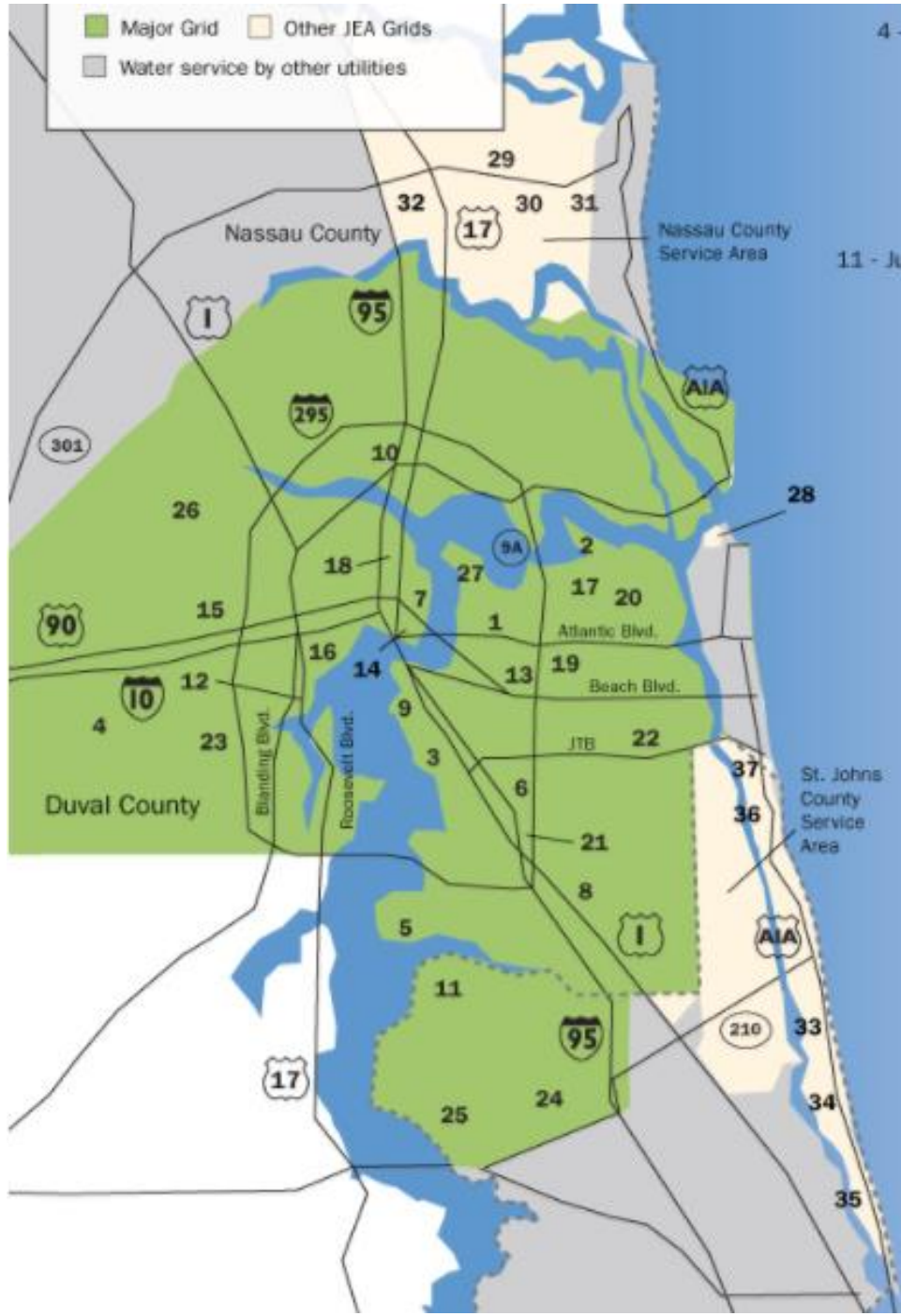


# Water Conservation

David Reed

JEA Account Executive

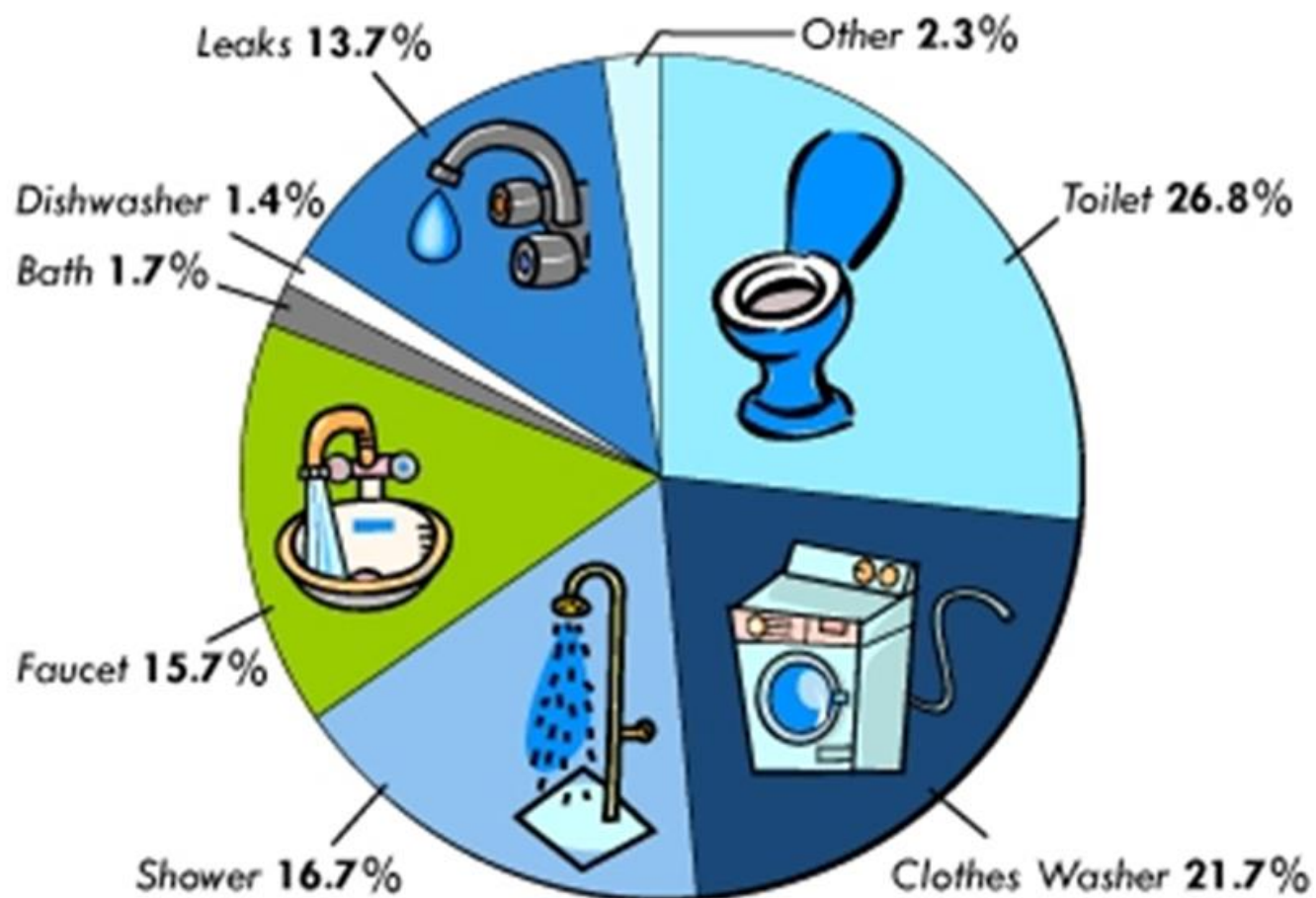




Major Grid
  Other JEA Grids  
 Water service by other utilities

- 4 - Cecil Commerce Center
- 5 - Community Hall
- 6 - Deerwood III
- 7 - Fairfax
- 8 - Greenland
- 9 - Hendricks
- 10 - Highlands
- 11 - Julington Creek Plantation
- 12 - Lakeshore
- 13 - Lovegrove
- 14 - Main Street
- 15 - Marietta
- 16 - McDuff
- 17 - Monument Road
- 18 - Norwood
- 19 - Oakridge
- 20 - Ridenour
- 21 - Royal Lakes
- 22 - Southeast
- 23 - Southwest
- 24 - St. Johns Forest
- 25 - St. Johns North
- 26 - Westlake
- 27 - Woodmere
- Independent Plant**
- 28 - Mayport
- Lofton Oaks Grid (Nassau County)**
- 29 - Lofton Oaks
- 30 - Nassau Regional
- 31 - Otter Run
- 32 - West Nassau
- Ponce De Leon Grid (St. Johns County)**
- 33 - A1A North
- 34 - A1A South
- 35 - Ponce De Leon
- Ponte Vedra Grid (St. Johns County)**
- 36 - Corona Road

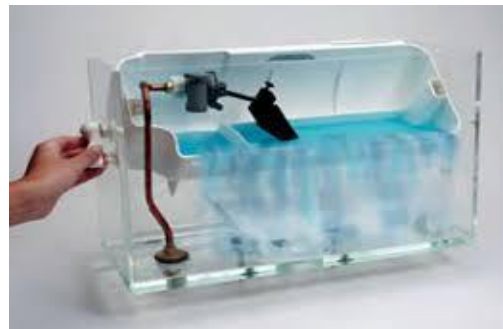
## Indoor Household Water Use



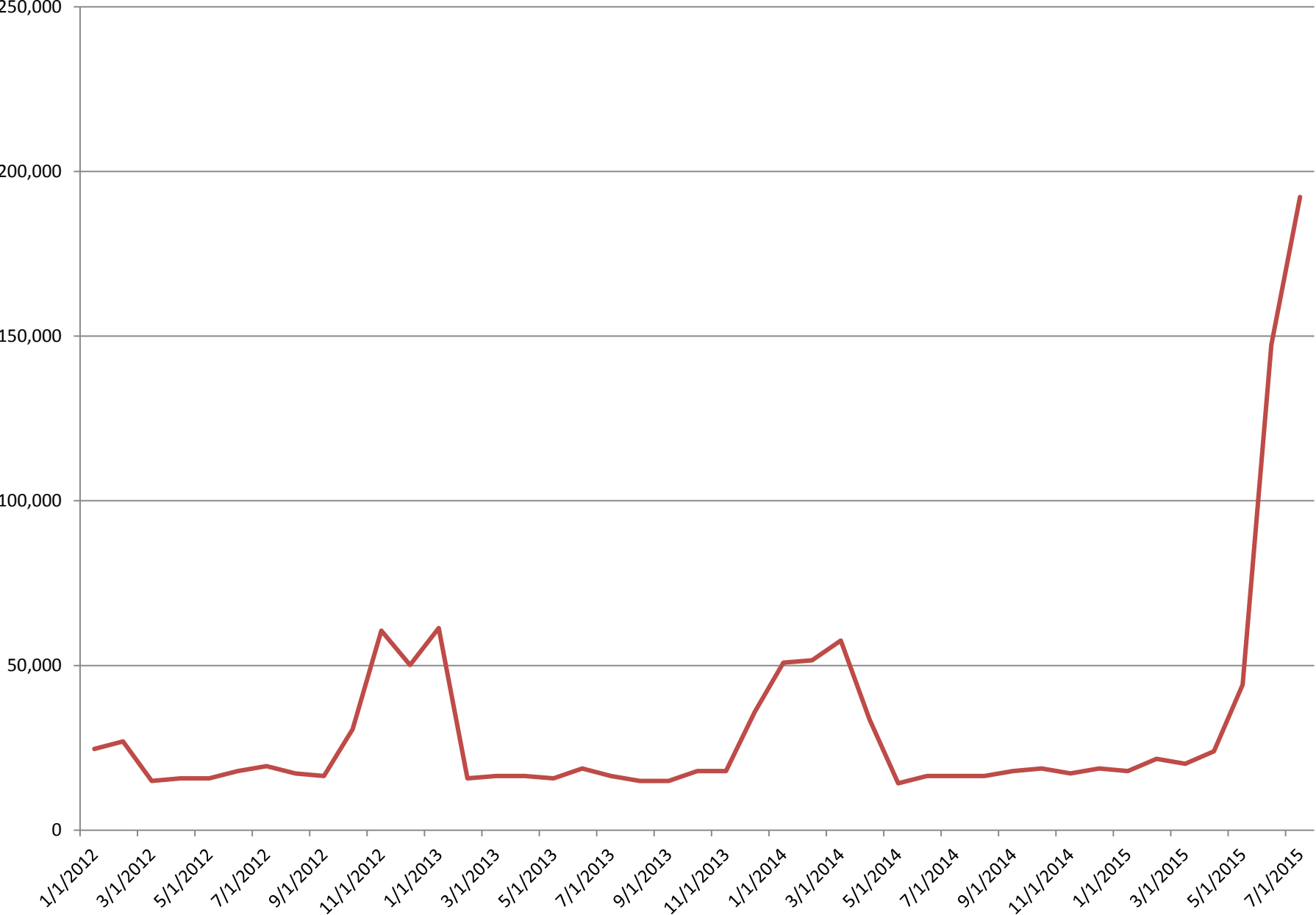
Source: Awwa Research Foundation (1999)

# What Can Be Done?

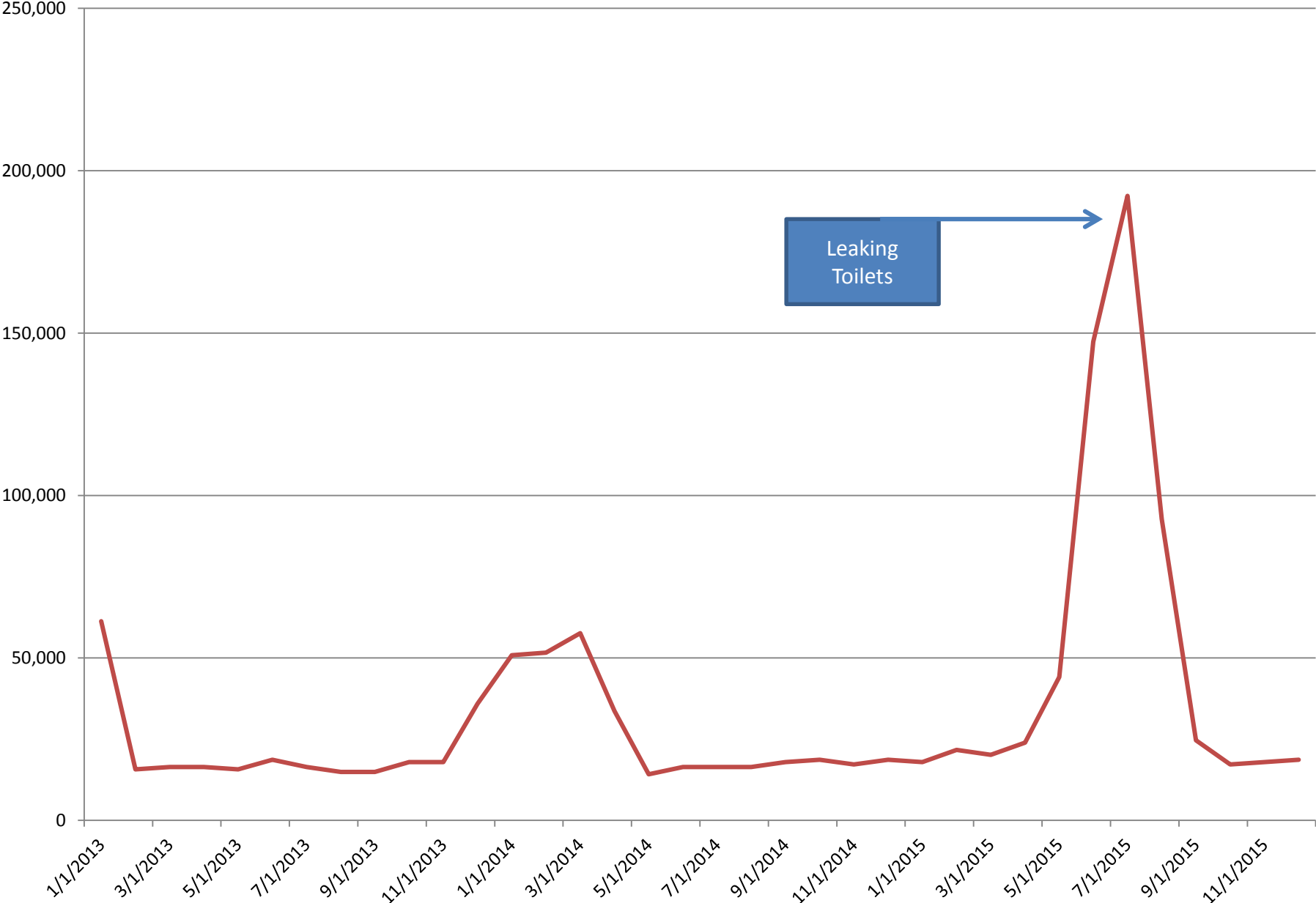
- Low flow Showerheads (1.5-2 GPM)
- High efficiency toilets (low flow, dual flush, flapperless)
- Efficient dishwashers and clothes washers
- Faucet aerators



# Water Consumption (gallons)



# Water Consumption (gallons)







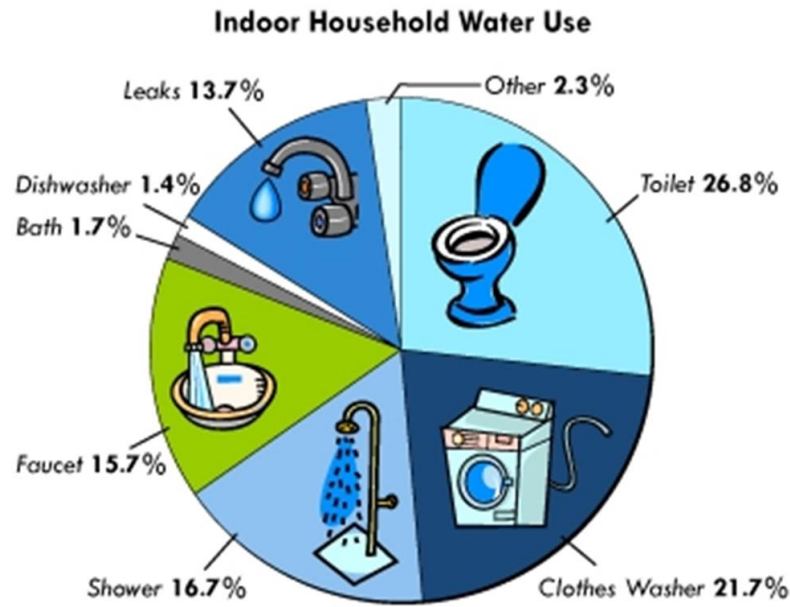




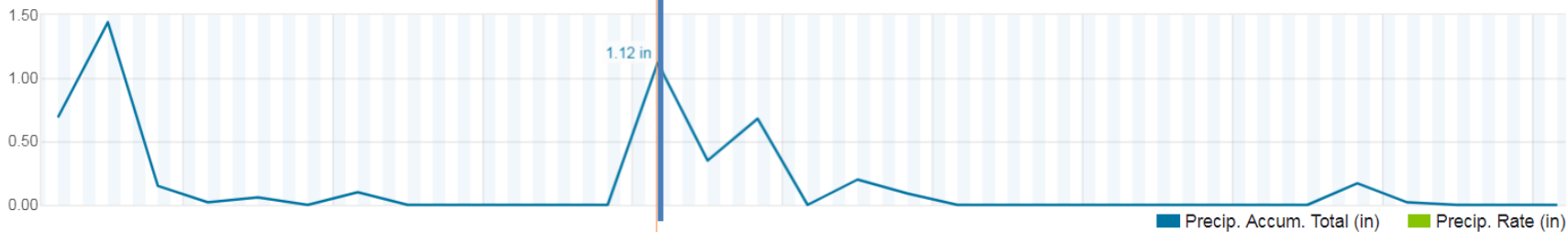


Irrigation      Home

|                    |      |     |
|--------------------|------|-----|
| 07/13/17 23:57 Thu | 0    | 0   |
| 07/12/17 23:57 Wed | 1980 | 0   |
| 07/11/17 23:54 Tue | 0    | 10  |
| 07/10/17 23:40 Mon | 2150 | 0   |
| 07/09/17 22:40 Sun | 1980 | 0   |
| 07/08/17 23:55 Sat | 0    | 80  |
| 07/07/17 23:32 Fri | 2150 | 440 |
| 07/06/17 23:14 Thu | 0    | 180 |
| 07/05/17 23:38 Wed | 2060 | 120 |
| 07/04/17 23:47 Tue | 0    | 110 |
| 07/03/17 23:52 Mon | 0    | 40  |
| 07/02/17 23:43 Sun | 2140 | 430 |
| 07/01/17 23:44 Sat | 0    | 60  |
| 06/30/17 23:17 Fri | 2290 | 50  |
| 06/29/17 23:47 Thu | 0    | 80  |
| 06/28/17 21:27 Wed | 2160 | 110 |
| 06/27/17 23:40 Tue | 0    | 220 |
| 06/26/17 23:39 Mon | 2180 | 160 |
| 06/25/17 23:56 Sun | 2020 | 160 |
| 06/24/17 23:00 Sat | 0    | 300 |
| 06/23/17 23:09 Fri | 2150 | 170 |



Source: Awwa Research Foundation (1999)



| Read Date          | Badge # | Module ID | Bill Read (GAL) | Actual Read | Usage | Outage Counter | Outage | Magnet | Read Origin |
|--------------------|---------|-----------|-----------------|-------------|-------|----------------|--------|--------|-------------|
| 11/06/17 23:57 Mon |         |           | 685             | 685520      | 1940  | 0              | N      | N      | AMR         |
| 11/05/17 23:59 Sun |         |           | 683             | 683580      | 290   | 0              | N      | N      | AMR         |
| 11/04/17 23:47 Sat |         |           | 683             | 683290      | 330   | 0              | N      | N      | AMR         |
| 11/03/17 23:49 Fri |         |           | 682             | 682960      | 2140  | 0              | N      | N      | AMR         |
| 11/02/17 23:05 Thu |         |           | 680             | 680820      | 190   | 0              | N      | N      | AMR         |
| 11/01/17 23:59 Wed |         |           | 680             | 680630      | 2020  | 0              | N      | N      | AMR         |
| 10/31/17 23:38 Tue |         |           | 678             | 678610      | 330   | 0              | N      | N      | AMR         |
| 10/30/17 23:55 Mon |         |           | 678             | 678280      | 1990  | 0              | N      | N      | AMR         |
| 10/29/17 23:26 Sun |         |           | 676             | 676290      | 450   | 0              | N      | N      | AMR         |
| 10/28/17 23:57 Sat |         |           | 675             | 675840      | 440   | 0              | N      | N      | AMR         |
| 10/27/17 23:57 Fri |         |           | 675             | 675400      | 2110  | 0              | N      | N      | AMR         |
| 10/26/17 23:51 Thu |         |           | 673             | 673290      | 380   | 0              | N      | N      | AMR         |
| 10/25/17 23:44 Wed |         |           | 672             | 672910      | 2200  | 0              | N      | N      | AMR         |
| 10/24/17 23:53 Tue |         |           | 670             | 670710      | 320   | 0              | N      | N      | AMR         |
| 10/23/17 23:55 Mon |         |           | 670             | 670390      | 2190  | 0              | N      | N      | AMR         |
| 10/22/17 23:16 Sun |         |           | 668             | 668200      | 480   | 0              | N      | N      | AMR         |
| 10/21/17 23:45 Sat |         |           | 667             | 667720      | 370   | 0              | N      | N      | AMR         |
| 10/20/17 23:50 Fri |         |           | 667             | 667350      | 2150  | 0              | N      | N      | AMR         |
| 10/19/17 23:52 Thu |         |           | 665             | 665200      | 320   | 0              | N      | N      | AMR         |
| 10/18/17 23:47 Wed |         |           | 664             | 664880      | 2120  | 0              | N      | N      | AMR         |
| 10/17/17 23:02 Tue |         |           | 662             | 662760      | 330   | 0              | N      | N      | AMR         |
| 10/16/17 22:41 Mon |         |           | 662             | 662430      | 1930  | 0              | N      | N      | AMR         |
| 10/15/17 23:59 Sun |         |           | 660             | 660500      | 700   | 0              | N      | N      | AMR         |
| 10/14/17 23:52 Sat |         |           | 659             | 659800      | 640   | 0              | N      | N      | AMR         |
| 10/13/17 23:45 Fri |         |           | 659             | 659160      | 2040  | 0              | N      | N      | AMR         |
| 10/12/17 23:53 Thu |         |           | 657             | 657120      | 350   | 0              | N      | N      | AMR         |
| 10/11/17 23:49 Wed |         |           | 656             | 656770      | 1980  | 0              | N      | N      | AMR         |
| 10/10/17 23:20 Tue |         |           | 654             | 654790      | 370   | 0              | N      | N      | AMR         |
| 10/09/17 23:52 Mon |         |           | 654             | 654420      | 1860  | 0              | N      | N      | AMR         |
| 10/08/17 23:36 Sun |         |           | 652             | 652560      | 0     | 0              | N      | N      | AMR         |

| Read Date          | Badge # | Module ID | Bill Read (GAL) | Actual Read | Usage | Outage Counter | Outage | Magnet | Read Origin |
|--------------------|---------|-----------|-----------------|-------------|-------|----------------|--------|--------|-------------|
| 11/01/17 23:58 Wed |         |           | 31794           | 31794800    | 6300  | 0              | N      | N      | AMR         |
| 10/31/17 23:54 Tue |         |           | 31788           | 31788500    | 6300  | 0              | N      | N      | AMR         |
| 10/30/17 23:47 Mon |         |           | 31782           | 31782200    | 6400  | 0              | N      | N      | AMR         |
| 10/29/17 23:31 Sun |         |           | 31775           | 31775800    | 6800  | 0              | N      | N      | AMR         |
| 10/28/17 23:48 Sat |         |           | 31769           | 31769000    | 7300  | 0              | N      | N      | AMR         |
| 10/27/17 23:54 Fri |         |           | 31761           | 31761700    | 6800  | 0              | N      | N      | AMR         |
| 10/26/17 23:50 Thu |         |           | 31754           | 31754900    | 4900  | 0              | N      | N      | AMR         |
| 10/25/17 23:37 Wed |         |           | 31750           | 31750000    | 7200  |                | N      | N      | BILLED      |
| 10/24/17 23:23 Tue |         |           | 31742           | 31742800    | 9000  | 0              | N      | N      | AMR         |
| 10/23/17 23:56 Mon |         |           | 31733           | 31733800    | 10300 | 0              | N      | N      | AMR         |
| 10/22/17 23:50 Sun |         |           | 31723           | 31723500    | 10400 | 0              | N      | N      | AMR         |
| 10/21/17 23:56 Sat |         |           | 31713           | 31713100    | 10500 | 0              | N      | N      | AMR         |
| 10/20/17 23:48 Fri |         |           | 31702           | 31702600    | 9300  | 0              | N      | N      | AMR         |
| 10/19/17 23:47 Thu |         |           | 31693           | 31693300    | 13000 | 0              | N      | N      | AMR         |
| 10/18/17 23:59 Wed |         |           | 31680           | 31680300    | 10800 | 0              | N      | N      | AMR         |
| 10/17/17 23:59 Tue |         |           | 31669           | 31669500    | 6100  | 0              | N      | N      | AMR         |
| 10/16/17 23:49 Mon |         |           | 31663           | 31663400    | 9100  | 0              | N      | N      | AMR         |
| 10/15/17 23:47 Sun |         |           | 31654           | 31654300    | 8900  | 0              | N      | N      | AMR         |
| 10/14/17 23:48 Sat |         |           | 31645           | 31645400    | 10500 | 0              | N      | N      | AMR         |
| 10/13/17 23:54 Fri |         |           | 31634           | 31634900    | 11400 | 0              | N      | N      | AMR         |
| 10/12/17 23:50 Thu |         |           | 31623           | 31623500    | 9600  | 0              | N      | N      | AMR         |
| 10/11/17 23:54 Wed |         |           | 31613           | 31613900    | 11200 | 0              | N      | N      | AMR         |
| 10/10/17 23:49 Tue |         |           | 31602           | 31602700    | 11300 | 0              | N      | N      | AMR         |
| 10/09/17 23:55 Mon |         |           | 31591           | 31591400    | 11600 | 0              | N      | N      | AMR         |
| 10/08/17 23:51 Sun |         |           | 31579           | 31579800    | 11400 | 0              | N      | N      | AMR         |
| 10/07/17 23:52 Sat |         |           | 31568           | 31568400    | 10800 | 0              | N      | N      | AMR         |
| 10/06/17 23:49 Fri |         |           | 31557           | 31557600    | 11200 | 0              | N      | N      | AMR         |
| 10/05/17 23:56 Thu |         |           | 31546           | 31546400    | 9900  | 0              | N      | N      | AMR         |
| 10/04/17 23:55 Wed |         |           | 31536           | 31536500    | 10400 | 0              | N      | N      | AMR         |
| 10/03/17 23:59 Tue |         |           | 31526           | 31526100    | 0     | 0              | N      | N      | AMR         |





252,000 gallons for water  
299,000 gallons for irrigation

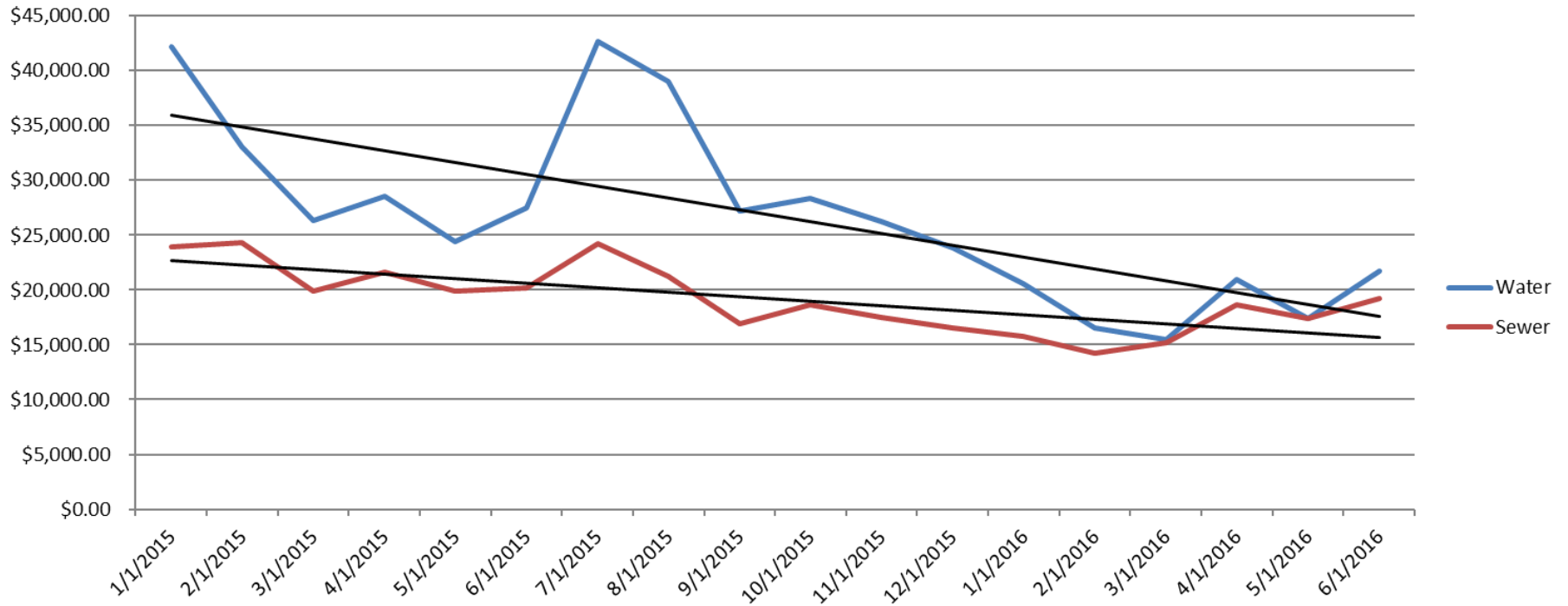
**TOTAL SUMMARY OF CHARGES**

|                  |               |
|------------------|---------------|
| Electric .....   | \$ 133,225.60 |
| Irrigation ..... | 1,572.82      |
| Sewer .....      | 1,879.40      |
| Water.....       | 692.86        |

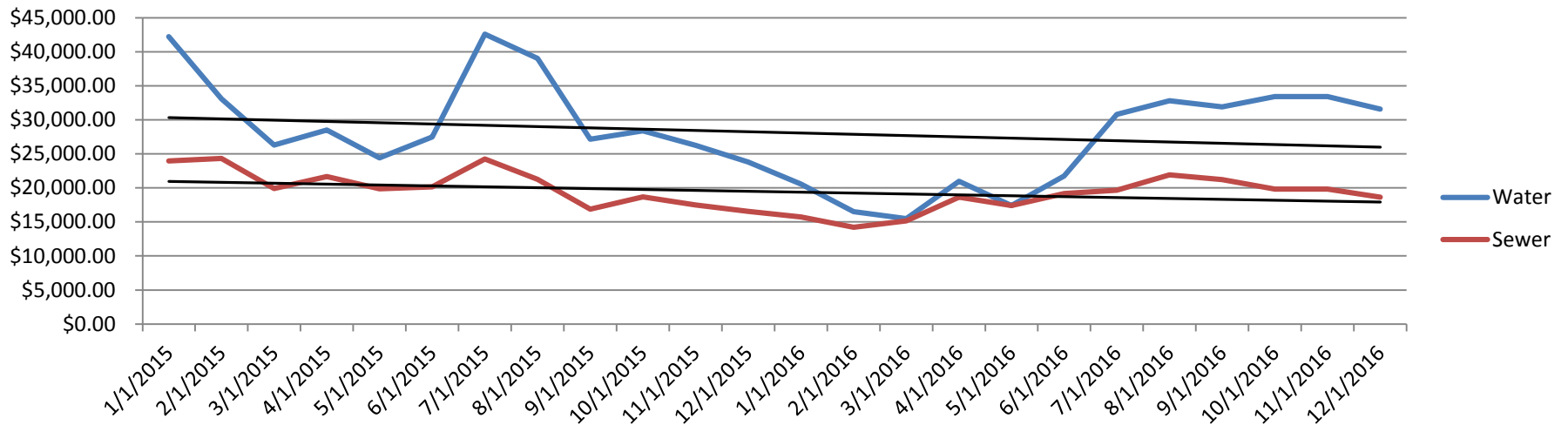
*(A complete breakdown of charges can be found on the following pages.)*

Total New Charges: ..... \$ 137,370.68





Still at 5 MGM for 318 homes  
That's 16 kgals per home



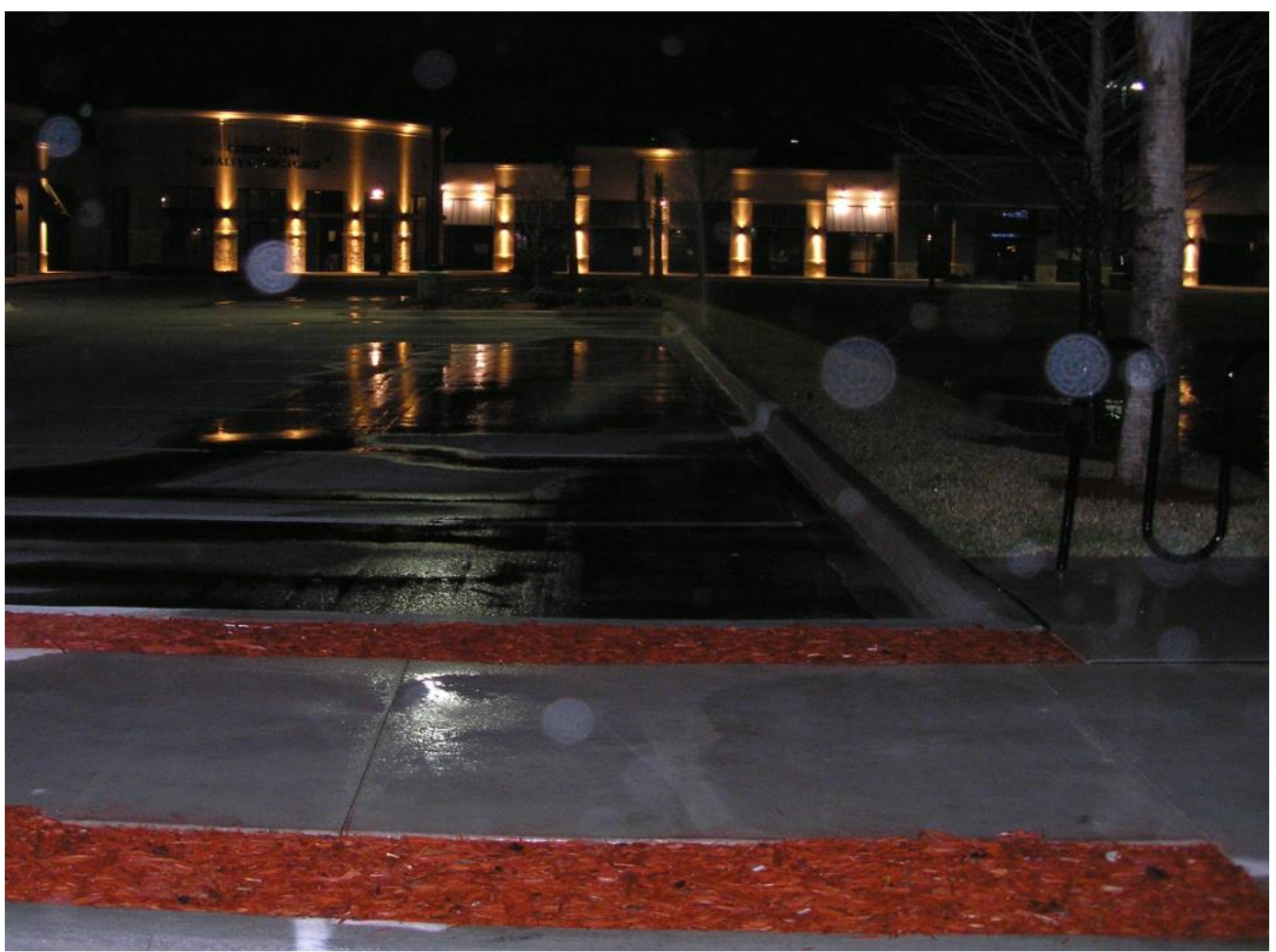
|                    | First Quarter |            |            | Second Quarter |            |            | Third Quarter |            |            | Fourth Quarter |            |            | TOBI/YTD     |
|--------------------|---------------|------------|------------|----------------|------------|------------|---------------|------------|------------|----------------|------------|------------|--------------|
|                    | Jan.          | Feb.       | March      | April          | May        | June       | July          | Aug.       | Sept.      | Oct.           | Nov.       | Dec.       |              |
| <b>2016</b>        |               |            |            |                |            |            |               |            |            |                |            |            |              |
| Clay               | 41            | 114        | 89         | 103            | 93         | 96         | 90            | 90         | 76         | 66             | 48         | 54         | 960          |
| Duval              | 214           | 269        | 244        | 227            | 273        | 267        | 193           | 237        | 184        | 178            | 187        | 236        | 2,709        |
| Nassau             | 38            | 62         | 50         | 122            | 115        | 82         | 78            | 97         | 92         | 77             | 72         | 45         | 930          |
| St. Johns          | 279           | 306        | 262        | 289            | 323        | 292        | 328           | 327        | 254        | 243            | 216        | 188        | 3,307        |
| <b>2016 Totals</b> | <b>572</b>    | <b>751</b> | <b>645</b> | <b>741</b>     | <b>804</b> | <b>737</b> | <b>689</b>    | <b>751</b> | <b>606</b> | <b>564</b>     | <b>523</b> | <b>523</b> | <b>7,906</b> |
|                    | 1st Quarter   |            | 1,968      | 2nd Quarter    |            | 2,282      |               |            |            | 4th Quarter    |            |            | 1,610        |

|                    | First Quarter |            |            | Second Quarter |            |            | Fourth Quarter |            |            |             |            |            | TOBI/YTD     |
|--------------------|---------------|------------|------------|----------------|------------|------------|----------------|------------|------------|-------------|------------|------------|--------------|
|                    | Jan.          | Feb.       | March      | April          | May        | June       | July           | Aug.       | Sept.      | Oct.        | Nov.       | Dec.       |              |
| <b>2015</b>        |               |            |            |                |            |            |                |            |            |             |            |            |              |
| Clay               | 64            | 66         | 57         | 90             | 70         | 66         | 68             | 45         | 104        | 92          | 63         | 44         | 829          |
| Duval              | 161           | 132        | 214        | 224            | 202        | 324        | 153            | 142        | 251        | 208         | 255        | 207        | 2,473        |
| Nassau             | 51            | 64         | 46         | 52             | 56         | 77         | 79             | 51         | 67         | 64          | 58         | 35         | 700          |
| St. Johns          | 177           | 145        | 222        | 171            | 170        | 321        | 216            | 354        | 255        | 258         | 191        | 243        | 2,723        |
| <b>2015 Totals</b> | <b>453</b>    | <b>407</b> | <b>539</b> | <b>537</b>     | <b>498</b> | <b>788</b> | <b>516</b>     | <b>592</b> | <b>677</b> | <b>622</b>  | <b>567</b> | <b>529</b> | <b>6,725</b> |
|                    | 1st Quarter   |            | 1,399      | 2nd Quarter    |            | 1,823      | 3rd Quarter    |            | 1,785      | 4th Quarter |            |            | 1,718        |

# What Can Be Done?

- Don't irrigate – Florida Friendly Landscaping
  - [http://duval.ifas.ufl.edu/lg\\_florida\\_yards.shtml](http://duval.ifas.ufl.edu/lg_florida_yards.shtml)
  - <http://floridayards.org/>
  - Better development practices
  - Flip side – jobs and economy
- Efficient irrigation
  - Micro and drip irrigation
  - Smart controllers
- Rainwater/greywater harvesting – not very realistic
- Make it expensive to use too much. Go after waste and drive efficiency with cost.
- Change societal behavior – The hardest but most sustainable thing that can be done







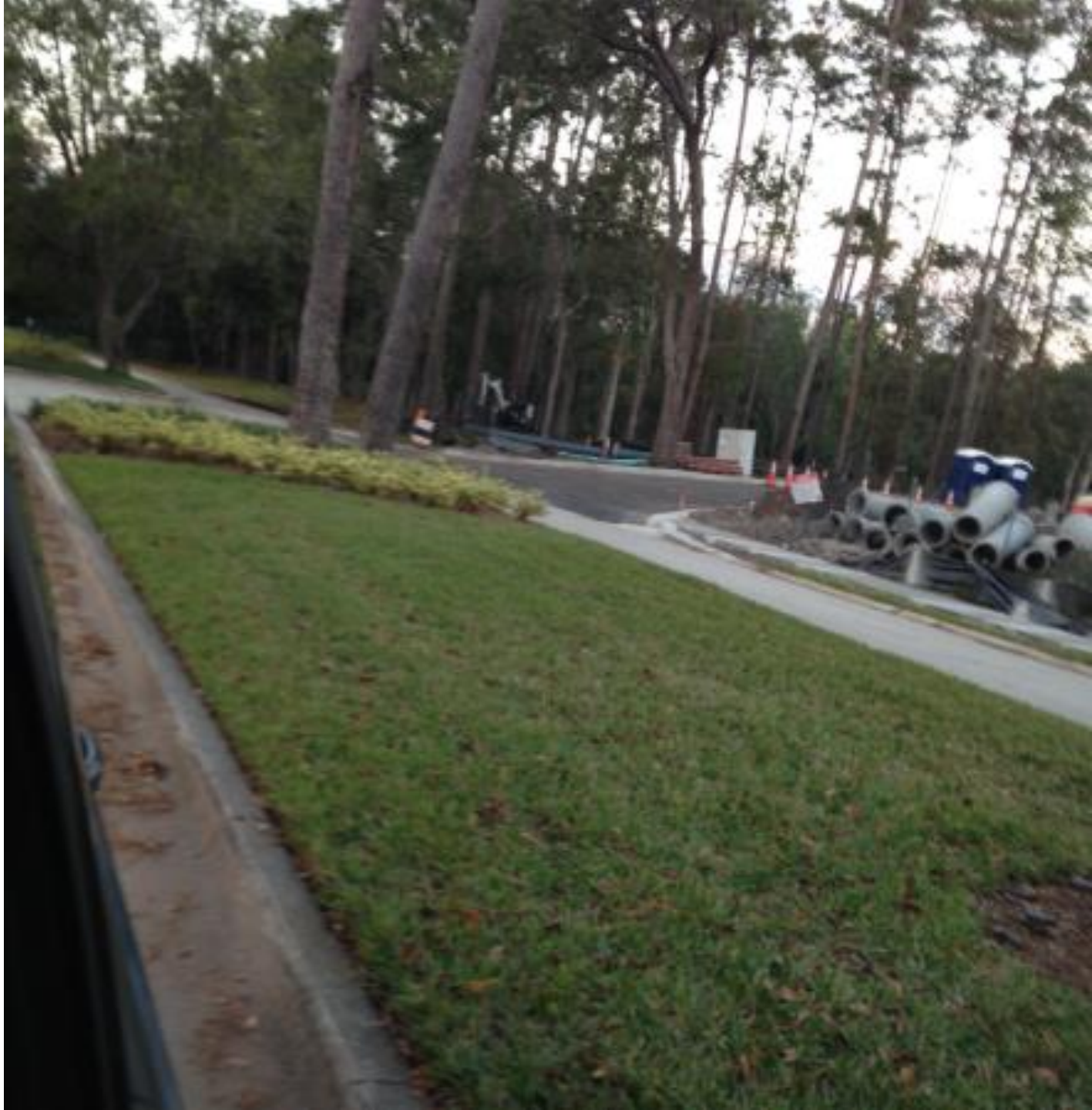
















PESTICIDE APPLICATION



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- TurterGreen Lawn Care
- Pest Prevention
- Termite Control



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