

## Northeast District Sees Significant Reductions in Utilities

### Business Issue

In an effort to reduce cost and increase efficiency, the Northeast District wanted to identify specific strategies to do this and to take advantage of opportunities that have a positive effect on the environment. Looking at utilities appeared to be a good first step. It quickly became clear that measuring cost improvement in utilities was not going to help the Northeast District to effectively manage the available resources. Usage would tell a better story.

### Approach

Northeast District leadership challenged its employees to decrease the district's usage by 10 percent over a period of a calendar year (2008 - 2009).

The district set up teams by organization numbers or buildings, such as the district complex office buildings. Everyone participated on a team and helped contribute ideas and actions toward reduction of utilities. Each team was challenged to reduce the utilities that applied to its particular building by monitoring its monthly. The four basic utilities were: electricity, natural gas, propane, and water.

|                           | Target for 2009 Utilities | Year to Date Actuals As of 12/31/09 | STATUS | 2008 Monthly Average | Change in Usage   | Increase or Decrease from 2008 |
|---------------------------|---------------------------|-------------------------------------|--------|----------------------|-------------------|--------------------------------|
| <b>Area 3401 Osbourne</b> |                           |                                     |        |                      |                   |                                |
| 4306--Edina and Edir      | 20,125.85                 | 23,772.49                           | ☹️     | 22361.83             | 1,410.68          | 6.31%                          |
| 4318--Memphis             | 11,790.70                 | 9,701.70                            | 😊      | 13100.78             | -3,399.08         | -25.95%                        |
| 4323--Novelty             | 4,926.38                  | 5,200.83                            | ☹️     | 5473.75              | -272.92           | -4.99%                         |
| 4328--Shelbina            | 4,847.25                  | 6,597.08                            | ☹️     | 5385.83              | 1,211.25          | 22.49%                         |
| 4329--Shelbyville         | 7,834.06                  | 10,497.27                           | ☹️     | 8794.51              | 1702.76           | 19.36%                         |
| <b>TOTALS</b>             | <b>49,524.04</b>          | <b>55,769.37</b>                    | ☹️     | <b>55116.7</b>       | <b>652.67</b>     | <b>1.18%</b>                   |
| <b>Area 3402 Shubert</b>  |                           |                                     |        |                      |                   |                                |
| 4302--Canton              | 7,783.95                  | 7,681.08                            | 😊      | 8648.83              | -967.75           | -11.19%                        |
| 4314--LaBelle             | 5,126.12                  | 3,410.27                            | 😊      | 5895.89              | -2,285.42         | -40.13%                        |
| 4316--Luray               | 2,953.91                  | 4,039.87                            | ☹️     | 3282.13              | 757.74            | 23.09%                         |
| 4322--Monticello          | 8,463.12                  | 6,885.24                            | 😊      | 9403.46              | -2,518.22         | -26.78%                        |
| 4331--Wayland             | 12,914.18                 | 24,242.00                           | ☹️     | 14349.08             | 9,892.92          | 68.84%                         |
| <b>TOTALS</b>             | <b>37,241.28</b>          | <b>46,258.46</b>                    | ☹️     | <b>41379.19</b>      | <b>4,879.27</b>   | <b>11.79%</b>                  |
| <b>Area 3403 Ellison</b>  |                           |                                     |        |                      |                   |                                |
| 4303--Center              | 9,017.40                  | 8,801.00                            | 😊      | 10019.33             | -1,218.33         | -12.16%                        |
| 4310--Frankford           | 8,797.63                  | 7,212.60                            | 😊      | 9775.14              | -2,562.54         | -26.21%                        |
| 4311--Hannibal            | 7,565.63                  | 6,538.50                            | 😊      | 8408.25              | -1,867.75         | -22.22%                        |
| 4321--Monroe City         | 4,149.23                  | 3,118.25                            | 😊      | 5288.42              | -2,170.17         | -41.04%                        |
| 4324/43EB/North AE        | 20,944.50                 | 17,653.67                           | 😊      | 23031.5              | -5,377.83         | -23.35%                        |
| <b>TOTALS</b>             | <b>50,474.39</b>          | <b>43,324.02</b>                    | 😊      | <b>56520.64</b>      | <b>-13,196.62</b> | <b>-23.35%</b>                 |

**Table 1**

To encourage everyone to participate, leadership set a goal for the whole district to reduce usage by 10 percent. Each team also had the goal of 10 percent. One tough obstacle was to determine the best way to compete. Various utility companies provide services within the district. Each of those companies also measure usage differently. These variables, as well as the multiple ways each building uses utilities, helped clarify that teams would be best serviced by competing against themselves.

To keep everyone focused, a spreadsheet tracked and acknowledged reductions, for all to see. Additionally, the reductions of 10 percent or more were highlighted. (Table 1) The final incentives were a trophy, paid leave time and lunch.

Each team was able to determine how it would approach a reduction in utilities, and not only look at long-term changes, but also changes that could have a quick impact. Many teams saw successes from the start, such as installing programmable thermostats, turning off lights or installing automated lights in less frequented rooms. The one most impactful long-term reduction was not to heat the hot oil tanks when not in use.



### *Approach (cont'd.)*

Before each teams made a decision on a particular innovative idea, they answered the following questions:

1. How can the Northeast District be more efficient?
2. How can the Northeast District be greener?
3. How can the Northeast District encourage every employee to help?
4. How can the Northeast District be a better steward of the taxpayer's monies?
5. What are the criteria to help everyone understand?

Overall, the message was to treat your office as it was your home.

The **Paris Maintenance and Mechanic Buildings** came out as the top team in the competition. The team was able to reduce its usage by 41.99 percent. This included a reduction in usage on electricity, natural gas and water. **Monroe City** was close behind with a reduction of 41.04 percent. Much of its decrease was attributed to not heating the hot oil tank when not in use. Third place went to the **LaBelle** maintenance facility, with a 40.13 percent decrease. The team also showed significant reductions in usage for all of its utility areas. Additionally, in Rick Ellison's and Kenneth Hollocher's areas, every building met the challenge by reducing usage by 10 percent or greater. Through all this effort, the Northeast District had a grand total reduction of 9.67 percent in 2009!

Here are some tips that can help every MoDOT building:

1. Stop heating the hot oil tanks when not in use;
2. Use the used oil for furnaces;
3. Install sensor lights;
4. Turn security lights off during the day;
5. Turn off air and lights in the break rooms;
6. Install programmable thermostats and monitor them;
7. Appropriately change filters;
8. Reduce the temperature to heat water;
9. Participate in the Stretch Your Power campaign;
10. Support the teams by sending reminders, updates and requests for more information when spikes occurred like dramatic water increases. One example was a shed that had a spike on water usage because they washed a bridge; and,



11. Conduct a periodic review for all usage to help eliminate data errors and quickly identify possible problems such as leaks.

### **Conclusion**

Northeast District's Utility Challenge results show what a team effort can do. Further, benefits of the changes can now be directly tied to MoDOT's Tangible Results.

#### **Environmentally Responsible**

- All the Northeast District buildings reduced energy use.

#### **Best Value for Every Dollar Spent**

- The Northeast District reduced utility usage, thus providing cost savings.

For its efforts, the Northeast District has seen a dramatic reduction in utility usage. Expenditures were higher in 2009 due to rate increases. Although, some actions might have been small such as turning off the lights, a combined effort of all actions produced big results and improved employee morale.

For additional tips, the Stretch Your Power intranet links:

<http://www/intranet/gs/Stretchyourpower.htm>.

Reduce your carbon footprint on [MoDOT.org](http://www.modot.org) or directly at:

<http://www.modot.mo.gov/Multimodal/CarbonFootprint.htm>.

Best practices benchmarking for energy efficient programs and tools:

<http://www.eebestpractices.com/index.asp>.