2013

ANNUAL REPORT

MONROE COUNTY ENVIRONMENTAL QUALITY & SUSTAINABILITY COMMISSION

Dedicated to Ann Gardner

1941-2013

Monroe County Environmental Quality & Sustainability Member

MONROE COUNTY GOVERNMENT

BOARD OF COMMISSIONERS

100 West Kirkwood Avenue, Rm 323

Bloomington, IN 47404

CONTENTS

Monroe County Environmental Quality & Sustainability Commission

2013 Members

Dave Parsons, Chair	Monroe County Commissioner Appointment
Terry Usrey, Vice Chair	Monroe County Commissioner Appointment
Marie Fleming, Secretary	Monroe County Commissioner Appointment
Ashley Cranor, Staff Support	Monroe County Commissioners Office
Jacqueline Bauer	City of Bloomington Appointment
Steve Cordell	Monroe County Council Appointment
Rick Dietz	Monroe County Council Representative
Ben Stidd	Monroe County Soil & Water Appointment
Julie Thomas	Monroe County Commissioner Representative
Emily Rex	Indiana University Representative
Ian Yarbrough	Monroe County Council Appointment
Annelise Huber, Intern	Indiana University– School of Public & Environmental Affairs

Monroe County Board of Commissioners & County Council

2013 Members

Board of Commissioners

Iris Keisling, President

Julie Thomas, Vice President

Pat Stoffers, Member

County Council

Geoff McKim, President

Rick Dietz, Vice-President

Marty Hawk, Member

Lee Jones, Member

Vic Kelson, Member

Ryan Langley, Member

Cheryl Munson, Member

LETTER FROM THE CHAIR

2013 was a great year of exciting progress toward the Monroe County Environmental Quality and Sustainability Commission's goals of providing education, advice, and encouragement regarding environmental quality and sustainability to Monroe County.

Early in 2013 we completed our 2012 Annual Report, our first. This is a very useful tool for the County because it provides accessible, accurate information for budgeting utilities, managing properties and assessing energy savings. In fact this annual report identified energy savings of $15,948.00 in 2012! This money was placed in the Energy Conservation Non-Reverting Fund and used for more efficient lighting in the Justice Building and outside the Courthouse. The results for 2013 have been calculated and show a savings based on usage of $33,456. We appear to be moving in the right direction on energy use!

The Thomson Property Project was a focus for 2013. We identified stake holders, gathered information, and organized a public meeting in November. This meeting generated pages of comments from the public and three proposals for use of the property. The proposal from South Central Community Action Program called Lettuce Work became our initial recommendation to the County Commissioners. SCCAP has been pursuing solutions to challenges involved in creating greenhouses with handicapped access on the property to bring this worthwhile project to fruition.

LETTER FROM THE CHAIR

Our Energy Conservation Working Group, working with Southern Indiana Renewable Energy Network (SIREN) and Mann Plumbing/MPI Solar from Bloomington and Solar Zentrum North America from Osgood, Indiana have received estimates for alternative sources of energy for the Justice Building's electricity and hot water needs. These Include solar photovoltaic panels, solar thermal panels and units that combine solar photovoltaic and thermal. We plan to have recommendations for the County Commissioners in 2014.

Other topics followed this year were the Food Policy Council's work on a local food policy, urban food production and zoning and methane production at the site of the inactive Monroe County Landfill.

2014 promises to be just as interesting with continued work on the Thomson Property Project, the Justice Building improvements, and in promoting energy conservation through Green Teams at a department level.

We have a good start and look forward to even more progress toward our goals in 2014.

Sincerely,

Dave Parsons, Chair
Monroe County Environmental Quality & Sustainability Commission

A YEAR IN REVIEW

Public Engagement

During 2013, EQUAS facilitated public input on these important topics:

Monroe County Landfill Methane Gas emissions

At the March EQUAS meeting, Kenneth Cline provided public input regarding methane gas emissions at the old county landfill on Anderson Rd. Further EQUAS activity on this issue is described in the Accomplishments and Actions section.

Food Policy Council

At the February EQUAS meeting, Stephen Hale and Michael Simmons provided public input on a sustainable foods initiative called the Food Policy Council. EQUAS is grateful to Stephen and Michael for bringing the issue of food sustainability to our attention. While no specific EQUAS action has been taken on this issue, the commission does recognize the importance of the issues involved, and commends the efforts of the Food Policy Council group.

Thomson Property

Perhaps the biggest project on the EQUAS agenda for 2013 was the planning and coordination efforts to re-purpose the "Thomson Property." Public input on this issue was provided by a local Disc (Frisbee) Golf representative at the June EQUAS meeting. On Nov. 7, following a substantial planning and organizing effort, EQUAS hosted a town-hall style meeting, inviting stakeholders and the public at large to discuss and suggest possible uses for the property. In response EQUAS received three formal proposals (Trillium, Disc Golf, Lettuce Works) and a number of informal ideas and suggestions (urban forest, bike paths, others). Further EQUAS activity on this issue is described in the Accomplishments and Actions section.

Justice Building Energy Upgrades

The EQUAS Energy working group provides analysis and advising on energy efficiency and renewable energy investments for county properties. In 2013 the working group was focused on improvements for the Justice Building. Solar Zentrum of Osgood, IN provided detailed input on their innovative solar technology.

A YEAR IN REVIEW

Accomplishments and Actions

Thomson Property

On the EQUAS agenda for 2013 was finding a new use for the County's Thomson property. EQUAS invested significant time and effort in this regard, culminating in the town-hall public meeting on Nov. 7. The town hall meeting was attended by key stakeholders and dozens of interested citizens. EQUAS collected, organized, and presented information including zoning, planning commission, public safety concerns, legal obligations, roadway issues, environmental conditions, and discussion was facilitated. Three proposals were received in response to the forum. The most complete and detailed proposal came from SCCAP for the Lettuce Works project which has been endorsed by EQUAS and forwarded to the County Commissioners as a recommended for implementation. Two other potential project proposals for a Disc Golf course and a multi-part permaculture development project from Trillium will hopefully develop into more complete and detailed project plans for consideration in 2014.

Energy Working Group

The Energy working group has assessed each county-owned building for potential energy efficiency upgrades as well as their potential for renewable energy enhancements. These analyses are intended to inform the County's Capital Improvement Projects (CIP) planning process. While significant action has been taken, the focus of the Energy working group in the latter half of the year has shifted specifically to the Justice building, the biggest energy liability among County buildings. The Energy working group has developed five completing strategies for improving the hot-water service at Justice, ranging from advanced solar technology to more energy efficient boilers. Final recommendation to the Commissioner's Office from EQUAS on the Justice building project is forthcoming in early 2014. Studies of all county building energy profiles will be an ongoing action by the energy working group.

Landfill Methane Emissions

EQUAS became aware of the potential problem of methane gas leaking from the county's former landfill operation on Anderson Road. Actions taken in this regard include:

- Scheduled a landfill tour conducted by Solid Waste Management District person
- Acquiring copies of cost/benefit analysis of methane capture from IU-SPEA
- Funding for a full site study of methane emissions included in the 2014 County budget

It is the intention of EQUAS to provide recommendations for action on mediating methane emissions should the 2014 study demonstrate a need for action.

2013 MEETINGS

The Environmental Quality and Sustainability Commission met monthly in 2013. Officers were elected in February. Twelve members are currently serving the commission, representing a breadth of expertise, including soil and water, solar energy, composting, and sustainable agriculture/farming. The Commission also includes two non-voting ex officio members, one a member of the County Commissioners, and the other a member of the County Council.

The Commission's **energy work group** worked to further study and implement energy conservation initiatives . The group is responsible for reviewing the annual report data collected by the Commissioners office. The Commission presented the County Commissioners with a recommendation on energy conservation opportunities.

Throughout the year the group meet with local experts to discuss and study a proposed **renewable energy project** for the Charlotte T. Zietlow Justice building expected to be installed in spring of 2014.

The Commission's **Thomson property work group** has made great efforts in deciding the use of the Thomson property this year. After a community meeting in November, the Commission presented their recommendations to the County Commissioners.

2013 PRESENTATIONS

Todd Thompson presented on the Geology of Monroe County at the May EQUAS meeting. Todd's presentation has helped EQUAS develop a better understanding of our natural environment and threats to our environmental quality.

Beth Rosenbarger (Monroe County Planning) presented on the Open Streets project at the September EQUAS meeting. Beth and the Monroe Co. Planning Dept. are to be commended for sponsoring efforts like Open Streets which promote healthy lifestyles in our community.

Geoff McKim (County Council President) presented on county financing/funding at the November EQUAS meeting. Geoff's presentation was very helpful for EQUAS's understanding of funding and budgeting within county government, especially regarding funding related to environmental or sustainability projects managed by EQUAS.

FUNDING

Sustainable Planning

In Ordinance 2012-09, the Monroe County Council established an "Energy Conservation Non-Reverting Fund" in order to sustain and fund the county's energy conservation efforts. Section 2 of Ordinance 2012-09 states "the Energy Conservation Non-Reverting Fund shall be funded with savings accruing from conservation efforts and conservation programs instituted by the county."

RENEWABLE ENERGY PRODUCTION

The 63.75 kilowatt solar array located on the Monroe County Government Center at the historic Showers building is the largest photovoltaic (PV) system on any state or local municipality government building in Indiana. The system was brought online in May 2012 and has generated 145,129.16 kilowatt hours of electricity, equating to $11,618.17 in energy savings, or the carbon equivalent of removing 21.3 cars from the road.

The Monroe County Environmental Quality and Sustainability Commission proposes the following annual process to fund the Energy Conservation Fund:

At the end of each calendar year, the MCEQSC will prepare an Annual report to the County Commissioners. This report will include a building-by-building quantitative and qualitative assessment of total energy and water use, based on the metered energy and water use reported by the utility companies. For each building that was occupied for the entire year, a comparison will be made between the current reporting year and the average of the previous one to three years (depending on data availability). The amount of money saved will be calculated by multiplying the difference in amount used (therms of gas, kWh of electricity, kilo gallons of water) by the current year's average rate.

The total cost differentials between the current reporting year and the previous year for all buildings that were occupied for the entire year will be combined, providing a single, all-inclusive energy cost savings for the current reporting year. If the all-inclusive total of annual energy cost savings is greater than zero, then the cost savings may be directed into the Energy Conservation Fund.

Money from sales of Renewable Energy Credits (RECs) will be contributed to the non-reverting fund directly.

Renewable energy infrastructure (i.e. solar PV, solar water hearing, etc) production will be converted directly to dollars at the average market rate of the year.

In the annual reports, the MCEQSC will provide recommendations to the County Commissioners on re-investing the Energy Conservation Fund where it can result in the most future .

SOLAR RENEWABLE ENERGY CREDITS

Renewable energy credits (REC) are tradable commodities that represent the green attributes associated with energy generated from renewable energy resources. One REC is generated every time one megawatt-hour (mWh) of clean, renewable electricity is produced.

A renewable portfolio standard (RPS) requires that energy suppliers in a certain state produce a proportion of their energy from renewable energy. To meet these RPS requirements, energy suppliers can (1) develop their own renewable energy facilities such as solar plants or wind farms to produce RECs or (2) purchase RECs from others that own renewable energy facilities.

87 RECs were sold in 2013 for $1,434

24 SRECs were sold in 2012 for $302

ANNUAL ENERGY SAVINGS & COSTS

$33,456

2013 ENERGY SAVINGS

$676,242

2013 ENERGY COSTS

$6,367

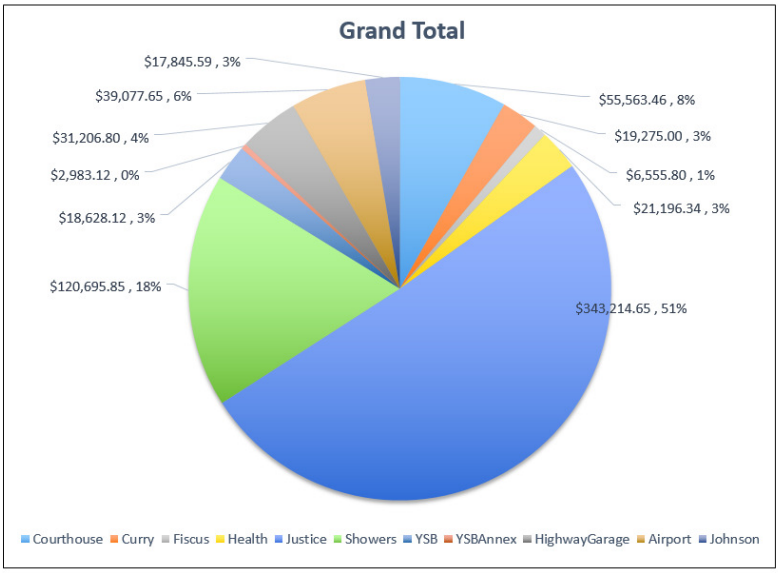
SOLAR COST SAVINGS

$27,089

ENERGY COST SAVINGS

80,498 kWh

SOLAR PRODUCTION



$483,935

TOTAL ELECTRICITY COST

$121,562

TOTAL WATER COST

$70,744

TOTAL NATURAL GAS COST

MONROE COUNTY GOVERNMENT

Conservation Policies, Building Upgrades, & Initiatives

The leadership of **Monroe County Government** has articulated a vision that Monroe County lead the State of Indiana in demonstrating that a high-performing economy can coexist with a low energy footprint. This vision has been translated into a number of policy initiatives and activities that have a demonstrable impact on the energy and water usage of our community and on the waste generated. This section of the report highlights several of the key initiatives from Monroe County Government over the past five years.

Several important initiatives are focused on ensuring the quality of the community's water supply for decades to come. In 2008, several critical amendments to the Monroe County code that established regulations over **stormwater management and landscaping practices;** the landscaping regulations were amended in 2012. Most importantly, 2012 also saw the startup of a Monroe County Stormwater Management Program, along with a dedicated funding mechanism – an impervious area based stormwater fee on all property owners in the unincorporated areas of the county.

Numerous initiatives focused on energy conservation. 2008 and 2009 both saw resolutions committing to **energy conservation goals.** The County invested in many energy conservation upgrades in county buildings. The County also replaced all vending machines in county buildings with efficient **Energy-Star** machines.

One of the most exciting policy initiative in 2012 was the establishment of the **Energy Conservation Non-reverting Fund (Ordinance 2012-09)**. This fund was designed to capture some of the savings from energy conservation and production initiatives, in order that they can be reinvested in further energy conservation initiatives.

Finally, in 2013 the Board of Commissioners partnered with Duke energy, enrolling the Justice building in their **PowerShare** program. The County receives energy and financial credit for participating.

Policy

ORDINANCE 2006-40
Rainfall and Water Quality Research Fund

ORDINANCE 2007-18
Need Determination for Solid Waste Facilities

RESOLUTION 2008-05
Fuel Conservation

RESOLUTION 2008-09
Energy Conservation Resolution

ORDINANCE 2008-10
Amendment to the Monroe County Code by Adding Chapter 764- Storm Water Management Board

ORDINANCE 2008-26
Amendment to the landscaping regulations set forth in Chapter 20 of the Monroe County Zoning Ordinance

RESOLUTION 2009-10
2009 Energy Conservation Resolution

ORDINANCE 2009-46
Establishment of a Paperless Initiative Nonreverting Fund

ORDINANCE 2012-01
Chapter 830, Landscaping General Revisions

ORDINANCE 2012-09
Establishment of an Energy Conservation Non-Reverting Fund

BUILDING IMPROVEMENTS

AIRPORT CHAROLTTE T. ZIETLOW JUSTICE COURTHOUSE CURRY FISCUS HEALTH HIGHWAY JOHNSON SHOWERS YOUTH SERVICES BUREAU/ANNEX

AIRPORT

CHARLOTTE T. ZIETLOW JUSTICE CENTER

Jail and Clerk's Office retrofitted to replace T-12 bulbs with T-8 and T-5 bulbs

External LED lighting

COURTHOUSE BUILDING

External LED lighting

HEALTH BUILDING

External LED lighting

FISCUS BUILDING

SHOWERS BUILDING

YOUTH SERVICES BUREAU

Addition of a bioswale for better runoff drainage courtesy of a grant from Sassafras Audubon Society

Replacement of faulty water softner

BUILDING DATA OVERVIEW

The following pages provide an in-depth building-by-building analysis of usage for each utility. The narrative of each building's utility costs discuss a net savings or loss compared to 2012. New buildings will not be counted in the calculations for the non-reverting fund because there is no base year of County ownership to compare utilities to.

This final net savings or loss is calculated by comparing the change in usage (kWh, therm, kGal) from 2012 to 2013 and multiplying the difference by that building's average 2013 rate ($/kWh, $/therm, $/kGal). Graphs are also included to compare utility costs across multiple years from the amount actually paid. By comparing usage rather than cost, (1) reducing the usage through conservation efforts continues to provide incentive even with rising energy prices; and (2) the county is not credited with savings in years that utility prices go down, unless actual usage goes down.

For example, electricity rates ($/kWh) in 2013 were on average 8.89% higher while natural gas prices were on average 10.2% lower than in 2012. With the methodology described, the Energy Conservation Fund can capture savings fairly, without over-counting the savings from gas prices dropping and without undercounting the savings from electricity prices rising.

The average rates for utilities over all County buildings were $0.10/kWh for Electricity, $0.61/therm for Natural Gas, and $11.57/kGal for Water and Waste Water.

DEFINITIONS

In the Annual Report 2013, buildings will also be scored based on their Energy Star Score if the building is large enough and can be properly measured by an Energy Star Score or by the EUI Score which is applied to smaller buildings that cannot obtain an Energy Star Score. Whether an Energy Star Score or an EUI measure are used for a building is based on Department of Energy (DOE) and Environmental Protection Agency (EPA) guidelines and are international standards for measuring energy use.

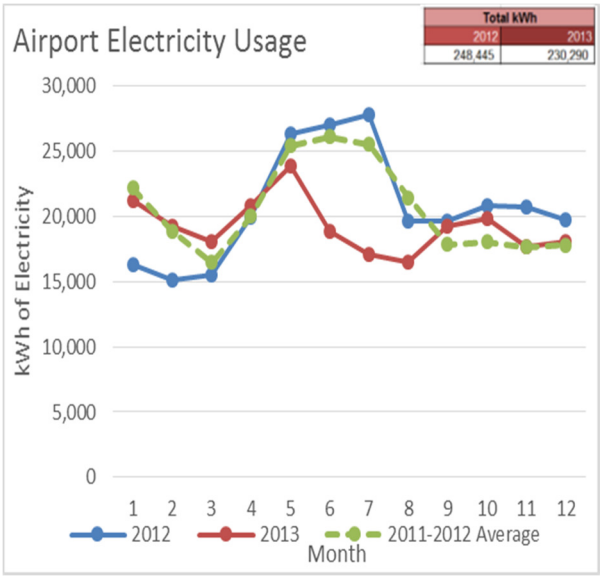
- **Energy Star Score** rating system is used on larger buildings such as Curry, Showers, and Justice. The ENERGY STAR Score is a measure of a property's performance relative to similar properties when normalized for climate and operational characteristics. These scores are based on data from national building energy consumption surveys and allows EnergyStar Portfolio to control for a building's energy performance including its hours of operation and building size. The Energy Star Score scaling ranges from 1 to 100 with a 1 representing the worst performing buildings and 100 representing the best performing buildings. A score of 75 or greater indicates a building that is eligible to earn an ENERGY STAR Certification.
- Small buildings such as Fiscus utilize **Weather-Normalized Source EUI (kBtu/ft2) Scores,** which determines the **source energy** use the property would have consumed during 30-year average weather conditions. For example, if 2012 was a very hot year, then your ***Weather Normalized Source Energy*** may be lower than your ***Source Energy Use***, because you would have used less energy if it had not been so hot. It can helpful to use this weather normalized value to understand changes in energy when accounting for changes in weather.
    - **Current EUI** measures the total amount of raw fuel in use at the property within a given time period.
    - **Baseline EUI** measures the total amount of raw fuel that is required to operate a given property. This includes what the property consumers on-site as well as losses that take place during generation, transmission, and distribution which allows a complete assessment of energy consumption resulting from the building's operations.
        - **Example:** A Current EUI that is less than a Baseline EUI shows that the building is consuming less than other buildings of its same size, capacity, and general use.

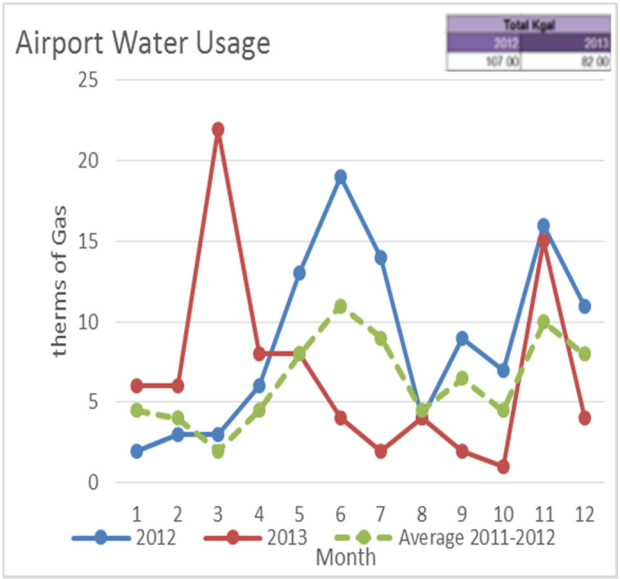
MONROE COUNTY AIRPORT

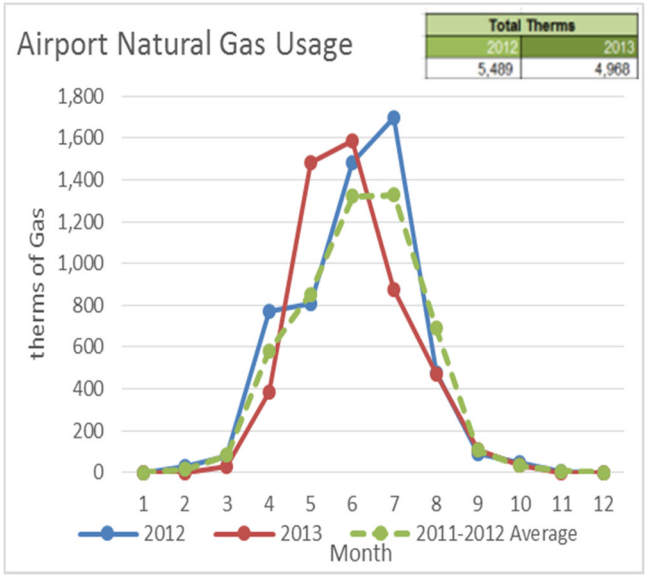
The Monroe County Airport has gone through a lot of remodeling. In 2012 and 2013, it proactively pursued more efficient technologies including replacing lighting. Compared to 2012, Monroe County Airport has decreased gas usage has dropped more (9.49%) than electric (7.31%). Water usage decreased by 23.36%. These savings totaled $3,307.

