REQUEST FOR BOARD ACTION

HENDERSON COUNTY
BOARD OF COMMISSIONERS

MEETING DATE: Monday, October 3, 2016

SUBJECT: Energy Management Update

PRESENTER: Rachel Kipar, Environmental Programs Coordinator

ATTACHMENTS: Yes,
                         1. Energy & Fuel Management Data

SUMMARY OF REQUEST:

The attachment provides information to the Board about the County's energy use across all County facilities in the areas of electricity, natural gas, and water/sewer. It compares the FY 15-16 4th quarter with the previous year to illustrate historical trends in commodity consumption. Supplementary cost analyses represent the monthly cost profile comparing 2015 and 2016 YTD for the highest-cost commodity at each facility. Selected fuel consumption information is also provided for the FY 15-16 4th quarter period.
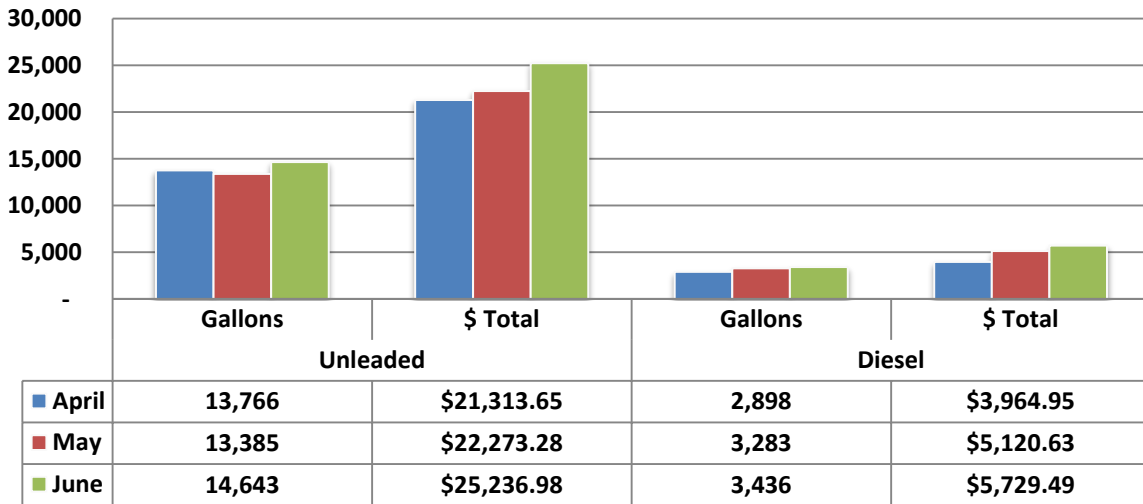

BOARD ACTION REQUESTED:
No Board action is requested. This item is for informational purposes only.
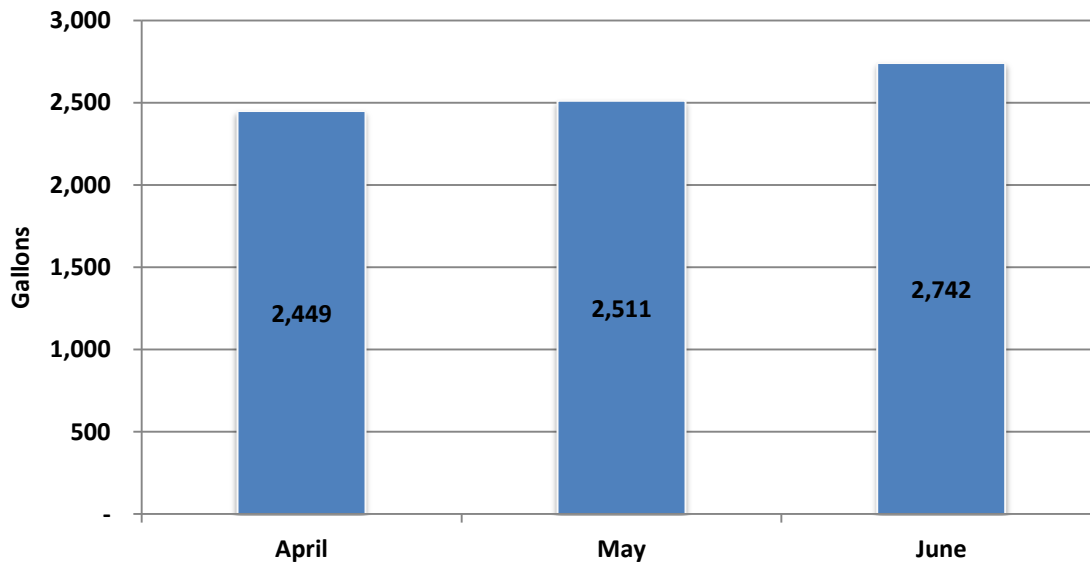

    Suggested Motion:
    No motion suggested.

Energy and Fuel Management Data for Qtr. 4, FY15-16
April- June 2016
BOC Meeting: October 3, 2016

FUELS & FLEET INFORMATION

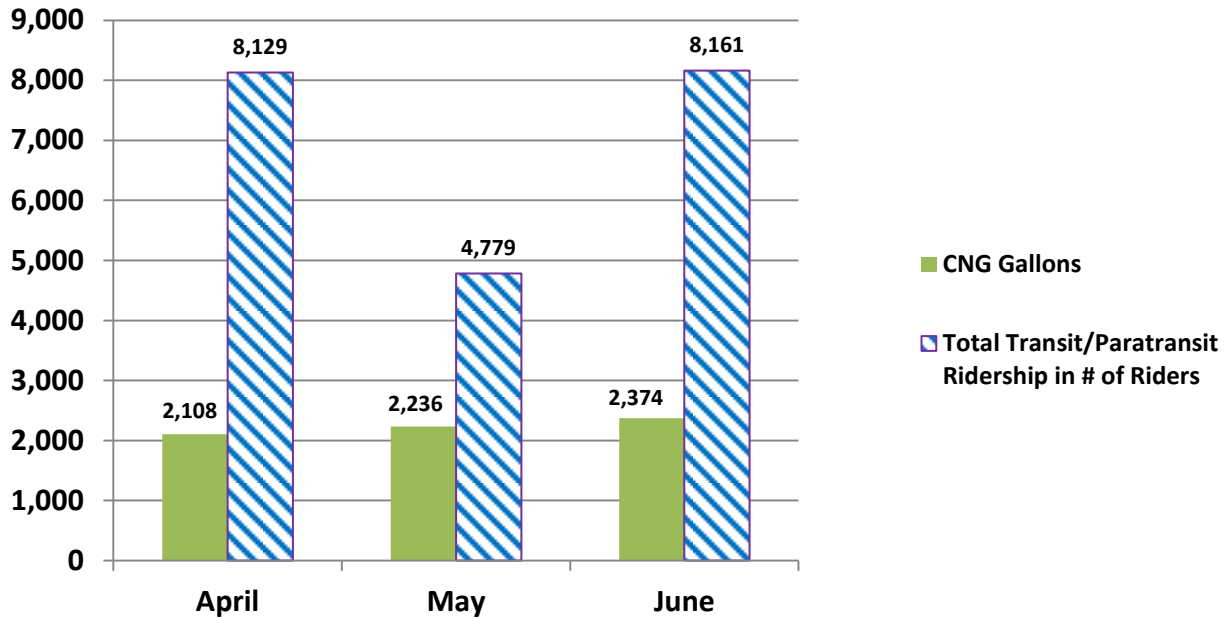### Henderson County Fleet Conventional Fuel Consumption, Qtr. 4 FY15-16 (April-June)

	Unleaded		Diesel	
	Gallons	$ Total	Gallons	$ Total
■ April	13,766	$21,313.65	2,898	$3,964.95
■ May	13,385	$22,273.28	3,283	$5,120.63
■ June	14,643	$25,236.98	3,436	$5,729.49

Henderson County CNG Fleet Fuel Consumption, Quarter 4 FY15-16 (April - June 2016)*

Gallons:
- April: 2,449
- May: 2,511
- June: 2,742

* Departments include: Building Inspections, Solid Waste, Utilities, WCCA Busses

1

WCCA Ridership Totals Compared to Total Gallons of CNG Consumed, April-June 2016

Legend:
- CNG Gallons
- Total Transit/Paratransit Ridership in # of Riders

Data shown:
- April: CNG Gallons 2,108; Total Transit/Paratransit Ridership 8,129
- May: CNG Gallons 2,236; Total Transit/Paratransit Ridership 4,779
- June: CNG Gallons 2,374; Total Transit/Paratransit Ridership 8,161

UTILITY USAGE INFORMATION

Environmental Programs is tracking:
46 City of Hendersonville Water/Sewer meters
110 Duke Energy meters
21 PSNC Natural Gas meters

*Expense Breakdown of Henderson County Facilities in Total Costs YTD %

- Electric: 77
- Natural Gas: 14
- Water/Sewer: 8
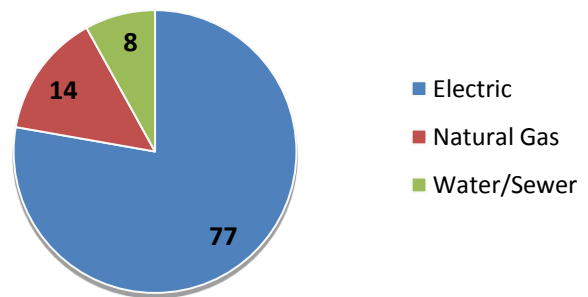
The graph above is a cumulative comparison by percentage of the total utility cost breakdown of the 177 tracked meters across all commodities (water, electricity, natural gas) at all Henderson County facilities, including parks. The graph represents the cost percentage of each commodity over the most recent 12 months, not including the current month or last month [data tracking program assumes data for these months may be incomplete based on varying billing cycles among the different utilities]).
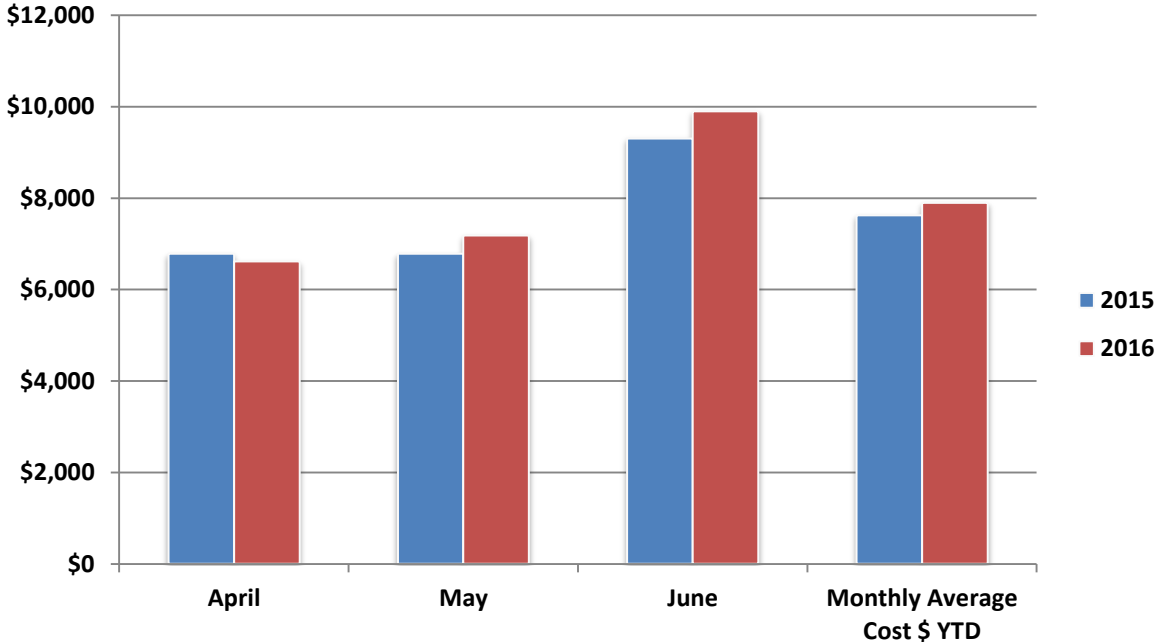
1995 Courthouse Utility Use
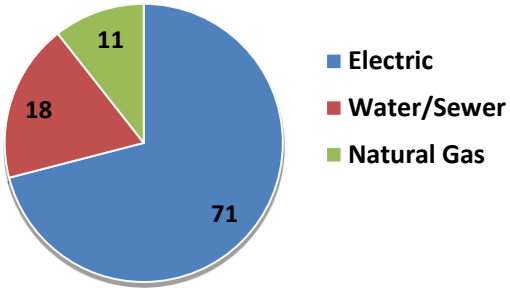
Total Cost % YTD*

