-Glasscock Transmission Line Storm Hardening	-	1,114	-	-	-	-	1,114	1,114
Gabriel-Rivery Transmission Line Storm Hardening	-	1,461	5,624	-	-	-	7,085	7,085
General Additions	-	4,000	4,000	4,000	4,000	4,000	16,000	16,000
Giddings Power Transformer Addition	-	-	-	-	1,800	-	1,800	1,800
Glasscock Substation Upgrade	-	1,000	-	-	-	-	1,000	1,000
Hallettsville-Hallettsville City Transmission Line Addition	-	-	-	-	-	5,355	5,355	5,355
Harris Branch Power Transformer Addition	-	-	-	-	-	1,800	1,800	1,800
High Point Substation Addition	-	-	2,000	-	-	-	2,000	2,000
Kempner Circuit Breaker Addition	-	500	2,500	-	-	-	3,000	3,000
LCRA TSC Fiber Build-out – FY 2020 Telecommunications Upgrade	-	8,000	8,000	-	-	-	16,000	16,000
LCRA TSC Fiber Build-out – FY 2021 Telecommunications Upgrade	-	-	8,000	8,000	-	-	16,000	16,000
LCRA TSC Fiber Build-out – FY 2022 Telecommunications Upgrade	-	-	-	5,000	5,000	-	10,000	10,000
LCRA TSC Fiber Build-out – FY 2023 Telecommunications Upgrade	-	-	-	-	-	5,000	5,000	5,000
LCRA TSC Transmission System Upgrade	-	-	-	-	-	10,000	10,000	10,000

Transmission Projects (Continued)

LCRA Transmission Services Corporation FY 2019 Capital Plan Future Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year	
							Total	Lifetime
Future (continued)								
Lockhart-Mendoza Transmission Line Storm Hardening	-	500	2,500	-	-	-	3,000	3,000
Lytton Springs-Turnersville Transmission Line Storm Hardening	-	290	-	-	-	-	290	290
Maenius Road Circuit Breaker Addition	-	-	-	500	2,500	-	3,000	3,000
Merrelltown Substation Addition	-	-	2,831	-	-	-	2,831	2,831
Minor Capital	-	4,253	3,896	3,997	3,600	-	15,746	15,746
Montgomery County Transmission Line Addition	-	-	-	-	-	20,000	20,000	20,000
Multiprotocol Label Switching Protective Relaying Telecommunications Upgrade	-	130	-	-	-	-	130	130
Obsolete Circuit Breaker Replacement – FY 2020 Substation Upgrade	-	3,000	-	-	-	-	3,000	3,000
Obsolete Circuit Breaker Replacement – FY 2021 Substation Upgrade	-	-	2,500	-	-	-	2,500	2,500
Obsolete Circuit Breaker Replacement – FY 2022 Substation Upgrade	-	-	-	2,000	-	-	2,000	2,000
Obsolete Circuit Breaker Replacement – FY 2023 Substation Upgrade	-	-	-	-	-	2,500	2,500	2,500
Physical Security – FY 2020 Substation Upgrade	-	3,500	6,500	-	-	-	10,000	10,000
Physical Security – FY 2021 Substation Upgrade	-	-	3,500	6,500	-	-	10,000	10,000
Physical Security – FY 2022 Substation Upgrade	-	-	-	3,000	3,000	-	6,000	6,000
Pooley Road Circuit Breaker Addition	-	500	2,500	-	-	-	3,000	3,000
Remote Terminal Unit MPLS Migration – FY 2020 Telecommunications Upgrade	-	1,500	-	-	-	-	1,500	1,500
Remote Terminal Unit MPLS Migration – FY 2021 Telecommunications Upgrade	-	-	1,800	-	-	-	1,800	1,800
Storm Mitigation – FY 2020 Substation Upgrade	-	1,000	-	-	-	-	1,000	1,000
Storm Mitigation – FY 2021 Substation Upgrade	-	-	1,000	-	-	-	1,000	1,000
Storm Mitigation – FY 2022 Substation Upgrade	-	-	-	500	-	-	500	500
Strahan Power Transformer Addition	-	-	-	-	-	1,800	1,800	1,800
Swiftex Power Transformer Addition	-	-	1,800	-	-	-	1,800	1,800
Telecommunications Tower Additions	-	-	-	-	-	1,000	1,000	1,000
Transmission Bus Reconfiguration – FY 2021 Substation Upgrade	-	-	2,500	2,500	-	-	5,000	5,000
Transmission Bus Reconfiguration – FY 2022 Substation Upgrade	-	-	-	2,500	2,500	-	5,000	5,000
Transmission Bus Reconfiguration – FY 2023 Substation Upgrade	-	-	-	-	2,500	2,500	5,000	5,000

Transmission Projects (Continued)

LCRA Transmission Services Corporation FY 2019 Capital Plan Future Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year	
							Total	Lifetime
Future (continued)								
Transmission Line Clearance Mitigation – FY 2020		-	5,000	-	-	-	5,000	5,000
Transmission Line Clearance Mitigation – FY 2021		-	-	5,000	-	-	5,000	5,000
Transmission Line Clearance Mitigation – FY 2022		-	-	-	3,000	-	3,000	3,000
Transmission Line Clearance Mitigation – FY 2023		-	-	-	-	1,000	1,000	1,000
Transmission Line Overhauls – FY 2020		-	5,200	5,200	-	-	10,400	10,400
Transmission Line Overhauls – FY 2021		-	-	3,862	3,862	-	7,724	7,724
Transmission Line Overhauls – FY 2022		-	-	-	5,866	-	5,866	5,866
Transmission Line Overhauls – FY 2023		-	-	-	-	14,135	14,135	14,135
Transmission Line Storm Hardening – FY 2020		-	2,500	2,500	-	-	5,000	5,000
Transmission Line Storm Hardening – FY 2021		-	-	2,500	2,500	-	5,000	5,000
Transmission Line Storm Hardening – FY 2022		-	-	-	2,500	2,500	5,000	5,000
Transmission Metering – FY 2020 Substation Upgrade		-	505	-	-	-	505	505
Transmission Metering – FY 2021 Substation Upgrade		-	-	505	-	-	505	505
Transmission Metering – FY 2022 Substation Upgrade		-	-	-	505	-	505	505
Transmission Metering – FY 2023 Substation Upgrade		-	-	-	-	505	505	505
Transport Network Power – FY 2020 Telecommunications Upgrade		-	300	-	-	-	300	300
Transport Network Power – FY 2021 Telecommunications Upgrade		-	-	300	-	-	300	300
Transport Network Power – FY 2022 Telecommunications Upgrade		-	-	-	300	-	300	300
TXI Loop Transmission Line Addition		-	-	1,000	8,000	14,838	23,838	23,838
Whisper Valley Substation Addition		-	-	400	3,600	-	4,000	4,000
Wolf Creek Circuit Breaker Addition		-	-	500	2,500	-	3,000	3,000
XS Ranch Substation Addition		-	-	-	3,900	-	3,900	3,900
York Creek Circuit Breaker Addition		-	-	-	500	2,500	3,000	3,000
Yorktown-Nordheim Circuit Breaker Addition		-	-	500	2,500	-	3,000	3,000
Zorn Autotransformer Replacement		-	394	5,923	-	-	6,317	6,317
Future Subtotal		-	53,759	125,792	92,448	126,105	398,104	400,604
Total LCRA Transmission Services Corporation			295,621	299,262	281,533	164,545	1,168,026	1,391,061

Water Projects

Water projects in the capital plan include capital improvements for managing and delivering raw water. This plan focuses resources on managing the river, improving infrastructure – including LCRA’s Hydromet system – and planning to meet the basin’s future water needs.

Water recommended and approved projects total \$40.2 million in FY 2019 and \$72.4 million over the next five years through FY 2023. Future projects total \$54 million through FY 2023.

FY 2019 Recommended Projects

Garwood River Plant Bank Upstream Bank Erosion – The project will rehabilitate and stabilize the bank of the lower Colorado River upstream of the Garwood River Pumping Plant where flooding from Hurricane Harvey caused severe erosion. The cost estimates for the project are preliminary.

Griffith League Ranch Groundwater – The project will design and permit the facilities needed to access groundwater on Bastrop County’s Griffith League Ranch. LCRA purchased the property’s groundwater rights in 2015.

Gulf Coast Plant No. 1 Downstream Sheet Pile Wall – The project will rehabilitate and stabilize the bank of the lower Colorado River downstream of Gulf Coast Pumping Plant No. 1 where flooding from Hurricane Harvey caused severe erosion. The cost estimates for the project are preliminary.

Lakeside River Plant Bank Erosion – The project will rehabilitate and stabilize the bank of the lower Colorado River at the Lakeside River Pumping Plant where flooding from Hurricane Harvey caused severe erosion. The cost estimates for the project are preliminary.

Water Projects (Continued)

FY 2019 Recommended Projects (Continued)

General Additions – General addition projects will maintain infrastructure and improve reliability and efficiency for the following:

- Hydromet.
- Irrigation systems.
- Raw water.

Minor Capital – The scope of minor capital projects is to purchase equipment that, essentially, is ready to place in service upon delivery for the following:

- Hydromet.
- Irrigation systems.

Water Projects (Continued)

Water

FY 2019 Capital Plan Recommended and Approved Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year		
							Total	Lifetime	
Recommended									
Garwood River Plant Upstream Bank Erosion	10%	500	-	-	-	-	500	500	
General Additions – Hydromet		16	-	-	-	-	16	16	
General Additions – Irrigation Systems		880	-	-	-	-	880	880	
General Additions – Raw Water		250	-	-	-	-	250	250	
Griffith League Ranch Groundwater	11%	3,000	1,750	-	-	-	4,750	5,500	
Gulf Coast Plant No. 1 Downstream Sheet Pile Wall	10%	1,500	-	-	-	-	1,500	1,500	
Lakeside River Plant Bank Erosion	10%	700	-	-	-	-	700	700	
Minor Capital – Hydromet		98	-	-	-	-	98	98	
Minor Capital – Irrigation Systems		536	-	-	-	-	536	536	
Recommended Subtotal		7,480	1,750	-	-	-	9,230	9,980	
Approved									
Arbuckle Reservoir (formerly Lane City Reservoir)		18,414	-	-	-	-	18,414	250,000	
Buchanan Dam 7 Gate Spillway Channel		425	636	-	-	-	1,061	1,500	
Buchanan Dam Spalling Concrete Rehabilitation – Phase 3		3,216	2,888	3,467	3,693	4,335	17,599	36,000	
Buchanan Floodgate Rehab Phase 2		5,893	1,095	-	-	-	6,988	50,072	
Gulf Coast Plant No. 1 Bank Erosion		1,237	-	-	-	-	1,237	1,354	
Gulf Coast Wadsworth Gates		370	-	-	-	-	370	370	
Mansfield Dam Dehumidification System		300	-	-	-	-	300	375	
Mansfield Dam Paradox Gate Rehabilitation – Phase 2		1,217	1,354	1,579	1,204	548	5,902	10,416	
New Water Supply Projects – Phase 1		1,380	175	-	-	-	1,555	6,179	
Prairie Conservation Reservoir		298	2,699	4,077	2,681	5	9,760	11,340	
Approved Subtotal		32,750	8,847	9,123	7,578	4,888	63,186	367,606	

Water Projects (Continued)

Water

FY 2019 Capital Plan Future Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year Total	Lifetime
Future								
Buchanan Dam 7 Gate Deck and Hoist Recoating	-	500	-	-	-	-	500	500
Buchanan Dam 7 Gate Section Spillway Improvements Phase 2	-	-	2,500	2,500	-	-	5,000	5,000
Buchanan Intake Structure	-	-	-	-	-	798	798	798
Garwood Dam Rehabilitation	-	500	-	-	-	-	500	500
General Additions – Hydromet	-	100	100	100	100	100	400	400
General Additions – Irrigation Systems	-	960	660	660	660	600	2,880	2,880
General Additions – Raw Water	-	350	200	200	200	200	950	950
Gulf Coast Plant No. 1 – Pumps 1 and 2	-	-	-	-	700	-	700	700
Irrigation SCADA	-	850	-	-	-	-	850	850
Lakeside Automated Gates	-	370	370	370	370	370	1,480	1,850
Lakeside Lake Plant Building Office and Meeting Room	-	-	300	-	-	-	300	300
Lakeside Lake Plant Variable Frequency Drive and Switchgear Building	-	500	-	-	-	-	500	500
Lakeside Main Canal Structures	-	-	-	-	-	300	300	1,200
Lakeside Prairie Plant Automated Trash Rack	-	-	-	-	300	-	300	300
Mansfield Dam Floodgate Hydraulic Piping	-	785	-	-	-	-	785	785
Minor Capital – Hydromet	-	167	167	167	167	167	668	668
Minor Capital – Irrigation Systems	-	350	350	350	350	350	1,400	1,400
New Regional Water Supply Projects – Phase 2	-	11,900	11,900	11,900	-	-	35,700	35,700
Future Subtotal	-	11,900	17,332	16,547	5,347	2,885	54,011	55,281
Total Water	-	52,130	27,929	25,670	12,925	7,773	126,427	432,867

Public Service Projects

Legislative authority and LCRA's Board of Directors provide direction for LCRA staff to develop and manage parks, recreation facilities and natural science centers in LCRA's statutory district, providing public recreation and water access along the lower Colorado River and its tributaries and at LCRA's power plant reservoirs. LCRA's public park system includes more than 40 parks, recreation areas, natural resource areas and river access sites on more than 11,000 acres. The parks and natural science centers enhance the public's use and enjoyment of LCRA lands and provide diverse outdoor recreation and education opportunities.

LCRA's public service funding aims to keep pace with the growing Central Texas population and expected increase in park visitation, protect natural resources and water quality along the Colorado River; and develop facilities that help achieve LCRA's cost-recovery goals for parks.

Public Services recommended and approved projects total \$1.7 million in FY 2019 and over the next five years through FY 2023. Future projects total \$9.4 million through FY 2023.

FY 2019 Recommended Projects

Lake Bastrop Park Improvements – The project will build on the success of an already popular destination park by adding a nine-hole miniature golf course at Lake Bastrop South Shore. The project's scope also includes making improvements to the camping loop road at Lake Bastrop North Shore to better handle heavy weight traffic, such as recreational vehicles, and updating signage throughout both Lake Bastrop parks. The cost estimates for the project are preliminary.

General Additions – General addition projects will maintain infrastructure and improve safety for park visitors.

Minor Capital – The scope of minor capital projects is to purchase equipment that, essentially, is ready to place in service upon delivery for the following:

- Parks.
- Other public services.

Public Service Projects (Continued)

Public Services

FY 2019 Capital Plan Recommended and Future Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year Total	Lifetime
Recommended								
Parks								
General Additions		158	-	-	-	-	158	158
Lake Bastrop Parks Improvements	15%	590	-	-	-	-	590	590
Minor Capital		677	-	-	-	-	677	677
Other Public Services								
Minor Capital		255	-	-	-	-	255	255
Recommended Subtotal		1,680	-	-	-	-	1,680	1,680
Future								
Parks								
General Additions		-	506	-	1,602	2,000	4,108	4,108
Matagorda Bay Park Improvements		-	1,494	2,089	398	-	3,981	3,981
Minor Capital		-	310	227	219	110	866	866
Other Public Services								
Minor Capital		-	201	107	52	116	476	476
Future Subtotal		-	2,511	2,423	2,271	2,226	9,431	9,431
Total Public Service		1,680	2,511	2,423	2,271	2,226	11,111	11,111

Enterprise Support Projects

Enterprise Support capital projects provide the facility services, telecommunications and information technology infrastructure that support the business operations of the organization. LCRA's power, transmission and water rates fund the projects, which makes predicting costs to include in LCRA's rates especially important. Unless an emergency arises, LCRA adjusts Enterprise Support priorities throughout the year to stay within the approved capital plan budget for each fiscal year instead of seeking additional funding authority from the Board.

Enterprise Support recommended and approved projects total \$16.9 million in FY 2019 and \$17.6 million over the next five years through FY 2023. Future projects total \$79.9 million through FY 2023.

FY 2019 Requested Project Budget Increase

Enterprise Financial Operations Re-engineering – The project will restructure LCRA's chart of accounts to align daily transactions and activities of the business areas with LCRA's financial reporting tools. It also will provide guidance for business area financial decision-making and reporting under the umbrella of LCRA's financial goals and strategies. The project was approved in FY 2018 with preliminary cost estimates and a lifetime budget of \$3 million. After determining the detailed requirements, staff is requesting the lifetime budget be reset to \$5,815,000. Spending for this project is almost entirely for labor, and the increased costs reflect the workers and hours needed to complete the project in FY 2019 as planned.

FY 2019 Recommended Projects

Campus Distribution Switches – The project will replace middle-layer components of LCRA's network infrastructure at the General Office Complex, Dalchau Service Center and Redbud Center. The existing hardware has been in service for 10 years and has reached its end of life.

Enterprise Support Projects (Continued)

FY 2019 Recommended Projects (Continued)

Generation Management System – The project will replace the hardware that supports the OSII Monarch software – the software package LCRA uses to communicate with ERCOT in its role as a qualified scheduling entity. The hardware warranty expired in 2016, and the extended support contract also is nearing its expiration date. The project’s scope also includes upgrading the Monarch software to the most current version. The cost estimates for the project are preliminary.

Virtual Private Network (VPN) Replacement – The project will replace the Pulse Secure VPN appliances that have reached their end of life. VPN services provide a variety of functions, including secure remote access to the LCRA network for employees, contractors, and customer and vendor portals.

Physical Access Control System – Phase 4 – The project will upgrade the physical access controls and video surveillance systems for the Eastern Maintenance Facility, the Western Maintenance Facility, McKinney Roughs Nature Park, Lake Bastrop South Shore Park, the Gulf Coast Irrigation District’s Bay City office and the Mansfield Dam Annex.

LCRA Backbone Fiber Upgrades – FY 2019 – The project will replace aged and deteriorated LCRA-owned optical ground wire on the 2.4-mile Lakeway (Austin Energy)-to-Marshall Ford 138-kV line with new 72-count optical ground wire.

Radio System Migration – FY 2019 Telecommunications Upgrade – The project will upgrade firmware in approximately 3,200 OpenSky® radios to allow for conversion to the P25 network commonly used by emergency response organization dispatchers. The upgrade is based on vendor recommendations and notifications regarding termination of OpenSky support for the radio system.

Enterprise Support Projects (Continued)

FY 2019 Recommended Projects (Continued)

Radio System Power Telecommunications Upgrade – The project will replace end-of-life uninterruptible power supply systems that were discontinued in 2004 at 18 locations. The project’s scope also includes replacing the backup generator and auto-transfer switch at the Bay City radio site.

San Marcos Radio Site Telecommunications Upgrade – The project will reduce lease and operations and maintenance costs, as well as improve service to the City of San Marcos. The project’s scope includes retiring a leased tower site (C-237) and installing new telecommunication facilities at a new tower site constructed and owned by the City of San Marcos.

General Additions – General addition projects will maintain infrastructure and regulation compliance, and improve reliability for the following:

- Digital Services.
- Facilities.
- Telecommunications.

Minor Capital – The scope of minor capital projects is to purchase equipment that, essentially, is ready to place in service upon delivery for the following:

- Digital Services.
- Environmental Lab.
- Facilities.
- Public Safety.
- Telecommunications.

Enterprise Support Projects (Continued)

Enterprise Support FY 2019 Capital Plan Recommended and Approved Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year Total	Lifetime
Recommended								
Digital Services								
Campus Distribution Switches	10%	250	-	-	-	-	250	800
General Additions		1,690	-	-	-	-	1,690	1,690
Generation Management System	10%	1,200	-	-	-	-	1,200	1,200
Minor Capital		1,635	-	-	-	-	1,635	1,635
Virtual Private Network (VPN) Replacement	10%	400	-	-	-	-	400	400
Environmental Lab								
Minor Capital		250	-	-	-	-	250	250
Facilities								
General Additions		1,062	-	-	-	-	1,062	1,062
Minor Capital		319	-	-	-	-	319	319
Public Safety								
Minor Capital		285	-	-	-	-	285	285
Physical Access Control System – Phase 4	9%	410	-	-	-	-	410	410
Telecommunications								
General Additions		2,430	-	-	-	-	2,430	2,430
LCRA Backbone Fiber Upgrades – FY 2019	0%	392	-	-	-	-	392	392
Minor Capital		562	-	-	-	-	562	562
Radio System Migration – FY 2019 Telecommunications Upgrade	0%	1,833	-	-	-	-	1,833	1,833
Radio System Power Telecommunications Upgrade	0%	243	243	-	-	-	486	486
San Marcos Radio Site Telecommunications Upgrade	0%	300	-	-	-	-	300	300
Recommended Subtotal		13,261	243	-	-	-	13,504	14,054
Approved								
Digital Services								
Commercial Data Analytics		510	-	-	-	-	510	750
Enterprise Financial Operations Re-engineering		2,525	-	-	-	-	2,525	5,815

Enterprise Support Projects (Continued)

Enterprise Support

FY 2019 Capital Plan Approved and Future Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year Total	Lifetime
Approved (continued)								
Digital Services (continued)								
Scheduling Tool		-	300	-	-	-	300	300
Treasury Management – Phase 1		405	-	-	-	-	405	405
Wireless Replacement		180	164	-	-	-	344	755
Telecommunications								
LCRA Backbone Fiber Upgrades – FY 2018		21	-	-	-	-	21	964
Approved Subtotal		3,641	464	-	-	-	4,105	8,989
Future								
Digital Services								
Backup Storage Replacement		-	500	-	-	-	500	500
Cloud Computing		-	500	750	600	-	1,850	1,850
Data Center Security		-	500	-	-	-	500	500
Database High Availability		-	-	650	-	-	650	650
Digital Services Infrastructure		-	-	1,000	1,000	1,000	3,000	3,000
Document Management		-	-	500	-	-	500	500
Edge Network Upgrade		-	1,250	750	-	-	2,000	2,000
Enterprise Data Discovery		-	500	-	-	-	500	500
General Additions		-	2,000	3,150	5,400	7,000	17,550	17,550
Minor Capital		-	1,490	1,000	1,000	1,000	4,490	4,490
Security Incident and Event Management (SIEM) Replacement		-	1,000	-	-	-	1,000	1,000
Settlement and Billing System Server Refresh		-	315	-	-	-	315	315
Water Billing System		-	850	-	-	-	850	850
Wholesale Power Billing System		-	-	1,000	1,000	-	2,000	2,000
Environmental Lab								
Minor Capital		-	280	165	167	-	612	612

Enterprise Support Projects (Continued)

Enterprise Support FY 2019 Capital Plan Future Projects

(Dollars in thousands)

Project Name	Contingency	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five-Year Total	Lifetime
Future (Continued)								
Facilities								
General Additions		-	700	500	500	500	2,200	2,200
GOC Hancock Chiller Plant Mag Drive		-	1,000	-	-	-	1,000	1,000
GOC Redbud Chiller		-	-	-	-	300	300	300
Minor Capital		-	1,476	1,180	1,196	-	3,852	3,852
Western Maintenance Facility Natural Resource Conservation Building		-	400	-	-	-	400	400
Public Safety								
Minor Capital		-	303	271	348	304	1,226	1,226
Physical Access Control – FY 2023		-	-	-	-	4,000	4,000	4,000
Physical Access Control System – Phase 5		-	-	450	-	-	450	450
Telecommunications								
General Additions		-	1,900	1,800	2,100	2,100	7,900	7,900
LCRA Backbone Fiber Upgrades – FY 2020		-	4,000	-	-	-	4,000	4,000
LCRA Backbone Fiber Upgrades – FY 2021		-	-	4,000	-	-	4,000	4,000
LCRA Backbone Fiber Upgrades – FY 2022		-	-	-	4,000	-	4,000	4,000
LCRA Backbone Fiber Upgrades – FY 2023		-	-	-	-	4,000	4,000	4,000
Minor Capital		-	553	398	264	400	1,615	1,615
Radio System Migration – FY 2020 Telecommunications Upgrade		-	2,100	-	-	-	2,100	2,100
Radio System Migration – FY 2021 Telecommunications Upgrade		-	-	1,500	-	-	1,500	1,500
Radio System Migration – FY 2022 Telecommunications Upgrade		-	-	-	1,000	-	1,000	1,000
Future Subtotal		-	21,617	19,064	18,575	20,604	79,860	79,860
Total Enterprise Support			16,902	22,324	19,064	18,575	20,604	102,903

Appendix – Financial Tables

LCRA Consolidated (Including Nonprofit Corporations)

(Dollars in millions)	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenues						
Total Net Revenue¹	884.8	948.8	973.8	991.2	1,029.3	1,084.9
Expenses						
Total Net Expense¹	482.6	522.7	527.4	542.3	573.2	593.3
Net Operating Margin	402.2	426.1	446.4	448.9	456.1	491.7
Less: GenTex 1 Funds ²	(0.1)	(2.3)	(5.8)	(3.0)	(0.1)	(1.6)
Net Margin for Debt Service, Adjusted	402.2	423.9	440.5	445.9	456.0	490.1
Debt Service	\$ 291.1	308.5	315.7	303.3	315.5	318.8
Debt Service Coverage, Adjusted	1.38x	1.37x	1.40x	1.47x	1.45x	1.54x
Net Margin After Debt Service³	\$ 111.1	117.7	130.6	145.6	140.7	172.8
Less:						
Operating Reserves	7.5	13.8	6.7	9.3	15.9	14.1
Revenue-Funded Capital	79.1	82.6	105.5	120.8	111.4	144.6
Noncash Revenue	1.9	2.6	2.6	2.6	2.6	2.6
Restricted for Reserves	7.0	12.7	12.6	6.2	7.6	10.5
Restricted for Capital/Debt Retirement	14.8	5.0	2.3	5.6	2.2	0.1
CDPP Grants	1.0	1.0	1.0	1.0	1.0	1.0
Net Cash Flow	\$ 0.0	0.0	0.0	0.0	0.0	0.0

¹ Total net revenues and total net expenses are net of intracompany transfers. Total revenues include interest income. Operations and maintenance expense excludes the LCRA TSC capital charge, which is a capital expense for LCRA consolidated.

² Includes adjustments related to GenTex 1 capital funding and reserve funding.

³ Net margin after debt service includes funds dedicated to GenTex 1.

LCRA TSC

(Dollars in millions)

	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenues	\$ 409.7	425.8	446.2	475.5	495.5	536.0
Operations and Maintenance	110.9	110.9	116.1	120.3	123.6	126.6
Net Operating Margin	298.8	314.9	330.1	355.3	371.9	409.4
Plus: Interest Income	2.6	3.8	5.5	6.0	6.1	5.1
Less: Assigned Enterprise Expense	44.2	48.1	47.2	48.9	55.8	58.1
Public Service Fund	12.3	12.8	13.4	14.3	14.9	16.1
Resource Development Fund	8.2	8.5	8.9	9.5	9.9	10.7
Net Margin Available for Debt Service	236.7	249.3	266.1	288.5	297.4	329.6
Debt Service	\$ 173.9	180.4	195.0	205.9	217.2	220.4
Debt Service Coverage	1.36x	1.38x	1.36x	1.40x	1.37x	1.50x
Net Margin After Debt Service	\$ 62.8	68.9	71.1	82.6	80.3	109.2
Less:						
Operating Reserves	6.8	4.6	5.4	4.6	7.7	7.5
Assigned Enterprise Capital	6.1	8.4	14.1	12.2	11.8	13.9
Revenue-Funded Capital	53.1	54.0	51.7	72.7	68.0	95.9
Transfer to LCRA ¹	4.1	7.3	6.7	1.1	1.1	1.1
Assigned Transmission Minor Capital	1.9	0.0	0.0	0.0	0.0	0.0
Plus:						
Amortization of Enterprise/Minor Capital ²	9.2	5.4	6.8	8.0	8.3	9.1
Net Cash Flow	\$ 0.0	0.0	0.0	0.0	0.0	0.0

¹ An initial transfer from LCRA TSC to LCRA was authorized by the LCRA and LCRA TSC boards of directors in April 2014. Under the initial contractual commitment, the LCRA and LCRA TSC boards must make an annual determination to authorize each year's transfer. Such annual transfers are payable only if all other financial commitments have been met as required by LCRA TSC's financial policies.

² In FY 2012 through FY 2018, LCRA TSC funded minor capital and its share of enterprise capital with current year revenues and included an amortization of the amount in each year to recover in rates. Starting in FY 2019, minor capital will be included in LCRA TSC's capital plan.

Water

	(Dollars in millions)					
	Budgeted FY 2018	Proposed FY 2019	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenue						
Firm Water	\$ 17.9	20.0	23.5	26.4	26.6	27.0
Agriculture	11.8	11.0	11.4	11.8	12.3	12.7
Other	2.0	2.1	2.1	2.1	2.1	2.1
Total Revenues	31.6	33.1	37.0	40.2	41.0	41.8
Operations and Maintenance	16.9	18.1	17.8	16.6	16.9	17.0
Net Operating Margin	14.7	15.0	19.2	23.7	24.1	24.8
Plus: Interest Income	1.1	1.1	1.4	1.7	1.5	1.5
Less: Assigned Enterprise Expense	2.5	4.2	5.1	5.3	6.0	6.4
Public Service Fund	0.9	1.0	1.1	1.2	1.2	1.3
Net Margin Available for Debt Service	12.3	10.9	14.4	18.9	18.4	18.7
Debt Service	\$ 14.4	16.0	16.3	19.4	19.7	20.0
Debt Service Coverage	0.85x	0.68x	0.88x	0.97x	0.93x	0.94x
Plus: Resource Development Funding	10.2	10.3	10.5	12.8	12.9	12.9
Debt Service Coverage, Adjusted	1.56x	1.32x	1.53x	1.63x	1.59x	1.58x
Net Margin After Debt Service	8.1	5.2	8.6	12.3	11.6	11.6
Less:						
Operating Reserves	0.0	0.4	0.2	0.0	0.3	0.1
Assigned Enterprise Capital	0.5	0.6	2.0	1.0	0.9	1.2
Revenue-Funded Capital	5.7	2.2	4.6	9.4	8.5	7.8
Restricted for Capital/Debt Retirement	0.0	0.0	0.0	0.0	0.0	0.7
Noncash Revenues	1.9	1.9	1.9	1.9	1.9	1.9
Net Cash Flows	\$ 0.0	0.0	0.0	0.0	0.0	0.0

Strategic Services

(Dollars in millions)

	Budgeted	Proposed	Forecast			
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenues	\$ 18.2	14.4	15.5	15.8	16.6	17.6
Expenses	13.6	9.4	10.3	10.3	10.1	10.2
Net Operating Margin	4.6	5.0	5.2	5.6	6.5	7.4
Less: Assigned Enterprise Expense	3.0	2.3	2.3	2.3	2.4	2.4
Public Service Fund	0.5	0.4	0.4	0.4	0.4	0.5
Resource Development Fund	0.2	0.1	0.2	0.2	0.2	0.2
Net Margin Available	0.9	2.2	2.4	2.6	3.4	4.3
Less:						
Operating Reserves	0.4	0.0	0.2	0.0	0.0	0.0
Assigned Enterprise Capital	0.2	0.4	0.6	0.4	0.4	0.3
Assigned Transmission Minor Capital	0.1	0.0	0.0	0.0	0.0	0.0
Noncash Revenues	0.0	0.7	0.7	0.7	0.7	0.7
Net Cash Flow	\$ 0.2	1.1	0.9	1.5	2.2	3.3



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