

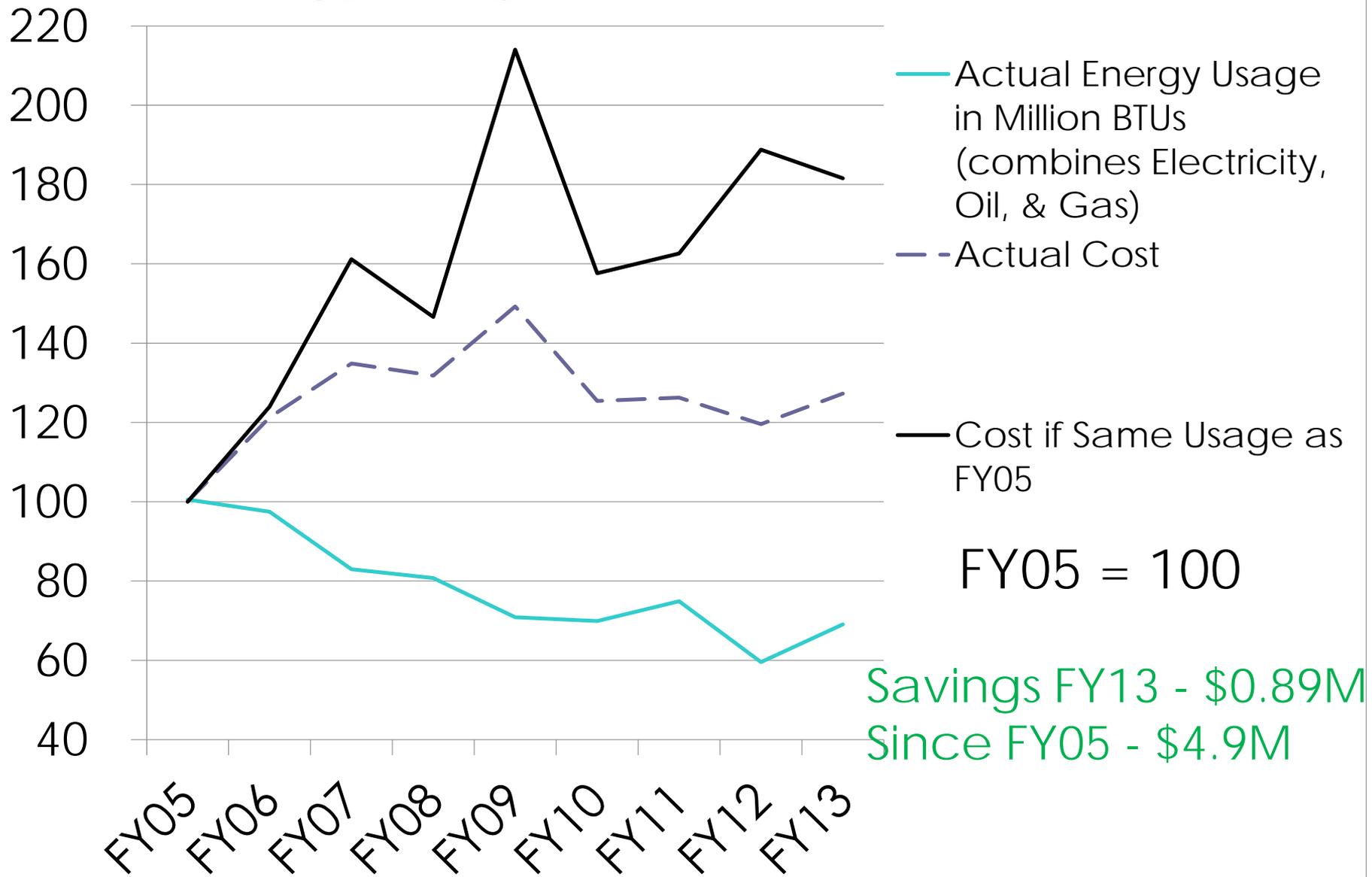
2013 Energy Results

Town of Winchester

November 18, 2013

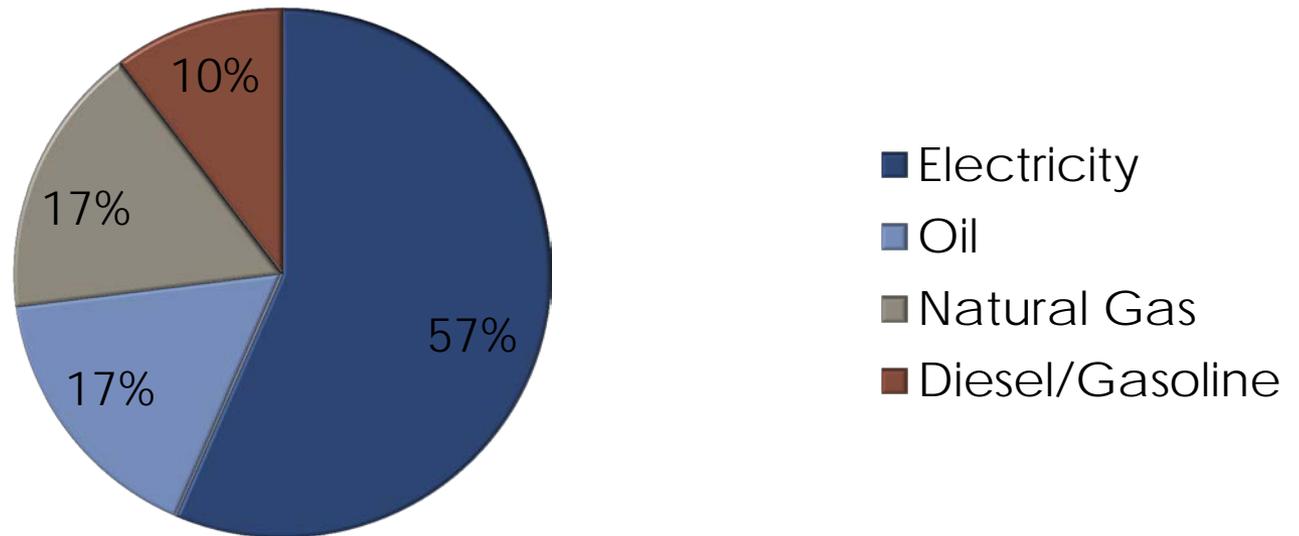
Board of Selectmen

Energy Usage and Cost FY05 to FY13



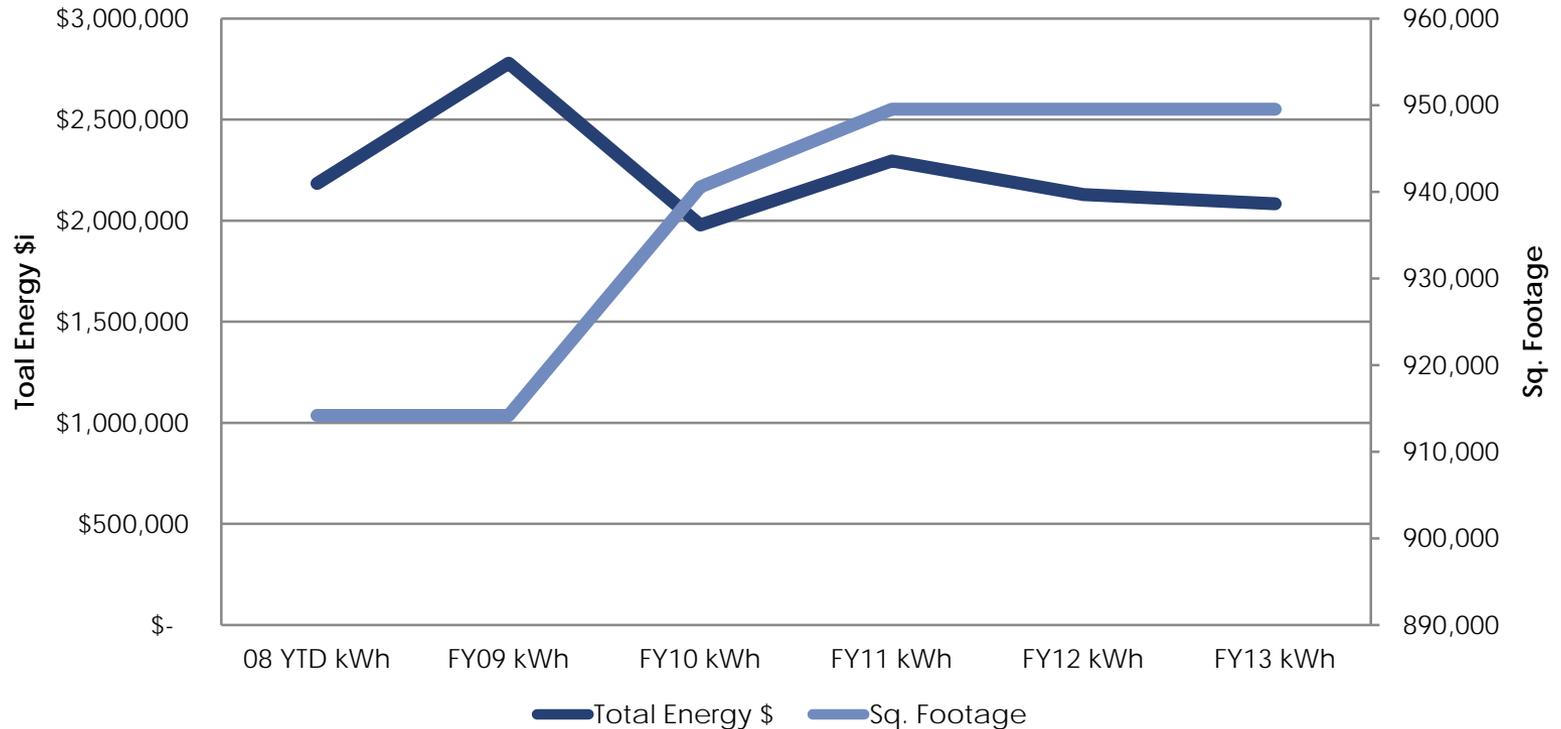
Energy Costs by Fuel

% to Total

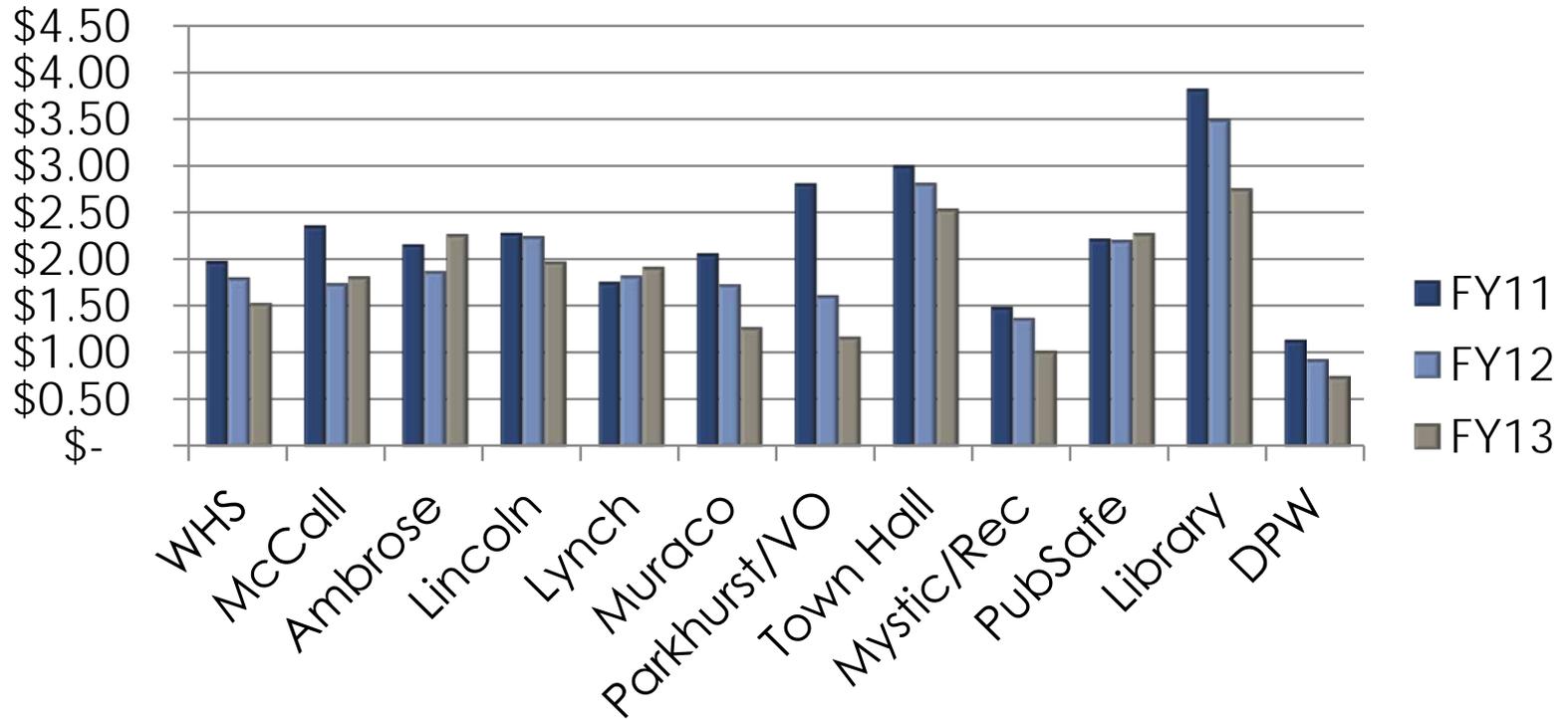


Electricity is Winchester's most expensive energy and the greatest fraction of usage.

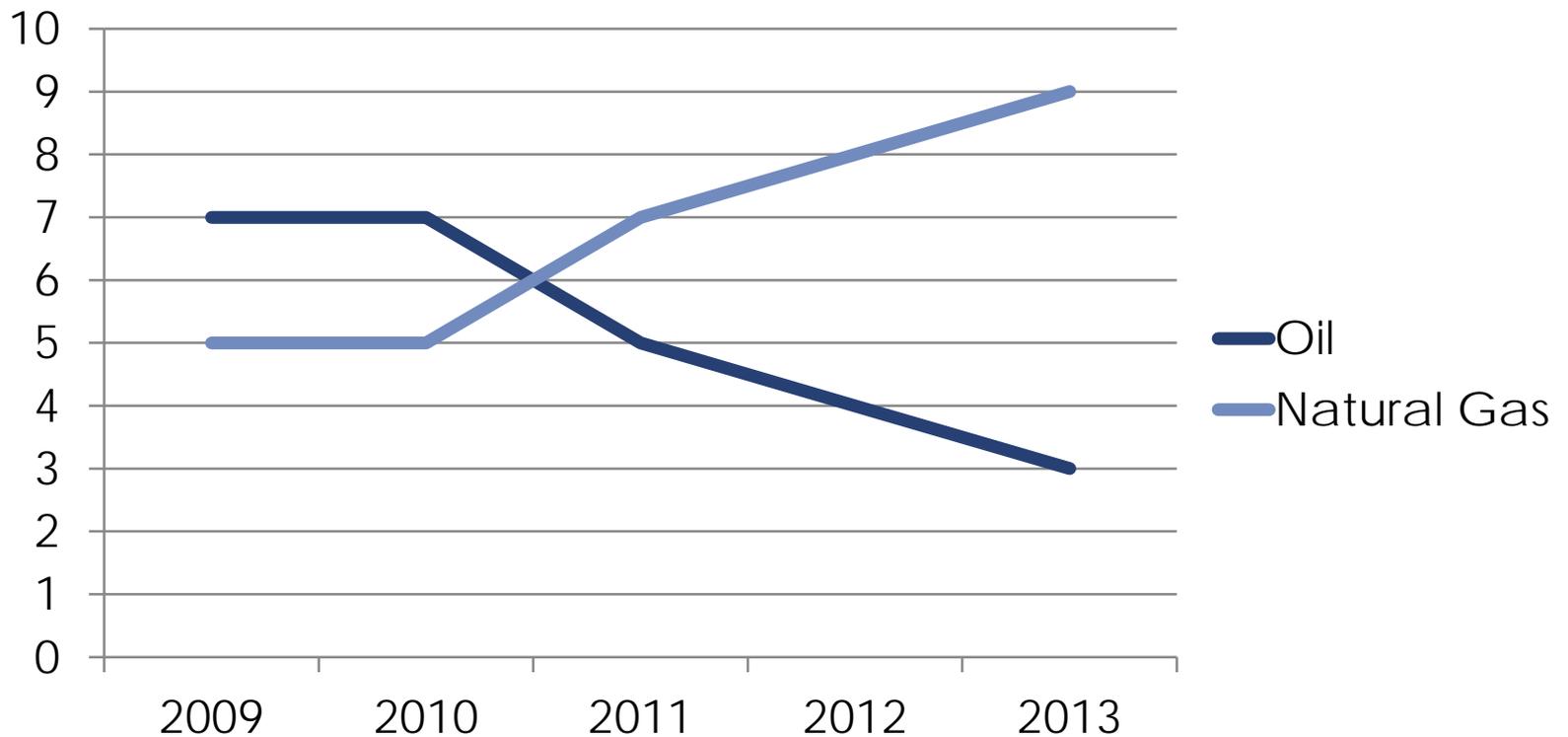
Energy Expense vs. Sq. Footage



Energy Cost per Square Foot



Natural Gas Conversions



McCall on line, heating with Natural Gas now.

FY13 Energy Projects

- McCall switch to Natural Gas - \$40,000 annual savings
- Green Communities Projects - \$57,000 annual savings
 - McCall E Wing Energy Management System tie in & VFD's.
 - Library Energy Management System.
 - Muraco, Lynch, Lincoln, Town Hall demand control ventilation.
 - Ambrose lighting occupancy sensors.
 - Public Safety hot water heater.

WHS Renovation: Energy Efficiency Features

- ▣ Chilled Beam HVAC system
- ▣ Windows that open
- ▣ Great insulation
- ▣ Architect challenged to hit 45% below code in performance
- ▣ Solar Hot Water, being studied with grant funding.
 - ▣ Potential for grant funding, if feasible.
- ▣ White Roof
- ▣ \$1.3 million add alternate for life cycle costing. Recommend moving forward with this.

Grants & Incentives

- ▣ Green Communities \$198,000
- ▣ Technical Assistance
 - ▣ Geothermal study (Library) \$12,500
 - ▣ Solar Hot Water feasibility (WHS renovation) \$5,000
- ▣ Utility incentives
 - ▣ Ngrid – McCall natural gas project \$80,000 for Mains; \$127,000 to run line at Main Street.
 - ▣ NStar – partner with lighting and HVAC projects \$48,000+

What next

- ▣ LED Streetlights
- ▣ Geothermal at the Library – feasibility study
- ▣ Solar – reissue for 3 roof top arrays
 - ▣ DPW, Ambrose, Vinson-Owen
- ▣ DPW Lighting improvements
- ▣ Parkhurst EMS

Back Up Data

Building Champions

Usage by fuel type: FY08 – FY13

| | 08 YTD kWh | FY09 kWh | FY10 kWh | FY11 kWh | FY12 kWh | FY13 kWh | % Change '13 vs. '12 |
|-------------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|
| Facility | | | | | | | |
| Ambrose | 450,170 | 447,693 | 446,019 | 421,395 | 466,523 | 482,136 | 3% |
| WHS | 2,160,153 | 2,017,593 | 2,004,153 | 1,839,938 | 1,617,179 | 1,704,644 | 5% |
| Lincoln | 584,172 | 493,488 | 423,407 | 510,621 | 424,896 | 460,884 | 8% |
| Lynch | 387,048 | 355,448 | 337,971 | 359,426 | 335,688 | 326,238 | -3% |
| McCall | 922,100 | 975,940 | 1,056,900 | 1,132,749 | 980,839 | 955,520 | -3% |
| Muraco | 181,442 | 202,762 | 225,522 | 296,359 | 285,154 | 236,972 | -17% |
| VO | 179,367 | 187,365 | 162,674 | 148,359 | 31,432 | 2,700 | -91% |
| Parkhurst | | | | 18,680 | 111,440 | 106,680 | -4% |
| Schools Usage | 4,864,452 | 4,680,289 | 4,656,646 | 4,727,526 | 4,253,151 | 4,275,774 | 1% |
| Schools \$ | \$972,890 | \$936,058 | \$931,329 | \$921,868 | \$812,352 | \$816,673 | 1% |
| | | | | | | | |
| DPW | 81,440 | 68,720 | 74,720 | 95,280 | 92,640 | 101,385 | 9% |
| Library | 277,477 | 298,379 | 319,796 | 375,456 | 349,780 | 328,658 | -6% |
| Rec | 63,640 | 59,840 | 56,120 | 59,713 | 58,720 | 58,120 | -1% |
| Public Safety | 297,465 | 292,502 | 283,372 | 263,713 | 309,383 | 335,371 | 8% |
| Town Hall | 299,389 | 273,166 | 280,906 | 273,779 | 251,946 | 250,323 | -1% |
| Muni Usage | 1,019,411 | 992,607 | 1,014,914 | 1,067,942 | 1,062,469 | 1,073,857 | 1% |
| Muni \$ | \$203,882 | \$198,521 | \$202,983 | \$208,249 | \$202,932 | \$205,107 | 1% |
| | | | | | | | |
| B Champion Usage | 5,883,863 | 5,672,896 | 5,671,560 | 5,795,468 | 5,315,620 | 5,349,631 | 1% |

Electricity Usage

▣ Building Champion Energy History

| Facility | 08 YTD therms | FY09 therms | FY10 therms | FY11 therms | FY12 therms | FY13 therms | % Change '13 vs. '12 |
|----------------|------------------|-------------|-------------|-------------|-------------|-------------|-------------------------|
| Ambrose | | | | | | | |
| WHS | 150,486 | 125,475 | 132,644 | 152,587 | 124,513 | 132,722 | 7% |
| Lincoln | | | | | | | |
| Lynch | | | | | | | |
| McCall | | | | | | | |
| Muraco | | | | 43,500 | 24,714 | 29,002 | 17% |
| VO | 36,007 | 37,245 | 34,612 | 39,448 | 4,612 | | -100% |
| Parkhurst | | | | | 26,252 | 26,681 | 2% |
| Schools Total | 186,493 | 162,720 | 167,256 | 235,536 | 180,091 | 188,405 | 5% |
| DPW | | | | 30,821 | 22,552 | 27,687 | 23% |
| Library | | | | | 3,253 | 9,885 | 204% |
| Rec | 24,565 | 28,096 | 25,385 | 29,245 | 17,746 | 21,930 | 24% |
| Public Safety | 22,946 | 23,234 | 18,181 | 21,963 | 14,615 | 21,917 | 50% |
| Town Hall | 10,226 | 11,029 | 9,292 | 11,714 | 9,291 | 12,710 | 37% |
| Muni Total | 57,737 | 62,359 | 52,858 | 93,744 | 67,457 | 94,129 | 40% |
| BC Total Usage | 244,230 | 225,079 | 220,114 | 329,279 | 247,548 | 282,534 | 16% |

Natural Gas Usage

▣ Building Champion Energy History

| Facility | FY09 Gal. | FY10 Gal. | FY 11 Gal. | FY12 Gal. | FY13 Gal. | % Change '13 vs. '12 |
|-------------------------|-----------|-----------|------------|-----------|-----------|----------------------|
| Ambrose* | 20,063 | 17,461 | 22,098 | 10,007 | 20,500 | 105% |
| WHS | | | | | | |
| Lincoln | 16,990 | 17,997 | 24,129 | 18,796 | 18,709 | 0% |
| Lynch | 31,526 | 38,915 | 22,851 | 25,139 | 33,200 | 32% |
| McCall** | 45,165 | 41,054 | 40,056 | 25,068 | 39,642 | 58% |
| Muraco | 37,830 | 34,165 | - | | | |
| VO | | | | | | |
| Schools Usage | 151,574 | 149,592 | 109,135 | 79,010 | 112,051 | 42% |
| Schools \$ | \$648,737 | \$335,086 | \$290,298 | \$257,916 | \$369,768 | 43% |
| DPW | 7,280 | 6,419 | - | | | |
| Library | 6,204 | 7,747 | 9,092 | 2,001 | - | -100% |
| Rec | | | | | | |
| Public Safety | | | | | | |
| Town Hall*** | | | | | | |
| Muni Usage | 13,484 | 14,166 | 9,092 | 2,001 | | -100% |
| Muni \$ | \$57,712 | \$31,732 | \$24,186 | \$6,351 | | -100% |
| Building Champion Usage | 165,058 | 163,758 | 118,227 | 81,011 | 112,051 | 38% |

Fuel Oil Usage

- ▣ Building Champion Energy History