MINUTES

WORK SESSION
OF
AUGUST 31, 2015
1:00 P.M.

THE DALLES CITY HALL
313 COURT STREET
THE DALLES, OREGON

PRESIDING:	Mayor Steve Lawrence
COUNCIL PRESENT:	Dan Spatz, Tim McGlothlin, Linda Miller, Russ Brown, Taner Elliott
COUNCIL ABSENT:	None
STAFF PRESENT:	City Manager Nolan Young, City Clerk Julie Krueger, Public Works Director Dave Anderson, Engineer Dale McCabe

CALL TO ORDER

Mayor Lawrence called the meeting to order at 1:00 p.m.

ROLL CALL

Roll call was conducted by City Clerk Krueger; all Councilors present.

STATUS REPORT AND REVIEW ALTERNATIVES FOR WASTEWATER TREATMENT PLANT UPGRADE PROJECT

Tom Paul and Todd Peterson from Mortenson Construction, and Preston Van Meter and Michael Humm from Kennedy/Jenks Consultants were introduced as the design/build team for Phase 1A of the Wastewater Treatment Plant upgrade.

Mr. Paul provided project background, noting there were three phases of construction. He said the Phase I scope included influent pumping firm capacity, new screening and grit, and repair of the digester 2 lid, heating and mixing.

Mayor Lawrence asked if the population predictions had been adjusted in the Plan. Public Works Director Anderson said population estimates by Portland State University would not be completed until next June or July, so historical data had been used to calculate the population to be approximately 17,000 in the next 20 years. Anderson said the plan also included potential industrial use for undeveloped land within the city limits.

Preston Van Meter said the design/build team had held several workshops, brainstorming, staff input, and site visits and used a "Choosing by Advantage" process to determine maximizing value and ensuring success. He said this had included design concept and budget validation, drafting a schedule, and initial site logistics.

Michael Humm discussed development of alternatives, using existing assets and construction project sequencing; developing unit process alternatives; identifying existing "insults"; and process modeling using influent data. Humm said alternatives were rated by factor reference and proposed weighting to analyze the importance of each factor.

Several alternatives were reviewed, with various cost estimates. The alternative recommended was 3,C.

Public Works Director Anderson said the City had cash to complete the recommended Phase IA improvements and no bonding would be required to proceed with the work. He said staff would schedule approval of the contract to proceed with 80% design, for the September 28 Council meeting.

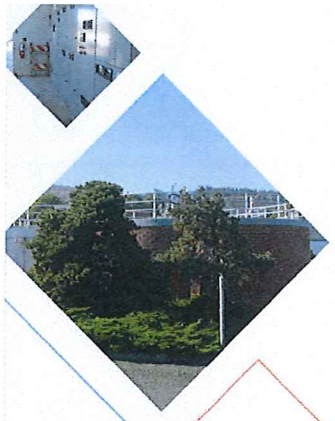
ADJOURNMENT

Being no further business, the meeting adjourned at 2:54 p.m.

Submitted by/
Julie Krueger, MMC
City Clerk

SIGNED: Stephen E. Lawrence
Stephen E. Lawrence, Mayor

ATTEST: Julie Krueger
Julie Krueger, MMC, City Clerk



City of The Dalles

Wastewater Treatment Plant Upgrade

Phase 1A
City Council
Workshop

31 August 2015

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Agenda

- 1:00 - 1:20: Introductions and Project Background
- 1:20 – 1:30: Workshops/CBA Process
- 1:30 – 2:10: Review of Alternatives
- 2:10 – 2:30: Recommended Plan
- 2:30 - 3:00: Questions and Answers

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Progressive Design/Build Team

- Mortenson/KJ Team

Tom Paul Corporate Executive (Mortenson)

Todd Peterson – Senior Estimator (Mortenson)

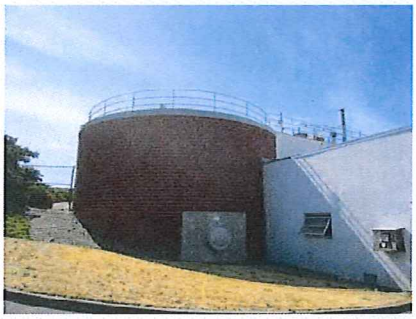
Preston Van Meter – Design Project Manager (K/J)

Michael Humm – Design Project Engineer (KJ)

Design & Construction Experience

Project Background

- 2013 Facility Plan
  - 3 Phases of Construction
- Phase 1 Scope
  - Influent Pumping Firm Capacity
  - New Screening and Grit
  - Repair of Digester 2 Lid, heating and mixing



