

## **Household Solid Waste Collection Study February 23, 2016**

### **Summary Findings.**

The Household Solid Waste Collection Study team has completed its analysis of household solid waste collection by the City of Fayetteville's Environmental Services Department for the period of July 1, 2015 through December 31, 2015. A summary of findings is as follows:

- The department's percentage of accuracy in collecting household solid waste for the period was 99.9%. This was based on 26.5 weeks of service with 60,997 address stops per week which equates to 1,616,421 stops for the study period. During this period 1,659 calls for missed pick-ups were registered. An accurate collection is defined as the City collecting solid waste at a stop during the normally scheduled run of a route for that stop. This implies that the solid waste container was placed properly by the resident at the appropriate time for normal pickup.
- A majority of calls for missed pick-up (54%) were due to resident fault as opposed to department fault. Resident faults for missed pick-ups would include, but not be limited to, container not placed out prior to the arrival of the solid waste truck, containers placed too closely together, obstructions around the container preventing pickup, and/or containers placed under low hanging utility lines. Even in the case of a resident fault resulting in a no pick-up, the City's Environmental Services department returns to complete the pickup 61% of the time. Environmental Services returns to complete a missed pick-up 100% of the time in the case of the pick-up being missed due to department fault. This means that in the case of all missed pick-ups, the department returns to complete the pick-up 79% of the time at a cost to the City of \$75 per pick-up. Total cost to return for missed pick-ups during the study period was approximately \$98,250.
- The average number of missed pick-ups per route for the study period was 26.33 or approximately one missed pick-up per route per week of the study. However, eight routes were identified as having higher than expected missed pick-ups over the study period. For purposes of this report these routes were identified as being more than one standard deviation from the mean number of missed pick-ups. The study examined missed pick-ups by route, council district, address, and day of the week, but missed pick-ups per route seemed to offer the most significant potential for performance improvement. These eight routes accounted for 29% of all misses in the study period, and if the number of missed pick-ups on these routes were reduced to the mean for all routes it could result in a savings of over \$16,000 in reduced costs to return to pick up missed solid waste. It is notable that missed pick-ups due to department fault on these eight routes accounts for 53% of the missed pick-ups which is higher than the overall average for all routes in the study.

### **Methodology.**

This study included complaints about missed household solid waste pick-ups recorded by the City between July 1, 2015 and December 31, 2015. This time span is 26.5 weeks. The City's Environmental Services department had 60,997 address stops per week during this period for a total of 1,616,421 stops. 1,659 calls were logged for missed household solid waste pick-up during the study period.

### **Benchmarking.**

#### **Peer Cities.**

David Ammons, in his book *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards*, 3<sup>rd</sup> edition, reports that cities in his study experienced between 2.5 and 15 missed pick-ups per 10,000 collection points. The City of Fayetteville's rate of missed pick-ups (both departmental fault and customer fault) was 10.26 missed pick-ups per 10,000 collection points during the study period, or 1.026 missed pick-ups per 1,000 collection points. The average in 2014 for the cities reporting in the *Final Report on City Services for Fiscal Year 2013 – 2014* produced by the UNC Chapel Hill School of Government (SOG) is 38.4 missed pick-ups per 1000 collection points. The SOG study includes cities such as Charlotte, Winston-Salem, and Greensboro. Also, the percentage of missed pick-ups in the SOG study due to department fault was 45% compared to 46% for the City. Of note is that two of the cities in the SOG study, Apex and Concord, utilized contracted services for 100% of their municipal household solid waste collection and both recorded higher rates of missed pick-ups than the City of Fayetteville.

**Industry.**

According to the Gershman, Brickner, and Bratton study completed for the City in April 2015, Waste Management has set 1 missed pick-up per 1000 household collection points as its standard of quality for performance. Based on this standard, in the words of Gershman, Brickner, and Bratton, “the City is doing a good job of providing customer service”.

**Resident Satisfaction.**

In the most recent City of Fayetteville resident survey of satisfaction with City services, the Environmental Services department received a rating of 77% satisfied or very satisfied with household solid waste collection. This level of satisfaction remained unchanged from the resident survey conducted in 2013.

