Minutes
Coventry Town Council Meeting
May 2, 2016
Town Hall Annex

1. The meeting was called to order at 7:30 PM.
   Present: Richard Williams, Julie Blanchard, Thomas Pope, Andy Brodersen, Lisa Thomas, Hannah Pietrantonio, Matthew O'Brien
   Also present: John Elsesser, Town Manager; Beth Bauer, Finance Director

2. The Pledge of Allegiance was recited.

3. **Audience of Citizens**:

   Mike D'Amicol, Town Assessor, has been employed as Assessor for the Town of Coventry for the past nine years. It has been great and he wants to express his appreciation. He has also been a member of the National Guard for 22 years and has been deployed twice since coming to work for the Town of Coventry. The Town has been terrific and supportive during his deployments, particularly John Elsesser and Beth Bauer. His most recent deployment was with short notice. While stationed in Guantanamo Bay, he made arrangements to have the American flag flown in the Town's honor. He is presenting it in the spirit of patriotism, in recognition of those who have lost their lives due to terrorism and in recognition of those who continue to serve. The Council thanked Mr. D'Amicol for his service.

   Jenn Reilly, 496 Bunker Hill Road, is on the Town Energy Committee. We have been looking at the proposed extension of natural gas. The Energy Committee has received lots of emails about this. We are supporting the idea of natural gas coming to Coventry. We don't want to pick one winner of fuel choices available to our citizens, and natural gas could open the door to other energy opportunities, maybe hydrogen. We have openings on the Energy Committee and are always looking for members, especially related to solar, EV, and hydrogen. Give us a chance to show you what we do. Our next meeting is Wednesday at the Department of Public Works and we will be talking about solar and what is next for the Town.

7. **Unfinished Business**:
   Motion #15/16-366: Matthew O'Brien made a motion to move up item 7B, 15/16-68: Consideration and Possible Action: CNG proposal to extend natural gas to Coventry, as the next item of business. The motion was seconded by Andy Brodersen and carried on unanimous vote.

   John Elsesser made a presentation giving an overview of the project, including the scope and projected costs. (*The presentation is attached to these minutes*). Members of the School Energy/Building Efficiency Committee were also in attendance. If the Town commits to the project, it would be designed, permitted and constructed this summer. The Building Committee would have to bid the boilers this summer as part of a larger project they are already doing. Concern has been raised about doing it while school is in session. There are 6 boilers at the school plant. We can pull down one at a time and phase it over. Gas piping from the meters is minimal because they are close to exterior walls. There is no discussion about changing the science labs or kitchen at this point. We could look at the kitchen in the future when equipment ages but the lab is not practical.

   In terms of neighborhood impacts, there is no requirement to connect, and no betterment assessment.

There would be a 5-year grace period to tie in at no additional expense. After 5 years the property owner would need to pay to get the line installed. All roads will be repaired after construction. There are tax incentives and rebates for converting. Gas is just like electricity in that you can choose your supplier - CNG provides the transmission. CNG's prices are pretty competitive right now. People must be aware that there will be a buried gas line. Roads along the route include Lewis Hill, Eastview, Gardener Tavern and Ripley Hill. Construction is a simple trench. We already had Eastview and Gardner Tavern scheduled for road work this summer so we would hold off. Lewis Hill and Ripley are scheduled for the following year – we might defer to 2017 and do it all at once which would be paid for out of the summer roads program.

Natural gas fits into the State's energy policy. It is lower-cost, less polluting and domestically available. It will reduce greenhouse gas emissions and allow micro grids to keep emergency operations and shelters up and running, and prices are typically lower than oil.

Safety concerns have been raised. We already have a high-pressure gas line in the southern end of town operated by Duke Energy. There have never been any problems. We can't use that gas because the line is high pressure and a conversion station would cost millions. Plus it is not near any users. We sent out a query to other managers in the State regarding their towns' experience with natural gas. Respondents with gas indicated there have never been any issues, and others without it wish they could get it. They gave positive feedback regarding safety and the benefits of natural gas. The line would be constructed with plastic pipe, not metal which corrodes over time. Over a half million houses are already connected in Connecticut and the State is trying to get 300,000 more. Our percentage is low compared to other states. CNG complies with safety standards and has a 24/7 emergency response system.

We ran the potential project through various Town boards and commissions. The Energy Conservation/Alternative Energy Committee, the School Building Committee and the Planning & Zoning Commission all endorsed the project. The School Building Committee has been charged with evaluating traditional as well as non-traditional techniques and educating the public prior to any referendum. The committee was going to have to do work before the natural gas opportunity came along. Several of the oil tanks are at maximum life. One must be replaced within 2 years at a cost of $74,000 and another tank with 12 more years will be $45,000. At Town Hall we are borrowing a propane tank because ours went. It would cost $6800 to buy. If we stay with oil there are no energy rebates, which are estimated at $50,000. Converting to natural gas might solve a noise standards compliance issue with the school's unit ventilators. If so, code compliance money might kick in – those savings are not yet calculated. A detailed life cycle costing, prepared by BL Companies in very short time, shows a comparison over 20 years (*Attached to these minutes*). If we go to new boilers at the high school/middle school it projects a $2,451,991 savings for that complex – there are other buildings on top of that. The State's energy plan talks about the importance of reducing CO_2 emissions. This project is projected to eliminate 1.8 million pounds of CO_2 over 20 years.

We are locked into buying oil from July 1-June 30 2017. There are various options. We could rent storage and save it. That adds up quickly and is not a great option. We could resell it to others – but we might have to pay an extra transportation fee. We could pay liquidated damages. The price today is $1.20 per gallon. It adds up a lot. It is summer now - if we wait until winter we might be able to sell it at a higher rate. Based on an estimate of what was delivered between July-December last year, we believe it would be $15,246 to sell or $53,816 to liquidate. It is hard to get a handle on it but we are working with the oil dealer and this is where we are at this point. There are a couple alternatives: A) do conversion burners only. Even if we have to take liquidation damages it would be within the amount available in CNREF, or B) go with new high-efficiency boilers. The $462,000 estimated expenditure might be eligible for $50,000 in energy credits. We could lease purchase some of the

items. There would be no increase in taxes. Our payment plan to CNG would be $90,000 for 7 years. This would be offset by fuel savings, maintenance, and higher efficiency. Natural gas prices are predicted to be steady. Looking at historical trend data, oil was higher then dipped dramatically, but is projected to widen out again over time. Propane is also higher. We would have the opportunity to change vendors annually.

Tom Kolodziej, Chair of the School Building Committee, was present along with committee members Matt Mullen, Cheri Trudon and Greg Longo from BL Companies. He said the committee has been working for several years and finally hired an engineering company, BL Companies. We have to address ADA issues, building code issues, energy issues and now this. We asked BL to drop their current project and fast-track this report. We commend them for their prompt response. Matt Mullen said he is also on the Energy Committee for the Town. As a member of both committees we have been talking about energy conservation and bemoaning the lack of natural gas. Getting it would open up a lot of opportunities. We asked BL Companies to look at options and a life-cycle analysis.

Greg Longo gave an overview of BL Companies' analysis, noting there are trade-offs in anything you do. (*The report is attached to these minutes.)* We looked at three options:

Option 1: Do nothing - keep the existing equipment and don't bring anything in. This results in the highest operating cost and fuel consumption at $144,000 per year in energy costs. Matt noted there is an eventual additional cost because the boilers are 50 years old. We will have to replace them down the road. Greg said there is no Day 1 cost for them but there are incremental costs which are listed in the data.

Option 2: Replace the burners. This allows us to operate the existing boilers on natural gas. We don't get all the efficiencies but we would be running cleaner fuel and gain some efficiencies. We would have to remove the oil tanks and we will additionally need to replace the boilers down the road. Andy Brodersen asked if they might last longer if we switch to gas. Greg said possibly. They don't need to be cleaned as much, but there are downfalls including the possibility of condensing. John Elsesser noted at Town Hall we replaced our pumps with variable speed pumps which have energy savings because they don't run all the time.

Option3: Replace the existing boilers. We could do a phased approach to save money. We put together a worst case scenario but could probably find some savings. John noted we could do it in the winter.

Matt Mullen noted that condensing boilers have to stay hot. We can only get so much heat. We have already replaced a lot of the boiler parts. On a cold winter morning when we send hot water through, a lot of them crack when they take the cold water back. Condensing boilers are designed to handle that. They also provide 92-93% efficiency vs. 75% (if we are lucky). With gas we can condense it and gain 20% more efficiency. That is a big savings. John noted the costs to re-loop water would be eliminated too.

Matthew O'Brien asked if BL could give an estimate of the remaining life of the boilers. Greg replied there was not a lot of time to get input - originally we had them scheduled for replacement earlier than shown but we didn't want to make it look like we were stacking the information. Matt Mullen noted the boiler itself may last longer but we are having difficulty getting parts for the burner. Tom Kolodziej said the original plan was to replace the boilers and fuel tanks. We already had a failure of the boiler at Town Hall, which was built the same year as the high school. The Middle School is a little further behind. We could do a conversion on those. We haven't delved into that in depth but we are trying to get the big picture. We had to drop everything to look at the gas conversion possibility.

Matt Mullen said if we stick with oil we are stuck with the unit ventilators we have. We were tasked with doing something about that. Going with gas may open up opportunities that we will talk to BL Companies about. We might gain additional benefits. Matthew O'Brien said he understands there are code violations for noise from the ventilators. Greg replied it is not a code violation - the way the law is written is that any new equipment paid for by State funds must meet the noise codes. Shutting them off because they are noisy is a violation. We could go to a dedicated air system or run it with natural gas instead of running heating pipes. We haven't had time to look at a lot of those things yet. Tom said we are really at the beginning stages. We don't have a lot of information yet. Greg said we started our work on the other schools first and switched to the high school instead. Tom said it became a top priority a week and a half ago.

Matthew O'Brien said there is a 5-year grace period for residents to connect – he would encourage the Energy Committee to work with homeowners to sign up. He thinks they will find it to be an economic as well as an environmental benefit. He asked if the committee feels too rushed to give a recommendation. Tom said no. We looked at the cost savings to the Town. If there is good savings in the high school/middle school complex we assume there would be similar savings to the other schools in the future and we unanimously support the project. We would say there is a substantial savings to the Town and the committee is in unanimous agreement to proceed.

Matthew O'Brien asked about John's slide showing $3 million in savings. Tom Kolodziej noted that the chart showing oil prices was modest. Oil is already up 35 cents so the savings will only get better. Even with very conservative estimates we would imagine oil to be considerably higher. Greg said we are trying to put forth a fair comparison and used the same escalation for natural gas at 4% - it could really probably be 2%. We did a one-year model of the building and amount spent over the last 3 years and compared it to the model - then we changed the fuel over to natural gas and changed the prices.

Lisa Thomas said asked to clarify the committee's statement that seemed to indicate natural gas would save costs at the other school buildings, noting this project does not include G.H. Robertson and the Grammar School. John replied he thinks they were referring to the other town buildings, not the schools. Tom said we are tied to where the pipeline goes. Who knows when the pipeline might get to other facilities.

Richard Williams asked when they did the calculations if they made assumptions of the way the two prices follow each other. Greg said we assumed that both natural gas and fuel oil would be increasing at 4% per year. We could have been a little less conservative to have gas escalate less than oil. Matthew O'Brien asked if that has been the history. Matt Mullen said yes. The supply of natural gas is reliable and not subject to the whim of international events.

Hannah Pietrantonio asked why the kitchen is not being included in the conversion. Matt said some of the equipment can't be converted right now, but when the time comes to replace it then it should be looked at. John said there is little use in the science lab so it didn't make sense to convert that.

Andy Brodersen said this all sounds good. What could happen to screw it up? Matt Mullen replied if the pipeline is not installed in time. Our recommendation is not to touch any boilers until the pipeline and meters are in place. Once they are in we can do the boilers in a couple of weeks. Matthew O'Brien thanked the committee and BL Companies for all their hard work with short notice.

Motion #15/16-367: Matthew O'Brien moved to authorize the Town Manager to enter into the community agreement with CNG to extend natural gas to Coventry. Thomas Pope seconded the

motion.

Matthew O'Brien said these gentlemen have been working very hard and it seems very clear there are a lot of benefits in energy savings, energy efficiency and reduced CO_2 emissions. He is in favor of the project and thinks it would be fantastic to be able to set up a micro grid in times of emergency.

Andy Brodersen said he is also in favor and asked if we can see the agreement. John replied it was in the Council agenda packet. CNG accepted the language change we presented to them.

Lisa Thomas asked whether the road repairs would be done at Town or State expense. We know we can commit, but what about the State? John replied that CNG would fix the State roads. The Town would be responsible for town roads.

Lisa said there are a lot of different options for funding. We have consistently talked about taking money out of CNREF at least for the first two years of the project. She is concerned about what that leaves us and where we are for the remaining five years. John said it is predicated on putting the same amount into CNREF on an annual basis that we are doing this year. Operating budgets could be reduced by savings. Lisa said that future Councils will need to recognize this commitment. There have also been discussions about trying to build this fund. Another option might be to bond. Can bonds be pre-paid or paid down? John said not typically - not usually for 5-10 years. He doesn't think bonding would be the right mechanism. Lisa said we haven't heard a lot of concern about this at the table – this would be a bill that needs to be paid. John replied we have many multi-year contracts like buses. Matthew said another option would be to move it into the capital fund. Lisa said that is still a concern because it is being marked for a certain fund. Then it must be voted on by the voters each year. Matthew said when we do a lease purchase on a fire truck for 10 years isn't that the same? Lisa said we are voting on actions we don't control.

Richard said a lot of those costs are offset by savings. So a lot of it is balanced. If oil goes up there are increased savings that protect the taxpayer. We can't predict the future but he can almost see it happening. Even natural gas has ups and downs but it seems more stable. John said it is more stable because we have it locally.

Lisa agreed she doesn't want oil dependency.

Richard said he guesses he is in favor of the project. He has gone back and forth over the costs and it seems like the place we want to be. It seems like right thing to do.

Thomas Pope said after listening to all of the information, he would postulate that any position short of support for this project would not be in the best interest of our community in its entirety.

Julie Blanchard asked about the process with our oil commitment. John said we try to top the tanks off at the end of the season and don't take delivery until September/October. We don't use a lot in the summer. We had calculated 31% would be used by December 30th. East River Energy also looked at it and came up with a similar number. We think those estimates of surplus are fairly accurate. We expect oil prices will go up and we will be able to sell so we won't have to pay liquidated damages, or we could try to come up with a better storage method and use it at Robertson and the Grammar School the following year. We are already using the Town Hall storage tank for Public Works. We still have a contract for those buildings so we may have to wait. We can keep the tanks at the schools for storage to reduce the number of gallons we would have to pay to store. That could cut our storage needs in half. There are some simple additives you can put in. We were very comfortable taking it from Town Hall and running it through the waste fuel burner at Public Works. We would think there

are some larger users in town like St. Mary's Church that might want it because they weren't able to lock in at $1.79. We haven't had time to pursue the option of using it for Fuel Bank deliveries. We can't make promises. We are paying the same tax as everyone else because fuel oil doesn't have sales tax. We think there are still other options we will be able to come up with. Richard asked if we really want to get into the business of selling fuel. John said no. The liquidation market is the easiest thing but right now it isn't reasonable because people aren't buying oil. Matthew asked if we have to store all of it now. John said no – we have to take it by July 2017. The tanks can stay in until 2018.

Lisa said the motion we are about to vote on is the agreement with CNG. It does not deal with conversion vs. replacement. John said he recommends letting the Building Committee proceed with what they were tasked with and then they would come back to the Council, who would decide how to fund it. He thinks they did spectacular work to get where we are today. A lot of things have fallen into place to allow it – they had an engineer on board, the road work was already scheduled, etc. The Town of Hebron gave up because they didn't feel they had costs calculated. We were fortunate. We would have time over the summer to work through other issues like the timing of the road work. We would bid out the equipment and connect when the meters are in. The road might be patched for one year but at the end it all would be the same.

Hannah asked if Town offices to be converted also include the school administration building. John said yes. That is propane so the conversion is very inexpensive. It is included on the slide for conversion of town buildings in the presentation.

Motion #15/16-367 carried on unanimous vote. Julie said she thinks we are doing a good thing for the community.

4. **Acceptance of Minutes, April 18, 2016**:
Motion #15/16-368: Matthew O'Brien m oved to accept the minutes of the Town Council meeting on April 18, 2016. The motion was seconded by Andy Brodersen and carried on unanimous vote.

5. **Consent Agenda:**
Motion #15/16-369: Lisa Thomas moved to accept the Consent Agenda. The motion was seconded by Matthew O'Brien and carried on unanimous vote.

6. **Reports:**
A. Council Chairwoman: Julie Blanchard reminded people to vote tomorrow. Polls are open from 6 AM to 8 PM at the firehouses.

B. Council Members:
Matthew O'Brien said at the last meeting he had brought up receiving a letter from David Petrone detailing cuts to their budget, and the impact of a $200,000 reduction. He wants to note for the record that reductions were achieved in utilities, technology, and savings from switching from buying insurance from Apple to a self-insured plan. Special Education was reduced because a student they were expecting is not coming. So the $200,000 cut has zero impacts on our students and he hopes everyone will support the budget. The Board of Education was able to make adjustments without impacting their surplus for this year so that money is still available and able to be used for additional purposes.

Lisa Thomas gave congratulations to Probate Court Judge Barbara Riordan, who will be arguing before the Supreme Court.

Hannah Pietrantonio announced that she is a grandmother. Her grandson Miles Patrick King was born a few days ago and everyone is doing well.

C. Steering Committee: Thomas Pope:

- Citizens from Avery Shores and Pine Lake Shores attended the meeting to discuss acceptance of their lake association roads. Pine Lake Shores will need additional time. We had lengthy discussions with both groups. Avery Shores left the room satisfied we have made progress. Pine Lake Shores is also satisfied and feel we could move forward but not in the original timeframe. Later on the agenda is a request to modify the Council's road acceptance policy to give them additional time.
- The Library is still working on their items for the building expansion so we will meet with them next month.
- We will also work on the tax abatement initiative next month.
- There is a list of openings on Boards and Commissions on the Town website. We would welcome additional volunteers.

D. COVRRA – John Elsesser:

The relocation study for the transfer station is proceeding. The engineer came out to take a look and feels there are two alternatives. The one near the sewage treatment plant would have had high tree removal costs. The remaining two options are staying where we are or a site near Public Works.

E. Town Manager – John Elsesser:

1. Projects Update:

- On May 11th there is a meeting about crumbling concrete foundations that we are part of. It is at E.O. Smith Auditorium at 6:30 PM. Another group also met at Ellington High School last week. This is an update from State officials. We are trying to get the State Senator or Representative to come and talk about legislation that just passed to allow affected property owners to appeal to the Board of Assessment Appeals to reduce the value of their properties. This is an important meeting for people who think they have these problems. Matthew said he understands the legislation also prevents insurance companies from dropping you.
- We finished grading Mt. Ridge and got the drainage done. The paving crew got up there Friday and Saturday. They were supposed to work today but weather is a factor. Matthew said everybody in the neighborhood said it is the best it's been in 20 years.
- Village drainage work is finishing up then then we will be reclaiming those sections of road, and then moving on to binder and paving.
- Crack sealing is complete.
- Final grooming is done and the water system is going in at the Laidlaw soccer field next week. It looks great and will be a great field. Matthew asked how the parking lot is coming along. John said we are using drainage materials from Mt. Ridge there. It is more of a goal for fall.
- The Miller Richardson parking area is done. We got the five remaining trees planted and rocks installed for a barrier so cars can't drive on the field. The Locip money was released so we will proceed with the fence and backstop.
- There is a forum about the Lake Management Plan on May 18th at the Lodge.
- The Tax Sale is down to 6 properties from 21. That is good news.
- More good news today: we had nominated Chief Palmer for the Law Enforcement Officer of the Year award from the Windham Chamber of Commerce and he won. The event is May 4th but unfortunately we got very last minute notice – we are not happy about that as people's schedules are already booked. The Council may wish to recognize him at a future meeting.
- Thomas Pope said back on March 8th we celebrated Sunshine Week and the following day the Board of Education said they were going to get pricing to join in our financial transparency

initiative. He knows they have surplus funds available so they could do it, but he hears they are still waiting for a price. Thomas asked if John would please follow up. Matthew noted they shared some information on their website. John said it appears they have a quote – we will look into it. Matthew said he still has a lot of trouble with their website. He wishes they would switch and join us.

2. Public Hearing: Proposed Beach Fee Increase: The hearing is May 4th. Council members can speak as individuals or take action as a Council. We urged them to move to the Annex so there will be enough room. They will do a presentation at the meeting. Part of the reason for the increase is their expenses have increased since the minimum wage increased. The numbers of hours at Lisicke Beach require $700 per week in attendant fees. We could subsidize it through other funds or reduce the attendant's hours. Matthew said he thought the Recreation Department said they were good budget-wise when they came to meet with us. John said no - he thought they made it clear that expenses are higher than revenue.

Thomas Pope asked how much the sale of beach stickers brings in. John replied $8,000-$10,000. Thomas said it is interesting we met with them on March 8th and then a week later they began to crunch the numbers. He questioned why they waited to crunch their numbers until after they met with us. We collect an awful lot of money for open space and the lake is the largest area. Maybe if the Recreation Director had crunched her numbers beforehand we could have given her money from open space. He thinks this is putting an additional burden on taxpayers. Lisa Thomas disagreed, saying there has been consistent conversation at this table for a couple years regarding how the beach sticker pricing has not gone up and that they are depleting their funds as they are being asked to do more and more. To her this wasn't a new conversation and they are restructuring the price of the stickers, so the first one is $20 and then it goes down to $10. She also said Mr. Pope is consistently confusing conversations about open space, and she gets the sense he might not support what has been done in the community about open space. She thinks he is muddying the waters. We don't have an open space fund that money can be taken out of to cover beach usage. She thinks he talks about open space in a way that is not very transparent. Thomas said nothing in the minutes of the meeting reflect that a fee increase is needed. The only thing that was mentioned was when Richard Williams was talking about fees. Richard mentioned he thought the fees were a little low for what we are providing and that there might be a need to raise fees.

Richard said we are getting off topic. He thinks what is in question is how Parks & Recreation is going to raise revenue to cover their programs and one of the things they are looking at is raising beach fees. Andy said or reducing gate attendant time. It might mean the police have to stop by once in a while. Lisa asked John to give a history of why the gate attendants are there, noting there have been problems with alcohol, etc. John said the attendants at the beaches have different roles. At Lisicke they check for resident parking stickers. At Patriots they distribute literature, check coolers etc. It is relatively new to have an attendant at Lisicke - people had felt non-residents were parking there. At that point an attendant was put in and a fee was charged to cover it. For the number of weeks we have, with minimum wage now at $10 per hour, it adds up quickly. Lisa asked how the lifeguards are paid. John said some is through Town funds and some through swim program revenue. Matthew said he is not sure why we are having this discussion – he is not questioning what the gate attendants do or the lifeguards, this is about disappointment with staff for not raising this issue during budget discussions when we could do something about it. Richard noted most of the fees will be paid by non-residents.

Thomas said the last item on the sheet says seniors may receive a sticker at no charge if they regularly use the Senior Center, but if you are not a regular attendee you don't get to go. This is establishing a preferred class of senior citizen. Shouldn't we treat every senior equally? John said that is not the intent of this and that the language could be corrected. The issue is parking access for the Senior Center. We

will work with staff on the language. On very busy days at Patriots Park the seniors complain they may not have a parking spot. It is not for beach use. It is not for Lisicke. It is for use in visiting the Senior Center so they don't get a ticket. It shows they are legitimately at the Senior Center. It is available for anybody who goes to the Senior Center and goes on their dash.

3. Earth Day Brief: We wanted to share the progress our community as a whole has made with energy savings and CO_2 emissions. Thomas Pope asked if this is just for residential. John replied it is what they are aware of for the community. Thomas said under the item for electricity saved maybe we could ask them what was saved at the high school since we can't seem to get a number for the solar project. John said we will continue to ask for information. They have provided an update – the cells are producing what they are supposed to. Energy use savings is only showing a 3% decrease so they still think something is wrong with the meter. They shut down the preschool for a week and it didn't affect the meter. Now they will shut the panels off and see what happens. Thomas said if it's not working the way we think it should, are we still going forward with other projects? John said all the other solar projects are working fine, just not at the high school. Richard asked how much the panels produce in real dollars. John replied it is 8.5 cents per kilowatt but he doesn't have a total.

7. **Unfinished Business:**
A. 15/16-15: Discharge Ad-Hoc Study Committee on the Strategic Plan for Coventry Fire and EMS Services: Motion #15/16-370: Matthew O'Brien moved to discharge the Ad-Hoc Study Committee on the Strategic Plan for Coventry Fire and EMS with great thanks for their hard work. The motion was seconded by Richard Williams and carried on unanimous vote.

8. **New Business:**

A. 15/16-93: Authorization: Town Council Student Achievement Awards: Julie Blanchard said each year the high school staff picks winners in six achievement categories and the Council presents a plaque at the awards ceremony. If the Council is in favor of continuing this tradition we would look for volunteers to present the awards. The event is June 2nd. Consensus was to continue this initiative. Hannah said she will go – she will be there anyway presenting the Larry Pietrantonio scholarship. Julie will also go.

B. 15/16-94: Consideration and Possible Action: Amendment to Road Acceptance Policy (E)
1. Amendment to policy
2. Consideration: Extension of deadline for Pine Lake Shores
Motion #15/16-371: Thomas Pope moved to insert language into section 2.0 in the last line as follows: "Requests for extensions will be considered on case by case basis by the Town Council." Lisa Thomas seconded the motion. Thomas said the reason for the change is lack of specificity by town staff that has caused misinterpretations by both residents and staff. It is going to take time to accomplish our goal and he feels with an extension it would be possible. **The motion carried on unanimous vote.**

Motion #15/16-372: Thomas Pope moved to extend Pine Lake Shores an additional five years to bring their roads up to acceptance standards and allow the Town Council to make a judgement to accept them if they are brought up to standards. Matthew O'Brien seconded the motion. Matthew asked their deadline is currently. John replied September 2017. The extension would be to September 2022. **The motion carried on unanimous vote.**

Andy Brodersen asked once the roads become the Town's, if it changes the tax status at all? John said theoretically. A house on a town road has a higher value than a house on a private road. It takes a while for the market to adjust, but there is more certainty of repair if your house is on a town road. He thinks the difference might be several thousand, not tens of thousands of dollars.

9. **Executive Session:**
   Motion #15/16-373: Thomas Pope moved that the Town Council enter into Executive Session pursuant to Connecticut General Statutes 1-200(6)(B)-discussion of strategy and negotiation with respect to pending claims and litigation to which the public agency or a member thereof, because of his conduct as a member of such agency is a party until such litigation claim has been finally adjudicated or otherwise settled with the following people in attendance: Town Council members, the Town Manager and the Finance Director. The motion was seconded by Matthew O'Brien and carried on unanimous vote.

   Motion #15/16-374: Thomas Pope moved that the Town Council enter into Executive Session pursuant to Connecticut General Statutes 1-200(6)(D)-discussion of the selection of a site or the lease, sale or purchase of real estate by a political subdivision of the state when publicity regarding such a site, lease, sale, purchase or construction would cause a likelihood of an increased price until such time as all of the property has been acquired or all proceedings or transactions concerning same have been terminated or abandoned with the following people in attendance: Town Council members, the Town Manager and the Finance Director. The motion was seconded by Matthew O'Brien and carried on unanimous vote.

   Executive Session commenced at 9:40 PM.

   Motion #15/16-375: Richard Williams moved to leave Executive Session at 10:05 PM. The motion was seconded by Matthew O'Brien and carried on unanimous vote.

10. **Adjournment:**
    Motion #15/16-376: Matthew O'Brien moved to adjourn the meeting at 10:06 PM. The motion was seconded by Thomas Pope and carried on unanimous vote.

Respectfully submitted,

Laura Stone
Town Council Clerk
Note: These minutes are not official until acted on by the Town Council at its next regular meeting. Those meeting minutes will reflect approval or changes to these minutes.

ATTACHMENTS

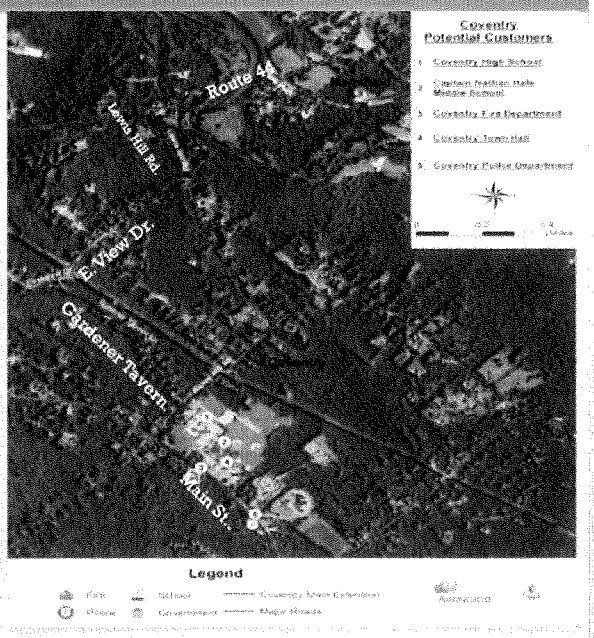
Natural Gas Extension

Mansfield Depot to Main Street in Coventry

May 2, 2016: Office of Town Manager

Coventry Proposed Expansion

- Proposed 4 miles of new gas infrastructure.
- Main to be installed starting from Mansfield in the vicinity of the UConn Depot Campus and will continue ending at Main Street.
- Natural Gas available to:
  - Coventry High School
  - Nathan Hale Middle School
  - Coventry Town Offices
  - Fire Station
  - Police Station
- 65 homes along the route



- Project Cost Estimate: $2,287,000
- CNG Subsidy: $1,154,800
- Town payment request: $629,200: $90,000/yr. for 7 years 0% interest
- Balance of project expense to CNG to be recouped from sales estimated by CNG (with no Town risk)
- Town to patch local roads
- CNG to patch State roads
- Connect our schools and buildings by 12/31
- CNG to pay property taxes: Estimated at $76,448 for first 7 years

CNG Offer

- If approved the work would be designed, permitted and constructed by CNG this summer.
- Town and School buildings must connect within 90 days of meter installation or December 31.
- Town Building committee would bid work for boilers this summer as top priority of their larger project.
- Anticipated installation and cut over of boilers in December 2016.
- Project should not impact normal school routine since Schools have dual boilers in three locations. The installation and/or conversions can be phased without loss of heat to complex. Gas piping from meter to boiler rooms is minimal and will not be disruptive.

Project Timing

- No one is required to connect
- No additional cost impact to pipeline abutters
- Owners have five year grace period to tie in without any expense to them for service line and meter to house
- Will have roads, or right of ways repaired after construction
- Eligible for tax incentives and rebates for gas heating systems. Can also select alternative supplier
- Will need to be aware of buried pipelines and comply with already required Call Before You Dig requirements.

Neighborhood Impact

- Town Roads impacted: Lewis Hill Road, Eastview Drive, Gardner Tavern Lane, Ripley Hill Road
- Construction call for 18 to 24 inch trench in road or shoulder
- CNG restores State roads: Town fixes Town roads
- Eastview and Gardner Tavern were already scheduled for work this year and Lewis Hill and Ripley the following year
- Town will patch and chip seal summer of 2017. Would delay planned work on Gardner Tavern and Eastview a year to allow work to be completed and add in other two roads
- To be paid for out of summer roads program

Roads

- DID YOU KNOW WE ALREADY HAVE NATURAL GAS IN TOWN? - DUKE ENERGY HIGH PRESSURE GAS LINE
- CT Town experiences very positive. In survey of membership of CTCMA members no safety concerns raised
- CNG to use plastic pipe to avoid corrosion issues and enhance flexibility and bonding
- 562,000 CT homes and businesses connected
- Nationwide 65 million homes and businesses
- Complies with State and Federal safety standards
- Training given to first responders, 24 hour monitoring and response crews

Safety

- "…Shale gas for a **lower-cost, less polluting and domestically available** (and thus more reliable) foundation for society's needs. In identifying natural gas as a **bridge** to a truly sustainable energy future, it [the plan]puts forward a seven-year game plan for expanding access to natural gas across the state with a goal of providing nearly 300,000 CT homes, businesses and other facilities with an energy choice that includes natural gas…"
- "… initiatives…will **measurably reduce** CT's greenhouse gas emissions…"
- "Promote 'distributed generation'…microgrids that would keep critical facilities…(police & fire), warming shelters 'up…'"
- "…increased availability of shale gas at prices that are now **significantly lower** than oil…"
- "Because natural gas combustion produces **lower emissions than oil** or coal, conversion to natural gas promises a **cheaper, cleaner and more reliable fuel**…"

DEEP: Comprehensive Energy Strategy for CT (2013)

- This project was reviewed and endorsed (with conditions on financial impacts) by the following Town agencies:

- Energy Advisory/Alt. Energy Committee
- Coventry Board of Education
- Building Energy and Efficiency Building Committee
- Coventry Planning and Zoning Commission

Reviews and Endorsements

- Established May 5, 2014 to address efficiency repairs and other improvements at Capt. Nathan Hale Middle School/Coventry High School, the Town Hall, and other Town and School facilities.
- Committee charged with reviewing energy audits and other plans, hiring a professional engineer, and developing a projected scope of work with cost estimates.
- Committee asked to consider traditional funding techniques as well as performance contracting techniques.
- The Committee asked to present its report to public forums, including a Special Town Meeting (if needed), and to educate the public prior to any referendum.
- After approval the Committee is charged to construct project including:
  - a) Properly expending funds provided by the Town
  - b) Designing and bidding, and monitoring
  - c) Assuring timely submittal of requests for grant reimbursements/payments from the State of Connecticut
  - d) Hiring a Clerk of the Works, if required, to assure quality construction practices and to keep a log of construction.

Role of Energy & Building Efficiency Building Committee

- Savings on replacing oil tanks at CHS, CNHMS which need to be removed by 2018 per State regulations. ($74,532) plus additional tank in 12 years for $45,386
- Savings from avoiding buying and installing a propane tank at Town Hall ($6,800-estimate)
- Energy Rebates on new gas boilers not available for previously planned oil boiler replacing-$50,000
- Possible State school construction aid for unit ventilators alternatives due resolving existing noise code violations in future project stages.
- Existing fuel oil contract issues: see future slides

Cost Impact

- BL Companies, the consultant to the Building Energy and Efficiency Building Committee, was requested to prepare a life cycle comparison of the cost of the previously proposed school energy project comparing proceeding with oil versus converting to natural gas

Twenty Year Comparsion of systems

	1) Existing oil	2) Gas conversion burners	3) Gas Boiler replacement	Saving conversion burners	Savings New Gas Boilers	Annualized
Total Cost	$4,936,315	$2,642,157	$2,484,324	$2,294,158	$2,451,991	$122,600
Energy Cost	$1,276,180	$669,912	$593,140	$606,268	$683,040	$34,152
Maintenance cost	$169,440	$107,872	$54,000	$61,568	$115,440	$5,772
CO2 emmissions (lbs)	1,853,669	11,594	8,541	1,842,075	1,845,128	92,256

Cost Comparison

- Fuel oil purchase contract requires Town and Schools to buy 98,000 gallons of oil at $1.79 per gallon between 7/1/16 and 6/30/17 (80,000 School, 18,000 Town)
- Assuming a December conversion a significant quantity of oil will remain on this contract.
- Options being pursued as of this writing:
  - Rent fuel storage and carryover oil for use in remaining Town/School facilities ($.15 cents per gallon per month quoted but other options may exist)
  - Resell to other user (may need to pay extra transportation fee estimated around 5 cents/gal depending on distance)
  - Pay liquidated damages: Set by market and varies based on current fuel prices, season and demand. Today's price is $1.20/gal which reflects summer pricing. Mid winter and rising oil prices should be less than this.

Other issues: Existing fuel contracts

- Best estimate of fuel balance on 1/1/17
  - Schools 31,299 gallons
  - Town 13,544 gallons (Town Hall 9,600 gallons regardless of decision since it was changed to propane)
  - Best Guess of worst case scenarios: selling oil at discount at 1.50/gallon to large users (44,843 gallons at .29 loss=$13,004 plus .05 delivery fee increase = $2,242 for a total of $15,246
  - Alternative cost to liquidate these gallons = $53,816

Excess fuel discussion

- OPTION 1: Combo of new boilers and conversions
- CHS/Hale new HE Gas Boilers $462,000
- Other buildings (Police, CVFA, Town Hall, Annex, School admin.) burner conversions $10,000 total
- Tank removals Schools $27,536, Town Hall $3,500.
- Financing plan: Lease purchase boilers at $52,790/yr. for ten years and pay for other expenses from CNREF fund for a total in FY 16/17 of $93,826. Note: $150,000 increase in FY 16/17 budget.
- Liquidated damages (if applicable) could also be paid out of the CNREF fund
- In FY 17/18 the $150,000 annual payment into CNREF would be adequate to cover Community payment of $90,000 and lease purchase payment of $52,790 (total $142,790); no increase in taxes required

Other issues: 1) Paying for new boilers for school and conversions for other buildings

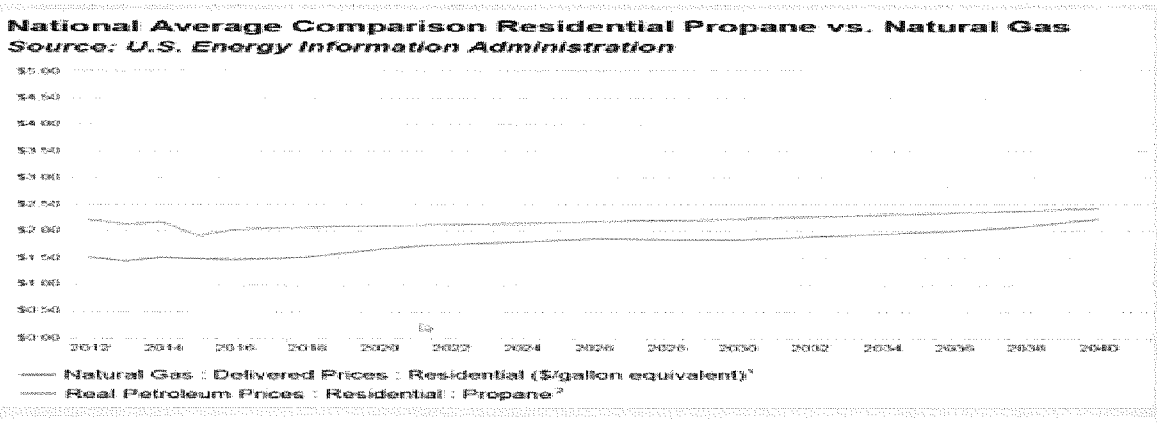
- Option 2: Conversion burners only
- CHS/Hale conversions $57,997 plus other buildings $10,000
- Tank removals Schools $27,536, Town Hall $3,500.
- Total from CNREF in FY 16/17 $99,033
- Liquidated damages (if applicable) could also be paid out of the CNREF fund
- No on going expenses after FY 16/17

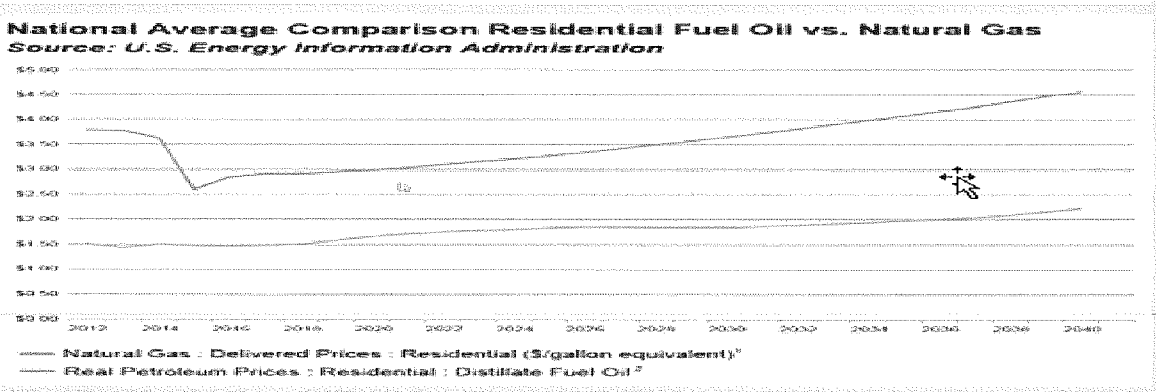
Other issues: 2) paying for conversion burners for all

- Annual interest free payments of $90,000 to CNG from Annual budget for seven years starting FY 2017-18, to be offset by fuel differential savings (gas vs. oil), property taxes paid by CNG, lower HVAC maintenance, and higher efficiency equipment. Estimated to break even within 7 years.
- CNG Payments will be from CNREF Fund. If we keep current annual payment into fund unchanged the payments will not require a tax increase, or cuts to other Capital budget items.
- Cost of equipment conversion of existing boilers can be paid for out of this account in FY 16/17 since no CNG payment is due until following year.
- Replacing school boilers over 50 years old (as planned before this CNG offer was made) will require additional funding authorization such as a Town Meeting/Referendum or lease purchase.

Payment Plan to CNG

Price comparison of Gas to propane & oil





- Like electric power supply purchases the Town/Schools could buy natural gas from third party vendors and just pay applicable transmission costs
- Town/School can change vendors annually
- The Capitol Region Council of Governments bids out natural gas pricing for Towns when market conditions warrant
- Current Fuel dealer gave estimate of $1.16 per CCF which is above high volume pricing but below smaller buildings pricing offered by CNG.

Price Competition

Engineering Economic Analysis
for

High School Complex
Natural Gas Expansion

Coventry High School Complex
78 Ripley Hill Road
Coventry, CT 06238

Prepared by:

BL Companies

355 Research Parkway
Meriden, Connecticut 06450
203-630-1406
www.blcompanies.com
BL#16D3011

School Energy and Building Efficiency Committee

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A. EXECUTIVE SUMMARY

A.1 – Project Overview

On April 20th, 2016 BL Companies was engaged to perform an engineering economics analysis for the Coventry High School Complex. The purpose of this report is to provide a base line energy use and operating expenses that can be used to determine the cost benefit of converting the complex to natural gas.

An overall summary of the projected operating costs is as follows:

		EXISTING SYSTEM	GAS CONVERSION BURNERS	GAS BOILER REPLACEMENT
20 Year	Total Cost	$ 4,936,315	$ 2,642,157	$ 2,484,327
	Energy Cost	$ 1,276,180	$ 669,912	$ 593,140
	Maintenance Cost	$ 169,440	$ 107,872	$ 54,000

Note: This data is based on the assumptions listed in appendix D.1.

A.2 - Recommendations

The option with the lowest total present net worth is the Gas Boiler Replacement, although the "First Year" investment is estimated to be $525,000. The energy savings will be approximately $68,000 per year with a simple payback of 7-10 years. Additionally, the project would qualify for approximately $50,000 through the current Connecticut Gas Heating Equipment Rebate program. Currently this program refunds $8.00 per input MBH, see "C.1– Energy Use Data". This option includes the removal of all existing oil fired hot water boilers serving the High School Complex, installation of new high efficiency gas fired boilers, and all Professional Services.

A.3 –Assumptions

Utility Rate Assumptions		
Fuel	*Cost Basis*	*Escalation*
Electricity	$0.18 kWh	0% Per Year
No. 2 Heating Oil	$1.79 Gal.	4% Per Year
Natural Gas	$0.81 Therm.	4% Per Year

Maintenance, Existing Equipment – The average yearly cost is based on three years of maintenance records. These records include replacement parts, major services, and emergency services. The costs do not include any labor for town employees or maintenance staff.

Maintenance, New High Efficiency Gas Boilers – The average yearly cost is based on data provided by the manufacturer regarding the labor hours and material required for annual maintenance. The labor rate was calculated using RSMeans Mechanical Cost Data.

Oil Boiler Replacement Costs – The estimated cost of replacing the existing oil fired boilers is based on new manufactured equivalent sized equipment. The material estimates were provided by a reputable manufacturer. The labor estimates were calculated using RSMeans Mechanical Cost Data.

Gas Conversion Costs – The estimated cost of installing gas conversion burners for the existing oil fired boilers is based on material estimates provided by a reputable heating distributor and the labor estimates were calculated using RSMeans Mechanical Cost Data.

New Natural Gas Boiler Costs – The estimated cost of removing the existing oil (or gas converted) boilers and installing new high efficiency gas boilers is based on installing five (5) high efficiency gas boilers per boiler room. The material estimates were provided by a reputable manufacturer. The labor estimates were calculated using RSMeans Mechanical Cost Data.

Additional Costs - All equipment costs include a 10% Contingency, 10% Project Management, and 7% for Professional Engineering Design, Construction Administration, and Commissioning.

B. SCENARIO DESCRIPTION

The three scenarios presented are representative of the most cost effective options for the Town of Coventry.

Option 1 – Existing System
Continue to use existing boilers and burners:

This option represents the project fuel usage, maintenance, and planned replacement costs for the High School Complex. All equipment would remain operating as is. The maintenance costs per year are estimated based on three years of maintenance bills. Planned replacements of the existing boilers are based on a 25-year life expectancy. Boilers are scheduled to be replaced with equivalent equipment of similar size. The state mandates that in ground oil tanks be replaced within 30 years of initial installation. The in ground oil tanks are scheduled to be replaced at year 2, 5, and 9 to represent this state required scheduled replacement.

Option 2 – Gas conversion burners
Convert oil burners to use natural gas:

This option represents the projected fuel usage, maintenance, and planned replacement costs for the High School Complex. All oil fired boilers providing building heat would be modified to burn natural gas. The cost of converting the existing boilers to natural gas is seen in year one. The maintenance costs per year are estimated based on three years of maintenance bills. The maintenance costs reflect the lower cost of servicing new high efficiency gas boilers. Planned replacements of the existing boilers are based on a 25-year life expectancy. Boilers are scheduled to be replaced with high efficiency gas equipment sized to meet the actual heating load of the building. The in ground oil tanks are scheduled to be removed in year one to satisfy the state requirements and reduce liability for the town.

Option 3 – Gas boiler replacement
Replace all boilers with high efficiency gas equipment:

This option represents the projected fuel usage, maintenance, and planned replacement costs for the High School Complex. All oil fired boilers providing building heat would be replaced with high efficiency gas equipment sized to meet the actual heating load of the building. The cost of replacing the existing boilers with high efficiency equipment is seen in year one. The maintenance costs are estimated based on regional averages for the proposed equipment. The in ground oil tanks are scheduled to be removed in year one to satisfy the state requirements and reduce liability for the town.

C. ENERGY USE DATA

The recommendations and economic analysis are based on the heat loss estimates for each hydronic heating system. These systems are broken out by the space that they serve; CNH Middle School, Complex Addition, and High School. These calculations are based on the average occupancy and ventilation classifications for each building.

C.1 – CNH Middle School

Air System Information

Air System Name ..... **CNH Middle School**
Equipment Class ..... **TERM**
Floor Area ..... **64,158.0** ft²
Location ..... **Coventry, Connecticut**

Heating System Sizing Data

Max load ..... **1,490.6** MBH
Outside/ Indoor Air Temp ..... **2.0 / 70.0** °F

Outdoor Ventilation Air Data

Design airflow CFM ..... **20,315** CFM
CFM/ft² ..... **0.32** CFM/ft²

C.2 – Complex

Air System Information

Air System Name ..... **Complex**
Equipment Class ..... **TERM**
Floor Area ..... **53,642.0** ft²
Location ..... **Coventry, Connecticut**

Heating System Sizing Data

Max load ..... **1,182.0** MBH
Outside/ Indoor Air Temp ..... **2.0 / 70.0** °F

Outdoor Ventilation Air Data

Design airflow CFM ..... **16,100** CFM
CFM/ft² ..... **0.30** CFM/ft²

C.3 – High School

Air System Information

Air System Name ..... **High School**
Equipment Class ..... **TERM**
Floor Area ..... **88,235.0** ft²
Location ..... **Coventry, Connecticut**

Heating System Sizing Data

Max load ..... **2,058.4** MBH
Outside/ Indoor Air Temp ..... **2.0 / 70.0** °F

Outdoor Ventilation Air Data

Design airflow CFM ..... **28,050** CFM
CFM/ft² ..... **0.32** CFM/ft²

D.1
Life Cycle Summary

Lifecycle Summary

Project: Coventry Energy Projects - High School Complex 4/29/2016
Prepared By: BL Companies 2:17:49 PM

Coventry Energy Project - High School Complex

Existing System or Base Line 20 Year Life Cycle Analysis
Gas Conversion Burners 20 Year Life Cycle Analysis
Gas Boiler Replacement 20 Year Life Cycle Analysis

Type of Analysis.....Public Sector Lifecycle Analysis
Type of Design Alternatives.....Independent
Length of Analysis.....20 yrs

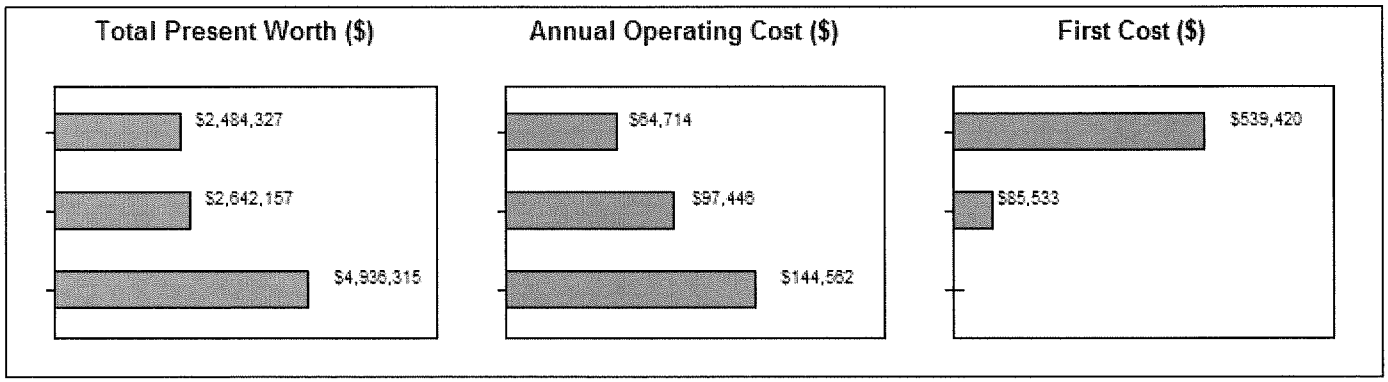

Table 1. Executive Summary

Economic Criteria	Best Design Case for Each Criteria	Value ($)
Lowest Total Present Worth	Gas Boiler Replacement	$2,484,327
Lowest Annual Operating Cost	Gas Boiler Replacement	$64,714
Lowest First Cost	Existing System	$0

Table 2. Design Cases Ranked by Total Present Worth

Design Case Name	Total Present Worth ($)	Annual Operating Cost ($/yr)	First Cost ($)
Gas Boiler Replacement	$2,484,327	$64,714	$539,420
Gas Conversion Burners	$2,642,157	$97,446	$85,533
Existing System	$4,936,315	$144,562	$0

D.2
Design Case Inputs

Design Case Inputs

Project: Coventry Energy Projects - High School Complex 4/29/2016
Prepared By: BL Companies 2:17:51 PM

Type of Analysis ..... Public Sector Lifecycle Analysis
Length of Analysis ..... 20 yrs
Income Taxes ..... Not Considered

General Information :

Design Case Name ..... Existing System
Description :
Continue to use existing boilers and burners:

Investment Costs :

Cost Item	Cost ($)	Year Incurred	Useful Life (yrs)
Replace CNH Boilers	$ 134,058	8	25
Replace CHS Boilers	$ 202,455	11	25
Replace Complex Boilers	$ 188,776	15	25
Replace CNH Oil Tank	$ 24,544	2	30
Replace Complex Oil Tank	$ 45,386	5	30
Replace CHS Oil Tank	$ 49,988	9	30

Annual Operating Costs :

Cost Item	Cost ($)	Start Year	Number Of Years	Esc Rate (%/yr)
No. 2 Fuel Oil	$ 127,618	1	20	4.00
Maintenance and Repair	$ 16,944	1	20	0.00

Design Case Inputs

Project: Coventry Energy Projects - High School Complex 4/29/2016
Prepared By: BL Companies 2:17:51 PM

Type of Analysis ..... Public Sector Lifecycle Analysis
Length of Analysis ..... 20 yrs
Income Taxes ..... Not Considered

General Information :

Design Case Name ..... Gas Conversion Burners
Description :
Convert oil burners to use natural gas:

Investment Costs :

Cost Item	Cost ($)	Year Incurred	Useful Life (yrs)
Oil Tank Removal - All Tanks	$ 27,536	0	0
Oil to Gas - Burner Conversions	$ 57,997	0	0
CNH Boiler Replacement	$ 170,628	8	25
CHS Boiler Replacement	$ 170,628	11	25
Complex Boiler Replacement	$ 170,628	15	25

Annual Operating Costs :

Cost Item	Cost ($)	Start Year	Number Of Years	Esc Rate (%/yr)
Natural Gas	$ 80,502	1	3	4.00
Natural Gas	$ 75,014	3	1	4.00
Natural Gas	$ 65,546	4	3	4.00
Natural Gas	$ 59,314	7	13	4.00
Maintenance and Repair	$ 16,944	1	3	0.00
Maintenance and Repair	$ 13,096	3	1	0.00
Maintenance and Repair	$ 9,248	4	3	0.00
Maintenance and Repair	$ 5,400	7	13	0.00

Design Case Inputs

Project: Coventry Energy Projects - High School Complex 4/29/2016
Prepared By: BL Companies 2:17:51 PM

Type of Analysis ..... Public Sector Lifecycle Analysis
Length of Analysis ..... 20 yrs
Income Taxes ..... Not Considered

General Information :

Design Case Name ..... Gas Boiler Replacement
Description :
This option represents repalcing all the boilers with high efficiency gas boilers on day one.

Investment Costs :

Cost Item	Cost ($)	Year Incurred	Useful Life (yrs)
Oil Tank Removal - All Tanks	$ 27,536	0	0
CNH Boiler Replacement	$ 170,628	0	1
CHS Boiler Replacement	$ 170,628	0	1
Complex Boiler Replacement	$ 170,628	0	1

Annual Operating Costs :

Cost Item	Cost ($)	Start Year	Number Of Years	Esc Rate (%/yr)
Natural Gas	$ 59,314	1	25	4.00
Maintenance and Repair	$ 5,400	1	20	0.00

D.3
Cash Flow Details

Cash Flow Details

Project: Coventry Energy Projects - High School Complex
Prepared By: BL Companies

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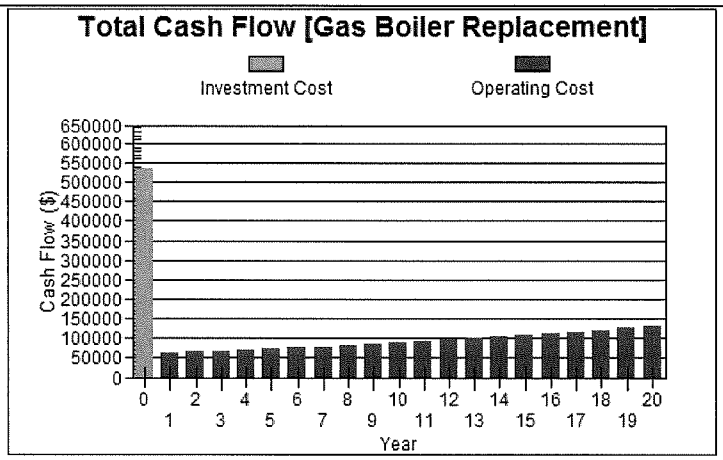
Coventry Energy Project - High School Complex

Existing System or Base Line 20 Year Life Cycle Analysis
Gas Conversion Burners 20 Year Life Cycle Analysis
Gas Boiler Replacement 20 Year Life Cycle Analysis

Type of Analysis ..... Public Sector Lifecycle Analysis
Type of Design Alternatives ..... Independent
Length of Analysis ..... 20 yrs



1A. Component Cash Flows [Gas Boiler Replacement], Actual Value

Year	Date	Cash Investment ($)	Annual Operating Cost ($)	Total Cash Flow ($)
0	Initial	539,420	0	539,420
1	1	0	67,087	67,087
2	2	0	69,554	69,554
3	3	0	72,120	72,120
4	4	0	74,789	74,789
5	5	0	77,565	77,565
6	6	0	80,451	80,451
7	7	0	83,453	83,453
8	8	0	86,575	86,575
9	9	0	89,822	89,822
10	10	0	93,199	93,199
11	11	0	96,711	96,711
12	12	0	100,364	100,364
13	13	0	104,162	104,162
14	14	0	108,113	108,113

Cash Flow Details

Project: Coventry Energy Projects - High School Complex
Prepared By: BL Companies

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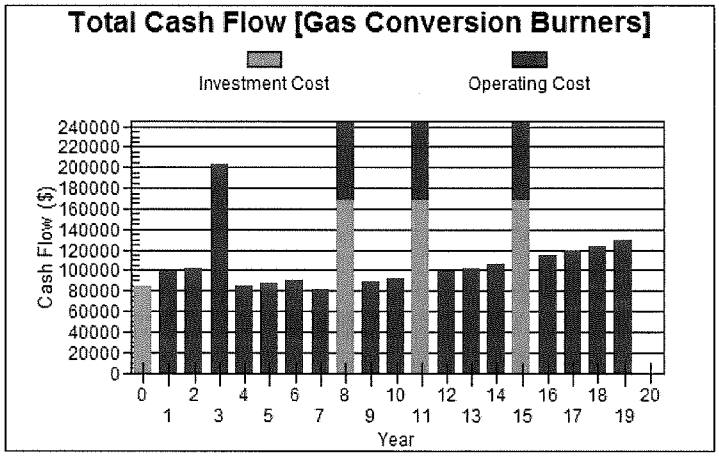
Year	Date	Cash Investment ($)	Annual Operating Cost ($)	Total Cash Flow ($)
15	15	0	112,221	112,221
16	16	0	116,494	116,494
17	17	0	120,938	120,938
18	18	0	125,559	125,559
19	19	0	130,366	130,366
20	20	0	135,364	135,364
Totals		539,420	1,944,907	2,484,327



2A. Component Cash Flows [Gas Conversion Burners], Actual Value

Year	Date	Cash Investment ($)	Annual Operating Cost ($)	Total Cash Flow ($)
0	Initial	85,533	0	85,533
1	1	0	100,666	100,666
2	2	0	104,015	104,015
3	3	0	204,974	204,974
4	4	0	85,928	85,928
5	5	0	88,995	88,995
6	6	0	92,185	92,185
7	7	0	83,453	83,453
8	8	170,628	86,575	257,203
9	9	0	89,822	89,822
10	10	0	93,199	93,199
11	11	170,628	96,711	267,339
12	12	0	100,364	100,364
13	13	0	104,162	104,162

Cash Flow Details

Project: Coventry Energy Projects - High School Complex
Prepared By: BL Companies

4/29/2016
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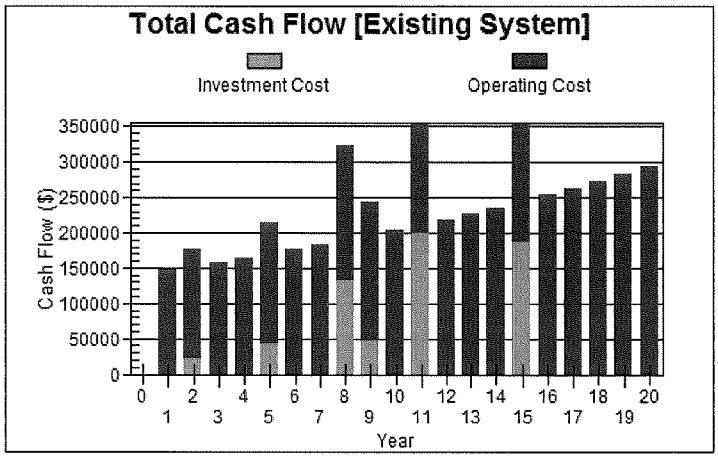
Year	Date	Cash Investment ($)	Annual Operating Cost ($)	Total Cash Flow ($)
14	14	0	108,113	108,113
15	15	170,628	112,221	282,849
16	16	0	116,494	116,494
17	17	0	120,938	120,938
18	18	0	125,559	125,559
19	19	0	130,366	130,366
20	20	0	0	0
Totals		597,417	2,044,740	2,642,157



3A. Component Cash Flows [Existing System], Actual Value

Year	Date	Cash Investment ($)	Annual Operating Cost ($)	Total Cash Flow ($)
0	Initial	0	0	0
1	1	0	149,667	149,667
2	2	24,544	154,976	179,520
3	3	0	160,497	160,497
4	4	0	166,239	166,239
5	5	45,386	172,211	217,597
6	6	0	178,421	178,421
7	7	0	184,881	184,881
8	8	134,058	191,598	325,656
9	9	49,988	198,584	248,572
10	10	0	205,850	205,850
11	11	202,455	213,406	415,861
12	12	0	221,265	221,265
13	13	0	229,437	229,437
14	14	0	237,937	237,937

Cash Flow Details

Project: Coventry Energy Projects - High School Complex
Prepared By: BL Companies

4/29/2016
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Year	Date	Cash Investment ($)	Annual Operating Cost ($)	Total Cash Flow ($)
15	15	188,776	246,777	435,553
16	16	0	255,970	255,970
17	17	0	265,531	265,531
18	18	0	275,475	275,475
19	19	0	285,816	285,816
20	20	0	296,571	296,571
Totals		645,207	4,291,109	4,936,316

D.4
Annual Energy and Emissions – Existing System

Annual Energy and Emissions – Existing System

Coventry Energy Projects - High School Complex 04/25/2016
BL Companies 11:08AM

Table 1. Annual Costs

Component	CNH ($)	Complex ($)	High School ($)
HVAC Components			
Fuel Oil	36,807	34,629	56,182
HVAC Sub-Total	**36,807**	**34,629**	**56,182**
Non-HVAC Components			
Electric	18,345	15,338	25,230
Non-HVAC Sub-Total	**18,345**	**15,338**	**25,230**
Grand Total	**55,152**	**49,968**	**81,411**

Table 2. Annual Energy Consumption

Component	CNH	Complex	High School
HVAC Components			
Fuel Oil (Gallon)	20,563	19,346	31,386
Non-HVAC Components			
Electric (kWh)	101,918	85,213	140,166

Table 3. Annual Emissions

Component	CNH	Complex	High School
CO2 Equivalent (lb)	534,627	502,996	816,046

Cost Basis:

$0.18 per kWh

$1.79 per Gallon No. 2 Heating Oil

$0.8123 per Therm Natural Gas

D.5
Annual Energy and Emission – Gas Burner Conversion

Annual Energy and Emissions – High School

Coventry Energy Projects - NG Conversion 04/25/2016
BL Companies 11:44AM

Table 1. Annual Costs

Component	CNH ($)	Complex ($)	High School ($)
HVAC Components			
Natural Gas	23,218	21,844	35,440
HVAC Sub-Total	**23,218**	**21,844**	**35,440**
Non-HVAC Components			
Electric	18,345	15,338	25,230
Non-HVAC Sub-Total	**18,345**	**15,338**	**25,230**
Grand Total	**41,563**	**37,183**	**60,669**

Table 2. Annual Energy Consumption

Component	CNH	Complex	High School
HVAC Components			
Natural Gas (Therm)	28,582	26,891	43,627
Non-HVAC Components			
Electric (kWh)	101,918	85,213	140,166

Table 3. Annual Emissions

Component	CNH	Complex	High School
CO2 Equivalent (lb)	3,344	3,146	5,104

Cost Basis:

$0.18 per kWh

$1.79 per Gallon No. 2 Heating Oil

$0.8123 per Therm Natural Gas

D.6
Annual Energy and Emissions – Gas Boiler Replacement

Annual Energy and Emissions – High School

Coventry Energy Projects - NG Replacement 04/25/2016
BL Companies 11:55AM

Table 1. Annual Costs

Component	CNH ($)	Complex ($)	High School ($)
HVAC Components			
Natural Gas	17,730	15,612	25,972
HVAC Sub-Total	**17,730**	**15,612**	**25,972**
Non-HVAC Components			
Electric	18,345	15,338	25,230
Non-HVAC Sub-Total	**18,345**	**15,338**	**25,230**
Grand Total	**36,075**	**30,950**	**51,202**

Table 2. Annual Energy Consumption

Component	CNH	Complex	High School
HVAC Components			
Natural Gas (Therm)	21,826	19,219	31,972
Non-HVAC Components			
Electric (kWh)	101,918	85,213	140,166

Table 3. Annual Emissions

Component	CNH	Complex	High School
CO2 Equivalent (lb)	2,553	2,248	3,740

Cost Basis:

$0.18 per kWh

$1.79 per Gallon No. 2 Heating Oil

$0.8123 per Therm Natural Gas

- BL Companies, the consultant to the Building Energy and Efficiency Building Committee, was requested to prepare a life cycle comparison of the cost of the previously proposed school energy project comparing proceeding with oil versus converting to natural gas

Twenty Year Comparsion of systems

	1) Existing	2.) Gas conversion burners	3) Gas Boiler replacement	Saving conversion	Savings New Gas Boilers	Annualized
Total Cost	$4,936,315	$2,642,157	$2,484,324	$2,294,158	$2,451,991	$122,600
Energy Cost	$1,276,180	$669,912	$593,140	$606,268	$683,040	$34,152
Maintenance cost	$169,440	$107,872	$54,000	$61,568	$115,440	$5,772
CO2 emmissions (lbs)	1,853,669	11,594	8,541	1,842,075	1,845,128	92,256

Cost Comparison