

Completed by:	Les Major
Department Head Review:	Dan Hartman

Responsible Department:	Public Works
Fund:	Water Fund #5

Projec	ct Name:		Utility Line Replacement - water									
Brief De	escription:		Replacement and rehabilitation of aging water distribution lines									
			Fuiation C	ant Funda	Potential Grant Funds			tified From	Francis Islam	tified From		
Fundir	ng Source		Existing Gr Identified		Identified		Capital Project Fund		Other Fund (Name)		No Identifie	ed Funding
Davage	Consusted		Significan		_	ing Revenue	One-Time	Revenue	No Revenue Generated			
Kevenue	Generated		Kevenue	Source	300	irce	Gene	rated	,	,		
Legally	Mandated		Court D	ecision	Regulatory I	Requirement	Pending Le	egal Action	x Potential Legal Action		Normal Liability	
			Existing Sev	oro Hazard		nor Hazard	Potential Se	voro Hazard	Potential Minor Hazard		No Health or Safety Issa	
Public Hea	alth & Safety	/	LAISTING SEV	ere riazaru			i otentiai se	vere riazaru	x		140 Health of	Jarety 133ue
Operating E	Budget Impa	oct	Decreases and/or Pers		Minimal or No Impact on Operating and/or Personnel Costs x		Slight Increase to Operating and/or Personnel Costs		Significant Increase to Operating and/or Personnel Costs			
Environment a	and Sustaina	bility	Enhances En and/or Sus		Benefits Environment and/or Sustainabilty		No Environmental Impact		Minor or Negative Environmental Impact		Diminishes Environment	
% Of Popu	lation Serve	d	100% of Popu by Pr	oject		Population ved	Approxima Population	tely 50% of on Served		50% of the on Served		
Preservati	on of Facility	у	Loss of Facility Imminent without Project Completion		without	amage Likely Project letion	Project Constitutes Normal Major Maintenance		Project Constitutes Normal Minor Maintenance		New Facility Safety Issue	
Project	Useful Life		20+ Years With Little/No Maintenance		20+ Years With Normal Maintenance		x 10-20 Years With Normal Maintenance		5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance	
Conformity to Strate	gic Plans & [oals	Department	Established Plans / Goals		Assists in Accomplishing Established Plans / Goals Will Not Assi Hinder Accor Plans / G		omplishing	Recommended by City Council		Recommended by Staff		
Recreational o	r Aesthetic \	Value	x Major Value		Moderate value		No Value x		Possibly Detrimental			
Estimated Fr	equency of I	Use	Every Day		Several Times per Week		Several Times per Month		Once per Month or Less			
	х			(
			Visio	n 2030 Guid	ing Principle	s Priority - (Choose One	Best Fit)				
х	(A) Safe and F Public Infr	Reliable rastructure			Economic Vitality and Community Amenities (C) Public (D) Other that Improve Quality of Life Safety							
			Ca	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	st Fit)				
	Land		Building	ategory of Capital Expenditures - (Choose One Best Fit) Equipment Vehicle T					Technology	v	Infrastructure	
	Improvement		Improvement		qa.p		. • • • • • • • • • • • • • • • • • • •					
					Financial Im	pact - Exper	ises					
	Life-To-											
Project Costs	Date*	2022 768,700	2023 952,400	2024 912,500	2025 949,000	2026 987,000	2027 1,026,400	2028 1,067,500	2029 1,110,200	2030 1,154,600	2031 1,200,800	Total 10,129,100
On-Going Maintenance				· · · · · · · · · · · · · · · · · · ·								-
Total Project Costs	-	768,700	952,400	912,500	949,000	987,000	1,026,400	1,067,500	1,110,200	1,154,600	1,200,800	10,129,100
*Life-to-date includes any act	tual expenditure	s from start of pr	oject through Jul	y 2021 and estin	nates for the ren	nainder of FY 202	21				l	
				В	asis for Proj	ect Cost Esti	mate					
	Formal Propo	sal		Contractor/E	ngineer Estima	ate		State Purchasi	ng Co-Op	х	Staff Estimate	:
					Financial Im	pact - Rever	ues					
	Life-To- Date*	2022	2023	2024	2025	226	2027	2028	2029	2030	2031	Total
Revenue Estimate												-
*Life-to-date includes any act	tual revenue gen	erated from start	of project throu	gh July 2021 and	estimates for the	ne remainder of	FY 2021					

Project Name:	Utility Line Replacement - water
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	The City of Golden owns 110.3 miles of water distribution mains with an expected life span of 75 years. In order to maintain the current system, approximately 1.5 miles of water main should be replaced each year. Since we have slightly over-invested in water mains in recent years, the cost estimate has been calculated based on replacing 1.4 miles of water main (90% of the goal) at current contract unit costs. Increased water quality complaints, main breaks and reduced flow are used as indicators for planning replacements. ROW costs associated with cutting newer streets also drive replacement of mains that may not need replacement today but will within the next five to 10 years. A reliable and safe water distribution system is expected by the residents of Golden and this type of project ensures that. This project will not change ongoing maintenance costs for the distribution system overall, but deferred investment would result in increases to maintenance.
Strategic Action Plan Success Factor(s):	Quality Services
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	The utility line replacement program assures that we have a reliable potable water distribution system and can provide quality public service of potable water.
List any obstacles for implementation	
	Finance Use Only
	Date
	Received by Finance Department Reviewed by City Manager:



Completed by:	Theresa Worsham
Department Head Review:	Dan Hartman

Responsible Department:	Public Works
Fund:	Water Fund #6

Projec	t Name:		Hydroelectric Power Project									
Brief De	escription:		A feasibility study completed in 2018 (funded by a State grant) identified one or more hydroelectric projects to be sited at City reservable. Clear Creek County that could yield a significant source of renewable energy for the City.							eservoirs in		
Fundin	ng Source		_	rant Funds for Project	Potential Grant Funds Funds Identified Capital Project Fund X		oject Fund	Funds Identified From Other Fund (Name)		No Identified Funding		
New/Additional I	Revenue Ge	nerated	Significant Ongoing Revenue Source		Sou	ing Revenue irce X	One-Time Gene	Revenue rated	No New/Additional Revenue Generated			
Legally	Mandated		Court D	ecision	Regulatory I	Requirement	Pending Le	egal Action	Potential L	egal Action	Normal Liability X	
Public Hea	alth & Safety	/	Existing Sev	ere Hazard	Existing M	nor Hazard	Potential Se	vere Hazard	Potential Minor Hazard		No Health or Safety Issue	
Operating E	Budget Impa	ict		Operating connel Costs	Operatir Personr	No Impact on ag and/or nel Costs X	_	e to Operating connel Costs	Operatin	Increase to ag and/or nel Costs		
Environment a	nd Sustaina	bility	and/or Sus	nvironment stainability	Benefits Environment and/or Sustainabilty		No Environmental Impact		Minor or Negative Environmental Impact		Diminishes Environment	
% Of Popul	lation Serve	d		llation Served oject K		Population ved	Approxima Population	tely 50% of on Served		50% of the on Served		
Preservati	on of Facilit	у	Loss of Facility Imminent without Project Completion		Additional Damage Likely without Project Completion Project Constitutes Normal Major Maintenance		Project Constitutes Normal Minor Maintenance		New Facility/ No Safety Issue X			
Project	Useful Life		20+ Years With Little/No Maintenance X		20+ Years With Normal 10-20 Years With Normal Maintenance Maintenance			5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance		
Conformity to Strate	gic Plans & I oals	Department	Critical to accomplishing		Assists in Accomplishing Hinder		Hinder Acc	Accomplishing Recomi		Recommended by City Council		ed by Staff
Recreational o	r Aesthetic \	Value	Major	Value		te value	No Value X		Possibly Detrimental			
Estimated Fro	equency of	Use		/ Day	Several Tim	Times per Week Several Times per Month		Once per Month or Less				
								t.)				
			Visio	n 2030 Guid	ing Principle	es Priority - (Choose One		i		i	
Х	(A) Safe and I Public Infr	Reliable rastructure			Vitality and C ove Quality of	ommunity Am Life	nenities		(C) Public Safety		(D) Other	
			Ca	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	st Fit)				
	Land		Building		Equipment Vehicle		Vehicle	Technology		/ X Infrastructu		
	Improvement	t	Improvement	t								
	Life-To-				Financial Im	pact - Expe	nses					
	Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Project Costs					250,000							250,000
On-Going Maintenance						1,000	1,000	1,000	1,000	1,000	1,000	6,000
Total Project Costs	-	-	-	-	250,000	1,000	1,000	1,000	1,000	1,000	1,000	256,000
*Life-to-date includes any act	ual expenditure	s from start of pr	oject through Ju									
	Formal Propo	sal	х		asis for Proj	ect Cost Esti ate	mate	State Purchasi	ing Co-Op		Staff Estimate	
											•	
	Life-To-				Financial Im	pact - Rever	nues					
Revenue Estimate	Date*	2022	2023	2024	2025	2026	2027	2028 10,000	2029 10,000	2030	2031 10,000	Total 50,000
*Life-to-date includes any act	ual revenue gen	erated from star	t of project throu	lgh July 2021 and	d estimates for t	ne remainder of	· ·	-,		.,	-,,	-,

Project Name: Hydroelectric Power Project In order to make progress on the City Council adopted renewable energy goals embodied in Resolutions 1793, 2330, and 2656, it will be necessary to pursue the implementation of significant renewable energy projects for city facilities. Council's stated goal is to achieve 50% of electricity from renewable sources. Hydroelectric power could yield a significant source of renewable energy for City operations. The feasibility study included identification of opportunities, economic analysis, conceptual design and permitting. The best opportunities for return on investment are at the Upper & Lower Urad and Guanella Reservoir locations. Preliminary estimates include \$250,000 for a 10kW turbine and associated pipe infrastructure. There may be opportunities for state grant funds to offset a portion of the costs and monthly revenue for the electricity generation. Revenues are dependent on both the utility offerings at the time of construction and the price paid per kWh of electricity generated. Because this turbine would not offset any COG electricty generation, but would sell energy to the Henderson Mine (nearest electric consumer) through a net metering agreement, the cost offset is minimal for the City. However, the energy produced would directly benefit Please provide details for the following: the City's renewable energy goals and be counted toward the City's investment and progress. Due to financial feasibility determined from the 1. Project Description feasibility study we have pushed this project back 5 years, to 2025. 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable) Strategic Action Plan Success Factor(s): Active, Connected and Sustainalbe This project will help meet Golden's renewable energy goals. Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above. The Federal Energy Regulatory Commission (FERC) publishes rules on the process for activities within regulated bodies of water. The process to obtain permits may take longer than the estimated timeline proposed here. List any obstacles for implementation Finance Use Only Date **Received by Finance Department**

Reviewed by City Manager:



Completed by:	Will Stambaugh
Department Head Review:	Anne Beierle

Responsible Department:	Public Works
Fund:	Water Fund #8

Proje	ct Name:		Vidler Tunnel Improvements									
Brief D	escription:			Rebuild and Replace infrastructure including; collection points, pipelines, instrumentation, portals, and tunnel								
Fundir	ng Source		Existing Gi Identified	ant Funds for Project	Potential Grant Funds Identified		Funds Identified From Capital Project Fund x		Funds Identified From Other Fund (Name)		No Identified Funding	
Revenue	Generated		Significan Revenue		_	ing Revenue irce	One-Time Gene		No Revenue Generated			
Legally	Mandated		Court D	ecision		Requirement	Pending Le	egal Action	X Potential Legal Action		Normal Liability	
Public Hea	alth & Safety	,	Existing Sev	ere Hazard		nor Hazard	Potential Se	vere Hazard	Potential Minor Hazard		No Health or Safety Issue	
Operating I	Budget Impa	ct		Operating onnel Costs	Minimal or No Impact on Operating and/or Personnel Costs x		Slight Increase to Operating and/or Personnel Costs		Significant Increase to Operating and/or Personnel Costs			
Environment a	ınd Sustaina	bility	Enhances En and/or Sus	nvironment stainability		vironment stainabilty	No Environm	ental Impact	Minor or Negative Environmental Impact		Diminishes Environment	
% Of Popu	lation Serve	d	100% of Popu by Pr			Population ved		tely 50% of on Served		50% of the on Served		
Preservati	on of Facility	y	Loss of Facility Imminent without Project Completion		without	amage Likely : Project letion	pject Project Constitutes Normal Major Maintenance		Project Constitutes Normal Minor Maintenance		New Facility Safety Issue	
Project	Useful Life		20+ Years With Little/No Maintenance		20+ Years With Normal Maintenance Maintenance x			5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance		
Conformity to Strate	gic Plans & [oals	Department	Critical to accomplishing Established Plans / Goals x		Assists in Accomplishing Established Plans / Goals Will Not Assi Hinder Accomplants / Goals		omplishing	Recommended by City Council		Recommened by Staff		
Recreational o	r Aesthetic \	/alue	Major Value		Moderate value No Valu			Possibly Detrimental				
Estimated Fr	equency of I	Use	Every Day x		Several Times per Week		Several Times per Month		Once per Month or Less			
			Visio	2030 Guid	ing Principle	s Priority - (Choose One	Bost Eit)				
x	(A) Safe and F Public Infr	Reliable astructure		(B) Economic	uiding Principles Priority - (Choose One Best Fit) mic Vitality and Community Amenities (C) Public (D) Other nprove Quality of Life Safety							
			Co	to a swy of Co	mital Evene	diames (Ch	aasa Ona Ba	-4 F:4\				
	Land		Building	legory of Ca		aitures - (Cii	oose One Be		Technology		Indus should	
	Improvement		Improvement		Equipment		Vehicle		reclinology	х	Infrastructure	
					Financial Im	pact - Exper	ıses					
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Project Costs	2440	325,000	375,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	1,900,000
On-Going Maintenance												-
Total Project Costs	_	325,000	375,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	1,900,000
*Life-to-date includes any act	tual expenditures				nates for the ren	nainder of FY 202	· ·	,				,,
				В	asis for Proj	ect Cost Esti	mate					
	Formal Propo	sal		Contractor/E	ngineer Estima	ate		State Purchasi	ng Co-Op	х	Staff Estimate	
					Financial Im	pact - Rever	nues					
	Life-To- Date*	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Revenue Estimate *Life-to-date includes any act	tual revenue gen	erated from star	t of project throu	gh July 2021 and	l estimates for ti	ne remainder of	FY 2021					-

Project Name:	Vidler Tunnel Improvements
	The Vidler collection system and diversion tunnel allows Golden to divert water from the Colorado River headwaters to Clear Creek for use at Fossil Trace and for other uses that require "Non-tributary" water. It is a vital part of Golden's water infrastructure. It consists of six collection points with six head gates that feed snowmelt into a pipeline. The pipeline is about 5000 feet long and carries the snowmelt across the Horseshoe basin. At the end of the pipeline is a flume that measures and controls the water before feeding it into the West Portal of a tunnel (Vidler Tunnel). The tunnel extends 1.4 miles (7400 feet) through a mountain, under the Continental Divide, and discharges the water into the headwaters of Clear Creek several miles above Georgetown. Once the water is in Clear Creek, it becomes available for Golden to use. This project will not change ongoing maintenance costs for the Vidler system overall, but deferred investment would result in increases to maintenance. In 2022 we will replace the remaining section of the collection system pipe, approximatly 1,000 ft. and rebuild one collection point structure. Current market conditions for materials may require that we purchase materials in 2021 and install in 2022 as part of a multi year project. A transfer of \$75,000.00 from the 2022 Water Distribution Replacement Project to the Vidler Tunnel Improvements is reflected in the 2022 budget amount. This amount will be reimbursed in 2023 from the Vidler account. This project will increase the prorated share of the carriage fees to all Vidler water users.
Strategic Action Plan Success Factor(s):	Quality Services
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	Routine reinvestement in capital assets such as the Vidler Tunnel reduces long term costs and assures that we continue to have a reliable water supplay so that we can provide potable water to the community.
List any obstacles for implementation	
	Pinance Use Only Date Received by Finance Department Reviewed by City Manager:



Completed by:	Anne Beierle/Theresa Worsham
Department Head Review:	Dan Hartman

Responsible Department:	Public Works
Fund:	Water Fund #9

Projec	ct Name:		Solar Photovoltaic Projects at Water Treatment Ponds										
Brief Do	escription:		10-500kW	of solar photo	volaic panels	can generate e	electricity to m	eet 100% of the	e RV park and	additional elec	ctricity needs fo	or the City.	
Fundir	ng Source		Ü	rant Funds for Project	Potential Grant Funds Identified		Funds Identified From Capital Project Fund x		Funds Identified From Other Fund (Name) water		No Identifie	ed Funding	
New/Additional Revenue Generated			_	t Ongoing e Source	Sou	ing Revenue Irce		e Revenue erated	No New/Additional Revenue Generated				
Legally	Mandated		Court D	ecision	Regulatory I	Requirement	Pending L	egal Action	Potential L	egal Action	Normal Liability X		
Public Hea	alth & Safety	У	Existing Sev	vere Hazard	·	nor Hazard	Potential Se	evere Hazard		linor Hazard	No Health or Safety Issue		
Operating E	Budget Impa	ict	and/or Pers	Operating sonnel Costs	Operatir	No Impact on ag and/or nel Costs	Slight Increase to Operating and/or Personnel Costs		Significant Increase to Operating and/or Personnel Costs				
Environment a	nd Sustaina	bility	and/or Su	nvironment stainability		nvironment stainabilty	No Environn	nental Impact		Negative ntal Impact	Diminishes E	invironment	
% Of Popu	lation Serve	d	by Pı	ılation Served roject X		Population ved		ately 50% of on Served		50% of the on Served			
Preservation of Facility		у	Loss of Facility Imminent A without Project Completion		Additional Damage Likely without Project Completion		Project Constitutes Normal Major Maintenance		Project Constitutes Normal Minor Maintenance X		New Facility/ No Safety Issue		
Project Useful Life			20+ Years With Little/No Maintenance X		20+ Years With Normal Maintenance		10-20 Years With Normal Maintenance		5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance		
Conformity to Strategic Plans & Department Goals			Critical to accomplishing Established Plans / Goals		Assists in Accomplishing Established Plans / Goals X		Will Not Assist or Will Hinder Accomplishing Plans / Goals		Recommended by City Council		Recommened by Staff		
Recreational or Aesthetic Value			Major	Value	Moderate value No Value Possibly X			Possibly D	etrimental				
Estimated Fr	equency of	Use		y Day X	Several Tim	es per Week	Several Time	es per Month	Once per M	onth or Less			
			Visio	n 2030 Guidi	ing Principle	s Priority - (Choose One	Rest Fit)					
х	(A) Safe and I Public Infr	Reliable rastructure		(B) Economic		ommunity An			(C) Public Safety		(D) Other		
			Ca	togory of Co	mital Evnan	ditures (Ch	oose One Be	set Eit\					
	Land		Building	tegory or ca	Equipment	uitures - (Cil	-	est ritj	To also a la mu		Infrastructure		
	Improvement		Improvement	<u> </u>	Equipment		Vehicle		Technology	Х	Jiiiiastructure		
					Financial Im	pact - Expe	nses						
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total	
Project Costs	Date	2022	2023	2024	650,000	2020	2027	2028	2023	2030	2031	650,000	
On-Going Maintenance												-	
Total Project Costs	-	-	-	_	650,000	-	_	_	_	-	-	650,000	
*Life-to-date includes any act	ual expenditure	 s from start of pr	oject through Ju	ly 2021 and estin	nates for the ren	nainder of FY 202	21						
				В	asis for Proj	ect Cost Est	imate						
Х	Formal Propo	osal		Contractor/E	ngineer Estim	ate		State Purchasi	ing Co-Op		Staff Estimate		
					Financial Im	pact - Revei	nues						
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total	
Revenue Estimate *Life-to-date includes any act	ual revenue gen	erated from star	t of project thro	igh July 2021 and	l estimates for t	ne remainder of	FY 2021					-	

Project Name:	Solar Photovoltaic Projects at Water Treatment Ponds
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	Ground-mounted and rooftop solar photovoltaic is the most cost-effective technology for renewable energy generation in Golden. The surface of the water treatment ponds presents an opportunity for newer floating solar technology and to integrate renewable energy into the water plant/RV park area as a means toward the City's 100% renewable energy goals (adopted by Resolution 2656). A small 30kW system (equivalent to 15% of the RV Park's annual electricity usage) as a pilot project to assess durability over a winter season is a reasonable first step. Pending success and additional data to ensure reliability, a system up to 500kW could be appropriate. Revenue generated would be dependent on the utility rebates offered at the time of construction. In general, solar rebates are declining, but total costs of equipment are also trending down, resulting in a similar or better payback period as other city solar projects. It is expected that overall monthly consumption (electricity bills) will decrease, offset by any loan payment for construction, and significant reduced costs after the payback period. The total system size would offset the entire electricity usage at the RV Park and some additional from the Water Treatment Plant.
Strategic Action Plan Success Factor(s):	Active, Connected and Sustainable
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	This project will help meet Golden's renewable energy goals.
List any obstacles for implementation	All major projects at the water plant faces the challenge of doing the work while continuing to operate the plant and provide water. Work is scheduled based on potential impact and generally avoids high demand periods.
	Finance Use Only

	Date
Received by Finance Department	
Reviewed by City Manager:	



Completed by:	Brynn Goe
Department Head Review:	Anne Beierle

Responsible Department:	Public Works
Fund:	Water Fund #10

Projec	ct Name:		Water Treatment Plant Improvements - General										
Brief Do	escription:		Capital replac	Capital replacement of components of the potable water plant to assure reliable operations and ongoing treatment of safe potable water residents and businesses in the city									
Fundir	ng Source		Existing Grant Funds Identified for Project		Potential Grant Funds Identified		Funds Identified From Capital Project Fund x		Funds Identified From Other Fund (Name)		No Identifie	ed Funding	
New/Additional Revenue Generated			Significan Revenue		_	ing Revenue irce	One-Time Gene		No New/Additional Revenue Generated x				
Legally	Mandated		Court D	ecision		Requirement	Pending Le	egal Action	Potential L	egal Action	Normal Liability		
Public Hea	alth & Safety	,	Existing Sev	ere Hazard	Existing Mi	nor Hazard	Potential Se	vere Hazard	Potential Minor Hazard		No Health or	Safety Issue	
Operating E	Budget Impa	ct		Operating onnel Costs	Minimal or No Impact on Operating and/or Personnel Costs x		Slight Increase to Operating and/or Personnel Costs		Significant Increase to Operating and/or Personnel Costs				
Environment a	ınd Sustaina	bility	Enhances En and/or Sus	nvironment stainability		vironment stainabilty	No Environmental Impact		Minor or Negative Environmental Impact		Diminishes Environment		
% Of Popu	lation Serve	d	100% of Popu by Pr			Population ved		tely 50% of on Served		50% of the on Served			
Preservation of Facility		Loss of Facility Imminent A without Project Completion		Additional Damage Likely without Project Completion		Project Constitutes Normal Major Maintenance x		Project Constitutes Normal Minor Maintenance		New Facility/ No Safety Issue			
Project Useful Life		20+ Years With Little/No Maintenance		20+ Years With Normal Maintenance		10-20 Years With Normal Maintenance		5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance			
Conformity to Strategic Plans & Department Goals		Department	Critical to accomplishing Established Plans / Goals		Assists in Accomplishing Established Plans / Goals		Will Not Assist or Will Hinder Accomplishing Plans / Goals		Recommended by City Council		Recommened by Staff		
Recreational o	r Aesthetic \	/alue	Major Value		Moderate value		No Value x		Possibly Detrimental				
Estimated Fr	equency of I	Use	Every	Day	Several Times per Week Several Times per Month Once per		Once per M	onth or Less					
					ing Dringinla	s Brigrity /	Choose One	Post Fit)					
	(A) Safe and F	Paliable				<i></i>		best ritj	(C) Public		(D) Other		
х	4	astructure		(B) Economic that Impro	ove Quality of		lemues		Safety		(b) Other		
			Ca	tegory of Ca	pital Expend	ditures - (Ch	oose One Be	st Fit)					
	Land Improvement		Building Improvement		Equipment		Vehicle		Technology	х	Infrastructure		
					Financial Im	pact - Exper	ıses						
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total	
Project Costs		600,000	730,000	2,000,000	1,000,000	750,000	750,000	750,000	750,000	750,000	750,000	8,830,000	
On-Going Maintenance												-	
Total Project Costs	-	600,000	730,000	2,000,000	1,000,000	750,000	750,000	750,000	750,000	750,000	750,000	8,830,000	
*Life-to-date includes any act	tual expenditure:	s from start of pr	oject through Jul	y 2021 and estin	nates for the ren	nainder of FY 202	21				'		
				В	asis for Proj	ect Cost Esti	mate						
	Formal Propo	sal	х	Contractor/E	ngineer Estima	ate		State Purchasi	ng Co-Op		Staff Estimate		
					Financial Im	pact - Rever	nues						
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total	
Revenue Estimate *Life-to-date includes any act	tual revenue gen	erated from star	t of project throu	gh July 2021 and	l estimates for ti	ne remainder of	FY 2021					-	

Project Name:	Water Treatment Plant Improvements - General
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	Golden's water treatment plant provides safe, clean potable water to residents and businesses in the City of Golden. The water plant starts at the raw water ponds west of the plant and includes several processes, including oxidation, coagulation, flocculation, sedimentation, filtration, disinfection, and solids handling, controlled using state of the art process control. The oldest facilities at the plant date back to the 1950s and the plant has been updated and modified to meet demand and to improve the reliability and quality of water delivered to the system. Capital replacement projects at the plant are identified and planned based on age of facility, life cycle of equipment, reliability and regulatory changes. The reclaim basin is a single underground tank at the water treatment plant that holds approximately 500,000 gallons of water. The reclaim basin acts as a flow equalization basin for the water treatment plant and plays a crucial role in recycling water back to the raw water holding ponds rather than sending any water to the sewer system unnecessarily. The reclaim basin was part of the 1991 upgrade and plant expansion project. The equipment in the reclaim basin, such as the residuals collectors, piping, valves and pumps are reaching the end of their useful life and some parts will soon be obsolete. The reclaim project for 2022 will replace these components with updated equipment which will allow for longer life and easier operations of the basin. If the sludge collection system and sludge pumps are not replaced, it will make it impossible to keep residuals from building up in the reclaim basin. Once the basin gets full, the water quality leaving the basin will change and a large cost will be associated with having to pump the residuals from the basin. This would also eliminate the option for the residuals to be dewatered using existing equipment at the WTP.
Strategic Action Plan Success Factor(s):	Quality Services
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	Routine reinvestement in capital assets such as the water treatment plant reduces long term costs and assures that we continue to reliable provide potable water to the community.
List any obstacles for implementation	All major maintenance at the water plant faces the challenge of doing the work while continuing to operate the plant and provide water. Work is scheduled based on potential impact and generally avoids high demand periods.
	Finance Use Only Date
	Date

	Date
Received by Finance Department	
Reviewed by City Manager:	



Completed by:	Brynn Goe
Department Head Review:	Anne Beierle

Responsible Department:	Public Works
Fund:	Water Fund #10

Proje	ct Name:		Water Treatment Plant Security Updates									
Brief Do	escription:		Addition of	physical securi	ty measures s	uch as camera		tion, outdoor li infrustructure.	ghting and add	ditional alarms	on doors to bu	uildings that
Fundir	ng Source		Existing Grant Funds Identified for Project		Potential Grant Funds Identified		Funds Identified From Capital Project Fund x		Funds Identified From Other Fund (Name)		No Identifie	ed Funding
New/Additional	Revenue Ge	nerated	_	t Ongoing e Source	_	ing Revenue ırce		e Revenue erated	No New/Additional Revenue Generated x			
Legally	Mandated		Court D	ecision ecision		Requirement	Pending L	egal Action	Potential Legal Action		Normal Liability	
Public Hea	alth & Safety	,	Existing Sev	vere Hazard	Existing M	nor Hazard	Potential Se	evere Hazard		linor Hazard x	No Health or	Safety Issue
Operating E	Budget Impa	ct		Operating sonnel Costs	Operatir Personr	Minimal or No Impact on Operating and/or Personnel Costs x		Slight Increase to Operating and/or Personnel Costs		Increase to ag and/or nel Costs		
Environment a	ınd Sustaina	bility		nvironment stainability		nvironment stainabilty	No Environn	nental Impact		Negative ntal Impact	Diminishes E	invironment
% Of Popu	lation Serve	d		llation Served roject x		Population ved		itely 50% of on Served		50% of the on Served		
Preservation of Facility		Loss of Facility Imminent A without Project Completion		Additional Damage Likely without Project Completion		Project Constitutes Normal Major Maintenance x		Project Constitutes Normal Minor Maintenance		New Facility/ Safety	No Issue	
Project Useful Life		20+ Years With Little/No Maintenance		20+ Years With Normal Maintenance		10-20 Years With Normal Maintenance		5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance		
Conformity to Strategic Plans & Department Goals		Department	Critical to accomplishing Established Plans / Goals		Assists in Accomplishing Established Plans / Goals		Will Not Assist or Will Hinder Accomplishing Plans / Goals		Recommended by City Council		Recommened by Staff	
Recreational or Aesthetic Value				Value	Modera	te value		/alue x	Possibly D	etrimental		
Estimated Fr	equency of I	Use		y Day x	Several Times per Week Several Times per Month Once per Month or Les		onth or Less					
			Visio	n 2030 Guid	ing Principle	s Priority - l	Choose One	Rost Eit\				
х	(A) Safe and F Public Infr	Reliable astructure	VISIO	(B) Economic		ommunity An		Destrict	(C) Public Safety		(D) Other	
			Ca	togory of Co	nital Evnon	dituros (Ch	oose One Be	set Eit\				
	Land		Building	tegory or ca	Equipment	ultures - (Cil	Vehicle	,	Technology		Infrastructure	
	Improvement		Improvement	t ^	Equipment		Vernicie		reciliology		Ininastructure	
					Financial Im	pact - Expe	ıses					
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Project Costs		50,000										50,000
On-Going Maintenance												-
Total Project Costs	-	50,000	-	-	-	-	-	-	-	-	-	50,000
*Life-to-date includes any act	tual expenditure	s from start of pr	oject through Ju	ly 2021 and estin	nates for the ren	nainder of FY 202	<u> </u> 21					
				В	asis for Proj	ect Cost Est	imate					
	Formal Propo	sal	х	Contractor/E	ngineer Estim	ate		State Purchasi	ng Co-Op		Staff Estimate	!
					Financial Im	pact - Revei	nues					
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Revenue Estimate *Life-to-date includes any act	tual revenue gen	erated from star	t of project throu	igh July 2021 and	l estimates for t	ne remainder of	FY 2021					-

Project Name: Water Treatment Plant Security Updates Cybersecurity and physical security are important to operator safety as well as equipment and communication reliability. Per the 2018 American Water Infrastructure Act, utilities are required to do a thorough assessment of the cyber and physical security of their facilities. These assessments were completed for the City's water treatment plant in June 2020. Based on recommendations from the assessments additional security measures should be taken. After prioritizing the recommendations, the consciences was that additional security cameras, lighting, glass coatings (doors and some wall space) and additional alarms will need to be added at the water treatment plant. The security upgrades mostly fall under equipment as the capital expenditure category, but can also include technology (camera operating system and alarm notification system) as well as building improvements (glass protection coatings). The new cameras will be added to the video management system purchased by the IT department to manage the clear creek cameras. Additional alarms will be added using systems already in place. There will not be a significant on-going maintenance cost to maintain and monitor the additional security measures put in place. By not adding some of the security measures identified during the risk and resilience assessment, the water treatment plant and water plant operators will be less secure from outside acts of terrorism on the water treatment plant. Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable) Strategic Action Plan Success Factor(s): **Quality Services** Routine reinvestement in capital assets such as the water treatment plant reduces long term costs and assures that we continue to reliable provide potable water to the community. Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above. All major maintenance at the water plant faces the challenge of doing the work while continuing to operate the plant and provide water. Adding additional cameras and alarms around the plant will involve integrating the equipment into existing PLC cabinets. If a PLC needs to be taken off line to tie in new equipment, the plant may need to be shut down. Installation of most security upgrade components can be added with little to no impact on plant operations. List any obstacles for implementation Finance Use Only

	Date
Received by Finance Department	
Reviewed by City Manager:	



Completed by:	Brynn Goe
Department Head Review:	Anne Beierle

Responsible Department:	Public Works
Fund:	Water Fund #10

Proje	ct Name:		Water Quality/Plant Improvements - PLC replacement									
Brief D	escription:		Replacement of Programmable Logic Controllers (PLCs) used for automation at the water treatment plant, pump stations and tanks.							nd tanks.		
Funding Source			Existing Grant Funds Identified for Project		Potential Grant Funds Identified		Funds Identified From Capital Project Fund x		Funds Identified From Other Fund (Name)		No Identifie	ed Funding
New/Additional Revenue Generated			Significant Ongoing Revenue Source		Small Ongoing Revenue Source		One-Time Revenue Generated		No New/Additional Revenue Generated x			
Legally Mandated			Court D	ecision	Regulatory Requirement		Pending L	egal Action	Potential Legal Action		Normal Liability	
Public Hea	alth & Safety	/	Existing Sev	ere Hazard	Existing Minor Hazard		Potential Se	evere Hazard	Potential Minor Hazard		No Health or	Safety Issue
Operating E	Budget Impa	ct	Decreases Operating and/or Personnel Costs		Minimal or No Impact on Operating and/or Personnel Costs x		Slight Increase to Operating and/or Personnel Costs		Significant Increase to			
Environment a	ınd Sustaina	bility	Enhances Enhances Enhances Enhances	nvironment stainability		nvironment stainabilty	No Environmental Impact		Minor or Negative Environmental Impact		Diminishes Environment	
% Of Popu	lation Serve	d	100% of Popu by Pr			Population ved		ntely 50% of on Served		50% of the on Served		
Preservati	on of Facility	y	Loss of Facili without Comp	Project	without	Additional Damage Likely without Project Completion		Project Constitutes Normal Major Maintenance x		Project Constitutes Normal Minor Maintenance		No Issue
Project Useful Life		20+ Years With Little/No Maintenance		20+ Years With Normal Maintenance		10-20 Years With Normal Maintenance		5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance		
Conformity to Strategic Plans & Department Goals		Department	Critical to accomplishing Established Plans / Goals x		Assists in Accomplishing Established Plans / Goals		Will Not Assist or Will Hinder Accomplishing Plans / Goals		Recommended by City Council		Recommened by Staff	
Recreational o	r Aesthetic \	/alue	Major		Modera	te value		/alue x	Possibly D	etrimental		
Estimated Fr	equency of (Use	Every	Day	Several Time	es per Week		es per Month	Once per M	onth or Less		
			Visio	2030 Guidi	ing Principle	s Priority - l	Choose One	Rost Eit\				
х	(A) Safe and F Public Infr	Reliable astructure		(B) Economic		ommunity An			(C) Public Safety		(D) Other	
			Ca	togory of Co	mital Evnan	ditures (Ch	aasa Ona Ba	oct Eit\				
	Land		Building	tegory or Ca	Equipment	ultures - (Cil	oose One Be		Technology		Infrastructure	
	Improvement		Improvement		Equipment		venicie		Technology	Х	Jiiiiastructure	
					Financial Im	pact - Expe	nses					
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Project Costs		100,000	100,000	100,000	100,000							400,000
On-Going Maintenance												-
Total Project Costs	-	100,000	100,000	100,000	100,000	-	-	-	-	-	-	400,000
*Life-to-date includes any act	tual expenditure	s from start of pr	oject through Jul	-								
	1					ect Cost Est	mate	7			1	
	Formal Propo	sal		Contractor/E	ngineer Estima	ate		State Purchasi	ing Co-Op	х	Staff Estimate	
					Financial Im	pact - Revei	nues					
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Revenue Estimate *Life-to-date includes any act	tual revenue gen	erated from star	t of project throu	gh July 2021 and	l estimates for ti	ne remainder of	FY 2021					-

Project Name:	Water Quality/Plant Improvements - PLC replacement
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	Operation of Golden's water treatment plant has been automated using a control system and PLCs that control individual components of the plant such as pumps, valves and chemical feeders. PLCs are essentially small programmable computers that communicate with a central control system. The potable treatment plant and distribution system contains dozens and dozens of individual PLCs. As with all technology, PLCs are quickly outdated. In the past we have replaced all the PLCs at once in a comprehensive program. Doing the upgrades in this manner is expensive and presents challenges for continuous operation of the plant. This multi-year replacement program spreads the project over several years. This project is necessary to assure continued, reliable, uninterrupted operations of the water plant. This project will not change ongoing maintenance costs for the water plant overall, but deferred investment would result in increases to maintenance. In 2018, funds were used to complete a comprehensive PLC and SCADA system inventory to better plan for the changes in technology and cost associated with PLC upgrades. In 2019, funds were used to complete an updated SCADA masterplan. As of 2020, there is a total of 33 PLC's in the water plant and distribution system. Each unit has a life expectancy of 8-10 years and the cost to replace a single unit (including hardware and labor) is approximately \$22,000. The number of individual PLC units will also increase as time goes on and more of the plant and distribution system becomes further automated. New regulatory instrumentation at the water plant and in the distribution system will also add to the number of PLC units as instrumentation becomes more automated and communicates better with our SCADA system.
Strategic Action Plan Success Factor(s):	Quality Services
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	Routine reinvestement in capital assets such as the control system at the water treatment plant reduces long term costs and assures that we continue to reliable provide potable water to the community.
List any obstacles for implementation	All major maintenance at the water plant faces the challenge of doing the work while continuing to operate the plant and provide water. When a PLC needs to be taken off line for replacement, the plant may need to be shut down. Work is scheduled based on potential impact and generally avoids high demand periods.
	Pinance Use Only Date Received by Finance Department Reviewed by City Manager:



Completed by:	Brynn Goe
Department Head Review:	Anne Beierle

Responsible Department:	Public Works
Fund:	Water Fund #10

Proje	ct Name:		Water Treatment Plant - Fire Resiliency									
Brief Do	escription:		Upgrades to improve facility resiliency and treated water quality under challenging source water conditions resulting from a forest fire ev within the watershed.							est fire event		
Funding Source			Existing Grant Funds Identified for Project		Potential Grant Funds Identified		Funds Identified From Capital Project Fund x		Funds Identified From Other Fund (Name)		No Identifie	ed Funding
New/Additional Revenue Generated			Significan Revenue		_	ing Revenue ırce		e Revenue erated	No New/Additional Revenue Generated x			
Legally Mandated			Court D	ecision		Requirement	Pending L	egal Action	Potential L	egal Action	Normal Liability	
Public Health & Safety			Existing Sev	vere Hazard	Existing Minor Hazard		Potential Severe Hazard		Potential Minor Hazard		No Health or	Safety Issue
Operating E	Budget Impa	ct	Decreases Operating and/or Personnel Costs		Minimal or No Impact on Operating and/or Personnel Costs		Slight Increase to Operating and/or Personnel Costs		Significant Increase to Operating and/or Personnel Costs			
Environment a	ınd Sustaina	bility	Enhances En and/or Sus	nvironment stainability		nvironment stainabilty	No Environmental Impact		Minor or Negative Environmental Impact		Diminishes Environment	
% Of Popu	lation Serve	d	100% of Popu by Pr			Population ved		ntely 50% of on Served		50% of the on Served		
Preservati	on of Facility	у	Loss of Facili without Comp	Project	without	amage Likely : Project :letion x	Project Constitutes Normal Major Maintenance		Project Constitutes Normal Minor Maintenance		New Facility/ Safety	No Issue
Project Useful Life			0+ Years With Little/No Maintenance		20+ Years With Normal Maintenance		10-20 Years With Normal Maintenance		5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance	
Conformity to Strategic Plans & Department Goals		Critical to accomplishing Established Plans / Goals x		Assists in Accomplishing Established Plans / Goals		Will Not Assist or Will Hinder Accomplishing Plans / Goals		Recommended by City Council		Recommened by Staff		
Recreational or Aesthetic Value			Major		Modera	te value		/alue x	Possibly D	etrimental		
Estimated Fr	equency of I	Use	Every	/ Day	Several Time	es per Week	Several Time	es per Month	Once per M	onth or Less		
			Visio	o 2030 Guidi	ing Principle	s Priority - l	Choose One	Rost Eit\				
х	(A) Safe and F Public Infr	Reliable rastructure		(B) Economic		ommunity An		Dest Fit)	(C) Public Safety		(D) Other	
	1				•	ditures - (Ch	oose One Be	,	1		1	
	Land Improvement		Building Improvement		Equipment		Vehicle		Technology	х	Infrastructure	
					Financial Im	pact - Expe	nses					
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Project Costs		300,000	300,000									600,000
On-Going Maintenance				93,000		93,000		93,000		93,000		372,000
Total Project Costs	-	300,000	300,000	93,000	-	93,000	-	93,000	-	93,000	-	972,000
*Life-to-date includes any act	tual expenditure	s from start of pr	oject through Jul									
	1				asis for Proj		imate	7			1	
	Formal Propo	sal	х	Contractor/E	ngineer Estima	ate		State Purchasi	ng Co-Op		Staff Estimate	!
					Financial Im	pact - Rever	nues					
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Revenue Estimate *Life-to-date includes any act	tual revenue gen	erated from star	t of project throu	igh July 2021 and	l estimates for tl	ne remainder of	FY 2021					-

Project Name:	Water Treatment Plant - Fire Resiliency
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	After the wildfire seasons in 2019 and 2020, it has become clear that water plants need to prepare for the possibility that source water will be impacted by wildfire. Golden is active in efforts to protect the watershed and water supply, but these projects are implemented ove many years and only reduce, not eliminate, the risk of wildfire. This project makes it possible to treat water that has been impacted by wildfire in the upper Clear Creek Basin. The water treatment plant draws water from Clear Creek, which is a heavily forested mountainous dry watershed that has been highly impacted by the Mountain Pine Beetle epidemic. Clear Creek is the only water source for Golden and i either treated in the water treatment plant or conveyed in the non-potable irrigation system. Golden does not have the option to use a different water supply if Clear Creek is compromised by fire. Anticipated water quality impacts that can take place following a wildfire even in the clear creek watershed are: increased turbidity, increased organic carbon, increased heavy metals, increase in alkalinity and pH increase in radionuclides, and increased nutrient loading. The current process at the water treatment plant is not set up to effectively trea raw water impacted by wildfire. Even if plant flow could be reduced and slowed to try to achieve higher removal to be safe to drink, the treated water would likely have taste and odor issues. Infrastructure and additional or alternative treatments would be needed to treat thi water. Most either have long lead times or cannot address taste and odor concerns. Based on engineering assessments, the most conceffective first step in moving the water treatment plant towards being able to treat the effected water is to replace the current filter medic from anthracite and sand to granular activated carbon. The granular activated carbon (GAC) will help in the removal of organics, taste, odor color, metals, radionuclides and turbidity. GAC will improve water quality from the plant under normal conditions,
Strategic Action Plan Success Factor(s):	Quality Services
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	The water utility has identifed an upstream wildfire as a risk to our ability to provide potable water to the community. This risk is high enough that this project has been proposed to assure that the water plant has the treatment methods necessary to treat a water supply that has been contaminated as a result of a wildfire and assure that we can provide continuous quality service and potable water to the community.
List any obstacles for implementation	All major projects at the water plant faces the challenge of doing the work while continuing to operate the plant and provide water. Work is scheduled based on potential impact and generally avoids high demand periods.
	Finance Use Only
	Date

		Date
ı	Received by Finance Department	
	Reviewed by City Manager:	



Completed by:	Will Stambaugh
Department Head Review:	Anne Beierle

Responsible Department:	Public Works
Fund:	Water Fund #11

Projec	ct Name:					Pump	Station	Improve	nents					
Brief Description: Pump Station equipment and facilities rehabilitation and replacement														
Funding Source			Existing Gi			irant Funds tified	Capital Pro	entified From Other Funds Identified From Other Fund (Name) In Revenue Inerated Revenue Generated X Legal Action Potential Legal Action Severe Hazard Potential Minor Haza X ase to Operating Personnel Costs Inmental Impact X Interact Impact Impact X Interact Impact Imp			No Identifie	ed Funding		
New/Additional I	Revenue Ge	nerated	Significan Revenue		_	ing Revenue irce	One-Time	Revenue	Revenue	Generated				
Legally l	Mandated		Court D	ecision		Requirement	Pending Le	egal Action			Normal I	Liability		
Public Hea	alth & Safety	,	Existing Sev	ere Hazard	Existing Mi	nor Hazard	Potential Se	vere Hazard	Potential M	linor Hazard x	No Health or	Safety Issue		
Operating E	Budget Impa	ct	Decreases and/or Pers		Operatin Personr	lo Impact on g and/or nel Costs	_		Operatin	g and/or				
Environment a	nd Sustaina	bility	Enhances En and/or Sus			vironment stainabilty		·			Diminishes E	nvironment		
% Of Popul	lation Serve	d	100% of Popu by Pr	oject		Population ved	Approxima	tely 50% of						
Preservati	on of Facility	y	Loss of Facili without Comp	ty Imminent Project		amage Likely : Project letion	Normal Major	Maintenance	Norma	l Minor	New Facility/ No Safety Issue			
Project Useful Life			20+ Years W Mainte	-		Vith Normal enance	10-20 Years	With Normal			1-4 Years with Normal Maintenance			
Conformity to Strategic Plans & Department Goals			Critical to ac Established I		Assists in Ad	complishing Plans / Goals	Hinder Acc	omplishing			Recommened by Staff			
Recreational or Aesthetic Value			Major		Modera	te value			Possibly D	etrimental				
Estimated Fro	equency of l	Use	Every	Day	Several Time	es per Week			Once per Month or Less					
			Visio	n 2030 Guidi	ing Principle	s Priority - (Choose One	Rest Fit)						
х	(A) Safe and F Public Infr	Reliable rastructure		(B) Economic		ommunity Am					(D) Other			
			Ca	togory of Ca	nital Evnon	dituros (Ch	aasa Ona Ba	ct Eit\						
	Land		Building	· ·	Equipment	aitures - (Cir	Vehicle		Technology	х	Infrastructure			
	Improvement		Improvement											
					Financial Im	pact - Exper	ıses							
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total		
Project Costs		67,500	70,200	73,000	75,900	79,000	82,100	85,400	88,800	92,400	96,100	810,400		
On-Going Maintenance												-		
Total Project Costs	-	67,500	70,200	73,000	75,900	79,000	82,100	85,400	88,800	92,400	96,100	810,400		
*Life-to-date includes any act	*Life-to-date includes any actual expenditures from start of project through July 2021 and estimates for the remainder of FY 2021													
	Basis for Project Cost Estimate Formal Proposal Contractor/Engineer Estimate State Purchasing Co-Op x Staff Estimate													
					Financial Im	pact - Rever	uies —							
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total		
Revenue Estimate *Life-to-date includes any act								2020	2023	2030	2031	-		

Project Name:	Pump Station Improvements
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	Golden has nine pump stations that are essential components of Golden's water infrastructure. Gravity is used to maintain water pressure throughout the city by storing water in tanks at different elevations. The water treatment plant on Clear Creek is at an elevation of about 5700 feet. Finished water is pumped from the plant to tanks at an elevation of 6000 feet, then pumped up to tanks at alevations of 6130, 6170, 6200 and 6260 feet, then finally to tanks at an elevation of 6400 feet. The pump stations also provide pumped non-potable irrigation and pumped diversions from Clear Creek. Included in the Pump Station infrastructure are four automated control valves and the bulk water station, plus nine pressure reducing valves which are not automated. This project will not change ongoing maintenance costs for pump stations overall, but deferred investment would result in increases to maintenance. 2022 projects include pump and motor rebuild/upgrades at the seasonal pump station and Welch Ditch pump station.
Strategic Action Plan Success Factor(s):	Quality Services
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	Routine reinvestement in capital assets such as the pump stations reduces long term costs and assures that we continue to reliable provide potable water to the community.
List any obstacles for implementation	
	Date Received by Finance Department Reviewed by City Manager:



Completed by:	Les Major
Department Head Review:	Anne Beierle

Responsible Department:	Public Works
Fund:	Water Fund #12

Projec	ct Name:		Storage Tank Improvements									
Brief Do	Brief Description: Replace existing interior and exterior coatings on potable water tanks											
Existing Grant Funds Potential Grant Funds Funds Identified From Funds Identified From												
Fundir	ng Source		_	for Project		tified	Capital Pr	oject Fund X		nd (Name)	No Identific	ed Funding
New/Additional	Revenue Ge	nerated	Significan Revenue	t Ongoing e Source	_	ing Revenue urce		e Revenue erated	Revenue	Additional Generated		
Legally	Mandated		Court D	ecision		Requirement	Pending Lo	egal Action		X egal Action	Normal	Liability
Public Hea	alth & Safety	,	Existing Sev	vere Hazard		X inor Hazard	Potential Se	vere Hazard		linor Hazard	No Health or	Safety Issue
Operating E	Budget Impa	ict		Operating sonnel Costs	Operatir Personi	No Impact on ng and/or nel Costs	_	e to Operating sonnel Costs	Significant Operatir	Increase to ag and/or nel Costs		
Environment a	ınd Sustaina	bility		nvironment stainability		nvironment stainabilty		nental Impact		Negative ntal Impact	Diminishes Environment	
% Of Popul	lation Serve	d		lation Served oject		Population ved	Approxima	tely 50% of on Served		50% of the on Served		
Preservati	on of Facility	у	Loss of Facili	ty Imminent : Project letion	withou	amage Likely t Project oletion	Normal Major	onstitutes r Maintenance X	Norma	onstitutes I Minor enance	New Facility/ No Safety Issue	
Project Useful Life			20+ Years W Mainte	ith Little/No enance	Maint	Vith Normal enance X	10-20 Years Maint	With Normal enance	5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance	
Conformity to Strategic Plans & Department Goals			Established I	ccomplishing Plans / Goals		ccomplishing Plans / Goals	Hinder Acc	ssist or Will complishing / Goals	Recommended by City Council		Recommened by Staff	
Recreational or Aesthetic Value				Value	Modera	ite value		/alue X	Possibly D	etrimental		
Estimated Fr	equency of (Use		y Day	Several Tim	es per Week		es per Month	Once per Month or Less			
			Visio	- 2020 Cuid	ina Drinainle	a Drievity /	Choose One	Doct Fit\				
х	(A) Safe and F	Reliable rastructure	VISIO	(B) Economic		ommunity An			(C) Public Safety		(D) Other	
		- astracture		that miph	- Quality of				Jaicty			
			Ca	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	st Fit)				
	Land Improvement		Building Improvement	•	Equipment		Vehicle		Technology	Х	Infrastructure	•
					Financial <u>Im</u>	ıpact - Expei	nses					
	Life-To- Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Project Costs		300,000	100,000	100,000								500,000
On-Going Maintenance												-
Total Project Costs *Life-to-date includes any act	- tual expenditures	300,000 s from start of pr	100,000 oject through Ju	100,000 ly 2021 and estin	- nates for the rer	- nainder of FY 202	- 21	-	-	-	-	500,000
,		-				ect Cost Esti						
Х	Formal Propo	sal		Contractor/E				State Purchasi	ng Co-Op		Staff Estimate	
					Financial Im	nact Paus	21105					
	Life-To-				mancial III	pact - Rever	lues					
	Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
Revenue Estimate												-

^{*}Life-to-date includes any actual revenue generated from start of project through July 2021 and estimates for the remainder of FY 2021

Project Name:	Storage Tank Improvements
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	The City of Golden owns ten tanks that serve as potable water storage for the citizens of Golden. Five tanks are above ground steel tanks with an expected life of 100+ years. Repainting the steel tanks with new polymer based coatings will extend the life of the existing structures and ensure good water quality for the next 20 plus years. This project will not change ongoing maintenance costs for storage tanks overall, but deferred investment would result in increases to maintenance. 2022 Projects include Rimrock tank interior piping coating, ladder replacement and circulation improvements.
Strategic Action Plan Success Factor(s):	Quality Services
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	Routine reinvestement in capital assets such as water storage tanks reduces long term costs and assures that we continue to reliable provide potable water to the community.
List any obstacles for implementation	
	Finance Use Only Date Received by Finance Department
	Reviewed by City Manager:



Completed by:	Anne Beierle
Department Head Review:	Dan Hartman

Responsible Department:	Public Works
Fund:	Water Fund #13

Projec	ct Name:				Meter S	ystem U	pgrde - V	· Water Meter Replacement						
Brief Do	escription:		Replace v	vater meters t	hat are appro	aching their 20) year design lif	e and were no	t replaced as p	part of the 201	6 replacement	program		
Funding Source			Existing Gr Identified			irant Funds tified	Capital Pr	tified From oject Fund x		itified From nd (Name)	No Identifie	ed Funding		
New/Additional	Revenue Ge	nerated	Significan Revenue		_	ing Revenue Irce		Revenue rated	Revenue	Additional Generated x				
Legally	Mandated		Court D	ecision		Requirement	Pending Le	egal Action		egal Action	Normal	Liability		
Public Hea	alth & Safety	у	Existing Sev	ere Hazard	Existing Mi	nor Hazard	Potential Se	vere Hazard		linor Hazard x	No Health or	Safety Issue		
Operating E	Budget Impa	act	Decreases and/or Pers		Personr	No Impact on ag and/or nel Costs x	-	e to Operating connel Costs	Operatir	Increase to ng and/or nel Costs				
Environment a	ınd Sustaina	bility	Enhances En and/or Sus			nvironment stainabilty	No Environm	ental Impact		Negative ntal Impact	Diminishes Environment			
% Of Popu	lation Serve	ed .	100% of Popu by Pr			Population ved		tely 50% of on Served		50% of the on Served				
Preservation of Facility			Loss of Facili without Comp	Project	without	amage Likely Project lletion	Normal Major	onstitutes Maintenance	Population Served Project Constitutes Normal Minor Maintenance		New Facility/ No Safety Issue			
Project Useful Life			20+ Years W Mainte	-	20+ Years V Mainto	Vith Normal enance	Mainte	With Normal enance x	5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance			
Conformity to Strategic Plans & Department Goals			Critical to ac Established F	Plans / Goals		complishing Plans / Goals	Hinder Acc	ssist or Will omplishing Goals	Recommended by City Council		Recommened by Staff			
Recreational o	r Aesthetic \	Value	Major		Modera	te value		/alue x	Possibly D	etrimental				
Estimated Fr	equency of	Use	Every		Several Time	es per Week	Several Time	es per Month	Once per Month or Less					
			Visio	2030 Guid	ing Principle	s Priority - (Choose One	Rest Fit)						
х	(A) Safe and I Public Infi	Reliable rastructure		(B) Economic	Vitality and C ove Quality of	ommunity An		Descrie,	(C) Public Safety		(D) Other			
			Ca	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	st Fit)						
	Land		Building		Equipment	(0.1	Vehicle	,	Technology		Infrastructure			
	Improvemen	t	Improvement											
	Life-To-	1			Financial Im	pact - Expe	ises							
	Date*	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total		
Project Costs			100,000	100,000	100,000	100,000	100,000					500,000		
On-Going Maintenance												-		
Total Project Costs	-	-	100,000	100,000	100,000	100,000	100,000	-	-	-	-	500,000		
*Life-to-date includes any act	*Life-to-date includes any actual expenditures from start of project through July 2021 and estimates for the remainder of FY 2021													
Basis for Project Cost Estimate Formal Proposal Contractor/Engineer Estimate State Purchasing Co-Op x Staff Estimate							:							
					Financial Im	nact - Rever	ues							
	Life-To-	2022	2022					2020	2020	2020	2021	Total		
Revenue Estimate *Life-to-date includes any act	Date*	2022	2023 t of project throu	2024 gh July 2021 and	2025 d estimates for the	2026	2027 FY 2021	2028	2029	2030	2031	Total -		

Project Name:	Meter System Upgrde - Water Meter Replacement
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	Replace meters that were in stalled after January 1, 2006 and before January 1 2016. Mechanical meters lose accuracy as the age which results in lost revenue. Replacing these meters before they fail will result in a more even revenue stream and avoid increasing maintenance costs associated with failing or stopped meters. In the past we have replaced all of the meters at once in a comprehensive program. Upgrading meters in this manner is expensive and leads to challenges in data quality control and billing. A multi year approach will allow for better data quality control and ensure billing needs are met in a timely manner. The project will not change ongoing maintenance costs, but deferred investment would result in increases to maintenance. This is a five year campaign.
Strategic Action Plan Success Factor(s):	Quality Services
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	Accurate water meters assure that we bill correctly and continue to provide quality public services in the delivery of potable water to the community.
List any obstacles for implementation	
	Finance Use Only Date Received by Finance Department
	Reviewed by City Manager: