



Board of Directors Study Session

**HOLLAND BOARD OF PUBLIC WORKS
625 HASTINGS AVENUE
HOLLAND, MICHIGAN**

**June 22, 2026
4:00 p.m.**

MEETING AGENDA

1. **Call to Order**
2. **Communications from the Audience**
3. **Financial Review**
 - a. [2026-06-22 May 2026 Internal Financials](#)
4. **Study Item(s)**
 - a. Holland Area Water Reclamation Facility (WRF) High-Strength Waste Receiving Evaluation Update
[Recommendation - Holland Area Water Reclamation Facility \(WRF\) High-Strength Waste Receiving Evaluation Update](#)
[2026-06-22 FY27 HSW Acceptance TA Presentation](#)
 - b. Outline of Grant Program for Customer Initiated Private Side Lead Service Line Replacements
[Recommendation - Outline of Grant Program for Customer Initiated Private Side Lead Service Line Replacements](#)
 - c. Evaluation of Water Rate for Customers That Use Once Through Cooling
[Recommendation - Evaluation of Water Rate for Customers That Use Once Through Cooling](#)
5. **Other Business, if needed**
Adjourn Meeting

AUDIENCE PARTICIPATION:

Members of the audience may address the Board of Directors during public hearings and under "Communications from the Audience". Audience participation includes stating name and address and limiting speaking time to five minutes.

The City of Holland will provide necessary services and auxiliary aids, such as signers for the hearing impaired and audiotapes of printed materials, to individuals with disabilities, upon receipt of seven days prior notice. Person with disabilities requiring auxiliary aids services should contact the City of Holland by writing or calling: Human Relations C/O City Clerk's Office contacting Esther Fifelski, 270 S River Avenue Holland, MI 49423, telephone (616) 355-1301.

Document(s) available for translation upon request

La Ciudad de Holland proporcionara servicios necesarios y ayudas auxiliares, tales como personas que usan lenguaje de señas aquellos con discapacidad auditiva y Cintas de audio de materiales impresos, a las personas con discapacidad, con un aviso previo de siete días de anticipación. Las personas con discapacidades que necesiten servicios de ayudas auxiliares deben ponerse en contacto con la

Agenda subject to change

Ciudad de Holland escribiendo o llamando a: Human Relations C/O City Clerk's Office, a comunicándose con Esther Fifleski 270 S River Avenue, Holland, MI 49423, telefono (616) 355-1301.
Documento(s) en traducción disponible(s) a peticion.

Posted 2026.06.18 @ 625 Hastings Ave Holland, MI 49423

ELECTRIC	MAY 2026	MAY 2025	MAY 2026	VARIANCE	VARIANCE	FY2026	FY2025	FY2026	VARIANCE	VARIANCE
	ACTUAL	ACTUAL	BUDGET	\$	%	ACTUAL	ACTUAL	BUDGET	\$	%
Revenue										
Residential	1,713,155	1,596,442	1,685,322	27,832	2%	20,838,481	19,796,979	19,660,098	1,178,383	6%
Commercial	2,541,871	2,531,661	2,579,571	(37,700)	-1%	28,744,867	28,104,869	28,475,053	269,814	1%
Industrial	4,668,354	4,344,117	4,757,760	(89,406)	-2%	53,993,457	45,302,004	50,537,140	3,456,316	7%
Wholesale	136,171	247,785	127,331	8,840	7%	2,372,227	2,680,361	1,400,644	971,583	69%
Other Income (Expenses)	62,869	207,751	158,797	(95,928)	-60%	2,319,288	2,462,743	1,746,827	572,460	33%
Total Revenue	9,122,420	8,927,756	9,308,781	(186,362)	-2%	108,268,319	98,346,955	101,819,762	6,448,557	6%
Operating Expenses										
Purchased Power	1,269,250	1,897,289	1,781,627	512,377	29%	8,956,448	5,697,525	16,467,066	7,510,618	46%
Fuel	2,331,273	2,111,740	2,060,207	(271,066)	-13%	28,559,261	23,595,884	22,152,575	(6,406,686)	-29%
External Resource Debt and O&M	1,025,121	944,678	971,034	(54,087)	-6%	5,243,233	6,649,420	5,635,641	392,408	7%
Non Fuel Production and Maintenance	1,079,765	1,171,545	1,011,078	(68,687)	-7%	12,184,495	12,234,423	11,351,841	(832,654)	-7%
Distribution	576,162	717,375	588,550	12,389	2%	6,422,000	6,138,130	7,061,561	639,561	9%
Conservation	218,812	184,817	267,822	49,010	18%	2,627,020	2,213,696	2,946,407	319,387	11%
Administration and General	812,001	879,496	803,008	(8,992)	-1%	9,742,605	9,542,136	9,531,157	(211,448)	-2%
Depreciation Expense	1,264,878	1,208,296	1,217,711	(47,167)	-4%	13,752,927	13,265,726	13,394,819	(358,108)	-3%
Total Operating Expenses	8,577,262	9,115,235	8,701,038	123,776	1%	87,487,989	79,336,941	88,541,066	1,053,077	1%
OPERATING INCOME	545,158	(187,479)	607,743	(62,586)	-10%	20,780,330	19,010,015	13,278,696	7,501,634	56%
Other Income (Expenses)										
Investment Income	336,781	232,412	114,212	222,569	195%	4,066,790	2,816,221	1,256,332	2,810,458	224%
Gain/Loss on Fair Market Value Adjustment	(116,147)	(193,437)	-	(116,147)	0%	(104,291)	1,122,006	-	(104,291)	0%
Other Income (Expenses)	4,756	10,234	10,888	(6,132)	-56%	1,144,238	303,113	119,768	1,024,470	855%
Interest Expense	-	(5,269)	-	-	0%	(14,760)	(52,620)	(14,747)	(13)	0%
Contribution to City	(699,668)	(763,617)	(699,668)	-	0%	(7,696,348)	(8,399,785)	(7,696,348)	-	0%
Total Other Income (Expenses)	(474,278)	(719,677)	(574,568)	100,290	17%	(2,604,370)	(4,211,065)	(6,334,995)	3,730,625	59%
NET POSITION	70,880	(907,156)	33,175	37,705	114%	18,175,960	14,798,949	6,943,701	11,232,259	162%

WATER	MAY 2026 ACTUAL	MAY 2025 ACTUAL	MAY 2026 BUDGET	VARIANCE \$	VARIANCE %	FY2026 ACTUAL	FY2025 ACTUAL	FY2026 BUDGET	VARIANCE \$	VARIANCE %
Revenue										
Residential	568,825	494,857	519,082	49,743	10%	6,655,240	5,466,657	6,421,400	233,841	4%
Commercial	371,879	317,224	342,642	29,237	9%	4,460,567	4,017,372	4,192,271	268,295	6%
Industrial	132,611	123,522	99,552	33,059	33%	1,364,762	1,164,059	1,188,075	176,687	15%
Wholesale Sales	45,318	204,675	221,005	(175,688)	-79%	2,370,334	2,204,897	2,365,451	4,883	0%
Other Income (Expenses)	(797,425) ^A	62,295	59,802	(857,226)	-1433%	776,483	670,086	657,817	118,666	18%
Total Revenue	321,208	1,202,573	1,242,083	(920,875)	-74%	15,627,386	13,523,071	14,825,014	802,372	5%
Operating Expenses										
Chemicals and Power	95,295	71,071	92,563	(2,732)	-3%	895,847	768,004	860,843	(35,004)	-4%
Water Production Operations and Maintenance	157,626	158,909	164,323	6,697	4%	1,941,904	1,879,437	1,960,359	18,455	1%
Water Distribution Operations and Maintenance	(11,806)	141,117	200,562	212,368	106%	2,042,286	1,888,748	2,141,401	99,116	5%
Administrative and General	188,963	203,000	229,319	40,356	18%	2,234,191	2,254,784	2,490,200	256,009	10%
Depreciation Expense	254,330	236,018	265,928	11,598	4%	2,802,586	2,594,995	2,925,204	122,618	4%
Total Operating Expenses	684,408	810,116	952,695	268,287	28%	9,916,814	9,385,967	10,378,007	461,193	4%
OPERATING INCOME	(363,200)	392,457	289,388	(652,588)	-226%	5,710,573	4,137,104	4,447,007	1,263,565	28%
Investment Income	40,685	49,526	13,750	26,935	196%	517,607	271,823	151,250	366,357	242%
Increase/Decrease Value Invest	(10,682)	(18,973)	-	(10,682)	0%	(9,957)	92,449	-	(9,957)	0%
Other Income / Expenses	983,781	(47,500)	(4,504)	988,285	21942%	910,560	(227,052)	(49,544)	960,104	1938%
Interest Expense	(80,006)	(85,941)	(74,881)	(5,125)	-7%	(883,253)	(614,398)	(883,248)	(5)	0%
Trunkage	(3,837)	-	13,500	(17,337)	-128%	234,168	191,494	148,500	85,668	58%
Total Other Income (Expenses)	929,941	(102,887)	(52,135)	982,076	1884%	769,125	(285,684)	(633,042)	1,402,167	221%
NET POSITION	566,741	289,570	237,253	329,488	139%	6,479,697	3,851,420	3,813,965	2,665,732	70%

^A - During a review of a recurring monthly accrual entry, it was identified that the process was not consistently performed correctly throughout the fiscal year. Certain items were accrued as revenue despite having already been billed and collected earlier in the year, resulting in prior-period overstatements and causing temporary negative revenue impacts in May for Water. The Accounting Team is conducting a comprehensive review of the calculation and underlying process, and necessary corrections will be recorded in June to ensure accurate fiscal year-end balances.