Use ⬇
Cost ⬇

$36,770.29
Total Utility Costs
$40,484.89 in 2012







CHARLOTTE T. ZIETLOW JUSTICE CENTER

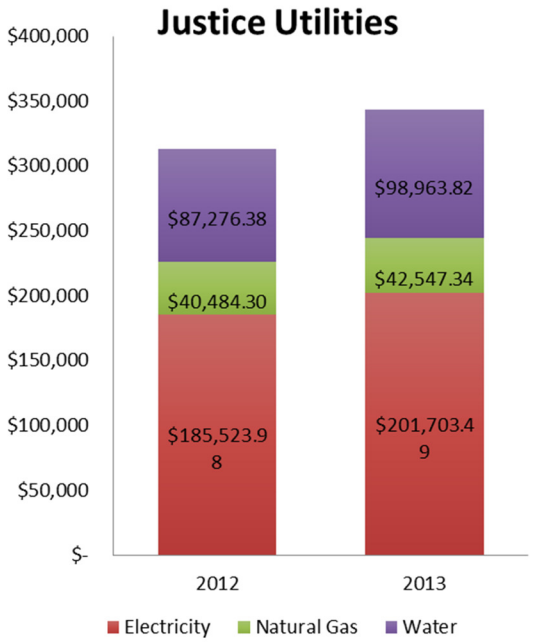
ENERGY STAR Score (1-100)	
Current Score:	56
Baseline Score:	64

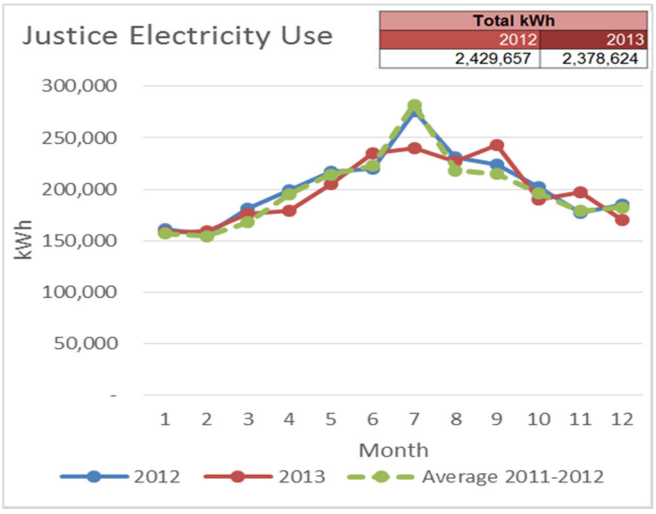
The Justice Center remains the largest energy consumer of the county buildings. The Justice Center has constant traffic, numerous offices, and a 24-hour jail facility that operates at maximum capacity. However in 2013, the County implemented a building-wide retrofit and replacement of outdated and inefficient lighting systems.

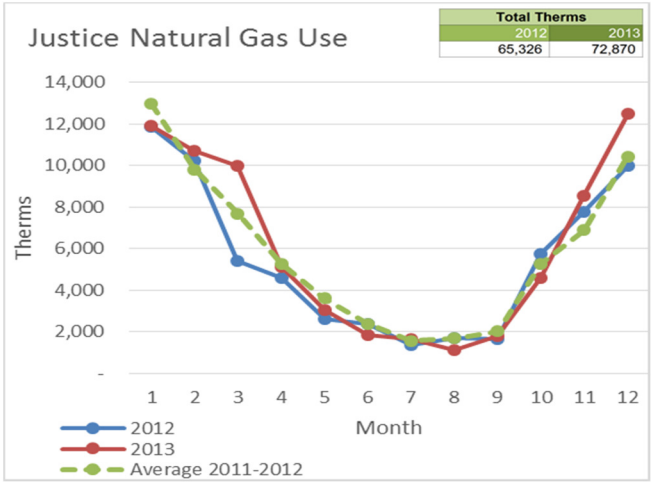
Use ↑
Cost ↑

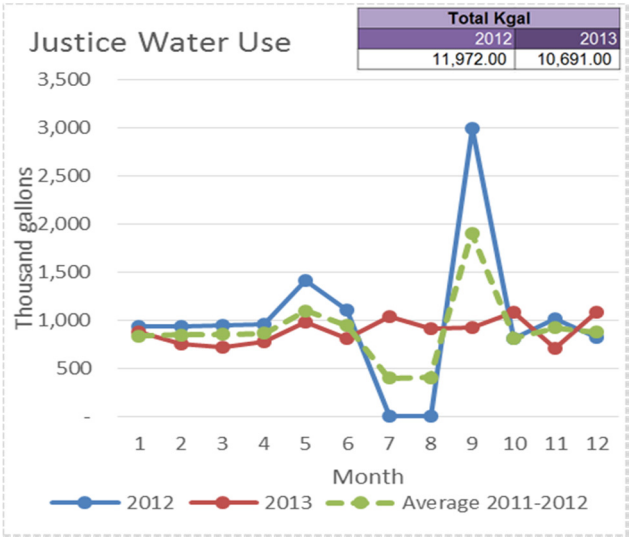
$343,214.65
Total Utility Costs
$313,284.66 in 2012

This year's electricity use has decreased by 2.1% and natural gas use is up by 11.55%. Electric costs increased by 8.72% in 2013, amounting to $16,180. The costs of natural gas increased by 5.10%, however due to the dual contract with Proliance and Vectren, which delivers natural gas at a reduced costs, there were some savings amounting to $2,608.75. Water use in the Justice Center decreased in 2013 by 10.7% while water costs still rose by 13.39%, highlighting the continued need to decrease water consumption through efficiency measures and behavioral strategies. Overall, utility costs for the Justice Center increased by $29,930 despite some drops in usage.









ENERGY STAR Score (1-100)	
Current Score:	17
Baseline Score:	12

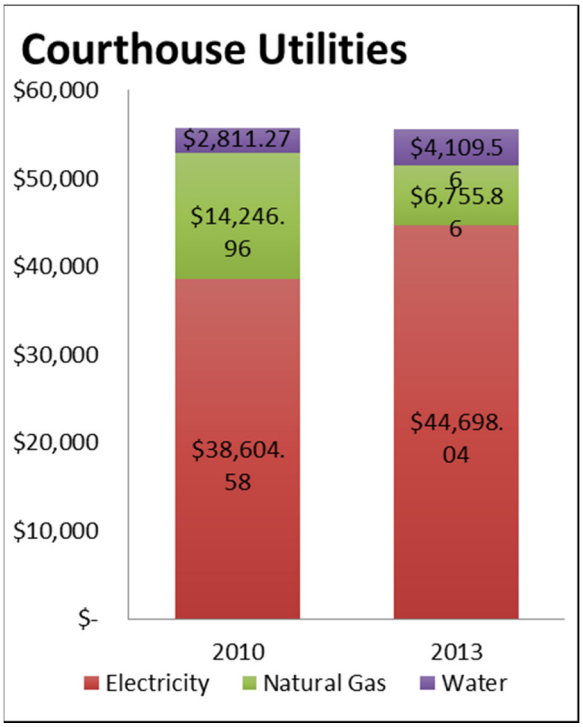
COURTHOUSE BUILDING

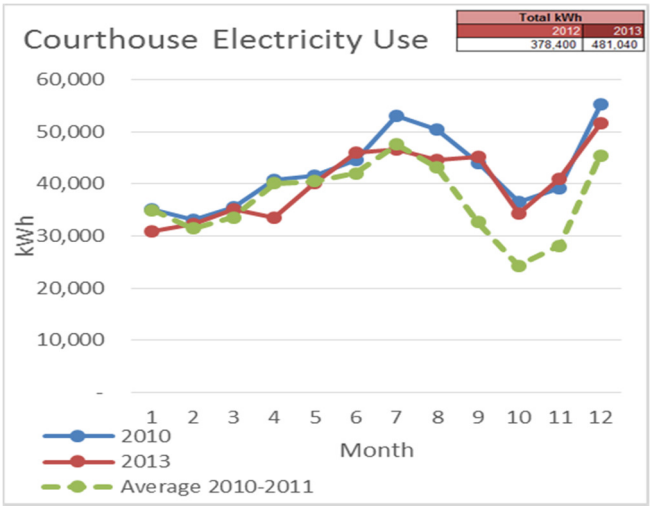
The historic Courthouse was open for all of 2013 but the partial occupancy in 2011 and 2012 mean that it has inconsistent baseline data. For the purposes of the Non-Reverting Fund, the calculations for the 2013 comparison were made off of the 2010 baseline, the most recent data for the Courthouse when it was fully operational for one entire year.

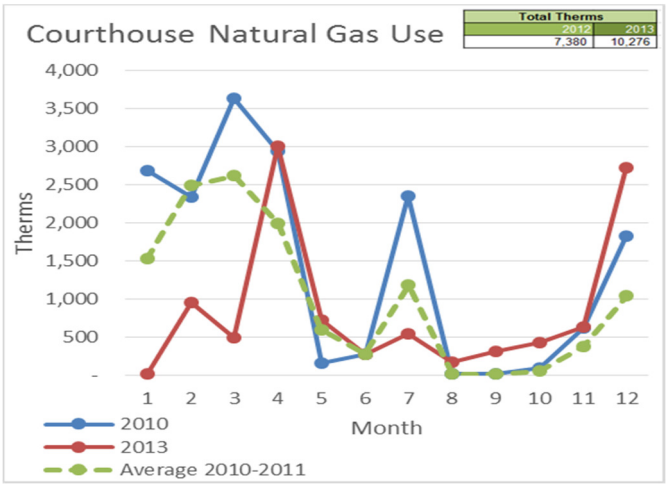
Compared to 2012, the Courthouse has decreased gas usage has dropped more (39.39%) than electric (5.49%). Water usage decreased by 23.36%. These savings totaled $99, which is quite good given the increases in utility costs for water and electricity. The Courthouse was in a contract with Proliance until the end of September 2013.

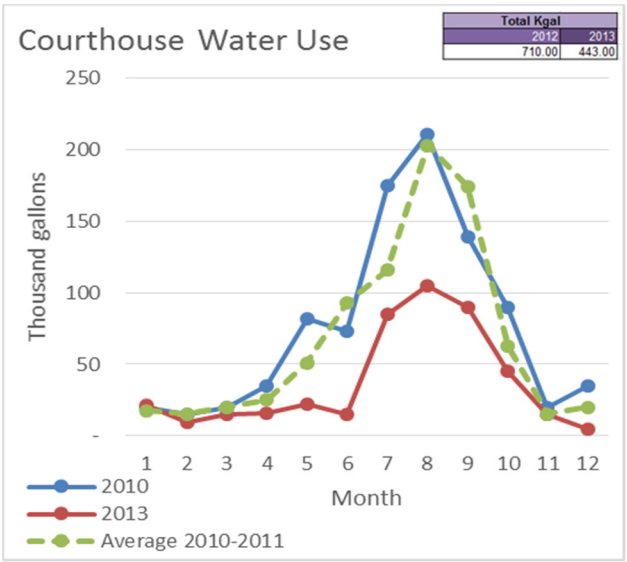
Use ⬇
Cost ⬇

$55,563.46
Total Utility Costs
$55,662.81 in 2010









CURRY BUILDING

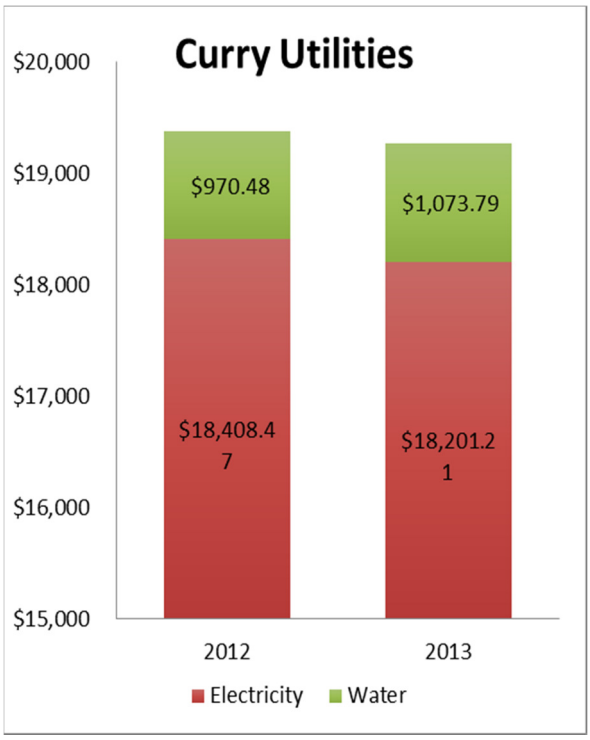
ENERGY STAR Score (1-100)	
Current Score:	93
Baseline Score:	89

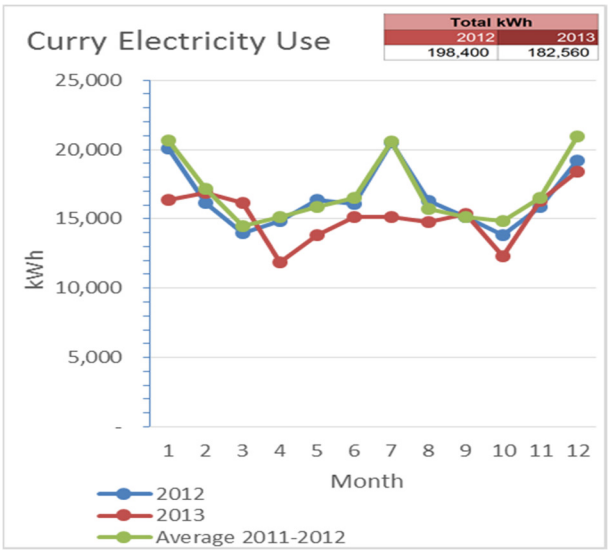
The historic Curry building is the only county building to hold an Energy Star designation, and it has held Platinum for both 2011 and 2012. No major building improvements or occupancy changes have occurred, so its energy use will be included in the accounting for the non-reverting fund.

