

# Increasing Pollution Complaint Response Capacity

Lean Six Sigma Green Belt Project

# Define

- Bureau of Pollution Control and Prevention (BPCP)
  - Investigates Air, Water, and Soil Pollution Complaints
    - Field investigations; Air, Water, and Soil Samples; Permit Inspection
  - 5 Investigators, 3 Administrative Associates, 1 Supervisor
  - Workload: complaint response, area surveillance, complaint follow up, state mandated hazardous site audits, community outreach
- BPCP does not have the capacity to fulfill all obligations
  - Follow ups, surveillances, training, and community outreach were being neglected
  - Poor response to off hour complaints
- Our goal was to increase capacity by eliminating waste, and thus increasing quality and quantity of outputs by BPCP

# Define: Observations

- Needs additional equipment; investigators often have to go without
- Variance in investigation protocol and experience
  - Some investigators miss what others catch
- Significant driving time
  - Often more than 45 minutes between locations; Average of about 30 minutes
- Investigators fighting Lagan at times
  - Lagan incorrectly setting due dates
  - Investigators manually entering data in “other comments” section
  - Only one type of complaint available
  - Have to return to office for anything involving Lagan

# Define: Observations

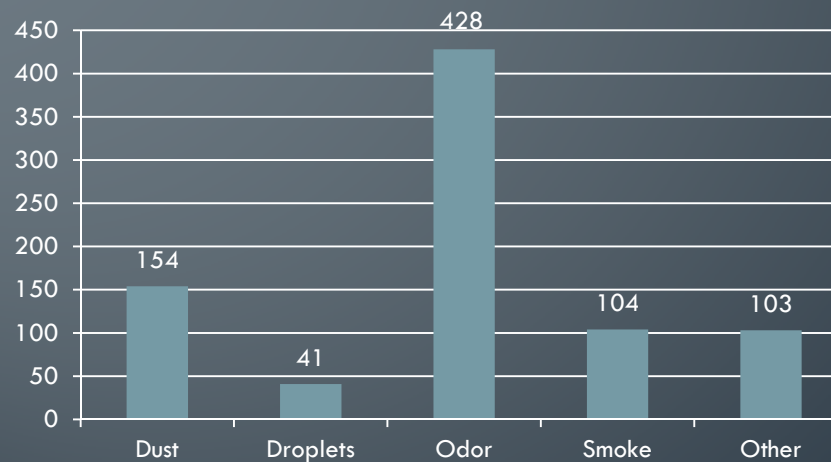
- Tracking in-progress investigations very difficult
  - Information just kept at investigator's desk
- Too much paperwork!
  - Investigators print out multiple copies of electronically accessible reports
  - Administrative Assistants spending large parts of their day either printing forms or filing copies of permits and reports

# Measure

- 311 Lagan Reports
  - Length of Case; Case Volume; Type; Location
- Water complaints: 10% of total complaints; Soil: 3-5%.
  - Not in Lagan
- 660 air complaints/year
  - Average time to close: 21 days
  - Value Add Time: 1 - 3.5 hours
  - Takt Time: 3.04 Hours/Complaint
    - 8 hour work day
    - 250 working day/year

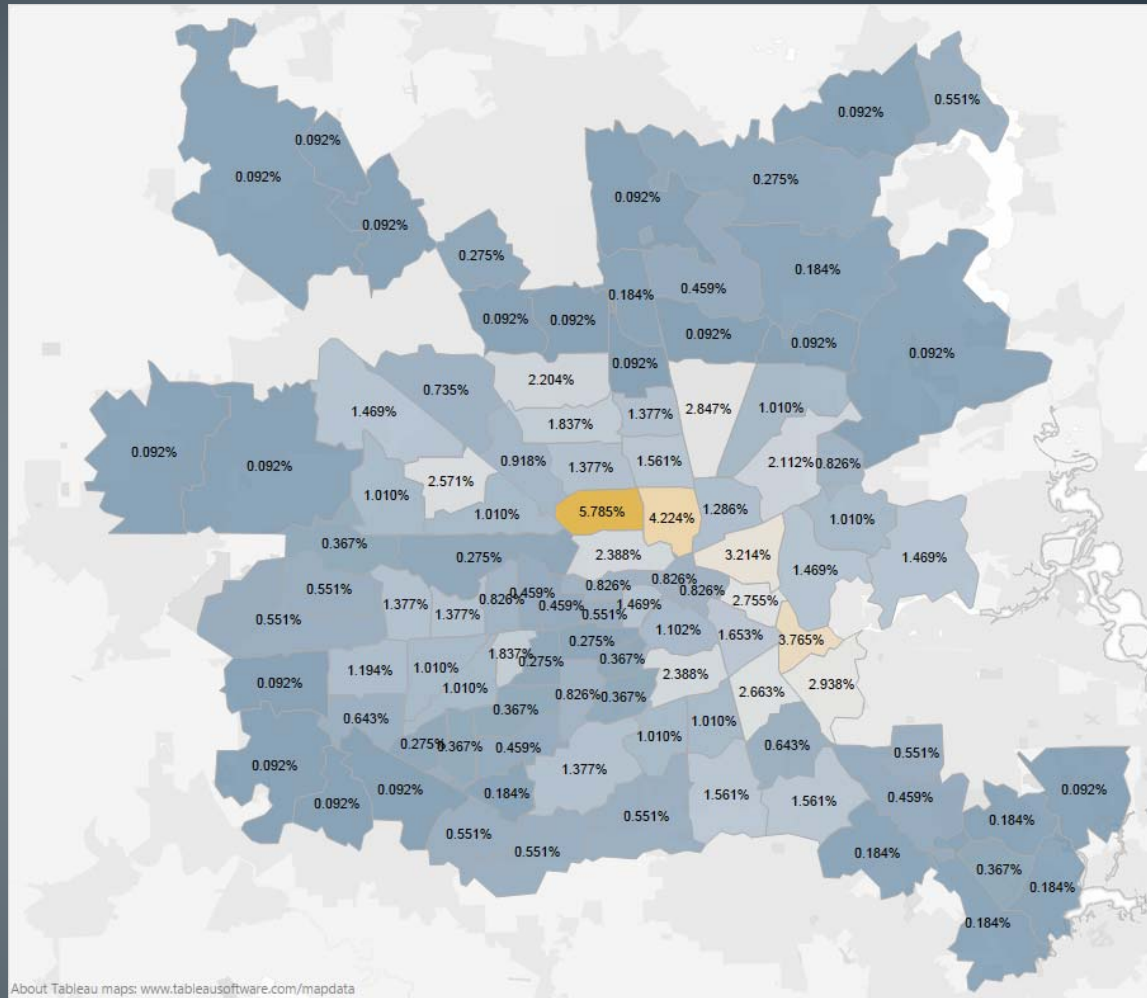
# Measure

- 599 out of 660 air complaints in 2012 between 7am and 8pm
  - Only 51 complaints on the weekend
- 65% of complaints involved odor; 23% involved dust.
- Most complaints require around 2 follow ups
  - Checking permits, ensuring compliance, or later surveillance
- Additional Investigations Mandated by State





# Measure



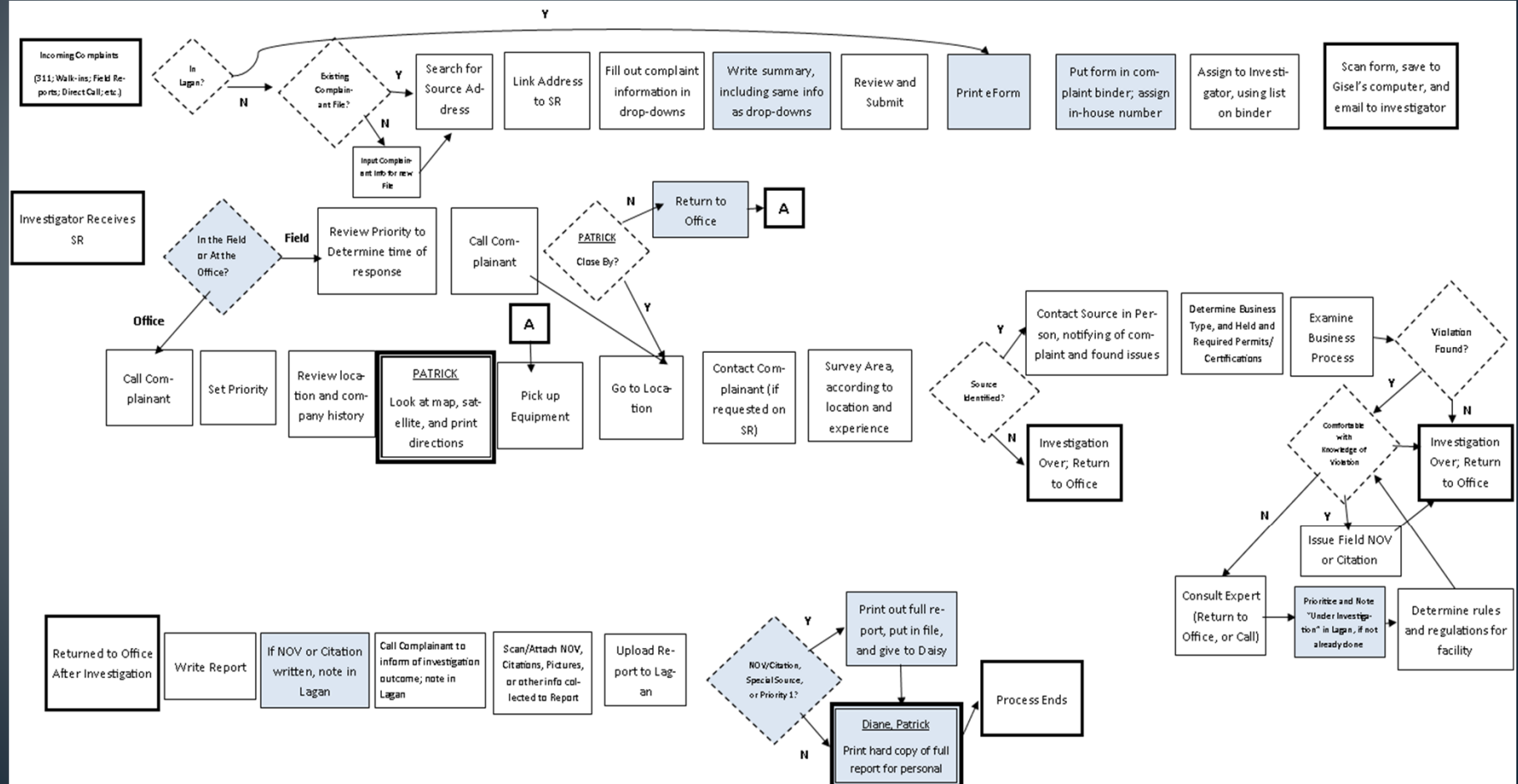
- Breakdown of Air Complaints by Zip Code
  - Used to create territories

# Analyze

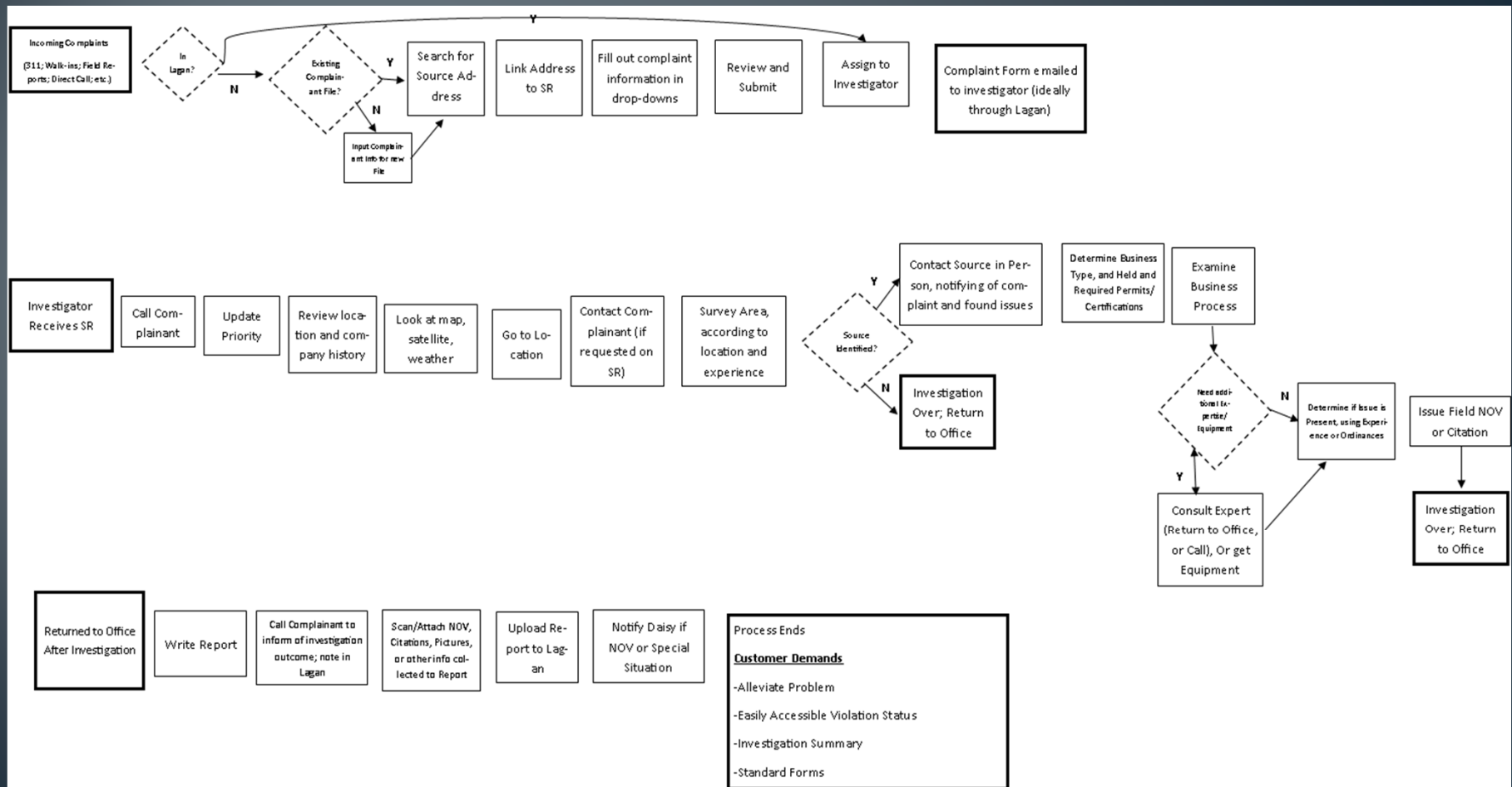
- Investigators have to drive as far as 90 minutes between complaints; Average drive time of approximately 30 minutes between sites.
  - Approximately half of an investigator's time is being spent driving
- Standard work does not exist
  - Missing issues, bringing wrong equipment, lower average quality of work



# Current State



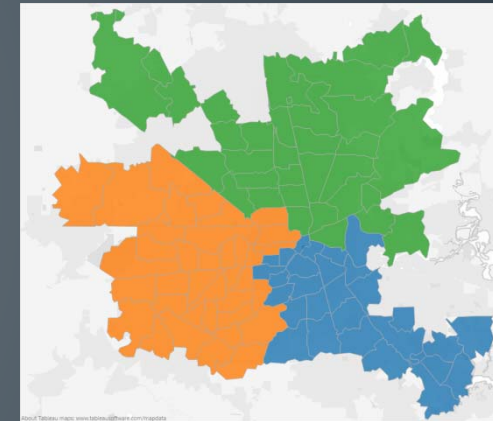
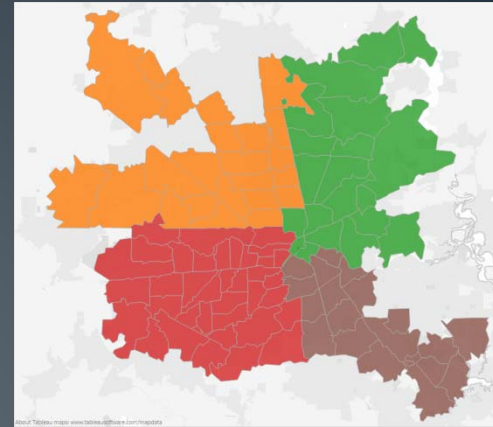
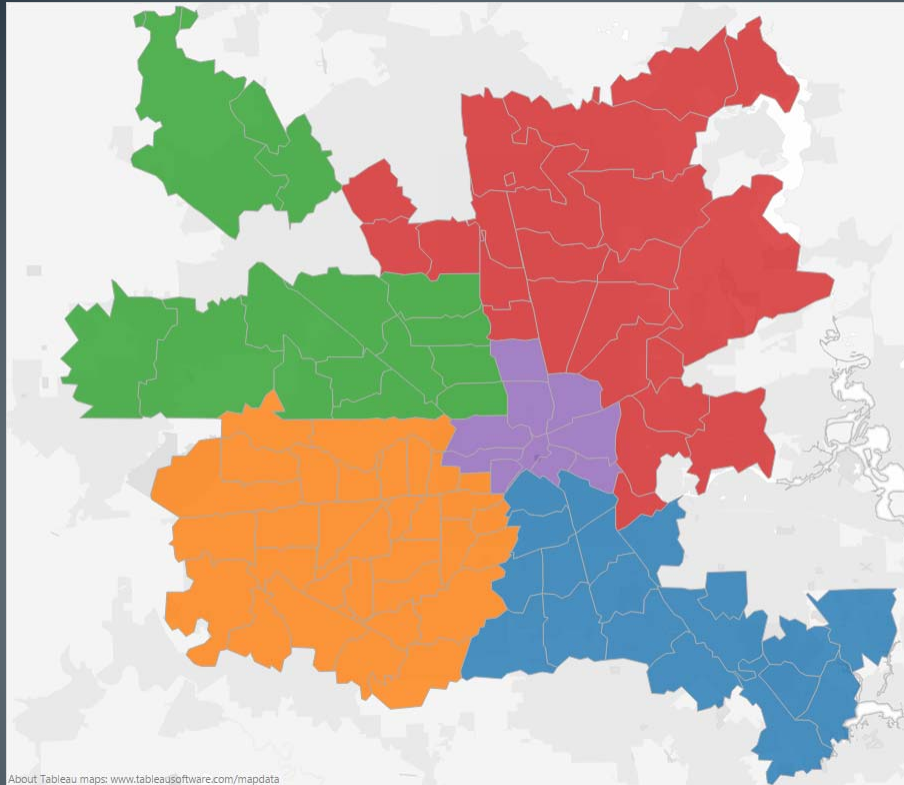
# Future State



# Improve

	Task	Responsibility	Notes
<b>Completed</b>	<ul style="list-style-type: none"> <li>▲ Implement Area Focused Complaint Assignment</li> <li>▲ Quality of Life Updates to Lagan</li> <li>▲ Eliminated Wasteful Paperwork for Investigators</li> <li>▲ Standard Work for Investigation Reports</li> </ul>	<ul style="list-style-type: none"> <li>▲ Arturo Blanco (BPCP), Daisy James (BPCP)</li> <li>▲ Ray Taylor (311)</li> <li>▲ Arturo Blanco (BPCP), Daisy James (BPCP)</li> <li>▲ Arturo Blanco (BPCP), Daisy James (BPCP)</li> </ul>	<ul style="list-style-type: none"> <li>▲ Anh to follow up in two weeks to check on progress</li> <li>▲ Any further complaints will be addressed by Ray Taylor when brought to this attention.</li> <li>▲ Anh to follow up in two weeks to ensure new procedures are being followed.</li> <li>▲ Anh to follow up in two weeks to ensure new form is functioning well.</li> </ul>
<b>Next Steps</b>	<ul style="list-style-type: none"> <li>▲ Acquire Funding for mobile technology solution</li> <li>▲ Standard Work for Investigation</li> <li>▲ Integration of Water and Soil Complaints into Lagan</li> <li>▲ Elimination of State Permit Files</li> <li>▲ Develop Visual Controls</li> </ul>	<ul style="list-style-type: none"> <li>▲ Anh Trieu (HHS)</li> <li>▲ Arturo Blanco (BPCP), Daisy James (BPCP)</li> <li>▲ Ray Taylor (311)</li> <li>▲ Anh Trieu (HHS)</li> <li>▲ Anh Trieu (HHS)</li> </ul>	<ul style="list-style-type: none"> <li>▲ Anh to present to the HHS department in the near future to request funding. Will follow up with Daisy and Arturo afterward.</li> <li>▲ Anh to follow up in two weeks to check on progress being made by Arturo and Daisy.</li> <li>▲ Arturo and Daisy to maintain close communication with Ray Taylor to ensure progress, and to update Anh of any developments.</li> <li>▲ Anh to call TCEQ about being provided secondary copies of files, and to follow up with Gisel Chavez (BPCP) regarding reducing inventory of unnecessary files and electronic access to files.</li> <li>▲ Anh to work with Daisy and Arturo on visual controls to better track complaint responses.</li> </ul>
<b>Distant Goals</b>	<ul style="list-style-type: none"> <li>▲ Additional Funding for Equipment</li> </ul>	<ul style="list-style-type: none"> <li>▲ Arturo Blanco (BPCP), Daisy James (BPCP)</li> </ul>	<ul style="list-style-type: none"> <li>▲ Arturo to seek funding for an additional GRIMM dust detector. Anh to periodically check in on this process.</li> </ul>

# Improve



- Furthest two points are now 30 miles within a district, with the smallest district having a maximum of 11 miles between points.
  - Average drive time should drop by at least half with three district map
    - More Districts = Less Drive Time

# Standard Investigation Report Form



Houston Department of Health and Human Services  
Bureau of Pollution Control and Prevention (BPCP)  
**Complaint Investigation Report**



**Complaint Request:** Complaint Number  
**Date/Time Received :** Click here to enter a date.  
**Date/Time Investigated:** Click here to enter a date.  
**Site/Facility Name:** Residential? Company?  
**Site/Facility Address:** Location Address  
**Weather Conditions:** Weather Information

**Introduction:**

**Investigation:**

**Process Description:**

**Complaint & Compliance History:**

**Conclusion:**

**Written by:** Select Name.

**Date:** Click here to enter a date.

# Control

- Tracking Outputs to Measure Success
  - Visual Controls to ensure fast response time
  - Adjust districts if workload unbalanced
- Follow Up on Process
  - Maintain contact between interested parties
    - Weekly communication
    - Biweekly meetings
    - Continued observations