WASTEWATER

	MAY 2026 ACTUAL	MAY 2025 ACTUAL	MAY 2026 BUDGET	VARIANCE \$	VARIANCE %	FY2026 ACTUAL	FY2025 ACTUAL	FY2026 BUDGET	VARIANCE \$	VARIANCE %
Revenue										
Residential	360,267	338,920	355,075	5,192	1%	4,029,592	3,890,536	4,051,765	(22,173)	-1%
Commercial	260,515	293,741	284,646	(24,131)	-8%	3,120,012	3,237,071	2,996,150	123,863	4%
Industrial	160,817	139,793	107,845	52,972	49%	1,646,507	1,226,362	1,126,510	519,997	46%
Wholesale Sales	186,656	194,169	186,656	-	0%	1,655,766	1,918,897	2,053,216	(397,450)	-19%
Other Income	236,622	252,668	214,392	22,230	10%	2,504,372	2,548,471	2,358,308	146,064	6%
Total Revenue	1,204,877	1,219,291	1,148,614	56,263	5%	12,956,250	12,821,338	12,585,949	370,301	3%
Operating Expenses										
Chemicals and Power	151,764	179,343	192,583	40,820	21%	2,011,290	2,103,900	2,082,750	71,460	3%
Treatment Operations and Maintenance	319,174	410,633	325,107	5,933	2%	3,450,189	3,237,726	3,549,810	99,621	3%
Collection Operations and Maintenance	92,034	88,015	71,222	(20,812)	-29%	888,862	919,698	860,589	(28,273)	-3%
Administration and General	225,568	243,589	302,593	77,025	25%	2,666,952	2,703,164	3,321,743	654,792	20%
Depreciation Expense	277,651	271,230	297,749	20,098	7%	3,008,981	3,096,891	3,275,242	266,262	8%
Total Operating Expenses	1,066,191	1,192,810	1,189,255	123,064	10%	12,026,274	12,061,379	13,090,134	1,063,860	8%
OPERATING INCOME	138,687	26,481	(40,641)	179,327	441%	929,975	759,959	(504,186)	1,434,161	284%
Other Income (Expenses)										
Investment Income	37,986	48,135	23,528	14,458	61%	538,125	573,779	258,808	279,317	108%
Gain/Loss on Fair Market Value Adjustment	(8,146)	(14,468)	-	(8,146)	0%	(7,588)	70,500	-	(7,588)	0%
Other Income (Expenses)	215	-	-	215	0%	654	4,930	-	654	0%
Interest Expense	(31,938)	(35,221)	(31,379)	(559)	-2%	(355,609)	(387,433)	(357,166)	1,557	0%
Trunkage	8,275	1,500	33,750	(25,475)	-75%	429,073	402,891	371,250	57,823	16%
Total Other Income (Expenses)	6,391	(55)	25,899	(19,508)	-75%	604,655	664,667	272,892	331,763	122%
NET POSITION	145,078	26,426	(14,742)	159,820	1084%	1,534,630	1,424,626	(231,294)	1,765,924	763%

BROADBAND

	MAY 2026 ACTUAL	MAY 2025 ACTUAL	MAY 2026 BUDGET	VARIANCE \$	VARIANCE %	FY2026 ACTUAL	FY2025 ACTUAL	FY2026 BUDGET	VARIANCE \$	VARIANCE %
Revenue										
BB Act Ethernet Monthly	63,478	65,228	67,200	(3,723)	-6%	699,319	724,682	734,800	(35,481)	-5%
BB Dark Fiber Monthly	42,689	84,128	85,650	(42,961)	-50%	887,447	923,021	933,900	(46,453)	-5%
BB Shared Gig Monthly	2,300	1,990	3,200	(900)	-28%	27,345	46,752	31,600	(4,255)	-13%
BB Fiber Internet service	193,645	79,053	188,881	4,765	3%	1,663,921	454,265	1,540,270	123,651	8%
Other Revenue	67,517	7,402	2,710	64,807	2391%	173,557	84,058	26,212	147,345	562%
Total Revenue	369,629	237,801	347,641	21,988	6%	3,451,589	2,232,778	3,266,782	184,807	6%
Operating Expenses										
Operations and Maintenance	117,506	173,371	153,265	35,759	23%	1,683,827	1,277,392	1,761,268	77,440	4%
Administration and General	47,116	44,398	59,236	12,120	20%	568,993	486,238	650,863	81,870	13%
Depreciation Expense	59,713	23,251	20,315	(39,399)	-194%	481,680	258,077	223,460	(258,220)	-116%
Total Operating Expenses	224,335	241,021	232,816	8,481	4%	2,734,501	2,021,707	2,635,591	(98,910)	-4%
OPERATING INCOME	145,294	(3,219)	114,825	30,469	27%	717,088	211,072	631,191	85,897	14%
Other Income (Expenses)										
Interest Expense	-	(77)	-	-	0%	(233)	(842)	(227)	(6)	-2%
Other Income (Expenses)	-	-	-	-	0%	8,906	-	-	8,906	0%
Gain/Loss on Disposal of Assets	-	-	-	-	0%	-	98	-	-	0%
Total Other Income (Expense)	-	(77)	-	-	0%	8,673	(745)	(227)	8,900	3921%
NET POSITION	145,294	(3,296)	114,825	30,469	27%	725,762	210,327	630,964	94,797	15%



**OFFICE OF THE GENERAL MANAGER
BOARD OF PUBLIC WORKS
HOLLAND, MICHIGAN**

To: BPW Board of Directors
Date: 2026-06-22
Subject: Holland Area Water Reclamation Facility (WRF) High-Strength Waste Receiving Evaluation Update

Operations Department

Introduction:

This presentation is intended to provide an update relative to the tactical action efforts surrounding evaluation of the feasibility of accepting high-strength waste at the Water Reclamation Facility.

Recommendation:

Accept the High-Strength Waste Acceptance Evaluation presentation for information.

Description:

Local industrial customers have inquired about sending hauled high strength waste (HSW) to the WRF since the initial announcement of the anaerobic digester project. Additionally, closure of the Fremont Digester and reduced acceptance by Muskegon County's WWTP are making it more difficult for industrial customers to dispose of their high strength waste streams.

A tactical action was created this fiscal year to determine what regulatory and process impacts would occur due to receiving high strength hauled waste (HSW) at the WRF. Additional evaluation was done to determine extra costs/manpower required to receive HSW. The ultimate outcome of the tactical action is to provide a recommendation on whether to pursue HSW acceptance and what additional requirements will be necessary.

HBPW staff utilized guidance from the Water Environment Federation (WEF), information from other area HSW acceptors, and correspondence with our area HSW processors to build out a robust business case evaluation for a potential receiving program. As part of the Study Agenda, staff will give a presentation on the background, methodology, and conclusions of this evaluation.

Respectfully submitted,

David G. Koster
General Manager

Strategic Directive:

- 1. HBPW will effectively and proactively address customer needs and continually seek ways to grow through the provision of added value services to its customers and the greater Holland area.**
- 5. HBPW will be a good corporate citizen, sensitive and responsive to the social, economic, and environmental impacts of the utility today and in the future.**

Attachments:

2026-06-22 FY27 HSW Acceptance TA Presentation

Report prepared by: *Adam Assink, Water & Wastewater Process Engineer*



2026 WRF High-Strength Waste (HSW) Acceptance Tactical Action Report

June 22, 2026

Problem Statement

Local industrial customers have inquired about sending hauled high strength waste (HSW) to the WRF as soon as the announcement of the anaerobic digester project. Additionally, closure of the Fremont Digester and reduced acceptance by Muskegon County's WWTP are making it more difficult for industrial customers to dispose of their high strength waste streams.



Metric

*Determine what regulatory and process impacts would occur due to receiving high strength hauled waste (HSW) at the WRF.
Determine extra costs/manpower required to receive HSW.
Provide a recommendation on whether to pursue HSW acceptance and what additional requirements will be necessary.
Present findings in the form of a report and presentation to senior staff.*



Background & Approach



What is High-Strength Waste (HSW)?

- High organic loads/concentrations (COD)
- Unable to send to collection system without significant cost/fines
- Food processing
- Manufacturing
- Pumped wastes (grease traps, portable toilets, septic tanks, etc)



Local Generators of HSW

- Food processors
 - Hudsonville Ice Cream, Request Foods, Boars Head Meats, more...
- Grease Interceptors
 - 300+ logged grease interceptors & traps, 150+ of which are from restaurants
- Septic haulers
- Manufacturers

Hudsonville
ICE CREAM

Kraft *Heinz*



Current Area Disposal Options

- Local Pickup: Liquid Industrial Waste
- Hauled Options:
 - Muskegon County RRC : \$0.127/gallon
 - Hart BioPure Treatment Facility: ~\$0.08/gallon
 - Other partners: Vanguard, DarPRO, etc.
- Former:
 - Fremont Waste-to-Energy Facility: Closed May 2025
 - Grand Rapids WRRF: Ceased accepting recently



Potential Benefits of HSW Acceptance

- Financial:
 - Tipping fee revenue
 - Increased biogas production (high strength = high energy potential)
- Environmental:
 - More beneficial use of waste than traditional disposal
- Operational:
 - Predictable loading to digestion system



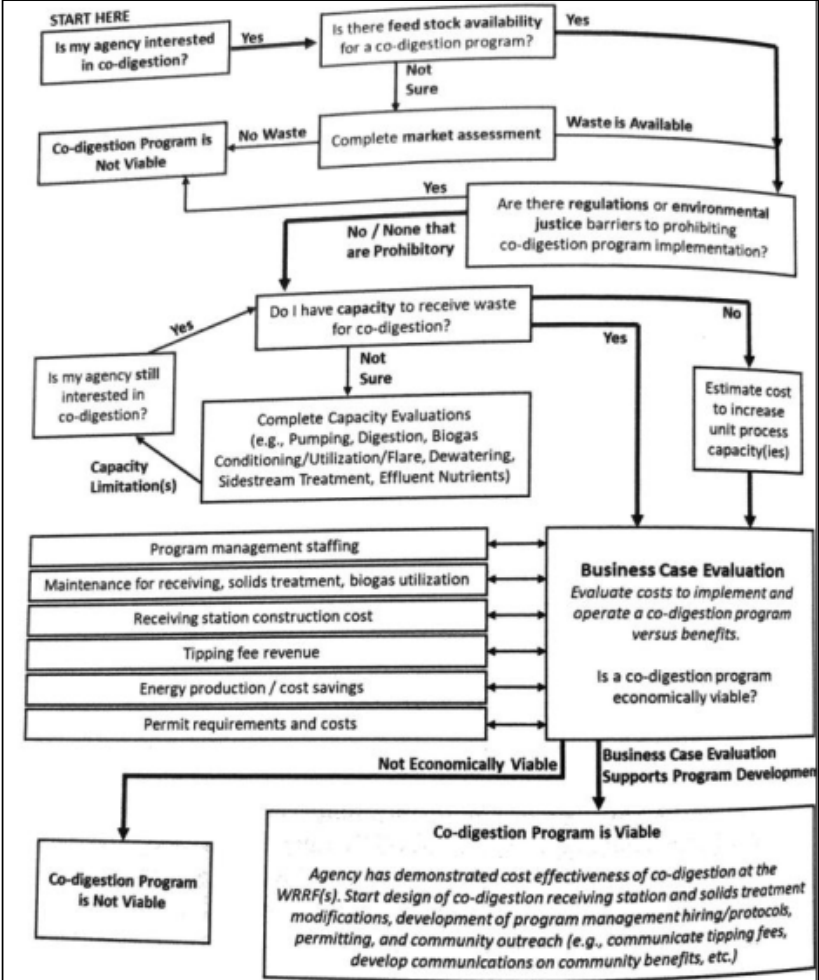
HSW Acceptance Feasibility Roadmap

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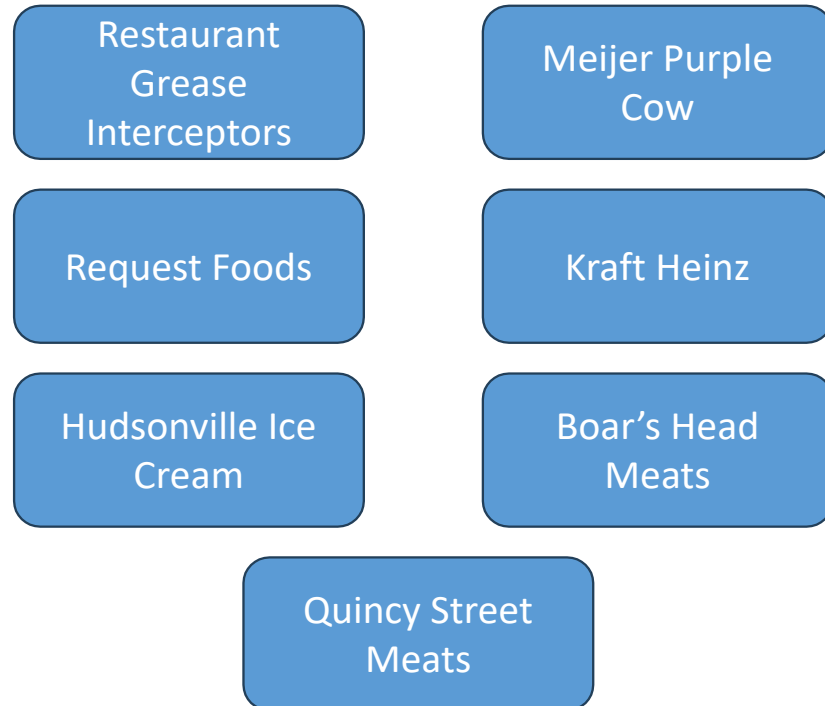
WEF 2025 Co-Digestion Guidance Manual



1. Determine available sources of feedstock (market availability assessment)
2. Determine if facility systems have sufficient capacity
3. Business case evaluation for co-digestion scenarios



Available Area Feedstock

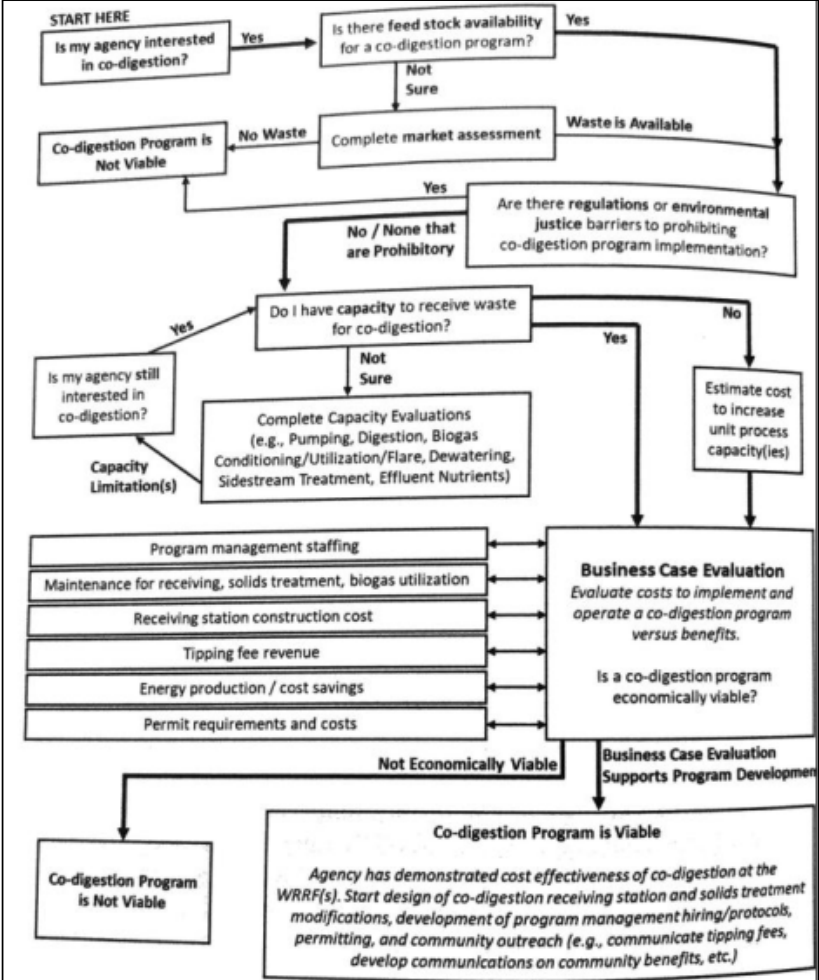


Estimated = 3,800,000 gallons/year

- Varied composition (fats, protein, carbohydrate)
- Varied solids content (will require bounds <8%)
- Predictable waste from each
- Likely results in approximately additional 85,000 CCF/yr biogas (~10% increase)

WEF 2025 Co-Digestion Guidance Manual

1. Determine available sources of feedstock (market availability assessment)
2. Determine if facility systems have sufficient capacity
3. Business case evaluation for co-digestion scenarios



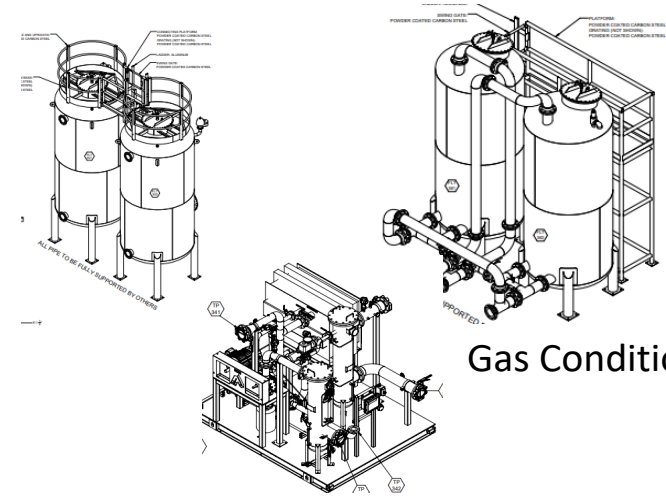
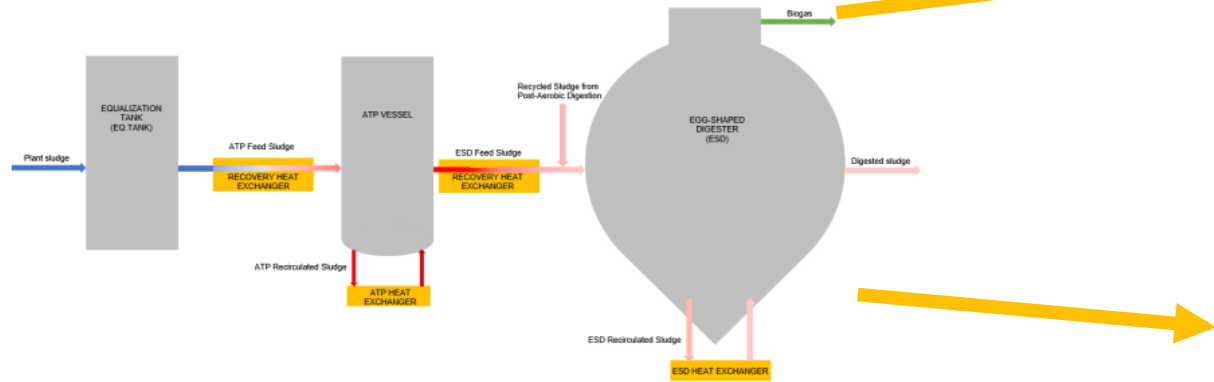
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Existing System Capacity

Anaerobic Digestion System

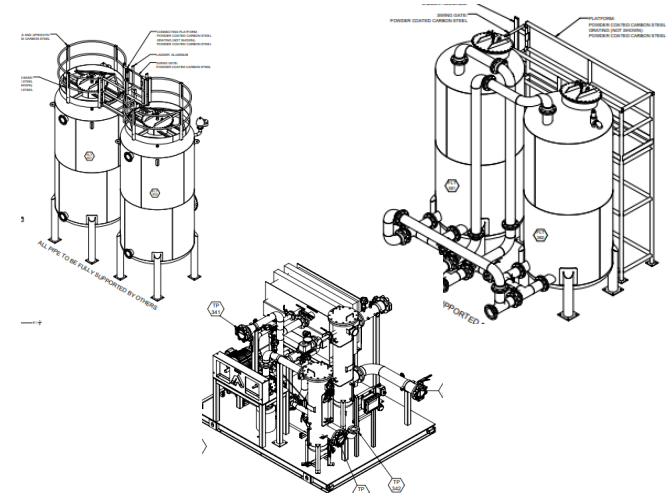
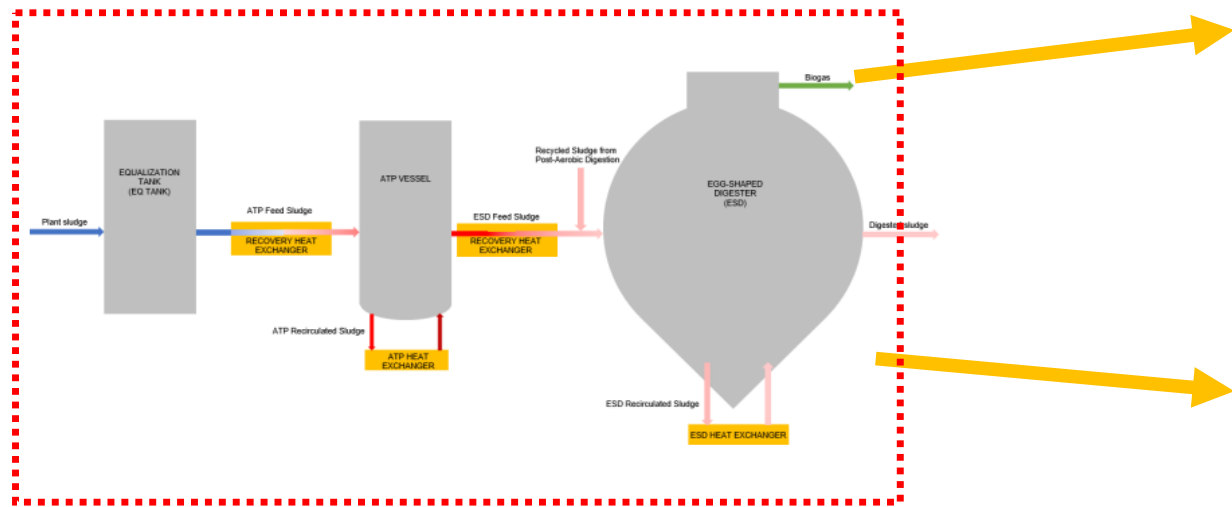


Gas Conditioning



Post-Aerobic Digestion System

Existing System Capacity



Anaerobic Digestion System

Parameter	Basis of Design	2024-2025 Data
Sludge Flow (gal/day)	159,358 (peak)	47,169 (average), 60,482 (peak)
VA:Alk Ratio	0.1 – 0.25	0.21
Temperature (°F)	90 – 104 F	100
pH (S.U.)	6.5 – 7.5 and stable	7.95
Ammonia (mg/L)	N/A	2,620

OK ✓

OK ✓

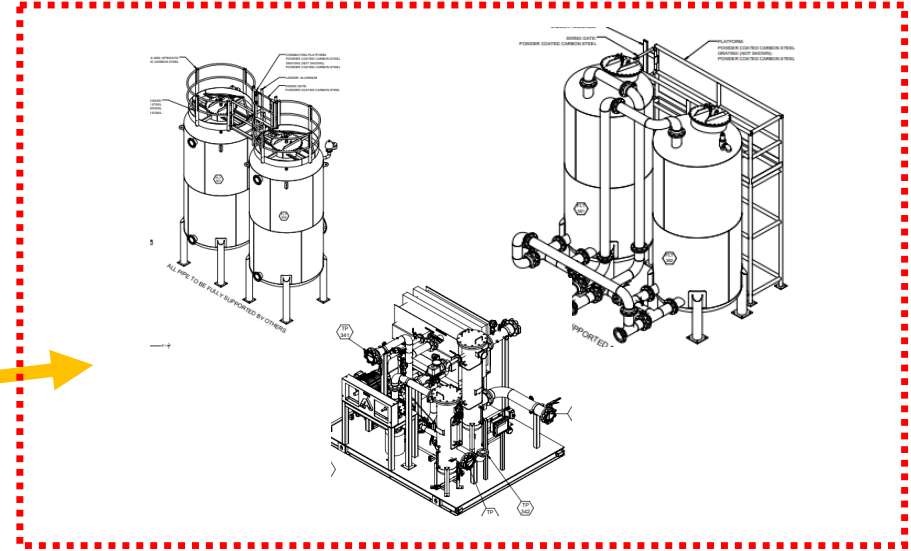
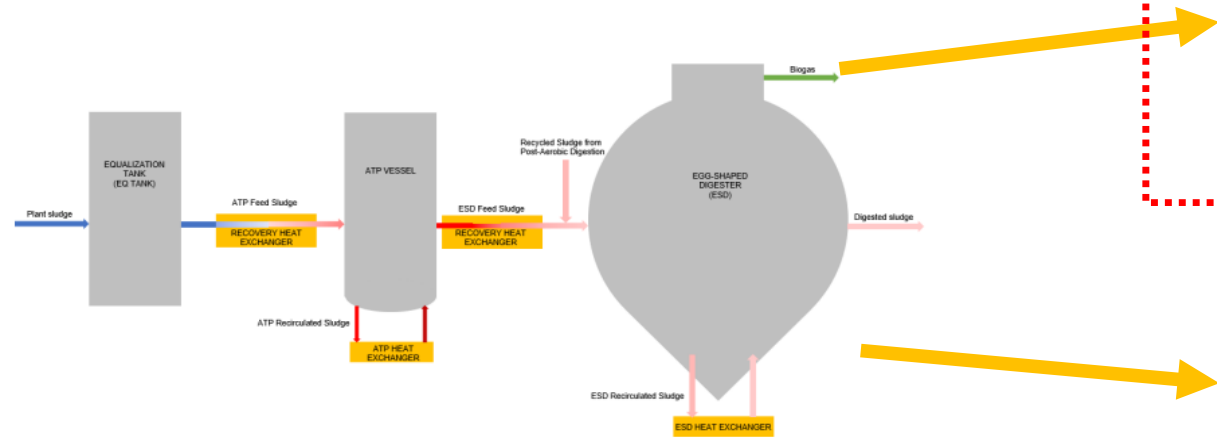
OK ✓

OK ✓

OK ✓



Existing System Capacity



Gas Conditioning System

PRINCIPLE OF OPERATION Digester Gas Conditioning System

GENERAL

OVERVIEW

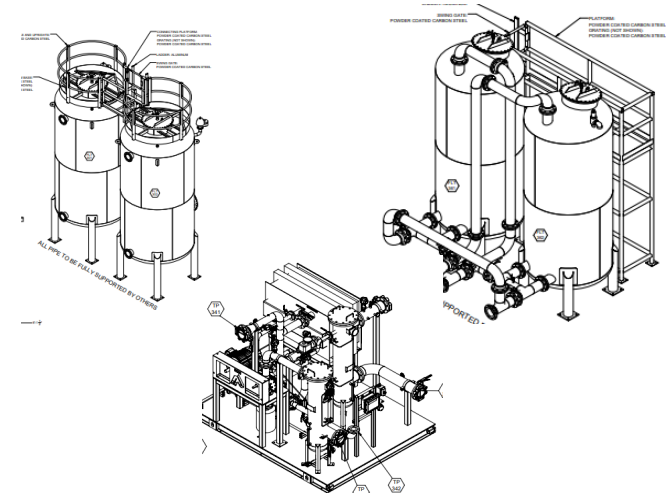
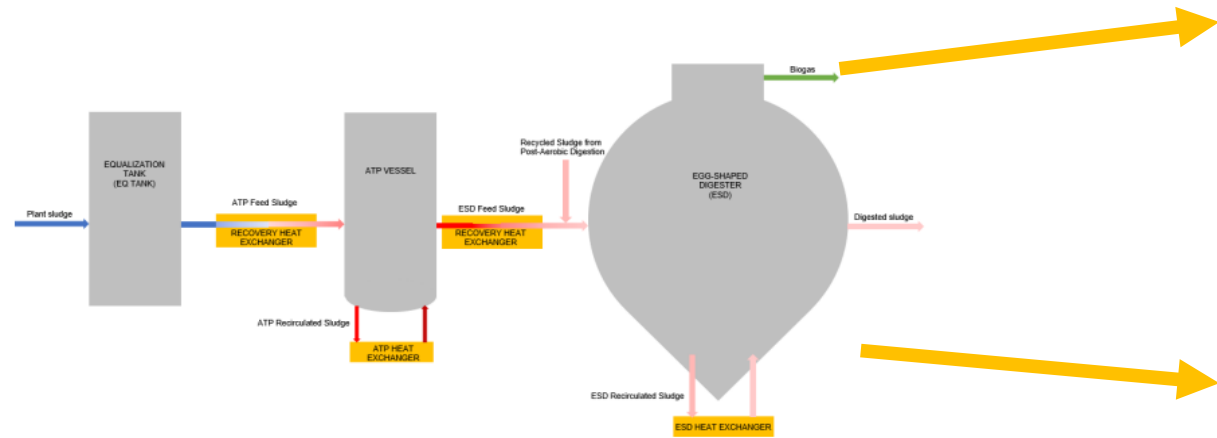
The Unison Solutions, model BGS-400-530-HS, gas conditioning system is designed to supply up to 400 scfm of clean, dry, digester gas, compressed to 5 psig. The system is comprised of several parts including:

- H₂S removal system
- The gas blower skid which pressurizes the gas, removes moisture, and regulates discharge pressure and temperature
- Glycol chiller which supplies cold glycol for use by the gas conditioning system
- Siloxane removal system
- System control panel which monitors and controls all the parameters in the gas conditioning system

- Peak 4,421 CCF per day (~300 SCFM)
- Average 2,332 CCF per day (~160 SCFM)
- Sample results show good H₂S and Siloxane removal

OK ✓

Existing System Capacity



Post-Aerobic Digestion System

Parameter	Basis of Design	2024-2025 Data
Sludge Flow (gal/day)	140,200 (Max month condition assumed)	47,169 (average), 60,482 (peak)
Total Solids (%)	3 – 4%	3.25
Ammonia Loading (lbs/day)	1,666	1,100
Ammonia Concentration (mg/L)	1,425	2,620

OK ✓

OK ✓

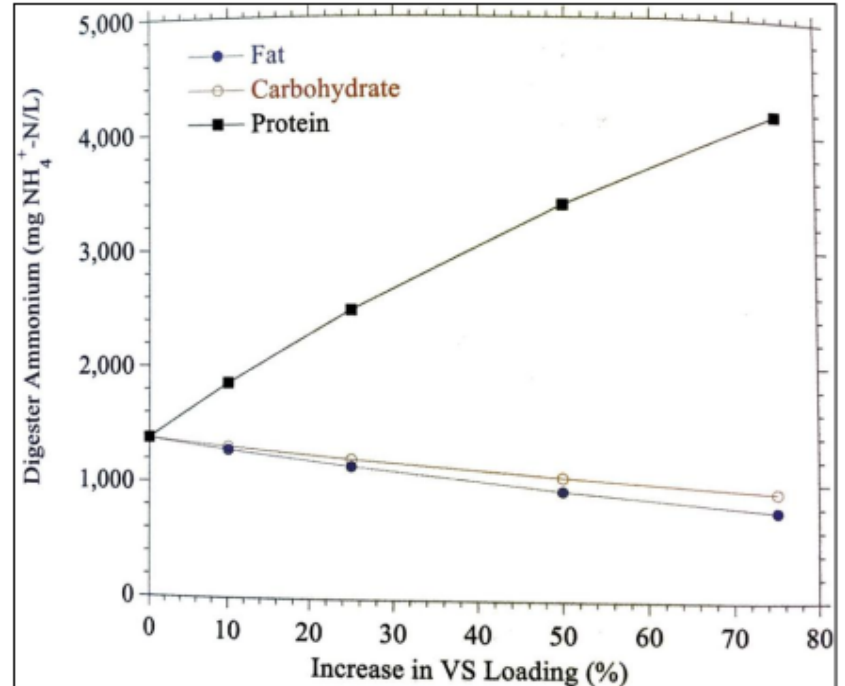
MARGINAL ~

HIGH



System Summary

- The ESD and PAD can handle more volumetric flow, up to an additional flow of approximately 90,000 gallons per day.
- The VA:Alk ratio indicates that the digester can receive more COD/strength
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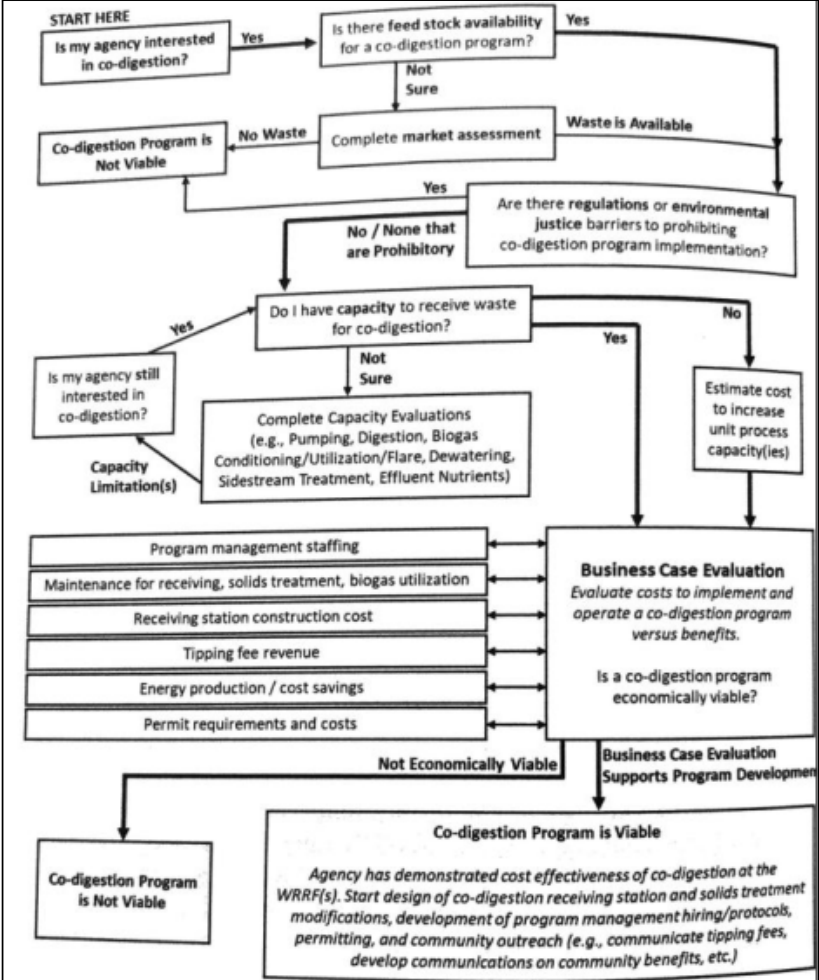


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WEF 2025 Co-Digestion Guidance Manual

1. Determine available sources of feedstock (market availability assessment)
2. Determine if facility systems have sufficient capacity
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Business Case Evaluation

Expense / Costs	VS	Income
Initial capital cost for receiving station		Tipping fees assessed to haulers
Initial capital cost for additional biogas utilization		Additional power/heat generated (offsetting power costs)
Ongoing O&M cost for receiving station equipment		Assigned monetary value of decarbonization, green tech., program appearance
Ongoing additional laboratory & regulatory costs associated with HSW program		
Additional labor cost		
Additional O&M costs on other existing biosolids processes		

Page 24 of 33

Page 30 of 74



HSW Receiving Station

- Receiving station should:
 - Intercept large inorganic debris
 - Remove excess water to concentrate grease
 - Keep entire tank mixed and heated
 - Batch tank into digestion process



Biogas Utilization Methods

- Combined Heat & Power (CHP) Units
 - Larger sizes required
 - Little turndown ratio
- Microturbines
 - Smaller sizes + modular
- Biogas Fuel Cells
 - High efficiency, high technology
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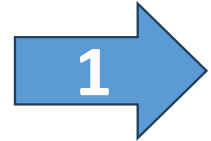


Laboratory & Regulatory

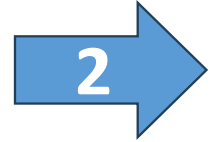
- Laboratory
 - CHNOS elemental analysis – Proteins, Fats, Carbohydrates
 - Toxicity Assays
 - Biomethane Potential
 - Metals, other typical lab parameters
- Regulatory
 - Likely fits within our existing permit structure, no requirement to permit as solid waste
 - Engage regulatory consultant up-front for assistance



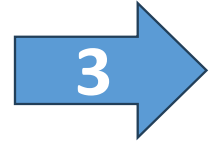
Business Case Evaluation – Roadmap



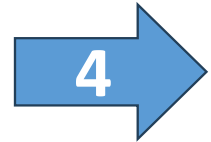
Estimate total volume of HSW to be received (based on scenario)



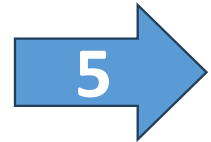
Based on volume and types of HSW, estimate additional biogas to be produced, and select the most appropriate generation equipment



Generate cost estimates for receiving station, generation equipment, and ongoing expenses. Use a 10-year NPV to determine total cost.



Generate savings estimate for the power cost avoided by using additional power generation equipment. Use a 10-year NPV to determine total savings income.



Back-calculate required tipping fee to be assessed to haulers in order to make the program break even using 10-year NPV for all income and expenses.



Business Case Evaluation – Scenarios

1

- 3,800,000 gallons per year from area food producers and hauled grease traps.
- One additional full-time-equivalent staff (FTE)
- Purchase and operation of additional equipment for biogas utilization

3

- 3,200,000 gallons per year from area food producers and hauled grease traps.
- One additional full-time-equivalent staff (FTE)
- Flare excess biogas (no generation)
- Sensitivity analysis – losing one large hauler

2

- 3,800,000 gallons per year from area food producers and hauled grease traps.
- One additional full-time-equivalent staff (FTE)
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4

- 800,000 gallons per year from Hudsonville Ice Cream
- No additional staff
- Simple, small receiving station
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- Sensitivity analysis – one large hauler only

Business Case Evaluation – Scenario Results

2

Scenario	Capital Cost (\$)	Avg. Annual O&M Cost (\$)	Required Tipping Fee for Positive 10yr NPV (\$/gal)
1	\$3,541,000	\$260,531	\$0.219
2	\$2,859,000	\$231,710	\$0.189
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- 3,800,000 gallons per year from area food producers and hauled grease traps.
- One additional full-time-equivalent staff (FTE)
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Page 30 of 33



Business Case Evaluation – Considerations

- Viability of “Best” Option

- Scenario 2 = lowest tipping fee required to be positive in 10-yr NPV
- Relies on full buy-in from area haulers
- Very sensitive to losing one or more haulers (Scenario 3)
- Tipping fee (\$0.189/gal) still exceeds area benchmarks (MCRRC = \$0.127/gal, Hart BioPure = \$0.08/gal)

- Non-economic Factors

- No beneficial reuse of biogas = no work towards decarbonization goals
- Increased truck traffic into WRF for haulers
- Requires significant cooperation and understanding from haulers – some loads may get sent back/away



HSW Receiving Program – Conclusions

CURRENT

- No scenario considered was immediately financially viable
- Many scenarios have potential undesirable non-economic considerations
- Each scenario requires a higher tipping fee than market standard



WHAT COULD CHANGE?

- Other area receivers either close or increase tipping fees
- Operational changes or improvements at WRF make receiving easier to incorporate
- Regulatory requirements force haulers to seek alternate disposal options (see California)

Acknowledgements

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2026 WRF High-Strength Waste (HSW) Acceptance Tactical Action Report

June 22, 2026

Problem Statement

Local industrial customers have inquired about sending hauled high strength waste (HSW) to the WRF as soon as the announcement of the anaerobic digester project. Additionally, closure of the Fremont Digester and reduced acceptance by Muskegon County's WWTP are making it more difficult for industrial customers to dispose of their high strength waste streams.

Metric

*Determine what regulatory and process impacts would occur due to receiving high strength hauled waste (HSW) at the WRF.
Determine extra costs/manpower required to receive HSW.
Provide a recommendation on whether to pursue HSW acceptance and what additional requirements will be necessary.
Present findings in the form of a report and presentation to senior staff.*

Background & Approach



What is High-Strength Waste (HSW)?

- High organic loads/concentrations (COD)
- Unable to send to collection system without significant cost/fines
- Food processing
- Manufacturing
- Pumped wastes (grease traps, portable toilets, septic tanks, etc)



Local Generators of HSW

- Food processors
 - Hudsonville Ice Cream, Request Foods, Boars Head Meats, more...
- Grease Interceptors
 - 300+ logged grease interceptors & traps, 150+ of which are from restaurants
- Septic haulers
- Manufacturers

Hudsonville
ICE CREAM

Kraft *Heinz*



Current Area Disposal Options

- Local Pickup: Liquid Industrial Waste
- Hauled Options:
 - Muskegon County RRC : \$0.127/gallon
 - Hart BioPure Treatment Facility: ~\$0.08/gallon
 - Other partners: Vanguard, DarPRO, etc.
- Former:
 - Fremont Waste-to-Energy Facility: Closed May 2025
 - Grand Rapids WRRF: Ceased accepting recently



Potential Benefits of HSW Acceptance

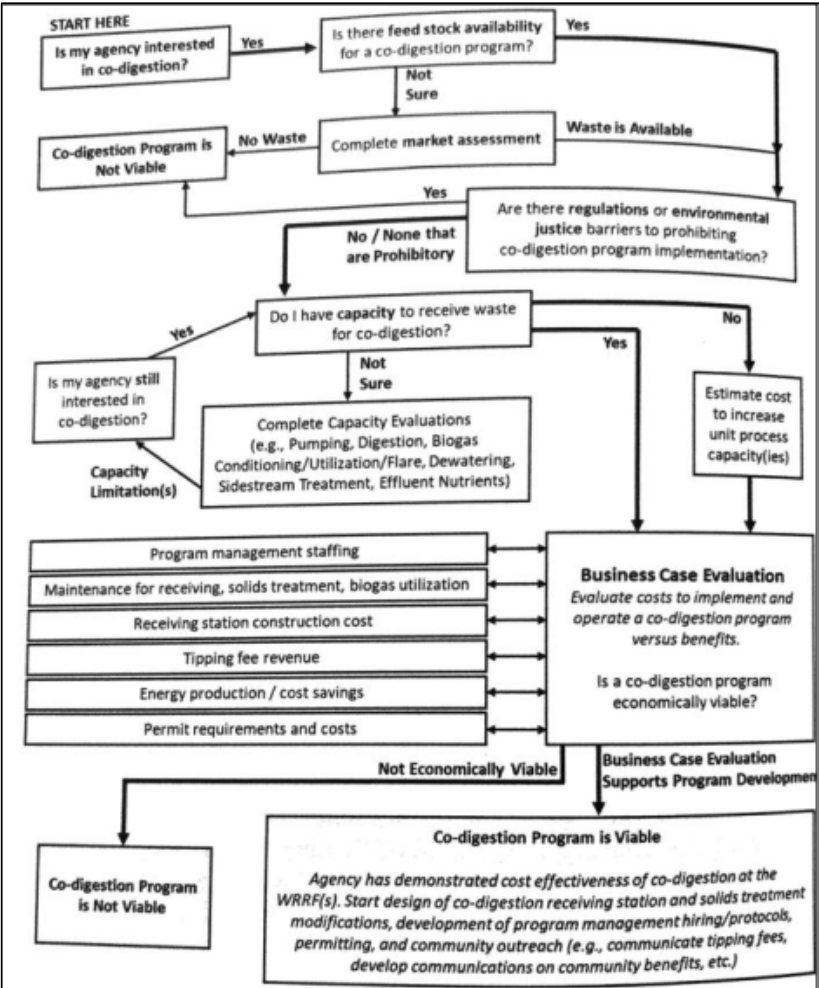
- Financial:
 - Tipping fee revenue
 - Increased biogas production (high strength = high energy potential)
- Environmental:
 - More beneficial use of waste than traditional disposal
- Operational:
 - Predictable loading to digestion system



HSW Acceptance Feasibility Roadmap



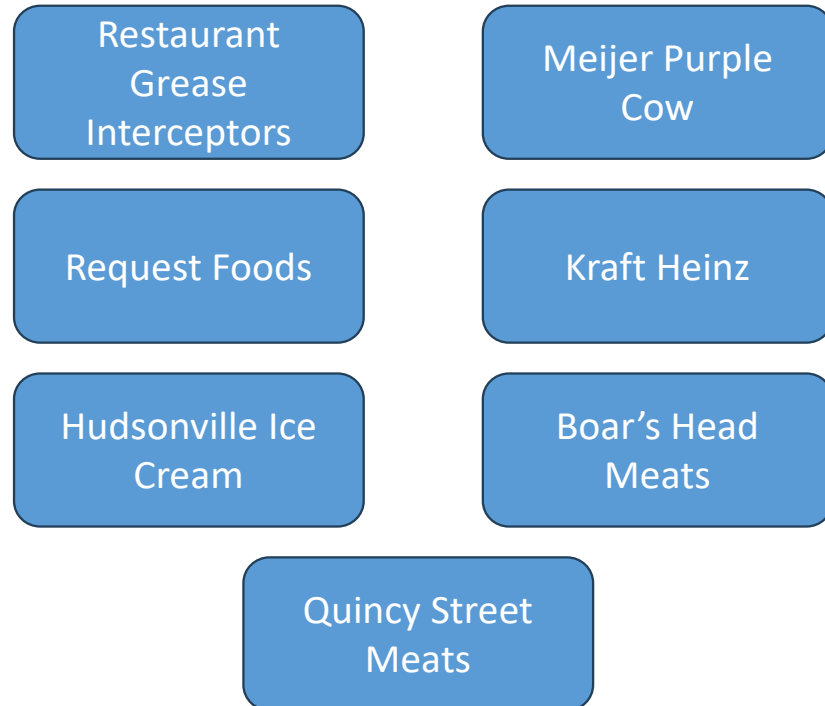
WEF 2025 Co-Digestion Guidance Manual



1. Determine available sources of feedstock (market availability assessment)
2. Determine if facility systems have sufficient capacity
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Available Area Feedstock

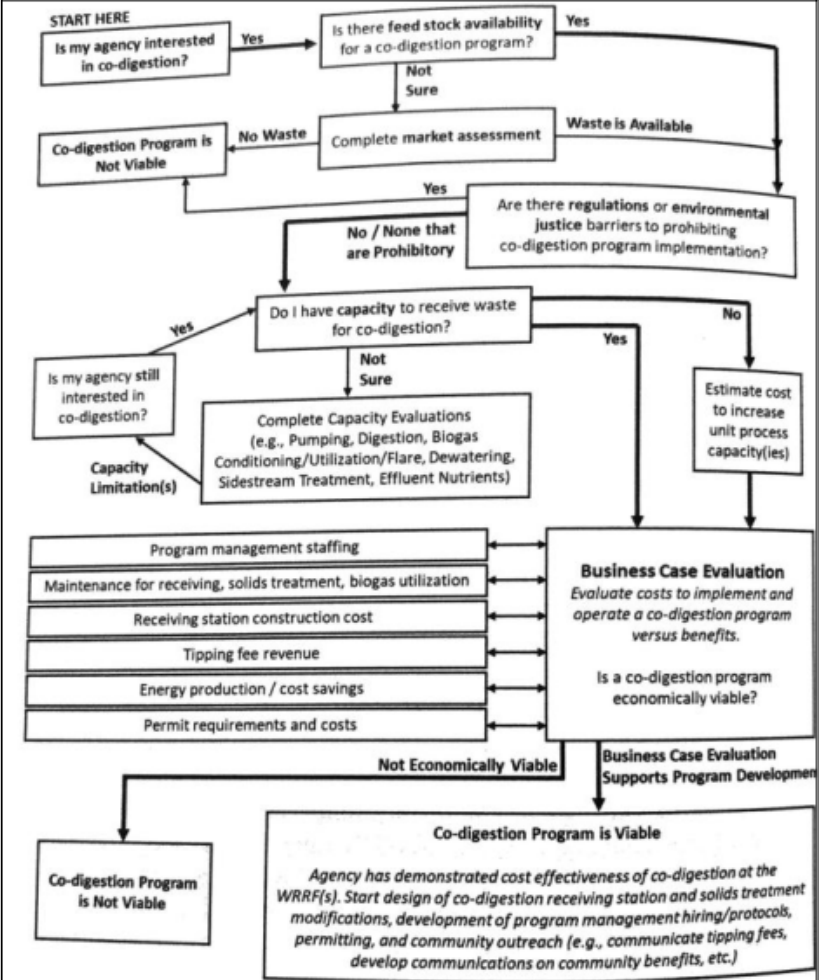


Estimated = 3,800,000 gallons/year

- Varied composition (fats, protein, carbohydrate)
- Varied solids content (will require bounds <8%)
- Predictable waste from each
- Likely results in approximately additional 85,000 CCF/yr biogas (~10% increase)

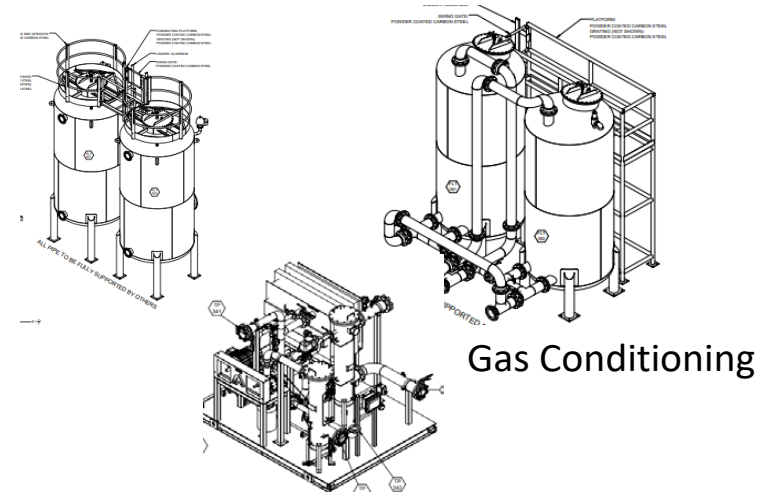
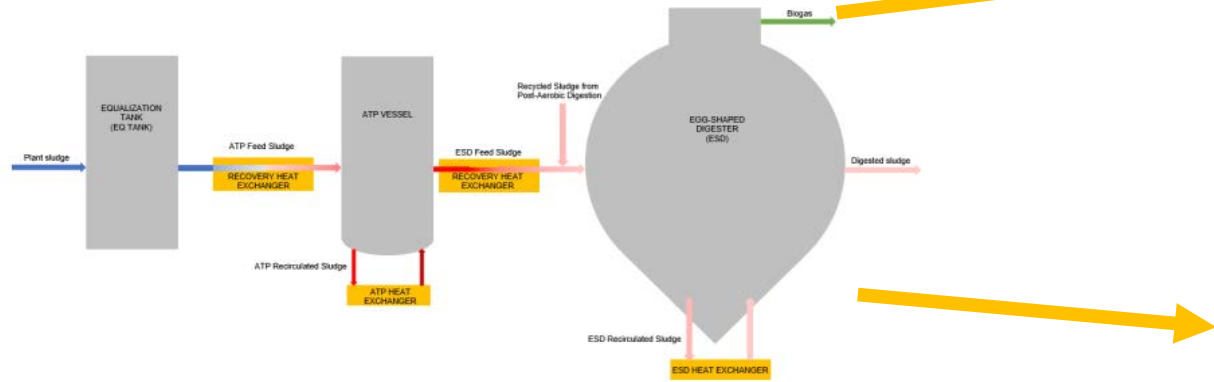
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Existing System Capacity

Anaerobic Digestion System

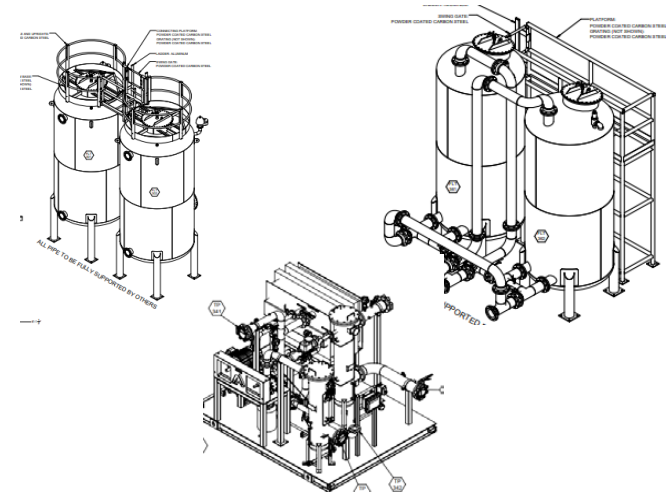
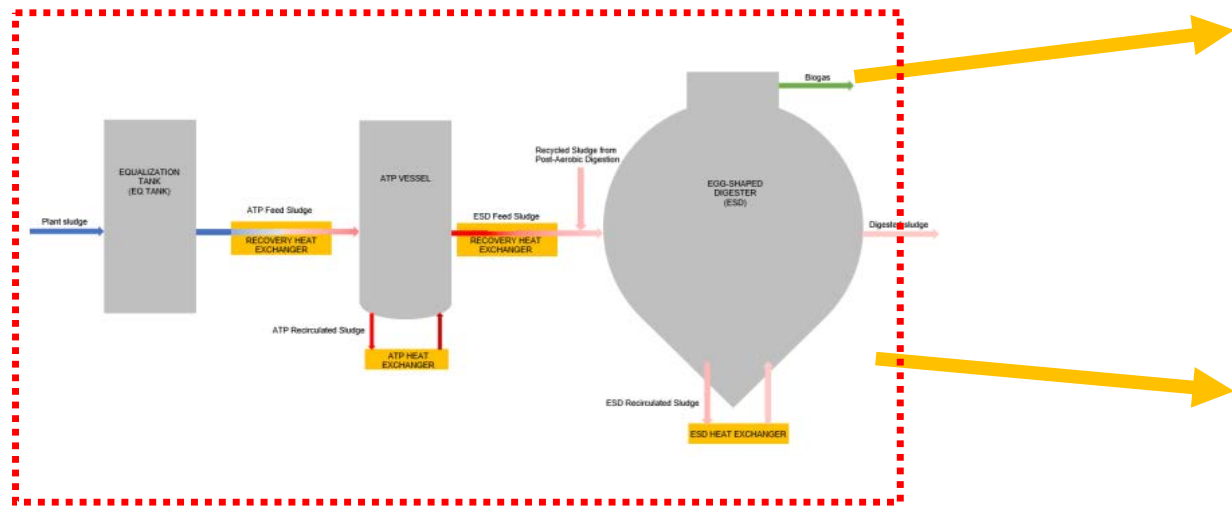


Gas Conditioning



Post-Aerobic Digestion System

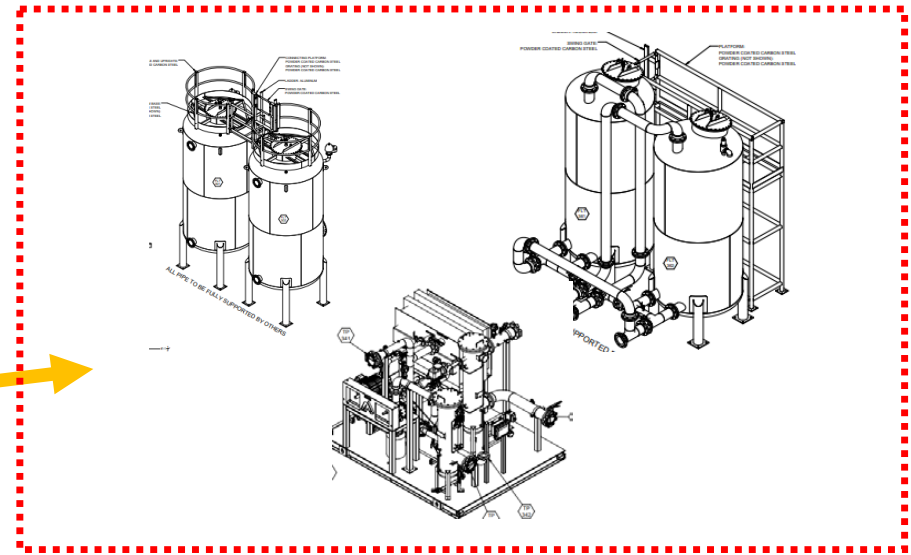
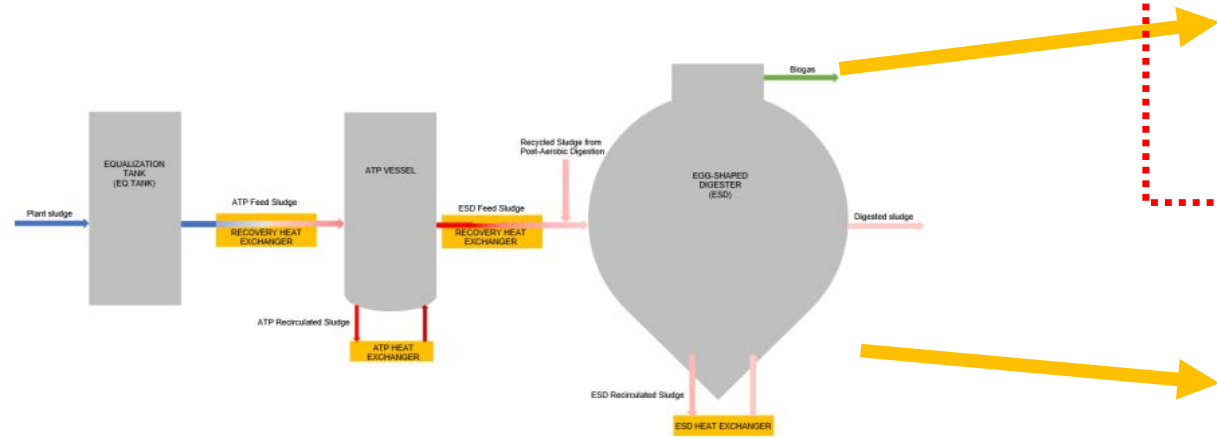
Existing System Capacity



Anaerobic Digestion System

Parameter	Basis of Design	2024-2025 Data	
Sludge Flow (gal/day)	159,358 (peak)	47,169 (average), 60,482 (peak)	OK ✓
VA:Alk Ratio	0.1 – 0.25	0.21	OK ✓
Temperature (°F)	90 – 104 F	100	OK ✓
pH (S.U.)	6.5 – 7.5 and stable	7.95	OK ✓
Ammonia (mg/L)	N/A	2,620	OK ✓

Existing System Capacity



Gas Conditioning System

PRINCIPLE OF OPERATION Digester Gas Conditioning System

GENERAL

OVERVIEW

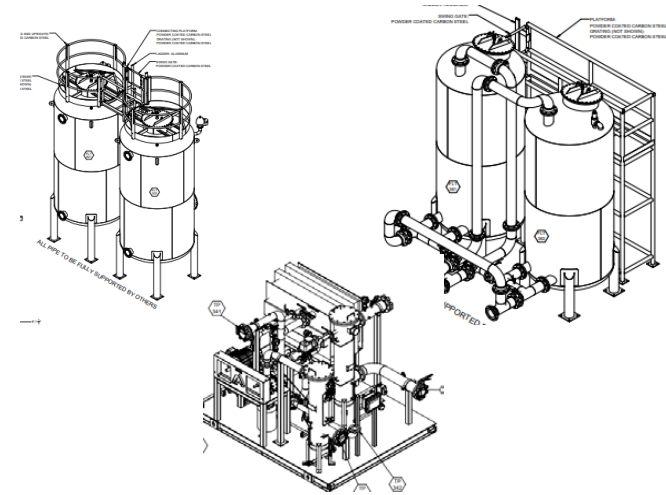
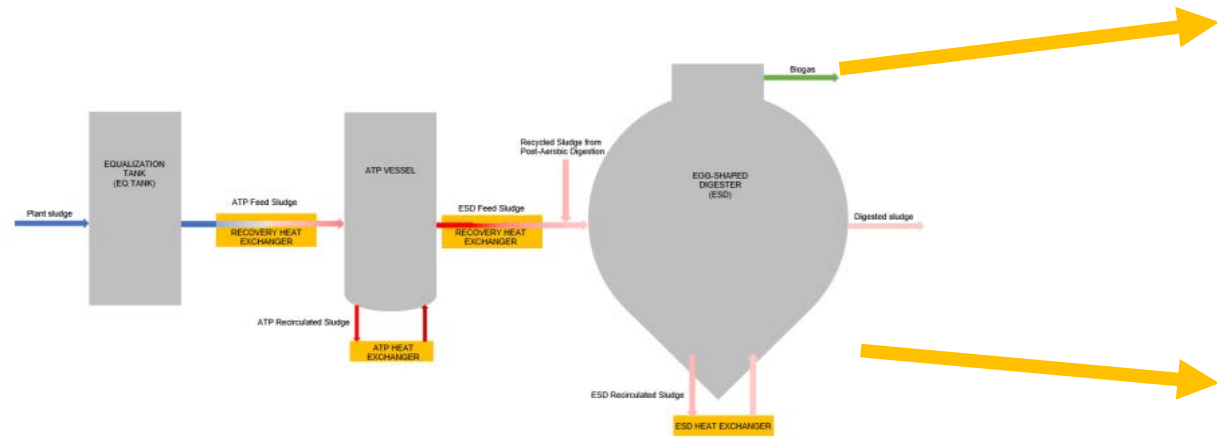
The Unison Solutions, model BGS-400-330-HS, gas conditioning system is designed to supply up to 400 scfm of clean, dry, digester gas, compressed to 5 psig. The system is comprised of several parts including:

- H₂S removal system
- The gas blower skid which pressurizes the gas, removes moisture, and regulates discharge pressure and temperature
- Glycol chiller which supplies cold glycol for use by the gas conditioning system
- Siloxane removal system
- System control panel which monitors and controls all the parameters in the gas conditioning system

- Peak 4,421 CCF per day (~300 SCFM)
- Average 2,332 CCF per day (~160 SCFM)
- Sample results show good H₂S and Siloxane removal

OK ✓

Existing System Capacity



Post-Aerobic Digestion System

Parameter	Basis of Design	2024-2025 Data
Sludge Flow (gal/day)	140,200 (Max month condition assumed)	47,169 (average), 60,482 (peak)
Total Solids (%)	3 – 4%	3.25
Ammonia Loading (lbs/day)	1,666	1,100
Ammonia Concentration (mg/L)	1,425	2,620

OK ✓

OK ✓

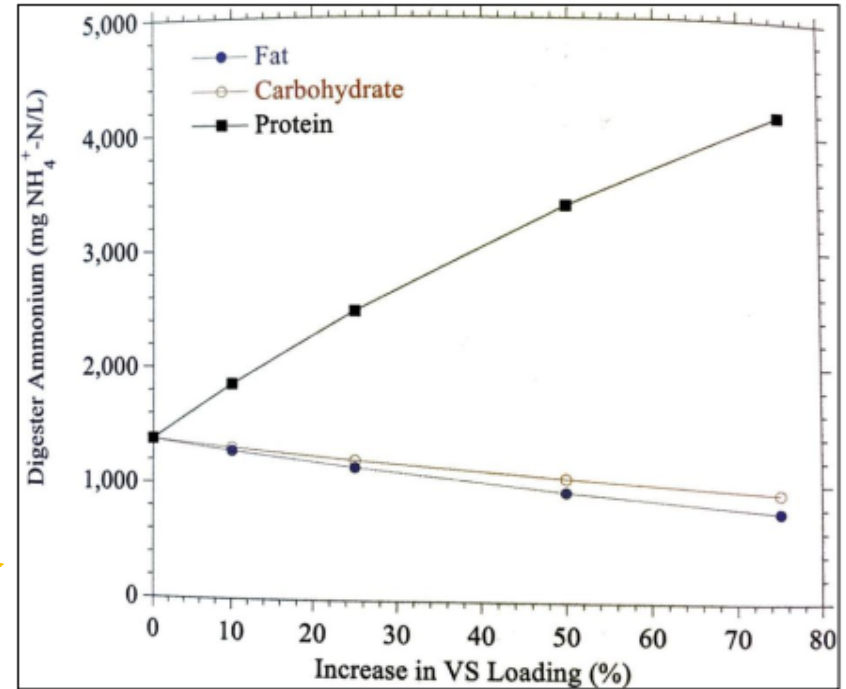
MARGINAL ~

HIGH



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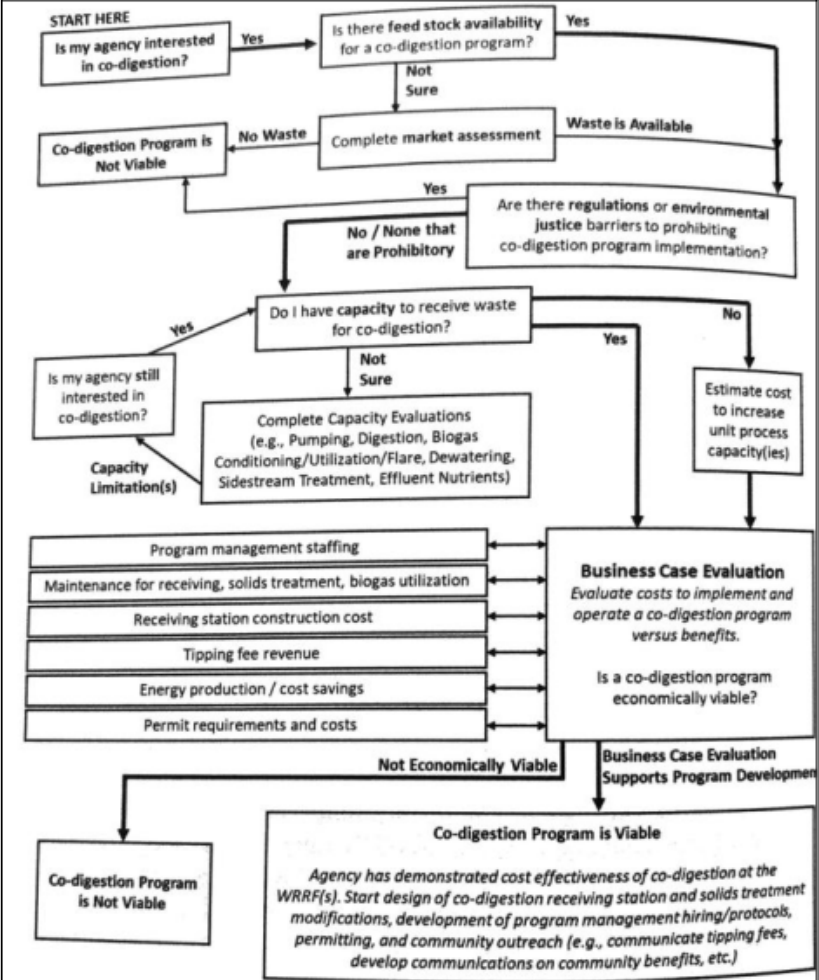
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**OFFICE OF THE GENERAL MANAGER
BOARD OF PUBLIC WORKS
HOLLAND, MICHIGAN**

To: BPW Board of Directors
Date: 2026-06-22
Subject: Outline of Grant Program for Customer Initiated Private Side Lead Service Line Replacements

Utility Services Department

Introduction:

The Michigan Lead and Copper rule requires water utilities to replace galvanized water service lines with a lead connector, including the customer owned portion of the galvanized line. Staff will outline a proposed grant program to allow customer initiated private side service line replacements while still adhering to the Lead and Copper Rule requirements.

Recommendation:

Accept for information.

Description:

The Michigan Lead and Copper rule requires water utilities to replace galvanized water service lines with a lead connector, including the customer-owned portion of the galvanized line. Staff will outline a proposed grant program to allow customer-initiated private side service line replacements while still adhering to the Lead and Copper Rule requirements. This program can reduce the HBPW staff workload normally required to communicate replacements, work with contractors, and spend time following up with customers who are not responding to our requests to replace their portion of the water service line.

Respectfully submitted,

David G. Koster
General Manager

Strategic Directive:

- 1. HBPW will effectively and proactively address customer needs and continually seek ways to grow through the provision of added value services to its customers and the greater Holland area.**
- 3. HBPW will maintain compliance with and monitor regulatory issues affecting the utility, and where possible, directly participate in relevant legislative dialogue.**

Report prepared by: Ted Siler, Utility Services Director



**OFFICE OF THE GENERAL MANAGER
BOARD OF PUBLIC WORKS
HOLLAND, MICHIGAN**

To: BPW Board of Directors
Date: 2026-06-22
Subject: Evaluation of Water Rate for Customers That Use Once Through Cooling

Utility Services Department

Introduction:

HBPW has developed rates and programs to help reduce peak water usage in the summer months. Once through cooling is an inefficient usage of water for industrial cooling and it may be appropriate to charge a higher rate for the usage that contributes to summer peak demands.

Recommendation:

Accept for information.

Description:

HBPW has developed rates and programs to help reduce peak water usage in the summer months. Once through cooling is an inefficient usage of water for industrial cooling and it may be appropriate to charge a higher rate for the usage that contributes to summer peak demands. Staff worked with Utility Financial Solutions to analyze customer usage patterns and evaluated the appropriateness of implementing a separate water rate for customers that employ once through cooling.

Respectfully submitted,

David G. Koster
General Manager

Strategic Directive:

2. HBPW will follow fiscal policies that ensure the long-term stability of finances, cash reserves, rates, and workforce.

Report prepared by: *Ted Siler, Utility Services Director*