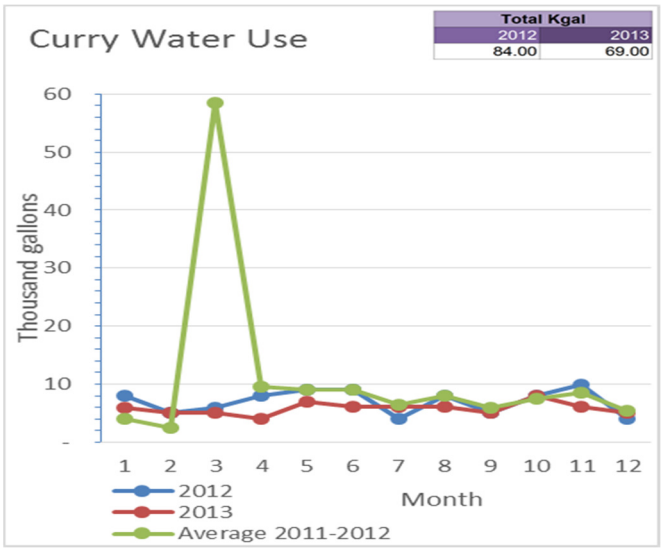
The Curry building's electricity-use increases with high and low temperatures because of its all-electric climate control system (no natural gas). The highest use months in 2012 are January, December, and July. No major building improvements have been implemented this year, but electricity-use is down by 7.98%, or $207. Water use at the Curry building is down 17% this year.

The savings from these utilities amount to $104. These results are probably attributable to the conservation efforts of the employees there, especially the Probation Department's Jeff Hartman who produces a quarterly newsletter that includes energy saving tips and encouraging co-workers to shut off lights and computers when not in use. The results at the Curry building are a major reason that Green teams should be developed for all county departments in 2014.

⬇ Use ⬇ Cost	$19,275.00 Total Utility Costs $19,378.95 in 2012







Weather-Normalized Source EUI (kBtu/ft²)	
Current EUI:	149.2
Baseline EUI:	152.8

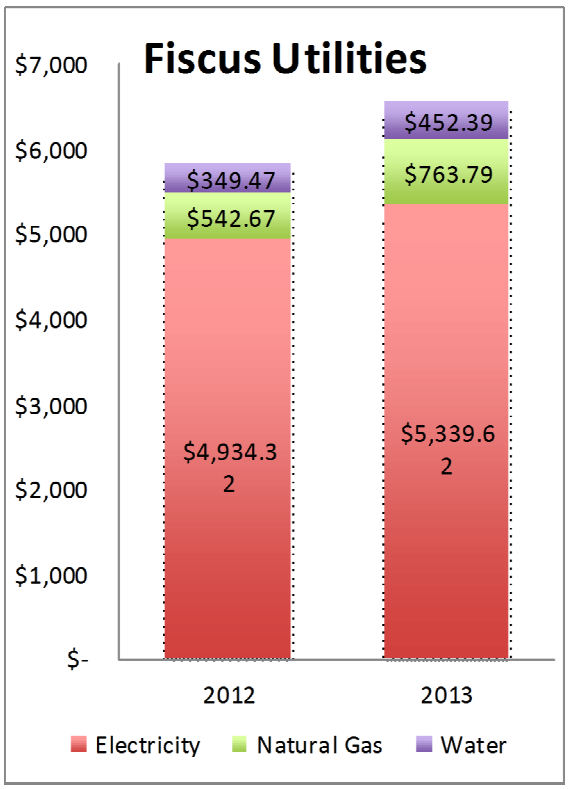
FISCUS BUILDING

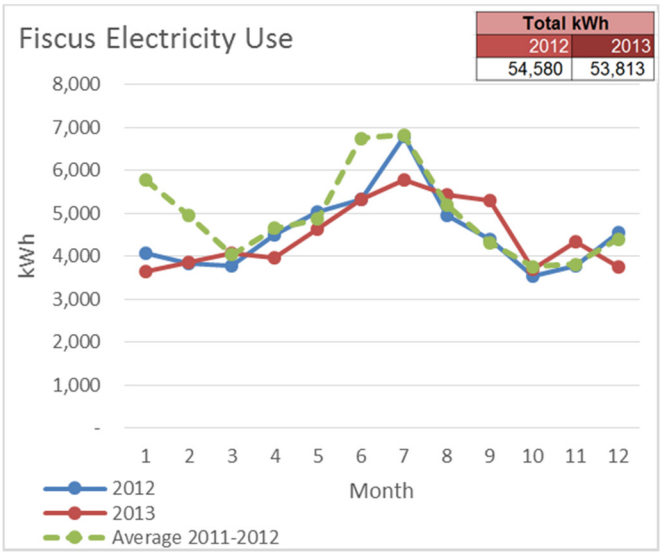
The Fiscus building experienced a small decrease in electrical use of 1.41%, the Fiscus building has greatly increased water and natural gas use. Water use increased by 5.83% and natural gas use increased 75.65%. These changes have resulted in an increase in overall utility costs by $729.

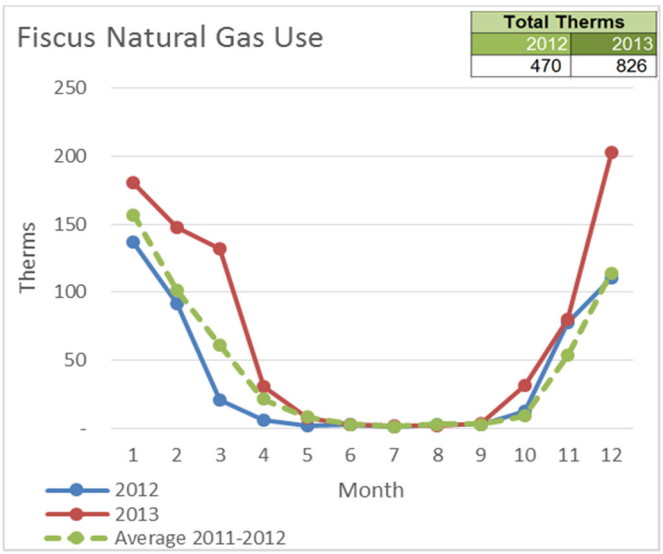
The Fiscus building clearly uses excessive amounts of water and natural gas. There are several opportunities to improve Fiscus through operations changes including LED light bulbs and through behavioral changes which will be worked on throughout 2014.

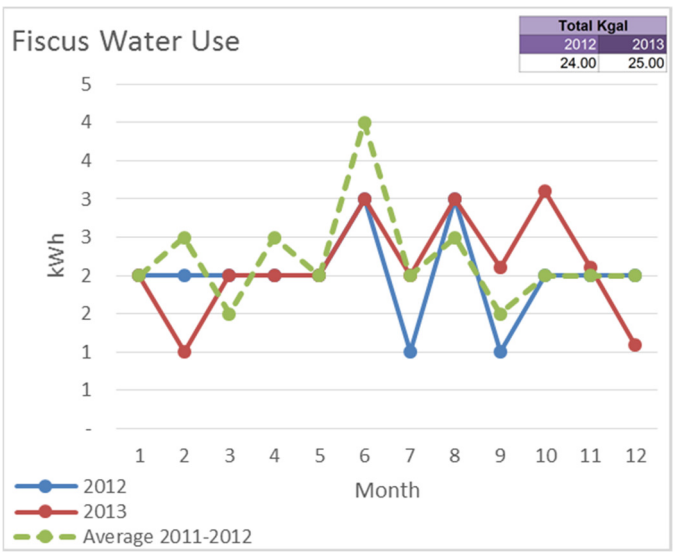
Use ↑
Cost ↑

$6,555.80
Total Utility Costs
$5,862.46 in 2012









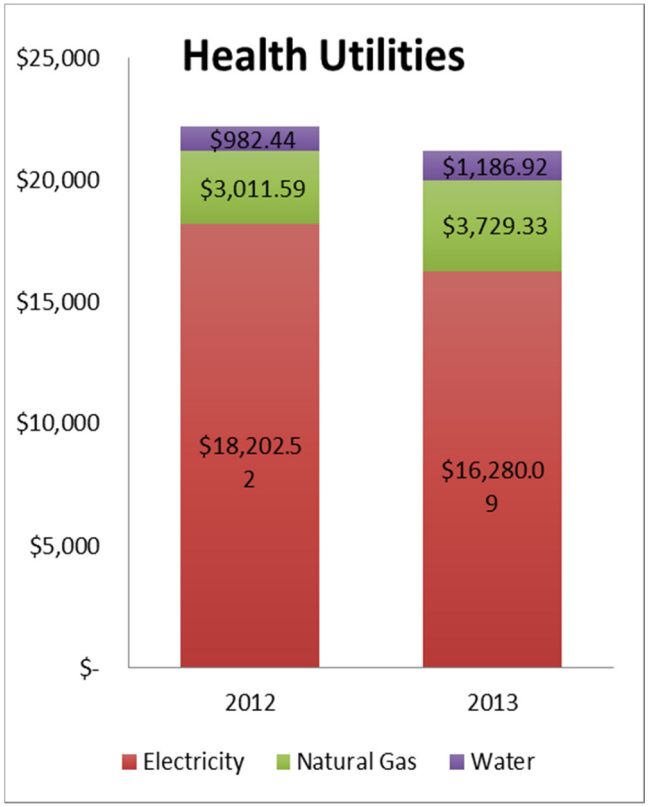
HEALTH BUILDING

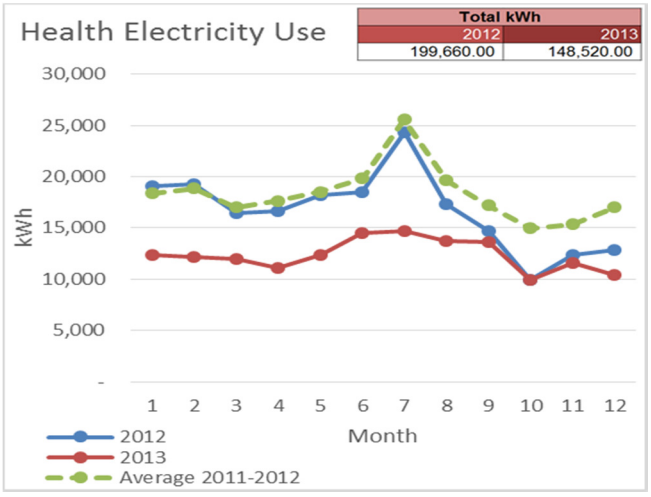
ENERGY STAR Score (1-100)	
Current Score:	70
Baseline Score:	46

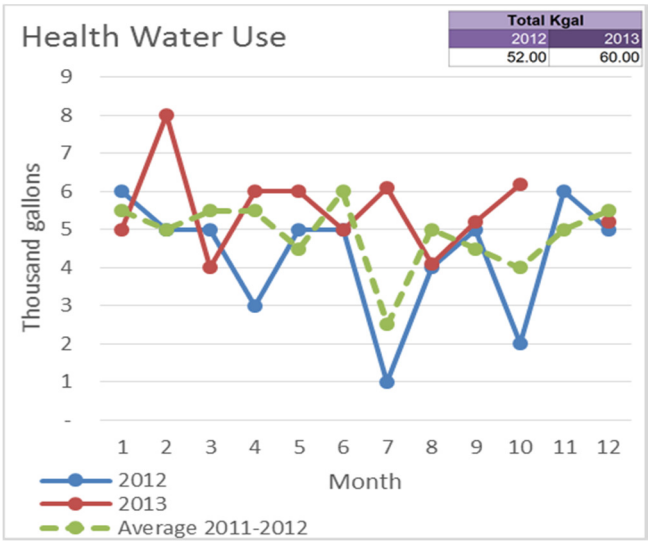
The historic Health building electricity use was down by almost 26% while the natural gas use and water use increased by 47% and 17% respectively. These increases are likely due to the fact that the Futures Health Clinic moved into the Health building in 2013, causing greater uses of water and natural gas to heat the water. Overall, Health saved approximately $1,000 compared to last year, all of the savings came from a decrease in electric usage. The Health building was in a contract with Proliance until the end of September 2013.