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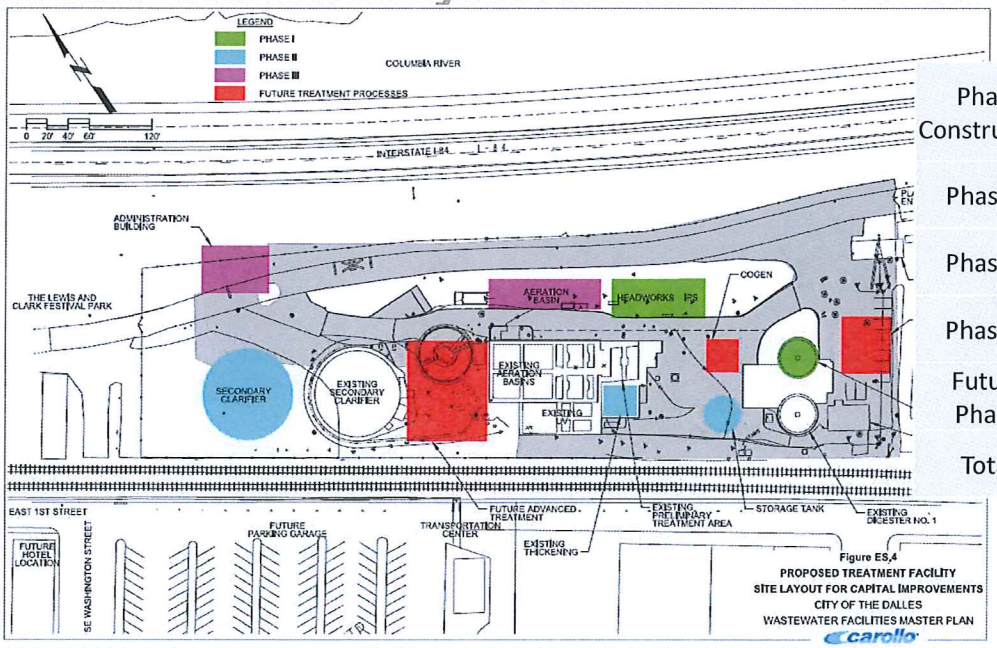
2013 Facility Plan CIP



Phase Construction	2013 Facility Plan	Current Estimated Plan
Phase 1	$4.88	$7.80
Phase 2	$3.38	$4.73
Phase 3	$4.73	$5.17
Future Phase		
Total	$12.99	$17.70

