HOME ENERGY RETROFIT TASK FORCE
COMMUNITY ENERGY STRATEGIES TEAM REPORT
Holland, Michigan

Item 3.

To: **Mayor Dykstra and Members of the Holland City Council**
Date: **October 24, 2012**
Subject: **Community Energy Strategies Team Report**

Background:
Four Task Forces were organized on September 17, 2012 to make recommendations to the City Council to implement the Community Energy Strategies (CES). The CES is intended to be a comprehensive, scaled, and long-term approach to improving Holland's energy-related facilities and practices over 40 years, not a series of individual, small actions that would be much more difficult to sustain and achieve our Mission.

Mission of the Home Energy Retrofit (HER) Task Force (from the original Community Energy Plan (CEP) Task Force mission statements).
The mission of the Home Energy Retrofit program is to create a new and extensive program of home renovation programs specifically targeted to encourage individual homeowners (and landlords) to make energy-saving/conserving changes to their homes.

This program is aimed at individual homeowners (and landlords of residences) throughout the City of Holland. There are over 7,000 such homes in the City and many of them are very energy in-efficient.

Community Values:
While the HER program will certainly be about saving energy and dollars, it is also about living out other deeply-held community values through these long-term energy choices that we will be making individually and as a community. These values include the following:

- Stewardship: being thoughtful about our resources: energy, funding, and natural resources
- Quality: identifying and supporting long term integrity and value
- Creativity/Innovation: designing new and more efficient ways to do things
- Entrepreneurship & Economic prosperity: measured risk-taking for a brighter future
- Education & Learning: providing opportunities to achieve intellectual potential
- Compassion: helping others with their essential needs

These are key community values that the CES and particularly the HER program, embraces and expresses.

Actions taken since September 17, 2012:
The Home Energy Retrofit Task Force met three times and used three sub-committees - Funding, Promotions, and Research - to prepare this report.

Prediction of Phases of Implementation:
We foresee three (or more) distinct phases of required actions, specifically,

- Pilot planning: Now thru July 1, 2013 - Select an Energy Team Leader/Manager and perform 90 home energy audits.
- Pilot: July 1, 2013 – July 1, 2014 - Complete 90 home retrofits.
- Scale: after July 1, 2014 - Complete 200-400 home retrofits annually.

Description of Pilot Planning Phase and Request for Funding:
To ensure success, a more thorough planning program is needed before launching the Home Energy Retrofit element of the Community Energy Strategies. We need to ensure all components are in place to take a homeowner from audit to retrofit to performance metrics, including project financing, so there is not an action gap created where the homeowner has the desire, but not the mechanism, to retrofit her home. In fact, without a sustainable financing model and without a quality, simple, streamlined process, there simply won't be much uptake of the retrofit program.

Best Practices: Since we have already learned that there are many successful HER programs or Program elements around the state and nation, a significant portion of this task will involve sifting through these various programs to determine the "best fit" for Holland - considering our environment, culture, energy needs, and available financial resources. This is likely to involve copying/cloning these elements directly into our HER program.

Listed below are suggested PLANNING steps for a PILOT project that could later be scalable to the entire community as demonstrated success and funds permit:

1. Approve the City staff to work with consultants to prepare a Scope of Responsibilities and Request For Proposal to contract for an Energy Team Leader or Manager to plan the scale project: $1,000 of time and materials consulting assistance;
2. Approve costs to recruit and Select an Energy Team Leader/Manager: $1,000
3. Approve City Attorney expenditures to assist with the legal documents required to do the PILOT and a future scale project: $2,000.
4. Approve funds to advertise and use social media and discuss with volunteer homeowners the benefits of energy audits: $1,000
5. Approve up to 90 energy audits to be bid out to determine the possible retrofits and greatest payback ranges for doing and monitoring prior to making scalable; 2/3 of cost paid by this effort: $18,000
6. Approve Contracting with an Energy Team Leader/Manager to evaluate and write the scalable, PILOT project for Board of Public Works and City Council review in March of 2013: $5,000
7. Participate in the CHEER Program in the following capacity as we believe lessons learned from this significant grass roots energy effort will be critical to the success of our PILOT:
   a) Assign the Energy Team Leader/Manager to be involved in and monitor CHEER efforts and progress.
   b) Explore ways in which private sector and outside grant funds might be made available to this project, so as to learn along with CHEER to prepare for the City's PILOT.
   c) Request a verbal and written report on CHEER at a City Council Study Session and Business Meeting to help advertise and promote the program.

   Sub-Total for Pilot Planning (November-March): $28,000

(NOTE: the above steps lean toward contracting out the Leader/Manager responsibilities, but it is also possible that this role could be assigned to a City or HBPW employee)

Summary and Recommendation:

The Task Force recognizes that HER efforts must be responsible, stepwise, yet forward-leaning. This must involve a learning process and its two key near-term recommendations are built around progressive learning steps:

1. Request funding from the City Council to plan the next steps to launch a PILOT program of at least 90 home retrofits starting in July 2013. The funding that will be required for this PILOT program is intended to come from a variety of sources as noted on the attached Funding Sub-Committee's report, and subject to more research. $28,000

2. Recognize, support, and learn from the CHEER (Church/Home Energy Efficiency Retrofit) improvement program that has been initiated by four in-town churches plus the Holland Area Arts Council and supported by several key community organizations: Community Action House, DwellTech Solutions, Good Samaritan Center, Hope College, and Midwest Energy Group.

   The overall goal of CHEER is to audit and begin energy retrofits of the four churches and the HAAC along with up to 10 homes that are owned by the four churches to showcase the benefits of energy efficiency, the power of communal (scale) purchases, and to encourage a community-wide energy efficiency ethic.

Both of these efforts will yield substantial additional local knowledge, experience, and support for the PILOT and larger scaled-up process that will be required to fulfill our overall Mission.

Respectfully Submitted,

Amy Alderink
Spokesperson

Home Energy Retrofit Task Force

Monday, October 1, 2012
7:00 PM * City Hall Training Room, Second Floor
(Revised for clarity by Community Energy Strategies (CES) Steering Committee – *See italics*)

I. **Finance Sub-Committee Report.** See below. Contributions to the Subcommittee's report made from the whole committee are underlined.

A. Encourage BPW to allow for Home Energy Retrofits via rebates from the energy optimization funds. Is there $5 million that could be made available by a revolving loan fund for equity reasons and have it be working cash. Loaning this money to a revolving loan fund would be secured by the real estate improved?

B. Monitor the changes at the Public Service Commission about opening up Solar Power Retrofits for assistance by utility renewable funds;

C. Institute a "Pay As You Save" program to take advantage of some of the energy savings noted above ($65 million);

D. Use funds saved by the City (and BPW) in energy conservation to go toward Home Energy Retrofits. In the case of the City, over $160,000 was saved per year since 2009. (**Footnote:** These savings have helped balance the City's budget. Any use of them would mean an additional tax increase or layoff on top of what took place in May, 2012)—The City actually saved $230K. The idea would be to reinvest in next round of projects

E. Take advantage of changing State laws on "single lot special assessments" to pay for voluntary Home Energy Retrofits;

F. Sell carbon offsets to those who buy on-line in a way that keeps these dollars local and provides for low income home energy retrofits;

G. Encourage faith-based communities to do Energy Retrofits on all of their properties (parsonages, church buildings, rentals, etc.). Look at the Cheer's program being jointly worked on by four churches;

H. Create a "stepped up" energy rate structure *(block rate or flex rate)* so those that consume the most, contribute a proportional greater share toward Home Energy Retrofits – so as to put a floor below low-income users;

I. Create a City fund-supported Revolving Loan Fund for low or no interest loans for Home Energy Retrofits that would be paid back upon re-sale or via a special assessment over time – combine with time of day pricing;

J. Research "Better Buildings for Michigan Loans" (available via "Michigan Saves" for residential by Consumers Credit Union as the Ottawa County and Allegan County) for 1.99% up to 10 years for up to $20,000; and

K. Determine if the City qualifies as a "rural community" for use of Department of Agriculture Funding for Home Energy Retrofits—Answer turns out to be No.

L. Low income home *retrofit* funding possible working through the legislature.

M. *Energy Optimization funds from SEMCO.*

District Heating and Cooling Task Force

October 24, 2012

From: Trent De Boer, Task Force Spokesperson
Jim Vanderveen, Co-chair

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Community Energy Strategies Team Report

District Heating and Cooling Task Force

To: Mayor Dykstra and the Holland City Council

From: Trent De Boer, Task Force Spokesperson, Jim Vanderveen co-chair

Date: October 24, 2012

Background

Four Task Forces were organized on September 17th, 2012, to make recommendations to the City Council to implement the Community Energy Strategies (CES). The CES is intended to be a comprehensive, scaled, and long-term approach to improving Holland's energy-related facilities and practices over forty years, not a series of individual, small actions that would be much more difficult to sustain and achieve our Mission.

Mission of the District Heating and Cooling (DHC) Task Force (modified from the original CEP Task Force mission statements)

The Mission of the District Heating and Cooling Task Force is to formulate a plan to evaluate alternative scenarios for a City-wide District Heating and Cooling Program leading to implementation of a new HBPW service providing hot/warm water to customer building locations to enable building heating (and possibly cooling) as well as expanded snowmelt services. Heated water for this service would be generated during electricity production or as a by-product of other utility activities and be distributed by a network of underground supply and return piping with individual piping serving customer facilities. Sources could be from waste heat provided by electric generating facilities or from private/public utility and non-utility sources with excess capacity or "waste energy".

Rationale for District Heating

In a conventional fuel fired boiler or engine driven power plant the effective power produced is on the order of 30 to 35% of the fuel energy supplied. Part of the remaining portion of the heat energy from the fuel supplied is rejected to a cooling system and the rest is exhausted to the atmosphere. A combined cycle gas turbine generates power with a natural gas fueled turbine driven generator, the exhaust gases of which are then directed into a boiler producing high pressure steam to drive an additional steam driven turbine to produce more power, resulting in an effective conversion of the fuel to power on the order of 45 to 50% of the fuel energy supplied. If a portion of the heat remaining after generation of electrical power can be put to some useful purpose, the overall efficiency of the system is

improved. To extract as much energy as possible during the electrical generation process, the steam flowing through the steam turbine must be exhausted to as low a pressure as possible by condensing at a temperature of 100 Deg. F or less. The water used in cooling the steam and condensing it at that low temperature now has the ability to provide a useful service, like snowmelt or other form of heating. Similarly, water could be heated by heat exchanger from low pressure steam to produce a higher temperature in the 200 Deg. F or higher range at a slight cost to overall efficiency.

A power plant using pipeline natural gas can already purchase gas at a substantially lower cost than is available to most industrial or commercial buildings, and much less than residential gas rates. As only 35 to 50% of that comparably lower cost heat energy is used in the production of electrical power, with a City of Holland owned utility like the HBPW, there is an opportunity for the general public served by the HBPW to be supplied from the remaining power cycle energy with much lower cost energy for heating (and possibly cooling), than that to which they would otherwise have access.

Actions taken Since September 17, 2012

The DH Task Force has met weekly (Tuesday afternoons) since the Call to Action meeting at the Park Theater. It was acknowledged immediately that while this is a 40-year plan, immediate focus was on the central city area as the target on an initial scale project. Evaluations of potential initial system layouts and locations of key load and possible supply properties, identification of system load requirements based on key contributing/loading facilities, have been included in this process.

Executive Summary

There is sufficient heating load in the central area of the City of Holland to justify consideration of district heating. There is also sufficient cooling load to require its consideration as well.

Similar heating and cooling opportunities could be developed in the industrial park areas.

A detailed engineering and HBPW business study is recommended to thoroughly determine the long term potential for either a high temperature (200 Deg. F or higher) or low temperature (100 Deg. F or less) system to serve heating and potentially cooling customers, down to the residential level.

Technical Findings

The existing heating load in the downtown area and south, east, and west of downtown is high enough for consideration of waste heat use from a new power generation system.

The existing cooling load in that area is also of ample magnitude to suggest that both heating and cooling utilities should be considered.

There is a mix of building types served by:

Conventional heating/cooling systems with hot water and chilled water or DX cooling

Gas-fired rooftop or split system furnace systems

Boiler/Tower Heat pump systems.

Holland Hospital and Hope College are supported by medium pressure steam boiler systems

Hope College Distributes steam to buildings with steam/hot water heat exchangers

Holland Hospital uses sterilization level steam and steam/hot water heat exchangers

Neither one is easily converted to a high temperature hot water system in the short term, but might address such a venture on a 40 year basis as equipment needs replacement. They could however take advantage of cooling or heat rejection sources in the short term.

The apparent range of heating load potential is in the 100 million to 200 million BTU/ hr. range or greater depending on what is served

The apparent range of cooling load potential is in the 5,000 to 10,000 ton range.

The concept of an East-West distribution system orientation may be attractive to support initial users. It could be supported by a power plant located on the far east or west side or anywhere along the distribution system.

The concept of a separate industrial park area system with power plant equipment at or near the current peaking plant needs consideration:

- Some industrial buildings have large ventilation loads suitable for low temperature water
- Several large facilities have both heating and cooling needs, e.g. Haworth, Magna Donnelly, Transmatic
- Distances involved between plants are significant.
- Some plants use steam, some have excess capacity (Hudsonville Ice Cream, Coastal Container).
- Besides a general manufacturing based expansion of this area, Holland Lakeshore Advantage might also pursue more potential users of low temperature heat, e.g. greenhouse industry with large heating loads.

In the very long term, the potential of connection between SE industrial park and Downtown area systems may be worthy of consideration depending on how the respective loads and energy balances work out over time.

Some of the downtown buildings are owned by a limited number of people who may be receptive to use of HBPW-provided heating and cooling. Many of those are already boiler/tower heat pump systems.

The high temperature system is most easily connected to existing buildings with hot water heating systems.

- It requires an infrastructure consisting of steel pipe insulated with a watertight protective jacket with provisions for temperature related expansion and contraction incorporated into the distribution system and the connections to potential customers.
- As a heating only system, HBPW would only be able to charge during those heating months.
- Ideally connections to the piping system are identified when it is installed or at least stubbed out and capped.
- As a higher temperature energy, the steam turbine system is penalized by using steam for heat that otherwise could have generated some additional electrical power. Current charges for downtown snowmelt are based on a similar premise.
- The higher temperature system can also serve to supplement existing low temperature systems in the same manner as their boilers currently do.

A low temperature system suitable for heat pumps or chiller heat rejection is most easily connected to existing buildings already served by boiler/tower heat pump systems and is readily adaptable to several other building types including residential.

- It requires an infrastructure consisting of HDPE piping similar to snowmelt where the piping is already able to contain the lower grade heat without additional insulation and no concern for water proofing or corrosion issues.
- With the addition of HPBW level heat rejection systems it could provide heat rejection services from heat pumps or conventional water cooled chillers.
- Future Connections to the system are done more easily in the field.
- Customers could be provided with year round heating and cooling service at a lower rate and HBPW would have an income stream of a more annual duration.
- As a lower temperature energy at the bottom of the power generation cycle the use of the fuel powering the generation system has been fully used. (The only other benefits to generation might occur if very cold lake water was used for condensing during the winter as

currently occurred when units 4 and 5 were operated. Unit 3 cooling system was modified to raise condenser temperatures for snowmelt).

- The 100 Deg. Level energy is warm enough to heat makeup air and provide radiant floor and snowmelt heating directly.

- The 100 Deg. (or less) Level energy is suitable for directly boosting or even direct connect to (depending on temperature) an existing heat pump based building system like its boiler might to maintain 65 to 75 Deg. F circulating loop temperature or provide such input to a central heat pump making hot water in the 130 to 140 Deg. F range with a heat exchanger loop, replacing part or all of the boiler function depending on the design of the heat transfer components in the system.

- Note that within a conventional boiler/tower heat pump building, heat pumps similar in appearance to furnaces or small air handling units, heat or cool air supplied to the zone served by either extracting heat from a circulating water loop or rejecting heat to the circulating water loop. This allows for simultaneous heating and cooling with in the building at different times of the year as well as transferring energy between buildings via a municipal system.

- The potential for serving blocks of houses from a common heat pump or hot water heating source needs to be addressed.

- The potential benefits of moving heat from cooling dominated facilities to those needing heat at the same time must be modeled, including the impact on residences close to cooling dominated facilities like large office buildings or businesses like grocery stores with lots of heat rejection over the year.

- In facilities from residential houses or multi-family dwellings to large single building commercial or institutional or modern campus arrangements of buildings with no HBPW, the ability to support heating or cooling is provided by large borefields making the ground act as a heat exchanger, also providing the ability to store energy in the ground from respective heating and cooling seasons, such that in the fall the heat rejected and stored is available for use for supplemental heat for some period of time as is the cold ground resulting from heat extracted over the winter available in the spring for low energy use cooling for some period of time. HBPW might want to consider borefields along with cooling towers and other water based systems as another technology for heat storage as part of this system.

- Historically gas prices have fluctuated much more than electrical rates. A heat pump system supplied by a conservative rate structure like the HPBW can typically generate heat at a lower cost than gas fired systems. Providing that heat beginning at the 75 Deg. F range can yield even higher coefficients of performance (COP) than they are typically rated for with source water in the 45 to 50 Deg. F range. (A COP of 3 means the heat pump can move 3

times as much energy as it consumes). A COP of close to 4 is possible with 75 Deg F supply. Though current gas prices are amazingly low, the future of gas costs has always been difficult to predict. Hence a heat pump based future based on more stable electrical rates supported by supplemental heat from an HPBW controlled waste heat source may be more sustainable over time. Similarly on the cooling side, a source, such as the waste water treatment plant, could provide increased cooling performance as well.

It should be noted that the higher temperature heating-only concept can operate with higher temperature differences between the supply and return hot water systems. This allows the resulting pipe size to be proportionally smaller than the pipe size required for the lower temperature system as the lower temperature system must be able to operate with flow rates suitable for providing heat rejection for heat pump or other cooling systems.

Some large users already have natural gas costs under $5/MCF. As there are connection costs associated with each facility, the cost of either heating or heating/cooling concept in terms of rate structure has to be attractive to potential customers.

The snowmelt system also needs to be maintained. Consideration for its expansion may be in order, noting that the current system is already serving approximately 550,000 sq.ft. of paving. It is estimated that on the order of 50,000 additional sq. ft. could be added from systems currently served by private heating sources. The experience in Holland has been that once the benefits of snowmelt are understood, more snowmelt is desired.

The HBPW Waste Water Treatment Plant has a nominal 9000 MGD sanitary sewer discharge rate that has great potential for heat pump heating extraction or cooling rejection use that could be part of the solution.

The business costs to potential customers including the decrease that may occur in their own operating and maintenance costs has to be fully studied for the system to be attractive.

The need for an advisory entity similar to this task force may be worthy of consideration on a review basis during the study or as an ad hoc committee after the operating entity, assumed to be the HPBW, is engaged in the implementation and operation of the system. This needs to be clarified early in the next phase of implementation.

Summary and Recommendations

From a City of Holland and Holland BPW point of view and from the perspective of future customers, the nature of the business opportunity needs a thorough analysis:

1. Determination of the waste energy available from likely power plant or the waste water treatment plant options and its suitability for higher 200 deg. F level use or lower temperature use similar to snow melt in the 100 Deg. F range or less.

2. Development of heating and cooling load profiles for the sum of likely users.
3. A grasp of approximate capital costs for potential pipeline scenarios.
4. Determination of billing rationale and method for the proposed utility.
5. Identification of long term operating and maintenance costs from BPW perspective.
6. Determination of investment versus savings relationships for customers and financial justification and rate structure issues for the HBPW to support initiating the concept.
7. Implementation plan, schedule, and financing for the proposed system .
8. Conceptual cost for such a study may be on the order of $100,000.

Next Steps

Develop a specific Request for Proposals to secure Engineering Services to conduct study identified above.

Bid, Select and Retain consulting engineering services.

HBPW analysis regarding taking on this new “utility service”.

Financing Opportunities

Unless other funding opportunities are identified, the estimated cost of the props work on the order of $100,000. Is projected to come from the HBPW

Appendices

Holland District Heating Review

GMB 5-2498

17-Oct-12 NOTE: This is a rough summary of available information
A more thorough investigation is needed.

Building	Area-sq.ft.	Boilers No.	Output-MBH	Est Peak Load-MBH		Cooling Eqt-tons		Est Load-tons
Herrick Library	72,290	two-HW	2000	2600		two DXAC	120	215
City Hall	49,270	two-HW	1058	1200		One WC	125	125
Police Dept	85,330	two-HW	1870	2700		One WC	160	160
Courthouse	62,521	Need		1500	Need data	Need		156
Resthaven Warm Friend	74,000	Two LP Steam	737	1400		All AC	160-175	165
Civic Center	38,170	One LP Stm	4120	4200		None		
(Could Be substantial future load)								
Aquatic Center		two-HW	2800	3730	Two DH, 1326 MBH	two ACDX	110	220
		DHW one	500	500	One DH, 133 MBH		11	11
		Pool I two	1740	1740	Office	AC Cond	40	40
		Pool heated by			Not easily changed			
		DH DX heat first			Exist Pool DX HtPump? 40T?			

Hope College

Devos Fieldhouse		One-HW	5000			One WC	150	150
		One-HW	8000			One WC	255	255
	Note snowmelt load up to 4000 MBH			8000				
	Average load may be much less							
Hope College Boiler Plant		Older One-stm	25108		Need gas meter data for power plant			
		Older One-stm	12066					
		Newe Two-stm	25108	50000				
De Witt						One WC	300	300
Graves Hall						One AC	60	60
Knickerbocker		LP Stm		1000	Est per AHU load	One AC	50	50
Schaap Science						Two WC	640	1280
Phelps Hall						One WC	150	150
Van Wylen						One WC	130	130
						One WC	250	250
Freedom Village	550,000	Four HW	2009		Evap Cool HP Syst	Three WC		600
		One HW	1370					
		One HW	1158					
				7250				
Evergreen Commons			9500	9000			550	500
	With Midtown Village & Midtown Center							

Plaza Center	60,000	Two HW	1158	2000 est	Heat Pumps	150	150
	Smelt heating too						
Plaza East	60,200	Two HW	1224	2000 est	Heat Pumps	150	150
	Smelt heating too						

Holland Hospital							
Boiler Plant		Three Stm 400 HP	13,500	27000	Chiller:	Two WC	500
		80-90 psig Sat				One WC	600
						One WC	125
						Backup	60
							1000

Holland High			12000	7500		600	520
		Includes Dom HW					
Holland NewTech	50,000			2500			65
City Green House				500			

Allowance for Other Downtown Buildings			
VFW	10,000		
Padnos Office	10,000		
Boatworks	11,000		
Post Office	22,000		
Arts Council	16,000		
Skiles	5,000		
GR Press	4,000		
Chamber	7,000		
Fields Fabrics	11,000		
Commerce Bank	9,000		
Priority Health	9,000		
	114,000		

Systems Unknown				Est.	2850		285

Bank of Holland	20,000		500	Ht Pump?	50
CentAve Financial Ctr	28,000		700	Ht Pump?	70
Lumir Bldg	40,000	boiler split AC	800		100
			141170		

Rough Totals: **141170 MBH** **7207 Tons**

Rest of buildings down town= See spread sheet from Greg H to avoid double counting or missing													
Seems high yet	1,109,949												
Includes some of													
list below with													
Heat Pump Systems:													
Curtis Center													
Claremont Court													
Tower Clock													
Cracker Building													
JB & Me													
Butches													
Allow another													
1000000 sq.ft.	1000000					25000							2500
				Subtotal		**166170**							**9707**

Note: Heinz also has a 100 psig steam boiler plant.
Hydro Aluminum is gas-fired air systems.
Hydro office is heat pumps 57 tons
Textron is a nominal 50,000 sq.ft plant near downtown

Types of Systems in Above List
Approximate Proportions Estimated

MediumPressure Steam										
	Hope, Holland Hosp,			**79400**						**3170**
Hot Water Heating										
DX and Chilled Water										
		From Known List above		**43970**						**2208**
Split System Cooling										
Furnaces and Rooftop Gas Fired										
and other unknown systems										
	Est using the difference			**12800**						**1929**
Heat Pump System			**Est**	**30000**						**2400**
	Many									
Snowmelt										
	Many									

Allowance for Residences

100 houses at 80 MBH			8000			300
3 tons each			174170	Total		10007
or						
1000 houses at 80 MBH steady			80000			3000
3 tons each	**Total**	**MBH**	**246170**		**Tons**	**12707**

NOTE: This is a very rough approximation and needs a much more thorough analysis!

Est. annual use at peak heating load of	100,000	MBH		278,779	MCF
	150,000	MBH		418,169	MCF
	200,000	MBH		557,559	MCF
	250,000	MBH		696,949	MCF
Est. annual use at peak cooling load of	5,000	Tons		75,000	MBTU/hr
Heat Rejected- Order of magnitude only				90,000,000	MMBTU/year
Assume average 1200 full load hours				4,800,000	KWH
(noting Hospital is 24/7)					
Allow .8 kw/ton					
	7,500	Tons		112,500	MBTU/hr
				135,000,000	MMBTU/year
				7,200,000	KWH
	10,000	Tons		150,000	MBTU/hr
				180,000,000	MMBTU/year
				9,600,000	KWH

Decatherms for Boiler Plant and DeVos Fieldhouse
Actual usage (with estimated amounts in italics)

Month	2012	2011	2010	2009	2008	2008 thru 2011 Monthly Average	Boiler Plt 2011	Fieldhse 2011
January	18,151	22,128	20,965	25,427	22,268	22,697	19178	2950
February	16,271	17,942	17,833	19,206	22,455	19,359	15718	2224
March	11,273	15,909	13,287	16,916	19,108	16,305	14603	1306
April	10,394	11,005	9,637	12,775	12,003	11,355	10428	577
May	6,977	7,827	8,152	8,009	9,005	8,248	7441	386
June	5,608	6,157	6,392	6,696	6,362	6,402	5708	449
July	5,382	5,777	5,906	6,663	6,309	6,164	5228	549
August	6,133	6,156	6,019	6,440	6,361	6,244	5563	593
September	*8,350*	7,334	7,238	7,414	7,225	7,303	6907	427
October	*9,575*	9,516	9,314	10,868	10,856	10,139	9037	479
November	*14,250*	11,495	12,573	11,670	16,172	12,978	10908	587
December	*21,125*	14,529	18,620	20,494	23,030	19,168	13445	1084
	133,489	**135,775**	**135,936**	**152,578**	**161,154**	**146,361**	**124,164**	**11,611**
	projected use							

James G. Vanderveen

To: Jimv@gmb.com; 'trentd@gmb.com' (Trentd@gmb.com)
Subject: Holland Hospital Info RE DH-5-2498
Attachments: HOLLAND HOSPITAL DH INFO.pdf

This afternoon, I met with Sue Frost, Manager of Building Engineering. She has already compiled most of the questions we needed. In addition to the information she provided, which is attached:

1. Boilers operate at 80-90 psig.
2. Need to run one boiler all the time with a second on standby and warmed up, third is backup.
3. Steam is used for autoclaves, 16 hrs/day, 3 systems. Also for cooking, all PRV'd to appropriate pressure.
4. Heat exchangers for building hot water are not centralized, all over the place.
5. Natural gas cost is $4.89/MCF.
6. Surgery chiller runs all year, holding 68 Deg. F. Also is glycol.
7. Have water side economizers, some air side.
8. Discussed idea of central cooling, might eliminate cooling towers. Reliability has to be really good.

Bottom line, I think it is a real stretch to get the hospital to accept anything but medium pressure saturated steam in the short run. To re-pipe even for 200 Deg. F water is very difficult.

Heat pump idea could supply chilled water but would need to tap into lots of distributed hot water systems to provide hot water to existing systems. They still need steam for sterilization and like it for cooking. Those steam uses could be served by dedicated much smaller boilers at some future time, maybe more like 750-1000 lbs/hr depending on steam also used for cooking (check analysis for Grandview Home).

JAMES G. VANDERVEEN PE, LEED® AP
Chief Executive Officer
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616-796-0200 www.gmb.com

James G. Vanderveen

To: Jimv@gmb.com; 'trentd@gmb.com' (Trentd@gmb.com)
Subject: Freedom Village 5-2498

I met with Freedom Village this morning:

1. Gord Van Wylen, Russ Turecky, Executive Director of Freedom Village, Tim Rietman Maintenance Director, Greg Holcombe, Me
2. Russ is getting utility billing information together for us.
3. Building Area is 550,000 sq.ft. I think that also includes the Nursing Home
4. Main Facility
    a. Each of the two sections has two Teledyne Laars gravity boilers, 2009 MBH out each. They run on one boiler about 90% of the time.
    b. The boiler system makes DHW also with a heat exchanger, which means the boiler water has to be hot enough for that.
    c. Each of the two sections has an Evapco Closed Circuit cooler, Model PMWA-174A, S/N 906285. Dwgs show rating of 3320 MBH, 1132 GPM, 95/85/73, 20 and 10 HP, 7-1/2 HP spray pump, 6 KW elect heat. Wild Guess at 3 GPM/ton would be 375 tons each but that does not yield 3320 MBH, might be lighter, like 275 tons.
5. Nursing Home
    a. Two sections- one has boiler of1370 MBH out, the other 1158 MBH out.
    b. They replace the cooling tower with a larger one, drawings show 292 GPM 105/90/76 EFC-C-223-3
    c. Name plate is an Imeco, 30 HP motor, with York nameplate BFC-C-233-2, S/N 53925-100. 233 must be larger than 223. Looks like 50% large on Imeco chart 60000 vs 40000 CFM, Wild guess 145 tons, if previous was 98 tons.
    d. Have dedicated DWH heaters I think.

A well cared for operation with lower cost equipment.

Hence, total capacity heating wise figuring a bit more than one of the main boilers on each main side:

1. Heating, two x 2500 main facility plus maybe 2250 for the nursing home, or 7250 MBH
2. Cooling, two x 375 tons plus about 150 or 700 tons (seems light for 550,000 sq.ft.) Could be as low as 600 tons figuring 3320/12 or even less at 3320/15 with condenser heat.

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James G. Vanderveen

From: Greg Holcombe <gregsh@macatawa.org>
Sent: Wednesday, October 10, 2012 6:36 PM
To: James G. Vanderveen; Dan Nally; Phil Meyer
Cc: Greg Holcombe
Subject: FW: DRAFT Downtown sf memo
Attachments: 2012assessmentmap.jpg

Categories: Filed by Newforma

Dear Jim, Trent, Dan, Phil,

Per our discussion on October 2 and 9, 2012, and with Phil's help, please see the attached Downtown Parking Assessment map and the following current and best estimates (FY2012/now) of the square footage of most buildings within the core Downtown Holland area.

Building Use	Square Footage	Notes
Office	669,000 sf	Includes commercial office, Police, Court, etc.
Retail/restaur	425,000 sf	
Vacant/storage/ & Other	154,000 sf	Includes Plaza East spaces, former Bowling Alley… in other words, a mix of potential office, retail, etc, but not future residential uses.
Residential	252,000 sf	Located above retail stores and in standalone buildings (Terraces, Downtown Place, Temple Bldg.)
Approx Total:	**1,500,000 sf**	(yes, Phil and I were remembering 1.5 million sf!)

The attached Parking Assessment base map provides a sense of the geography of these buildings, with the brown areas showing those building zones that are in these counts, while buildings in the yellow zones are not in these totals.

Importantly, these numbers do not include the following large and significant buildings/facilities; in parentheses are rough square footage estimates based on aerial photos…

1. Westerly: Civic Center (GMB has this #), VFW (10,000sf), Padnos office (10,000sf), former Textron warehouse (50,000sf), Boatwerks (11,000sf).
2. Easterly: Freedom Village (550,000sf), Hope College main campus (though the 100 East and Haworth Inn bldgs are included above), Post Office (22,000sf)…
3. Also easterly, the 1.5 million sf total does not include various commercial buildings along 8th Street roughly at/east of Columbia Avenue and west of Fairbanks – namely, the Arts Council (16,000sf), Skiles (5,000sf), GR Press 4,000sf), Chamber (7,000sf), Fields Fabrics (11,000sf), Commerce Bank 9,000sf), Priority Health (9,000sf), and several smaller buildings. All in, a reasonable estimate of all of these non-residential buildings would not exceed 100,000sf.

Hope this information helps round out your earlier findings! Thank you, Greg PS. Jim, would you please share with Trent? Thank you.

Greg Holcombe
Riverview Group
(616)-392-7893
gregsh@macatawa.org

City of Holland
POM12
Parking Oper & Maint

N
W E
S

0 230 460 920 Feet

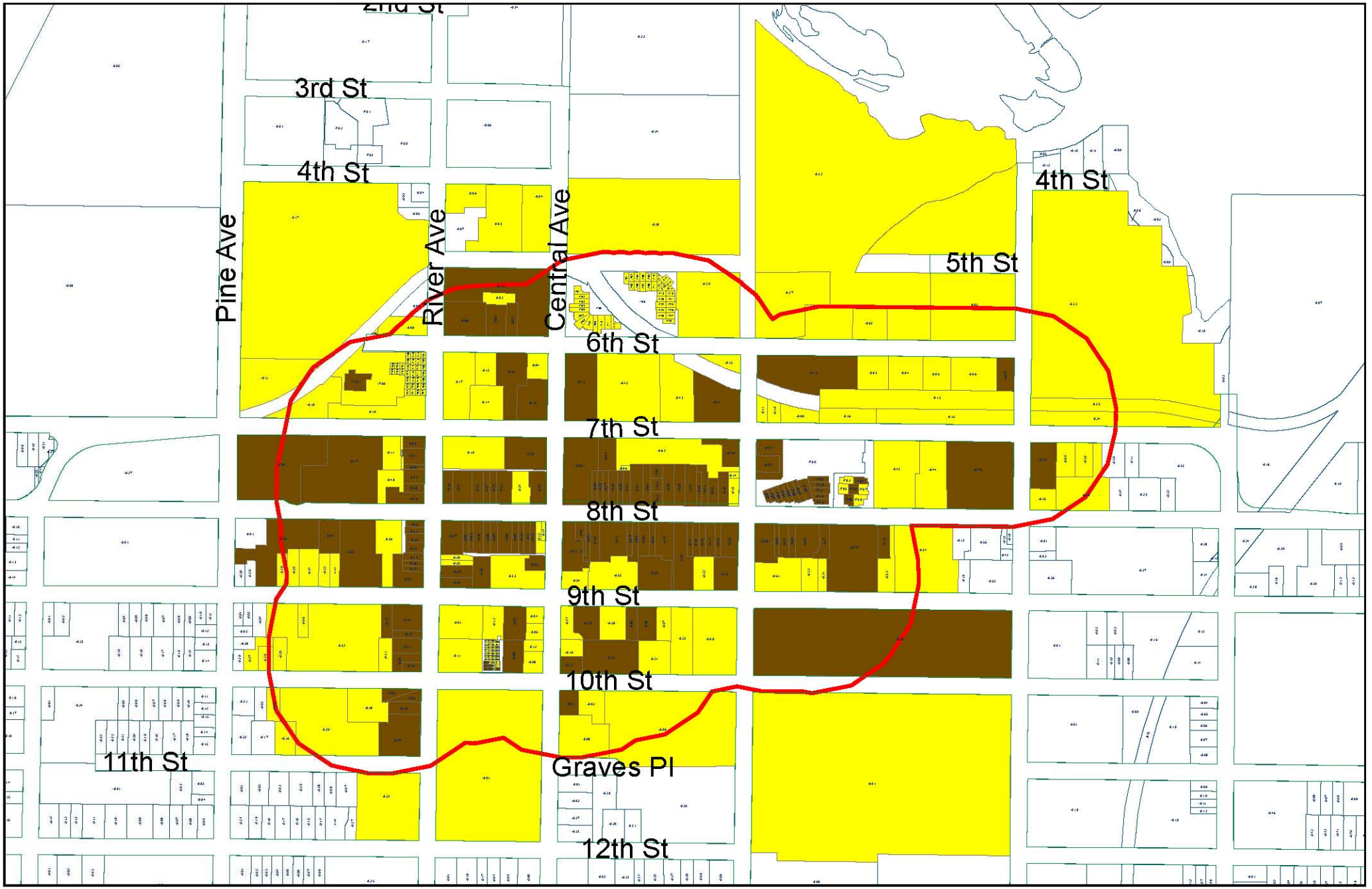
Legend

parkingbuffer08

Parcel

Charged

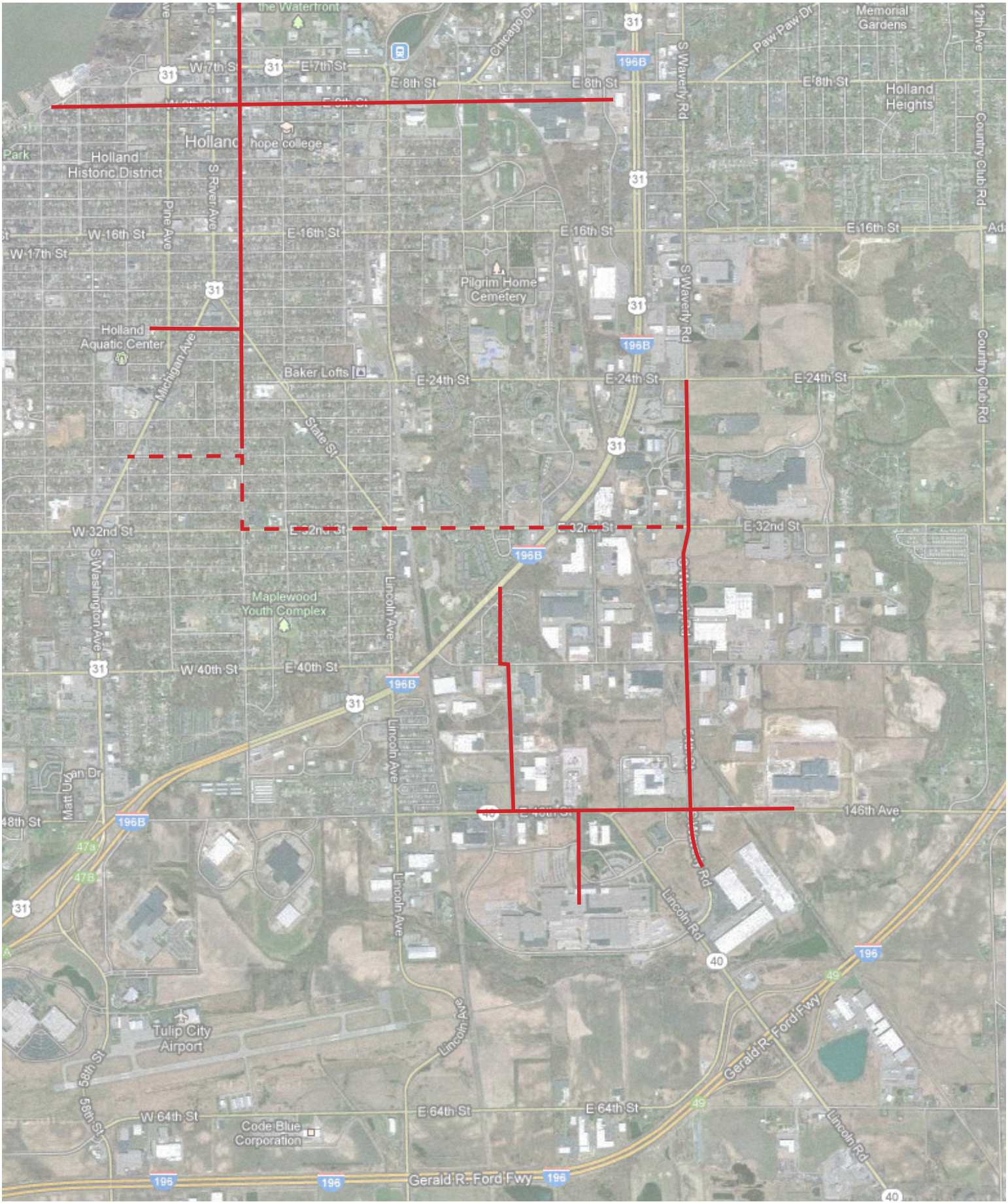
Not Charged



CITY OF HOLLAND

Conceptual Heating / Cooling System Infrastructure Routing

GMB ae
ARCHITECTURE + ENGINEERING



Potential System Option Components per Following Schematic Diagrams

1. **High Temperature Heating Only: Commercial/industrial Building**

   Filter to protect equipment, meter for billing, Heat exchanger to separate municipal and building systems, control valve to vary flow as needed from municipal system, heat exchanger circulating pump and shutoff valve for building heating loop. Packaged District Heating Stations combining such equipment in an attractive enclosure are available commercially that may be suitable for many applications.

2. **Low Temperature Heating/Cooling: Commercial/Industrial Building with conventional heating/cooling System**

   Filter to protect equipment, meter for billing, control valve on municipal system, Central Station water source heat pump to produce heating water or chilled water, pumps and control valves for connections to existing heating and cooling loops, may include pump and 3 way valve to hold lower loop temperature if municipal supply exceeds 75 Deg. F on heating

3. **Low Temperature Heating/Cooling: Commercial/Industrial Building with existing distributed heat pump system**

   Filter to protect equipment, Meter for billing, flow control valve, piping connections, may include pump and 3 way valve to hold lower loop temperature if municipal supply exceeds 75 Deg. F on heating

4. **Residence: High temperature heating only**

   Filter to protect equipment, meter for billing, flow control valve, heat exchanger to separate systems, hot water coil with circulating pump installed in furnace plenum or supply duct above cooling coil. Diagrams do not show air separator and other hydronic specialties needed.

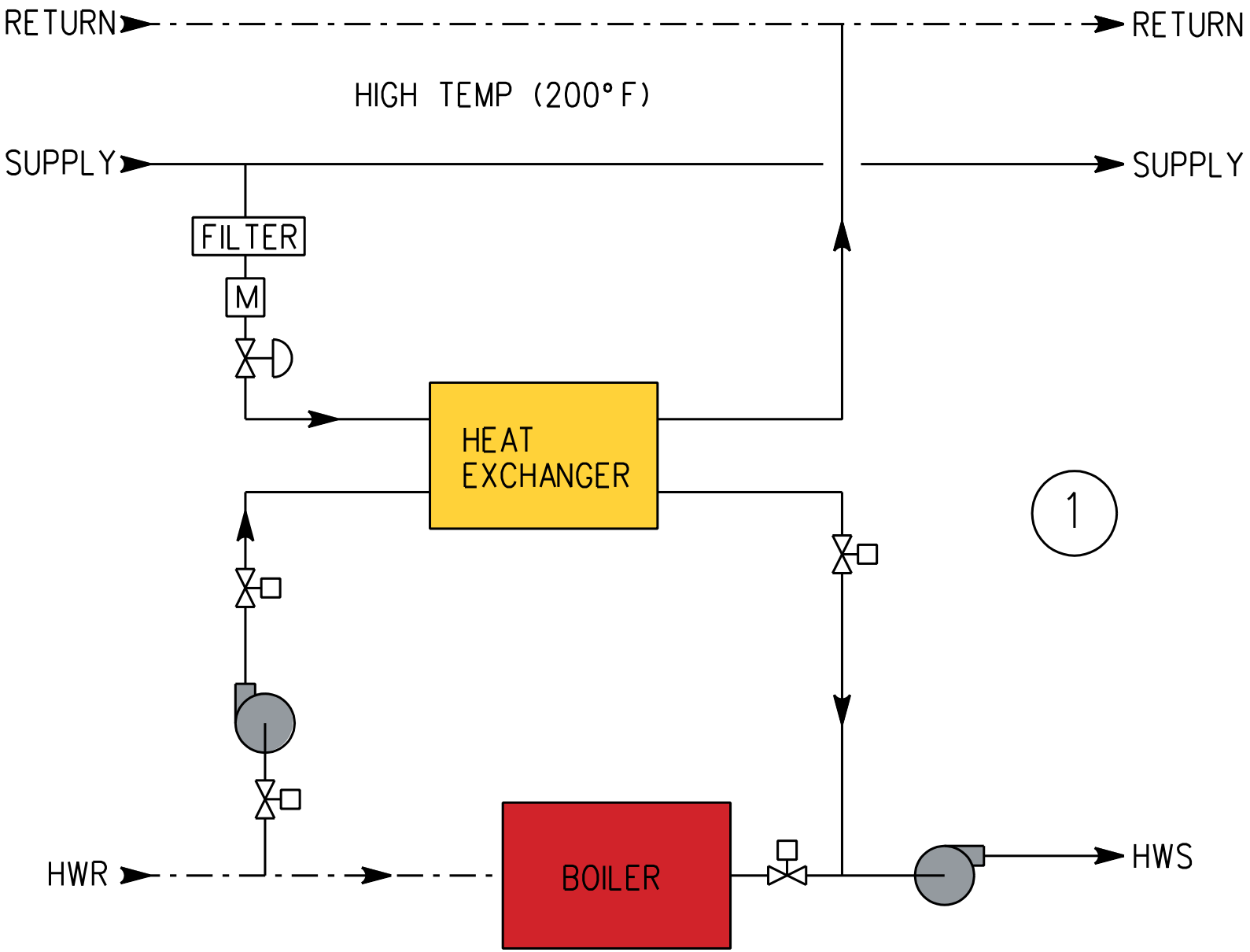
5. **Residence: Lower temperature heating/cooling with Heat Pump System**

   Filter to protect equipment, Meter for billing, flow control valve, may include pump and 3 way valve to hold lower loop temperature if municipal supply exceeds 75 Deg. F on heating

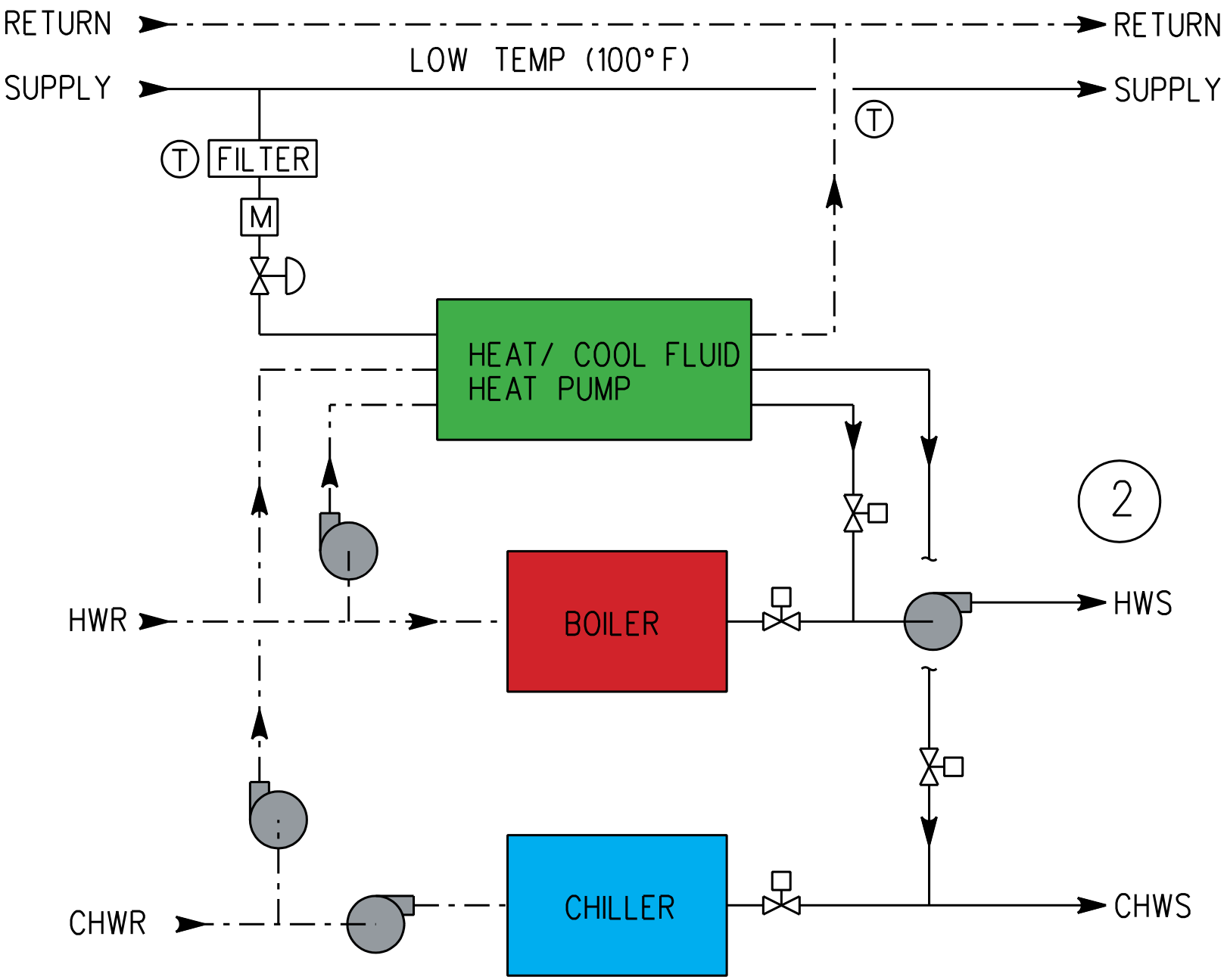
NOTE:

1. In general it is assumed that ample pressure differential would exist in the municipal system to provide enough flow, though customers near the ends of the distribution system may benefit from a pump on the municipal supply to their system. The concept of HBPW control technology and its relation to customer control systems needs review.

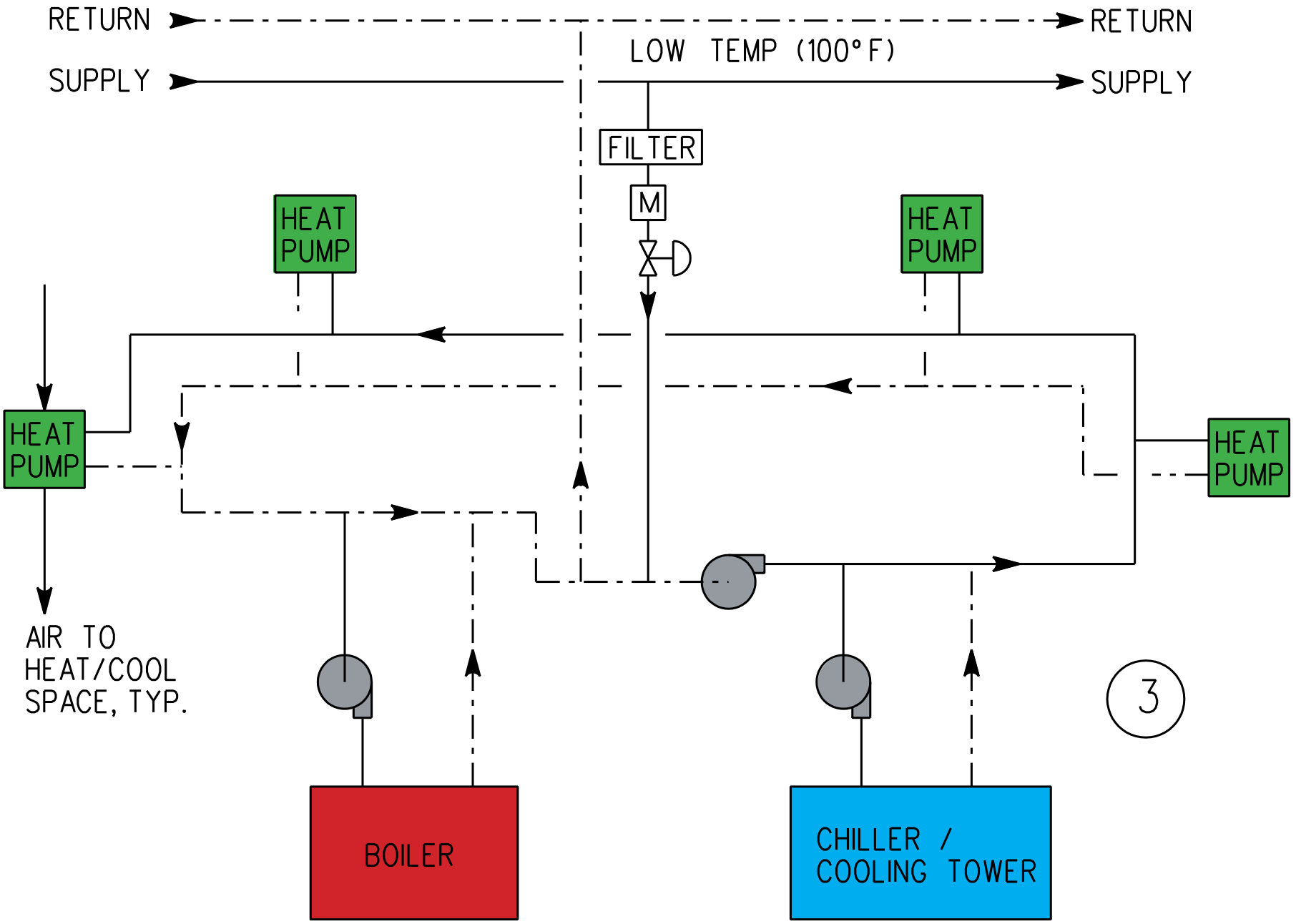
2. These diagrams are intended to represent a concept and are not intended as a representation of the details needed for construction.



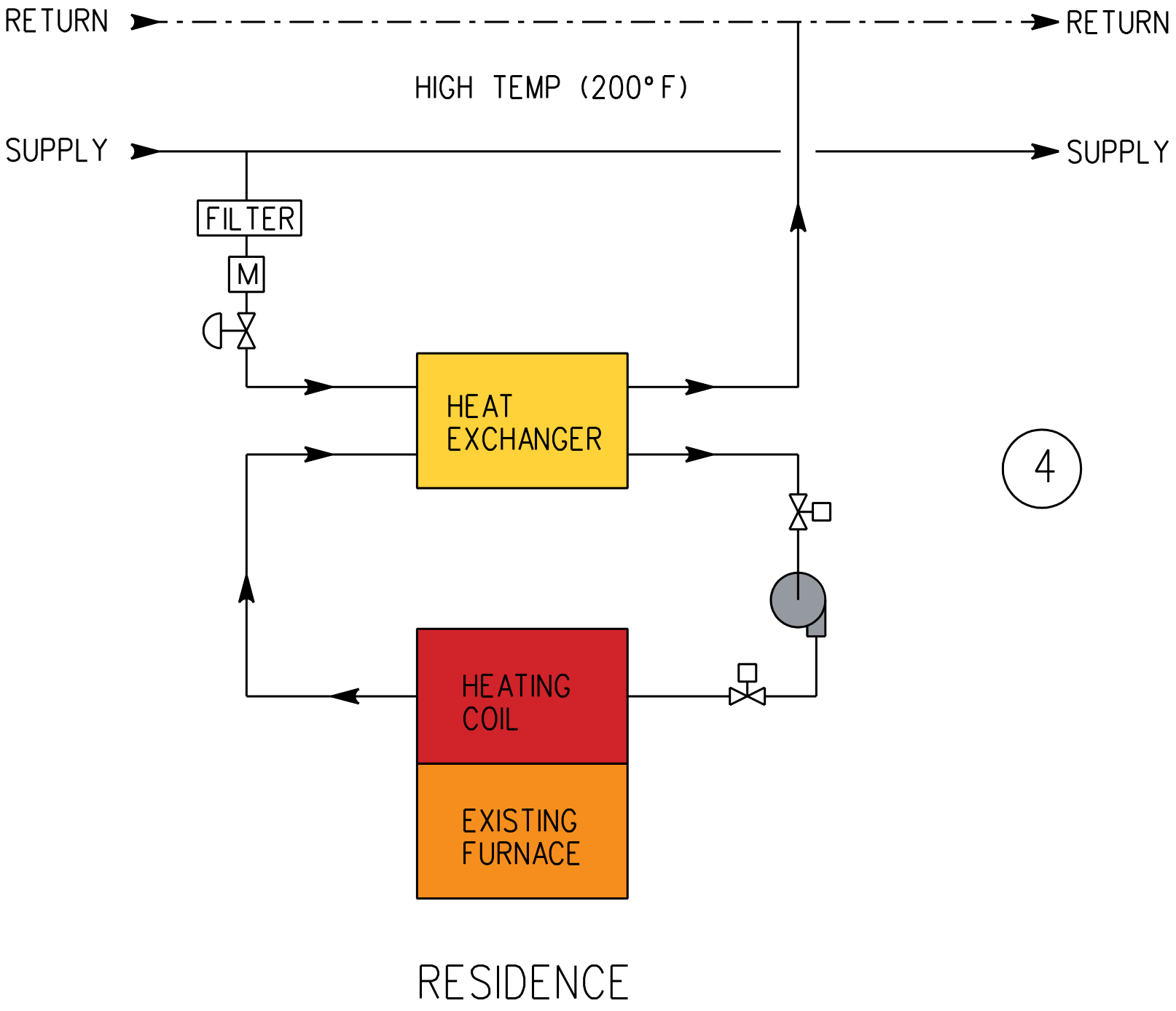
HEATING ONLY
COMMERCIAL / INSTITUTIONAL BLDG.



HEATING / COOLING CONVENTIONAL
COMMERCIAL / INSTITUTIONAL BLDG.



HEAT PUMP BUILDING
COMMERCIAL / INSTITUTIONAL BLDG.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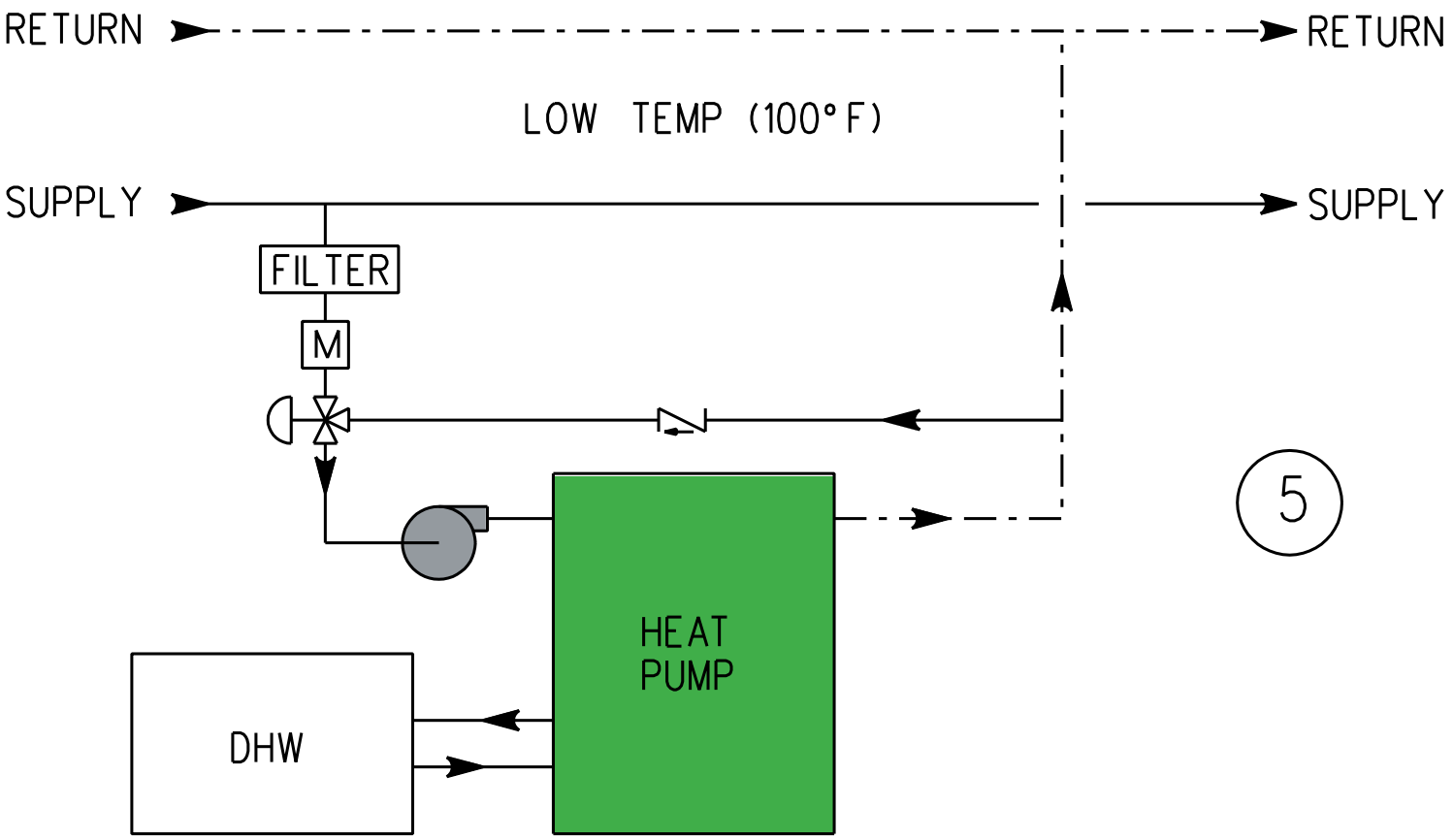
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RESIDENCE

TASK FORCE MEMORANDUM

TO: HOLLAND CITY COUNCIL

FROM: THE BUILDING ENERGY LABELING TASK FORCE

SUBJECT: SUMMARY OF GROUP FINDINGS

DATE: 10/19/2012

BACKGROUND

Four Task Forces were organized on September 17th, 2012, to make recommendations to the City Council for implementing the Community Energy Strategies (CES). The CES is intended to be a comprehensive and scaled approach to improving Holland's energy practices over forty years. The Building Energy Labeling task force was directed to research and propose a plan for labeling buildings in Holland. In the first meeting with the task force, Peter Garforth emphasized the importance of making a plan that would be simple, widespread, and informative.

The processes for quantifying energy usage are becoming more and more influential on the way people build, use, and view new and existing structures. As an example, New York City recently published energy efficiency data on its large buildings, becoming the first jurisdiction to do so. The reason for making this information public, as explained in a recent blog post on the issue, is to make energy efficiency an important factor in buy-sell, lease, and rental agreements, adding a level of transparency to the market.

> "Markets need information to function, and this will let New Yorkers know how much energy the buildings around them are using. It will allow them to get crucial real-estate information that hasn't been available until now,"[1]

The building energy labeling task force sees the transparency and visibility this labeling program will bring as the first step in a widely acknowledged and supported Community Energy Strategy.

MISSION

The mission of the Building Energy Labeling task force is to develop a comprehensive, transparent, and widely adopted building energy labeling program that accurately measures and appropriately publicizes building energy consumption levels in the city of Holland according to national energy standards.

[1] Institute for Market Transformation Executive Director, Cliff Majersik, on New York City's 2012 disclosure of energy benchmarking for 2,065 commercial properties

GOALS

The building energy labeling program should accomplish the following goals:

1. Establish transparency of building energy usage for these basic building types
    a. Residential
    b. Institutional
    c. Commercial
    d. Industrial
2. Create a "market" for building energy efficiency by making energy usage an influencing factor in real-estate transactions, home improvements, and community infrastructure.
3. Generate useful information and enthusiasm around the idea of optimizing energy usage.

OBJECTIVES

1. Benchmark building energy use in Holland and make the information widely available.
    a. Audit, label and publicize 200 residential buildings in the first year of the program.[2]
    b. The committee in charge should do more research to determine an objective for the other applicable building types.
2. Adopt a standardized label with credibility outside of the city of Holland.
3. Create a labeling program that informs, inspires, and incentivizes citizens to proceed with efficiency improvements.
4. Establish a labeling program that is simple, streamlined, and requires low up front capital investments from participants.

TWO STRATEGIES IDENTIFIED

Because the Building Energy Labeling task force is made up of many people with diverse skill sets and backgrounds, many different strategies came to light in the discussions. Here, the strategies are summarized in two different avenues of implementation. Deciding on a direction was very important to the rest of the process, so the group focused on the pros and cons of each before proceeding.

Strategy 1: Obtain SEMCO gas data, and create a database that aggregates existing building energy use data in one location and with a single indicator, then publicize the results.

Strategy 2: Implement an existing, robust energy labeling program, tied to a building energy audit.

[2] Obtaining a DOE Energy Score partnership requires labeling a minimum of 200 buildings in the first year.

Table 1: Strategy Comparison

Strategy 1: Aggregate existing energy data and publicize		**Strategy 2: Implement an existing labeling program**	
PROS	CONS	PROS	CONS
HBPW has existing data, much of which was collected for CEP. This would lessen the amount of work required	SEMCO would need to contribute gas usage data, which may be difficult to coordinate and approve.	Labeling programs already exist, and standards for audits and labels are in place	The City of Holland must choose label(s) out of many adequate possibilities based on project goals.
Can be implemented without building energy audits, which would increase participation, potentially to 100%.	Information would not be as holistic, and does not provide the visibility and weight that a building audit and label would.	Most labels available are recognized nationally, providing a national level of building comparison.	Would require a building energy audit which could deter program participation.
Can be broadly implemented across Holland relatively quickly.	Will require computer software adaptation and a widely available graphical user interface (GUI). HBPW is working on a limited GUI currently.	Information would be accurate to building design and be less dependent on current occupant usage.	Requires opt-in and significant education, marketing, and incentives; could take years for widespread implementation.
Near 100% adaptation will quickly establish an effective market mechanism.	Disconnects Building Energy Labels from "retrofit" program, where audit may already be required.	A carefully developed label will ensure minimum national standards are met. This work is already done for us.	Labels tied to building audits are more expensive per building.
	Focuses on building occupant's usage instead of building design intent.	Label typically comes with ideas for lowering energy usage, which can help transition into the "retrofit" program.	

ENERGY LABELS AND MINIMUM DATA FOR INCLUSION:

Without extensive research into label types and further coordination between community energy strategy task forces and City/BPW staff, it's difficult to make a strong recommendation on a specific label. However, the ideal types of data needed and some leading examples of energy labels are easier to identify.

An energy efficiency labeling system should document building annual energy consumption, CO2 equivalent, and total cost of energy used. It should provide a breakdown of energy use by category, and offer a tool for comparison to other homes. A good system will also estimate financial payback on recommended retrofit projects. Specifically, data on the following systems should be audited and included in the overall building assessment: walls, floors, windows, water heating, lights and appliances, heating, and cooling.

The labeling task force has identified a host of successful building energy labels, and can recommend some quality labels. However, having identified labeling goals and objectives, it now may be more appropriate for an energy program manager - looking at efficiency improvement programs holistically - to determine the "best fit" for Holland.

Two good examples of energy efficiency labels that the group recommends are the DOE Home Energy score, and the ASHRAE Building Energy Quotient. The US Department of Energy's Home Energy Score (http://www1.eere.energy.gov/) was designed for residential buildings. The process starts with a Home Energy Score Qualified Assessor collecting energy information during a brief home walk-through. Using the Home Energy Scoring Tool, the Qualified Assessor then scores the home on a scale of 1 to 10, with a score of 10 indicating that the home has excellent energy performance. A score of 1 indicates the home needs extensive energy improvements. In addition to providing the Score, the Qualified Assessor provides the homeowner with a list of recommended energy improvements and the associated cost savings estimates.

For commercial, institutional, and light industrial, ASHRAE's Building Energy Quotient (bEQ) is a good example of a quality energy label. The Building Energy Quotient (http://buildingenergyquotient.org) is a building energy labeling program that lets commercial building owners zero in on opportunities to lower operating cost and make informed decisions that decrease energy usage. The bEQ's In Operation rating applies an easily understood scale to compare a commercial building's energy quotient with similar buildings. What makes The bEQ unique is the depth of the analysis upon which the rating is based, and the reputation of the organization that champions the label.

BUDGET & FINANCE

The group felt strongly that a program that did not provide financial aid for participants would not be widely accepted, and therefore would not be successful. In addition, we felt it was important that the program be sustainably funded to allow for a strong and lengthy program lifespan. The following financing opportunities were proposed as potential solutions:

- Existing State "EO" dollars – although this is not a sustainable way to fund the program
- Financing in conjunction with proposed CCNG plant
- "On bill" "Pay as you save" financing in conjunction with the Retrofit Program
- Ratepayer surcharge or City General Fund
- Dedicated continued municipal energy efficiency savings

It was estimated that $30,000 - $35,000 should be allotted to the program in FY13 for planning, administration, and initial program implementation and $40,000 - $45,000 should be allotted for FY14. This conclusion is based on the group's discussions and estimates on labeling program costs and incentives and may be adjusted after bidding is complete.

INCENTIVIZING ACTION

There are many reasons why building owners should want to get their buildings labeled. One reason is that a good energy score could improve the value of a property. If the program goes as expected, a building label would act much like the mpg rating of a car, it will be the thing people want to know before making a purchase. Realtors can use building labels as a powerful selling tool and something that makes their properties stand apart from those that are not labeled. Another reason owners should want a building label is because the audit process will provide them with valuable information on how to save energy, and therefore money. After a preliminary audit, the owner can make improvements and re-label to get a better score. Despite these strong indicators for program success, the task force agreed that a labeling program would require financial incentives in order to allow for broad adaptation and participation, particularly for the residential and small commercial sectors. Without further information making a recommendation on specific incentives is premature, but it was agreed that any cost in excess of $100 for a residential audit and label would deter program participation. We don't want price to be a barrier to participation. Incentives for the commercial sector are harder to determine since the size of the building will have a great effect on the cost of the labeling process. Nevertheless, the group feels that it is important to provide an incentive. The specifics of which can be determined when the audits bids are received.

NEXT STEPS

Further planning and programming details are needed before launching the Building Energy labeling program portion of the Community Energy Strategies. We need to ensure all components are in place to take a building owner from audit to label to retrofit to performance metrics, including project financing, so there is no action gap created where the building owner has the desire, but not the mechanism, to improve their energy efficiency. Listed below are suggested planning steps for a pilot project that could later be scalable to the entire community as demonstrated success and funds permit.

A. Transitioning to Labeling Program Creation and Implementation

Establishing ownership and finding skilled leadership of the following responsibilities will be important to successfully moving forward. Such work could be contracted out or assigned to a City or HBPW employee. The council should move to approve a version of these steps to

move forward with the Building Energy Labeling program. Some basic responsibilities include:

1. City staff to work with consultants to prepare a Scope of Responsibilities and Request for Proposal to contract for an Energy Team Leader or Manager who will plan and begin implementing the project.
2. City Attorney expenditures to assist in the legal framework required to do the pilot and future scale project.
3. Identify and obtain funds to promote energy efficiency education, labeling and retrofit campaigns
4. Approve costs to bid out and Select an Energy Team Leader/Manager

B. Pilot Phase

Although final pilot phase planning should be left up to the judgment and research conclusions of the selected Energy Team Leader / Manager, the Building Energy Labeling task force has laid out some initial steps to pursue.

1. City Council review would be requested during the budget cycle for FY13 with the provisional intent on completing 200 residential project homes in the 2013 calendar year. The goal is to encourage energy labeling and to facilitate Home Energy Retrofits that make sense.
2. Prepare a Scope of Responsibilities and Request for Proposal to contract certified auditor to carry out pilot program labeling. Audits should be bid in an open and fair process that promotes competition and mitigates cost to the city and building owner.
3. Initiate 200 residential buildings to be labeled in accordance with Holland's preferred residential label.
4. Initiate a selected number of Institutional and Commercial buildings to be labeled in accordance with Holland's preferred commercial label.
5. Labeling should be prioritized in high visibility areas, but should include buildings in all neighborhoods to maximize visibility and widespread acceptance.
6. Identify and engage institutional partners to begin labeling efficient buildings

RECOMMENDATIONS:

The labeling task force recommends the building energy labeling program should follow Strategy 2 because the task force believes obtaining, benchmarking, and widely publicizing the necessary energy data identified with specific Holland buildings will be most effectively done using an existing labeling program. In this light, these recommendations summarize the conclusions of the task force's discussions:

1. Holland should adapt, encourage, promote, and incentivize an existing, robust and voluntary labeling program.
2. The program should be tied to the retrofit program as the first step in identifying potential energy reducing projects that will be easy to implement and provide the quickest payback.

3. The Labeling program should be managed by an individual or firm contracted by the city through a bidding process.
4. The US DOE Home Energy Score and the ASHRAE Building Energy Quotient are two good potential labels the task force recommends. After Requests for Proposals have been written, the Energy Team Leader may choose to go forward with these quality labels, or may determine that a different label better fits Holland's needs.
5. When discussing budgeting, the task force decided that $30,000 - $35,000 should be allotted to the program in FY13 for planning, administration, and initial program implementation and $40,000 - $45,000 should be allotted for FY14. This conclusion is based on the group's discussions and estimates on labeling program costs and incentives and may be adjusted after bidding is complete.

APPENDIX A: EXAMPLES OF POTENTIAL ENERGY LABELS

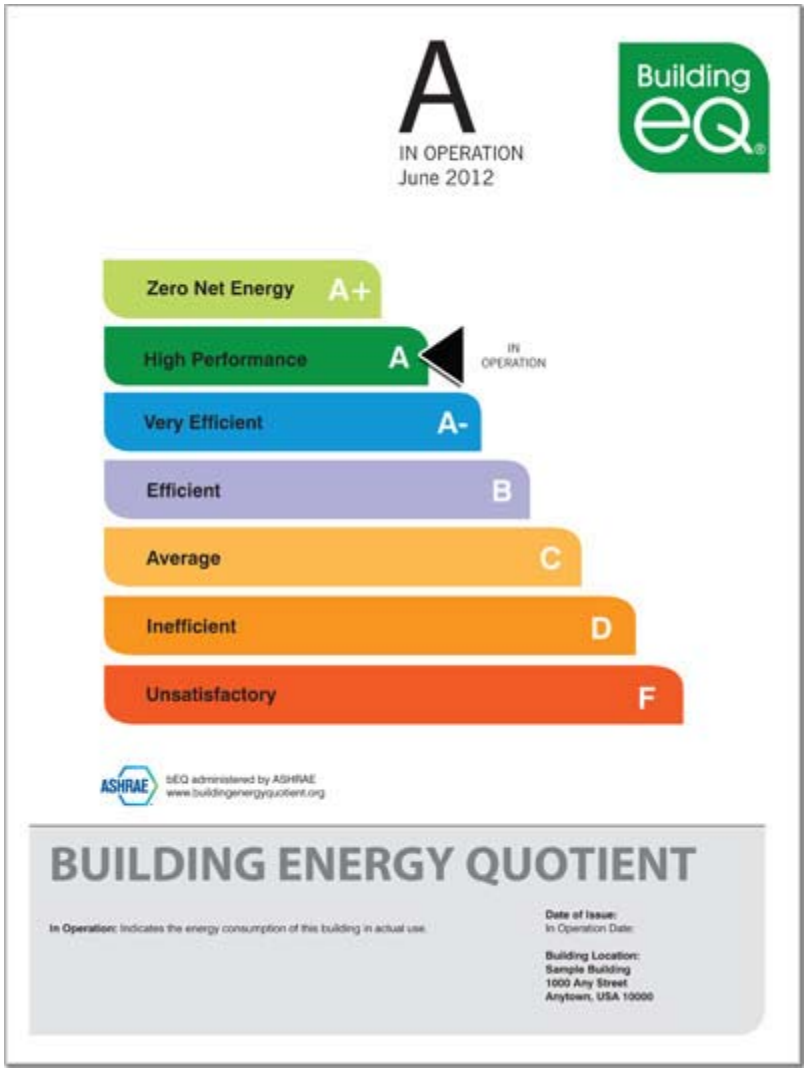

Figure 1. Building Energy Quotient Plaque[3]

[3] http://buildingenergyquotient.org/images/plaque400px.jpg

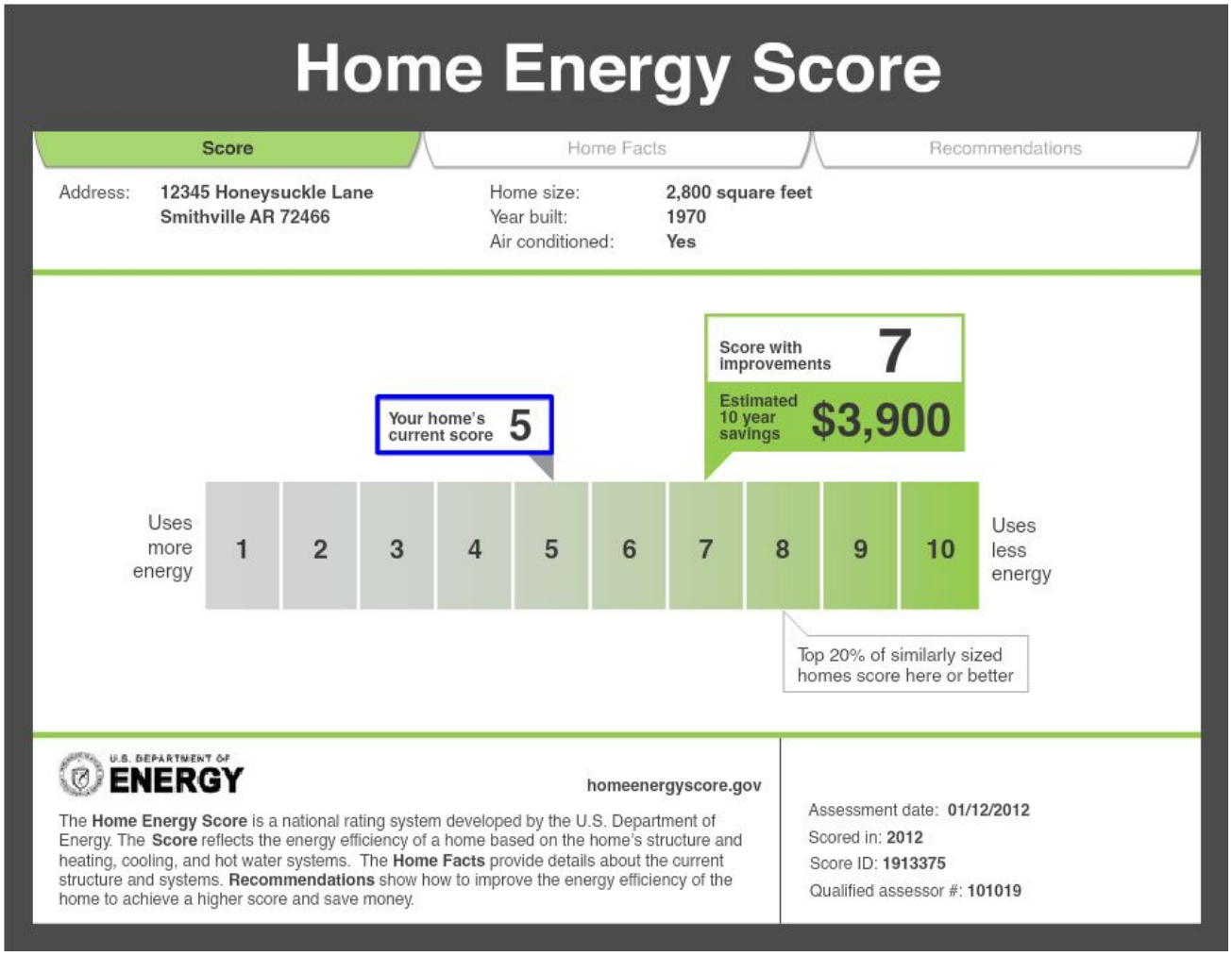

Figure 2. US Department of Energy Home Energy Scorecard[4]

[4] http://buildingenergyquotient.org/images/plaque400px.jpg

APPENDIX B: TASK FORCE DETAILS

Task Force Activities:
The full labeling group met 4 times between September 17th and October 24, 2012. Additionally, smaller work teams met several times.

Labeling Task Force Members:

Bethany Beckman

Brian Bosgraaf

Jeannette Brownson

Nancy DeBoer

Gilbert Galvan

Monica Hallacy

Bob Hoekstra

Greg Maybury

Bob McFarlane

Nick Occhipinti

Greg Robinson

Zachary Sikkema

Jim Theis

Mark Vanderploeg

Jeremy Vaneyk

APPENDIX C: ADDITIONAL FINANCING INFORMATION

These financing notes were gathered and discussed by the Home Retrofits Task Force.

1. Encourage BPW to allow for Home Energy Retrofits via rebates from the energy optimization funds
2. 80 to 100 million in BPW funds for emergencies. Is there $5 million that could be made available by a revolving loan fund for equity reasons and have it be working cash. Loaning this money to a revolving loan fund would be secured by the real estate improved.
3. Institute a "Pay As You Save" program to take advantage of some of the energy savings noted above
4. Use funds saved by the City (and BPW) in energy conservation to go toward Home Energy Retrofits. In the case of the City, over $160,000 was saved per year since 2009. (Footnote: These savings have helped balance the City's budget. Any use of them would mean an additional tax increase or layoff on top of what took place in May, 2012)—The City actually saved $230K. The idea would be to reinvest in next round of projects
5. Take advantage of changing State laws on "single lot special assessments" to pay for voluntary Home Energy Retrofits;
6. Sell carbon offsets to those who buy on-line in a way that keeps these dollars local and provides for low income home energy retrofits;
7. Encourage faith-based communities to do Energy Retrofits on all of their properties (parsonages, church buildings, rentals, etc.). Look at the Cheer's program being jointly worked on by four churches;
8. Create a "stepped up" energy rate structure so those that consume the most, contribute a proportional greater share toward Home Energy Retrofits – so as to put a floor below low-income users;
9. Create a City fund-supported Revolving Loan Fund for low or no interest loans for Home Energy Retrofits that would be paid back upon re-sale or via a special assessment over time – combine with time of day pricing;
10. Research "Better Buildings for Michigan Loans" (available via "Michigan Saves" for residential by Consumers Credit Union as the Ottawa County and Allegan County) for 1.99% up to 10 years for up to $20,000; and
11. Determine if the City qualifies as a "rural community" for use of Department of Agriculture Funding for Home Energy Retrofits—Answer turns out to be No.
12. Low income home funding possible working through the legislature.

To: City Council and BPW board for your October 24 Study sessions

From: Community Education and Outreach Task Team

The Community Energy Plan should be just that !

An expression of the value and commitment the citizens of Holland place on the availability of safe, environmentally sensitive, reliable and affordable energy to our households, commerce and industries.

The Community Energy Plan (CEP) should be the enabling mechanism to: implement residential home efficiency, explore alternative heating and cooling options through recapture of "waste heat and district heating", develop building labeling as a driver to greater efficiency and through an information, education, process stimulate citizen, business and institutions to engage in the changes necessary for implementation. Opportunities will continue to present themselves as new technologies are developed, legal and social requirements are imposed and the economy changes.

The CEP has a 40 year time horizon and some immediate challenges to address. While the scale projects are being addressed by the task teams the goals and guiding principals have not yet been adopted by city council or the BPW Board. To consider an education and outreach program the City and BPW leadership will need a clear understanding of those elements within the CEP and demonstrate support for them. These guiding principals include: the loading order, and the framing goals. The framing goals as presented in the plan include the following "Measures of Success" - **Competitiveness** 1. Energy Cost, 2. Employment, 3. Investment / **Security** 4.Supply security, 5. Supply quality, 6. Flexibility / and **Environment** 7. Greenhouse Gas Reduction.

The Community Education and Outreach task team identified the need to initiate steps to provide information and create channels for citizen input. The initial work of the Community Energy Advisory Group (CEAG) to educate and motivate people within the city reached thousands through the Sentinel Insert and hundreds through face to face community meetings while demonstrating how hard it is to get people engaged.

Holland has seen some very successful public / private partnerships to promote various aspects of the city. The DTDA, Tulip Time, Ready for School, just to name a few. We believe that this task team should be reformed with representation from the institutions that can make it successful. These include but not limited to: public and private school systems, Holland Chamber, Holland /Zeeland Foundation, Good Sam, representation of the faith community, representation of our major employers, city officials and staff and the staff of the BPW along with several citizens. We would like to see a coordinated effort by BPW, City and this team in all information and educational efforts.

While the concept of"Sustainability Institute" at Hope provides a potential for good work the fact is that it does not exist at this time and cannot be relied upon as a mechanism to meet the short term needs for education and outreach.

The Community Energy plan looks 40 years out into the future and sets a direction for current and future city leaders, BPW, our faith community, our educational institutions, civic leaders, industry and citizens. We need to invest now in this information and outreach effort.

We have identified some immediate first steps to launch a Community Education and Outreach program. They include:

1. A survey of citizens concerning energy issues.

   The city is planning a survey soon. Questions regarding energy would need to be developed to include in the survey and some type of analysis to see where the answers may lead.

2. Using the input from surveys and basics of what the CEP is, facilitate ward meetings.

   Develop a communications piece(s) to provide the framework for education. This may include pamphlets, web site, newspaper pieces?

3. Identify the resource needed to create a sustainable Community Education and Outreach program. This would involve some type of professional talent. The outcome would assist in the development of the long term strategies

The following funding estimates have been provided for consideration.

Assistance in working with the survey and information development from it. $ 7,000

Communicate and Facilitate ward meetings. $ 5,000

Development of communication piece and web activity. $ 20,000

Engage a professional to help develop the strategy for sustainable education and outreach activities. $ 20,000

Presented by Paul Lilly, spokesperson for the Community Education and Outreach Task team.

Energy Sustainability Project Funds and Potential Allocations for Task Force Planning

Task Forces	Requested	Recommendation	Notes
Home Energy Retrofit	$ 28,000	$ 28,000	*90 pilot energy audits and contracting for a Team Leader to cement the effort*
District Heating	See note to left	$ -	*BPW will cover as new business venture*
Building Energy Labeling	$ 30,000	$ 10,000	*This smaller amount should cover planning and a Contracted Building Energy Labeler for a pilot project...Match w/ BPW*
Education and Outreach	$ 52,000	$ 20,000	*Less is recommended via using the Community Survey to save $7,000 and to stay at a planning level for now*
Power Generation	NA	$ -	*BPW is covering as a matter of course*
Industrial Bundling	NA	$ -	*BPW is covering as a matter of course*
Total	**$ 110,000**	**$ 58,000**	

Approximate Total Available $ 66,000 *(The word approximate is used because Garforth will not be billing us the full costs; there may be a little more available)*

Contingency subject to Council (TBD) *$ 8,000*