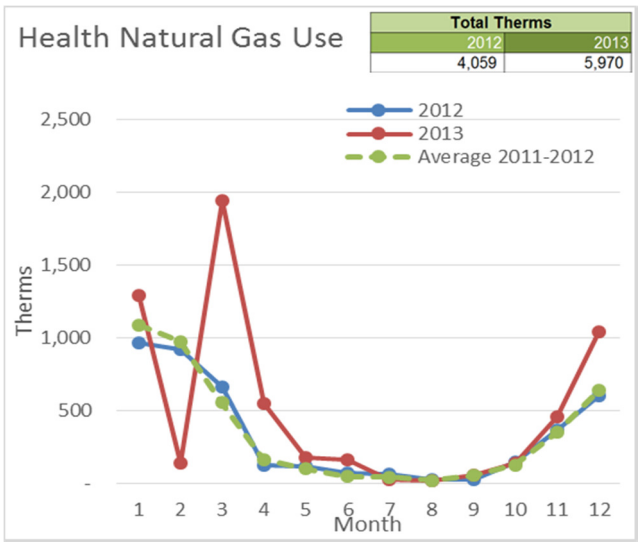
Use ↓
Cost ↓

$21,196.34
Total Utility Costs
$22,196.55 in 2012









ENERGY STAR Score (1-100)	
Current Score:	7
Baseline Score:	11

HIGHWAY GARAGE BUILDING

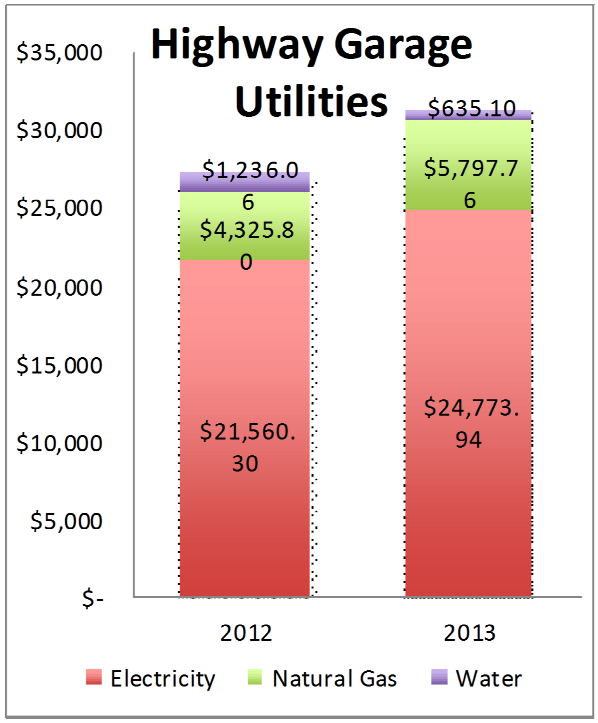
Use	↑
Cost	↑

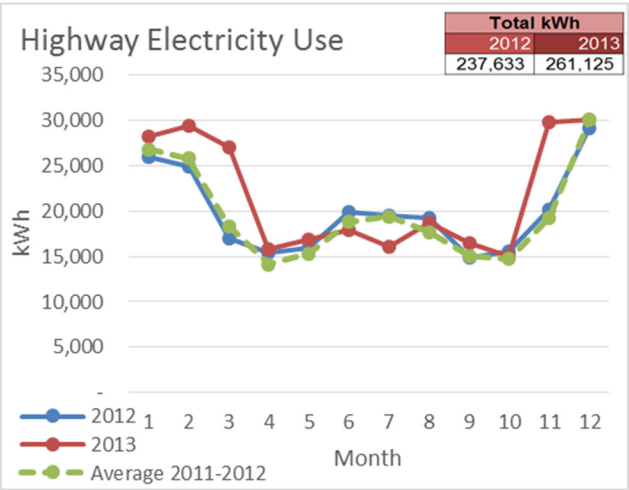
$31,206.80
Total Utility Costs
$27,122.16 in 2012

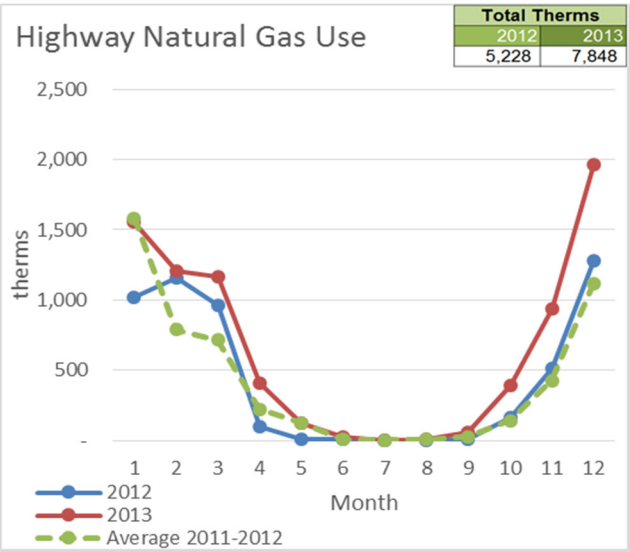
The Highway garage is an uninsulated building with a large garage area and a small office area and it is utilized primarily to house County vehicles. It now also houses the new computer servers for the County's emergency management services, which likely utilize a lot of energy.

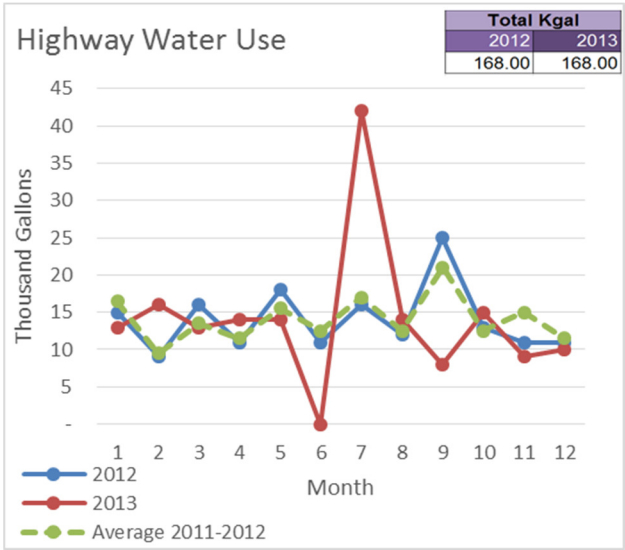
The Community Energy Plan mentioned insulating this building could offer large savings. Energy use increased this year, resulting in a net loss of approximately $4,085. The electric usage in the Highway Garage peaks predominantly in the winter which could be due to electric space heaters that run to compensate for inadequate natural gas heating, distribution, and insulation. Electric use was up 9.89% in 2013.

Natural gas use occurs with cold temperatures, thus summer usage is zero. Natural gas use is up 50.12% from 2012. The Highway garage is not a major water user, netting only 168kGal, and water costs decreased by 48.62%.





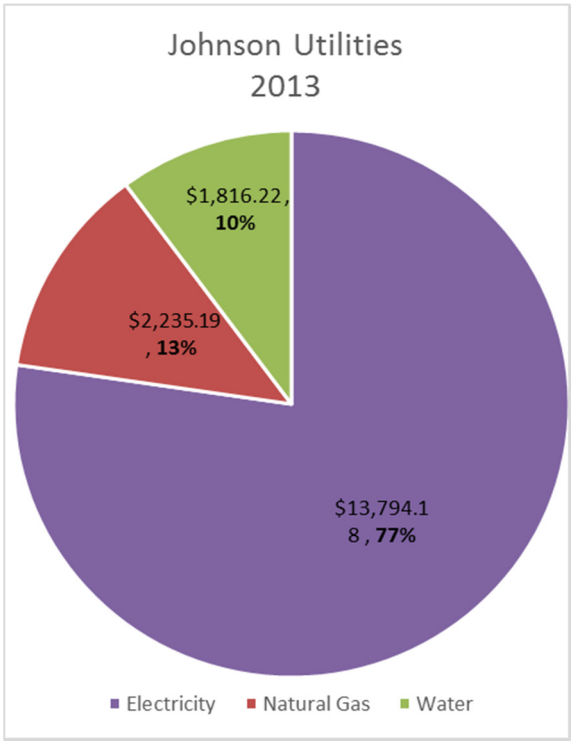


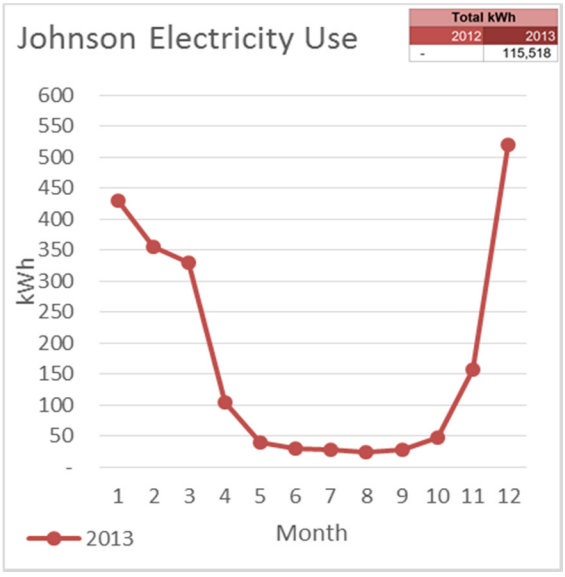


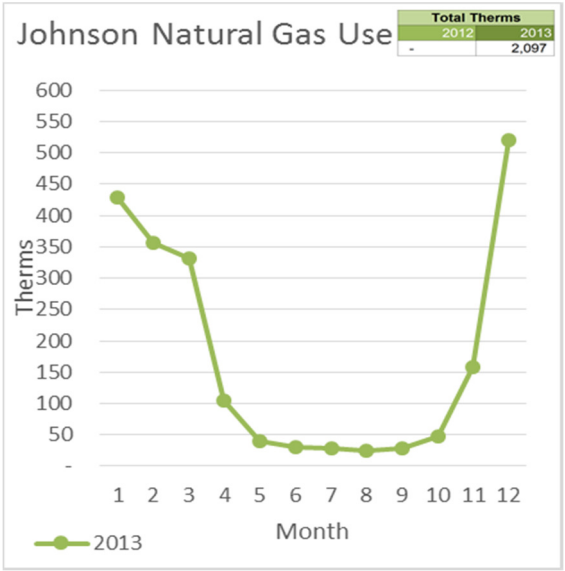
JOHNSON BUILDING

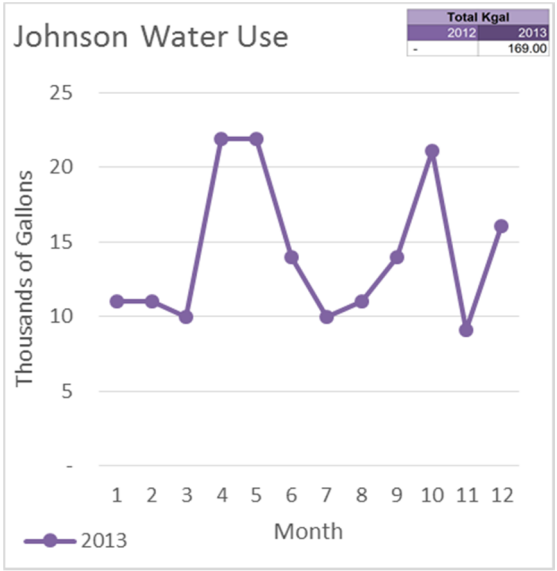
The Johnson Building was purchased by Monroe County government in late 2012 so there is only 2013 data for the baseline this year. Next year will prove better to determine the energy usage and energy costs and means of decreasing energy use and implementing conservation and efficiency measures.

$17,845.59
Total Utility Costs









ENERGY STAR Score (1-100)	
Current Score:	27
Baseline Score:	26

SHOWERS BUILDING

The county has only occupied the historic Showers building since May of 2011. During the 2011-2012 year, the building occupancy changed dramatically with several offices moving in and out of the building.

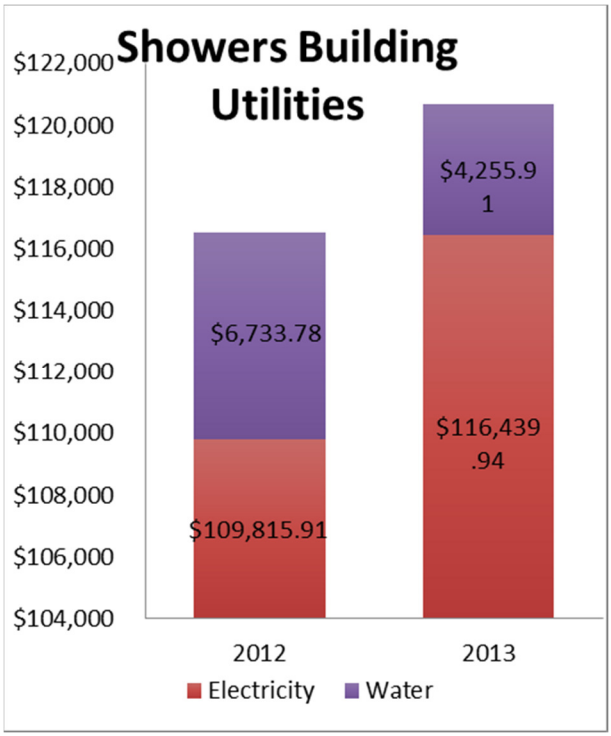
Electricity use in the Showers building spikes in the low temperature ranges, owing to its electric climate control (as opposed to a gas furnace).

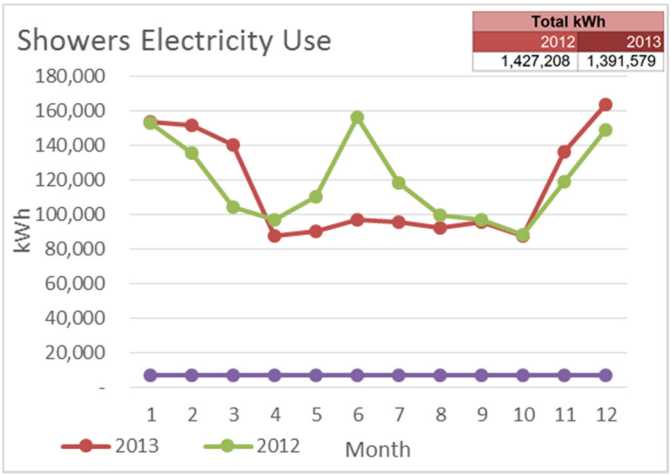
A 63.75 kW solar array was installed and began producing electricity in May of 2012. From May to November, the solar array produced just over 8% of the Showers building's electricity needs. Productivity in the winter was lower, especially during times of snow and cloud cover. This year the panels produced 80,498 kWh to save approximately $6,367.40 (at the Showers building's 2013 average rate of $0.0791/ kWh).

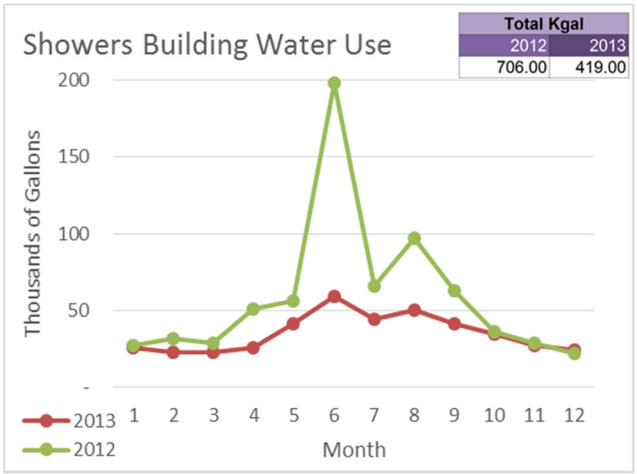
Water use at the Showers building peaks in the summer months, probably owing to landscaping uses. There are no water intensive uses besides day-to-day drinking and lavatory operations.

Use ⬇
Cost ⬆

$120,695.85
Total Utility Costs
$116,549.69 in 2012







YOUTH SERVICES BUREAU BUILDING

Weather-Normalized Source EUI (kBtu/ft²)	
Current EUI:	138.2
Baseline EUI:	170.7

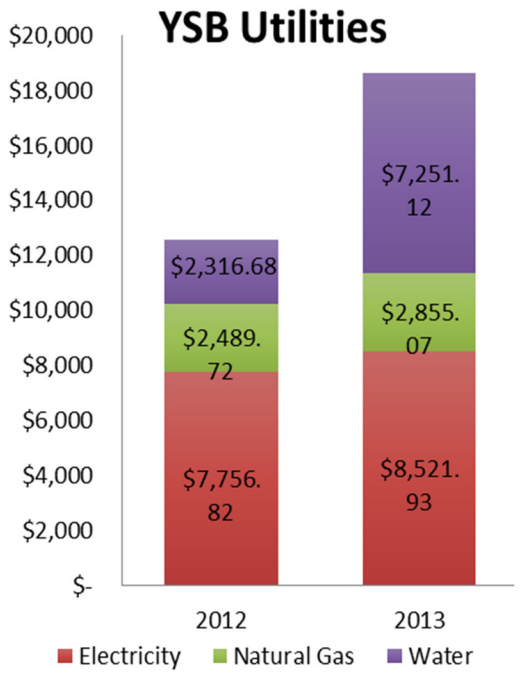
The Youth Services Building is a youth center that operates 24 hours a day, seven days a week.

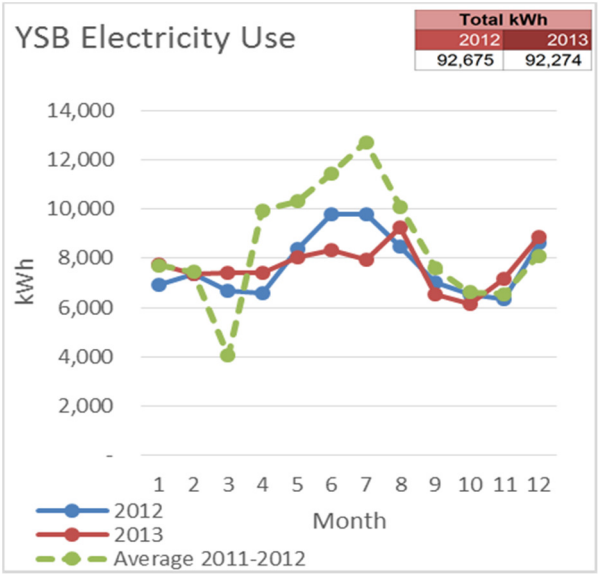
Youth Services experienced increases in energy and water consumption. In 2013, YSB slightly decreased its use of electricity by 0.43%, however costs increased. YSB increased its natural gas consumption by 17.72% and costs by 14.67%.

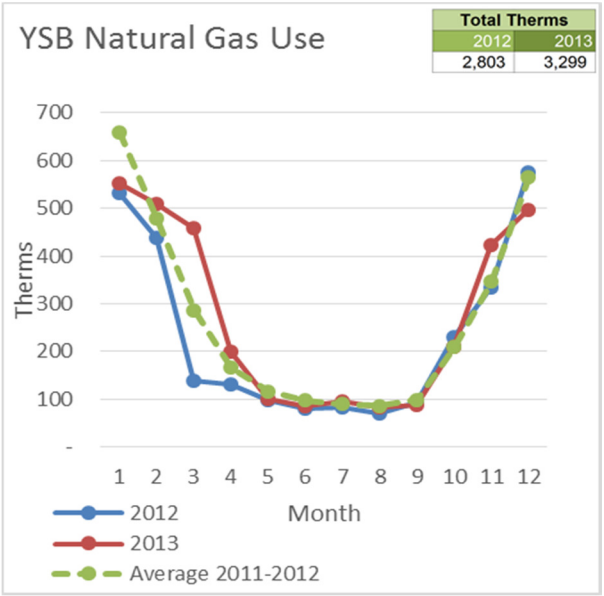
The water consumption increased more than double to 384.3 gallons. This massive increase was due to a malfunction of the water softener at YSB which constantly filled and drained, resulting in water waste and a spike in the month of October. The Commissioners and YSB only became aware of this once the meter was checked for billing. The increase in utilities usage amounted to no savings for YSB, but rather an overall increase in utility costs of $6,065.

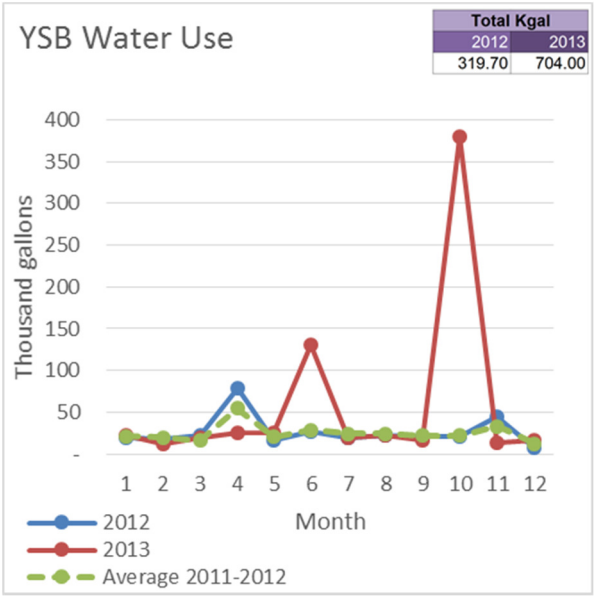
Use ↑
Cost ↑

$18,628.12
Total Utility Costs
$12,563.12 in 2012









Weather-Normalized Source EUI (kBtu/ft²)	
Current EUI:	161.0
Baseline EUI:	222.2

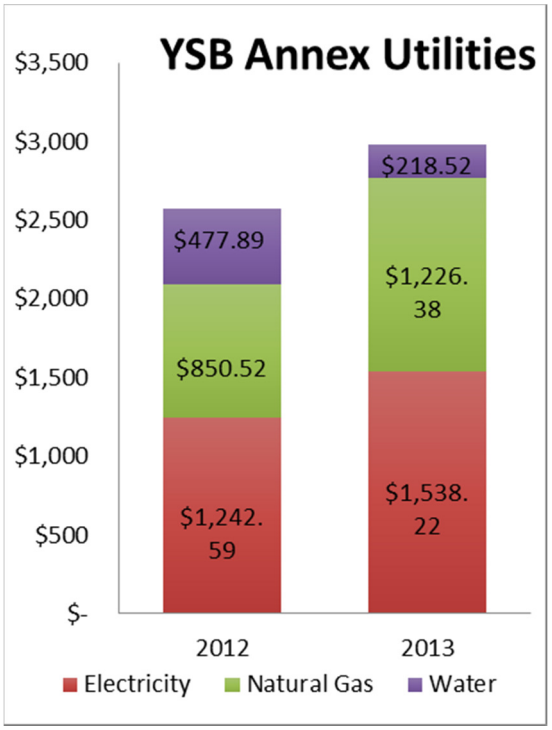
YOUTH SERVICES ANNEX BUILDING

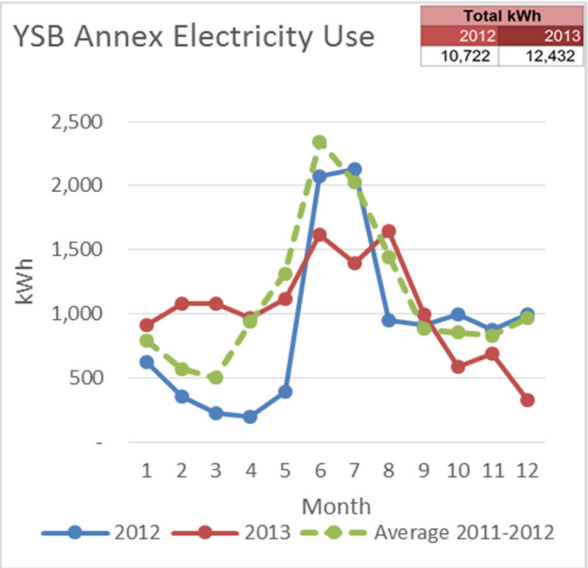
The Youth Services Annex building is a small house that is no longer fully in use and is primarily used for meetings. The water utility connection has now been shut off in the building, so sporadic natural gas and electricity use are the only remaining utilities. Electricity use in YSB Annex is highly variable because electricity is only used when the building is in use for meetings while natural gas usage tends to increase in the colder months between October and April.

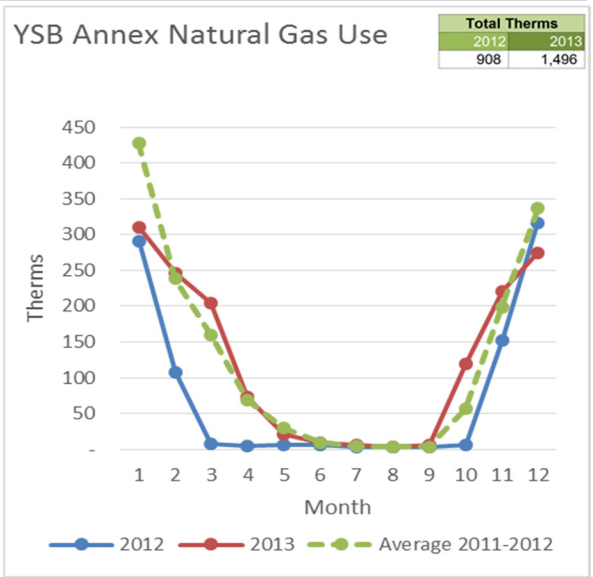
In 2013 compared to 2012, electricity use for YSB Annex increased by 15.86% and natural gas use increased by 64.80%, resulting in increases in cost of 23.79% and 44.19% respectively. The overall utilities cost increased by $412.12.

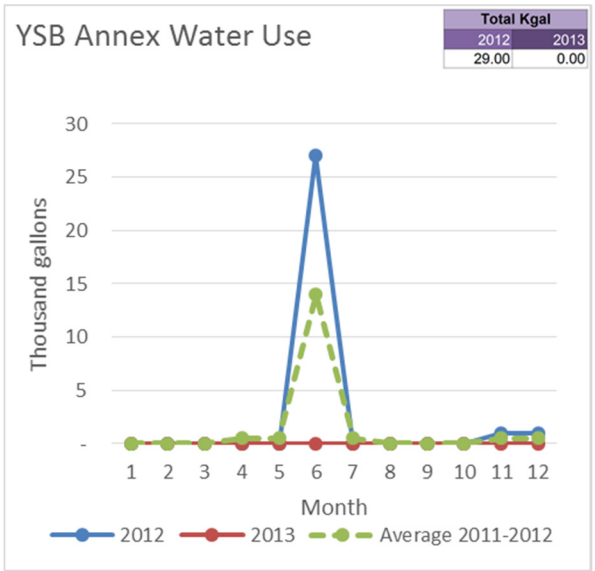
Use ↑
Cost ↑

$2,983.12
Total Utility Costs
$2,571.00 in 2012







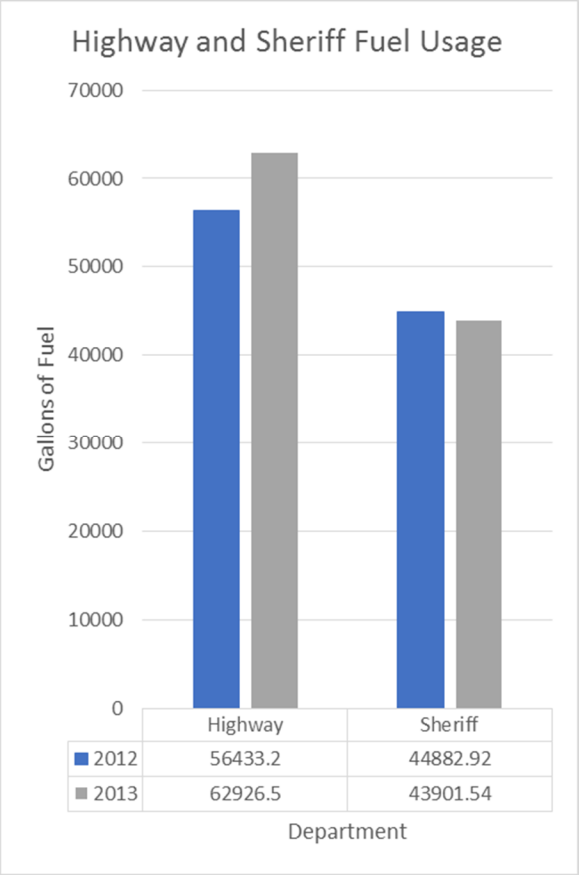


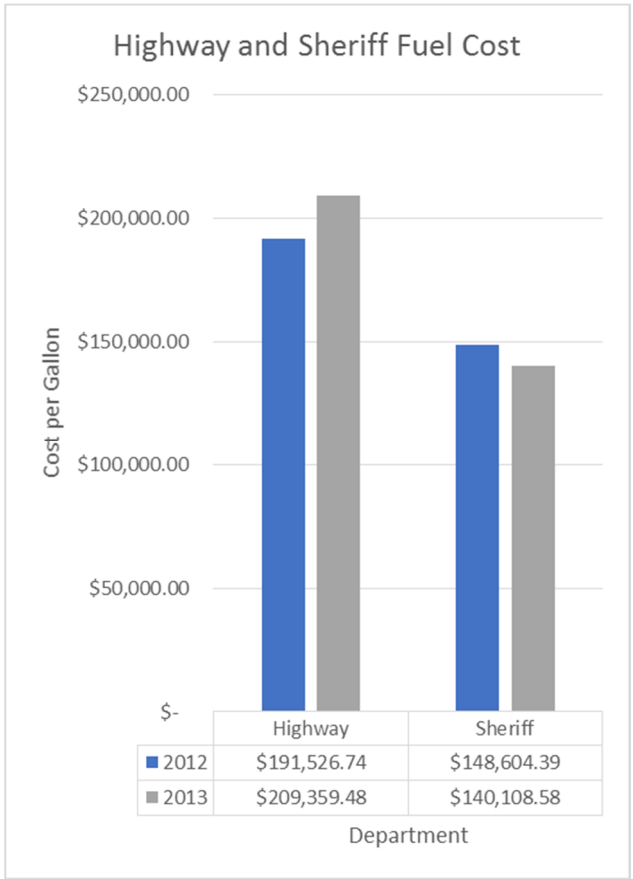
MONROE COUNTY FLEET

2013		2012
$454,370.42 Annual Cost	4.2% ↑	$436,187.65 Annual Cost
138,130.61 Gallons	7.0% ↑	129,079.51 Gallons
$3.22 Average Rate Per Gallons	3.3% ↓	$3.33 Average Rate Per Gallons
204	25 ↓	229

HIGHWAY AND SHERIFF FUEL USAGE & COSTS

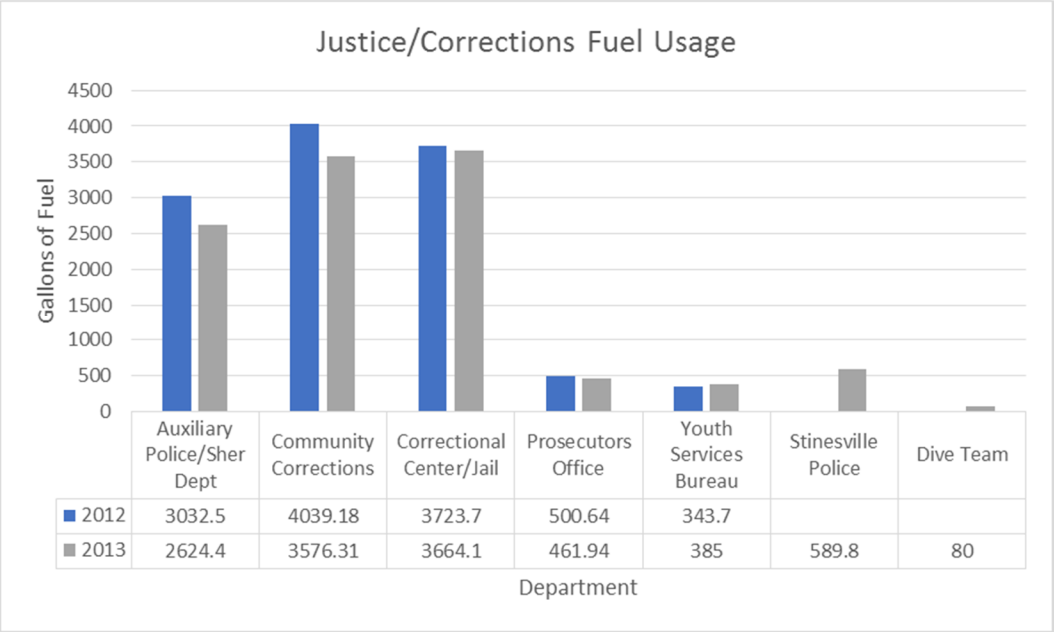
In 2013, the Monroe County fleet increased fuel usage compared to 2012 by 7.0% and increased the cost of that usage by 4.2%. These increases are attributable to the addition of three new departments which Monroe County will be permanently responsible for. Without the addition of these three departments, the fuel usage would have shown an increase of 0.4% and the cost of usage would have increased by 0.3%, owing in part to a 3.12% decrease in the average rate per gallon of fuel from $3.33 per gallon to $3.22 per gallon. The average cost per gallon is based on actual 'at the pump' transactions and do not include the service fee to the City of Bloomington of $330 per month.

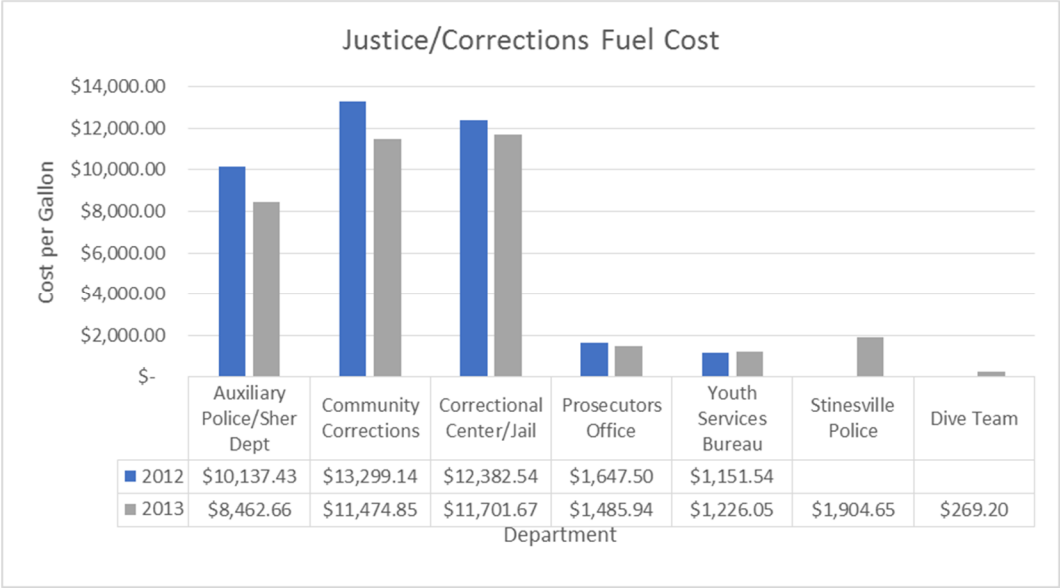




In 2013, the Sheriff numbers have decreased from 2012 in quantity used by 2.2% and reduced costs by 5.7%. The Highway numbers have increased by 11.5% for fuel usage and by 9.3% for fuel costs.

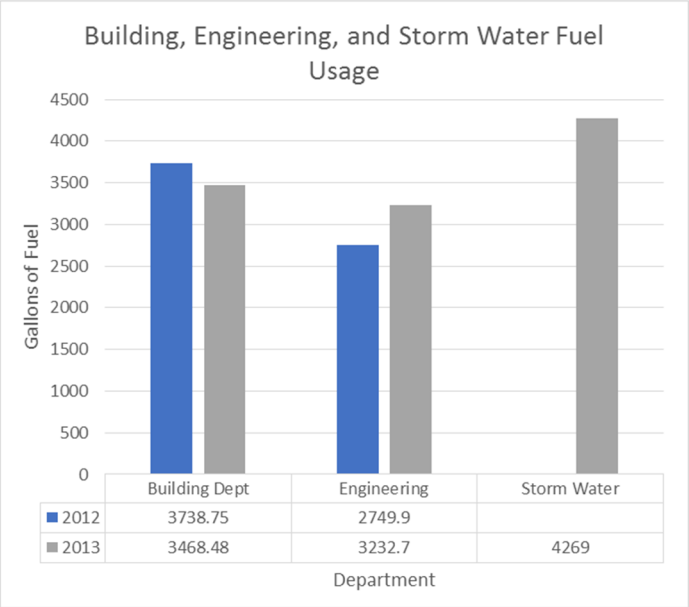
JUSTICE/CORRECTIONS USAGE & COSTS

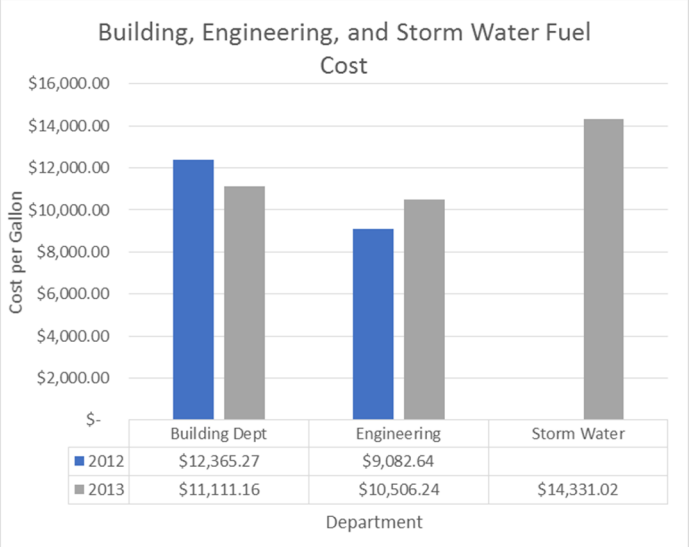




Auxiliary Police/Sheriff Department has also decreased fuel usage by 13.5% and costs by 16.5%. The justice-centered departments together decreased their overall fuel usage and fuel costs. Community Corrections contributed to this the most with an 11.5% reduction in fuel usage and a 13.7% reduction in fuel costs. The Prosecutors Office also decreased fuel usage by 7.7% and fuel costs by 9.8%. The Correctional Center/Jail decreased their overall fuel usage by 1.6% and fuel costs by 5.5%. Youth Services Bureau increased fuel usage by 12% and costs by 6.5% respectively. This is also the first time that Stinesville Police and the Dive Team have been included in Fleet Data.

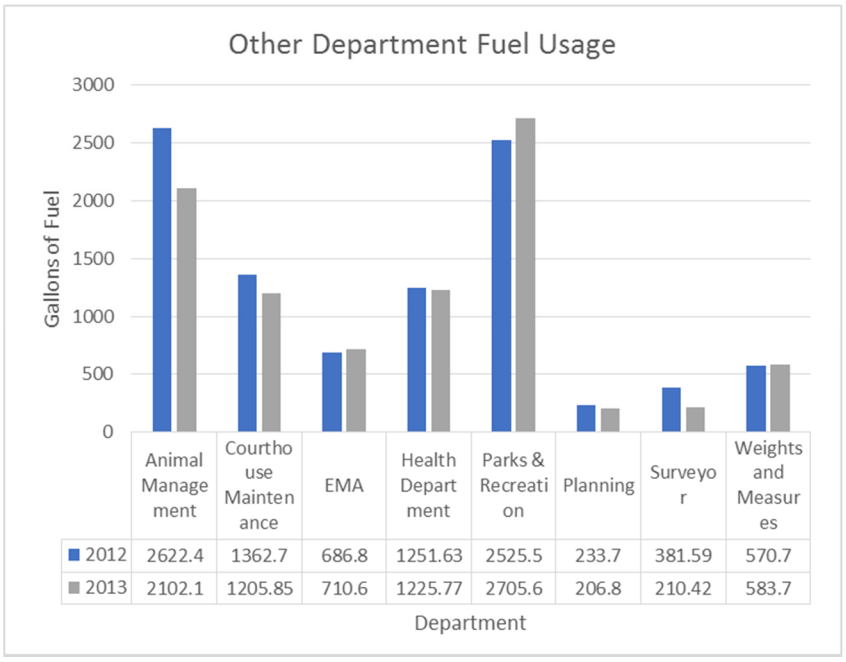
DEPARTMENTAL USAGE & COSTS

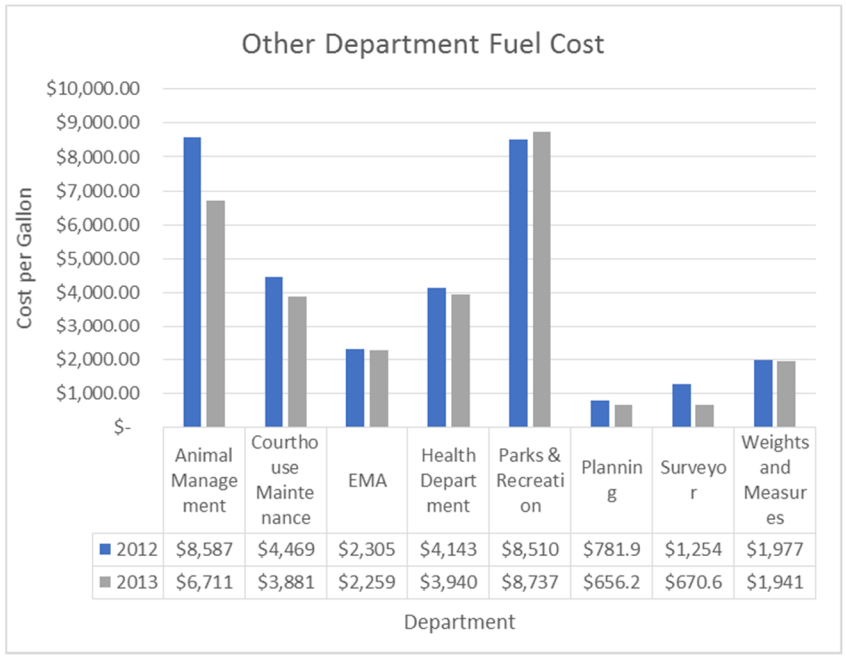




The Building Dept. decreased its fuel usage by 7.2% and decreased cost by 10.1%. Engineering increased fuel use by 17.6% and increased fuel costs by 15.7%. This is also the first time that Storm Water has been included in Fleet Data.

DEPARTMENTAL USAGE & COSTS





Most of the other departments have experienced an overall decrease in the use and cost of fuel. Those that did experience increases experienced smaller increases like EMA and Weights and Measurements, 3.5% and 2.3% respectively, but cost decreased by 2.0% and 1.8%. Courthouse Maintenance decreased its fuel usage by 11.5% and its fuel costs by 13.2%. Animal Management and Surveyor had the greatest decreases in fuel usage by 19.8% and 44.9% respectively and in cost by 21.8% and 46.5% respectively. Planning had a decrease in usage of 11.5% and a decrease in cost of 16.1%. The Health Department experienced a decrease in use of 2.1% but an increase in cost by 4.9%. Parks and Recreation use increased by 7.1% with a

ENVIRONMENTAL IMPACT

BUILDING	ELECTRICITY IN CARS 2013	ELECTRICITY IN CARS 2012	NATURAL GAS IN CARS 2013	NATURAL GAS IN CARS 2012	TOTAL 2013	TOTAL 2012
MONROE COUNTY AIRPORT	33.9	36.5	5.5	6.1	39.4	42.6
CTZ JUSTICE CENTER	350	357	80.5	72.2	430.5	429.2
COURTHOUSE	70.7	74.8	11.4	18.7	82.1	93.5
CURRY	26.8	29.2	-	-	26.8	29.2
FISCUS	7.9	8	0.9	0.5	8.8	8.5
HEALTH	21.8	29.3	6.6	4.5	28.4	33.8
HIGHWAY GARAGE	38.4	34.9	8.7	5.8	47.1	40.7
JOHNSON	17	-	2.3	-	19.3	-
SHOWERS	205	210	-	-	205	210
YOUTH SERVICES	13.6	13.6	3.6	3.1	17.2	16.7
YOUTH SERVICES ANNEX	1.8	1.6	1.7	1	3.5	2.6
BUILDING TOTAL	900	771	122	106	1022	877

Fuel Use to Car Conversion

905 therms = 1 car

6800 kWh = 1 car

In 2013, Monroe County added the carbon equivalent of 122 cars, mostly through electricity use but through therm use as well. The goal of the County should continue to be to minimize our environmental impact to ensure that it remains as environmentally and fiscally efficient and responsible as possible. By utilizing the measure of cars on the road and cars taken off the road, the County is better able to see its overall impact on the environment in a more uniform way than simply therms used and kWh used.

2014

GOALS AND RECOMMENDATIONS

Monroe County Environmental Quality & Sustainability Commission

GOALS

- Provide education, advice, and encouragement to all citizens and visitors
- Promote and adopt practices and policies that preserve and strengthen overall quality of life
- Create Monroe County Green Teams
- Water Conservation

RECOMMENDATIONS

- Lighting Upgrades
- Energy Audit for Johnson Building
- LED Holiday Lights
- Energy Dashboard Upgrades
- Energy Conservation Opportunities

LIGHTING RECOMMENDATIONS

BUILDING NAME	RECOMMENDATION
Courthouse	T12 to T8 conversion where possible
Showers	T12 to T8 conversion where possible (largest savings). In-house installation cost will most likely be a lot less than quoted.
Health	No T12 to T8 conversion recommended – not cost effective. Recommend taking down all **incandescent 60w** bulbs and replacing them with LED bulbs.
Curry	T12 to T8 conversion where possible. Recommend gradual upgrade as bulbs die out.
Johnson Corrections	Most time and cost effective – recommend full T12 to T8 conversion. Fastest payback time.
Airport	No recommendation. Most lights fall under FAA regulation (runway). All hangars have LED bulbs already. Some 40W Fluorescent bulbs can be gradually replaced with T8s as they burn out.
Highway	T12 to T8 conversion where possible
Fiscus	All bulbs are T8 already; no action recommended. LED conversion not cost effective.
Youth Services Bureau	Due to unique (U-Shaped) bulbs, this one is more difficult. The existing T12s can be easily swapped to T8 within a day at no cost for in-house installation (only 39 fixtures w/ 2 bulbs each). Recommend taking down all 60watt incandescent bulbs and/or replacing them with LED bulbs.
General recommendations (Based on estimated 28,142 KWh/year equating to $2,814 in extra costs due to misc. bulbs).	Remove all non-essential or redundant lighting – redundant/supplementary LED bulbs next to T12/8 fixtures, 60w incandescent bulbs, desk lamps, small fixtures, etc.

Converting the County's T-12 lighting to T-8 lighting is both feasible and cost effective for all of the buildings. The cost savings in return

Each building has extraneous lighting – desk lamps, 60watt incandescent bulbs, small fixtures, inessential and redundant LED bulbs supplementing existing T-12 or T-8 fixtures. These (and perhaps even more) lights can be eliminated, resulting in an **estimated savings of $2,814 per year** for the county.

The lighting study was supplied by Boris.

MONROE COUNTY

Energy Conservation Opportunities

Recommendations for Larger Investments

Airport 6% of Utility Costs

- AC units

Curry 3% of Utility Costs

- no significant investment

Fiscus 4% of Utility Costs

- no significant investment

Health 3% of Utility Costs

- high efficiency gas furnace

Johnson 3% of Utility Costs

- energy audit

YSB 3% of Utility Costs

- no significant investment

Courthouse 8% of Utility Costs

- seal building envelope (windows and doors)

Showers 18% of Utility Costs

- Seal building envelope (windows and doors)

Highway 4% of Utility Costs

- fiber glass insulation on the interior roof
- Gas fired infrared heaters (3)
- AC units in IT Server room

CTZ Justice 51% of Utility Costs

- Address utility use
    - Solar thermal (25% gas reduction)
    - Upgrade faucets, shower heads, other appliances
    - Replace water heaters (tankless)