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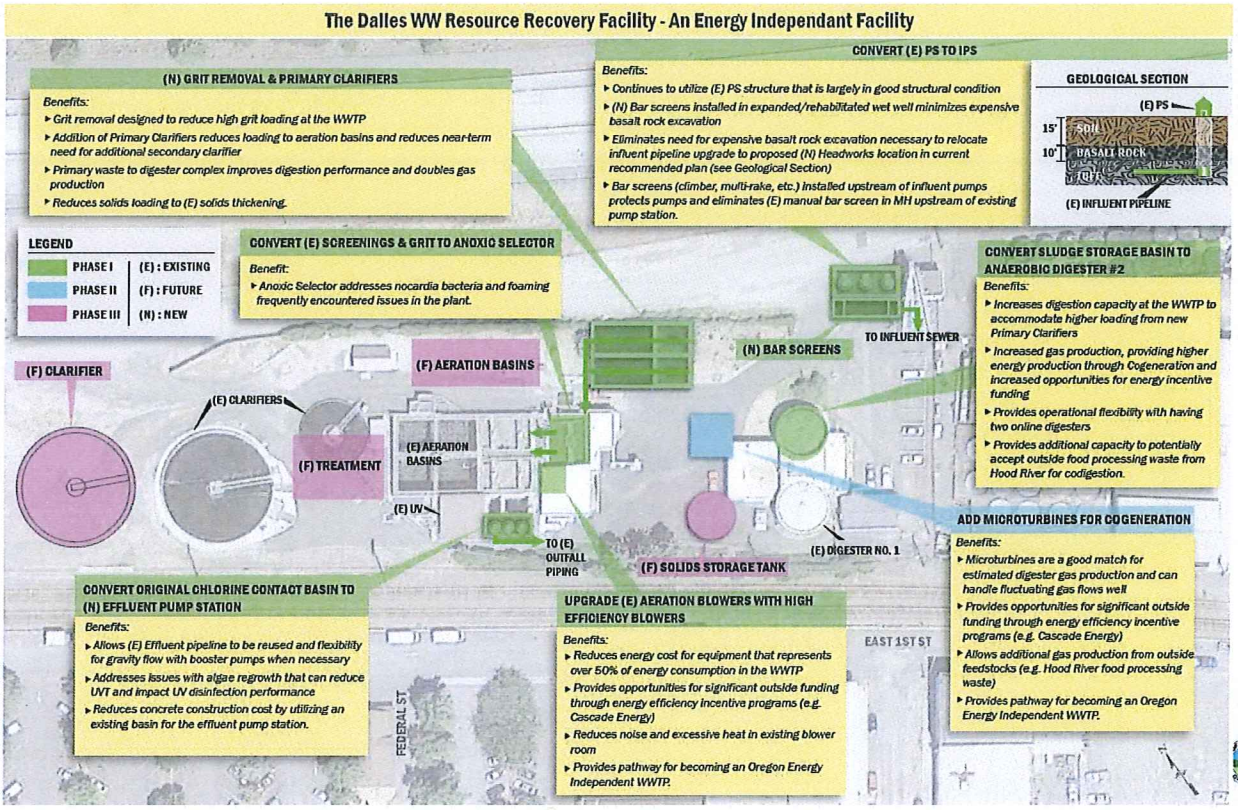
The Dalles WW Resource Recovery Facility - An Energy Independant Facility
(N) GRIT REMOVAL & PRIMARY CLARIFIERS
Benefits:
▸ Grit removal designed to reduce high grit loading at the WWTP
▸ Addition of Primary Clarifiers reduces loading to aeration basins and reduces near-term need for additional secondary clarifier
▸ Primary waste to digester complex improves digestion performance and doubles gas production
▸ Reduces solids loading to (E) solids thickening.
CONVERT (E) PS TO IPS
Benefits:
▸ Continues to utilize (E) PS structure that is largely in good structural condition
▸ (N) Bar screens installed in expanded/rehabilitated wet well minimizes expensive basalt rock excavation
▸ Eliminates need for expensive basalt rock excavation necessary to relocate influent pipeline upgrade to proposed (N) Headworks location in current recommended plan (see Geological Section)
▸ Bar screens (climber, multi-rake, etc.) installed upstream of influent pumps protects pumps and eliminates (E) manual bar screen in MH upstream of existing pump station.
GEOLOGICAL SECTION
(E) PS
15'
Soil
10'
BASALT ROCK
(E) INFLUENT PIPELINE
LEGEND
PHASE I (E) : EXISTING
PHASE II (F) : FUTURE
PHASE III (N) : NEW
CONVERT (E) SCREENINGS & GRIT TO ANOXIC SELECTOR
Benefit:
▸ Anoxic Selector addresses nocardia bacteria and foaming frequently encountered issues in the plant.
CONVERT SLUDGE STORAGE BASIN TO ANAEROBIC DIGESTER #2
Benefits:
▸ Increases digestion capacity at the WWTP to accommodate higher loading from new Primary Clarifiers
▸ Increased gas production, providing higher energy production through Cogeneration and increased opportunities for energy incentive funding
▸ Provides operational flexibility with having two online digesters
▸ Provides additional capacity to potentially accept outside food processing waste from Hood River for codigestion.
TO INFLUENT SEWER
(N) BAR SCREENS
(F) CLARIFIER
(E) CLARIFIERS
(F) AERATION BASINS
(F) TREATMENT
(E) AERATION BASINS
(E) UV
TO (E) OUTFALL PIPING
(F) SOLIDS STORAGE TANK
(E) DIGESTER NO. 1
ADD MICROTURBINES FOR COGENERATION
Benefits:
▸ Microturbines are a good match for estimated digester gas production and can handle fluctuating gas flows well
▸ Provides opportunities for significant outside funding through energy efficiency incentive programs (e.g. Cascade Energy)
▸ Allows additional gas production from outside feedstocks (e.g. Hood River food processing waste)
▸ Provides pathway for becoming an Oregon Energy Independent WWTP.
CONVERT ORIGINAL CHLORINE CONTACT BASIN TO (N) EFFLUENT PUMP STATION
Benefits:
▸ Allows (E) Effluent pipeline to be reused and flexibility for gravity flow with booster pumps when necessary
▸ Addresses issues with algae regrowth that can reduce UVT and impact UV disinfection performance
▸ Reduces concrete construction cost by utilizing an existing basin for the effluent pump station.
UPGRADE (E) AERATION BLOWERS WITH HIGH EFFICIENCY BLOWERS
Benefits:
▸ Reduces energy cost for equipment that represents over 50% of energy consumption in the WWTP
▸ Provides opportunities for significant outside funding through energy efficiency incentive programs (e.g. Cascade Energy)
▸ Reduces noise and excessive heat in existing blower room
▸ Provides pathway for becoming an Oregon Energy Independent WWTP.
EAST 1ST ST
FEDERAL ST

Choosing By Advantage

"Decisions must be made on the importance of advantages"

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Phase 1A Exploration & Discovery

Maximizing Value and Ensuring Success

- Workshop 1 – Project Kickoff & Discovery
- Workshop 2 – Alternatives Development
- Workshop 3 – Choosing by Advantage (CBA)
- Workshop 4 – Recommend Plan & Next Steps

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Collaborative Process

In addition to workshops:

- Review/Discuss Background Information
- Influent Characterization
  - Thanks to PW & WWTP Staff!
- Plant walkthroughs & site visits
- Mortenson/KJ project brainstorming workshops

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Phase 1A Outcomes

1. Design concept and budget validation
2. Initial GMP template
3. Draft schedule
4. Initial site logistics
5. City Council presentation

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Alternatives Development

- Meet FP requirements with new philosophy
  - Utilize existing assets
  - Construction project sequencing
- Develop unit process alternatives
  - Consider all CIP Phases
  - Facility Plan used as base alternative
- Identify existing WWTP "insults"
- Process modeling using influent data
  - Aeration basin, pH

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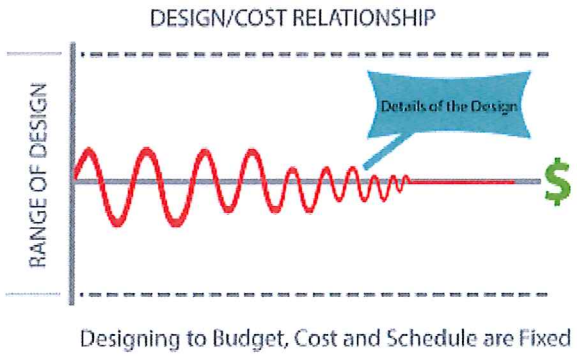
Importance Weighting Discussion

Factor Reference	Proposed Weighting
1. Capital cost	30%
2. Performance Reliability	30%
3. Expandability/Flexibility	10%
4. Complexity	10%
5. Operational and Environmental safety	10%
6. Utilization of Existing Assets	10%
Total	100%

Importance Factors	Score
Most Advantageous	5
Some Advantage	3
Least Advantageous	1

Estimated Costs

- Conceptual Level Cost Estimate -20% / +30%
- Industry cost metrics
- Current and projected bidding climate
- Limited scope of Facility Plan improvements



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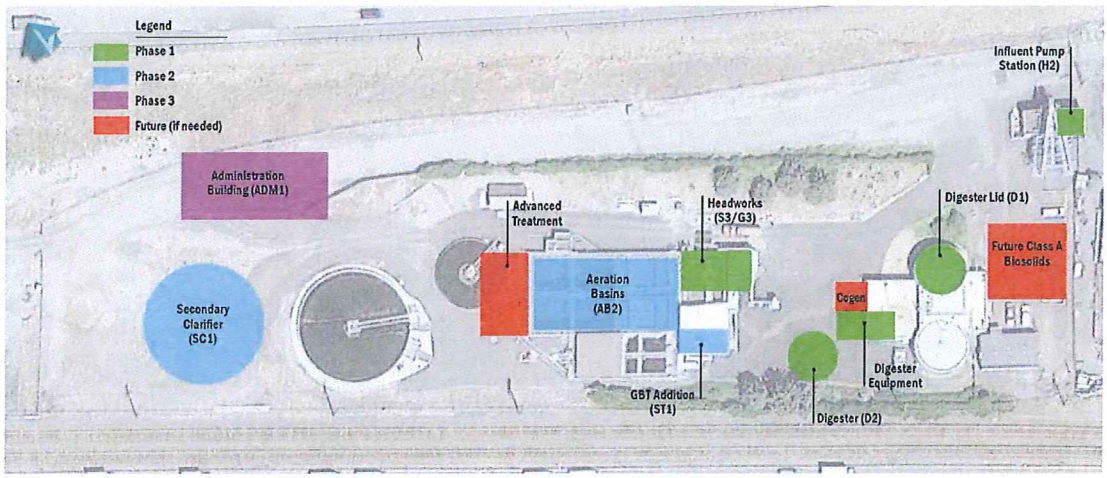
Combined Alternative 1



		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
ADM1	Admin Building							$121,923	$741,000	$316,800													
H2	Influent Pump Station	$280,333	$280,333	$280,333																			
S3/G3	Headworks (Screening/Grit)	$645,250	$645,250	$645,250																			
AB2	Aeration Basin				$1,088,800	$1,088,800																	
SC1	Secondary Clarifier				$738,200	$1,476,400	$738,200																
ST1	GBT Addition				$199,500	$199,500																	
D2	Digester - New 180,000 gallon	$1,460,500	$1,460,500																				
D1	Digester 2 Lid Repair	$260,000	$260,000																				
D2	Sludge Storage Tank				N.A	N.A	N.A																
A1	Aesthetic Improvements	$121,250	$121,250																				
P1A	Phase 1A	$132,278																					

Summary of Phases	
Phase 1	$7,110,000
Phase 2	$5,927,000
Phase 3	$1,482,000
Future Phase	
Total	$14,519,000

Site Improvements - Alternative 1

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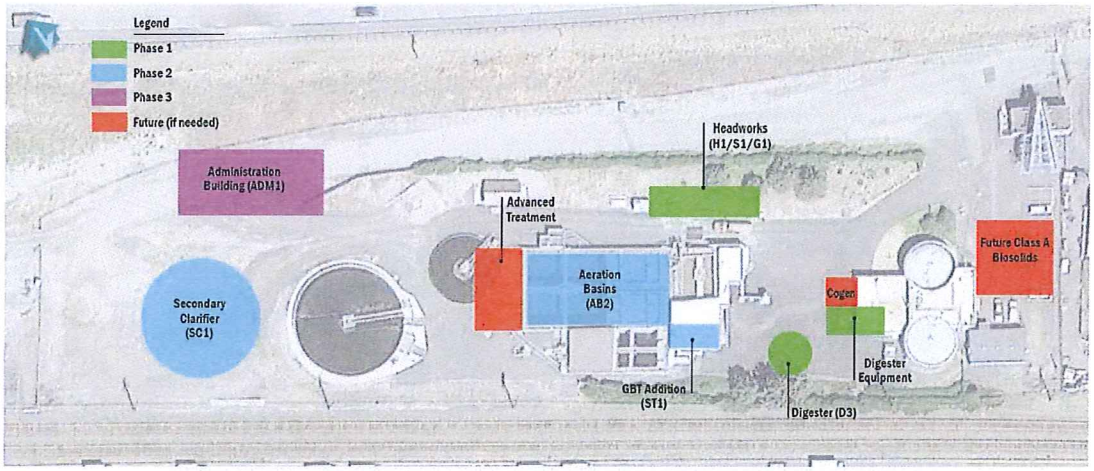
Combined Alternative 2



		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
ADM1	Admin Building							$272,553	$741,300	$370,650													
H1	Influent Pump Station	$572,550	$572,550																				
S1/G1	Headworks (Screening/Grit)	$1,253,100	$1,253,100	$1,253,100																			
AB2	Aeration Basin				$1,868,700	$1,868,700																	
SC1	Secondary Clarifier				$738,000	$1,476,000	$738,000																
ST1	GBT Addition				$199,500	$598,500																	
D3	New Digester - 220,000 gallon	$1,704,000	$1,704,000																				
D3	Sludge Storage Tank				$A	$A	$A																
A1	Aesthetic Improvements	$121,200	$121,200																				
P1A	Phase 1A	$332,724																					

Summary of Phases	
Phase 1	$9,577,000
Phase 2	$5,927,000
Phase 3	$1,482,000
Future Phase	
Total	$16,986,000

Site Improvements - Alternative 2

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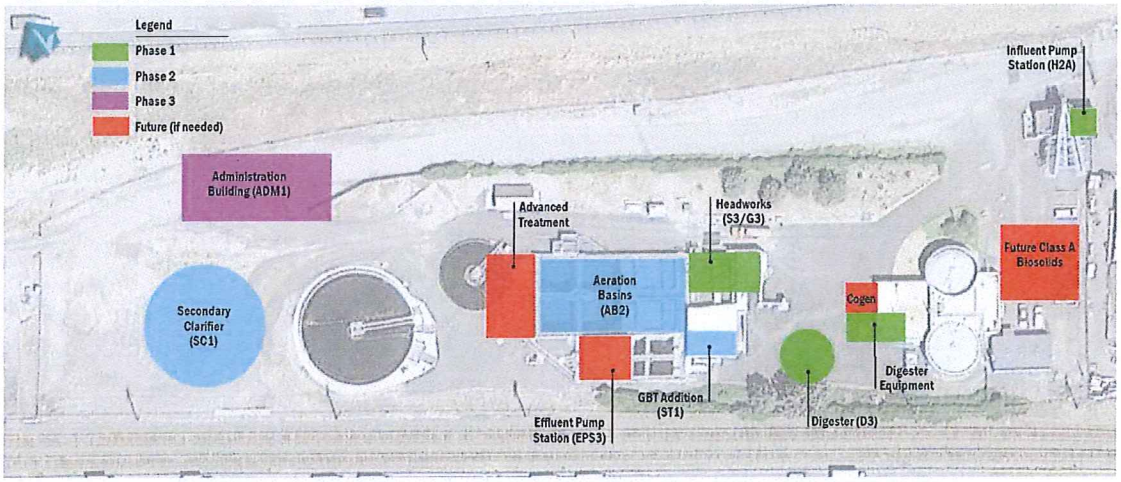
Combined Alternative 3A



		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
ADM1	Admin Building							$376,909	$741,000	$376,909													
H2A	Influent Pump Station	$466,503	$466,503																				
S3/G3	Headworks (Screening/Grit)	$645,200	$645,200	$645,200												$153,809							
AB2	Aeration Basin				$1,068,500	$1,068,500																	
SC1	Secondary Clarifier				$738,000	$1,476,000	$738,000																
ST1	GBT Addition				$199,900	$559,500																	
D3	New Digester - 220,000 gallon	$1,704,000	$1,704,000																				
D3	Sludge Storage Tank				NA	NA	NA																
A1	Aesthetic Improvements	$121,250	$121,250																				
EPS3	Effluent PS Improvements															$651,500	$963,000						
P1A	Phase 1A	$182,274																					

Summary of Phases	
Phase 1	$7,050,000
Phase 2	$5,927,000
Phase 3	$1,482,000
Future Phase	$1,430,000
Total	$15,889,000

Site Improvements - Alternative 3A

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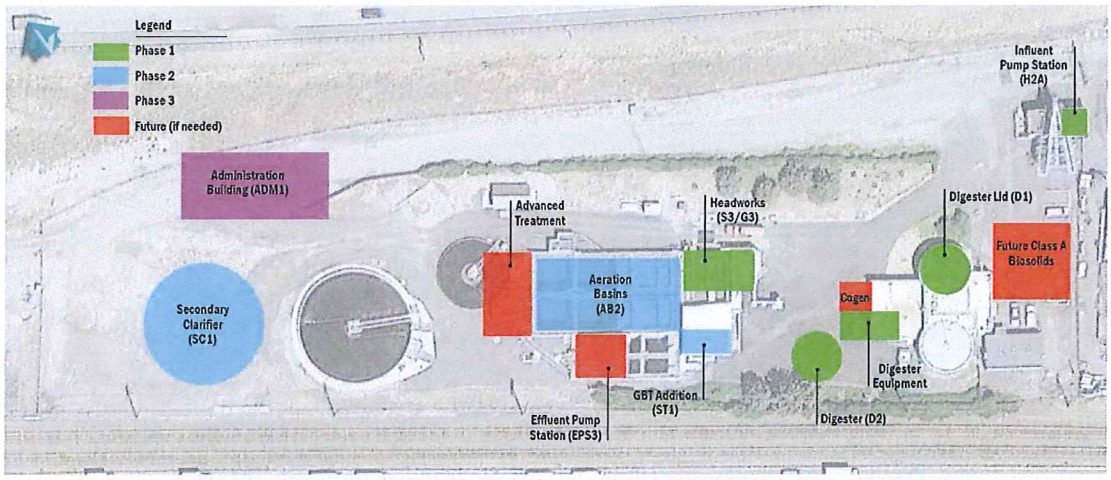
Combined Alternative 3B



		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
ADM1	Admin Building																						
H2A	Influent Pump Station																						
S3/G3	Headworks (Screening/Grit)																						
AB2	Aeration Basin																						
SC1	Secondary Clarifier																						
ST1	GBT Addition																						
D2	New Digester - 180,000 gallon																						
D1	Digester 2 Lid Repair																						
A1	Aesthetic Improvements																						
EPS3	Effluent PS Improvements																						
P1A	Phase 1A																						

Summary of Phases	
Phase 1	$7,080,000
Phase 2	$5,927,000
Phase 3	$1,482,000
Future Phase	$1,430,000
Total	$15,919,000

Site Improvements - Alternative 3B

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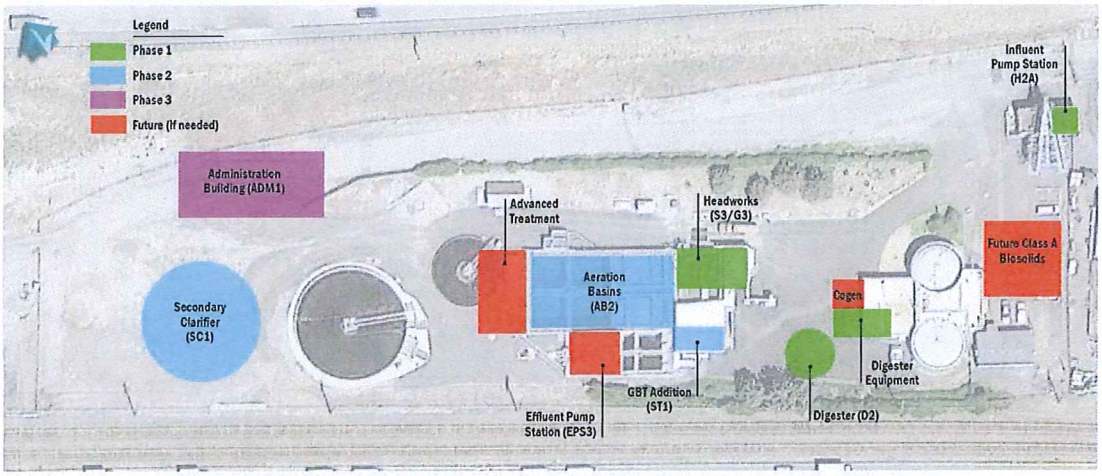
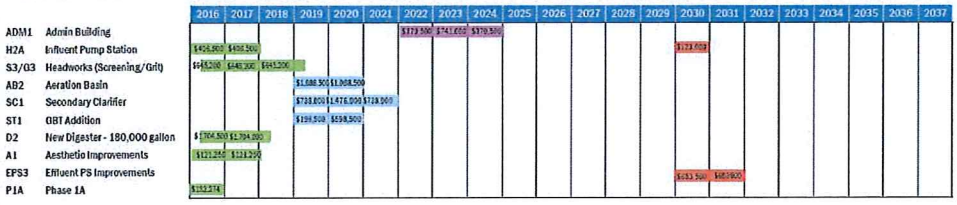
Combined Alternative 3C





Summary of Phases	
Phase 1	$6,532,000
Phase 2	$5,927,000
Phase 3	$1,482,000
Future Phase	$1,430,000
Total	$15,371,000

Site Improvements - Alternative 3C

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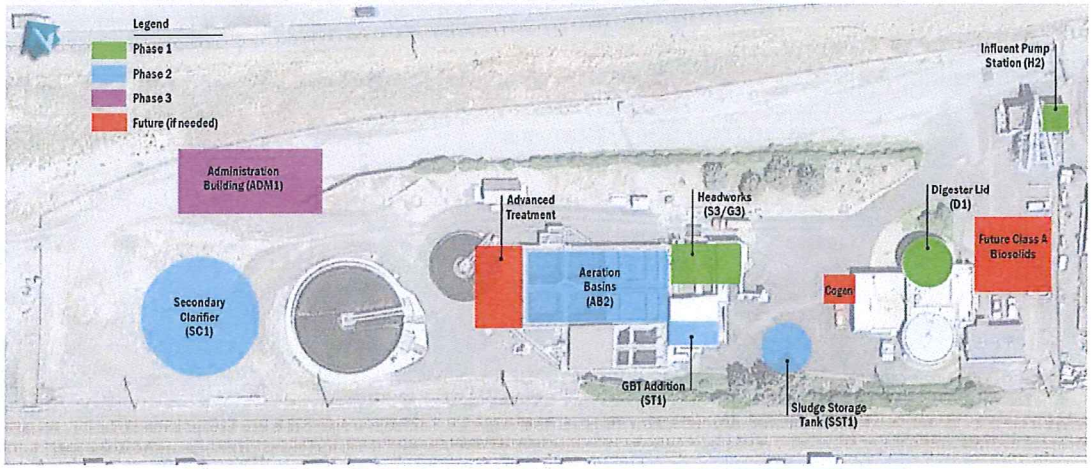
Combined Alternative 4



		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
ADM1	Admin Building							$370,500	$741,000	$370,500												
H2	Influent Pump Station	$260,333	$260,333	$260,333																		
S3/G3	Headworks (Screening/Grit)	$649,200	$649,200	$649,200																		
AB2	Aeration Basin				$1,169,500	$1,169,500																
SC1	Secondary Clarifier				$728,100	$1,456,200	$728,100															
ST1	GBT Addition				$199,500	$399,000	$199,500															
D1	Digester 2 Lid Conversion	$408,000	$408,000																			
SST1	Sludge Storage Tank				$545,448	$490,893	$545,448															
A1	Aesthetic Improvements	$231,250	$231,250																			
P1A	Phase 1A	$132,274																				

Summary of Phases	
Phase 1	$5,035,000
Phase 2	$6,909,000
Phase 3	$1,482,000
Future Phase	0
Total	$13,426,000

Site Improvements - Alternative 4

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Summary of Combined Alts

Summary of Combined Alternatives	Facility Plan	Combined #1	Combined #2	Combined #3A	Combined #3B	Combined #3C	Combined #3D	Combined #4
Importance Factor	1.6	4.2	2.8	4.0	4.0	4.0	4.0	3.2
Phase 1	$7.80	$7.11	$ 9.63	$ 7.05	$ 7.08	$ 6.53	$ 7.05	$ 5.15
Phase 2	$4.73	$ 5.93	$ 5.93	$ 5.93	$ 5.93	$ 5.93	$ 5.93	$ 6.91
Phase 3	$5.17	$ 1.48	$ 1.48	$ 1.48	$ 1.48	$ 1.48	$ 1.48	$ 1.48
Sub-Total	**$17.70**	**$ 14.52**	**$16.99**	**$ 14.46**	**$ 14.49**	**$ 13.94**	**$ 14.46**	**$ 13.42**
Future Phase				$ 1.43	$ 1.43	$ 1.43	$ 1.43	
Total	**$17.70**	**$ 14.52**	**$16.99**	**$ 15.89**	**$ 15.92**	**$ 15.37**	**$ 15.89**	**$ 13.42**

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Potential Alternative Plan

- Influent "Carbon Diversion"
  - Send more solids to new Digester
  - Reduce Aeration Basin
  - Save $$: More gas (Digester/Cogen), Less air (AB)
  - Pilot testing to verify performance
- Benefits:
  - Opportunities for outside funding
  - Accommodate outside feedstocks ($)
- Recommend Pilot Testing as first step
  - Promising initial discussions with Cascade Energy/BPA

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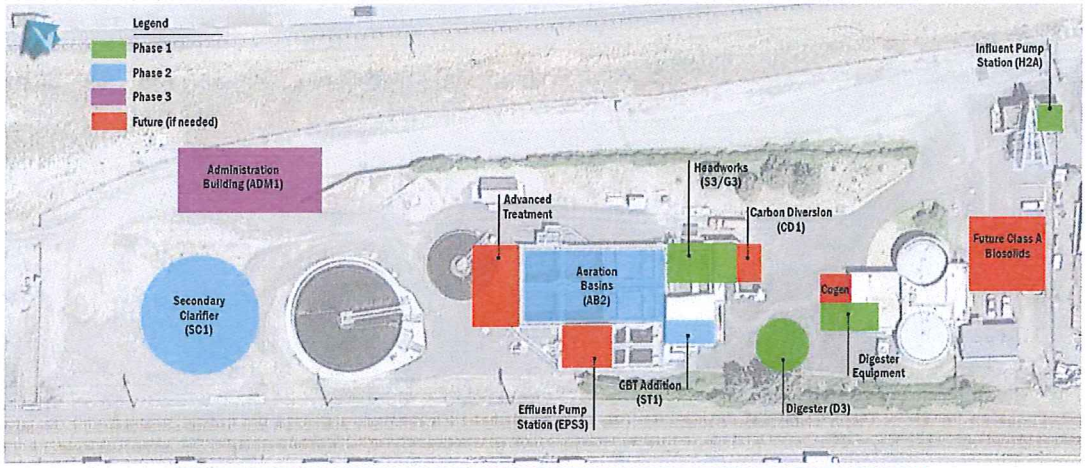
Combined Alternative 3D



		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
ADM1	Admin Building							$370,500	$741,000	$370,500													
H2A	Influent Pump Station	$406,500	$406,500													$122,000							
S3/G3	Headworks (Screening/Grit)	$445,200	$445,200	$445,200																			
AB2	Aeration Basin				$1,088,500	$1,088,500																	
SC1	Secondary Clarifier				$738,000	$1,476,000	$738,000																
ST1	GBT Addition				$199,500	$598,500																	
D3	New Digester - 220,000 gallon	$1,704,000	$1,704,000																				
D3	Sludge Storage Tank				NA	NA	NA																
A1	Aesthetic Improvements	$191,250	$191,250																				
EPS3	Effluent PS Improvements															$140,000	$233,500						
P1A	Phase 1A	$182,074																					
CD2	Carbon Diversion																						

Summary of Phases	
Phase 1	$7,050,000
Phase 2	$5,927,000
Phase 3	$1,482,000
Future Phase	$1,430,000
Total	$15,889,000

Site Improvements - Alternative 3D

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Next Steps

- City Council Discussion
- Finalize Facility Plan Update
- 80% Design and GMP
- Construction

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