

Completed by:	Les Major
Department Head Review:	Brian Tracy

Responsible Department:	Public Works
Fund:	Water #4

Strategié Action Replacement and rehabilitation of aging water distribution lines				Active, Con		Afforda		•	usive and	Respected and Relational		Quality	
Replacement and rehabilitation of aging water distribution lines	Strategic S	uccess Facto	or	Sustainable		Thriving		Engaged		Governance			
Project Name												^	
Project Name	Strategic Action												
Funding Source	Strate	SIC ACTION				Replacemo	ent and rei	nabilitation	of aging wa	ater distrib	ution lines		
Funding Source	Ducio	ot Nama						D I		\A/-1			
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Legally Mandated Court Decision Regulatory Requirement Pending Legal Action Potential Legal Action Normal Liability	New/Additional I	Revenue Ge	nerated	Revenue	e Source	Sou	irce	Gene	erated				
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Operating Budget Impact Information of Personnel Costs of Personnel C			<i>'</i>										
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## Approximately 50% of Population Served ## Project Constitutes	Environment a	nd Sustaina	bility	and/or Sus	tainability	and/or Sus	stainabilty	NO ENVIRONM	ientai impact	Environme	ntal Impact	Diminishes E	nvironment
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Preservation of Facility without Project Completion Com	% Of Popul	lation Serve	ed .	Served b	y Project	Ser	ved	Population	on Served	Populatio	n Served		
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Vision 2030 Guiding Principles Priority - (Choose One Best Fit)	Estimated Ex			Every	Day	Several Time	es per Week	Several Time	Several Times per Month Once per Month or Le		onth or Less		
Vision 2030 Guiding Principles Priority - (Choose One Best Fit)	Estimated Fro	equency of	Use)	(
X (A) Safe and Reliable Public Infrastructure (B) Economic Vitality and Community Amenities (C) Public Safety (D) Other that Improve Quality of Life Safety													
Public Infrastructure				Visio	n 2030 Guid	ing Principle	es Priority - (Choose One	Best Fit)				
Category of Capital Expenditures - (Choose One Best Fit)	Х	(A) Safe and	Reliable		(B) Economic	Vitality and C	ommunity An	nenities		(C) Public		(D) Other	
Land Building Equipment Vehicle Technology X Infrastructure Improvement Improvemen		Public Infi	rastructure		that Impro	ove Quality of	Life	•		Safety			
Land Building Equipment Vehicle Technology X Infrastructure Improvement Improvemen													
Improvement				Ca	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	est Fit)				
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Project Costs 800,000 800,000 800,000 986,949 1,026,427 1,067,484 1,110,184 1,154,591 1,200,775 1,248,806 10,195,216		Life-To-											
On-Going Maintenance		Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Total Project Costs - 800,000 800,000 800,000 986,949 1,026,427 1,067,484 1,110,184 1,154,591 1,200,775 1,248,806 10,195,216 Life-to-date includes any actual expenditures from start of project through July 2022 and estimates for the remainder of FY 2022 Basis for Project Cost Estimate	Project Costs		800,000	800,000	800,000	986,949	1,026,427	1,067,484	1,110,184	1,154,591	1,200,775	1,248,806	10,195,216
Total Project Costs - 800,000 800,000 800,000 986,949 1,026,427 1,067,484 1,110,184 1,154,591 1,200,775 1,248,806 10,195,216 Life-to-date includes any actual expenditures from start of project through July 2022 and estimates for the remainder of FY 2022 Basis for Project Cost Estimate	On Going Maintenance												
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Basis for Project Cost Estimate State Purchasing Co-Op X Staff Estimate State Purchasing Co-Op X Sta	Total Project Costs	-	800,000	800,000	800,000	986,949	1,026,427	1,067,484	1,110,184	1,154,591	1,200,775	1,248,806	10,195,216
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Formal Proposal Contractor/Engineer Estimate State Purchasing Co-Op X Staff Estimate Financial Impact - Revenues Life-To- Date* 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 Total Revenue Estimate - Contractor/Engineer Estimate State Purchasing Co-Op X Staff Estimate Financial Impact - Revenues	Basis for Project Cost Estimate												
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Date* 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 Total Revenue Estimate		Life-To-				rmancial im	pact - Reve	lues					
Revenue Estimate -			2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
	Revenue Estimate												
Life-to-date includes any actual revenue generated from start of project through July 2022 and estimates for the remainder of FY 2022		tual revenue gor	nerated from star	rt of project thro	ugh lulv 2022 an	d estimates for	the remainder o	F FY 2022					

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 113.9 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.
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 water distribution system and can provide quality potable water to our citizens.
List any obstacles for implementation	
	Date Received by Finance Department Reviewed by City Manager:

Affordable and

Safe, Inclusive and

Quality



Completed by:	Les Major
Department Head Review:	Brian Tracy

Active, Connected and

Responsible Department:	Public Works
Fund:	Water #5

Respected and Relational

Strategic Si	uccess Facto	or	Sustai	Sustainable Thriving Engaged		Gover	nance	Services X					
												`	
Strateg	gic Action			Add t	elemetry t	to the Urac	l reservoirs	and lower	Urad outle	t pipe reco	ating		
Projec	ct Name					Urad F	d Reservoir Improvements						
Fundin	g Source		Existing Gr Identified		Potential Grant Funds Identified		Funds Identified From Capital Project Fund X		Funds Identified From Other Fund (Name)		No Identified Funding		
New/Additional F	Revenue Ge	nerated	Significan Revenue	t Ongoing e Source	Small Ongoi Sou	ng Revenue irce		e Revenue erated	No New/Additional Revenue Generated				
Legally I	Mandated		Court D	ecision	o ,	Requirement	Pending Legal Action		Y Potential Legal Action		Normal Liability		
Public Hea	olth & Safety	y	Existing Sev	ere Hazard	Existing Mi	nor Hazard		evere Hazard X	Potential M	inor Hazard	No Health or	Safety Issue	
Operating B	Budget Impa	ct	Decreases and/or Pers			-	Slight Increas	e to Operating sonnel Costs	Operatin	Increase to g and/or sel Costs			
Environment a	nd Sustaina	bility	Enhances En and/or Sus		Benefits En	vironment stainabilty		nental Impact	Minor or Environme	Negative ntal Impact	Diminishes Environment		
% Of Popul	ation Serve	d	100% of P Served b		Majority of Ser	•	Approxima	X ately 50% of on Served	Less than 50% of the Population Served				
Preservation	on of Facilit	у			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 W Mainte	•			enance	1-4 Years with Normal Maintenance					
Recreational or	r Aesthetic \	Value	Major	Value	Moderate value No Value Possibly Detrimental X			etrimental					
Estimated Fro	equency of	Use	Every	/ Day	Several Time	es per Week	Several Times per Month Once per Mon		onth or Less				
			Visio	n 2030 Guid	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	tegory of Ca	pital Expen	ditures - (Ch	oose One B	est Fit)					
	Land Improvement		Building Improvement		Equipment		Vehicle	·	Technology	Х	Infrastructure		
	mprovemen		improvement		Financial Im	mast Even	***						
	Life-To-				rillaliciai ili	ipaci - Expe	1562						
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
Project Costs				50,000	50,000							100,000	
On-Going Maintenance												-	
Total Project Costs	-	-	-	50,000	50,000	-	-	-	-	-	-	100,000	
Life-to-date includes any act	ife-to-date includes any actual expenditures from start of project through July 2022 and estimates for the remainder of FY 2022												
	Formal Propo	osal		Contractor/E	asis for Proj			State Purchasii	ng Co-Op	х	Staff Estimate		
	•												
	Life-To-				Financial Im	pact - Reve	nues						
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
Revenue Estimate	and revenue ser	orated from sta	rt of project the	ugh luly 2022	d actimates for	tho romaindar -	F EV 2022					-	