- ■ Electric
- ■ Water/Sewer
- ■ Natural Gas

Pie chart values: 71, 18, 11

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

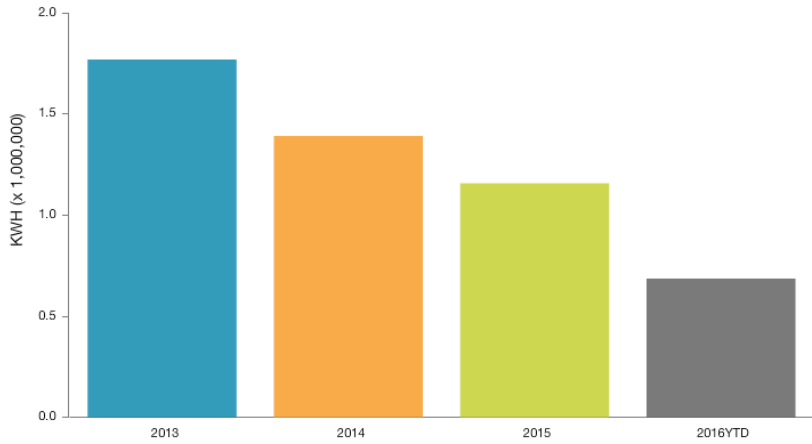## 95 Courthouse Electricity Usage Comparison
Qtr. 4, 2015-2016

- ■ 2015
- ■ 2016

1995 Courthouse Utility Use

Location: Henderson County-> 95 Courthouse-> 95COURTHOUSE_3560 [95 Courthouse]
Time: 09/09/2016 1:22:27 AM   **Commodity:** Electric

Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> 95 Courthouse-> 95COURTHOUSE_3560 [95 Courthouse]
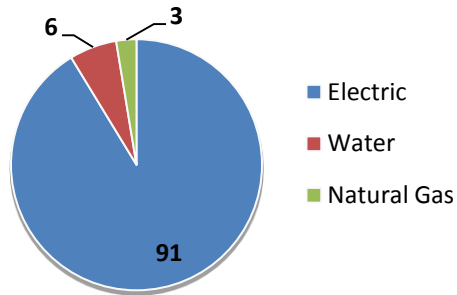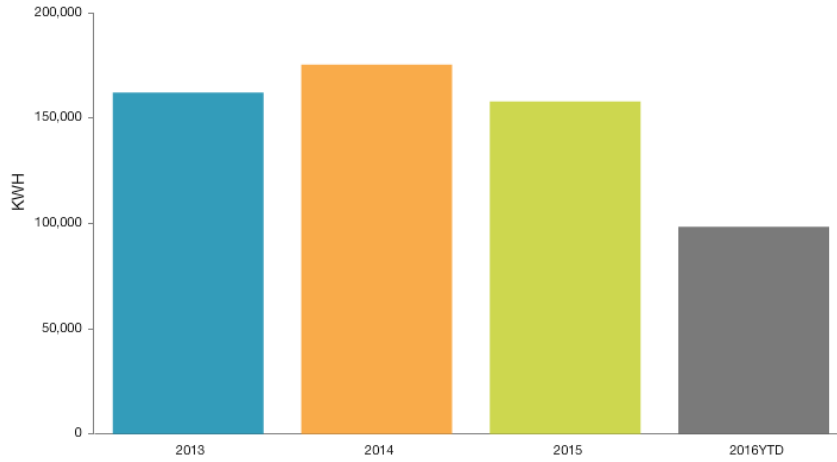**Time:** 09/09/2016 1:22:27 AM   **Commodity:** Natural Gas

Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)
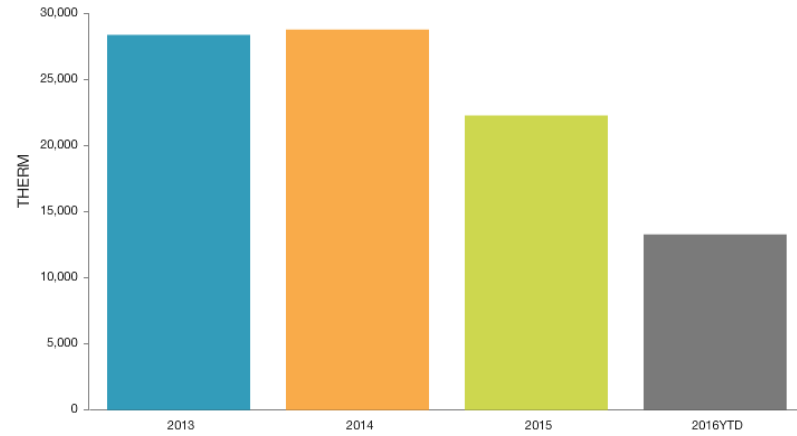
Location: Henderson County-> 95 Courthouse-> 95COURTHOUSE_3560 [95 Courthouse]
Time: 09/27/2016 1:25:39 AM   **Commodity:** Water

Water in Thousands of Gal

Total Use Summary
(FY ends in Dec of year shown)

Animal Services Utility Use

Total Cost % YTD

- Electric
- Water
- Natural Gas

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

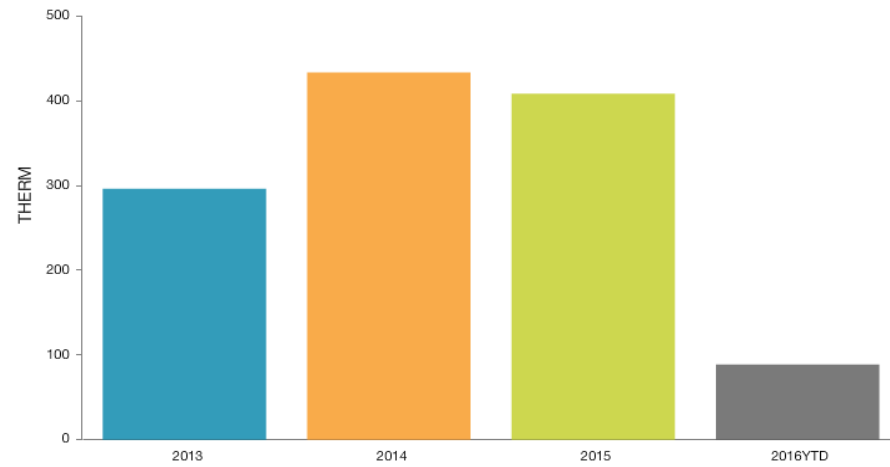## Animal Services Electricity Usage Comparison Qtr. 4, 2015-2016

- 2015
- 2016

April   May   June   Monthly Average Cost $ YTD
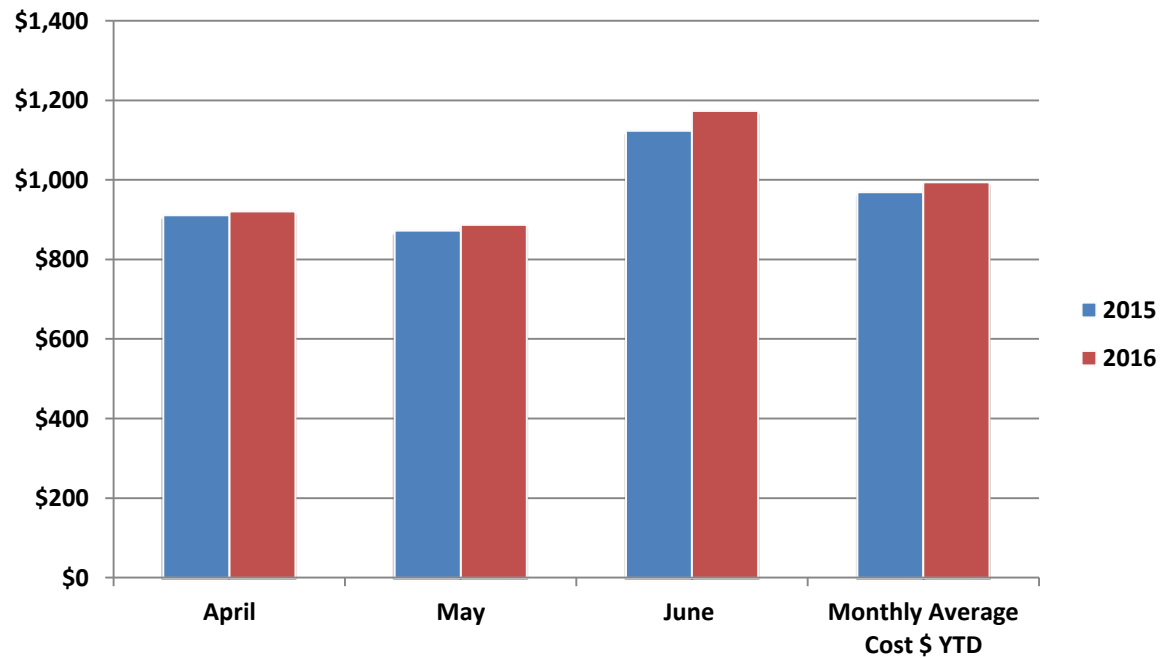
Animal Services Utility Use

Location: Henderson County-> ANIMALSERVICES [Animal Services]
Time: 09/09/2016 1:22:27 AM   **Commodity:** Electric

Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> Animal Services-> ANIMALSHELTER_3560 [Animal Shelter]
Time: 09/27/2016 1:25:39 AM   **Commodity:** Natural Gas

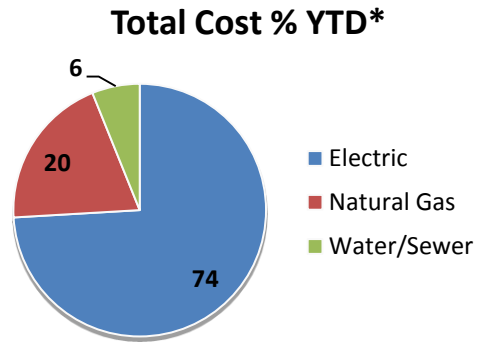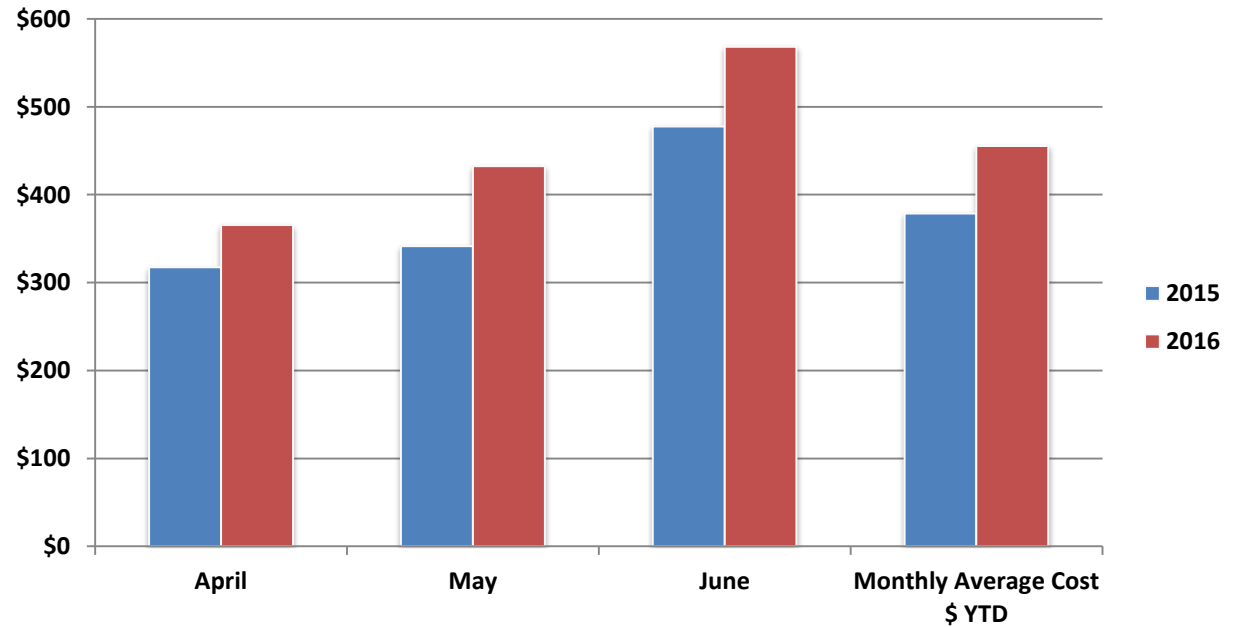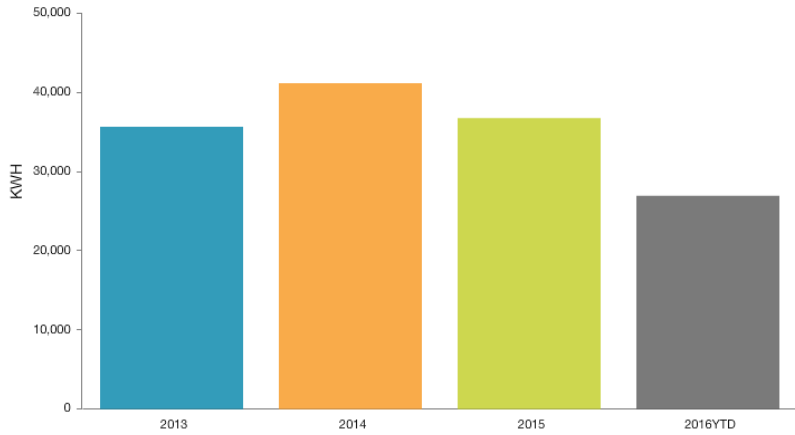Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> Animal Services-> ANIMALSHELTER_3560 [Animal Shelter]
Time: 09/27/2016 1:25:39 AM   **Commodity:** Water

Water in Thousands of Gal

Total Use Summary
(FY ends in Dec of year shown)

Board of Elections Utility Use

Total Cost % YTD*

- Electric
- Natural Gas
- Water/Sewer

6
20
74

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

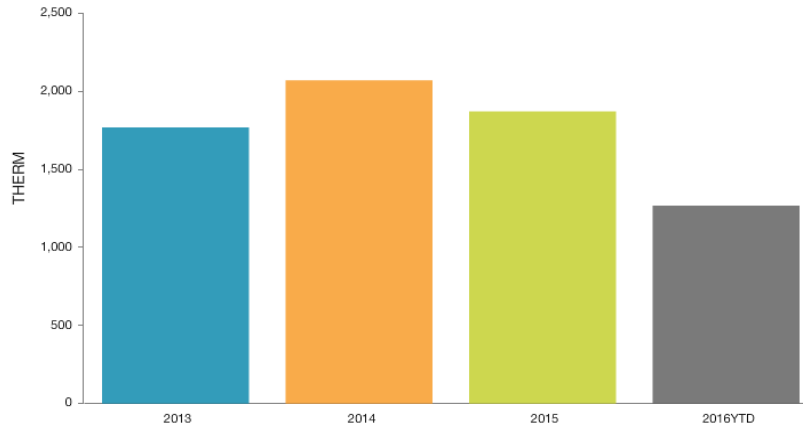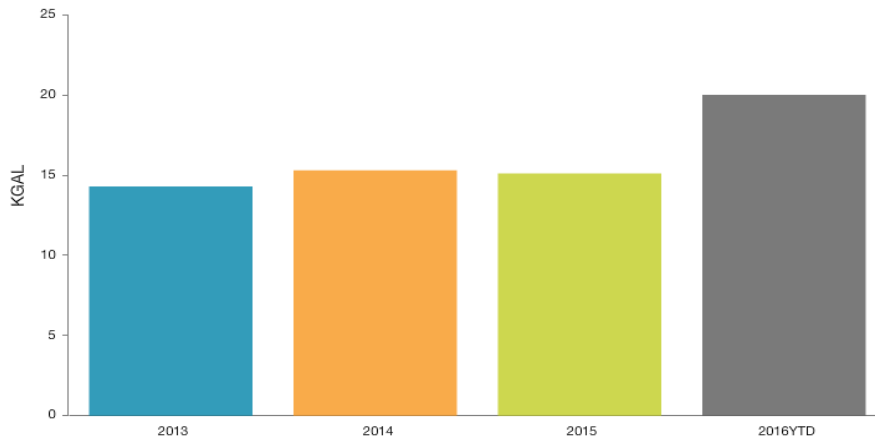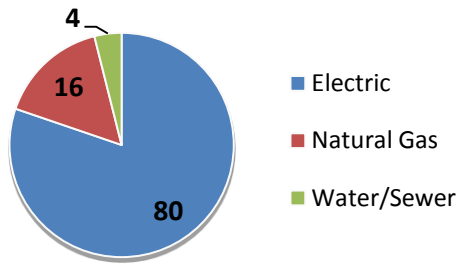## Board of Elections Electricity Use Comaprison Qtr. 4, 2015-2016

- 2015
- 2016

Board of Elections Utility Use

Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

Water in Thousands of Gal

Total Use Summary
(FY ends in Dec of year shown)

8

Central Services Utility Use

Total Cost % YTD*

- Electric
- Natural Gas
- Water/Sewer

4
16
80

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).
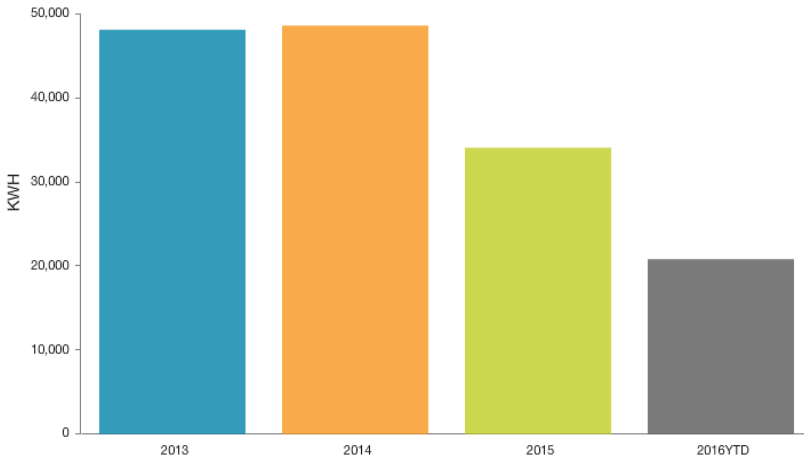
Central Services Electricity Use Comparison Qtr. 4, 2015-2016

Legend: 2015, 2016

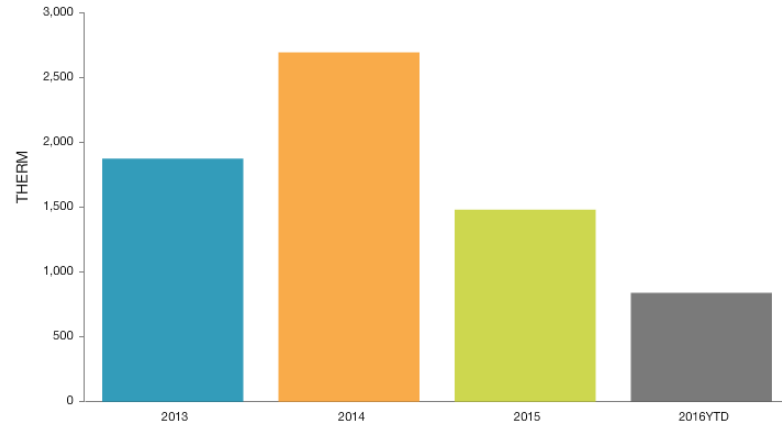X-axis: April, May, June, Monthly Average Cost $ YTD

Y-axis: $0, $100, $200, $300, $400, $500, $600, $700

Central Services Utility Use

Location: Henderson County-> CENTRALSERVICES [Central Services]
Time: 09/09/2016 1:22:27 AM   **Commodity:** Electric   Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

KWH

50,000	
40,000	
30,000	
20,000	
10,000	
0	

2013   2014   2015   2016YTD

Location: Henderson County-> CENTRALSERVICES [Central Services]
Time: 09/27/2016 1:25:39 AM   **Commodity:** Natural Gas   Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

THERM

3,000	
2,500	
2,000	
1,500	
1,000	
500	
0	

2013   2014   2015   2016YTD

Location: Henderson County-> CENTRALSERVICES [Central Services]
Time: 09/27/2016 1:25:39 AM   **Commodity:** Water   Water in Thousands of Gal

Total Use Summary
(FY ends in Dec of year shown)

KGAL

140	
120	
100	
80	
60	
40	
20	
0	

2013   2014   2015   2016YTD

* A billing discrepancy for several months during 2016 reflects the spike in consumption on this graph. The issue has been addressed with the City of Hendersonville Water and Sewer Department and is being remedied in the back-logged data, both at the City and with Environmental Programs. Usage at Central Services has been typical for this time of year.
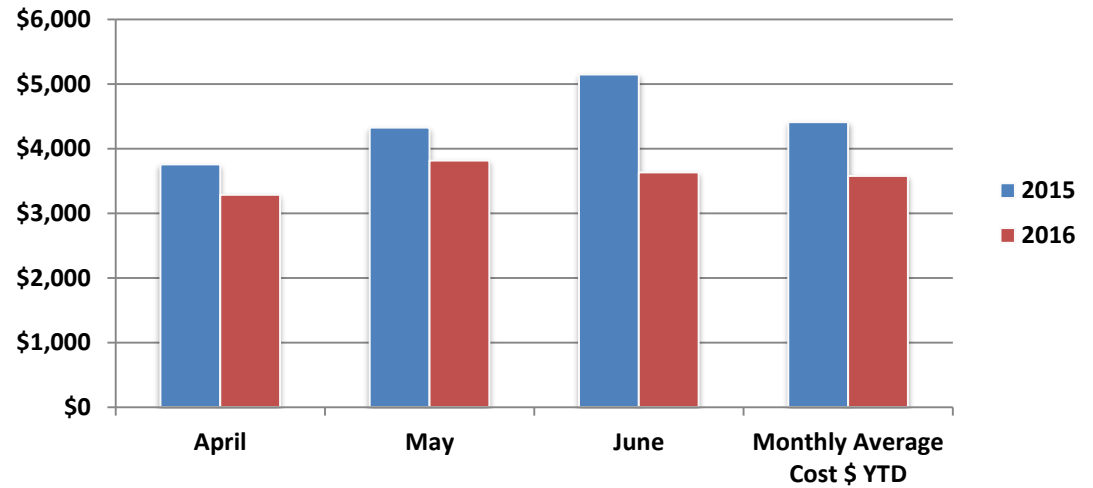
CNG Station Utility Use
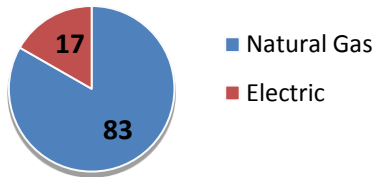
Total Cost % YTD

- Natural Gas
- Electric

17
83

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).
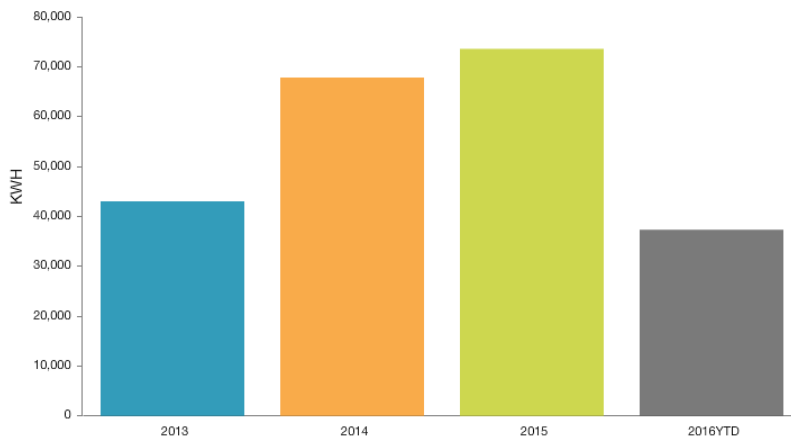
CNG Station Natural Gas Use Comparison
Qtr. 4, 2015-2016

- 2015
- 2016

April   May   June   Monthly Average Cost $ YTD

Location:	Henderson County-> CNGSTATION [Cng Station]		Electricity in KWH
Time:	09/09/2016 1:22:27 AM	Commodity: Electric	

Total Use Summary
(FY ends in Dec of year shown)

Location:	Henderson County-> CNGSTATION [Cng Station]		Natural Gas in Therms
Time:	09/09/2016 1:22:27 AM	Commodity: Natural Gas	

Total Use Summary
(FY ends in Dec of year shown)
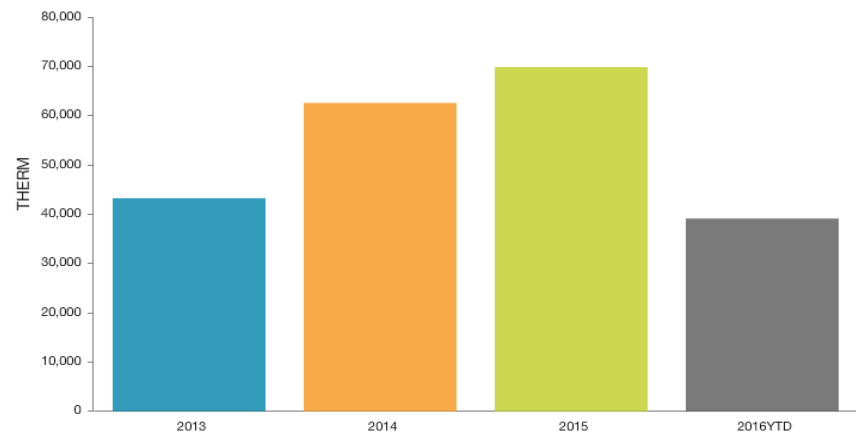
Cooperative Extension Utility Use

Total Cost % YTD
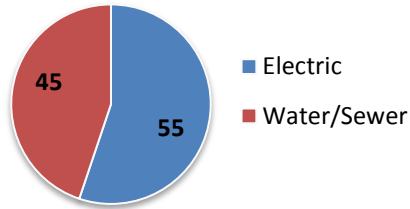
- Electric
- Water/Sewer

45
55

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

Cooperative Extension Electricity Use Comparison Qtr. 4, 2015-2016

Legend: 2015, 2016

Categories: April, May, June, Monthly Average Cost $ YTD
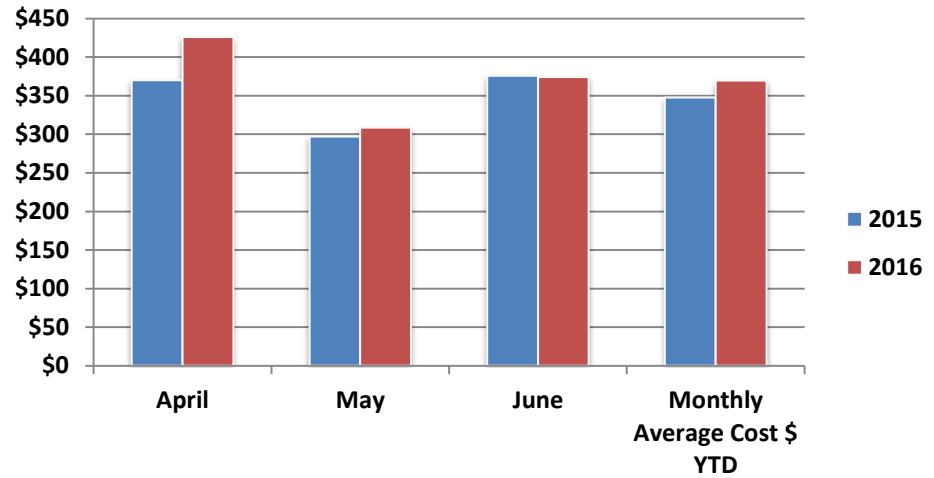
Location: Henderson County-> COOPERATIVEEXTENSION [Cooperative Extension]
Time: 09/27/2016 1:25:39 AM   Commodity: Electric

Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

Years: 2013, 2014, 2015, 2016YTD
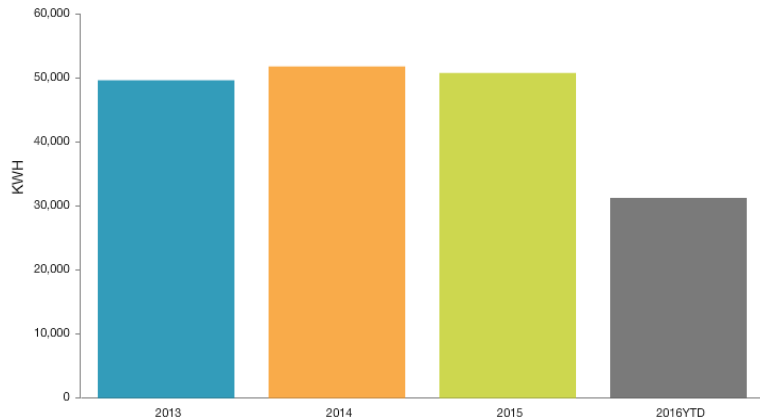
Location: Henderson County-> COOPERATIVEEXTENSION [Cooperative Extension]
Time: 09/09/2016 1:22:27 AM   Commodity: Water

Water in Thousands of Gal
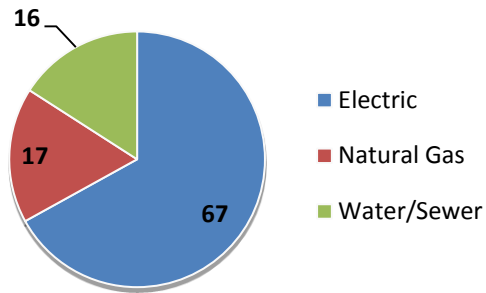
Total Use Summary
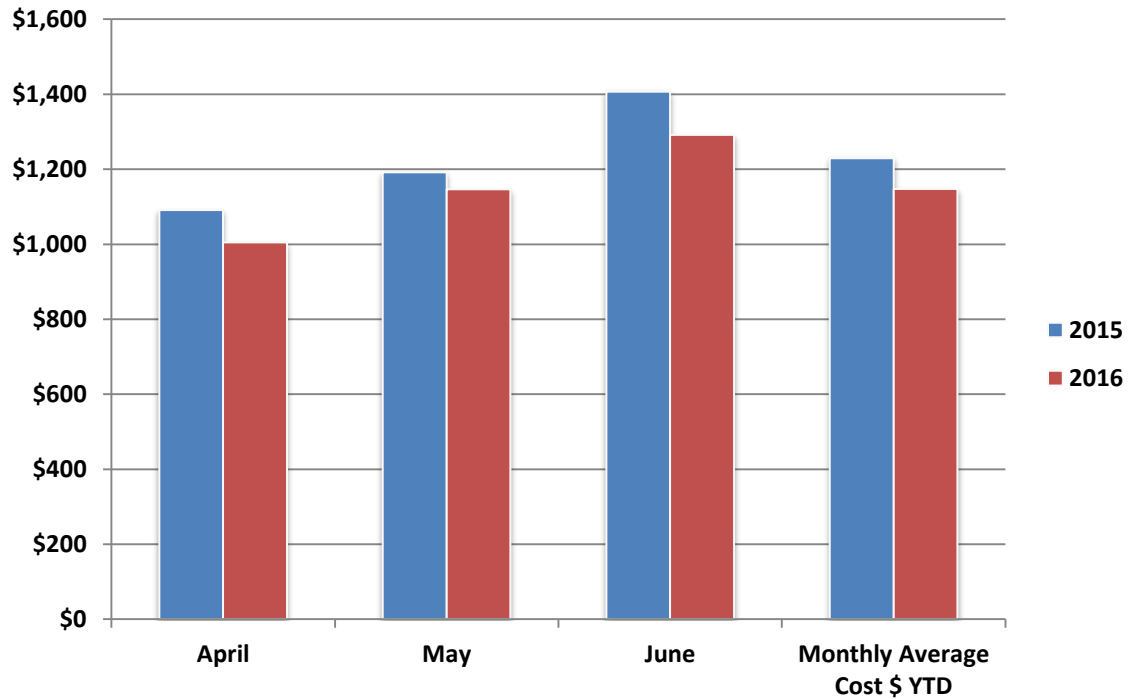(FY ends in Dec of year shown)

Years: 2013, 2014, 2015, 2016YTD

Court Services Utility Use

Total Cost % YTD*

- Electric
- Natural Gas
- Water/Sewer

16
17
67
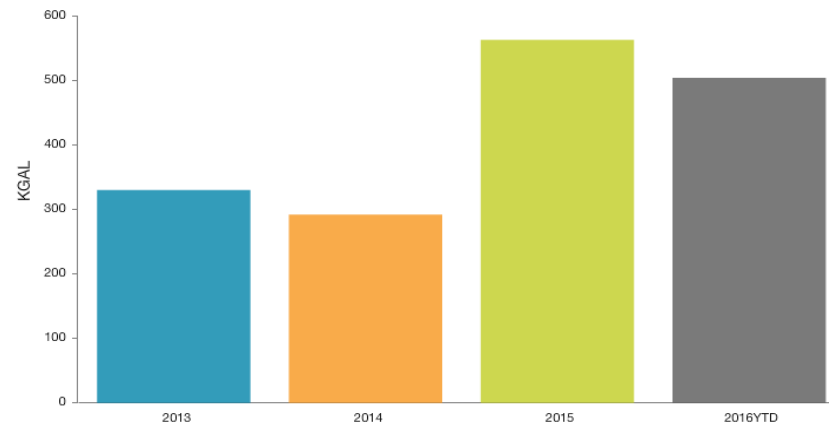
* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

Court Services Electricity Use Comparison
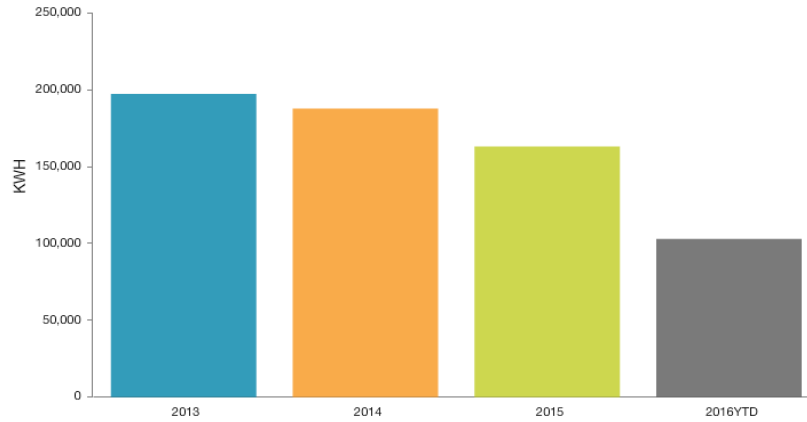## Qtr. 4, 2015-2016

- 2015
- 2016

13

Court Services Utility Use

Location: Henderson County-> OLDHEALTHDEPARTMENT_3560 [Court Services Building]
Time: 09/26/2016 1:23:39 AM   Commodity: Electric
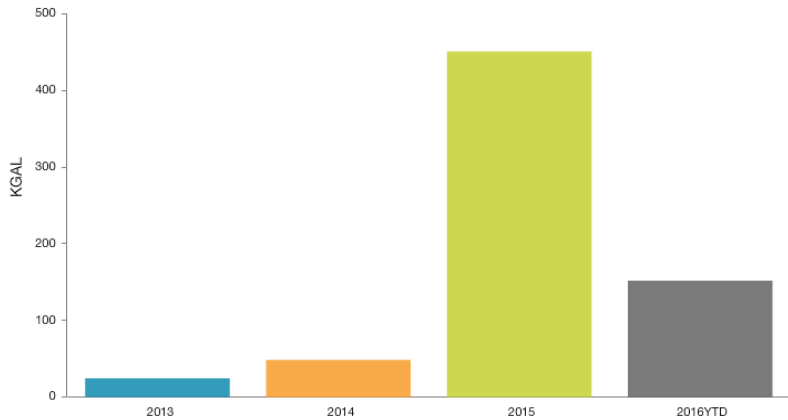
Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> OLDHEALTHDEPARTMENT_3560 [Court Services Building]
Time: 09/26/2016 1:23:39 AM   Commodity: Natural Gas
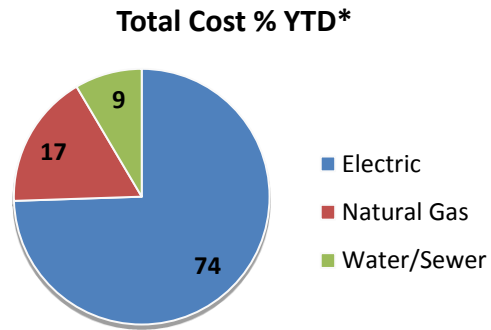
Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> OLDHEALTHDEPARTMENT_3560 [Court Services Building]
Time: 09/26/2016 1:23:39 AM   Commodity: Water

