Town of Washington Utility District 2012 Annual Report

For the period ending December 31st, 2012

Progress Report on FAST system

Billing:

At the beginning of 2012, we started with $1,830.40 in unpaid billing fees from the year 2011 for spreading. To date, we have collected $733.40 through sending out reminder letters. Of the $1,097.00 still owed, $737.40 (11 customers) will be collected through the owners' tax bills under a 'Special Assessment' billing. It may be noted all of these overdue bills were from the years 2010 and 2011 (8 customers), 2009 (2 customers), and 2008 (1 customer).

The remaining amount of $359.60 will be combined with overdue bills from 2012. This includes 2011 (7 customers), 2010 (2 customers) and 2 customers from 2005 – 2007.

Chart I - 2012 Statistics

Referring to Chart I for the year 2012, overall gallons disposed were 1% less than 2011, with Septic Waste being a bit more and Holding Tank waste a bit less (Columns E, F & G). In Columns K, L and M, 56% of the total gallons were spread on the fields; that being 100% of the Septic Tank waste and 45% of the Holding Tank Waste.

So the conclusion is that 45% of Holding Tank Waste is being spread on the field rather than into a FAST system. In column J this is shown in percentages of the use of the field by Holding Tank waste. On all but one field (Myra A1) the greater use of the field was for Holding Tank waste.

New FAST system:

The application has been filed with the USDA for funding for the proposed FAST system at the Gunnlaugsson Site. The Gunnlaugsson Site was the site of choice compared to the South Gunnlaugsson Site, Red Barn Site and the Dump Site.

(Page 13 & 15 OF PER) System type choice (DISCUSS)

On page 13 there is a breakdown and description of the recommended system which is a FAST pretreatment system with an in-ground pressurized disposal system. This system will be able to handle up to 11,000 gallons per day (gpd)with 7900 gpd being Holding Tank waste and 2,000 gpd being Septic Waste.

On page 15 states the reason the in-ground system was selected over a mound system being there was adequate soil depth and the cost of an in-ground was less than a mound system.

(Page 16) Conclusion and recommendation (DISCUSS)

This portion of the final (PER) clearly defines the projected expectations, functions and utilization of the new FAST system.

I am requesting the Utility District Board meet with Peter Hurth, Engineer, Baudhuin, Inc., and possibly Bill Brown and/or Paul Matthaie, WISCAP along with other interested parties to participate in an overview of the system design along with its capabilities.

On page 17 the report also outlines a recommendation for loading of both the new system and the existing Ball Park system.

Exhibit E – Cost estimates

The final Cost estimate came in at $519,000.^{00.}$ (See attached Engineering Cost Estimate) This includes all costs to the completion of the new system. The capital replacement fund is estimated at an additional $1,979 per year or $165.00 per month. Since components such as the pumps, blowers and filters have life expectancies of, on average, 10 years a fund would be established for costs associated with this in case of failure necessitating replacement.

Suggestions for Paying for this system (DISCUSS):

The costs could be broken down to address two separate parts of expenditures for the Utility District, one being the loan payment and the second being the operating costs.

Since the revenues received (.02 per gallon) is based on a variable base which is gallons pumped, this source of revenue can only be estimated annually and the final amounts could be more or less depending upon gallons disposed.

Revenues could be collected in one of two ways:

Option #1:

The payment for the loan could be assured by spreading the amount of the payment across all septic systems. According to the County there are 994 systems permitted on the Island.

Septic type – 779 (may be pumped every three years upon inspection)
Holding Tanks – 203 (pumped more frequently based upon need)
Other - (*Composting/Vault Privy) - 12 (*Town 'Pit Toilets')

*The Vault Privy(s) are the pit toilets owned by the Town. The pit toilets are also used as winter emergency septic waste disposal sites for holding until that septage can be field spread in the spring. Gallons pumped from Town properties are not charged.

continued

The Total Capital Cost: $519,000 over 40 years at 2.75%

The estimated annual payment & interest (P&I) to USDA of :
$21,408.00 – per year
$10,704 - bi-annual payment
$1,784.00 - per month

21,408 / 994 systems = $21.54 per system per year.

The cost of $21.54 per system could be added to the system owners' tax bill as a special assessment or utility district assessment. It would only affect those properties that have systems permitted to them; vacant or unimproved property would not be affected. This revenue would be used for the repayment of the **loan**. As more systems are added based upon economic growth, this could contribute to additional payoff amounts or the amount could be recalculated. The U.D. could collect its payment from the County, assuring a stable amount. This system benefits all who live on the Island and all owners with systems would contribute to the improvement. If a system would be abandoned or discontinued without replacement, that special assessment would be removed from that property tax bill.

The revenue received from the cost for spreading (currently $0.02 per gallon) would be reserved for the **operating costs** to the current FAST at the Ballfield and the new FAST at the Gunnlaugsson property. This amount will be recalculated based upon the yearly budget and anticipated expenditures.

Option #2:

All revenues would be generated from the cost per gallon (currently $0.02 per gallon) for both the Loan Repayment and the operating costs.

The estimated annual payment & interest (P&I) to USDA of :
$21,408.00 – per year
$10,704 - bi-annual payment
$1,784.00 - per month

21,408 / 1,163,400 gallons pumped
.018¢ per gallon

This would result in a projected increase in costs per gallon to .04¢ or possibly .05¢ per gallon. However this will affect only those who are having septage disposed, which would eventually result in most system owners contributing; Holding tank owners on a regular basis, with Septic owners on a three year basis (if their tanks need pumping upon inspection).

Monthly operational Costs:

The monthly operational expenses as outlined on the Operation Budget Summary page are estimated at $2,650.00 per month or $31,800.00 per year. According to a review of 2012 current costs (*see below breakdown), the price per gallon overall is still coming in at .02¢ per gallon to cover costs.

Referring to the spread sheet on Utility District Costs some of the revenue such as $11,065.55 for Field Lease and a portion of the Lime costs would now go to the operational costs of the new FAST system. (Less lime is required less frequently due to the requirement of lime only for the sludge from the tanks of the FAST systems being spread rather than all septic tanks waste spread on the fields. Some of these line items would reflect an increase such as electricity, inspections and testing of which the field revenue could be applied.

The costs on the proposed Operational Budget are a combination of both FAST systems. So for example if you would take the total 2012 total expenditures (as laid out below) of $28,646.67 / 12 months = $2,387.22 per month (current monthly operational expense), compared to the projected operational cost of $2,650 per month there may not be a need for an increase to the .02¢ per gallon currently charged. This increase would not include the replacement fund.

***2012 Cost Breakdown**

Cost to FAST system:

Gallons disposed in FAST system 2012: 507,620

Costs specifically to FAST system: $4,278.95
.01¢ per gallon

Costs to Fields:

Gallons disposed on Fields 2012: 655,780

Costs specifically to Fields: $14,023.93
.02¢ per gallon

Total overall expenses to District (including administration)

Total Gallons disposed 2012: 1,163,400

Total Expenditures: $28,646.67
.02¢ per gallon

Headwater Flo-meter system:

Attached are copies from the engineer on a metering system on the new FAST system which would meter all gallons pumped into the system. Apparently it incorporates the following:

Meter would have user id, time and date, gallons put in.
E-mail goes to pumper and Town stating how many gallons.
Pumper charges/collects from customers.
Pumper pays Town for gallons according to meter data.

Separate ID's can be entered for System User, Owner type (septic/holding tank) and different users such as the Town pumpouts so those gallons are not charged. This can be explained further by Pete Hurth, Baudhuin, Inc.

Respectfully submitted,

Lu Beekman
Utility District

Chart I 2012

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Acres	Max gals per acre	Annual Maximum	Field	Total Gallons Disposed both **Holding & Septic**	Total Gallons **Septic Waste** Disposed	Total Gallons **Holding Tank** Waste Disposed	% of Field Used by **All** Waste	% of Field Used by **Septic Waste**	% of Field Used by **Holding Tank** Waste	% of **Total Gallons** put on Field	% of **Septic Waste** on Field	% of **Holding Tank** on Field	Grease Waste/ Unaccounted Gallons on fields
3	39000	117000	Myra A South	49,000	22,250	26,750	42%	19%	23%	4%	10%	3%	0
3	39000	117000	Myra A North	88,750	15,200	73,550	76%	13%	63%	8%	7%	8%	0
2.5	39000	97500	Myra A1	64,650	33,550	22,850	66%	34%	23%	6%	15%	2%	8,250
4	39000	156000	Myra C East	148,150	68,400	78,550	95%	44%	50%	13%	30%	9%	1200
1.7	39000	66500	Gunnlaugsson West	52,550	20,650	31,900	79%	31%	48%	5%	9%	3%	0
16.03	12165	195000	Airport A	0	0	0	0%	0%	0%	0%	0%	0%	0
6	39000	117000	Myra B	89,320	44,340	44,980	76%	38%	38%	8%	19%	5%	0
3.5	39000	136500	Myra B1	0	0	0	0%	0%	0%	0%	0%	0%	
4	39000	156000	Myra C West	102,680	16,100	86,580	66%	10%	56%	9%	7%	9%	
2.8	39000	109200	Gunnlaugsson East	60,680	8,750	51,930	56%	8%	48%	5%	4%	6%	
10.14	12165	195000	Airport B	0	0	0	0%	0%	0%	0%	0%	0%	
		730000	Fast System	507,620	0	503,820	70%	0%	69%		0%	55%	
	730000		Fast System/Johnson	160,750	0	160,750				14%	0%	17%	
			Fast System/Jorgenson	346,870	0	343,070				30%	0%	37%	
Both Field & Fast		3,636,400	Totals	1,163,400	229,240	920,910				56%	100%	45%	9,450
	Fields Only	1,462,700		655,780		417,090							
			2011 Total	1,166,015	229,100	949,915				56%	100%	47%	
			Fields Only	652,040	229,100	444,320							
			Difference from 2011	-1%	1%	-1%							

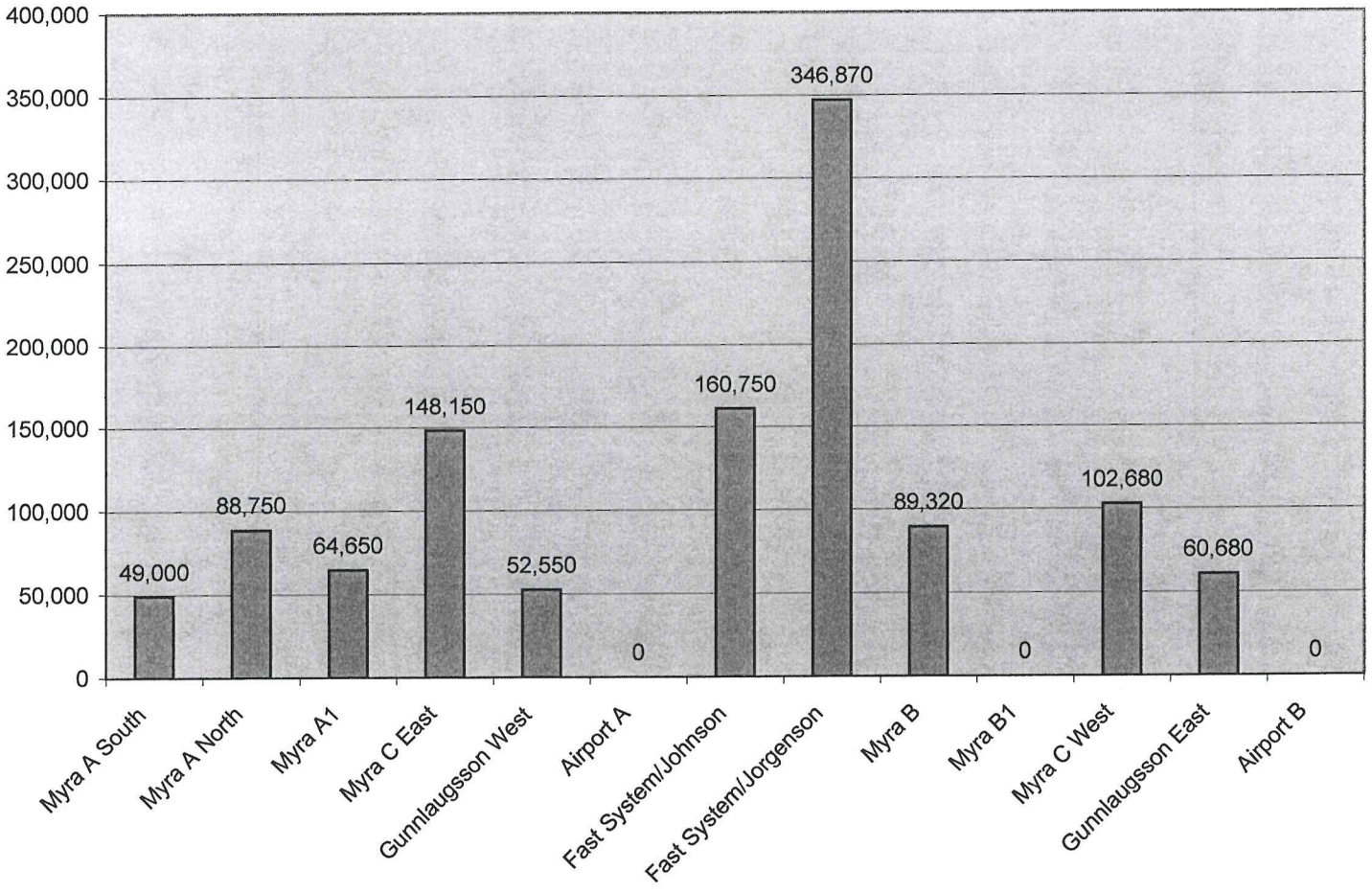
Town/Leased Field Useage

	Hanson	Jordan	Town
No. of Acres used this year	18	8	4.5
818,435	291,738	250,838	113,235
	35.65%	30.65%	13.84%

Chart II

All Fields/All Gallons

2012



All Systems/Fields
Annual 2012

Acres	Max gals per acre	Annual Maximum	Field	Total gallons	% of Total
3	39,000	117,000	Myra A South	49,000	4%
3	39,000	117,000	Myra A North	88,750	8%
2.5	39,000	97,500	Myra A1	64,650	6%
4	39,000	156,000	Myra C East	148,150	13%
1.7	39,000	66,500	Gunnlaugsson West	52,550	5%
16	12,165	312,000	Airport A	0	0%
			Fast System/Johnson	160,750	14%
			Fast System/Jorgenson	346,870	30%
6	39,000	117,000	Myra B	89,320	8%
3.5	136,500	136,500	Myra B1	0	0%
4	39,000	156,000	Myra C West	102,680	9%
2.8	39,000	109,200	Gunnlaugsson East	60,680	5%
10	10,150	195,000	Airport B	0	0%
			Totals	1,163,400	100%

Jorgensons

Acres	Max gals per acre	Annual Maximum	Field	Total gallons	% of total
3	39,000	117,000	Myra A North	88,750	13%
6	39,000	117,000	Myra B	89,320	13%
4	39,000	156,000	Myra C West	102,680	15%
2.8	39,000	109,200	Gunnlaugsson East	60,680	9%
10.14	12,165	195,000	Airport B	0	0%
			Fast System	346,870	50%
25.94				688,300	100%

Johnsons

Acres	Max gals per acre		Field	Total gallons	% of Total
3	39000	117000	Myra A South	49,000	10%
2.5	39000	97500	Myra A1	64,650	14%
3.5	39000	136500	Myra B1	0	0%
4	39000	156000	Myra C East	148,150	31%
1.7	39000	66500	Gunnlaugsson West	52,550	11%
16.03	12165	312000	Airport A	0	0%
			Fast System	160,750	34%
30.73				475,100	100%

TOWN OF WASHINGTON UTILITY DISTRICT
YEAR 2012 WASTEWATER DISPOSAL PRELIMINARY ENGINEERING REPORT

Prepared for:

Town of Washington
Rt 1 Main Road
Washington Island, WI 54246

Prepared by:

Peter J. Hurth, P.E., LEED AP
Baudhuin Incorporated
55 S. 3rd Avenue
Sturgeon Bay, WI 54235

Table of Contents

1. Report summary

Washington Island is located at the far north end of the Door County peninsula. The Island is separated by from the mainland with access by year round operating ferry line service. There is currently no municipal sewer or water service for the residents of the island. Residents are served by private wells. Wastewater is treated using on-site septic systems where soils and space are adequate. Areas without suitable soils or space are on individual holding tanks. Trucking of the wastewater to an existing wastewater treatment plant is impractical due to the location separated from the mainland.

The Town of Washington (Washington Island) currently disposes of its domestic wastewater in one of three ways.

- On-site individually owned and operated septic systems.
- On-site individually owned holding tanks that are routinely pumped by a pumper truck and land spread on permitted land spreading fields.
- On-site individually owned holding tanks that are routinely pumped by a pumper truck and emptied into a Town owned septic system located by the Town baseball field. This system is referred to as the FAST system due to the fixed activated sewage treatment (FAST) component of the system. The FAST system is rated for 3,000 gallons per day as currently designed. Documentation provided by the Town indicates this system has been overloaded.

The individually owned on-site septic systems require pumping of the sludge from the base of the septic tanks when solids levels accumulate to a depth equal to approximately one-third of the tank depth. This septic tank waste is currently land spread at the same land spreading sites as the holding tank waste.

Several of the approved land spreading sites may not be available in the near future. Owners of the sites have indicated a possible termination of the lease agreement upon expiration. The Town owns 31 acres of approved spreading sites: 4.5 acres on the Gunnlaugsson Site (Open Site) and 26.17 acres on the Airport Site. An additional 23 acres is being leased to the Town for spreading by private land owners.

The Airport site is currently not being used due to a runway re-alignment.

The Town has agreed to complete this preliminary engineering report to determine the best long term solution for treatment and disposal of the holding tank and septic tank wastewater for the Island. The existing homes that are currently on a privately owned and operated septic system will continue to use on-site disposal as the most desirable means of wastewater treatment and disposal.

2. Project planning areas

Four sites have been identified by the Town as available for wastewater treatment and disposal. The sites have been shown in Exhibit A of this report. The sites have been identified as follows:

- *Open Site*
  - This site has approximately 4.5 acres of open field that currently accepts land spreading.
  - This site has been referred to as the Gunnlaugsson site by the Town in the past.
  - This site is owned by the Town and located along the north side of Gunnlaugsson Road in the SE ¼ of the NW ¼ of Section 32, T34N, R30E.
  - The site is bordered to the west by the Town Dump and gravel/sand pit, to the east and north by 5 acre or larger residential lots and to the south by Gunnlaugsson Road.
  - Soil testing on the site had previously been completed indicating suitability for on-site disposal of wastewater utilizing a privately owned wastewater treatment system (POWTS) including in-ground absorption trenches.

- *Wooded Site*
  - This site is located on a 20 acre tract directly south of the *Open Site* across Gunnlaugsson Road.
  - This site has been referred to as the South Gunnlaugsson site by the Town in the past.
  - This site is currently a mature hardwood forest.
  - This site is owned by the Town and located in the NE ¼ of the SW ¼ of Section 32, T34N, R30E.
  - This site is bordered to the east by Town owned hardwood forest and to the west and south by privately held forest and to the north by Gunnlaugsson Road
  - Soil testing on the site indicated the site is suitable for on-site disposal of wastewater utilizing a privately owned wastewater treatment system (POWTS) including in-ground absorption trenches.

- *Dump Road Site*
  - This site is located on the same Town owned parcel as the *Open Site* just west of the public access drive into the dump (transfer station).
  - This site is located in a small clearing in the woods, adjacent to the access road to the dump.
  - This site is owned by the Town and located in the SW¼ of the NW ¼ of Section 32, T34N, R30E.
  - This site is bordered to the north by wetlands, west by 5 to 35 acre residential lots and south by Gunnlaugsson Road.

- Soil testing on the site indicated the site is suitable for on-site disposal of wastewater utilizing a privately owned wastewater treatment system (POWTS) including in-ground absorption trenches.

- ***Red Barn Site***
  - This site is located approximately 3 miles southwest of the other three sites. It is located within the 23 acre Town owned Red Barn Park. The area of the site examined is located east of the open portion of the park that contains the playground, etc. The area considered is located approximately 500 feet east of S. Shore Road.
  - The area considered is a meadow with some underbrush. The area considered is approximately 2 acres.
  - This site is owned by the Town and located in the SW ¼ of the NW ¼ (Govt lot 3) Section 18, T33N, R30E.
  - This site is bordered to the west by S. Shore Road as well as waterfront commercial uses. It is bordered to the north and south by large residential lots. The site bordered to the east by an 82 acre tract.
  - Soiling testing on the site indicated the site is suitable for on-site disposal of wastewater utilizing a privately owned wastewater treatment system (POWTS) including in-ground absorption trenches.

An environmental report analyzing each site has been included as Exhibit B of this report. The soil evaluation for each site has been included as Exhibit C of this report.

3. Population/flow projection

Based on information obtained from the "Town of Washington 2011 Utility District Annual Report", year 2009 Baudhuin Incorporated flow data, the Town's population projections and information provided by the Town regarding pumping records the following estimate of wastewater flows has been developed.

- The annual maximum flow capacity to the land spreading fields plus existing FAST system = 3,636,400 gallons per year = average 9,963 gallons per day (gpd) = current capacity
- Year 2007/2008 peak month =10,224 gpd (holding tank waste) plus 1,915 gpd (septage waste) which is the highest flow data made available to Baudhuin Incorporated.
- The average daily flow per year 2010 records included in year 2011 Annual Report = 1,166,015 gallons / 365 days = 3,195 gallons per day average
- Gunnlaugson east site (referred to as *Open Site* in this report) has an approved field spreading rate of 39,000 gallons per acre per year.
- Per RUS Bulliten 1780-3, the growth projections for the Town of Washington were researched. DOA census data and projections provided by USDA indicate 2010 had 344 projected households with year 2020 projected at 385 and year 2030 at 402. This data further justifies anticipated limited growth in the Town.