Project Name:	Urad Reservoir Improvements
	In the spring of 2022 Lower Urad Reservoir was reclassified by the State of Colorado as a "High Hazard" structure. This reclassification was driven by data supplied by the City of Golden from updated inundation mapping done by W.W. Wheeler & Associates, Inc. Due to this reclassification remote monitoring and control systems need to be installed at Lower Urad reservoir. Recoating of the interior of the outlet piping at Lower Urad is planned due to the failure of the existing coating in some areas.
	Routine reinvestment in capital assets such as reservoirs reduces long term costs and assures that we continue to have safe and well maintaned raw water storage facilities.
List any obstacles for implementation	
	Finance Use Only
	Received by Finance Department
	Reviewed by Finance Department Reviewed by City Manager:



Completed by:	Theresa Worsham
Department Head Review:	Anne Beierle

Responsible Department:	Public Works
Fund:	Water #5

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Strategic S	uccess Facto	or	Susta	inable	Thriving Engaged		Gover	Governance		Services X		
Strate	gic Action			I	nstallation	of hydroe	ectric gene	eration facili	ties at Ura	d reservoir	·s	
Proje	ct Name					Hydr	oelectric	Power Pi	roject			
			Existing G	rant Funds	Potential G	irant Funds	Funds Ider	ntified From	Funds Iden	tified From	No Identifi	nd Eunding
Fundir	ng Source		Identified	for Project	Iden	tified	Capital Pr	oject Fund	Other Fur	nd (Name)	No identini	eu Fullullig
			Significan	t Ongoing	Small Ongo	ing Revenue	One-Time	A e Revenue	No New/	Additional		
New/Additional	Revenue Ge	nerated	_	e Source	_	irce	Gene	erated		Generated		
						X						
Legally	Mandated		Court D	ecision	Regulatory F	Requirement	Pending L	egal Action	Potential L	egal Action	Normal	-
)	
Public Hea	alth & Safet	у	Existing Sev	ere Hazard	Existing Mi	nor Hazard	Potential Se	evere Hazard	Potential M	linor Hazard	No Health or	•
			D	0	Minimal or N	No Impact on	Clinks I account		Significant	Increase to)	(
Operating E	Budget Impa	act		Operating sonnel Costs	-	g and/or	_	e to Operating sonnel Costs		g and/or		
o perauma i						nel Costs K	,		Personr	nel Costs		
			Enhances F	nvironment		vironment			Minor or	Negative		
Environment a	ınd Sustaina	ability		stainability		stainabilty	No Environn	nental Impact		ntal Impact	Diminishes Environment	
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0/ Of Dans	lation Comus	. d		opulation		Population ved		ately 50% of		50% of the		
% Of Population Served			Served b	y Project K	Ser	vea	Populati	on Served	Populatio	on Served		
			_	Additional Damage Likely without Project		Project Constitutes		Project Constitutes		New Facility/		
Preservation of Facility			: Project letion	Completion		Normal Major Maintenance		Normal Minor Maintenance		No Safety Issue		
					20. Voore With Normal		40.00		FOV		X 1-4 Years with Normal	
Project	Useful Life			ith Little/No enance	20+ Years With Normal Maintenance		10-20 Years With Normal Maintenance		5-9 Years with Normal Maintenance		1-4 Years w Mainte	
110,000	oscial Elic			X								
Recreational o	r Δesthetic '	Value	Major	Value	Modera	te value	No Value		Possibly Detrimental			
- Treel eathernal e		• dide		X								
Estimated Fr	equency of	Use	Every	y Day	Several Time	es per Week	Several Time	es per Month	Once per M	onth or Less		
)	X								
			Visio	n 2030 Guid	ing Principle	es Priority -	(Choose One	Best Fit)				
х	(A) Safe and I	Reliable		(B) Economic	Vitality and C	ommunity An	nenities		(C) Public		(D) Other	
	Public Infi	rastructure		that Impr	ove Quality of	Life			Safety			
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-			-		1	aitures - (Cr	oose One Bo	est Fit)	1		1	
	Land Improvemen	 t	Building Improvement		Equipment		Vehicle		Technology	Х	Infrastructure	•
	p. 2. 0011		p. 0.101110111		Financial de							
	Life-To-				rmancial im	pact - Expe	nses					
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Project Costs							250,000					250,000
On-Going Maintenance												_
												_
Total Project Costs	-	-	-	-	-	-	250,000	-	-	-	-	250,000
*Life-to-date includes any ac	Life-to-date includes any actual expenditures from start of project through July 2022 and estimates for the remainder of FY 2022											
	Basis for Project Cost Estimate											
	Formal Proposal Contractor/Engineer Estimate State Purchasing Co-Op X Staff Estimate											
	Life-To-				Financial Im	pact - Reve	nues					
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Revenue Estimate												-
*Life-to-date includes any ac	l tual revenue ger	I nerated from sta	rt of project thro	l ugh July 2022 ar	l nd estimates for	the remainder o	l f FY 2022		<u> </u>	<u> </u>		

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 1. Project Description the feasibility study we have pushed this project back to 2025. 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable) 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:	Les Major
Department Head Review:	Brian Tracy

