

Filling Potholes:

Analyzing the City of Houston's Response



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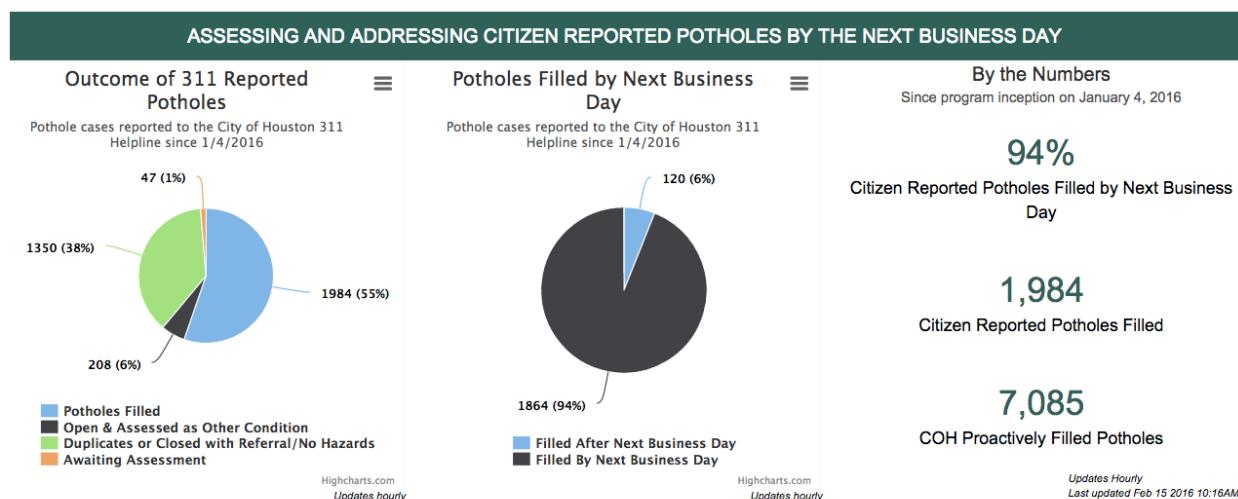
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Summary:

Mayor Sylvester Turner's pledge to quickly respond to citizens' pothole complaints spurred the creation of the City's Potholes Tracker website (www.houstontx.gov/potholes), which displays various information about the outcome of potholes reported via 311. The City of Houston requested that the Kinder Institute conduct an independent analysis of the numbers presented on the site by examining data collected between January 4 and January 21, 2016.

- Based on the city's current methodology, the Institute's analysis confirms the accuracy of the City's advertised rate of citizen-reported potholes filled by the next business day, a number that fluctuated between 93-96 percent for most of January 2016.
- While the City currently reports the percentage of potholes that are filled on time (by restricting the sample to the cases in which a pothole was indeed filled), the Potholes Tracker does not calculate the percentage of all citizens' pothole reports that were addressed – in one way or another – by the end of the following business day.
- The Institute suggests the City consider including additional information and metrics — such as the time it takes the City to assess 311 calls overall and additional breakouts of the categories of response to potholes — to further clarify its numbers and methodology for the public.



From the Potholes Tracker Website February 15, 2016.

Introduction:

The City of Houston recently launched its pothole repair initiative, in which it aims to “assess and repair potholes reported to the 311 Help and Information Line by the next business day.” The City created the Potholes Tracker website to monitor its progress with respect to this goal. Two of the primary metrics

displayed on the Potholes Tracker site are the outcome of 311 reported potholes and the percentage of potholes filled by the next business day.

On January 22, the City of Houston invited the Kinder Institute for Urban Research, as an independent research entity, to verify the numbers the City was presenting regarding the percentage of potholes filled by the next business day and the methodology behind them.

The City provided Institute researchers with the underlying data tables pertaining to 311 calls, service requests, and work orders for the dates of January 4 through January 21, 2016. (This data is available in Excel format on the separate Methodology page linked to below). The City of Houston merges these data sets and calculates additional variables to compute the numbers displayed on the Potholes Tracker site. Institute researchers worked with the raw data to independently recreate the City's merged table and calculated variables — the pieces of information that feed directly into the Potholes Tracker. The Institute confirms that the statistics displayed on the Pothole Tracker are accurate as of the date of this report, given the City's current methodology.

With regards to the "Potholes Filled Next Day" metric, during the window studied, approximately 93 percent of the citizen-reported potholes that were subsequently filled by the city were fixed by the end of the following business day. The percentage shown on the City's site has fluctuated between 93-96 percent as the City receives and responds to new reports.

Kinder Institute recommendations for further consideration:

In addition to confirming the accuracy of the City's current data, the Kinder Institute offered several suggestions to the City that may help to clarify its processes and make the data behind the website more clearly interpretable.

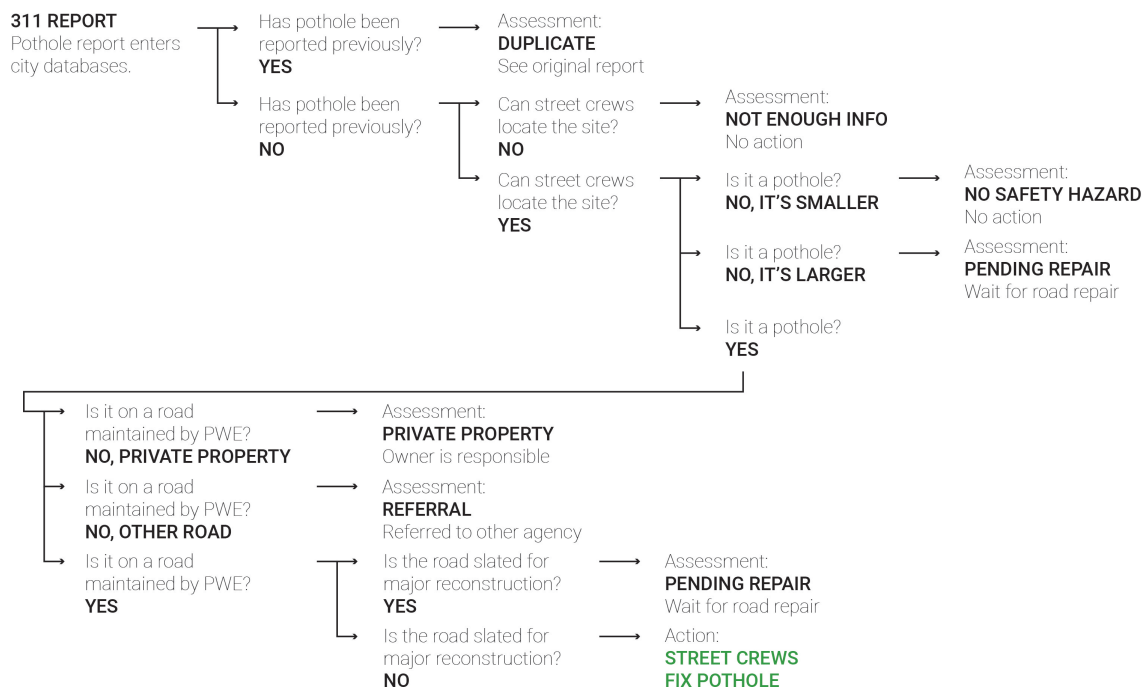
- 1) "Outcome of 311 Reported Potholes" should be expanded to show more categories of what happens following a pothole report. If displaying all the options on the pie chart is not feasible, perhaps an additional data table could be added.
- 2) The City of Houston should consider adding a third pie chart that shows the rate of on-time assessment for 311-reported potholes. The "What Happens When You Call 311" graphic, shown below, describes the possible assessments for 311-reported potholes. Such a pie chart would indicate the percentage of total pothole reports that were assessed by the City before the end of the next business day and would shed light on the City's response time for *all* of 311 pothole reports. The "Potholes Filled by Next Business Day" chart, in contrast, only describes the response time for reported potholes that are ultimately filled by the city. A possible method for calculating this metric is laid out in the "On Time Assessment" section in the linked methodology attachment.
- 3) The "Potholes Filled by Next Business Day" chart, while accurate, should be framed as only a subset of the 311 reports. As of now, that information is not obvious to readers unaware of the data sources. A simple addition of "93 percent of citizen-reported potholes are filled within this time frame relative to the total number of citizen-reported potholes that are filled" would help. As of now, the denominator used to create the percentage is unclear.

4) The “Next Business Day” metric should be abundantly clear. The City is considering “on time” filling of potholes to be any that are filled by the end of the following business day after they are reported. For the data examined by the Kinder Institute, the “on time” marker is on average 45 hours from report time. This average is likely higher due to a federal holiday and several weekend days being a part of the data set. This definition should be more clear on the site, as public and others might consider “Next Business Day” to be a shorter window of 8 or 24 hours.

What happens after I report a pothole?:

Many Houstonians interpret the process of lodging a 311 pothole complaint as straightforward — you call to report a pothole, the City registers it, and then it fills it. In reality, however, the process requires a number of assessment steps, many of which end with the reported pothole not receiving any treatment for a variety of reasons. It is these assessment steps that the Kinder Institute believes should be more clearly laid out in an additional pie chart or graphic to more thoroughly display the work the City is undertaking. The following flow chart illustrates the many possible tracks of a 311 report.

After a citizen reports a pothole through 311, the city must assess the reported issue by determining whether it technically qualifies as a pothole, whether it is on a city-maintained road, and whether it has been reported previously.



The green highlighted step of the flow chart represents the only portion of 311 calls that the City has deemed an actionable pothole and that it hopes to fill by the end of the next business day. It is this slice of the total calls that is represented in the “Potholes Filled by Next Business Day” pie chart. Duplicates, potholes that are a part of larger road repair projects, and those the City deems as not significant safety

hazards are not included. Also not included are reports pertaining to potholes on private property or roadways maintained by other jurisdictions such as the Texas Department of Transportation.

If a 311 report describes a pothole on a city-maintained road that has not been reported previously, the City tries to repair the pothole by the close of the following business day, creating a window of, on average, 45 hours to address the pothole “on time.” The “Potholes Filled by Next Business Day” pie chart on the Potholes Tracker site indicates the number of citizen-reported potholes filled within this time frame relative to the total number of citizen-reported potholes that are filled, not compared to the total number of citizen reports. An “On Time Assessment” graphic would consider all the citizen 311 calls.

The City’s “Outcome of 311 Reported Potholes” pie chart on the Potholes Tracker site indicates how many reports have been assessed and the breakdown of assessments that are made. Those categories are grouped into four categories in the current pie chart for visual legibility, but the Kinder Institute suggests including a table similar to the following one to further break out the categorization.

Breakdown of Resolutions from January 4 to January 21

Resolution	count	Percentage of <u>ALL</u> Cases
Maintenance repair has been completed	1169	53.5%
No Resolution - Status: Open	271	12.4%
No safety hazard found; no action needed	194	8.9%
Duplicate Case	172	7.9%
No Resolution - Status: Pending Repair	111	5.1%
Repair Already Completed Upon Arrival	95	4.3%
Referred to other department, agency, or municipality	44	2.0%
No City related issue found on-site	29	1.3%
Not enough info to complete investigation/inspection	17	0.8%
Concern is on private property	13	0.6%
Investigation / Inspection completed	12	0.5%
A contractor is working in the area and has been notified of this request.	11	0.5%
No resolution - Status: Closed	5	0.2%
No immediate hazard / referred for programming	4	0.2%
Misc	38	1.7%

A final suggestion is that the City consider displaying its rate of “On Time Assessment” — the percentage of 311 reported-potholes that receive one of the many assessments presented on the flow chart by the close of the next business day. Since so many of the resolutions of a 311 call are not incorporated into the “Potholes Filled by Next Business Day” graph, it would be beneficial for the City to display its rate of assessment on all calls, not just how it responds to those determined to be actionable potholes. A graphic which displayed the percentage of 311 calls assessed within the next business day would

augment the “Potholes Filled by Next Business Day” chart by displaying the overall response time of the city to 311 calls regardless of their outcomes.