**Process Capability.**

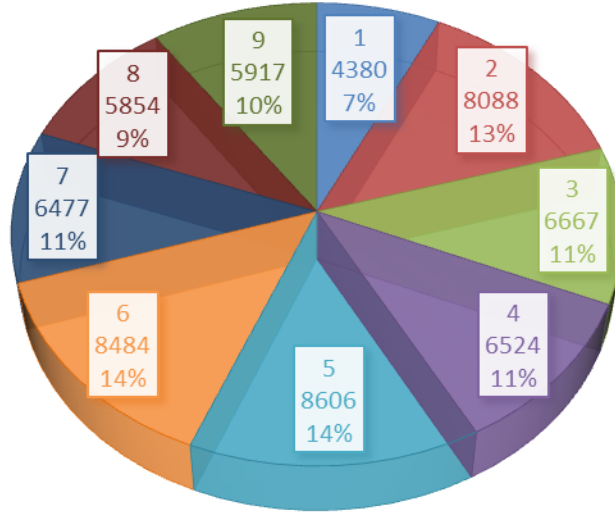
It is also useful to examine the process capability and process sigma value of the City’s solid waste collection process. Process capability and process sigma are statistical measures that indicate whether a process is capable of successfully executing the tasks of which it is comprised. Calculating 1026 defects per million opportunities from the data yields a process sigma value of 3 and a process capability index of approximately 1.5. A process sigma value of 3 is considered acceptable for a service process and process capabilities above 1 indicate that the process is capable of meeting its specifications. A process capability of 2 indicates world class performance

**Recommendations.**

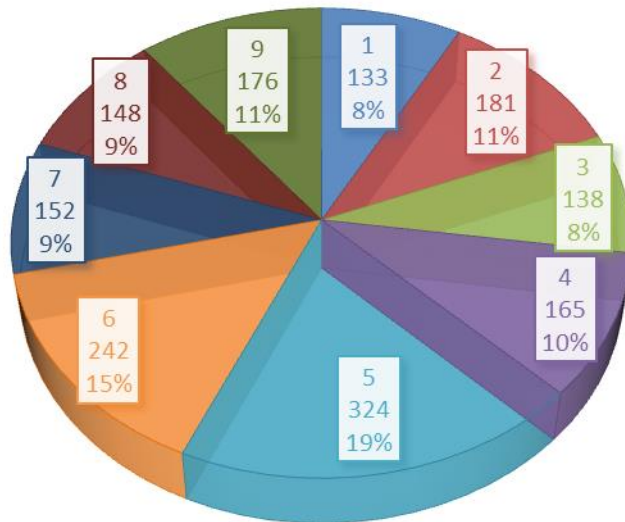
- Develop, with citizen input, a baseline for an acceptable level of quality for household collection.
- Publish a rubric of conditions that preclude a driver from collecting household solid waste, e.g. containers too close together, containers not curbside at the appropriate time, etc. Audit driver performance to ensure the established process for collecting or not collecting is followed consistently.
- Revisit the Gershman, Brickner, and Bratton April 2015 study to select or reject recommendations to adopt, prioritize those adopted recommendations, and compile a plan to implement the prioritized recommendations.
- Publish a rubric of conditions that determine when we will return to collect household solid waste. Audit this process to ensure consistent compliance.
- Publish a rubric of conditions to determine whether we mark a missed collection as being due to CoF miscue or the resident miscue. Audit this process to ensure consistent compliance.
- Develop and publish a strategy for procedures to employ at high volume times of the year, e.g. after Christmas.
- Develop additional customer outreach strategies to address those residents who complain about household collection most frequently. There were 29 addresses in the study period which logged more than two complaints about missed household pick-up.
- Develop an educational program for Council that would bring them in physically to view call center operations, Environmental Services office operations, and field operations (ride along with collectors and/or supervisors). Consider incorporating this into new council member orientation in the future. Also, as part of the educational program for Council, ensure citizen complaints made to Council members about household solid waste collection are relayed to staff in a consistent manner so that proper information about each complaint may be gathered and appropriate and timely action may be taken.
- Develop an incentive program for residents with the goal of reducing the number of missed pick-ups due to resident fault. Perhaps develop a City-wide contest to see which route can score the least number of resident fault missed pick-ups in a specific time period would be effective.
- Develop and stage a Rodeo for drivers similar to the one currently in place for FAST.
- Run a process improvement initiative to ensure FayFixIt issues are not closed until the issue has actually been resolved.
- Run a process improvement initiative to ensure Fleetmind is 100% operational, both from a systems perspective and from a user perspective.
- Permanently institute a program of initiatives to encourage quality performance in the field. This has been tried on a temporary basis and has produced positive results.

Exhibits.

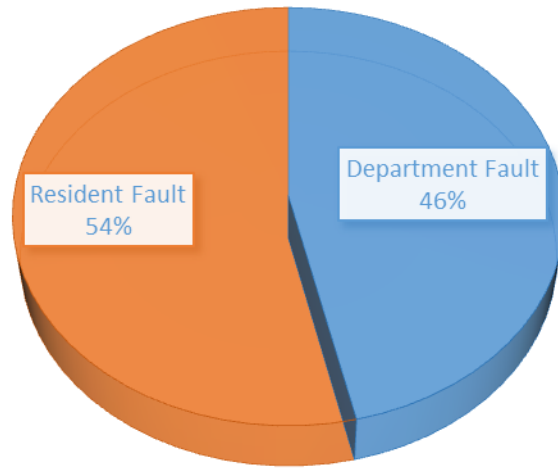
### ADDRESS COUNT BY DISTRICT



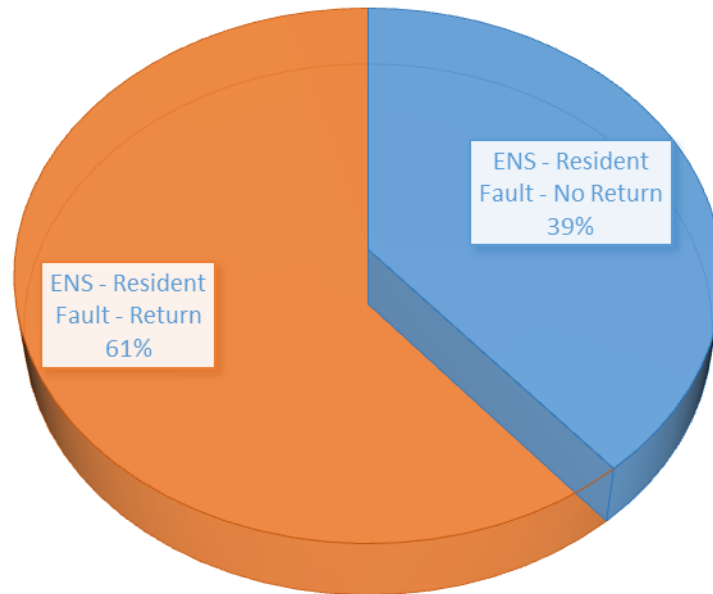
### CALL-INS BY DISTRICT



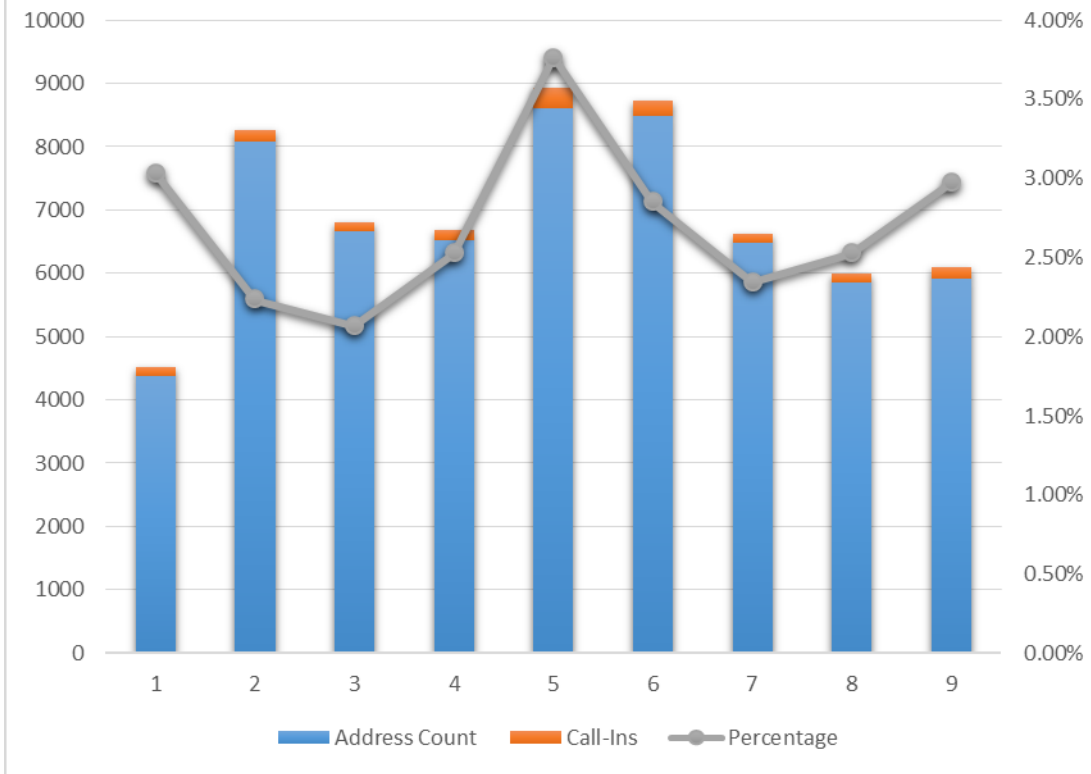
## DEPARTMENT VS RESIDENT FAULT



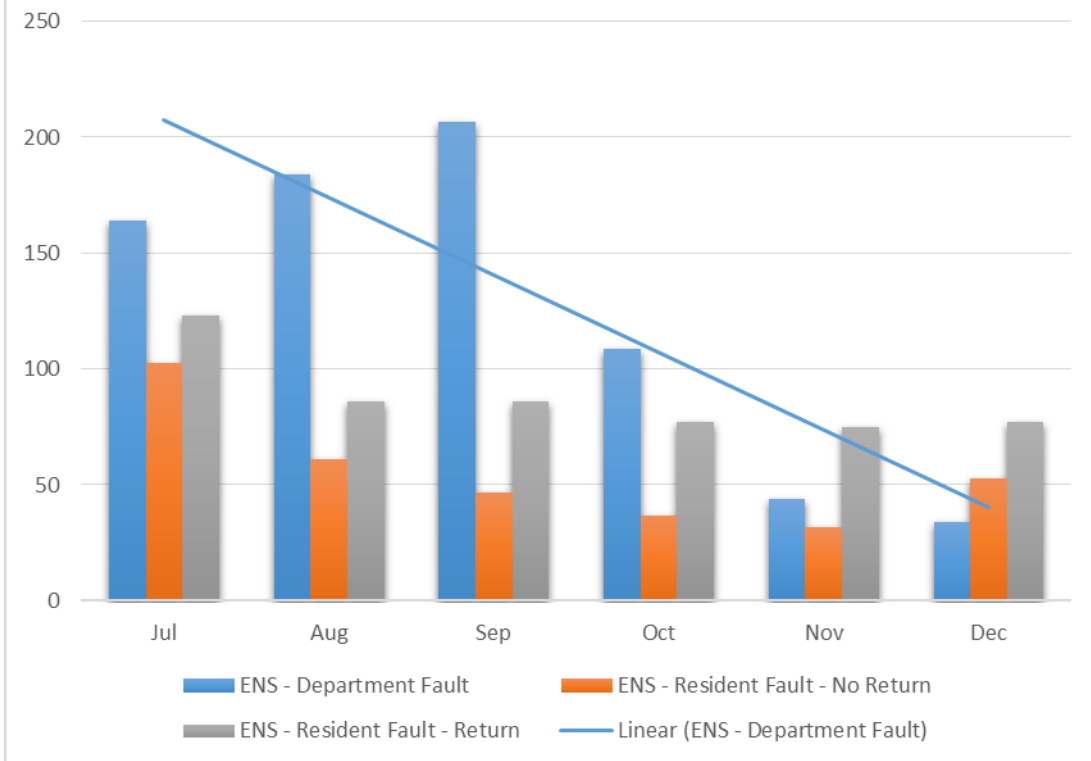
## RESIDENT FAULT - RETURN OR NO RETURN



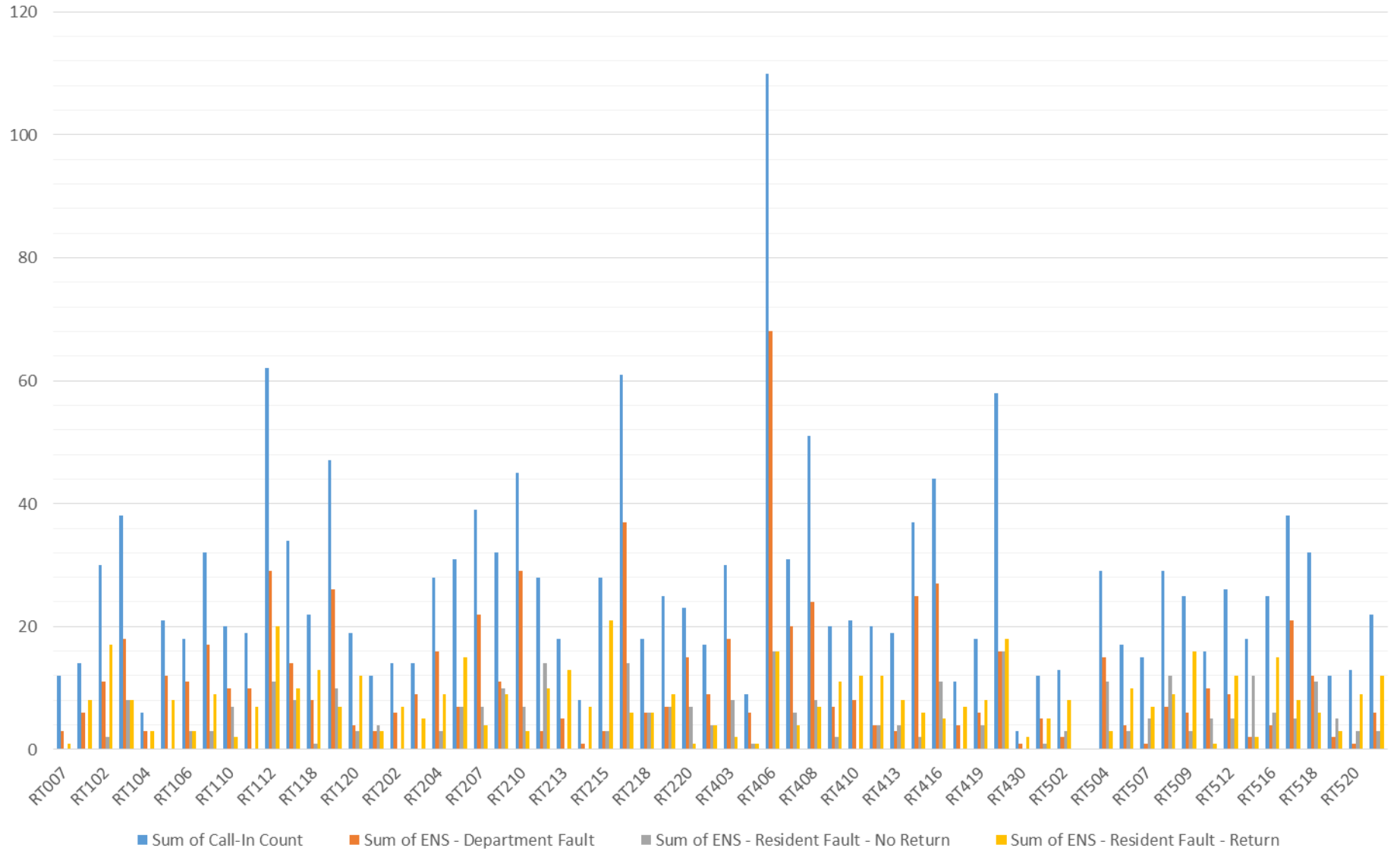
### Comparison of Call-Ins to Address Count w/ Call-Ins as a Percentage of Address Count



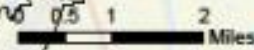
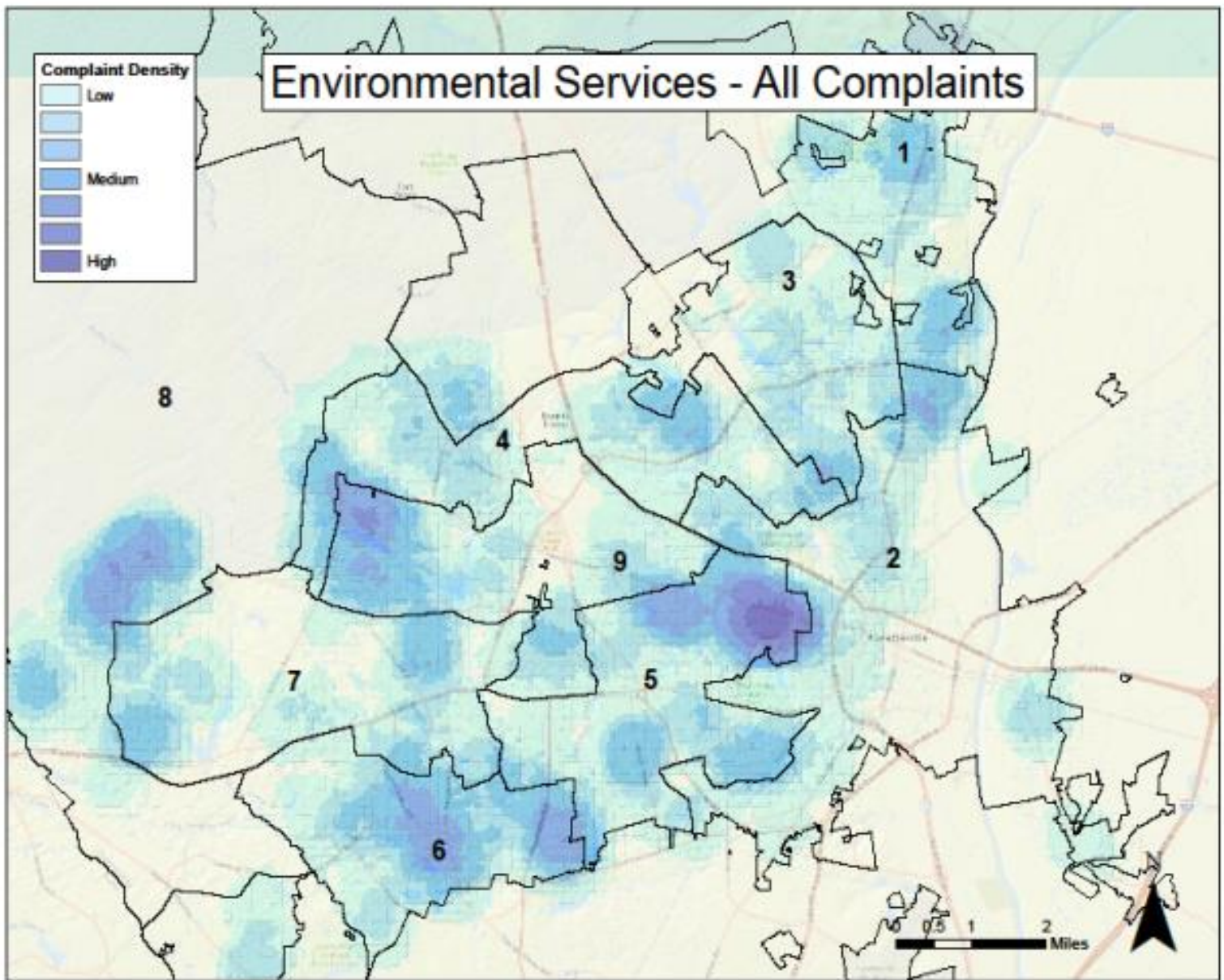
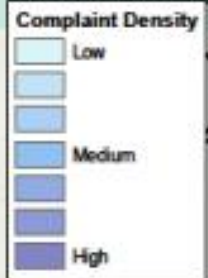
### Call-Ins by Month and Resolution



# CALL-INS BY ROUTE

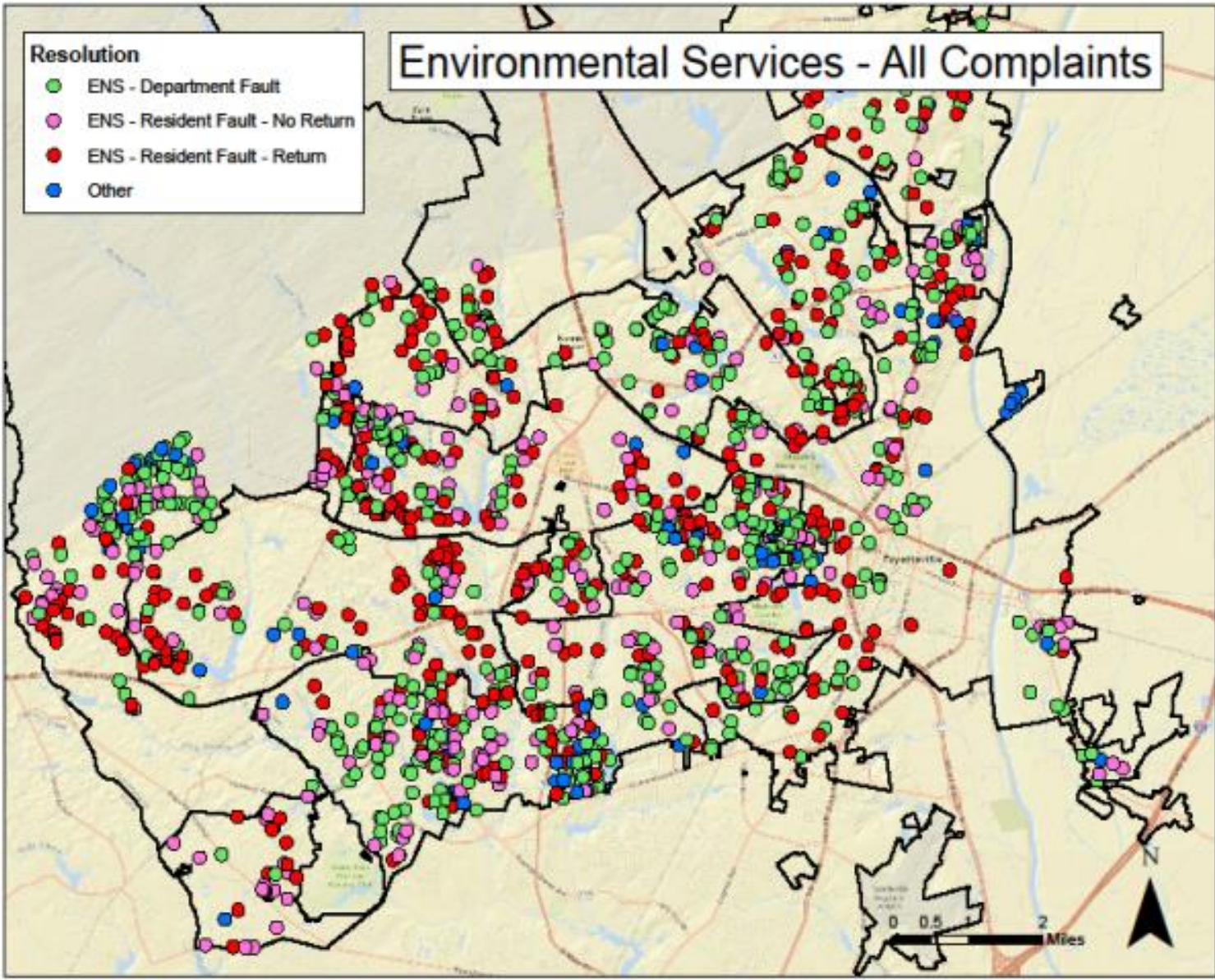


# Environmental Services - All Complaints

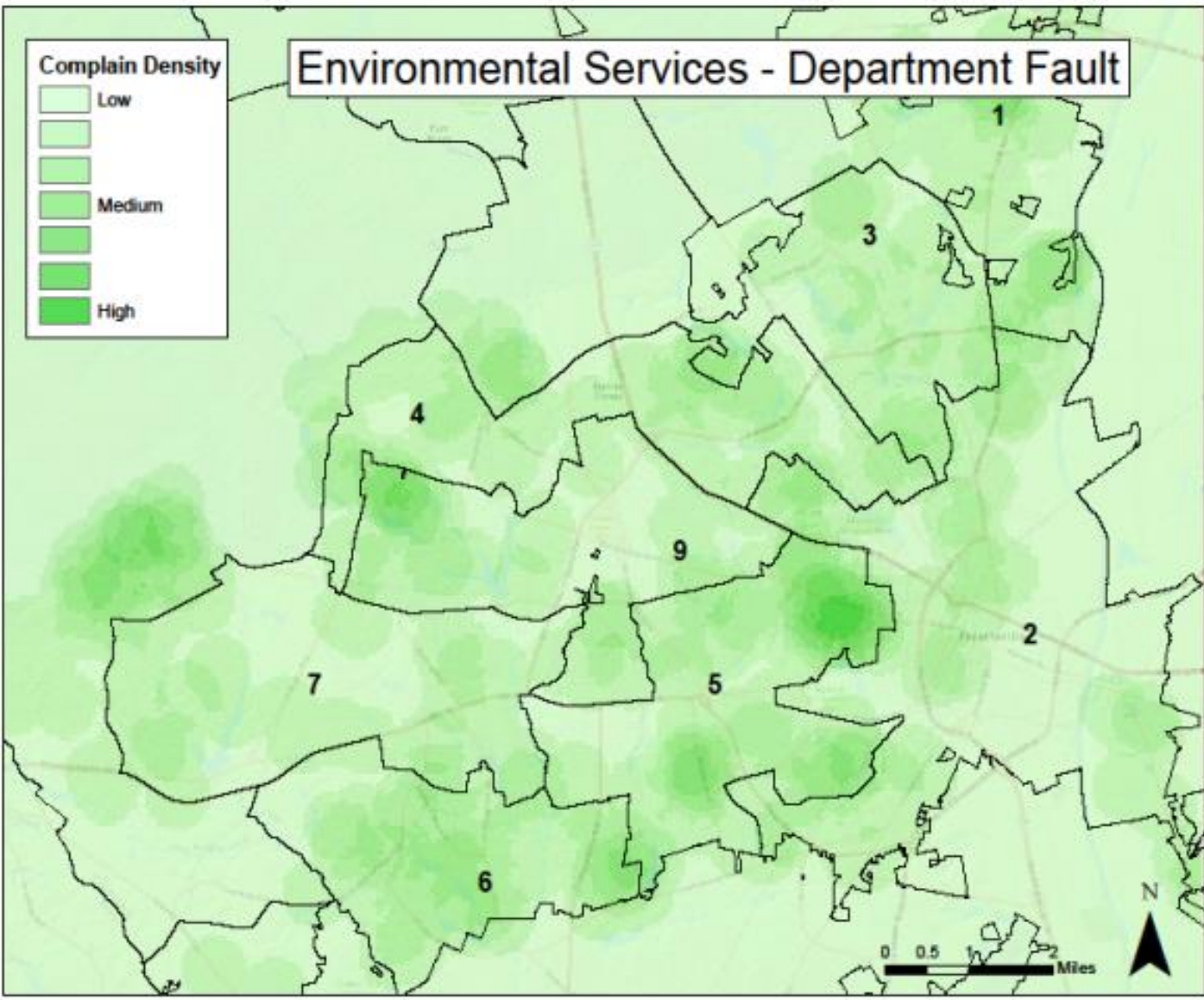


# Environmental Services - All Complaints

- Resolution**
- ENS - Department Fault
  - ENS - Resident Fault - No Return
  - ENS - Resident Fault - Return
  - Other







# Environmental Services - Resident Fault