Responsible Department:	Public Works
Fund:	Water #7

Chushasia Cuasaa Fashau		Active, Connected and Sustainable			Affordable and		Safe, Inclusive and Engaged		Respected and Relational		lity ices		
Strategic S	Strategic Success Factor		Sustai	nable	Thriving Eng		ageu	Gover	Governance		ices		
Strate	gic Action		Rebuild and replace infrastructure collection points, pipelines, instrumentation, portals, and tunnel										
Proje	ct Name		Vidlar Turnal Impressors										
110,0				Vidler Tunnel Improvements									
Francis	a Carrea		_	rant Funds for Project	Potential G	irant Funds		tified From oject Fund	Funds Iden Other Fun		No Identifie	ed Funding	
runain	ng Source		identified	ioi Project	ideii	uneu	Capital Fi	X	Other Full	iu (ivailie)			
Name / And distance 1	0		_	t Ongoing	_	ing Revenue		Revenue	No New/				
New/Additional I	kevenue Ge	nerated	Revenue	e Source	Sou	irce	Gene	erated	Revenue (
Logolly	Mandatad		Court D	ecision	Regulatory F	Requirement	Pending Le	egal Action	Potential L	egal Action	Normal I	Liability	
Legally	Mandated)	K							
Public Hea	alth & Safety	y	Existing Sev	ere Hazard	Existing Mi	nor Hazard	Potential Se	evere Hazard	Potential M		No Health or	Safety Issue	
					Minimal or N	No Impact on			Significant				
Operating E	Rudget Imna	oct		Operating onnel Costs	Operatin	g and/or	_	e to Operating sonnel Costs	Operatin	g and/or			
Operating 2	auget iiipu					nel Costs K	,		Personn	el Costs			
			Enhances E	nvironment	Benefits En	vironment	No Francisco	ontol lucus d	Minor or	Negative	Diminisher	nviran er ev t	
Environment a	nd Sustaina	bility	and/or Sus	stainability	and/or Su	stainabilty	NO ENVIRONN	nental Impact	Environme	ntal Impact	Diminishes Environment		
			100% of P	onulation	Majority of	Population		X Itely 50% of	Less than I	50% of the			
% Of Popu	lation Serve	d	100% of Population Served by Project		Majority of Population Served		Approximately 50% of Population Served		Less than 50% of the Population Served				
			X Loss of Facility Imminent		Additional Damage Likely		Duois et C	austitutos	Project Co	onstitutes	Name Parties /		
Preservation of Facility		without Project Completion		without Project		Project Constitutes Normal Major Maintenance		Normal Minor		New Facility/ No Safety Issue			
					Completion		Х		Maintenance				
Duning the Line for 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 wi Mainte		
Project Useful Life			Iviaiiice	enance	X						IVIAIIILE	Harice	
Recreational o	r Aesthetic \	Value	Major Value		Modera	te value	No Value		Possibly Detrimental				
			F	0.	C			X	0				
Estimated Fro	equency of	Use	Every	/ Day (Several Time	es per Week	Several Time	es per Month	Once per M	onth or Less			
					: D-::-I	- Dri - rite		D + 5'+\					
				•		•	Choose One	•					
X	(A) Safe and I Public Infr	Reliable rastructure		(B) Economic that Impro	Vitality and C ove Quality of	-	nenities		(C) Public Safety		(D) Other		
				•	, ,				•				
			Ca	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	est Fit)					
	Land		Building		Equipment		Vehicle		Technology	Х	Infrastructure		
	Improvement		Improvement		e:								
	Life-To-				Financial Im	npact - Expe	ises						
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
Project Costs		450,000	1	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	1,050,000	
n-Going Maintenance												-	
Total Project Costs	_	450,000	-	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	1,050,000	
ife-to-date includes any act	tual expenditure		roject through Ju		-		_	- 5,500	/3,000 /3,000		- 5,555	,,	
				В	asis for Proj	ect Cost Est	imate						
	Formal Propo	osal		Contractor/E	ngineer Estima	ate		State Purchasir	ng Co-Op	Х	Staff Estimate		
	Life-To-				Financial Im	pact - Revei	nues						
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
Revenue Estimate												-	
ifo to data includos any act	tual ravenue car	orated from cto	t of project thre	ugh July 2022 an	d actimates for	the remainder of	F EV 2022						

Project Name:	Vidler Tunnel Improvements
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	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 2023 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 2022 and install in 2023 as part of a multi year project. This project will increase the prorated share of the carriage fees to all Vidler water users.
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 supply so that we can provide potable water to the community.
List any obstacles for implementation	
	Finance Use Only
	Received by Finance Department
	Reviewed by City Manager:



Completed by:	Brynn Goe
Department Head Review:	Brian Tracy

Responsible Department:	Public Works
Fund:	Water #8

Strategic S	uccess Facto	or	Active, Con Sustai			ble and ving	Safe, Inclusive and Engaged		Respected and Relational Governance		Quality Services	
Strateg	cic Action		Comprel	omprehensive, connected infrastructure, services and amenities and preserve a beautiful comment.								nmunity
Projec	ct Name			Solar Photovoltaic Projects at Water Treatment Ponds								
Existing Grant Funds Funding Source Identified for Project					irant Funds tified	Funds Identified From Capital Project Fund		Funds Identified From Other Fund (Name)		No Identifie	ed Funding	
New/Additional F	Revenue Ge	nerated	_	t Ongoing e Source	Sou	ing Revenue irce		e Revenue rated	Water No New/Additional Revenue Generated			
Legally I	Mandated		Court D	ecision		Requirement	Pending Lo	egal Action	Potential Lo	egal Action	Normal Liability	
Public Hea	lth & Safety	У	Existing Sev	vere Hazard	Existing Mi	nor Hazard	Potential Se	vere Hazard	Potential M	inor Hazard	No Health or Safety Issue	
Operating B	Sudget Impa	ıct	and/or Pers		Operatin	No Impact on ig and/or nel Costs	Slight Increase to Operating and/or Personnel Costs		Significant Increase to Operating and/or Personnel Costs		х	
Environment a	nd Sustaina	bility	x Enhances Environment and/or Sustainability		Benefits Environment and/or Sustainabilty		No Environmental Impact		Minor or Negative Environmental Impact		Diminishes Environment	
% Of Popul	ation Serve	d	100% of P Served b	opulation	Majority of Population Served		Approximately 50% of Population Served		Less than 50% of the Population Served			
Preservation of Facility			Loss of Facility Imminent without Project Completion		Additional Damage Likely without Project Completion		Project Constitutes Normal Major Maintenance		Maintenance		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		
Recreational or	Recreational or Aesthetic Value			Major Value		te value		/alue x	Possibly De	etrimental		
Estimated Fre	equency of	Use	Every Day x		Several Tim	es per Week	Several Time		Once per Month or Less			
					ing Principle	es Priority -	(Choose One	Best Fit)				
х	(A) Safe and I Public Infr	Reliable rastructure		(B) Economic that Impro	Vitality and C ove Quality of	-	nenities		(C) Public Safety		(D) Other	
			Са	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	est Fit)				
	Land		Building		Equipment		Vehicle		Technology	Х	Infrastructure	
	Improvement		Improvement		Financial In	npact - Expe	nsos					
	Life-To-				rillaliciai ili	ірасі - Ехре	ises					
Project Costs	Date*	2023	2024	2025	2026	2027	2028 650,000	2029	2030	2031	2032	Total 650,000
On-Going Maintenance												-
Total Project Costs	-	-	-	-	-	-	650,000	-	-	-	-	650,000
l Life-to-date includes any act	ual expenditure	l es from start of p	l roject through Ju	ıly 2022 and esti	mates for the re	mainder of FY 2)22					
				В	asis for Proj	ect Cost Est	imate					
х	Formal Propo	osal	х	Contractor/E	ngineer Estim	ate		State Purchasir	ng Co-Op		Staff Estimate	
					Financial Im	pact - Reve	nues					
	Life-To- Date*	2023	2024	2024	2026	2027	2028	2029	2030	2031	2032	Total
Revenue Estimate *Life-to-date includes any act	ual revenue gen	perated from sta	rt of project thro	ugh July 2022 an	d estimates for	the remainder o	f FY 2022					-

Project Name:	Solar Photovoltaic Projects at Water Treatment Ponds
	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.
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	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.
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 provide reliable 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.
	Finance Use Only

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	Date
Received by Finance Department	
Reviewed by City Manager:	



Completed by:	Brynn Goe
Department Head Review:	Brian Tracy

Responsible Department:	Public Works
Fund:	Water #9

		Active, Con		Afforda			lusive and	Respected ar		Qua	•	
Strategic S	uccess Facto	or	Sustainable		Thriving		Engaged		Governance		Services x	
										x		
Strates	gic Action		5.1		, .			1		1		
Strate	SIC ACTION		Balancing fiscal responsibility with creativity and innovation to deliver quality public services									
Ducio	ot Name				\A/ - 1 -	. 6 . 1'1	/DI I .					
Projec	ct Name				wate	r Quality	//Plant ir	nprovem	ents - Ge	eneral		
			Existing Gr	ant Funds	Potential G	rant Funds	Funds Iden	ntified From	Funds Iden	tified From		
Fundin	g Source		Identified		Ident	tified	Capital Pr	oject Fund	Other Fur	d (Name)	No Identifie	ed Funding
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New/Additional I	kevenue Ge	enerated	Revenue	Source	Sou	irce	Gene	erated	Revenue (
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Legally I	Mandated		Court D	ecision		Requirement	Pending L	egal Action	Potentiai L	egal Action	Normal I	Liability
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Public Hea	alth & Safety	у	Existing Sev	ere Hazard	Existing Mi	nor Hazard	Potential Se	evere Hazard	Potential M	inor Hazard	No Health or	Safety Issue
					Minimal or N	lo Impact on			Significant	Increase to		
			Decreases			g and/or	_	e to Operating	Operatin			
Operating E	Budget Impa	act	and/or Pers	onnel Costs	Personn		and/or Pers	sonnel Costs	Personn	-		
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			Enhances E			vironment	No Environm	nental Impact	Minor or	_	Diminishes E	nvironment
Environment a	nd Sustaina	bility	and/or Sus	tainability	and/or Su	stainabilty		,	Environme	ntal Impact	Diffinition Environment	
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% Of Popul	lation Serve	v4	100% of P Served b	•	Majority of Ser	Population		ately 50% of on Served	Less than ! Population			
/0 O1 F Opul	iation serve	:u	Serveu b	y i roject (Jei	veu	i opulati	on serveu	i opulatio	ii Serveu		
			•		Additional D	-	Project Constitutes		_	onstitutes	New Facility/	
Preservation of Facility		y	without Project Completion		without Project Completion		Normal Major Maintenance		Normal Minor		No Safety Issue	
			Completion		Completion		х		Maintenance			
			20+ Years W	ith Little/No	20+ Years With Normal		10-20 Years With Normal		5-9 Years with Normal		1-4 Years w	ith Normal
Project	Useful Life		Maintenance		Maintenance		Maintenance		Maintenance		Mainte	nance
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Recreational o	r Aesthetic '	Value	Major Value		Moderate value		No Value		Possibly Detrimental			
			_	_				X				
Estimated From	equency of	Use	Every	Day	Several Time	es per Week	Several Time	es per Month	Once per Month or Less			
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			Visio	ո 2030 Guid	ing Principle	es Priority - (Choose One	Best Fit)				
	(A) Safe and I	Poliablo		(R) Economic	Vitality and C	ommunity An	nonitios	·	(C) Public		(D) Other	
Х	rastructure			ove Quality of	-	ieiiities		Safety		(D) Other		
				<u> </u>								
			Ca	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	est Fit)				
	Land		Building		Equipment		Vehicle		Technology	х	Infrastructure	
	Improvemen		Improvement						07			
					Financial Im	ıpact - Expe	nses					
	Life-To-				- mariciai III	pace Expe	1303					
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Project Costs		800,000	800,000	1,100,000	750,000	750,000	750,000	650,000	750,000	650,000	750,000	7,750,000
On-Going Maintenance												-
Total Project Costs	_	800,000	800,000	1,100,000	750,000	750,000	750,000	650,000	750,000	650,000	750,000	7,750,000
*Life-to-date includes any act	tual expenditure	I es from start of p	I roject through Ju	ly 2022 and esti	mates for the re	mainder of FY 20	<u> </u>)22					
				B	asis for Proi	ect Cost Est	imate					
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	Formal Propo	osal		Contractor/E	ngineer Estima	ate		State Purchasin	ng Co-Op	Х	Staff Estimate	!
					FinanciaLle	pact - Revei	21105					
	Life-To-				i mancial im	pact - Kevel	lucs					
	Date*	2023	2024	2024	2026	2027	2028	2029	2030	2031	2032	Total
Revenue Estimate												_
*Life-to-date includes any act	tual revenue ger	 nerated from star	rt of project thro	ugh July 2022 an	d estimates for	the remainder o	 f FY 2022					

Project Name:	Water Quality/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)	Solden's water treatment plant provides safe, clean potable water to residents and businesses in the City of Golden. The water plant start 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 an regulatory changes. The reclaim basin is a single underground tank at the water treatment plant that holds approximately 500,000 gallons of water. The reclaib 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 plan 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 basin rehab project for 2023 will replace these components with update equipment which will allow for longer life and easier operations of the basin. If the sludge collection system is 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 being pumped from the reclaim basin will change and a large cost will be associated with having to manually pump the residuals from the basin. This would alse eliminate the option for the residuals to be dewatered using existing equipment at the WTP. In 2024 chemical storage will be increased by adding additional storage tanks in the chemical building. This storage addition will
Describe how this project connects to and suppor 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. Work is scheduled based on potential impact and generally avoids high demand periods.

