

## Memo: Making use of work order reports for energy and water efficiency

June, 2014

The following tips for making use of work order reports are provided by Mark Pando and Jon Braman based on sample work order reports from the Yardi Maintenance module shared by Toby Ast.

Also see attached spreadsheet. Green tabs were added Bright Power

### **Identify (and possibly re-organize) work order categories related to energy and water**

Certain work order categories and types could be signs of energy and water consumption issues that require attention. The following were all seen in the sample reports and could have energy and water implications.

#	Work Order Category	Type
1	Appliance	Dishwasher Leak
2	Appliance	Refrigerator Leak
3	Heating	No Heat
4	Plumbing	Something Broken Inside Toilet
5	Plumbing	Any Leaks
6	Plumbing	Tub needs new Stopper
7	Plumbing	Leaks

Appliances – High levels of appliance work orders could indicate older appliances nearing the end of their useful lives. As complaints on site increase – appliance replacement should be considered in place of repeated repairs.

Heating – High levels of “no heat” complaints can be indicative of system-wide problems that are often not addressed in a single work order. If a site has repeated complaints of heating problems – the measures taken to relieve these issues in the units are often band-aid solutions which can adversely affect system-wide performance over the long term as these small changes add up.

Plumbing – Tracking leak information can be extremely important. Water waste is often overlooked by both residents and staff. A site with high levels of toilet repairs likely has many unreported toilets which are continuously running – driving up water usage.

Others categories like HVAC, Grounds, Electrical and Unit Turnover could also have energy and water impacts.

If possible, it might be worth trying to adapt the categories and types in the system to help quickly report on and catch energy and water trends. You might introduce a sub-category for equipment type (e.g. dishwasher, boiler, radiator) to help identify equipment needing replacement, or you might institute a cross-category ‘type’ for ‘cold water leak’ or ‘hot water leak’ in order to quickly see how many are reported in a given period. The current open field for work order ‘type’ may mean that similar issues are labeled differently - making it harder to spot trends.

### **Track time to completion**

One important criterion that should be being tracked is the time delay between the filing and completion of a work order. (See column M in the ‘Raw data for pivot’ tab in the attached). Comparing response times across multiple sites can identify problematic site performance. Lags in response time can be caused by multiple factors including low inventory, overstressed staff, and availability of necessary professionals (plumbers, boiler contractors, etc.).

For many low cost maintenance requests – on site staff should be able to complete the necessary work within a few days. Allowing problems to linger for longer periods increases utility waste. About half of response times are fast (<1 day) in the sample for Meadowbrook, while some are quite long (20+ days)

### **Create portfolio-wide metrics to compare site O&M**

You might consider developing metrics based on the number of work orders generated at different sites - perhaps on a per unit basis. For instance, the 'property comparison' tab in the attached shows the number of work orders per unit in each category for January at Meadowbrook. Similar metrics could be calculated on a monthly or annual basis for other sites as well. This might reveal significant differences between sites that could help you prioritize where to intervene or provide additional assistance around O&M.

### **Track work order trends over time**

The 'weekly' tab of the attached shows the number of work orders in each category at Meadowbrook by week in January. While this example doesn't reveal significant trends, watching this over the course of several months could indicate a worsening problem if certain types of work orders appear to be increasing in frequency.

### **Use work order reports to spur discussions with staff**

Even as-is these work order reports can provide a great jumping off point for a discussion with site staff about maintenance issues at a property. Sitting down with one or more months of work order reports, alongside the building's property scorecard, a manager might ask questions like:

- I see you had 4 "no heat" complaints this month. What caused those and how did you address it?
- How often do you find toilet leaks like the one you fixed on January 10 and do you think there are more that go unreported?
- I see there are a lot of dishwasher issues cropping up, what can we do to help?
- I notice your scorecard shows a low grade for domestic hot water, but there don't seem to be any work orders relating to water temperatures, showerheads, or the DHW system. Any ideas why you're using so much gas for DHW?
- I see you had a boiler tune-up in December, did they do a combustion test?

### **Tip: Make sure site staff see value in work order tracking**

If your site staff see work order tracking as a burden that doesn't help them, it may not be done accurately or consistently. Whenever possible, find ways to help them using info they provide in the work orders, so they will see it as a valuable tool for communication.

*\*Next step: create work orders for preventative maintenance using checklists.*