Water in Thousands of Gal

Total Use Summary
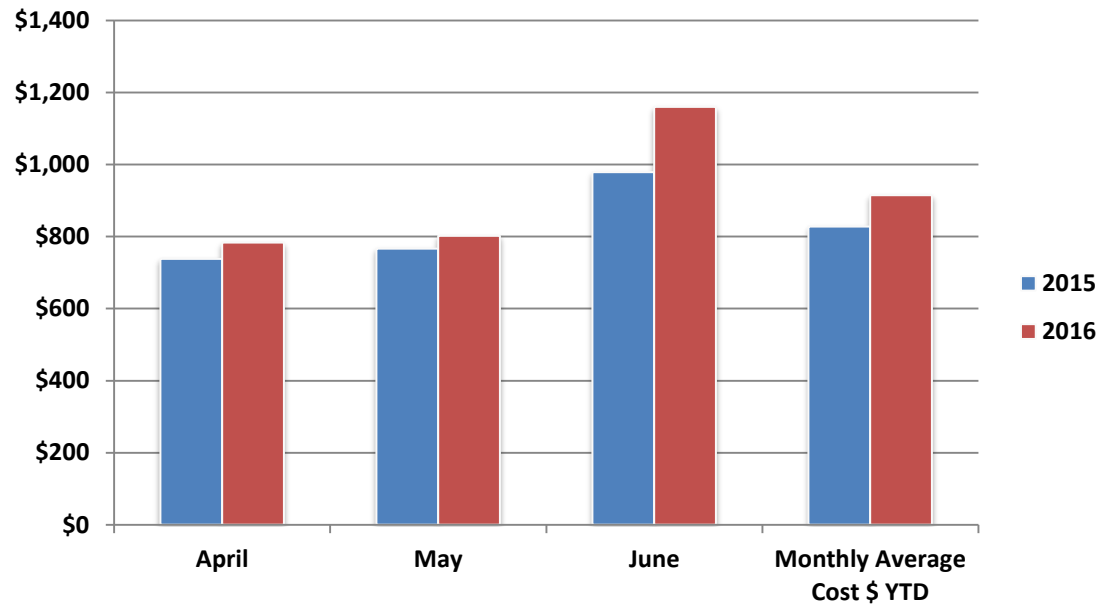(FY ends in Dec of year shown)

A major water leak was detected in late November 2015 and was fixed by Henderson County Facilities Services; the abnormal usage is reflected in this graph.

Emergency Services Utility Use

Total Cost % YTD*

- ■ Electric
- ■ Natural Gas
- ■ Water/Sewer

Pie chart values: 74, 17, 9

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).
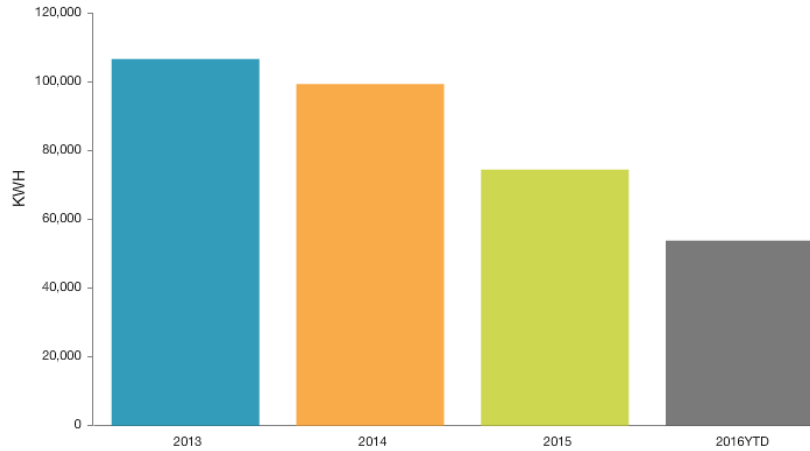
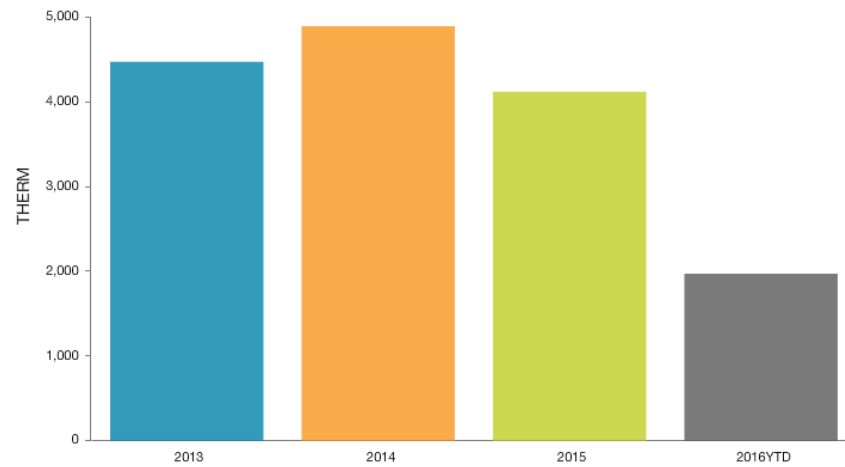## Emergency Services Electricity Use Comparison Qtr. 4, 2015-2016

- ■ 2015
- ■ 2016

Categories: April, May, June, Monthly Average Cost $ YTD

Emergency Services Utility Use

Historic Courthouse Utility Use

Total Cost % YTD*

- Electric
- Natural Gas
- Water/Sewer

2
16
82

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

Historic Courthouse Electricity Use Comparison
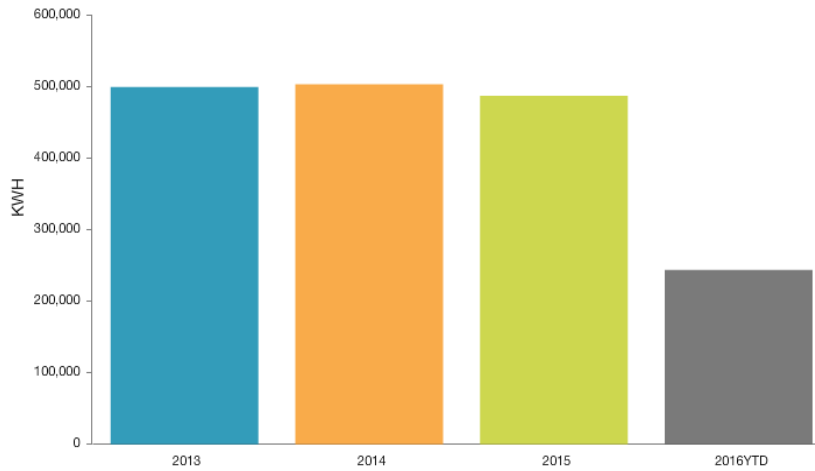## Qtr. 4, 2015-2016

- 2015
- 2016

April   May   June   Monthly Average Cost $ YTD

Historic Courthouse Utility Use

Location: Henderson County-> HISTORICCOURTHOUSE [Historic Courthouse]
Time: 09/09/2016 1:22:27 AM   **Commodity:** Electric
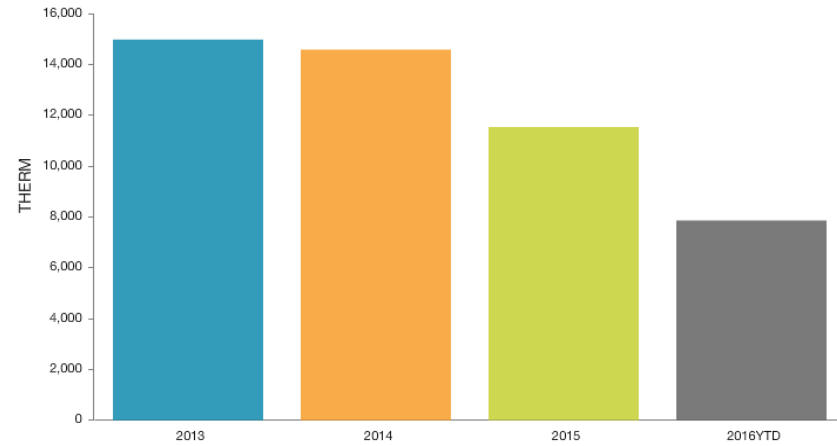
Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> HISTORICCOURTHOUSE [Historic Courthouse]
Time: 09/09/2016 1:22:27 AM   **Commodity:** Natural Gas
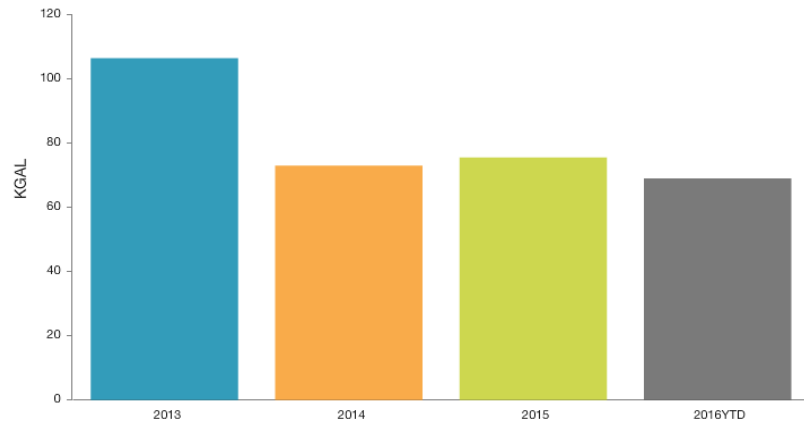
Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> HISTORICCOURTHOUSE [Historic Courthouse]
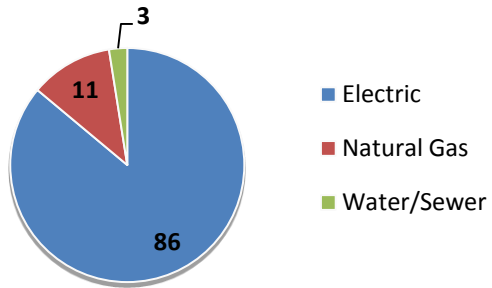**Time:** 09/09/2016 1:22:27 AM   **Commodity:** Water

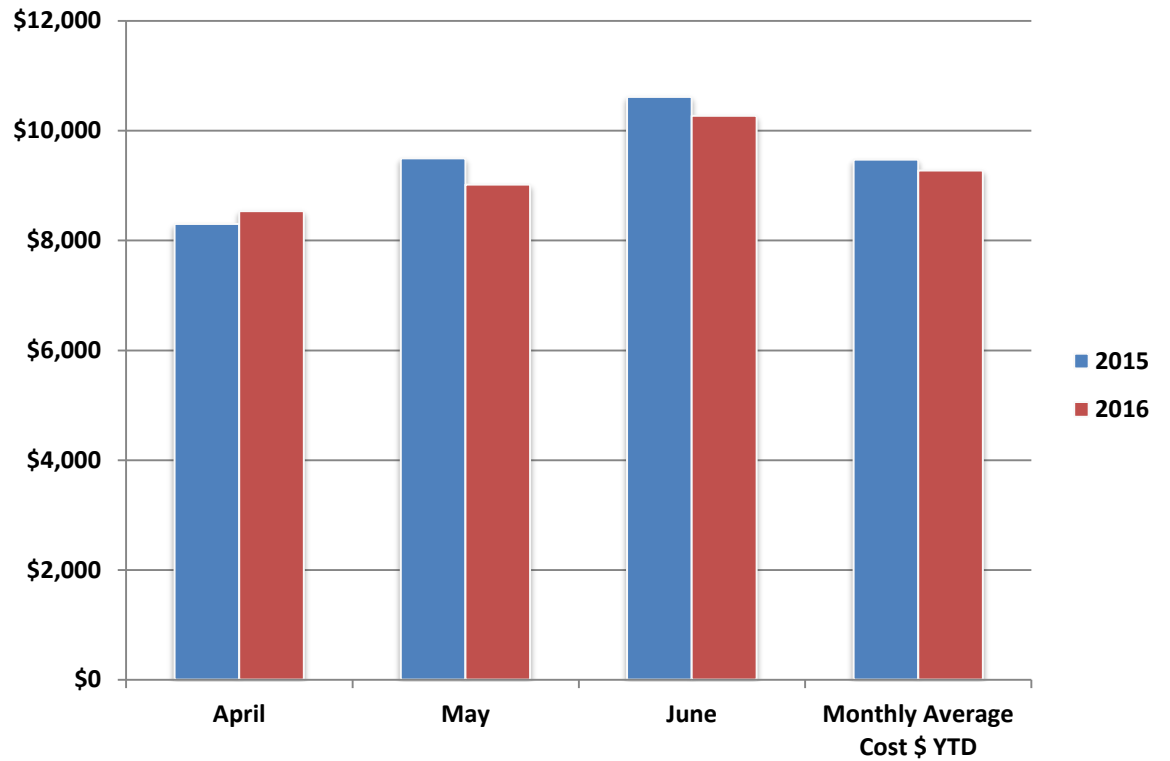Water in Thousands of Gal

Total Use Summary
(FY ends in Dec of year shown)

18

Human Services Utility Use

Total Cost % YTD*

- Electric
- Natural Gas
- Water/Sewer

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

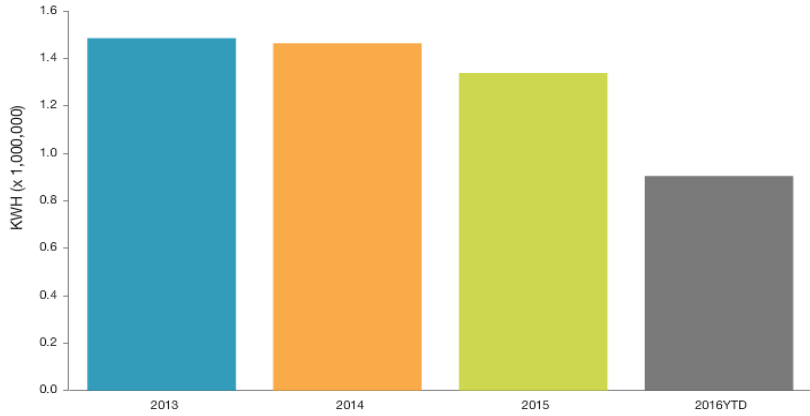## Human Services Electricity Use Comparison
Qtr. 4, 2015-2016

- 2015
- 2016

Human Services Utility Use

Location: Henderson County-> HUMANSERVICES [Human Services]
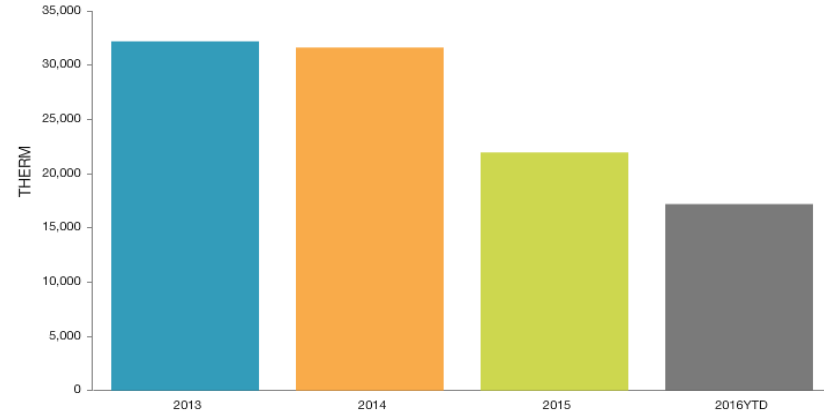**Time:** 09/09/2016 1:22:27 AM   **Commodity:** Electric

Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

KWH (x 1,000,000)

2013 2014 2015 2016YTD

Location: Henderson County-> HUMANSERVICES [Human Services]
Time: 09/27/2016 1:25:39 AM   **Commodity:** Natural Gas

Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

THERM

2013 2014 2015 2016YTD

Location: Henderson County-> HUMANSERVICES [Human Services]
Time: 09/09/2016 1:22:27 AM   **Commodity:** Water

Water in Thousands of Gal

Total Use Summary
(FY ends in Dec of year shown)

KGAL

2013 2014 2015 2016YTD

20

King Street Utility Use
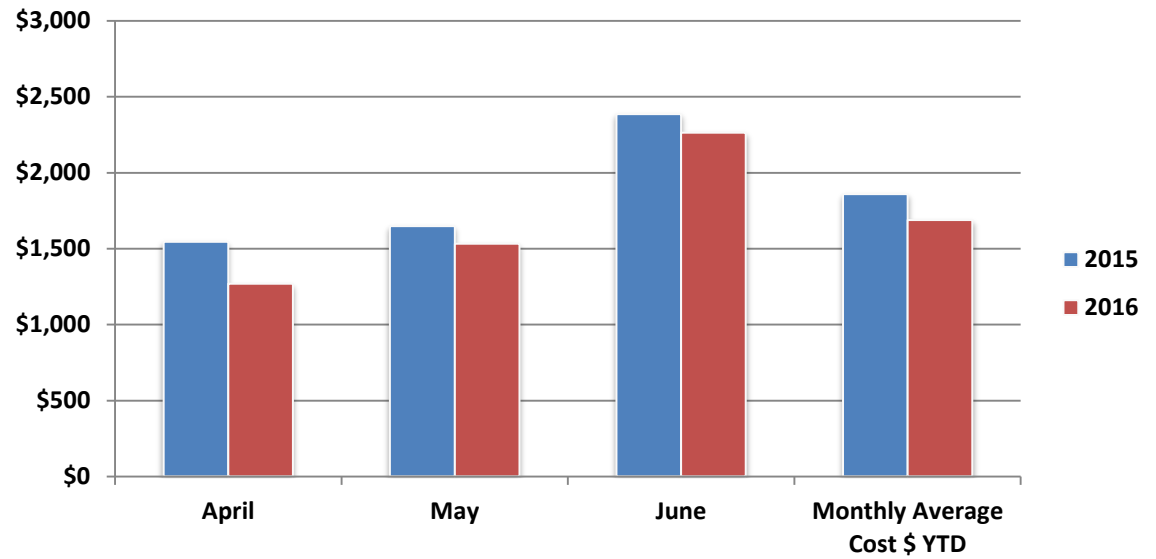
Total Cost % YTD*

- Electric
- Natural Gas
- Water/Sewer

3
18
79

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).
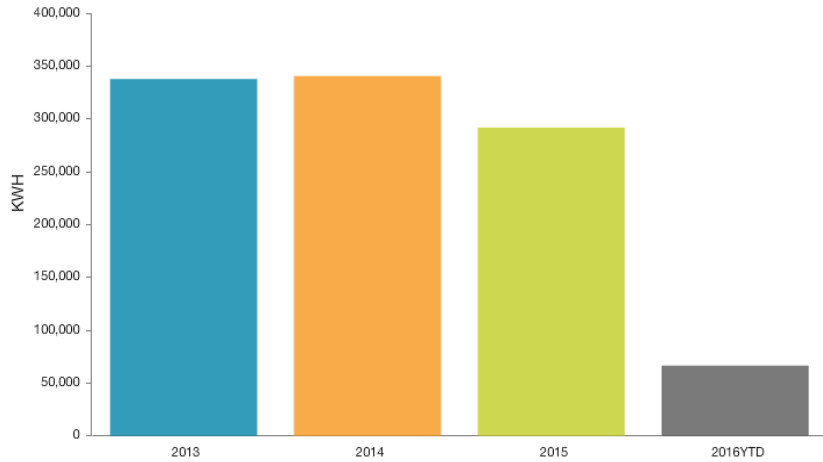
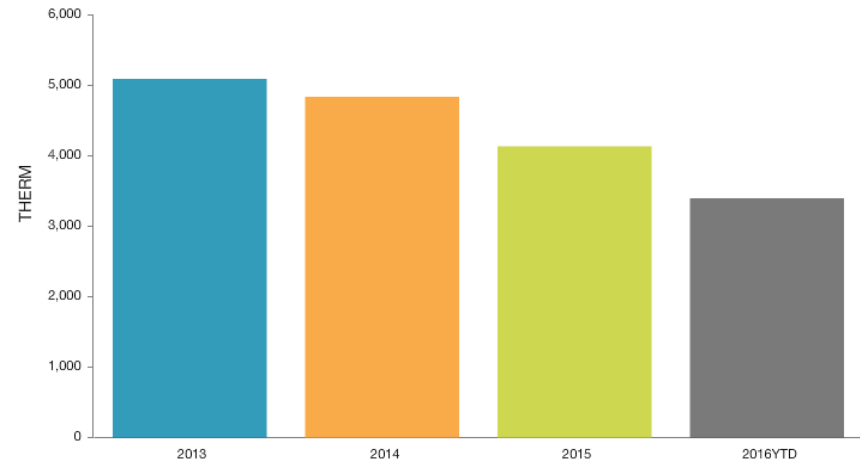## King Street Electricity Use Comparison
Qtr. 4, 2015-2016

- 2015
- 2016

April   May   June   Monthly Average Cost $ YTD

King Street Utility Use

Location: Henderson County-> KINGSTREETBUILDING [King Street Building]
Time: 09/27/2016 1:25:39 AM   **Commodity:** Electric

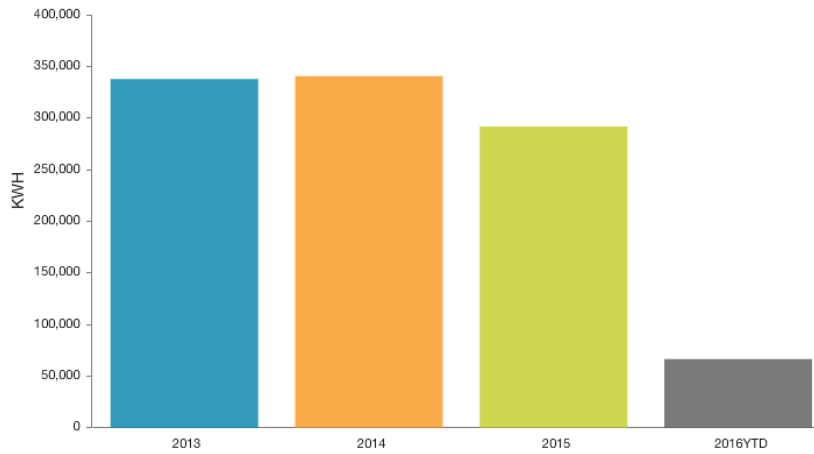Electricity in KWH ^

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> KINGSTREETBUILDING [King Street Building]
Time: 09/26/2016 1:23:39 AM   **Commodity:** Natural Gas

Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> KINGSTREETBUILDING [King Street Building]
Time: 09/27/2016 1:25:39 AM   **Commodity:** Electric

Water in Thousands of Gal *

Total Use Summary
### (FY ends in Dec of year shown)

^ Note regarding electricity data: spring 2016 electricity data does not reflect the full range of values due to data discrepancies from Duke Energy meter at this location. The issues have been addressed and the back-logged data should be available in fall 2016 to reflect true consumption these accounts. This location saw typical spring/summer visitor and event usage, further demonstrating the data discrepancy shown in this chart.

* A billing discrepancy for several months during 2016 reflects the spike in consumption on this graph. The issue has been addressed with the City of Hendersonville Water and Sewer Department and is being remedied in the back-logged data, both at the City and with Environmental Programs. Usage at Central Services has been typical for this time of year.
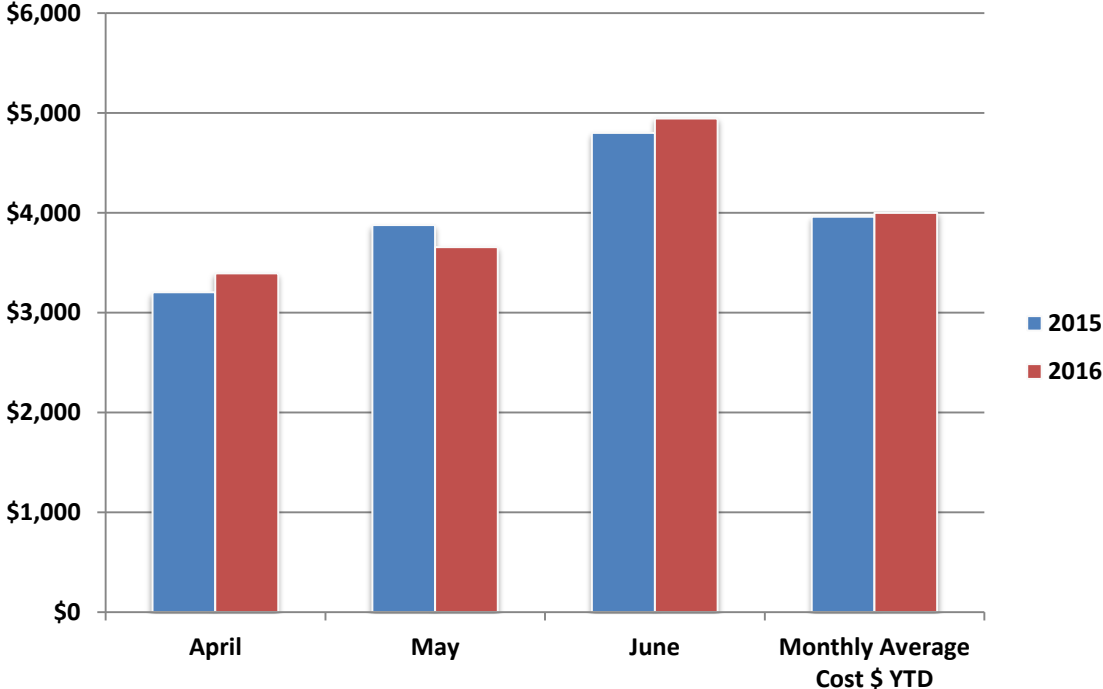
Library Utility Use

Total Cost % YTD*
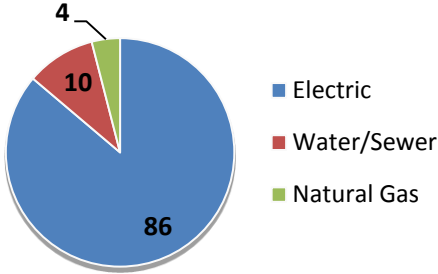
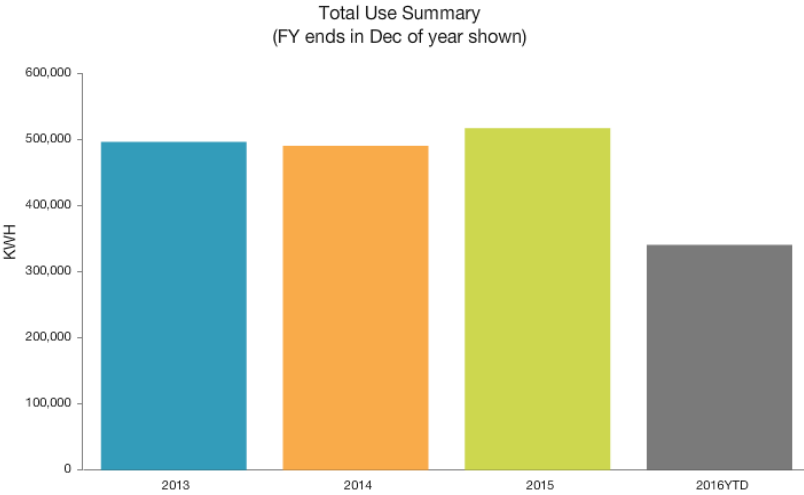- ■ Electric
- ■ Water/Sewer
- ■ Natural Gas

4
10
86

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

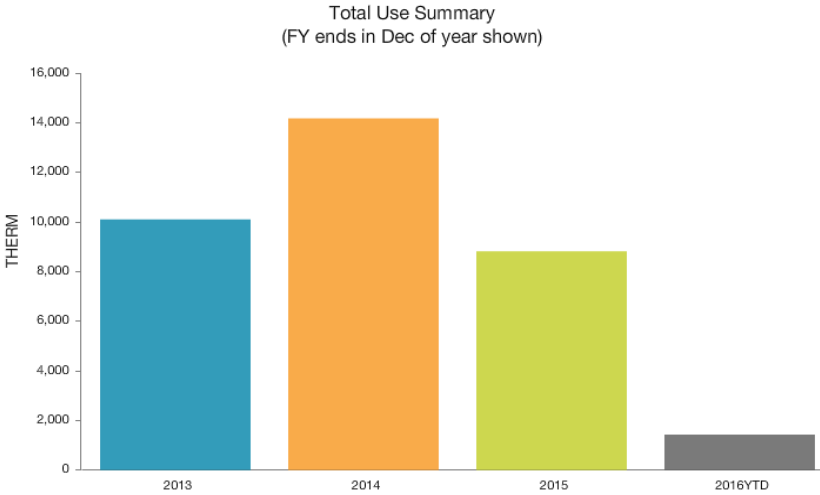## Libraries Electricity Use Comparison
Qtr. 4, 2015-2016

- ■ 2015
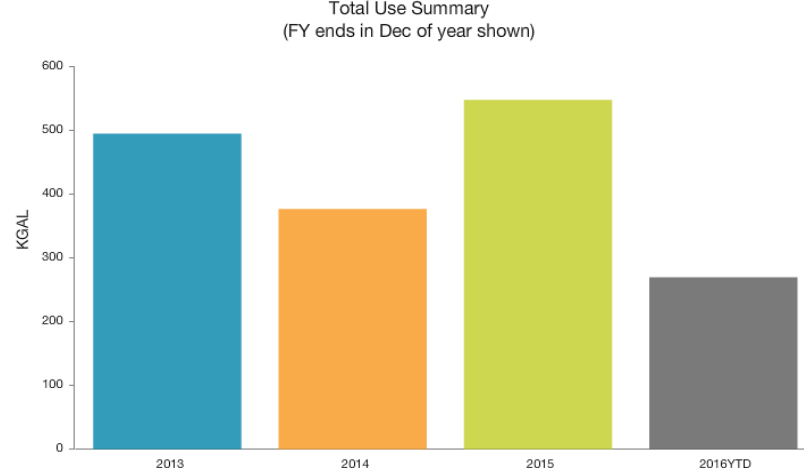- ■ 2016

Library Utility Use

Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

Water in Thousands of Gal

Total Use Summary
(FY ends in Dec of year shown)

*A major water leak was discovered in March 2016 that began in late February at the Main Library on Washington Street. The problem has been repaired but the leak caused a large increase in unanticipated volume.
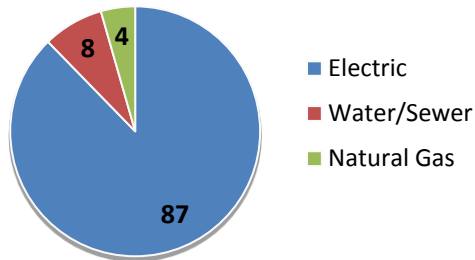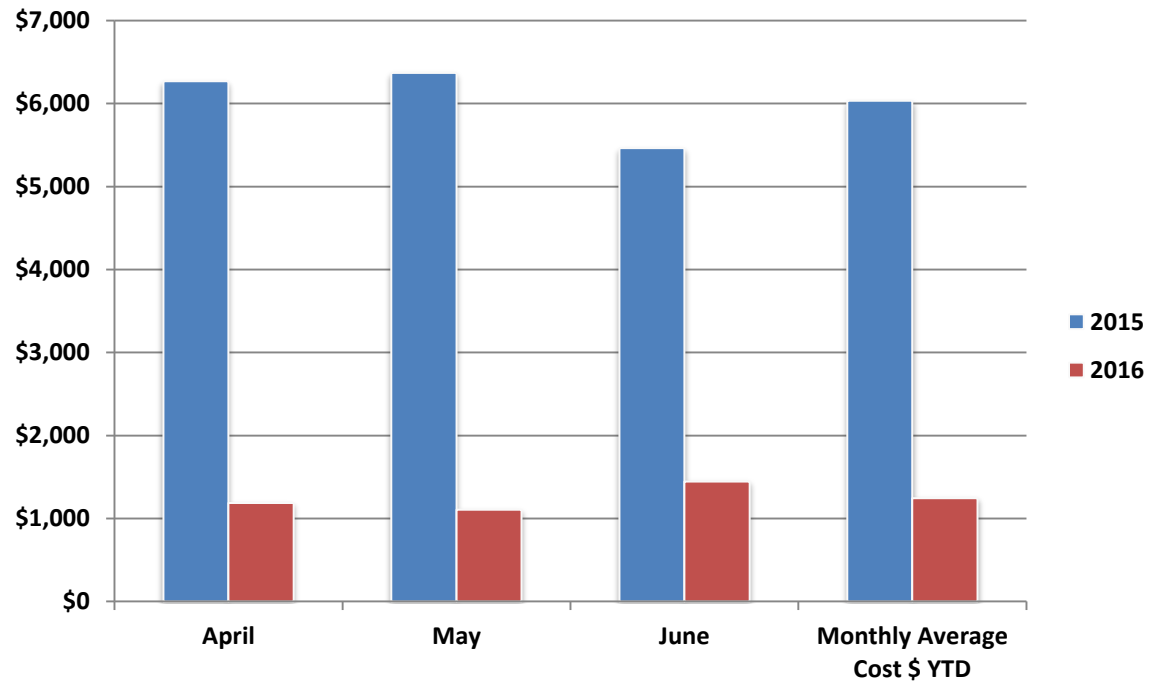
24

Parks and Recreation Utility Use

Total Cost % YTD*

- Electric
- Water/Sewer
- Natural Gas

87
8
4

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).

^ Note regarding this data: Spring 2016 electricity data does not reflect the full range of values due to data discrepancies from Duke Energy meters on some large Parks & Recreation accounts. The issues have been addressed and the back-logged data should be available in fall 2016 to reflect true consumption these accounts. The Parks & Recreation facilities have seen typical spring/summer visitor and event usage, further demonstrating the data discrepancy shown in this chart and the first chart on the following page.

Parks & Recreation Electricity Use Comparison Qtr. 4, 2015-2016^


- 2015
- 2016

Parks and Recreation Utility Use

Location: Henderson County-> PARKS&RECREATION [Parks & Recreation]
Time: 09/27/2016 1:25:39 AM   Commodity: Electric

Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)
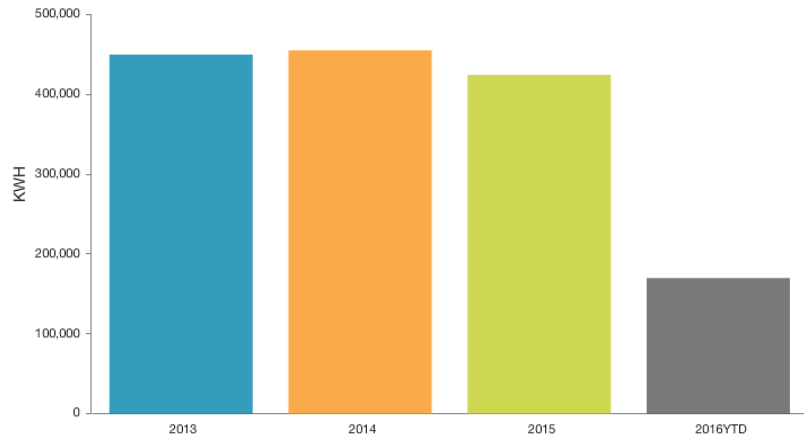
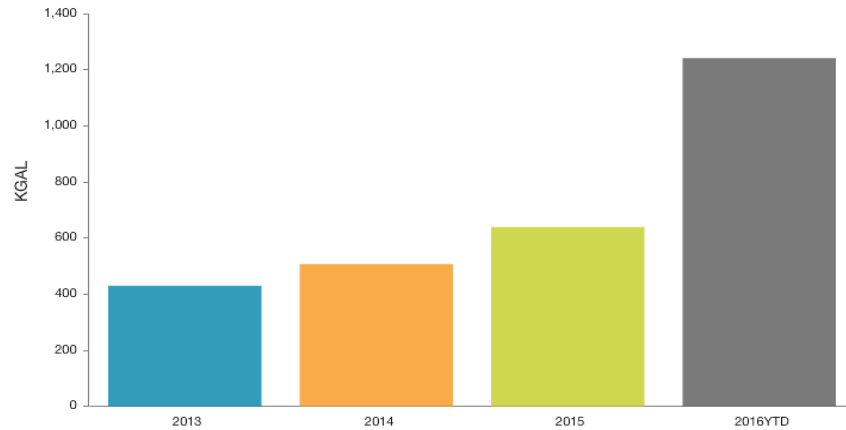Location: Henderson County-> PARKS&RECREATION [Parks & Recreation]
Time: 09/27/2016 1:25:39 AM   Commodity: Natural Gas

Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)
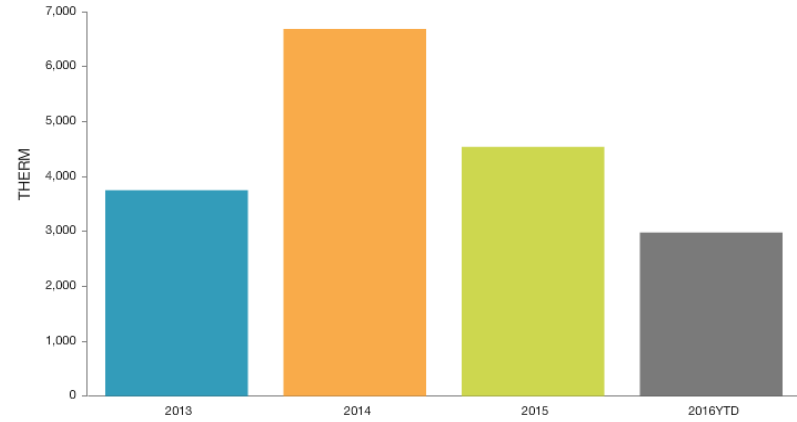
Location: Henderson County-> PARKS&RECREATION [Parks & Recreation]
Time: 09/26/2016 1:23:39 AM   Commodity: Water
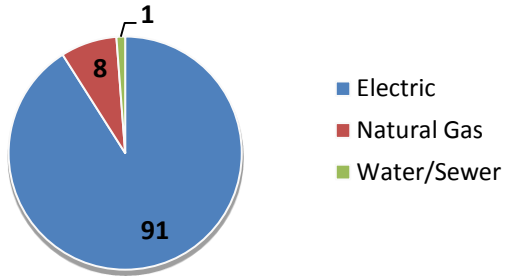
Water in Thousands of Gal *

Total Use Summary
(FY ends in Dec of year shown)

* A new tap was added at Edneyville Park to supply water to the park. Increased usage for both consumption and irrigation at multiple park sites has led to higher consumption on 2016 as compared with previous years.
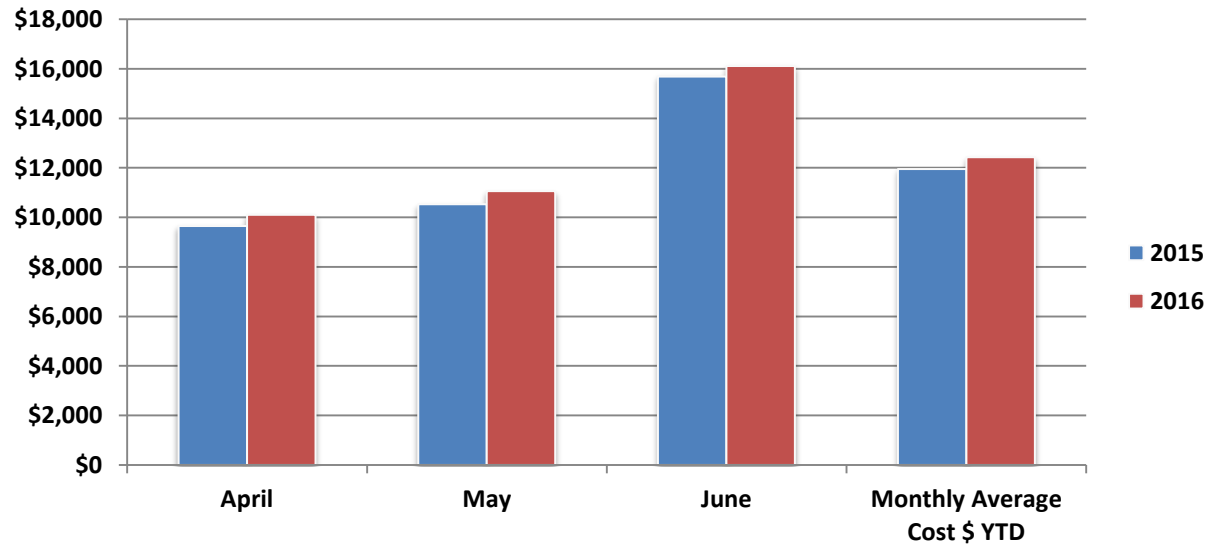
26

Sheriff's Complex Utility Use

Total Cost % YTD*

- Electric
- Natural Gas
- Water/Sewer

1
8
91

* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).
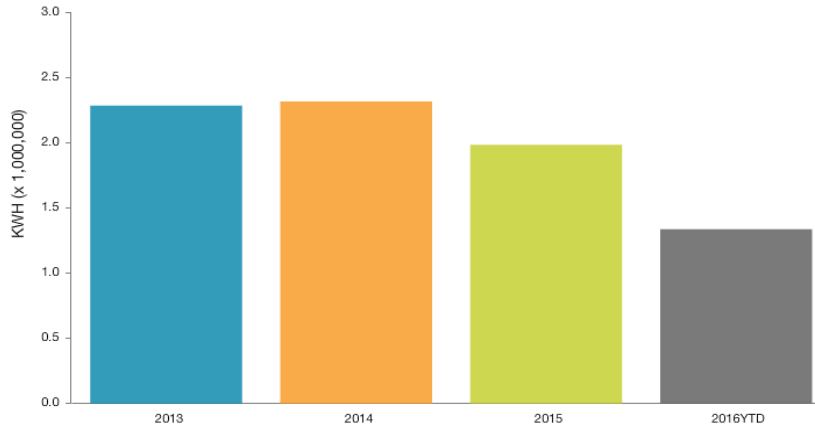
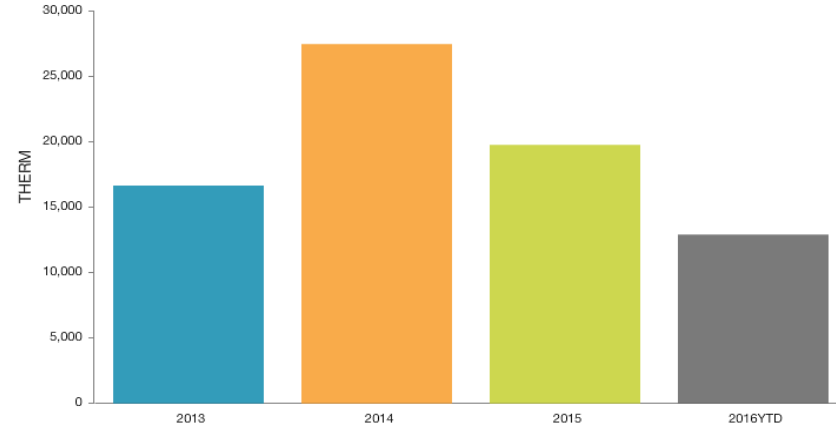## Sheriff's Complex Electricity Use Comparison Qtr. 4, 2015-2016

- 2015
- 2016

Sheriff's Complex Utility Use

Location: Henderson County-> SHERIFF [Sheriff]
Time: 09/26/2016 1:23:39 AM   Commodity: Electric

Electricity in KWH

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> SHERIFF [Sheriff]
Time: 09/26/2016 1:23:39 AM   Commodity: Natural Gas

Natural Gas in Therms

Total Use Summary
(FY ends in Dec of year shown)

Location: Henderson County-> SHERIFF [Sheriff]
Time: 09/27/2016 1:25:39 AM   Commodity: Electric

Water in Thousands of Gal

Total Use Summary
(FY ends in Dec of year shown)

Solid Waste Utility Use

Total Cost % YTD*

Pie chart:
- 85 — Electric (blue)
- 15 — Water/Sewer (red)
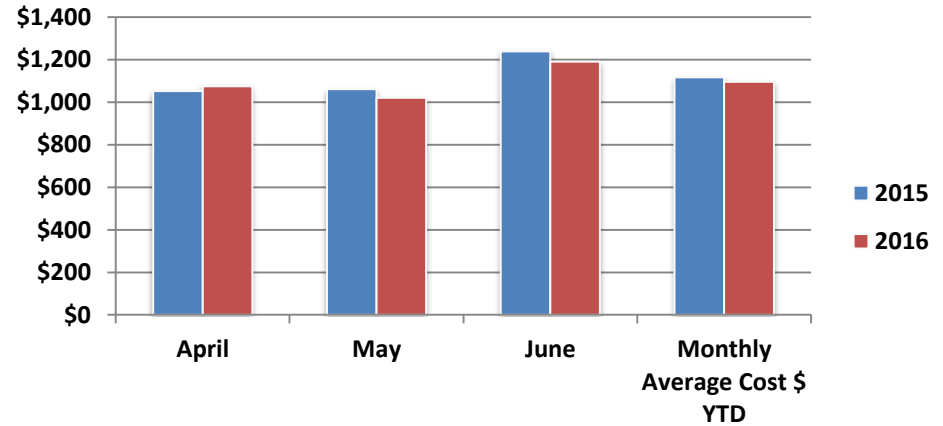
* The cost percentage of each commodity over the most recent 12 months, not including the current month or last month (FacilityDude assumes the data for these months may be incomplete).
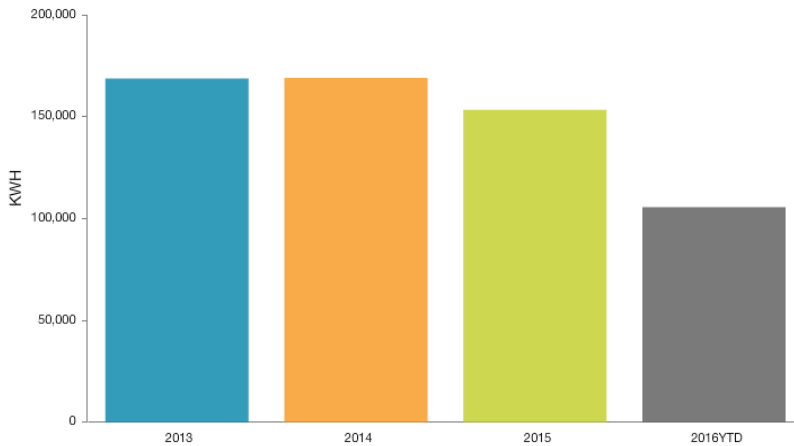
Solid Waste Electricity Use Comparison Qtr. 4, 2015-2016

Bar chart (2015 blue, 2016 red) with values ranging $0–$1,400 across April, May, June, and Monthly Average Cost $ YTD.

| Location: | Henderson County-> SOLIDWASTE [Solid Waste] | Electricity in KWH |
| Time: | 09/26/2016 1:23:39 AM | Commodity: Electric |

Total Use Summary (FY ends in Dec of year shown)

Bar chart — KWH by year: 2013 ≈168,000; 2014 ≈168,000; 2015 ≈153,000; 2016YTD ≈105,000.

| Location: | Henderson County-> SOLIDWASTE [Solid Waste] | Water in Thousands of Gal |
| Time: | 09/27/2016 1:25:39 AM | Commodity: Water |

Total Use Summary (FY ends in Dec of year shown)

Bar chart — KGAL by year: 2013 ≈560; 2014 ≈600; 2015 ≈860; 2016YTD ≈375.