List any obstacles for implementation

Finance Use Only

	Date
Received by Finance Department	
Reviewed by City Manager:	



Completed by:	Brynn Goe
Department Head Review:	Brian Tracy

Responsible Department:	Public works
Fund:	Water #9

Strategic S	uccess Facto	or	Active, Connected and Sustainable		Affordable and Safe, Incluse Engage		· •			Quality Services		
5 5	400000 1 401 0						6	,			Х	
Cl volve					_							
Strate	Strategic Action Balancing fiscal responsibility to fund and deliver quality public services											
Proje	ct Name			W	ater Qua	ality/Pla	nt Impro	vements	- PLC Re	placeme	nt	
Fundin	ng Source		Existing Gi Identified			irant Funds tified	Funds Identified From Capital Project Fund		Funds Identified From Other Fund (Name)		No Identified Funding	
New/Additional I	Revenue Ge	nerated	Significan Revenue		_	ing Revenue urce		e Revenue erated	No New/Additional Revenue Generated			
Legally I	Mandated		Court D	ecision	,	Requirement x	Pending L	egal Action		egal Action	Normal	Liability
Public Hea	alth & Safety	У	Existing Sev	ere Hazard	_	inor Hazard	Potential Se	evere Hazard	2	inor Hazard	No Health or	Safety Issue
Operating E	Budget Impa	act	Decreases and/or Pers		Operatin Personr	No Impact on ig and/or nel Costs	_	e to Operating sonnel Costs	Operatin	Increase to g and/or el Costs		
Environment a	ınd Sustaina	bility	Enhances En and/or Sus			nvironment stainabilty		nental Impact	Minor or Negative Environmental Impact		Diminishes Environment	
% Of Popul	lation Serve	d	100% of P Served b	-		Population ved	Approxima	ately 50% of on Served	Less than 50% of the Population 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	
Project	Useful Life		20+ Years With Little/No Maintenance		20+ Years With Normal Maintenance		10-20 Years With Normal Maintenance x		5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance	
Recreational o	r Aesthetic '	Value	Major	Value	Moderate value		No Value x		Possibly Detrimental			
Estimated Fro	nated Frequency of Use			-	Several Tim	es per Week	Several Tim	es per Month	Once per M	onth or Less		
Vision 2030 Guiding Principles Priority - (Choose One Best Fit) x (A) Safe and Reliable (B) Economic Vitality and Community Amenities (C) Public (D) Other Public Infrastructure that Improve Quality of Life Safety						(D) Other						
						1:1						
	_					ditures - (Ch	oose One B	est Fit)	1		_	
	Land Improvemen		Building Improvement		Equipment		Vehicle		Technology	Х	Infrastructure	
					FinanciaLlm	npact - Expe	nses					
	Life-To-											
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Project Costs		100,000	50,000							125,000	125,000	400,000
On-Going Maintenance												-
Total Project Costs	-	100,000	50,000	-	-	-	-	-	-	125,000	125,000	400,000
Life-to-date includes any act	tual expenditure	es from start of p	roject through Ju	•								
	Basis for Project Cost Estimate											
	Formal Propo	osal	х	Contractor/E	ngineer Estim	ate		State Purchasir	ng Co-Op		Staff Estimate	
					Financial Im	pact - Reve	nues					
	Life-To- Date*	2023	2024	2024	2026	2027	2028	2029	2030	2031	2032	Total
Revenue Estimate	hual was-ser	ovotod for	et of municipals	ugh lulu 2022	d octive-t f	the version	F EV 2022					-

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 centre 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 in the water plant and distribution system. Each unit has a life expectancy of 10-12 years and the cost to replace a single unit (includin hardware and labor) is approximately \$40,000. The number of individual PLC units will also increase as time goes on and more of the plan 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. The water treatment has 3 more PLC's to upgrade and will be able to complete the upgrades by 2024. The PLC's in the distribution system are not being upgraded at this time but instead, the spare parts available from the PLC replacements at the water treatment plant are bein used to mai
Describe how this project connects to and support 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 provide reliable potable water to the community.

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.

List any obstacles for implementation

Finance Use Only

	Date
Received by Finance Department	
Reviewed by City Manager:	



Completed by:	Brynn Goe
Department Head Review:	Brian Tracy

Responsible Department:	Public Works
Fund:	Water #9

Strategic S	uccess Facto	nr.		nected and inable	Afforda Thri	ble and ving	· ·	usive and aged	Respected and Relational Governance		Quality Services	
Strategic 3	uccess racio	,,	Justa	illable	11111	VIIIg	Liig	ageu	dover	Hance	Sei V	
			<u> </u>									
Strate	gic Action		Using	creativity a	and innova	tion to fur	id and deliv	er quality p	ublic servi	es today a	nd in the f	uture.
Proje	ct Name		Water Quality/Plant Improvements - Fire resiliency									
			Fxisting G	rant Funds	Potential G	irant Funds	Funds Iden	tified From	Funds Iden	tified From		
Fundin	ng Source		_	for Project	Iden			oject Fund x	Other Fun		No Identified Funding	
New/Additional F	Revenue Ge	nerated	_	t Ongoing e Source	_	ing Revenue irce		e Revenue erated	No New/Additional Revenue Generated x			
Legally I	Mandated		Court D	ecision		Requirement	Pending L	egal Action	Potential L	egal Action	Normal	Liability
Public Hea	alth & Safety	/	Existing Sev	ere Hazard		nor Hazard		evere Hazard	Potential M	inor Hazard	No Health or	Safety Issue
			Decreases	Operating	Minimal or N	No Impact on		x e to Operating	Significant	Increase to		
Operating B	Budget Impa	ct		onnel Costs		g and/or nel Costs	_	sonnel Costs	Operatin Personn			
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Environment a	nd Sustaina	bility		nvironment stainability	Benefits En and/or Su	vironment stainabilty		nental Impact	Minor or Environme	_	Diminishes Environment	
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% Of Popul	lation Serve	d	Served b	y Project	Served		Population Served		Population Served			
			Loss of Facility Imminent without Project		Additional Damage Likely without Project		Project Constitutes		Project Constitutes Normal Minor		New Facility/	
Preservation of Facility		Completion		Completion		Normal Major Maintenance		Maintenance		No Safety Issue		
		20+ Years With Little/No		x 20+ Years With Normal		10-20 Years With Normal		5-9 Years with Normal		1-4 Years with Normal		
Project Useful Life		Maintenance		Maintenance		Maintenance		Maintenance		Maintenance		
	Recreational or Aesthetic Value		Major Value Moderate value		X No Value		Possibly Detrimental					
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Vision 2030 Guiding Principles Priority - (Choose One Best Fit) x (A) Safe and Reliable (B) Economic Vitality and Community Amenities (C) Public (D) Other												
x	(A) Safe and I Public Infr	rastructure			ove Quality of	-	nenities		(C) Public Safety		(D) Other	
			Са	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	est Fit)				
	Land		Building		Equipment		Vehicle		Technology	х	Infrastructure	
	Improvement	t	Improvemen	i								
					Financial Im	pact - Expe	nses					
	Life-To- Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Project Costs			516,127	250,000		-						766,127
On-Going Maintenance					242,550	254,678	267,411	280,782	294,821	309,562		1,649,804
Total Project Costs	-	-	516,127	250,000	242,550	254,678	267,411	280,782	294,821	309,562	-	2,415,931
Life-to-date includes any act	tual expenditure	s from start of p	_							-		-
Basis for Project Cost Estimate												
	Formal Propo	 osal	х	Contractor/E	ngineer Estim	ate		State Purchasii	ng Co-Op		Staff Estimate	
	Life-To-				Financial Im	pact - Reve	nues					
	Date*	2023	2024	2024	2026	2027	2028	2029	2030	2031	2032	Total
Revenue Estimate												-
Life to date includes any act	tual rovonuo con	orated from sta	rt of project thro	ugh July 2022 an	d actimates for	the remainder o	f EV 2022					

				٠.			
Pr	OI	e	ct	N	а	m	e:

Water Quality/Plant Improvements - 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 watching the water quality issues following the recent wildfire seasons, 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 over 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 is 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 event 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 treat 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 this water. Most either have long lead times or cannot address taste and odor concerns. Based on engineering assessments, the most cost effective first step in moving the water treatment plant towards being able to treat the effected water is to add additional granular activated carbon filters into the treatment process. 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, but is only necessary to meet drinking water standards if the watershed is impacted by wildfire.

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.

Describe how this project connects to and supports
Stragetic Action Plan success factor(s) identified
above.

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.

List any obstacles for implementation

Finance Use Only

Received by Finance Department

Reviewed by City Manager:



Completed by:	Les Major
Department Head Review:	Brian Tracy

Responsible Department:	Public Works
Fund:	Water #10

			Active, Connected and Affordable and			Safe, Inclusive and		Respected and Relational		Quality		
Strategic S	uccess Facto	or	Sustai	nable	Thri	ving	Eng	aged	Governance		Services	
Strates	gic Action			Downer Chatter and the search and C. 1991 11 1199 11								
Strates	Sic Action		Pump Station equipment and facilities rehabilitation and replacement									
Proje	ct Name		Pump Station Improvements									
Proje	Ct Name					Pump	Station	improvei	ments			
			Existing Gr	ant Funds	Potential G	rant Funds	Funds Iden	tified From	Funds Iden	tified From	No Identifi	al Formalisas
Fundir	ng Source		Identified for Project		Ident	tified	Capital Pr	oject Fund	Other Fur	nd (Name)	No Identifie	ea Funding
					_		X					
Now/Additional I	Povonuo Co	norated	Significant		Small Ongoi	_		e Revenue	_	Additional		
New/Additional I	kevenue Ge	nerated	Revenue	Source	Sou	irce	Gene	erated		Generated K		
			Court D	ocision	Pogulatory F	Requirement	Ponding L	egal Action		egal Action	Normal I	iahility
Legally	Mandated		Court	CCISIOII		(i chung L	egai Action	1 Otential E	egai Action	Norman	Liability
			Evicting Co.	ana Hazand			Detential Ca	evere Hazard	Potential M	inou Horoud	No Hoolth on	Cofoty Joseph
Public Hea	alth & Safety	у	Existing Sev	ere Hazaro	Existing IVII	nor Hazard	Potentiai Se	evere Hazard			No Health or	Safety Issue
					Minimal or N	lo Impact on				Increase to		
Onevetine F	Sudaat loosa	. ale	Decreases			g and/or	_	e to Operating	Operatin			
Operating E	suaget impa	ict	and/or Pers	onnei Costs		el Costs	and/or Pers	sonnel Costs	Personn	el Costs		
						(
Ein	and Court	Lilla	Enhances En			vironment	No Environm	nental Impact		Negative	Diminishes E	nvironment
Environment a	ina Sustaina	ibility	and/or Sus	tainability	and/or Sus	stainabilty			Environme	ntal Impact		
			100% of P	opulation	Majority of	Population		X ately 50% of	Less than	50% of the		
% Of Popu	lation Serve	d	Served b	-	Majority of Population Served		Approximately 50% of Population Served		Less than 50% of the Population Served			
7. 5 .		X										
		without Project		Additional Damage Likely without Project		Project Constitutes		Project Constitutes Normal Minor		New Facility/		
Preservation of Facility		Completion		Completion		Normal Major Maintenance		Maintenance		No Safety Issue		
				20. V		X				4.4.		
		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		
Project Useful Life		iviainte	enance		enance (Walltellance		wantenance		iviainte	nance	
		Major Value		Moderate value		No Value		Possibly Detrimental				
Recreational or Aesthetic Value		•				Х						
			Every	Dav	Several Time	es per Week		es per Month	Once per M	onth or Less		
Estimated Frequency of Use)	-				-	one per m			
				`					l			
			Vision	1 2030 Guid	ing Principle	es Priority - (Choose One	Best Fit)				
Х	(A) Safe and I	Reliable		(B) Economic	Vitality and C	ommunity An	nenities		(C) Public		(D) Other	
Public Infrastructure				that Impro	ove Quality of	Life	•		Safety			
			Ca	tegory of Ca	pital Expen	ditures - (Ch	oose One Be	est Fit)				
	Land		Building		Equipment		Vehicle		Technology	Х	Infrastructure	
	Improvement	t	Improvement									
					Financial Im	ıpact - Expei	nses					
	Life-To-	2022	2021	202-	2025	2027	2022	2022		2024	2022	
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Project Costs		70,193	72,999	75,919	78,956	82,114	85,399	88,815	92,367	96,062	99,904	842,728
On-Going Maintenance												-
_												
Total Project Costs	-	70,193	72,999	75,919	78,956	82,114	85,399	88,815	92,367	96,062	99,904	842,728
*Life-to-date includes any ac	tual expenditure	es from start of p	roject through Ju	•								
				В	asis for Proj	ect Cost Est	imate					
	Formal Proposal Contractor/Engineer Estimate State Purchasing Co-Op X Staff Estimate											
	-	<u>'</u>						•				
					Financial Im	pact - Revei	nues					
	Life-To-	2022	2024	202-	2025	202-	2020	2020	2020	2024	2022	T = 1 - 1
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Revenue Estimate												<u> </u>
*Life-to-date includes any ac	tual revenue ger	nerated from star	rt of project thro	ugh July 2022 an	d estimates for	the remainder of	FY 2022					

Project Name:	Pump Station Improvements
	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 elevations 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 going forward. 2023 projects include exterior painting of 6400 pump station, ventilation improvements at 6200 pump station and pump and motor rebuilds at Welch Ditch and Fossil Trace pump stations. An ongoing project is algae control and installation of a structure on the inlet pipe at Fossil Trace to allow better maintenance of the suction piping for that pump station.
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 reliably 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:	Brian Tracy

Responsible Department:	Public Works
Fund:	Water #11

			Active, Connected and		Affordable and		Safe, Inclusive and		Respected and Relational		Quality		
Strategic S	uccess Facto	or	Sustai	nable	Thri	ving	Eng	aged	Gover	nance	Serv	ices	
					I								
Strate	gic Action			Replacement of ladders, wents and hatchs on and in storage tanks									
·				Replacement of ladders, vents and hatchs on and in storage tanks									
Proje	ct Name					Stora	ge Tank	Improven	nents				
Francis	a Causaa		Existing Grant Funds		Potential G		Funds Identified From		Funds Identified From		No Identifie	ed Funding	
Fundin	Funding Source		Identified for Project		luelli	illeu	Capital Project Fund X		Other Fund (Name)				
		Significan	t Ongoing	Small Ongoi	ng Revenue	One-Time Revenue		No New/Additional					
New/Additional Revenue Generated		Revenue	e Source	Sou	irce	Gene	erated	Revenue Generated					
										(
Legally I	Mandated		Court D	ecision		Requirement	Pending L	egal Action	Potential L	egal Action	Normal	Liability	
						(
Public Hea	alth & Safety	у	Existing Sev	ere Hazard	Existing Mi	nor Hazard	Potential Se	evere Hazard	Potential M		No Health or	Safety Issue	
					Minimal or N	lo Imnact on				Increase to			
			Decreases		Operatin	-	_	e to Operating	Operatin				
Operating B	sudget Impa	ICT	and/or Pers	onnei Costs	Personn	el Costs	and/or Per	sonnel Costs	Personn	el Costs			
)	(
	16	1 111	Enhances E		Benefits En		No Environmental Impact		Minor or Negative		Diminishes Environment		
Environment a	ina Sustaina	ibility	and/or Sus	stainability	and/or Su	stainability	·		Environmental Impact				
			100% of Donulation		Majority of Population		X Approximately 50% of		Less than 50% of the				
% Of Popul	lation Serve	d	100% of Population Served by Project		Served		Approximately 50% of Population Served		Population Served				
		X Loss of Facility Imminent		Additional Damage Likely				Project Constitutes					
		without Project		Additional Damage Likely without Project		Project Constitutes		Normal Minor		New Facility/			
Preservation of Facility		Completion		Completion		Normal Major Maintenance		Maintenance		No Safety Issue			
		20+ Years With Little/No		20+ Years With Normal		X 10-20 Years With Normal		5-9 Years with Normal		1-4 Years with Normal			
Project Useful Life		Maintenance		Maintenance		Maintenance		Maintenance		1-4 Years w Mainte			
				Х									
Recreational or Aesthetic Value		Major Value		Moderate value		No Value		Possibly Detrimental					
Necleational of Aesthetic Value						Х							
Estimated Frequency of Use		Every Day		Several Time	es per Week	Several Time	es per Month	Once per M	onth or Less				
Estillated Frequency of Ose)	(
			Visio	n 2030 Guid	ing Principle	es Priority - (Choose One	Best Fit)					
	(A) Cofo and I	Daliabla		•				,	(C) Dublic		(D) Other		
X	(A) Safe and I Public Infi	rastructure			ove Quality of	ommunity An Life	ienities		(C) Public Safety		(D) Other		
			Ca	Category of Capital Expenditures - (Choose One Best Fit)									
	Land		Building		Equipment		Vehicle		Technology	Х	Infrastructure		
	Improvemen	t	Improvement										
					Financial Im	ıpact - Expei	nses						
	Life-To-												
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
Project Costs		100,000	100,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	840,000	
On-Going Maintenance													
on some manifemance												-	
Total Project Costs	-	100,000	100,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	840,000	
Life-to-date includes any act	tual expenditure	es from start of p	roject through Ju	ıly 2022 and esti	mates for the re	mainder of FY 20)22						
	Basis for Project Cost Estimate												
	Formal Propo	osal		Contractor/E	ngineer Estima	ate		State Purchasir	ng Co-Op		Staff Estimate		
	• •		-					•	- 1	-	•		
					Financial Im	pact - Revei	nues						
	Life-To-	2022	2024	2025	2026	2027	2020	2020	2020	2024	2022	Total	
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
Revenue Estimate						-						-	
I ifa-ta-data includas anv act	tual ravenue car	annatad fram cta	rt at araiast thes	いなわ しいしょ フクラフ ~~	d actimates for	tha ramaindar a	EV 2022						

Project Name:	Replacement of ladders, vents and hatchs on and in storage tanks
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. Replacement of corroded ladders, vents and hatchs will ensure that routine maintenance is accomplished safely and easily. This project will not change ongoing maintenance costs for storage tanks overall, but deferred investment would result in increases to maintenance. 2023 projects include drainage improvements, rock scaling and grouting of the slope adjacent to the 6130 tank, Rimrock tank interior cleaning, coating repairs and ladder replacements in several tanks.
	Routine reinvestement in capital assets such as water storage tanks reduces long term costs and assures that we continue to provide a reliable source of potable water to the community.
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	
List any obstacles for implementation	
	Finance Use Only
	Received by Finance Department
	Reviewed by City Manager:

Affordable and

Safe, Inclusive and

Quality



Completed by:	Brian Tracy
Department Head Review:	Anne Beierle

Active, Connected and

Responsible Department:	Public Works
Fund:	Water #12

Respected and Relational

Strategic Success Factor		Sustai	nable	Thri	ving	Eng	aged	Gover	nance	Servi X		
Strateg	gic Action				ead Servic	e Line inve	entory and	renlacemen	t througho	ut the city		
Projec	ct Name		Lead Service Line inventory and replacement throughout the city. Lead Service Line Replacement									
·				Leau Service Line Replacement								
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 Identified Funding		
New/Additional F	Revenue Ge	nerated	Significant Ongoing Revenue Source		Small Ongoing Revenue Source		One-Time Revenue Generated		No New/Additional Revenue Generated			
Legally I	Mandated		Court Decision Regulato			Requirement	t Pending Legal Action		Potential Legal Action		Normal Liability	
Public Hea	olth & Safety	y	Existing Sev	rere Hazard	Existing Mi			evere Hazard	Potential M	inor Hazard	No Health or Safety Issue	
Operating B	Sudget Impa	ıct	Decreases and/or Pers	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	nd Sustaina	bility	Enhances En and/or Sus		Benefits En	vironment stainabilty	No Environmental Impact		Minor or Negative Environmental Impact		Diminishes Environment	
% Of Population Served		100% of Population Served by Project		Majority of Population Served		X Approximately 50% of Population Served		Less than 50% of the Population Served				
Preservation of Facility		Loss of Facility Imminent 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 X		10-20 Years With Normal Maintenance		5-9 Years with Normal Maintenance		1-4 Years wi Mainte		
Recreational or Aesthetic Value		Major Value		Moderate value		No Value X		Possibly Detrimental				
Estimated Frequency of Use		Every Day X		Several Times per Week		Several Times per Month		Once per Month or Less				
			Visio	2020 Guid	ing Principle	os Priority	Choose One	Roct Eit\				
Х	(A) Safe and I Public Infr	Reliable rastructure		(B) Economic		ommunity An		•	(C) Public Safety		(D) Other	
			Co	haram, of Ca	wital Evaca	dituuse (Ch	O D.	F:+\				
	Land	<u> </u>	Building		Equipment	aitures - (Ch	oose One Be Vehicle		Technology	Х	Infrastructure	
	Improvement	t	Improvement									
	Life-To-				Financial Im	pact - Expe	nses					
	Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Project Costs				100,000	200,000	206,000	212,000	219,000	225,000	232,000	239,000	1,633,000
On-Going Maintenance												-
Total Project Costs	-	-	-	100,000	200,000	206,000	212,000	219,000	225,000	232,000	239,000	1,633,000
*Life-to-date includes any actual expenditures from start of project through July 2022 and estimates for the remainder of FY 2022												
	Basis for Project Cost Estimate Formal Proposal Contractor/Engineer Estimate State Purchasing Co-Op X Staff Estimate											
				55 46.0 1/ El					-0	^		
	111 =				Financial Im	pact - Reve	nues					
	Life-To- Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Revenue Estimate				50,000	100,000	103,000	106,000	109,500	112,500	116,000	119,500	816,500
Life-to-date includes anv act	uai revenue ger	ierated from sta	rt of project thro	ugn Juiv 2022 an	iu estimates for	uie remainder o	I FY 2U22					

Project Name:	Lead Service Line Replacement
Please provide details for the following: 1. Project Description 2. Justification 3. Measure of Success 4. Description of Revenue Generated (if applicable)	EPA established the Lead and Copper Rule (LCR) to protect public health and reduce exposure to lead and copper in drinking water. Although lab results indicate there is not lead and copper contamination issue in the city, it is still a best practice to remove any source of lead, inclding lead service lines. In homes with lead pipes that connect the home to the water main, also known as lead services lines, these pipes are typically the most significant source of lead in the water. Lead pipes are more likely to be found in older cities and homes built before 1986. The City of Golden estimates there are up to 200 Lead Service Lines served by City of Golden Public Works. A lead service line inventory of underway in 2022, which will help forecast costs related to this project. During this budget cycle, a cost estimate of \$10,000 for each line replacement is used, with a roughly 3% inflation escaltor year over year, starting after 2026. We anticipate, as the most expensive scenario, to replace 10 lead service lines in 2025, and 20 lead service lines each year thereafter, through 2032, or until every identified lead service line is replaced. This project will generate revenue through eligible grant money, and may be eligible for federal or state low-cost loans, which could offset some of the project cost.
	The lead service line replacement program assures that we have a reliable water distribution system and can provide quality potable water to our citizens.
Describe how this project connects to and supports Stragetic Action Plan success factor(s) identified above.	
List any obstacles for implementation	
	Finance Use Only Date
	Received by Finance Department Reviewed by City Manager:



Completed by:	Les Major
Department Head Review:	Brian Tracy

Responsible Department:	Public Works
Fund:	Water #13

Strategic Success Factor			Active, Connected and Sustainable		Affordable and Thriving		Safe, Inclusive and Engaged		Respected and Relational Governance		Quality Services		
Strateg	gic Action		Replacement of AMI equipment and meters that have reached the end of their expected lifcycle.										
Projec	Meter System Upgrade - Water Meter Replacement												
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 Identified 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 Decision		Regulatory Requirement		Pending Legal Action		Potential Legal Action		Normal Liability		
Public Hea	Existing Severe Hazard		Existing Minor Hazard		Potential Severe Hazard		Potential Minor Hazard X		No Health or Safety Issue				
Operating Budget Impact			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 Operating and/or Personnel Costs				
Environment and Sustainability			Enhances Environment and/or Sustainability		Benefits Environment and/or Sustainabilty		No Environmental Impact		Minor or Negative Environmental Impact		Diminishes Environment		
% Of Population Served			100% of Population Served by Project		Majority of Population Served		Approximately 50% of Population Served		Less than 50% of the Population Served				
Preservation of Facility			Loss of Facility Imminent without Project Completion		Additional Damage Likely without Project Completion		Normal Major Maintenance		Project Constitutes Normal Minor Maintenance		New Facility/ No Safety Issue		
Project Useful Life			20+ Years With Little/No Maintenance		20+ Years With Normal Maintenance		X 10-20 Years With Normal Maintenance X		5-9 Years with Normal Maintenance		1-4 Years with Normal Maintenance		
Recreational or Aesthetic Value			Major Value		Moderate value		No Value X		Possibly Detrimental				
Estimated Frequency of Use			Every Day X		Several Times per Week		Several Times per Month		Once per Month or Less				
Vision 2030 Guiding Principles Priority - (Choose One Best Fit)													
Х		(B) Economic	Vitality and Community Amove Quality of Life				(C) Public Safety		(D) Other				
Public Infrastructure that Improve Quality of Life Safety Category of Capital Expenditures - (Choose One Best Fit)													
	Lond				,	aitures - (Cr			Tachnalası	v	lofo atmostra		
	Land Improvement		Building Improvement		Equipment		Vehicle		Technology	Х	Infrastructure		
Financial Impact - Expenses													
	Life-To- Date*	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
Project Costs		50,000	50,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	900,000	
On-Going Maintenance												-	
Total Project Costs	_	50,000	50,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	900,000	
Life-to-date includes any act	tual expenditure	-		-			_			3,000	3,200	,	
Basis for Project Cost Estimate													
	Formal Propo	sal	Contractor/Engineer Estimate				State Purchasing Co-Op			Х	Staff Estimate		
					Financial Im	pact - Reve	nues						
Revenue Estimate	Life-To- Date*	2023	2024	2024	2026	2027	2028	2029	2030	2031	2032	Total	
Life to date includes any act	tual rovenue as	orated from at-	et of project the	uah lulu 2022	nd actimates for	the remainder -	f EV 2022					-	

Project Name:	Meter System Upgrade - Water Meter Replacement
	Replacement of water meters and AMI equipment that have reached the end of their expected lifecycle. 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 ongoing campaign.
	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	
	Date Received by Finance Department Reviewed by City Manager: