

CITY OF KETCHIKAN, ALASKA
2023 - 2027 KETCHIKAN PUBLIC UTILITIES
CAPITAL IMPROVEMENT PROGRAM

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Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
2023 Capital Budget

Department/Division/Project	Revenues/ Reserves	Grants	Other	Revenue Bonds	2023 Total
Administration					
Financial & Accounting Information System	20,000				20,000
Administration Division Total	20,000				20,000
Sales, Marketing & Customer Service					
Vehicle Acquisition	65,635				65,635
Sales, Marketing & Customer Service Division Total	65,635				65,635
Electric Division					
Beaver Falls Relicensing	30,000				30,000
Ketchikan Tunnel Penstock Valves Replacement	50,000				50,000
Bailey Generator No. 4 Wartsilla PLC Upgrade	115,000				115,000
Generation Equipment Planning, Cleaning & Testing	50,000				50,000
Whitman Tailrace Modification	200,000				200,000
Diesel Generation Modernization	60,000				60,000
Bailey Exhaust Stack Re-Coating	55,000				55,000
Bailey Generator Radiator Replacement	40,000				40,000
Beaver Falls Switch Gear Replacement	1,372,150				1,372,150
Whitman Dam Crack Repair	30,000				30,000
Whitman Incubation Pipe Flow Meter	50,000				50,000
Ketchikan Lakes Utilities	195,000				195,000
Ketchikan International Airport & Pennock Upgrade	360,000				360,000
Feeder Protective Relay Upgrades	50,000				50,000
Battery System and Chargers	76,000				76,000
Transformer Purchase	100,000				100,000
AMI, Meters and Meter Replacement Parts	200,000				200,000
Transmission & Distribution Line Maintenance	400,000				400,000
Port West Substation Reconfiguration & Site Mod.	100,000				100,000
System Sectionalizers	100,000				100,000
Bailey Mooring Dolphin Replacement	110,000				110,000
Beaver Falls Powerhouse Exterior	750,000				750,000
Vehicles & Moving Equipment	665,000				665,000
Operating Equipment	276,000				276,000
Additional Projects	164,000				164,000
Reimbursable Projects	25,000				25,000
Vehicle Lift Replacement	80,000				80,000
Digital Radio Replacement	125,000				125,000
Silvis Road Repair	75,000				75,000
Electric Division Total	5,903,150				5,903,150

**Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
2023 Capital Budget**

Department/Division/Project	Revenues/ Reserves	Grants	Other	Revenue Bonds	2023 Total
Telecommunications Division					
Normal Growth and Repair - Buildings	50,000				50,000
Normal Growth and Repair - CO Switching	700,000				700,000
Normal Growth and Repair - Copper Cable	25,000				25,000
Normal Growth and Repair - Fiber Cable	150,000				150,000
Normal Growth and Repair - CO Transmission	150,000				150,000
Normal Growth and Repair - Expansion	25,000				25,000
Normal Growth and Repair - Provisioning	10,000				10,000
Fiber to the Home	462,000				462,000
Remote Cabinets for Advanced Services	50,000				50,000
Core Network Upgrade	100,000				100,000
Server Environment	400,000				400,000
Multi-Dwelling Unit Project	240,000				240,000
Operating Equipment	100,000				100,000
PC Hardware & Software	60,000				60,000
Power Expansion/Reclamation	100,000				100,000
Visual Mapping Software	10,000				10,000
Network Monitoring	100,000				100,000
Vehicle Acquisition	350,000				350,000
Security	100,000				100,000
Headend Expansion	25,000				25,000
Video Set Top Boxes	25,000				25,000
4G/LTE	300,000				300,000
Hosted	250,000				250,000
Wi-Fi	50,000				50,000
Internet Expansion	50,000				50,000
KetchCan1 Subsea Cable Repair	676,500				676,500
Telecommunications Division Total	4,558,500				4,558,500

**Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
2023 Capital Budget**

Department/Division/Project	Revenues/ Reserves	Grants	Other	Revenue Bonds	2023 Total
Water Division					
Filtration Facility-Preliminary Preparation Tasks	200,000				200,000
Water Meters - Business & Commercial Customers				851,520	851,520
Pump Station Switchgear Improvements	27,500				27,500
Utility Vehicles	75,000				75,000
West Fairy Chasm Main Replacement	35,000				35,000
Skyline Water Main Replacement	30,000				30,000
Valve Boxes - Repair of Surrounding Pavement	110,000				110,000
Water Distribution Grid Improvements	30,000				30,000
Additional Projects	40,000				40,000
Water Service Upgrade Program	15,000				15,000
Backflow Prevention Program	15,000				15,000
SCADA PLC Controllers	340,000				340,000
UV Facility - UPS Battery Replacement	45,000				45,000
Replace ClorTec Generating Cells	60,000				60,000
Peterson Street Water Main Rebuild	374,000				374,000
Water Division Total	1,396,500			851,520	2,248,020
GRAND TOTAL	11,943,785			851,520	12,795,305

Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
Summary of Projects by Division - All Years

Division/Project	Prior Years	2023	2024	2025	2026	2027	Five Year Total	Project Total
Administration								
Financial & Accounting Information System Implementation	438,992	20,000					20,000	458,992
Administration Total	438,992	20,000					20,000	458,992
Sales, Marketing & Customer Service								
Vehicle Acquisition		65,635					65,635	65,635
Sales, Marketing & Customer Service Total		65,635					65,635	65,635
Electric Division								
Beaver Falls Relicensing	615,000	30,000	30,000				60,000	675,000
Generator Rewind & Repair				650,000	700,000		1,350,000	1,350,000
Ketchikan Tunnel Penstock Valves Replacement	100,000	50,000	250,000				300,000	400,000
Bailey Generator No. 4 Wartsilia PLC Upgrade		115,000					115,000	115,000
Generation Equipment Planning, Cleaning & Testing	191,395	50,000	50,000				100,000	291,395
Whitman Tailrace Modification	36,291	200,000					200,000	236,291
Diesel Generation Modernization	120,000	60,000					60,000	180,000
Bailey Exhaust Stack Re-Coating		55,000	35,000				90,000	90,000
Bailey Unit No. 1 Rehabilitation	15,835					850,000	850,000	865,835
Bailey Generator Radiator Replacement		40,000	300,000				340,000	340,000
Beaver Falls Governor Upgrade				250,000			250,000	250,000
Silvis Shaft & Turbine Overhaul				750,000			750,000	750,000
Ketchikan Lakes Project Relicensing			300,000	300,000	300,000	300,000	1,200,000	1,200,000
Beaver Falls Switch Gear Replacement	105,000	1,372,150					1,372,150	1,477,150
Silvis Tunnel Valve Replacement				40,000	400,000		440,000	440,000
Penstock Inspections			100,000				100,000	100,000
Whitman Dam Crack Repair		30,000	50,000				80,000	80,000
Whitman Incubation Pipe Flow Meter		50,000					50,000	50,000
Bailey Title V Renewal			30,000				30,000	30,000
Ketchikan Lakes Utilities	30,000	195,000	100,000				295,000	325,000
Ketchikan International Airport & Pennock Island Upgrade	295,000	360,000	300,000	25,000			685,000	980,000
Feeder Protective Relay Upgrades	50,000	50,000	50,000	50,000	50,000	50,000	250,000	300,000
Battery Systems & Chargers	96,000	76,000	46,000	50,500	50,500	50,500	273,500	369,500
Transformer Purchase		100,000	155,000	175,000	175,000	175,000	780,000	780,000
AMI, Meters and Meter Replacement Parts		200,000	185,000	125,000	125,000	125,000	760,000	760,000
34.5 kV Tie Breaker and Relay Spares				105,000			105,000	105,000
Transmission & Distribution Line Maintenance		400,000		500,000		500,000	1,400,000	1,400,000
Port West Substation Reconfiguration & Site Mod.		100,000					100,000	100,000
System Sectionalizers		100,000	100,000	100,000			300,000	300,000
Bailey Mooring Dolphin Replacement		110,000					110,000	110,000
Beaver Falls Powerhouse Exterior	36,070	750,000					750,000	786,070

Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
Summary of Projects by Division - All Years

Division/Project	Prior Years	2023	2024	2025	2026	2027	Five Year Total	Project Total
Electric Division (continued)								
Vehicles & Moving Equipment		665,000	450,000	100,000	150,000	350,000	1,715,000	1,715,000
Operating Equipment		276,000	300,000	300,000	300,000	300,000	1,476,000	1,476,000
Additional Projects		164,000	164,000	164,000	164,000	164,000	820,000	820,000
Reimbursable Projects		25,000	25,000	25,000	25,000	25,000	125,000	125,000
Bailey Fuel Tank Painting			100,000				100,000	100,000
Vehicle Lift Replacement		80,000					80,000	80,000
Digital Radio Replacement		125,000					125,000	125,000
Silvis Road Repair		75,000					75,000	75,000
Electric Division Total	1,690,591	5,903,150	3,120,000	3,709,500	2,439,500	2,889,500	18,061,650	19,752,241
Telecommunications Division								
Normal Growth and Repair - Buildings		50,000	50,000	50,000	50,000	50,000	250,000	250,000
Normal Growth and Repair - CO Switching		700,000	100,000	75,000	75,000	75,000	1,025,000	1,025,000
Normal Growth and Repair - Copper Cable		25,000	25,000	25,000	25,000	25,000	125,000	125,000
Normal Growth and Repair - Fiber Cable		150,000	100,000	100,000	100,000	100,000	550,000	550,000
Normal Growth and Repair - CO Transmission		150,000	200,000	200,000	250,000	300,000	1,100,000	1,100,000
Normal Growth and Repair - Expansion		25,000	30,000	35,000	35,000	35,000	160,000	160,000
Normal Growth and Repair - Provisioning		10,000	10,000	150,000	50,000	50,000	270,000	270,000
Fiber to the Home		462,000	100,000	100,000	100,000	100,000	862,000	862,000
Remote Cabinets for Advanced Services		50,000	50,000	50,000	50,000	75,000	275,000	275,000
Core Network Upgrade		100,000	1,000,000	750,000	750,000	250,000	2,850,000	2,850,000
Server Environment		400,000	100,000	100,000	100,000	200,000	900,000	900,000
Multi-Dwelling Unit Project		240,000	200,000	200,000	200,000	200,000	1,040,000	1,040,000
Operating Equipment		100,000	50,000	50,000	50,000	100,000	350,000	350,000
PC Hardware & Software		60,000	60,000	60,000	60,000	65,000	305,000	305,000
Power Expansion/Reclamation		100,000	50,000	50,000	50,000	50,000	300,000	300,000
Visual Mapping Software		10,000	50,000	25,000	25,000	25,000	135,000	135,000
Network Monitoring		100,000	100,000	100,000	100,000	100,000	500,000	500,000
Vehicle Acquisition		350,000	100,000	50,000	50,000	50,000	600,000	600,000
Security	223,511	100,000	100,000	100,000	150,000	300,000	750,000	973,511
Headend Expansion		25,000	15,000	15,000	25,000	25,000	105,000	105,000
Video Set Top Boxes		25,000	25,000	25,000			75,000	75,000
4G/LTE		300,000	100,000	100,000	100,000	100,000	700,000	700,000
Microwave			20,000	20,000			40,000	40,000
Hosted		250,000	150,000	100,000	100,000	100,000	700,000	700,000
Wi-Fi		50,000	50,000	50,000	65,000	75,000	290,000	290,000
Internet Expansion		50,000	100,000	200,000	200,000	600,000	1,150,000	1,150,000
KetchCan1 Subsea Cable Repair		676,500					676,500	676,500
Telecommunications Division Total	223,511	4,558,500	2,935,000	2,780,000	2,760,000	3,050,000	16,083,500	16,307,011

Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
Summary of Projects by Division - All Years

Division/Project	Prior Years	2023	2024	2025	2026	2027	Five Year Total	Project Total
Water Division								
Filtration Facility - Preliminary Preparation Tasks	562,015	200,000	200,000				400,000	962,015
Water Meters - Business & Commercial Customers	398,480	851,520	250,000				1,101,520	1,500,000
Pump Station Switchgear Improvements	30,250	27,500	28,500		30,000		86,000	116,250
Utility Vehicles		75,000		160,000		112,000	347,000	347,000
West Fairy Chasm Replacement		35,000				550,600	585,600	585,600
Skyline Water Main Replacement		30,000				360,800	390,800	390,800
Valve Boxes - Repair of Surrounding Pavement		110,000	50,000	50,000	50,000	50,000	310,000	310,000
Water Distribution Grid Improvements		30,000	30,000	30,000	30,000	30,000	150,000	150,000
Additional Projects		40,000	40,000	40,000	40,000	40,000	200,000	200,000
Water Service Upgrade Program		15,000	15,000	15,000	15,000	15,000	75,000	75,000
Backflow Prevention Program		15,000	15,000	15,000	15,000	15,000	75,000	75,000
SCADA PLC Controllers	256,500	340,000	345,000				685,000	941,500
UV Facility - UPS Battery Replacement		45,000					45,000	45,000
Replace ClorTec Generating Cells		60,000	61,500	42,000	43,000		206,500	206,500
Peterson Street Water Main Rebuild		374,000					374,000	374,000
Woodland Ave Utility Improvements				40,000		430,000	470,000	470,000
Harris Street Utility Improvements				35,000		2,000,000	2,035,000	2,035,000
Replace Tongass Ave/Water Street Suspended Water Main			245,000		1,230,000		1,475,000	1,475,000
Highlands Reservoir Property Acquisition			300,000				300,000	300,000
Second Ave Main Replacement			60,000			1,300,800	1,360,800	1,360,800
Evergreen Ave Main Replacement			25,000			440,000	465,000	465,000
Denali Ave Main Replacement			30,000			512,000	542,000	542,000
Water Division Total	1,247,245	2,248,020	1,695,000	427,000	1,453,000	5,856,200	11,679,220	12,926,465
TOTAL	3,600,339	12,795,305	7,750,000	6,916,500	6,652,500	11,795,700	45,910,005	49,510,344

Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
Summary of Projects by Funding Source - All Years

Division/Project	Prior Years	Revenue Generating Fund	Grants	Other	Revenue Bonds	State Drinking Water Loan Fund	Total
Administration							
Financial & Accounting Information System Implementation	438,992	20,000					458,992
Administration Total	438,992	20,000					458,992
Sales, Marketing & Customer Service							
Vehicle Acquisition		65,635					65,635
Sales, Marketing & Customer Service Total		65,635					65,635
Electric Division							
Beaver Falls Project Relicensing	615,000	60,000					675,000
Generator Rewind & Repair		1,350,000					1,350,000
Ketchikan Tunnel Penstock Valves Replacement	100,000	300,000					400,000
Bailey Generator No. 4 Wartsilia PLC Upgrade		115,000					115,000
Generation Equipment Planning, Cleaning & Testing	191,395	100,000					291,395
Whitman Tailrace Modification	36,291	200,000					236,291
Diesel Generation Modernization	120,000	60,000					180,000
Bailey Exhaust Stack Re-Coating		90,000					90,000
Bailey Unit No. 1 Rehabilitation	15,835	850,000					865,835
Bailey Generator Radiator Replacement		340,000					340,000
Beaver Falls Governor Upgrade		250,000					250,000
Silvis Shaft & Turbine Overhaul		750,000					750,000
Ketchikan Lakes Project Relicensing		1,200,000					1,200,000
Ketchikan Beaver Falls Switch Gear Replacement	105,000	1,372,150					1,477,150
Silvis Tunnel Valve Replacement		440,000					440,000
Penstock Inspections		100,000					100,000
Whitman Dam Crack Repair		80,000					80,000
Whitman Incubation Pipe Flow Meter		50,000					50,000
Bailey Title V Renewal		30,000					30,000
Ketchikan Lakes Utilities	30,000	295,000					325,000
Ketchikan International Airport & Pennock Is. Upgrade	295,000	685,000					980,000
Feeder Protective Relay Upgrades	50,000	250,000					300,000
Battery Systems and Chargers	96,000	273,500					369,500
Transformer Purchases		780,000					780,000
AMI, Meters and Meter Replacement Parts		760,000					760,000
34.5 kV Tie Breaker and Relay Spares		105,000					105,000
Transmission & Distribution Line Maintenance		1,400,000					1,400,000
Port West Substation Reconfiguration & Site Mod.		100,000					100,000
System Sectionalizers		300,000					300,000

Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
Summary of Projects by Funding Source - All Years

Division/Project	Prior Years	Revenue Generating Fund	Grants	Other	Revenue Bonds	State Drinking Water Loan Fund	Total
Electric Division (continued)							
Bailey Mooring Dolphin Replacement		110,000					110,000
Beaver Falls Powerhouse Exterior	36,070	750,000					786,070
Vehicles & Moving Equipment		1,715,000					1,715,000
Operating Equipment		1,476,000					1,476,000
Additional Projects		820,000					820,000
Reimbursable Projects		125,000					125,000
Bailey Fuel Tank Painting		100,000					100,000
Vehicle Lift Replacement		80,000					80,000
Digital Radio Replacement		125,000					125,000
Silvis Road Repair		75,000					75,000
Electric Division Total	1,690,591	18,061,650					19,752,241
Telecommunications Division							
Normal Growth and Repair - Buildings		250,000					250,000
Normal Growth and Repair - CO Switching		1,025,000					1,025,000
Normal Growth and Repair - Copper Cable		125,000					125,000
Normal Growth and Repair - Fiber Cable		550,000					550,000
Normal Growth and Repair - CO Transmission		1,100,000					1,100,000
Normal Growth and Repair - Expansion		160,000					160,000
Normal Growth and Repair - Provisioning		270,000					270,000
Fiber to the Home		862,000					862,000
Remote Cabinets for Advanced Services		275,000					275,000
Core Network Upgrade		2,850,000					2,850,000
Server Environment		900,000					900,000
Multi-Dwelling Unit Project		1,040,000					1,040,000
Operating Equipment		350,000					350,000
PC Hardware & Software		305,000					305,000
Power Expansion/Reclamation		300,000					300,000
Visual Mapping Software		135,000					135,000
Network Monitoring		500,000					500,000
Vehicle Acquisition		600,000					600,000
Security	223,511	750,000					973,511
Headend Expansion		105,000					105,000
Video Set Top Boxes		75,000					75,000
4G/LTE		700,000					700,000
Microwave		40,000					40,000
Hosted		700,000					700,000

Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
Summary of Projects by Funding Source - All Years

Division/Project	Prior Years	Revenue Generating Fund	Grants	Other	Revenue Bonds	State Drinking Water Loan Fund	Total
Telecommunications Division (continued)							
Wi-Fi		290,000					290,000
Internet Expansion		1,150,000					1,150,000
KetchCan1 Subsea Cable Repair		676,500					676,500
Telecommunications Division Total	223,511	16,083,500					16,307,011
Water Division							
Filtration Facility - Preliminary Preparation Tasks	562,015	400,000					962,015
Water Meters - Business & Commercial Customers	398,480	250,000				851,520	1,500,000
Pump Station Switchgear Improvements	30,250	86,000					116,250
Utility Vehicles		347,000					347,000
West Fairy Chasm Main Replacement		35,000	275,300			275,300	585,600
Skyline Water Main Replacement		30,000	180,400			180,400	390,800
Valve Boxes - Repair of Surrounding Pavement	10,000	300,000					310,000
Water Distribution Grid Improvements		150,000					150,000
Additional Projects		200,000					200,000
Water Service Upgrade Program		75,000					75,000
Backflow Prevention Program		75,000					75,000
SCADA PLC Controllers	256,500	685,000					941,500
UV Facility - UPS Battery Replacement		45,000					45,000
Replace ClorTec Generating Cells		206,500					206,500
Peterson Street Water Main Rebuild		374,000					374,000
Woodland Ave Utility Improvements		40,000	215,000			215,000	470,000
Harris Street Utility Improvements		35,000	1,000,000			1,000,000	2,035,000
Replace Tongass Ave/Water St. Suspended Water Main		245,000	615,000			615,000	1,475,000
Highlands Reservoir Property Acquisition			150,000			150,000	300,000
Second Avenue Main Replacement		60,000	650,400			650,400	1,360,800
Evergreen Ave. Main Replacement		25,000	220,000			220,000	465,000
Denali Ave. Main Replacement		30,000	256,000			256,000	542,000
Water Division Total	1,257,245	3,693,500	3,562,100			4,413,620	12,926,465
TOTAL	3,610,339	37,924,285	3,562,100			4,413,620	49,510,344

**Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program**

Department: General Manager

Project Title	Priority	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Financial & Accounting Information System Implementation	1	438,992	20,000		20,000					458,992
Total		438,992	20,000		20,000					458,992

Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		438,992	20,000		20,000					458,992
Total		438,992	20,000		20,000					458,992

Department: KPU General Manager			Project Priority: 1			Project Number:				
Project Title: Financial & Accounting Information System Implementation			Start Date: 01/07 End Date: 12/23			Estimated Project Cost:				
Description: The City awarded a contract to New World Systems for the acquisition of new financial and accounting information system and began implementation in September 2011. Finance is requesting that remaining funds that have been appropriated for this project be carried over to 2023. Funds will be used for hardware and software contingencies and New World resources to supplement the Finance Department's efforts during critical phases of the continuing implementation process. Scheduled for completion in 2023 is financial reporting, electronic personnel action forms and e-suites. The cost of this project is being funded equally by General Government and KPU.						Design Land/Right-of-Way Consultation 51,975 Construction Equip, Software & Implementation Services 391,517 Other - Training 15,500 Project Total 458,992				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		438,992	20,000		20,000					458,992
Total		438,992	20,000		20,000					458,992

**Ketchikan Public Utilities
2023 - 2027 Capital Improvement Program
Division: Sales, Marketing and Customer Service**

Project Title	Priority	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
<u>REGULATED</u>										
Vehicle Acquisition	1			65,635	65,635					65,635
Total				65,635	65,635					65,635
Source of Funds	Prior Years		Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund				65,635	65,635					65,635
Total				65,635	65,635					65,635

Division: Sales, Marketing and Customer Service		Project Priority: 1		Project Number:	
Project Title: Vehicle Acquisition		Start Date: 01/23 End Date: 12/23		Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment 65,635 Other Project Total 65,635	
Description: This capital project funds the replacement of aging vehicles to prevent excessive maintenance costs and breakdowns affecting KPU's ability to meet customer demands. The Sales, Marketing & Customer Service Division's vehicle for its expanding video content program is beyond cost effective repair and lacks the ability to accomodate modern equipment. The project includes the cost of a Ford F150, snow tires, locking shell, KPUTV wrap, and transport to KTN.					

Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- riated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			65,635	65,635					65,635
Total			65,635	65,635					65,635

Ketchikan Public Utilities 2023 - 2027 Capital Improvement Program Division: Electric										
Project Title	Priority	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Generation (Hydro and Diesel) Projects										
Beaver Falls Relicensing	1	615,000		30,000	30,000	30,000				675,000
Generator Rewind & Repair	2						650,000	700,000		1,350,000
Ketchikan Tunnel Penstock Valves Replacement	3	100,000	50,000		50,000	250,000				400,000
Bailey Generator No. 4 Wartsila PLC Upgrade	4		115,000		115,000					115,000
Generator Equipment Planning, Cleaning & Testing	6	191,395	50,000		50,000	50,000				291,395
Whitman Tailrace Modification	12	36,291		200,000	200,000					236,291
Diesel Generation Modernization	13	120,000	60,000		60,000					180,000
Bailey Exhaust Stack Re-Coating	16		25,000	30,000	55,000	35,000				90,000
Bailey Unit No. 1 Rehabilitation	17	15,835							850,000	865,835
Bailey Generator Radiator Replacement	22			40,000	40,000	300,000				340,000
Beaver Falls Governor Upgrade	23						250,000			250,000
Silvis Shaft & Turbine Overhaul	24						750,000			750,000
Ketchikan Lakes Project Relicensing	25					300,000	300,000	300,000	300,000	1,200,000
Beaver Falls Switch Gear Replacement	30	105,000	1,372,150		1,372,150					1,477,150
Silvis Tunnel Valve Replacement	31						40,000	400,000		440,000
Penstock Inspections	32					100,000				100,000
Whitman Dam Crack Repair	33			30,000	30,000	50,000				80,000
Whitman Incubation Pipe Flow Meter	34			50,000	50,000					50,000
Bailey Title V Renewal	35					30,000				30,000
Transmission and Distribution Projects										
Ketchikan Lakes Utilites	5	30,000	95,000	100,000	195,000	100,000				325,000
Ketchikan International Airport & Pennock Island Upgrad	8	295,000	235,000	125,000	360,000	300,000	25,000			980,000
Feeder Protective Relay Upgrades	9	50,000	50,000		50,000	50,000	50,000	50,000	50,000	300,000
Battery Systems & Chargers	10	96,000		76,000	76,000	46,000	50,500	50,500	50,500	369,500
Transformer Purchases	18			100,000	100,000	155,000	175,000	175,000	175,000	780,000
AMI, Meters and Meter Replacement Parts	19			200,000	200,000	185,000	125,000	125,000	125,000	760,000
34.5 kV Breaker and Relay Spares	26						105,000			105,000
Transmission & Distribution Line Maintenance	36			400,000	400,000		500,000		500,000	1,400,000
Port West Substation Reconfiguration & Site Mod.	37			100,000	100,000					100,000
System Sectionalizers	38			100,000	100,000	100,000	100,000			300,000
General Plant Projects										
Bailey Mooring Dolphin Replacement	7		110,000		110,000					110,000
Beaver Falls Powerhouse Exterior	11	36,070	750,000		750,000					786,070
Vehicles & Moving Equipment	14			665,000	665,000	450,000	100,000	150,000	350,000	1,715,000
Operating Equipment	15			276,000	276,000	300,000	300,000	300,000	300,000	1,476,000
Additional Projects	20			164,000	164,000	164,000	164,000	164,000	164,000	820,000
Reimbursable Projects	21			25,000	25,000	25,000	25,000	25,000	25,000	125,000
Bailey Fuel Tank Painting	27					100,000				100,000
Vehicle Lift Replacement	28			80,000	80,000					80,000
Digital Radio Replacement	29			125,000	125,000					125,000
Silvis Road Repair	39			75,000	75,000					75,000
Total		1,690,591	2,912,150	2,991,000	5,903,150	3,120,000	3,709,500	2,439,500	2,889,500	19,752,241
Source of Funds		Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		1,690,591	2,912,150	2,991,000	5,903,150	3,120,000	3,709,500	2,439,500	2,889,500	19,752,241
Total		1,690,591	2,912,150	2,991,000	5,903,150	3,120,000	3,709,500	2,439,500	2,889,500	19,752,241

Division: Electric			Project Priority: 1			Project Number:				
Project Title: Beaver Falls Relicensing			Start Date: 01/18 End Date: 12/24			Estimated Project Cost:				
Description: <p>The Beaver Falls Hydroelectric Project is licensed through the Federal Energy Regulatory Commission (FERC) for a term of 30 years. KPU's current license expires in 2024. To renew its FERC license, KPU began the process in 2018 with development of a Preliminary Application Document (PAD), with Notice of Intent (NOI) that was filed in 2019. Following NEPA and tribal consultations, and completion of studies, a final license application is due in 2022. The following process will require professional services for FERC regulatory work, studies and surveys to respond to FERC generated requests. Relicensing costs are highly variable and are dependent upon issues that arise during the consultation process.</p>						Design 675,000 Land/Right-of-Way Construction Management Construction Equipment Other Project Total 675,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		615,000		30,000	30,000	30,000				675,000
Total		615,000		30,000	30,000	30,000				675,000

Division: Electric			Project Priority: 2			Project Number:				
Project Title: Generator Rewind & Repair			Start Date: 01/25 End Date: 12/26			Estimated Project Cost:				
Description: <p>Typical life expectancy for generator windings is 30-40 years. Generators in service beyond 50 years become a major concern. They are at an elevated risk of failure causing loss of generation and/or potential powerhouse fires. This budget is to provide funding for two rewinds and other repairs as identified through testing and inspection.</p> <p>Silvis: Unit No. 1 (1968) Beaver Falls: Unit No. 1 (2014), Unit No. 3 (2018, and Unit No. 4 (2018) Ketchikan: Unit No. 3 (2015), Unit No. 4 (1951), and Unit No. 5 (1991)</p>						Design 50,000 Land/Right-of-Way Construction Management Construction 800,000 Equipment 450,000 Other 50,000 Project Total 1,350,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund							650,000	700,000		1,350,000
Total							650,000	700,000		1,350,000

Division: Electric					Project Priority: 3		Project Number:		
Project Title: Ketchikan Tunnel Penstock Valves Replacement					Start Date: 01/13 End Date: 12/24		Estimated Project Cost:		
Description: <p>The three gate valves on the penstocks at the downstream end of the Ketchikan power tunnel are old and are nearing the end of their reliable service life. They must be capable of closing under flow and are critical to penstock safety. The valves are embedded in concrete and will be difficult to remove or to replace due to their location. As the tunnel provides the City's only potable water supply, it cannot be drained during the work. The assessment, design and replacement of the valves will be coordinated with the Water Division to ensure continuity of potable water service, slated for 2023.</p>							Design 125,000 Land/Right-of-Way Construction Management Construction 175,000 Equipment 100,000 Other Project Total 400,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund	100,000	50,000		50,000	250,000				400,000
Total	100,000	50,000		50,000	250,000				400,000

Division: Electric			Project Priority: 4			Project Number:				
Project Title: Bailey Generator No. 4 Wartsila PLC Upgrade			Start Date: 01/22 End Date: 12/23			Estimated Project Cost:				
Description: <p>The BAG4 PLC and I/O hardware are past end of life and beyond legacy support. This project will update the generator to a modern PLC and I/O hardware platform. This project will be completed in phases and requires engineering services, planning, plans and specifications, the procurement of equipment, the demolition/installation of equipment, factory acceptance testing (FAT) and commissioning.</p>						Design 20,000 Land/Right-of-Way Construction Management 10,000 Construction Equipment 75,000 Other 10,000 Project Total 115,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			115,000		115,000					115,000
Total			115,000		115,000					115,000

Division: Electric			Project Priority: 5			Project Number:				
Project Title: Ketchikan Lakes Utilities			Start Date: 01/22 End Date: 12/24			Estimated Project Cost:				
Description: This project provides funding to install power and communications to the Ketchikan Lakes hydro project, including Fawn Lake, Ketchikan Lakes and to the Granite Basin area. Power at these sites is currently provided by solar panels and small back-up generators, with communications limited to line of site antennas. Further work includes, but is not limited to, the installation of security cameras, emergency lighting, and fiber optic communications for lake level indications.						Design Land/Right-of-Way Construction Management Construction 325,000 Equipment Other Project Total 325,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		30,000	95,000	100,000	195,000	100,000				325,000
Total		30,000	95,000	100,000	195,000	100,000				325,000

Division: Electric					Project Priority: 6		Project Number:		
Project Title: Generation Equipment Planning, Cleaning & Testing					Start Date: 01/14 End Date: 12/24		Estimated Project Cost: Design/License Land/Right-of-Way Construction Management Construction Equipment Other		
Description: This project provides for comprehensive tests and evaluation of generator stator, rotor windings and generator related equipment. Detailed cleaning and generator repairs are necessary. Due to the scope of this work and required equipment, contracted work may be necessary. This work is essential in developing an updated plan for future rewinds and other major generator work. This budget is to provide funding for generator planning activities, cleaning, testing and required equipment in the KPU generation system.							291,395		
							Project Total		
							291,395		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund	191,395	50,000		50,000	50,000				291,395
Total	191,395	50,000		50,000	50,000				291,395

Division: Electric			Project Priority: 7			Project Number:				
Project Title: Bailey Mooring Dolphin Replacement			Start Date: 01/22 End Date: 12/23			Estimated Project Cost:				
Description: Fuel is delivered to the Bailey Power Plant by barge. One of the mooring dolphins used to secure the barge is of wood pile construction and at the end of its useful life. This project will replace it with a steel pile cluster. Project costs include installation of the new dolphin, removal of the old wood piles, design, permitting and other associated costs.						Design 30,000 Land/Right-of-Way Construction Management Construction 80,000 Equipment Other Project Total 110,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			110,000		110,000					110,000
Total			110,000		110,000					110,000

Division: Electric					Project Priority: 8		Project Number:		
Project Title: Ketchikan International Airport and Pennock Island Upgrade					Start Date: 01/12 End Date: 12/25		Estimated Project Cost:		
Description: The existing armored submarine electrical cable that serves the airport is nearing the end of its useful life (installed mid-1970s). The armoring has also begun to corrode, leading to the installation of slip-on armoring on its Gravina beach landing. The cable originates behind the Bailey Powerhouse tank farm and runs through the area of the Ketchikan Shipyard, Taquan Air, Carlanna Creek and the Bailey fuel barge delivery point. Dredging in the early 1970s damaged the original KIA cable. Design and specifications have been developed, in conjunction with the State and the Borough, to install a new armored cable beginning at a location near the airport ferry terminal. Preliminary uplands work began in 2020. The submarine cable will be purchased in 2023, along with continued uplands work and material. The new cable is programmed for installation in 2024 as the State's airport ferry terminal project progresses.							Design/License 50,000 Land/Right-of-Way Construction Management Construction 430,000 Equipment 500,000 Other Project Total 980,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappropriated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund	295,000	235,000	125,000	360,000	300,000	25,000			980,000
Total	295,000	235,000	125,000	360,000	300,000	25,000			980,000

Division: Electric					Project Priority: 9		Project Number:			
Project Title: Feeder Protective Relay Upgrades					Start Date: 01/22 End Date: 12/27		Estimated Project Cost:			
Description: Feeder protective relays are at end-of-life and are in need of upgrades. Feeder protective relays provide line protection, fault locating, event analysis, and other system protection. This project will include design, engineering, equipment, installation, and testing for twenty-two (22) relays.							Design 20,000 Land/Right-of-Way Construction Management Construction Equipment 270,000 Other 10,000 Project Total 300,000			
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		50,000	50,000		50,000	50,000	50,000	50,000	50,000	300,000
Total		50,000	50,000		50,000	50,000	50,000	50,000	50,000	300,000

Division: Electric			Project Priority: 10			Project Number:					
Project Title: Battery Systems and Chargers			Start Date: 01/20			Estimated Project Cost:					
Description:			End Date: 12/27								
There are ten battery systems and chargers throughout the KPU Electric system within powerhouses and substations. Eight will be approaching end of life over the next ten (10) years. A battery system and charger failure will compromise system reliability. This project will start systematically replacing these systems. 2023 funding will replace one of these systems.						Design					
						Land/Right-of-Way					
						Construction Management					
						Construction					
						Equipment 369,500					
						Other					
						Project Total 369,500					
Source of Funds		Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
				Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			96,000		76,000	76,000	46,000	50,500	50,500	50,500	369,500

Division: Electric					Project Priority: 11		Project Number:		
Project Title: Beaver Falls Powerhouse Exterior					Start Date: 01/13 End Date: 12/23		Estimated Project Cost:		
Description: The exterior of the Beaver Falls Powerhouse, which was built in 1954, contains asbestos coating that is failing. Signs of water intrusion into the concrete walls and structure are apparent. This project will entail an engineering evaluation of the building structure, an environmental evaluation, creation of plans and specifications for asbestos removal and disposal, concrete/structural repairs, a new coating system and required contractual work.							Design 10,000 Land/Right-of-Way Construction Management Construction 776,070 Equipment Other Project Total 786,070		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund	36,070	750,000		750,000					786,070
Total	36,070	750,000		750,000					786,070

Division: Electric			Project Priority: 12			Project Number:				
Project Title: Whitman Tailrace Modification			Start Date: 01/20 End Date: 12/23			Estimated Project Cost:				
Description: <p>The Whitman Hydroelectric Project operates under a FERC license, which requires monitoring of the tailrace that has shown fish to be stranded during normal operations. Operational adjustments have not been adequate to eliminate fish stranding. In 2019, KPU made modifications to the tailrace channel and continues to monitor it. Additional structural modifications may be necessary, the nature of which are subject to consultation and approval by fisheries management agencies and FERC.</p>						Design 36,291 Land/Right-of-Way Construction Management Construction 200,000 Equipment Other Project Total 236,291				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		36,291		200,000	200,000					236,291
Total		36,291		200,000	200,000					236,291

Division: Electric			Project Priority: 13			Project Number:				
Project Title: Diesel Generation Modernization			Start Date: 01/19			Estimated Project Cost:				
			End Date: 12/23			Design				
Description:						Land/Right-of-Way				
<p>Maintaining reliable diesel generation capacity for times of high-loads, low reservoir levels and hydroelectric and transmission-line outages is extremely important for the integrity of Ketchikan's electrical grid. An architecture and engineering consultant specializing in diesel generation and facilities will be hired to evaluate KPU Electric's existing diesel generation capabilities at Bailey Power Plant and North Pt. Higgins Substation. The evaluation will identify and recommend solutions for existing and future reliability. Items to address include limitations and vulnerabilities of the existing infrastructure; determination of what is needed for existing redundancy; evaluation of future system growth without the immediate ability to add new hydropower or other power sources; and recommendations for solutions and options encompassing additional diesel generation capacity, locations, fuel supplies, air quality permits, conceptual designs and budgetary estimates for detailed design and construction options of those solutions.</p>						Construction Management				
						Construction				
						Equipment				
						Other				180,000
						Project Total				180,000
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		120,000	60,000		60,000					180,000
Total		120,000	60,000		60,000					180,000

Division: Electric		Project Priority: 14			Project Number:				
Project Title: Vehicles & Moving Equipment		Start Date: 01/23 End Date: 12/27			Estimated Project Cost:				
Description:		This project is for the purchase of one (1) used excavator, one (1) new digger/derrick, and one (1) new work truck. In order to maintain an efficient and safe operating fleet, vehicles and equipment need to be replaced based on a regular cycle. The following is a schedule of the vehicles to be purchased and the vehicles to be replaced in 2023.			Design				
<u>Purchase:</u>					Land/Right-of-Way				
1) Mid-Size 20,000lb Rubber Track Excavator - estimated \$100,000					Construction Management				
2) Digger/Derrick Insulated Boom Truck - estimated \$450,000					Equipment				
3) 3/4-Ton Work Truck with Service Body - estimated \$65,000					Other				
4) Propane Forklift - estimated \$50,000					Project Total				
<u>Replaces:</u>									
1) 2007 Kubota U-45 12,000lb Mini-Excavator #183-57									
2) 1998 Simon-Telelect Digger/Derrick #184-97									
3) 2003 Ford F-250 #185-61									
<u>Projections:</u>									
2024 Replace 2003 large bucket truck #185-59 \$450,000									
2025 Replace small work truck(s)/van(s) \$100,000									
2026 Replace 2017 small bucket truck #186-15 \$150,000									
2027 Replace 2014 large bucket truck #186-06 \$350,000									
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro-priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			665,000	665,000	450,000	100,000	150,000	350,000	1,715,000
Total			665,000	665,000	450,000	100,000	150,000	350,000	1,715,000

Division: Electric		Project Priority: 15			Project Number:				
Project Title: Operating Equipment		Start Date: 01/23			Estimated Project Cost:				
Description:		End Date: 12/27			Design				
This capital account provides for the purchase of new or replacement equipment used for the operation and maintenance of electrical service.					Land/Right-of-Way				
1) Substation and Powerhouse Electronic Meters. Relays and Control Equipment		\$ 25,000			Construction Management				
2) Recording Equipment		\$ 10,000			Construction				
3) New Test/Indication/Recording Equipment, Repair & Recalibration		\$ 30,000			Equipment				
4) Meters, Probes, Hand Tools, Radios		\$ 25,000			Other				
5) Customer Current & Potential Transformers		\$ 50,000			Project Total				
6) Generation and Powerhouse Spare Parts		\$ 65,000							
7) Spare Powerhouse Generator Breakers		\$ 15,000							
8) Control Equipment Upgrades		\$ 25,000							
9) SCADA Critical Parts		\$ 10,000							
10) Radio Replacement/Parts		\$ 10,000							
11) Flail Mower for Kubota		\$ 11,000							
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			276,000	276,000	300,000	300,000	300,000	300,000	1,476,000
Total			276,000	276,000	300,000	300,000	300,000	300,000	1,476,000

Division: Electric					Project Priority: 16		Project Number:		
Project Title: Bailey Exhaust Stack Re-Coating					Start Date: 01/23 End Date: 12/24		Estimated Project Cost:		
Description: This project is to sandblast and paint all four Bailey diesel generator exhaust stacks with a proper high-heat anti-corrosion coating. These efforts will mitigate further corrosion that may otherwise lead to eventual high cost repairs and/or replacement. Work in development of detailed scope, specifications, and a more refined estimate to undertake the work in 2023 and 2024.							Design/License 25,000 Land/Right-of-Way Construction Management Construction 65,000 Equipment Other Project Total 90,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			55,000	55,000	35,000				90,000
Total			55,000	55,000	35,000				90,000

Division: Electric			Project Priority: 17			Project Number:				
Project Title: Bailey Unit No. 1 Rehabilitation			Start Date: 01/19 End Date: 12/27			Estimated Project Cost:				
Description: Bailey Generator No. 1 (BAG1) was built in the 1970s. During operation in October 2018, BAG1 suffered a main bearing failure, which caused extensive damage to the powertrain. This project will fund the rehabilitation of the turbocharger, fuel delivery system and engine components including injectors, main journals, crankshaft, connecting rods, pistons, bearings and related components. The estimate assumes onsite work. The project may require additional funding if overhaul or repair of major components is not feasible or possible.						Design Land/Right-of-Way Construction Management Construction 325,000 Equipment 540,835 Other Project Total 865,835				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		15,835							850,000	865,835
Total		15,835							850,000	865,835

Division: Electric					Project Priority: 18		Project Number:		
Project Title: Transformer Purchase					Start Date: 1/23 End Date: 12/27		Estimated Project Cost:		
Description: This capital account funds the routine and preventative replacement and upgrades of both pole mounted and pad mounted transformers throughout the system. Projected increases are anticipated due to the expected rise in the price of metals.							Design Land/Right-of-Way Construction Management Construction Equipment 830,000 Other Project Total 830,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			100,000	100,000	155,000	175,000	175,000	175,000	780,000
Total			100,000	100,000	155,000	175,000	175,000	175,000	780,000

Division: Electric					Project Priority: 19		Project Number:			
Project Title: AMI, Meters and Meter Replacement Parts					Start Date: 01/23 End Date: 12/27		Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment 810,000 Other Project Total 810,000			
Description: The division continues phasing in the AMI meters to make available advanced metering functions, including automated billing. This project funds replacement of the division's metering equipment and AMI software & hardware. This project also funds validating metering system accuracy and replacement of residential and commercial meters that are on a 20 year replacement schedule (or 5% per year).										
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund				200,000	200,000	185,000	125,000	125,000	125,000	760,000
Total				200,000	200,000	185,000	125,000	125,000	125,000	760,000

Division: Electric					Project Priority: 21		Project Number:		
Project Title: Reimbursable Projects					Start Date: 01/23 End Date: 12/27		Estimated Project Cost:		
Description: This capital account represents funds for materials for work that the division will be called upon to perform at the request of outside agencies and customers. Examples of reimbursable projects are new line extensions and damage repairs to the electrical system resulting from accidents, negligence and vandalism. The division's expectation is that such work will be reimbursed 100%. This CIP provides a means for warehouse inventory and transformer accounts to be replenished due to customer projects.							Design Land/Right-of-Way Construction Management Construction Equipment 125,000 Other Project Total 125,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			25,000	25,000	25,000	25,000	25,000	25,000	125,000
Total			25,000	25,000	25,000	25,000	25,000	25,000	125,000

Division: Electric					Project Priority: 22		Project Number:		
Project Title: Bailey Generator Radiator Replacement					Start Date: 1/23 End Date: 12/24		Estimated Project Cost:		
Description: The exterior radiators for Bailey Generator No. 3 (BAG3) and No. 4 (BAG4) continually develop leaks in the core, requiring cutting and removing parts of the radiator system. Increased generator usage and subsequent increased maintenance of the cooling system may result in the eventual need for complete replacement/upgrade of the radiators and cooling systems. It may be possible to design a more cost effective solution in lieu of complete replacement. 2023 funding allows for inspections, review of replacement options, and development of replacement specifications (if necessary).							Design/License 40,000 Land/Right-of-Way Construction Management Construction 60,000 Equipment 240,000 Other Project Total 340,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			40,000	40,000	300,000				340,000
Total			40,000	40,000	300,000				340,000

Division: Electric					Project Priority: 23		Project Number:		
Project Title: Beaver Falls Governor Upgrade					Start Date: 01/25 End Date: 12/25		Estimated Project Cost:		
Description: KPU Electric's hydro systems lack provision for isochronous operation (precise frequency control) if islanded, as sometimes occurs during outages and restoration. This proposed upgrade would provide SCADA selection for isoc/droop governor operation for Beaver Falls Nos. 3 & 4.							Design 50,000 Land/Right-of-Way Construction Management Construction Equipment 175,000 Other 25,000 Project Total 250,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund						250,000			250,000
Total						250,000			250,000

Division: Electric			Project Priority: 24			Project Number:				
Project Title: Silvis Shaft & Turbine Overhaul			Start Date: 01/25 End Date: 12/25			Estimated Project Cost:				
Description: The original turbine has had numerous repairs over its lifecycle; the seal rings are out-of-tolerance, the shaft bearing surfaces require machining, the wicket gate assembly is out-of-tolerance and other major components require upgrades. This work does not include the major electrical components.						Design 50,000 Land/Right-of-Way Construction Management Construction Equipment 650,000 Other 50,000 Project Total 750,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund							750,000			750,000
Total							750,000			750,000

Division: Electric					Project Priority: 25		Project Number:			
Project Title: Ketchikan Lakes Project Relicensing					Start Date: 01/24 End Date: 12/30		Estimated Project Cost:			
Description: <p>The Ketchikan Lakes Hydroelectric Project is licensed through the Federal Energy Regulatory Commission (FERC) for a term of 30 years. KPU's current license expires in 2030. To renew its FERC license, KPU must begin the process in 2024 with development of a Preliminary Application Document (PAD), and file Notice of Intent (NOI) in 2025. Following NEPA and tribal consultations, and completion of studies, a final license application is due in 2028. This process will require professional services for FERC regulatory work, studies and surveys. Relicensing costs are highly variable and are dependent upon issues that arise during the consultation process.</p>							Design 1,100,000 Land/Right-of-Way Construction Management Construction Equipment Other 100,000 Project Total 1,200,000			
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund						300,000	300,000	300,000	300,000	1,200,000
Total						300,000	300,000	300,000	300,000	1,200,000

Division: Electric			Project Priority: 26			Project Number:				
Project Title: 34.5 kV Breaker and Relay Spares			Start Date: 01/25 End Date: 12/25			Estimated Project Cost:				
Description: 34.5kV (38kV) Recloser with control cables and controller are used in the transmission system and substation. These are critical components for system sectionalizing and isolation.						Design 5,000 Land/Right-of-Way Construction Management Construction Equipment 100,000 Other Project Total 105,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund							105,000			105,000
Total							105,000			105,000

Division: Electric					Project Priority: 27		Project Number:		
Project Title: Bailey Fuel Tank Painting					Start Date: 1/25 End Date: 12/25		Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment Other Project Total		
Description: Bailey 210,000 gallon fuel tank pressure wash, prep and painting. The tank is approximately 32 feet tall and 30' in diameter.							100,000 100,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund					100,000				100,000
Total					100,000				100,000

Division: Electric					Project Priority: 28		Project Number:		
Project Title: Vehicle Lift Replacement					Start Date: 1/23 End Date: 12/23		Estimated Project Cost:		
Description: The existing stationary 4-post vehicle lift has a capacity of 12,000 pounds, while many of the 1-ton bucket trucks weigh 18,000 pounds. The intent is to purchase a set of four (4) mobile wheel lifts with a capacity of at least 20,000 pounds.							Design Land/Right-of-Way Construction Management Construction Equipment 80,000 Other Project Total 80,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			80,000	80,000					80,000
Total			80,000	80,000					80,000

Division: Electric			Project Priority: 29			Project Number:				
Project Title: Digital Radio System Upgrades			Start Date: 01/23 End Date: 12/23			Estimated Project Cost:				
Description: KPU Electric utilizes an island-wide radio system; it is an important safety tool when maintaining utility equipment. This project will update the existing Motorola radio system. The existing system has coverage issues and uses multiple channels for communication. The upgraded system will improve island-wide coverage and migrate to a single use channel.						Design 15,000 Land/Right-of-Way Construction Management Construction Equipment 100,000 Other 10,000 Project Total 125,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund				125,000	125,000					125,000
Total				125,000	125,000					125,000

Division: Electric		Project Priority: 30		Project Number:					
Project Title: Beaver Falls Switch Gear Replacement		Start Date: 01/17		Estimated Project Cost:					
Description: The Beaver Falls powerhouse switchgear needs replacement and is an operating risk to the power plant. The existing equipment is 1940s vintage and beyond its reliable life. It has been identified as containing asbestos materials, which will need to be abated during the replacement of the equipment. This work requires the replacement/upgrade of the three (3) generator excitation systems, controls, breakers, protection relays, electrical panels, DC electrical equipment and modification of the control room. This is a major project requiring an established scope of work and detailed work schedule. This project will be completed in phases over multiple years and requires engineering services, planning, plans and specifications, the procurement of equipment, the demolition/installation of equipment and commissioning.		End Date: 12/23		Design/License 90,000					
				Land/Right-of-Way 10,000					
				Construction Management 207,150					
				Construction 1,000,000					
				Equipment 140,000					
				Project Total 1,447,150					
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund	105,000	1,372,150		1,372,150					1,477,150
Total	105,000	1,372,150		1,372,150					1,477,150

Division: Electric			Project Priority: 31			Project Number:				
Project Title: Silvis Tunnel Valve Replacement			Start Date: 01/25 End Date: 12/26			Estimated Project Cost:				
Description: The Silvis tunnel valve leaks badly and is no longer capable of shutting off water to the penstock and Silvis Powerhouse. This has implications for project safety and the ability to maintain the plant. Given the location of the valve in a tunnel at the top of a steep slope, this will be a challenging project.						Design 40,000 Land/Right-of-Way Construction Management Construction 400,000 Equipment Other Project Total 440,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds							40,000	400,000		440,000
Total							40,000	400,000		440,000

Division: Electric					Project Priority: 32		Project Number:			
Project Title: Penstock Inspections					Start Date: 01/24 End Date: 12/24		Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment Other Project Total			
Description: Comprehensive exterior and interior inspections of the c. 1947 – 1957 Ketchikan Lakes and Beaver Falls steel penstocks.							100,000 100,000			
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds						100,000				100,000
Total						100,000				100,000

Division: Electric			Project Priority: 33			Project Number:				
Project Title: Whitman Dam Crack Repair			Start Date: 01/23 End Date: 12/24			Estimated Project Cost:				
Description: Whitman Dam has several significant leaks, cracks and spalled areas, which, though not an immediate dam safety concern, need to be repaired to prevent deterioration over time. Repairs should be designed by a Professional Engineer and submitted to FERC prior to implementation.						Design 30,000 Land/Right-of-Way Construction Management Construction 50,000 Equipment Other Project Total 80,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds				30,000	30,000	50,000				80,000
Total				30,000	30,000	50,000				80,000

Division: Electric			Project Priority: 34			Project Number:				
Project Title: Whitman Incubation Pipe Flow Meter			Start Date: 01/23 End Date: 12/23			Estimated Project Cost:				
Description: The FERC license for the Whitman Lake Hydroelectric project requires installation of a flow meter to measure the quantity of water delivered to the SSRAA fish hatchery. This project includes purchase and installation of the flow meter, excavation and earthwork, SCADA connection, coordination with the hatchery.						Design 10,000 Land/Right-of-Way Construction Management Construction Equipment 40,000 Other Project Total 50,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds				50,000	50,000					50,000
Total				50,000	50,000					50,000

Division: Electric					Project Priority: 35		Project Number:			
Project Title: Bailey Title V Renewal					Start Date: 01/24 End Date: 12/24		Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment Other Project Total			
Description: Bailey Powerhouse's air quality permit through the Alaska Department of Environmental Conservation is due for renewal. Failure to renew the permit will result in KPU no longer being able to operate the emergency diesel generators.							30,000 30,000			
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds						30,000				30,000
Total						30,000				30,000

Division: Electric			Project Priority: 36			Project Number:				
Project Title: Transmission & Distribution Line Maintenance			Start Date: 01/23 End Date: 12/27			Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction 1,500,000 Equipment Other Project Total 1,500,000				
Description: The Electric Division maintains over 4,600 utility poles throughout the transmission and distribution (T&D) system. This project provides a means for engineering assessments of existing poles, engineering and design work for replacement of poles, and if needed to augment KPU crews to hire a contract linecrew to conduct designed pole replacement projects.										
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds				400,000	400,000		500,000		500,000	1,400,000
Total				400,000	400,000		500,000		500,000	1,400,000

Division: Electric					Project Priority: 37		Project Number:			
Project Title: Port West Feeder Reconfiguration & Site Modification					Start Date: 01/23 End Date: 12/23		Estimated Project Cost:			
Description: The Port West Substation reached end-of-life and has been partially removed from service. The substation will be reconfigured, loads sectionalized, and added to Bethe Substation as a new feeder, feeder No. 3.							Design 10,000 Land/Right-of-Way Construction Management Construction 20,000 Equipment 65,000 Other 5,000 Project Total 100,000			
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds				100,000	100,000					100,000
Total				100,000	100,000					100,000

Division: Electric			Project Priority: 38			Project Number:				
Project Title: System Sectionalizers			Start Date: 01/23 End Date: 12/25			Estimated Project Cost:				
Description: This project provides funding for the acquisition of single-phase and three-phase primary reclosers, ancillary equipment, and associated engineering studies. Installing reclosers throughout the system is a step toward modernizing KPU Electric's distribution system, allowing for reduced outages, greater restoration flexibility, more accurate system data.						Design 30,000 Land/Right-of-Way Construction Management Construction Equipment 260,000 Other 10,000 Project Total 300,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds				100,000	100,000	100,000	100,000			300,000
Total				100,000	100,000	100,000	100,000			300,000

Division: Electric			Project Priority: 39			Project Number:				
Project Title: Silvis Road Repair			Start Date: 01/23 End Date: 12/23			Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction 75,000 Equipment Other Project Total 75,000				
Description: Implement an engineered solution to a drainage and erosion issue on the Silvis Access Road, along Lower Silvis Lake, that otherwise could limit or completely restrict vehicle access to Silvis Powerhouse. An engineer was hired in 2022 to develop plans.										
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Funds				75,000	75,000					75,000
Total				75,000	75,000					75,000

Ketchikan Public Utilities 2023 - 2027 Capital Improvement Program Division: Telecommunications											
Project Title	Priority	Prior Years	Adopted 2023			Projected Requirements				Total Project	
			Reappro- priated	New Funding	Total	2024	2025	2026	2027		
REGULATED											
Normal Growth and Repair - Buildings	1		50,000	50,000	50,000	50,000	50,000	50,000	50,000	250,000	
Normal Growth and Repair - CO Switching	2			700,000	700,000	100,000	75,000	75,000	75,000	1,025,000	
Normal Growth and Repair - Copper Cable	3			25,000	25,000	25,000	25,000	25,000	25,000	125,000	
Normal Growth and Repair - Fiber Cable	4			100,000	150,000	100,000	100,000	100,000	100,000	550,000	
Normal Growth and Repair - CO Transmission	5			150,000	150,000	200,000	200,000	250,000	300,000	1,100,000	
Normal Growth and Repair - Expansion	6			25,000	25,000	30,000	35,000	35,000	35,000	160,000	
Normal Growth and Repair - Provisioning	7			10,000	10,000	10,000	150,000	50,000	50,000	270,000	
Fiber to the Home	8			212,000	250,000	462,000	100,000	100,000	100,000	100,000	862,000
Remote Cabinets for Advanced Services	9			50,000	50,000	50,000	50,000	50,000	75,000	275,000	
Core Network Upgrade	10			100,000	100,000	1,000,000	750,000	750,000	250,000	2,850,000	
Server Environment	11	20,000	400,000	400,000	100,000	100,000	100,000	200,000	900,000		
Multi-Dwelling Unit Projects	12		220,000	240,000	200,000	200,000	200,000	200,000	1,040,000		
Operating Equipment	13		100,000	100,000	50,000	50,000	50,000	100,000	350,000		
PC Hardware & Software	14		60,000	60,000	60,000	60,000	60,000	65,000	305,000		
Power Expansion/Reclamation	15		100,000	100,000	50,000	50,000	50,000	50,000	300,000		
Visual Mapping Software	16		10,000	10,000	50,000	25,000	25,000	25,000	135,000		
Network Monitoring	17		100,000	100,000	100,000	100,000	100,000	100,000	500,000		
Vehicle Acquisition	18		350,000	350,000	100,000	50,000	50,000	50,000	600,000		
Security	19		223,511	100,000	100,000	100,000	100,000	150,000	300,000	973,511	
NON-REGULATED											
Headend Expansion	20			25,000	25,000	15,000	15,000	25,000	25,000	105,000	
Video Set Top Boxes	21			25,000	25,000	25,000	25,000			75,000	
4G/LTE	22			300,000	300,000	100,000	100,000	100,000	100,000	700,000	
Microwave	23					20,000	20,000			40,000	
Hosted	24			250,000	250,000	150,000	100,000	100,000	100,000	700,000	
WiFi	25			50,000	50,000	50,000	50,000	65,000	75,000	290,000	
Internet Expansion	26			50,000	50,000	100,000	200,000	200,000	600,000	1,150,000	
KetchCan1 Subsea Cable Repair	27			676,500	676,500					676,500	
Total		223,511	958,500	3,600,000	4,558,500	2,935,000	2,780,000	2,760,000	3,050,000	16,307,011	
Source of Funds		Prior Years	Adopted 2023			Projected Requirements				Total Project	
			Reappro- priated	New Funding	Total	2024	2025	2026	2027		
Revenue Generating Fund		223,511	958,500	3,600,000	4,558,500	2,935,000	2,780,000	2,760,000	3,050,000	16,307,011	
Total		223,511	958,500	3,600,000	4,558,500	2,935,000	2,780,000	2,760,000	3,050,000	16,307,011	

[illegible]

Division: Telecommunications		Project Priority: 2			Project Number:				
Project Title: Normal Growth and Repair - Central Office Switching		Start Date: 01/23 End Date: 12/27			Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment 1,025,000 Other Project Total 1,025,000				
Description: This capital account provides funding for reliability upgrades and additional capacity equipment required for the division's telecommunications switching and voice over Internet protocol network. Included are funds to enhance least cost routing and fraud detection, as well as to ensure that features work with all residential lines. Additionally, this budget item purchases one new softswitch to replace the end-of-life T7000 class 5 switch in 2023 to work in tandem with the Broadworks feature softswitch. This also includes funding to replace the ACME session border controllers with newer hardware and software to facilitate the protection of all of the division's ip voice platforms.									
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			700,000	700,000	100,000	75,000	75,000	75,000	1,025,000
								</	

[illegible][illegible]

Division: Telecommunications					Project Priority: 4		Project Number:		
Project Title: Normal Growth and Repair - Fiber Cable					Start Date: 01/23 End Date: 12/27		Estimated Project Cost:		
Description: This capital account provides funding for additional fiber optic network for business data circuits including smaller fiber projects necessary for the efficient operation of the Utility. This capital account also includes materials and labor for continued installation of fiber service drops for customers who order high bandwidth services. As circuits reach 1Gbps and beyond to 10Gbps copper circuits will no longer be a feasible option for internet customers.							Design 11,000 Land/Right-of-Way Construction Management Construction 302,500 Equipment 236,500 Other Project Total 550,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		50,000	100,000	150,000	100,000	100,000	100,000	100,000	550,000
Total		50,000	100,000	150,000	100,000	100,000	100,000	100,000	550,000

Division: Telecommunications		Project Priority: 5		Project Number:					
Project Title: Normal Growth and Repair - CO Transmission		Start Date: 01/23 End Date: 12/27		Estimated Project Cost:					
Description: This capital account provides funding for the purchase and installation of additional intelligent Network Interface Devices (NIDS) and Optical Network Terminals (ONTs) required to deliver service to customers served via fiber optic cable; internal network fiber ports; network transmission electronics necessary to serve business customers with new private line services including digital data service, optical wide area network, T1s, etc.; finishing the migration off the division's legacy platforms, which are no longer supported, to the standard Adtran platforms for both Optical and VDSL services. In 2025 the Total Access Adtran platform will likely be end-of-life, so KPU will need to implement a new FTTH platform. Furthermore this account includes funding to maintain the cooling and power necessary to keep this network equipment running.				Design Land/Right-of-Way Construction Management Construction 88,000 Equipment 1,012,000 Other Project Total 1,100,000					
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			150,000	150,000	200,000	200,000	250,000	300,000	1,100,000
Total			150,000	150,000	200,000	200,000	250,000	300,000	1,100,000

Division: Telecommunications Project Title: Normal Growth and Repair - Expansion Description: This capital account provides funding to upgrade, maintain and expand the division's "off island" connections, ensuring reliable services are provided to underserved, outlying areas. This project utilizes both wireless and fiber technologies to provide services to remote areas.					Project Priority: 6		Project Number:		
					Start Date: 01/23 End Date: 12/27		Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction 32,000 Equipment 128,000 Other Project Total 160,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			25,000	25,000	30,000	35,000	35,000	35,000	160,000
Total			25,000	25,000	30,000	35,000	35,000	35,000	160,000

Division: Telecommunications		Project Priority: 7		Project Number:	
Project Title: Normal Growth and Repair - Provisioning		Start Date: 01/23 End Date: 12/27		Estimated Project Cost:	
Description: This capital account provides funding for the introduction, upgrade, automation and integration of systems necessary to promote the enhancement of the customer service and support experience. In 2025, efforts will begin to attempt to replace the division's trouble ticketing software with a new up-to-date system.				Design 72,900 Land/Right-of-Way Construction Management Software 143,100 Equipment 29,700 Other 24,300 Project Total 270,000	

Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappropriated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			10,000	10,000	10,000	150,000	50,000	50,000	270,000
Total			10,000	10,000	10,000	150,000	50,000	50,000	270,000

Division: Telecommunications					Project Priority: 8		Project Number:		
Project Title: Fiber to the Home					Start Date: 01/23 End Date: 12/27		Estimated Project Cost:		
Description: <p>This capital account provides funding for contract labor to deploy fiber cable and terminals necessary to bring fiber to homes, businesses and multi-dwelling units throughout Ketchikan. Additionally, this project will allow the division to look into providing fiber into outlying, underserved areas.</p> <p>Engineering is preparing a large fiber overlay project for Ward Cove that will also address fiber shortages in the D1 Loop Road and Sunset Drive areas. Funding from 2022 will be reappropriated in order to provide a sufficient budget to complete this project in 2023</p>							Design 21,550 Land/Right-of-Way Construction Management Construction 323,250 Equipment 517,200 Other Project Total 862,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		212,000	250,000	462,000	100,000	100,000	100,000	100,000	862,000
Total		212,000	250,000	462,000	100,000	100,000	100,000	100,000	862,000

Division: Telecommunications					Project Priority: 9		Project Number:		
Project Title: Remote Cabinets for Advanced Services					Start Date: 01/23 End Date: 12/27		Estimated Project Cost:		
Description: This capital account provides funding for the maintenance and/or replacement of remote switching cabinets (RSC). This project also equips RSC's with remote monitoring sensors, ensuring technicians can remotely detect proper operation prior to failure. This account also funds the out-of-band network back to the Central Office. Over the next few years several remote cabinets need to be replaced.							Design 6,875 Land/Right-of-Way Construction Management Construction 20,625 Equipment 247,500 Other Project Total 275,000		
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			50,000	50,000	50,000	50,000	50,000	75,000	275,000
Total			50,000	50,000	50,000	50,000	50,000	75,000	275,000

Division: Telecommunications					Project Priority: 14		Project Number:				
Project Title: PC Hardware and Software					Start Date: 01/23 End Date: 12/27		Estimated Project Cost:				
Description: This capital account funds replacement of outdated computers and purchases of new pc hardware for Private Branch Exchange (PBX, business phone), Outside Plant, Central Office Network Technicians, and administrative staff. In order to remain competitive KPU will be rolling out symmetrical 2.5Gbps and 5Gbps and managed wifi 6E services which provide more than 1Gbps over wireless. And KPU will resell WebEx services in 2023 which will require our PBX staff to support and maintain both windows and apple ecosystems fluently.							Design Land/Right-of-Way Construction Management Construction Equipment 305,000 Other Project Total 305,000				
Source of Funds			Prior Years	Adopted 2023			Projected Requirements				Total Project
				Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund					60,000	60,000	60,000	60,000	60,000	65,000	305,000
Total					60,000	60,000	60,000	60,000	60,000	65,000	305,000

Division: Telecommunications		Project Priority: 15			Project Number:				
Project Title: Power Expansion/Reclamation		Start Date: 01/23 End Date: 12/27			Estimated Project Cost:				
Description: This capital account provides funding for the expansion of power facilities via new AC/DC filtering or reclamation of existing usage via more efficient equipment. KPU's North Point Higgins remote generator needs to be replaced in 2023 and battery upgrades at the Mountain Point remote where our subsea fiber terminates locally.					Design 7,500 Land/Right-of-Way Construction Management Construction 7,500 Equipment 285,000 Other Project Total 300,000				
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappropriated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			100,000	100,000	50,000	50,000	50,000	50,000	300,000
Total			100,000	100,000	50,000	50,000	50,000	50,000	300,000

Division: Telecommunications		Project Priority: 16			Project Number:				
Project Title: Visual Mapping Software		Start Date: 01/23 End Date: 12/27			Estimated Project Cost:				
Description: This capital account provides funding to enhance the division's documentation and ability to automate and distribute inside and outside plant design at the physical and logical levels. Future funding procures enhancements and labor to ensure the system is properly audited and meeting the needs of division customers. 2024 shows additional effort to update and enhance our logical diagrams once the physical layer is audited completed in 2023.					Design Land/Right-of-Way Construction Management Construction 16,200 Equipment 49,950 Other 68,850 Project Total 135,000				
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			10,000	10,000	50,000	25,000	25,000	25,000	135,000

[illegible][illegible]

Division: Telecommunications		Project Priority: 18		Project Number:	
Project Title: Vehicle Acquisition		Start Date: 01/23 End Date: 12/27		Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment 600,000 Other Project Total 600,000	
Description: This capital account funds replacement of aging vehicles to prevent excessive maintenance costs and breakdowns affecting KPU Telecom's ability to meet customer demands. Several of the division's bucket trucks are aging and need to be replaced over the next few years. One bucket truck experienced an engine failure and will be replaced in 2023. Additionally several service vehicles are becoming unreliable and need to be replaced.					

Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappropriated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			350,000	350,000	100,000	50,000	50,000	50,000	600,000
Total			350,000	350,000	100,000	50,000	50,000	50,000	600,000

Division: Telecommunications			Project Priority: 19			Project Number:				
Project Title: Security			Start Date: 01/22 End Date: 12/27			Estimated Project Cost:				
Description: <p>This capital account provides funding for the development of efforts to secure the network from internal and external threats in detecting and preventing the division and its customers from unauthorized intrusions or denial of service. Detecting and responding to cyberattacks in real-time requires a specialized set of analytical software to protect the network. Security is increasingly an issue in the network world and the division's costs will increase to protect the network when the division moves to a 100G backbone.</p>						Design 107,086 Land/Right-of-Way Construction Management Construction Equipment 866,425 Other Project Total 973,511				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		223,511		100,000	100,000	100,000	100,000	150,000	300,000	973,511
Total		223,511		100,000	100,000	100,000	100,000	150,000	300,000	973,511

Division: Telecommunications		Project Priority: 22		Project Number:	
Project Title: 4G/LTE		Start Date: 01/23 End Date: 12/27		Estimated Project Cost: Design 7,000 Land/Right-of-Way Construction Management Construction 105,000 Equipment 588,000 Other Project Total 700,000	
Description: This capital account provides continued funding to construct and maintain KPU's 4G/LTE Mobile network. The future of the division's 4G/LTE network is unclear but future estimates include the replacement of existing nodes based upon a potential 5G future. A new capacity cell site downtown and replacement of end of life battery backup systems are goals for 2023. Over the next two years several sites require radio replacements as well.					

Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- riated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			300,000	300,000	100,000	100,000	100,000	100,000	700,000
Total			300,000	300,000	100,000	100,000	100,000	100,000	700,000

Division: Telecommunications		Project Priority: 23			Project Number:				
Project Title: Microwave		Start Date: 01/27 End Date: 12/27			Estimated Project Cost:				
Description: This capital account provides continued funding to construct, expand and maintain KPU's microwave system to Canada. As the division enhances fiber redundancy off-island the NEC microwave system will likely be retired in 2026 or 2027.					Design 400 Land/Right-of-Way Construction Management Construction 6,000 Equipment 33,600 Other Project Total 40,000				
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- riated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund					20,000	20,000			40,000
Total					20,000	20,000			40,000

Division: Telecommunications					Project Priority: 24		Project Number:				
Project Title: Hosted					Start Date: 01/23		Estimated Project Cost:				
Description: This capital account provides funding to upgrade, maintain and expand business offerings on the division's Hosted PBX Platforms. In 2023, there will be an effort to acquire a separate redundant broadworks switch that can also serve as a lab to test new features and Webex software. Furthermore, an effort will be made to replace aging Cisco 10/100 switches that are serving a large number of our hosted ip customers.					End Date: 12/27		Lab System 105,000				
							Jazz 105,000				
							Training 161,000				
							Licenses 224,000				
							Integration 105,000				
							Other				
							Project Total 700,000				
Source of Funds			Prior Years	Adopted 2023			Projected Requirements				Total Project
				Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund					250,000	250,000	150,000	100,000	100,000	100,000	700,000

Division: Telecommunications		Project Priority: 25		Project Number:					
Project Title: WiFi		Start Date: 01/23		Estimated Project Cost:					
Description: This capital account funds the ability for KPU to deploy WiFi in strategic locations in town; to support free and paid WiFi services for local and transient customers. This account also funds efforts to make WiFi available to residential customers who are difficult to serve using wired connectivity. WiFi is a fast growing technology and to keep pace with the industry the division will need to respond with an increase in KPU's investment in these products to provide the best service including managed WiFi.		End Date: 12/27		Design 7,250					
				Land/Right-of-Way					
				Construction Management					
				Construction 58,000					
				Equipment 224,750					
				Other					
				Project Total 290,000					
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			50,000	50,000	50,000	50,000	65,000	75,000	290,000
Total			50,000	50,000	50,000	50,000	65,000	75,000	290,000

Division: Telecommunications		Project Priority: 27			Project Number:				
Project Title: KetchCan1 Subsea Cable Repair		Start Date: 01/23 End Date: 12/27			Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment Other Project Total				
Description: This capital account provides funding for the emergency repair of the KetchCan1 Subsea Cable should the cable become damaged. The North America Zone Maintenance Authority Agreement was approved by the City Council in 2022 and authorizes this annual appropriation. Funds will be used only as needed during an emergency; unexpended funds will be reappropriated each budget year.					676,500 676,500				
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project
		Reappropriated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund - Growth		676,500		676,500					676,500
Total		676,500		676,500					676,500

Ketchikan Public Utilities 2023 - 2027 Capital Improvement Program										
Division: Water										
Project Title	Priority	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Filtration Facility - Preliminary Preparation Tasks	1	562,015	35,319	164,681	200,000	200,000				962,015
Water Meters - Business & Commercial Customers	2	398,480	641,136	210,384	851,520	250,000				1,500,000
Pump Station Switchgear Improvements	3	30,250		27,500	27,500	28,500		30,000		116,250
Utility Vehicles	4		75,000		75,000		160,000		112,000	347,000
West Fairy Chasm Replacement	5		15,000	20,000	35,000				550,600	585,600
Skyline Water Main Replacement	6		10,000	20,000	30,000				360,800	390,800
Valve Boxes - Repair of Surrounding Pavement	7		50,000	60,000	110,000	50,000	50,000	50,000	50,000	310,000
Water Distribution Grid Improvements	8			30,000	30,000	30,000	30,000	30,000	30,000	150,000
Additional Projects	9			40,000	40,000	40,000	40,000	40,000	40,000	200,000
Water Service Upgrade Program	10			15,000	15,000	15,000	15,000	15,000	15,000	75,000
Backflow Prevention Program	11			15,000	15,000	15,000	15,000	15,000	15,000	75,000
SCADA PLC Controllers	12	256,500		340,000	340,000	345,000				941,500
UV Facility - UPS Battery Replacement	13			45,000	45,000					45,000
Replace ClorTec Generating Cells	14			60,000	60,000	61,500	42,000	43,000		206,500
Peterson Street Water Main Rebuild	15			374,000	374,000					374,000
Woodland Ave Utility Improvements	16						40,000		430,000	470,000
Harris Street Utility Improvements	17						35,000		2,000,000	2,035,000
Replace Tongass Ave/ Water Street Suspended Water Main	18					245,000		1,230,000		1,475,000
Highlands Reservoir Property Acquisition	19					300,000				300,000
Second Ave Main Replacement	20					60,000			1,300,800	1,360,800
Evergreen Ave Main Replacement	21					25,000			440,000	465,000
Denali Ave Main Replacement	22					30,000			512,000	542,000
Total		1,247,245	826,455	1,421,565	2,248,020	1,695,000	427,000	1,453,000	5,856,200	12,926,465
Source of Funds	Prior Years	Adopted 2023			Projected Requirements				Total Project	
		Reappro- priated	New Funding	Total	2024	2025	2026	2027		
Revenue Generating Fund	848,765	185,319	1,211,181	1,396,500	1,395,000	427,000	223,000	262,000	4,552,265	
Revenue Bonds - ADWF Loan	398,480	641,136	210,384	851,520					1,250,000	
Proposed ADWF Loan					150,000		615,000	2,797,100	3,562,100	
Proposed State 50% Municipal Assistance Funding					150,000		615,000	2,797,100	3,562,100	
	1,247,245	826,455	1,421,565	2,248,020	1,695,000	427,000	1,453,000	5,856,200	12,926,465	

Division: Water			Project Priority: 1			Project Number: 5400 2019 007				
Project Title: Filtration Facility - Preliminary Preparation Tasks			Start Date: 01/20 End Date: 12/24			Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment Other Project Total				
Description: The Division has engaged Jacobs Engineering for professional services supporting Ketchikan attaining a Limited Alternative to Filtration (LAF). The Tasks include preparations of a Watershed Control Program, a Source Water Quality Study, a Water Treatment Report, and Provisions for Public Involvement in the COBC as set out by the EPA, and a report demonstrating how Ketchikan's present disinfection process already exceeds the requirements of national drinking water regulations. The fifth task, Consolidated Ownership Status of the Watershed, is a legal matter and best handled by the municipal attorney with support as needed provided by Perkins Coie, a legal firm who are already familiar with the consolidated property ownership that has been questioned earlier by the EPA. All of the COBC Action Items' studies and reports have been completed and delivered to ADEC well before the COBC specified date of May 31, 2022. ADEC personnel have completed their reviews of each of these Action Items and updates incorporating their comments have been made. The next step will be ADEC's transmittal of these documents to the EPA Region 10 Administrator for the EPA's review. The EPA will undoubtedly have further questions during their individual reviews or requests for supplementary information about these Action Item submittals. This will likely occur over an extended amount of time, perhaps another year or more.						962,015 962,015				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		562,015	35,319	164,681	200,000	200,000				962,015
Total		562,015	35,319	164,681	200,000	200,000				962,015

Division: Water					Project Priority: 2		Project Number: Comb 2018 001							
Project Title: Water Meters - Business & Commercial Customers					Start Date: 01/18 End Date: 12/24		Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction 1,250,000 Equipment Other 250,000 Project Total 1,500,000							
Description: As it stands now, achieving the original goal of having all of the remaining approximately 225 unmetered businesses, commercial buildings, and large residential apartment complexes fully metered before the end of 2022 is simply no longer feasible and as a result, completion of this project is now very likely delayed into late 2023. Progress has been at a standstill during 2022 as the continuing coronavirus pandemic has severely affected material deliveries for both water meters as well as the radio-frequency nodes that allow them to electronically communicate and transmit information to KPU's electric meters. The promised delivery date of KPU's October 2020 order of additional nodes continues to slip drastically with the vendor's latest estimate for shipment now December 2022. Consequently, the next water meter installation contract cannot be issued until an adequate supply of nodes has finally arrived and installed to confirm that each new water meter is fully functional. In addition, before this entire project becomes fully operational in 2024, the 2016 Water/ Wastewater Rate Study will need to be updated or a new study commissioned as well as amendments made to the Ketchikan Municipal Code.														
Source of Funds		Prior Years	Adopted 2023			Projected Requirements				Total Project				
			Reappro- priated	New Funding	Total	2024	2025	2026	2027					
Revenue Generating Fund Revenue Bonds - ADWF Loan		398,480	641,136	210,384	851,520	250,000				250,000 1,250,000				
Total		398,480	641,136	210,384	851,520	250,000				1,500,000				

Division: Water			Project Priority: 3			Project Number:				
Project Title: Pump Station Switchgear Improvements			Start Date: 01/22 End Date: 12/26			Estimated Project Cost:				
Description: Each pump station will be upgraded individually in order of highest concern to lowest concern which began in 2022 with the Baranof Zone to be followed by the Confidence Zone in 2023. All of the mechanical motor starters in each of KPU's pump stations have been in service between 25 to 34 years and are well overdue for an upgrade. Mechanical motor starters rely on moving contactors to supply electricity to the pump motor and the sudden in-rush of starting electric current encounters some resistance which causes some heat. Over time, starting the pumps to refill the reservoir slowly but continually degrades the contactor mechanisms. Considering the age of our existing motor contactors, direct replacement contactors are becoming very difficult to find and may become impossible. Instead, each pump station is proposed to have both mechanical motor starters replaced with modern, solid-state soft starters. Solid-state soft motor starters have a smooth acceleration to full speed, have no moving components, minimal reactive power losses, and cost about half as much as a mechanical motor starter.						Design 5,000 Land/Right-of-Way Construction Management Construction Equipment 111,250 Other Project Total 116,250				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		30,250		27,500	27,500	28,500		30,000		116,250
Total		30,250		27,500	27,500	28,500		30,000		116,250

Division: Water			Project Priority: 4			Project Number:				
Project Title: Utility Vehicles			Start Date: 01/23 End Date: 12/27			Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction Equipment 347,000 Other Project Total 347,000				
Description: Vehicle 66, the single axle dump truck jointly shared by the Electric and Water Divisions was purchased in 2003. Already 19 years old, it is reaching the end of its useful service life with substantial mechanical issues. Although approved for replacement in the division's 2022 CIP Budget for \$98,000, KPU was unable to obtain any firm price quotes without having completely undefined inflationary escalation clauses also attached. Without a firm quotation, a replacement dump truck could not be purchased in 2022. Assuming that inflationary pressures are much reduced by 2025 and firm quotations can be obtained for replacement of this dump truck for about \$160,000 at that time, the division requests instead that \$75,000 of the approved 2022 CIP funds to be reappropriated for 2023 for the purchase of a replacement Service Truck. Purchased in 2009, Service Truck 90 is worn out and its frame badly rusted. Similarly, the oldest of the two small Kubota rubber tracked backhoes that are also jointly shared by the divisions was purchased in 2007. Supremely useful in tight situations where a large, rubber-tired backhoe won't fit, it too is reaching the end of its useful service life. A replacement small backhoe from a local vendor is estimated to cost \$98,500 today. With an allowance of 2.5% annual inflation until 2027, this would be equivalent to \$112,000 in 2027.										
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			75,000		75,000		160,000		112,000	347,000
Total			75,000		75,000		160,000		112,000	347,000

Division: Water			Project Priority: 5			Project Number:				
Project Title: West Fairy Chasm Main Replacement			Start Date: 01/23 End Date: 12/27			Estimated Project Cost:				
Description: This 8-inch ductile iron main was installed in 1981. The portion replaced in 2007 failed in a different manner than usually occurs. Unlike electrolytic corrosion that usually creates fairly small pits along the bottom of the pipe where the soils are moist and most conductive; in this case, the entire surface of the pipe was badly pitted. The soil layer around the pipe was black from dissolved iron and smelled slightly of sulfur. There is a possibility that the ductile iron pipe was bedded using rock that contains quite a bit of iron pyrite (fools gold) which is actually iron disulfide. Pyrites reacting with oxygen and water will form <i>Thiobacillus</i> bacteria which generate their energy through oxidizing the iron with a side effect of producing sulfuric acid, which chemically corrodes the iron pipe. Subsequent repairs made in 2017 and 2022 near the Black Bear intersection have shown similar pitting and the ductile iron sewer mains are very likely in the same condition. The entire 720 foot section should be replaced with non-corrodible HDPE plastic pipe. There is no present funding available for its replacement but if there were, it would be a joint venture between Public Works and the Water Division to be designed in 2023 with each of these four utility improvement projects contributing to the combined design contract with a single firm. Should Municipal Assistance Funding ever become available again, this would be a likely project that is already designed and has received ADEC approval for maximum points. It would also require voter approval to enter into loan agreements for the remainder of the funding. If granted, construction could begin in 2027.						Design 35,000				
						Land/Right-of-Way				
						Construction Management				
						Construction 550,600				
						Equipment				
						Other				
						Project Total 585,600				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund			15,000	20,000	35,000					35,000
Proposed 50% State Municipal Assistance Funding									275,300	275,300
Proposed Revenue Bonds - ADWF Loan									275,300	275,300
Total			15,000	20,000	35,000				550,600	585,600

Division: Water			Project Priority: 6			Project Number:				
Project Title: Skyline Water Main Replacement			Start Date: 01/22 End Date: 12/26			Estimated Project Cost:				
Description: The 560-foot ductile-iron 8-inch water line serving Skyline Condominiums is an unusual proposition. It is not installed in a dedicated right-of-way but rather through a series of easements that begin by passing through the side yard of 1111 Jackson, then across Skyline Condominium's property, and finally connecting to Carlanna Lake Road. Installed in 1983, it too is continuing to fail due to electrolytic corrosion, most recently in August 2021, and is overdue for replacement with non-corrodible HDPE plastic pipe. There is no present funding available for its replacement but if there were, it would be designed in 2023 along with each of these four utility improvement projects contributing to the combined design contract with a single firm. Should Municipal Assistance Funding ever become available again, this would be a likely project that is already designed and has received ADEC approval for maximum points. It would also require voter approval to enter into loan agreements for the remainder of the funding. If granted, construction could begin in 2027.						Design 30,000				
						Land/Right-of-Way				
						Construction Management				
						Construction 360,800				
						Equipment				
						Other				
						Project Total			390,800	
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund Proposed 50% State Municipal Assistance Funding Proposed Revenue Bonds - ADWF Loan			10,000	20,000	30,000					30,000
										180,400
										180,400

Division: Water			Project Priority: 7			Project Number:						
Project Title: Valve Boxes - Repair of Surrounding Pavement			Start Date: 01/23			Design Land/Right-of-Way Construction Management 310,000 Construction Equipment Other Project Total 310,000						
Description: In order for the Water Division to respond immediately to water main failures that occur beneath Ketchikan's streets, it must have ready access through the valve boxes to its in-line water main valves and hydrant valves in the street. In the 7-year period before 2020, when repavement of an asphalt street occurred, all cast-iron valve boxes were first lowered below the finished grade. After repavement was completed, a diamond shape was cut in the new asphalt, the valve box raised to the surface, and the surrounding diamond then refilled with warm asphalt. Unfortunately, the resultant compaction was minimal which allowed water to penetrate the new asphalt diamond. During the next subfreezing winter season, this became ice which expanded and caused the asphalt diamond to crack and fail. While concrete diamonds once solved this problem, after the surrounding asphalt roadway surface eroded by traffic, it caused snow plow problems and was no longer used. Since 2020, Ketchikan has ceased cutting these diamonds and instead brings critical valve boxes to the surface during the asphalt repaving process. For the earlier failing asphalt diamonds, Ketchikan needs to find a solution which addresses everyone's concerns. This project began repairing the failed asphalt diamonds around valve boxes during 2022's repaving season and will be continued in subsequent years.			End Date: 12/27									
Source of Funds			Fund No.	Prior Years	Adopted 2023			Projected Requirements				
					Reappro- priated	New Funding	Total	2024	2025	2026	2027	Total Project
Revenue Generating Fund					50,000	60,000	110,000	50,000	50,000	50,000	50,000	310,000
Total					50,000	60,000	110,000	50,000	50,000	50,000	50,000	310,000

Division: Water			Project Priority: 8			Project Number: Design Land/Right-of-Way Construction Management Construction 150,000 Equipment Other Project Total 150,000					
Project Title: Water Distribution Grid Improvements			Start Date: 01/23								
			End Date: 12/27								
Description: Each year in conjunction with the work of other agencies, the Water Division is presented with opportunities to undertake repairs to improve the municipal water system. This account provides the funding for such improvements.											
Source of Funds		Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
				Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund					30,000	30,000	30,000	30,000	30,000	30,000	150,000
Total					30,000	30,000	30,000	30,000	30,000	30,000	150,000

Division: Water			Project Priority: 9			Project Number:					
Project Title: Additional Projects			Start Date: 01/23			Design Land/Right-of-Way Construction Management Construction 200,000 Equipment Other Project Total 200,000					
Description: This account provides for the cost of fire hydrants and other related materials, which are provided by the Utility in water line extensions and are then incorporated into the municipal water system. This account also provides a source of funds for repair or installing new valve boxes in City streets when Public Works' annual repaving projects occur. Although specific streets have not yet been selected for asphalt paving in 2023, there will be paving scheduled for next year. This project has been an ongoing initiative of the division to make incremental improvements in cooperation with Public Works Department projects and other community projects.			End Date: 12/27								
Source of Funds		Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
				Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund					40,000	40,000	40,000	40,000	40,000	40,000	200,000
Total					40,000	40,000	40,000	40,000	40,000	40,000	200,000

Division: Water			Project Priority: 10			Project Number: Design Land/Right-of-Way Construction Management Construction 75,000 Equipment Other Project Total 75,000					
Project Title: Water Service Upgrade Program			Start Date: 01/23								
Description: The water service upgrade program was initiated in 1997, and has been an ongoing division initiative to allow a number of residents to upgrade their individual water services. The division proposes to continue offering this program in 2023. Numerous water services, from the main to the residence, are in need of replacement to KPU standards. After completion of the work and inspection by the division, this program allows the customer to provide cost documentation and receive a grant-in-aid. \$500 is available for work undertaken on private property and up to \$4,000 is available for work undertaken within the right-of-way. As a result of homeowners participating in the program, KPU will assume full responsibility for future repairs within the right-of-way as long as they are not caused by negligence on the part of the property owner.			End Date: 12/27								
Source of Funds		Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
				Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund					15,000	15,000	15,000	15,000	15,000	15,000	75,000
Total					15,000	15,000	15,000	15,000	15,000	15,000	75,000

Division: Water			Project Priority: 11			Project Number:						
Project Title: Backflow Prevention Program			Start Date: 01/23			Design Land/Right-of-Way Construction Management Construction 75,000 Equipment Other Project Total 75,000						
			End Date: 12/27									
Description: This grant-in-aid program was established in 1995, and has been an ongoing division initiative to encourage businesses to install backflow preventers to help protect the municipal water system. The division proposes to continue offering this program in 2022 with an increased reimbursement amount. This program is part of ADEC's mandated cross-connection control regulations which require the Utility to be responsible for system-wide protection. Until 2001, Ketchikan's lack of adoption and enforcement of the Uniform Plumbing Code allowed many substandard installations to be constructed within the City. Older sprinkler systems with just a single check are a particular problem. They cannot be tested and they leak contaminated water into the municipal system any time the water main is isolated and drained for repairs. Currently, at least 19 systems, all installed before Ketchikan adopted the 2012 Uniform Plumbing Code 603.5.15 which made backflow protection mandatory, are in need of backflow preventer installation that would benefit from this program to become compliant. The program as previously offered has not provided much incentive for businesses to make the upgrade, and the last time a business took advantage of the program was in 2017. In an effort to encourage business owners to become compliant to protect the City's water system, reimbursement to the property owner is now limited to 50% of the installed cost of the backflow preventer, or \$3,000, whichever is the lesser.												
Source of Funds			Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
					Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund					15,000	15,000	15,000	15,000	15,000	15,000	75,000	
Total					15,000	15,000	15,000	15,000	15,000	15,000	75,000	

Division: Water			Project Priority: 12			Project Number: 5400 2020 006				
Project Title: SCADA PLC Controllers			Start Date: 01/21 End Date: 12/24			Estimated Project Cost: Design Land/Right-of-Way Construction Management Construction 941,500 Equipment Other Project Total 941,500				
Description: Collectively, KPU has three Allen-Bradley Programmable Logic Controllers (PLCs) installed at the UV Facility, the Chlorination Plant, and the Ammonia Addition Facility. They are each providing continuous supervisory control over specific critical components within KPU's complex, computer-controlled, disinfection process. As identified in Contract 21-03 - Cyber Security Evaluation, this version of Allen Bradley PLCs, which were introduced in 2005, have ceased receiving any further factory support. This includes no longer maintaining any inventory of spare parts or the necessary input/output (I/O) modules. All of these critical PLC's must quickly migrate to the modern Allen-Bradley ControlLogix PLC platform before KPU's supply of replacement modules and spare parts is exhausted. Due to the world-wide effect of the coronavirus pandemic on material deliveries, the 2022 upgrade to the Water Treatment UV Facility's (CP-100) PLC has also been delayed and may not be completed before the end of 2022. In addition, there have also been significant material cost inceases during 2022 which are now reflected in the increased estimated costs to upgrade the two remaining PLCs that are located in the Old Chlorination Building (CP-300) in 2023, and upgrade the third and final PLC in the Ammonia Building (CP-400) in 2024.										
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund		256,500		340,000	340,000	345,000				941,500
Total		256,500		340,000	340,000	345,000				941,500

Division: Water			Project Priority: 13			Project Number:				
Project Title: UV Facility - UPS Battery Replacement			Start Date: 01/23 End Date: 12/23			Estimated Project Cost:				
Description: Ketchikan's UV Disinfection Facility is a vital component of our complicated disinfection system that provides Ketchikan with potable water. Due to the critical nature of this Facility and the requirement that it be fully operational at all times, there is a separate, dedicated standby generator and uninterruptible power supply (UPS) supplying power in the event of any electrical distribution failure. The large battery bank that is the UPS provides all the electrical power necessary to keep the programmable logic controllers (PLC's) operating the UV Facility for the short period needed until the standby generator can automatically start and come on-line. All UPS batteries have a limited service life which shouldn't exceed 5-6 years, regardless of how or when the UPS is deployed, since they use sealed or maintenance free batteries which offer the advantage of not containing any sloshing liquid that might leak or drip. However, this level of protection comes at a cost as they undergo repeated charge/discharge cycles. Chemical depletion slowly occurs which finally results in battery cell failure and power loss. Last replaced in 2017, the 60 UPS batteries are again due for replacement in 2023.						Design Land/Right-of-Way Construction Management Construction Equipment 45,000 Other Project Total 45,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund				45,000	45,000					45,000
Total				45,000	45,000					45,000

Division: Water			Project Priority: 14			Project Number:				
Project Title: Replace ClorTec Generating Cells			Start Date: 01/23			Estimated Project Cost:				
Description: Since September 16, 2002, KPU has been using proprietary ClorTec titanium generating cells to manufacture a 0.8% sodium hypochlorite disinfection solution. This process involves electrolytic separation by impressing a controlled amount of direct current (DC) electricity onto the titanium electrodes submerged in a saturated salt brine solution. A certain amount of degradation also occurs to the titanium generating cells themselves during their operation and they have an expected service life of about 7 years. Fortunately, Ketchikan's water is very soft with minimal hardness and buffering with the result in initial cells serving for 12 years, much longer than expected before being replaced in 2015. The Two-Point Chlorination Facility, which also uses the same design ClorTec generating cells, began service in 2016. These two facilities with 4 machines have a total of 10 cells in service that will be due for replacement soon. Beginning in 2023 with the two older 3-cell machines, start building sufficient cell inventory that will allow one ClorTech machine to be re-equipped every year followed by the 2-cell machines. Each cell is estimated to cost about \$20,000 in 2023 with a 2.5% inflation allowance for purchases made during the subsequent years.			End Date: 12/26			Design				
			Land/Right-of-Way							
			Construction Management							
			Construction							
			Equipment 206,500							
			Other							
Project Total 206,500										
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund				60,000	60,000	61,500	42,000	43,000		206,500
		</								

Division: Water			Project Priority: 15			Project Number:				
Project Title: Peterson St. Water Main Rebuild			Start Date: 01/23			Estimated Project Cost:				
Description: This January 2022, Peterson Street's flawed cast-iron water main froze and broke. Installed in 1962 in a substandard manner with only 2-feet depth of cover, it depended on the adjacent residences using bleeders during the winter to not only keep their water services unfrozen but to also protect the cast-iron main. Two of these residences had been destroyed earlier due to fire and when another frozen service occurred at the end of the street, the Peterson Street main also froze. There are no plans at the present time to begin design of the Peterson Street Utility Improvement Project for both water and sewer replacement with non-corrodible plastic pipe for the entire 280-foot length. Nor is there any present funding available for the water and sewer replacement but if there were, it would be a joint venture between Public Works and the Water Division. However, should Municipal Assistance Funding ever become available again, this would be a prime project to have already designed, submitted for ADEC approval, and gain maximum points. It would also require voter approval to enter into loan agreements for the remainder of the funding. If granted, a preliminary cost estimate of construction is included for 2025.			End Date: 12/23			Design 12,000				
						Land/Right-of-Way				
						Construction Management				
						Construction 362,000				
						Equipment				
						Other				
						Project Total 374,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund				374,000	374,000					374,000
Total				374,000	374,000					374,000

Division: Water			Project Priority: 16			Project Number:				
Project Title: Woodland Ave Utility Improvements			Start Date: 01/25			Estimated Project Cost:				
Description:			End Date: 12/27			Design 40,000				
<p>Woodland Avenue's cast-iron water mains were originally installed in 1969 and only the 500-foot portion of the failing water main between Park Avenue and Nickey Way was replaced in 1988. Since then, there has been no further progress replacing the remainder of this fragile, old 6-inch cast-iron water main with the exception of a 60-foot portion installed when Deermount Street was rebuilt in 1996. Including the corrugated metal sewer, both are long overdue for both water and sewer replacement for the entire 950-foot length with non-corrodible plastic pipe. There is no present funding available for its replacement but if there were, it would be a joint venture between Public Works and the Water Division. There are no plans at the present time to begin design of the Woodland Avenue Utility Improvement Project. However, should Municipal Assistance Funding ever become available again, this would be a prime project to have already designed, submitted for ADEC approval and gain maximum points. It would also require voter approval to enter into loan agreements for the remainder of the funding. If granted, a preliminary cost estimate of construction is included for 2027.</p>						Land/Right-of-Way				
						Construction Management				
						Construction 430,000				
						Equipment				
						Other				
						Project Total 470,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund							40,000			40,000
Proposed 50% State Municipal Assistance Funding									215,000	215,000
Proposed Revenue Bonds - ADWF Loan									215,000	215,000
Total							40,000		430,000	470,000

Division: Water			Project Priority: 17			Project Number:				
Project Title: Harris Street Utility Improvements			Start Date: 01/25			Estimated Project Cost:				
Description:			End Date: 12/27			Design 35,000				
<p>Harris Street's 855 feet of cast-iron water mains were originally installed in 1956 and 1969. Since then, there has been no further progress replacing this fragile, old 6-inch cast-iron water main. Including the corrugated metal pipe sewer, both are long overdue for replacement with non-corrodible plastic pipe. There is no present funding available for its replacement but if there were, it would also be a joint venture between Public Works and the Water Division. Although Public Works' Streets Division is proposing in 2023 to replace the Harris Street stacked rock retaining wall alongside Ketchikan Creek with a concrete structure, there are no plans at the present time to begin design of the Harris Street Utility Improvement Project. However, should Municipal Assistance Funding ever become available again, this would be a prime project to have already designed, submitted for ADEC approval and gain maximum points. It would also require voter approval to enter into loan agreements for the remainder of the funding. If granted, a preliminary cost estimate of construction is included for 2027.</p>						Land/Right-of-Way				
						Construction Management				
						Construction 2,000,000				
						Equipment				
						Other				
						Project Total 2,035,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro-priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund							35,000			35,000
Proposed 50% State Municipal Assistance Funding									1,000,000	1,000,000
Proposed Revenue Bonds - ADWF Loan									1,000,000	1,000,000
Total							35,000		2,000,000	2,035,000

Division: Water			Project Priority: 18			Project Number:				
Project Title: Replace Tongass/ Water St. Suspended Water Main			Start Date: 01/24 End Date: 12/26			Estimated Project Cost:				
Description: Installed in 1992, the 1680-feet of ductile iron water main located beneath the exposed portions of the Tongass Ave. & Water St. viaducts is in poor condition. Submerged in salt water during high tides, galvanic corrosion has degraded many of the individual galvanized suspension components. The concrete roadway consists of both precast concrete girder spans as well as flat slab sections. While the ductile iron pipe is readily supported by galvanized pipe chairs attached to the girders, it is a different matter at the flat slab roadway sections. Here steel mechanical couplings were needed to create longer pipe segments between the individual pipe supports that are fastened to the concrete flat slab section as well as providing the necessary deflection where needed to avoid other existing concrete structures under the viaduct. Services to individual waterfront buildings and fire hydrants are in equally bad shape. Rather than attempting repairs, this entire water main needs to be replaced with modern, non-corrodible HDPE pipe.						Design 245,000 Land/Right-of-Way Construction Management Construction 1,230,000 Equipment Other Project Total 1,475,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund						245,000				245,000
Proposed ADWF Loan								615,000		615,000
Proposed State 50% Municipal Assistance Funding								615,000		615,000
Total						245,000		1,230,000		1,475,000

Division: Water			Project Priority: 19			Project Number:				
Project Title: Highlands Reservoir Property Acquisition			Start Date: 01/24 End Date: 12/24			Estimated Project Cost:				
Description: Ketchikan is located in Earthquake Seismic Zone 3 (major damage). The Highlands Reservoir provides modest fire protection for the surrounding residential area including the State Jail, the Library, and other commercial buildings on Copper Ridge Lane. Ketchikan's last remaining wood-stave reservoir built in 1982 will not survive a significant earthquake, nor can it be economically retrofitted with additional shear protection. If damaged, there are no remaining sources of wood-stave repair parts to be found anywhere. The individual wooden staves are only held together by friction, and when they collapse during a severe earthquake, they will suddenly release 300,000 gallons of water causing significant damage downstream. Although discussions began in 2015 to acquire the necessary adjacent property at the same elevation needed to construct a modern, much larger reservoir, the sale was never completed at the proposed price of \$270,000. Once purchased, site investigations should begin in 2025 before beginning the construction of a large, modern 650,000 gallon reservoir. The design and construction funding will take at least another 8-10 years before the project is complete, and construction would begin around 2028 with an expected cost of about \$5 - 8 million.						Design Land/Right-of-Way 300,000 Construction Management Construction Equipment Other Project Total 300,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Proposed ADWF Loan						150,000				150,000
Proposed State 50% Municipal Assistance Funding						150,000				150,000
Total						300,000				300,000

Division: Water			Project Priority: 20			Project Number:				
Project Title: Second Avenue Main Replacement			Start Date: 01/24 End Date: 12/27			Estimated Project Cost:				
Description: Second Avenue's cast-iron water mains were originally installed in a number of segments between 1956 and 1958. Only the failing water and sewer portion between Madison and Adams Streets was replaced in 2001. Since then, there has been no further progress replacing the remainder of this fragile, old 6-inch cast-iron water main and there have been four further failures in the 1275-foot portion between Adams and White Cliff and is long overdue for water and sewer replacement with non-corrodible plastic pipe. There is no present funding available for its replacement but if there were, it would be a joint venture between Public Works and the Water Division to be designed in 2024 with each of these four utility improvement projects contributing to the combined design contract with a single firm. Should Municipal Assistance Funding ever become available again, this would be a likely project that is already designed and has received ADEC approval for maximum points. It would also require voter approval to enter into loan agreements for the remainder of the funding. If granted, construction could begin in 2027.						Design 60,000 Land/Right-of-Way Construction Management Construction 1,300,800 Equipment Other Project Total 1,360,800				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund						60,000				60,000
Proposed 50% State Municipal Assistance Funding									650,400	650,400
Proposed Revenue Bonds - ADWF Loan									650,400	650,400
Total						60,000			1,300,800	1,360,800

Division: Water			Project Priority: 21			Project Number:				
Project Title: Evergreen Ave. Main Replacement			Start Date: 01/24			Estimated Project Cost:				
Description: Evergreen Avenue's 548-feet of water main between Hill and Tower Roads was installed in two segments; the first 281-feet of 6-inch cast-iron was installed in 1970 followed by the final 267-feet in ductile-iron in 1976. The cast-iron portion has been particularly troublesome with several failures. The entire 548-foot segment is overdue for both water and sewer replacement with non-corrodible plastic pipe. There is no present funding available for its replacement but if there were, it would be designed in 2024 along with other utility improvement projects contributing to the combined design contract. Should Municipal Assistance Funding ever become available again, this would be a likely project that is already designed and has received ADEC approval for maximum points. It would also require voter approval to enter into loan agreements for the remainder of the funding. If granted, construction could begin in 2027.			End Date: 12/27			Design 25,000				
						Land/Right-of-Way				
						Construction Management				
						Construction 440,000				
						Equipment				
						Other				
						Project Total 465,000				

Division: Water			Project Priority: 22			Project Number:				
Project Title: Denali Ave. Main Replacement			Start Date: 01/24			Estimated Project Cost:				
Description: Denali Avenue's cast-iron 6-inch water mains between Hill & Tower Roads were installed in two segments beginning in 1968 and completed in 1969. Like other cast-iron mains, it is fragile. In just this one block segment, there have already been three failures. The 635-foot segment is overdue for both water and sewer replacement with non-corrodible plastic pipe. There is no present funding available for its replacement but if there were, it would be designed in 2024 along other utility improvement projects contributing to the combined design contract. Should Municipal Assistance Funding ever become available again, this would be a likely project that is already designed and has received ADEC approval for maximum points. It would also require voter approval to enter into loan agreements for the remainder of the funding. If granted, construction could begin in 2027.			End Date: 12/27			Design 30,000				
						Land/Right-of-Way				
						Construction Management				
						Construction 512,000				
						Equipment				
						Other				
						Project Total 542,000				
Source of Funds	Fund No.	Prior Years	Adopted 2023			Projected Requirements				Total Project
			Reappro- priated	New Funding	Total	2024	2025	2026	2027	
Revenue Generating Fund						30,000				30,000
Proposed 50% State Municipal Assistance Funding									256,000	256,000
Proposed Revenue Bonds - ADWF Loan									256,000	256,000