



ClaimStat Alert

Office of the New York City Comptroller

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Pothole City: A Data-Driven Look at NYC Roadways

Potholes have been a persistent presence in New York City since the days of the horse and buggy, causing harm to people and property and contributing to “frayed temperatures and rising blood pressure” throughout the five boroughs, as one commenter put it more than fifty years ago.¹

Just this month, the transportation research group TRIP found that over 80 percent of the major roads and highways in the New York City and Newark metropolitan areas were in poor or mediocre condition—the seventh worst ranking in the nation among cities with greater than 500,000 residents.² This imposes nearly \$800 in annual additional maintenance costs on car owners—what amounts to “a hidden pothole tax.”³

This ClaimStat Alert, from Comptroller Scott M. Stringer, examines “defective roadway” claims against the City of New York from Fiscal Years (FY) 2010 – 2015. Defective roadway claims fall into two categories—property damage (so-called “pothole” claims, generally affecting automobiles) and personal injury (mainly “trip and fall” claims on City roads).⁴

- There were 12,286 property damage defective roadway claims (hereafter “pothole claims”) from FY 2010 – FY 2015. During the same period, 1,549 claims were settled at a cost of nearly \$1.5 million.
- There were 5,913 personal injury defective roadway claims from FY 2010 – 2015. During the same period, 2,681 claims were settled at a cost of \$136.3 million.
- When taken together, the cost of both personal injury and property damage defective roadway claims between FY 2010 – 2015 was nearly \$138 million—an average of \$27.6 million annually.
- Most recently, there were 2,045 pothole claims filed in FY 2015 (ending June 30, 2015), nearly double the number of claims filed in FY 2013 (1,075) but significantly fewer than FY 2014, which witnessed a historical high with 2,955 claims filed amid one of the toughest winters on record with 57.4 inches of snow.⁵
- The roads with the greatest number of pothole claims include the Belt Parkway, the Grand Central Parkway and the FDR Drive, while the roads with the most personal injury cases include Broadway, Second, and Third Avenues in Manhattan.



- While many variables contribute to potholes – from road repaving and maintenance schedules to the general age of the City’s infrastructure – the data shows that heavy snowfalls correlate with a higher volume of pothole claims.

The following chart shows an annual pothole claim breakdown by borough.

	2010	2011	2012	2013	2014	2015	TOTAL
BRONX	271	438	125	137	482	293	1746
BROOKLYN	406	515	260	244	786	433	2644
MANHATTAN	393	500	196	168	460	319	2036
QUEENS	716	938	367	302	666	601	3590
STATEN ISLAND	439	369	120	182	472	339	1921
OTHER⁶	67	63	30	40	89	60	349
TOTAL	2292	2823	1098	1073	2955	2045	12,286

The analysis below provides further data on property damage and personal injury claims resulting from defective roadways, with a focus on specific “hot spots” that DOT should examine as it continues to refine its approach to ongoing pothole repair and determines priority corridors for capital construction in the coming years.

ANALYSIS

Property Damage (“Pothole”)

Most “pothole” claims are property damage and either do not settle—because there was no “prior notice” as required by city law⁷—or are settled for low amounts since payouts are limited by the type of damage. The data shows that the most common settlement figure was \$500 and that 76 percent of settlements (1,175) were for \$1,000 or less.

Within the five boroughs, certain thoroughfares generate more pothole claims than others. The roads with the highest number of claims over the last six fiscal years, including intersections, include:

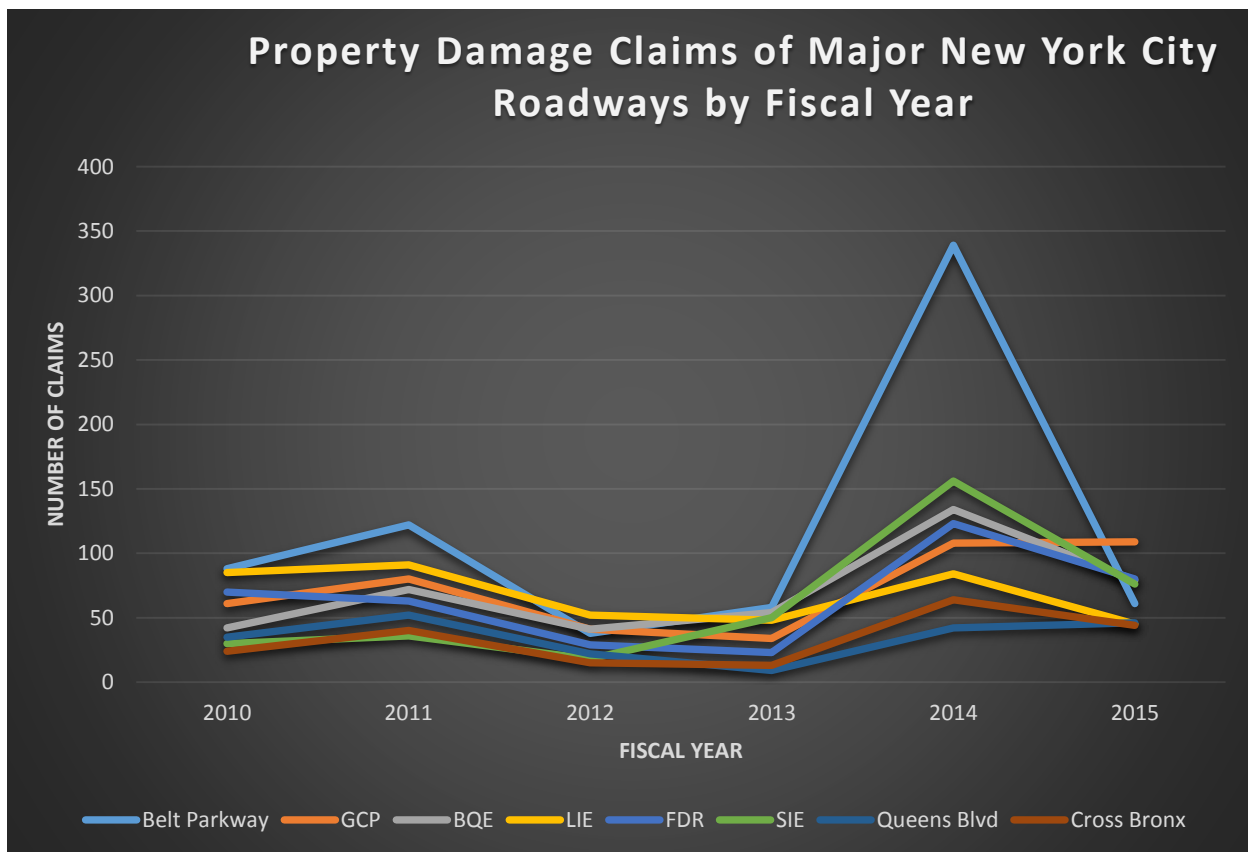
- Belt Parkway: **706**
- Grand Central Parkway (GCP): **433**
- Brooklyn-Queens Expressway (BQE): **422**
- Long Island Expressway (LIE): **405**
- Franklin Delano Roosevelt Drive (FDR): **388**
- Staten Island Expressway (SIE): **366**
- Queens Boulevard: **208**
- Cross Bronx Expressway: **200**



The following chart shows the number of claims on these major roadways by fiscal year.

	2010	2011	2012	2013	2014	2015	Grand Total
Belt Parkway	88	122	38	58	339	61	706
GCP	61	80	41	34	108	109	433
BQE	42	72	41	54	134	79	422
LIE	85	91	52	48	84	45	405
FDR	70	63	29	23	123	80	388
SIE	30	36	18	50	156	76	366
Queens Blvd	35	52	22	9	42	46	208
Cross Bronx	24	40	15	13	64	44	200

An analysis of this data, shows that these major roadways have a consistent amount of claims year to year. It is worth noting that the Belt Parkway had the most pothole claims in four of the six years examined, going as far back as FY 2010, making it by far the most pot-holed roadway in the city.



This breakdown could help DOT prioritize the repaving/resurfacing of certain roadways or determine where to pilot new and innovative strategies to combat potholes.

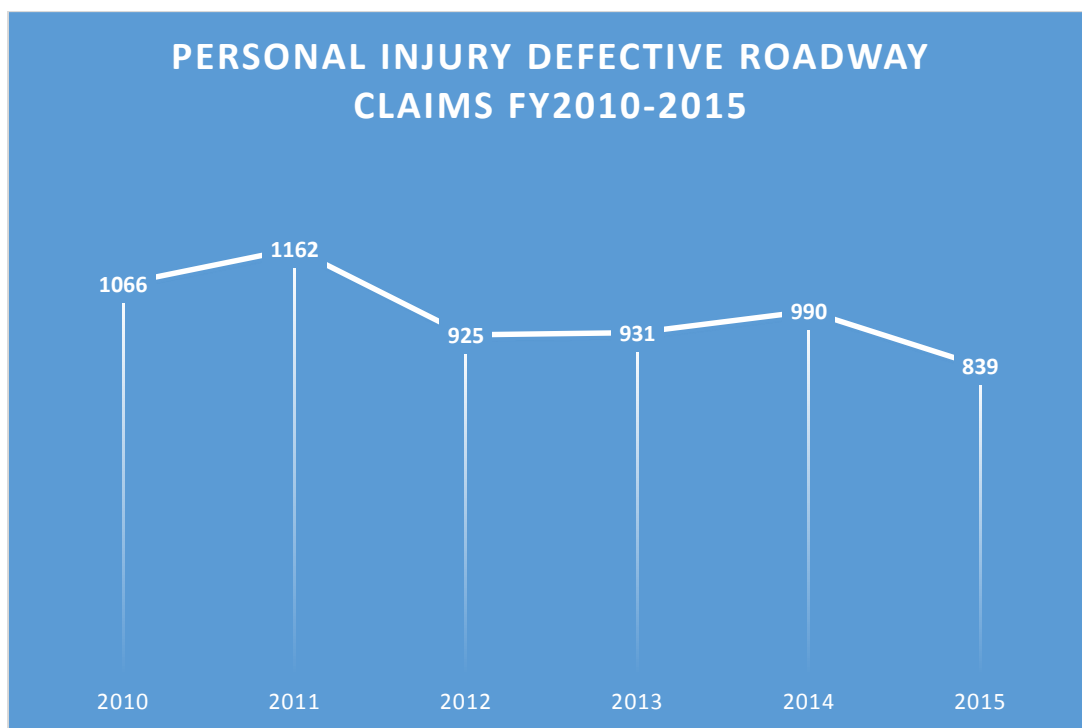


Personal Injury

While the majority of personal injury defective roadway claims are related to slips, trips and falls on the roadway, there are a number of such claims that also involve the conditions or design of the roadway that allegedly caused pedestrian or other motor vehicle-related personal injury claims.

There were 5,913 personal injury/defective roadway claims from FY 2010 – 2015. During the same period, 2,681 claims were settled at a cost of \$136.3 million.

Settlement costs range from \$2 to \$9 million, with 1,285 settlements (48 percent) of \$5,000 or less, and only 211 settlements (7.9 percent) of over \$100,000. The most common settlement figures were \$1,500 (485) and \$2,500 (245).



A breakdown by borough shows a relatively high number of claims filed per capita in Manhattan, reflecting the fact that many of these claims are filed by pedestrians:

- Manhattan: 1,832 (1.1 claims/1000 residents)
- Brooklyn: 1,502 (0.6 claims/1000 residents)
- Queens: 1,100 (0.5 claims/1000 residents)
- Bronx: 1,016 (0.7 claims/1000 residents)
- Staten Island: 326 (0.7 claims/1000 residents)
- Other (includes counties outside NYC): 8
- N/A (blank): 129

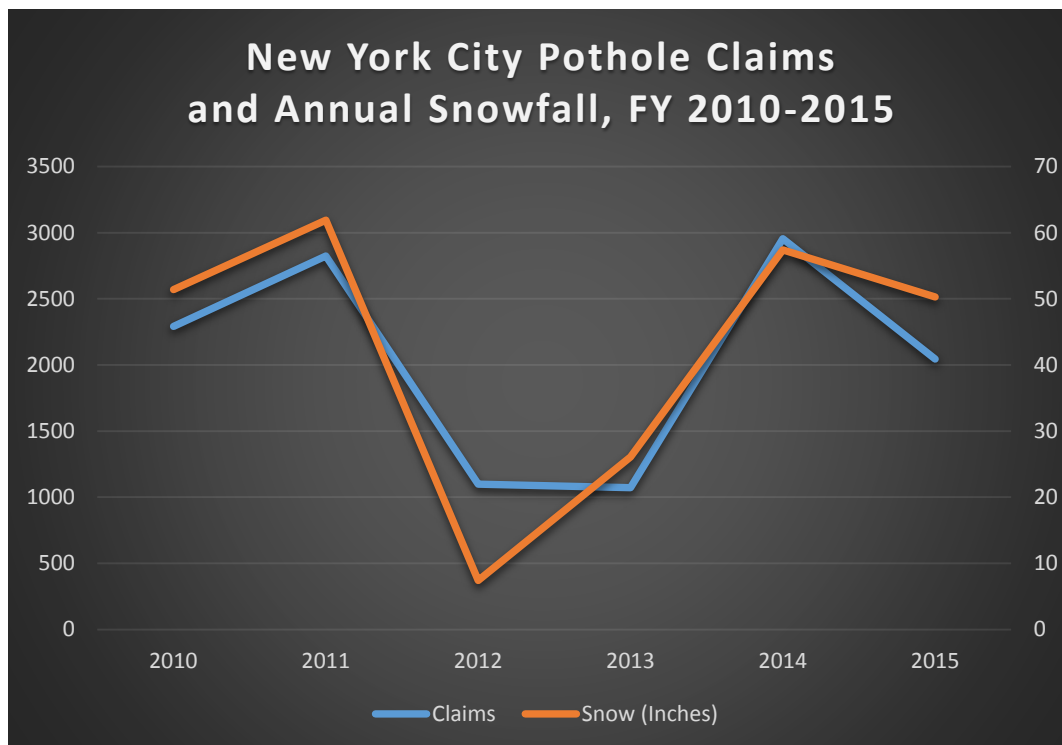


The “hot spot” analysis also supports this hypothesis, with the following thoroughfares having the most personal injury defective roadway claims:

- Broadway, Manhattan: 195
- Second Avenue, Manhattan: 107
- Third Avenue, Manhattan: 103
- Seventh Avenue, Manhattan: 86
- First Avenue, Manhattan: 84
- Fifth Avenue, Manhattan: 81

When Snow Falls, Potholes Follow

It has long been presumed that harsh winters lead to busy “pothole seasons” in the spring, when armies of workers take to the streets of New York to try and patch the holes that snow and freezing weather have left behind. This ClaimStat suggests that heavy snows are indeed a strong predictor of the potholes claims that will follow, as this chart shows:



The numbers are:

- | | |
|-------------------------|---------------------|
| • FY 2010: 2,292 claims | 51.4 inches of snow |
| • FY 2011: 2,823 claims | 61.9 inches of snow |
| • FY 2012: 1,098 claims | 7.4 inches of snow |
| • FY 2013: 1,073 claims | 26.1 inches of snow |
| • FY 2014: 2,955 claims | 57.4 inches of snow |
| • FY 2015: 2,045 claims | 50.3 inches of snow |



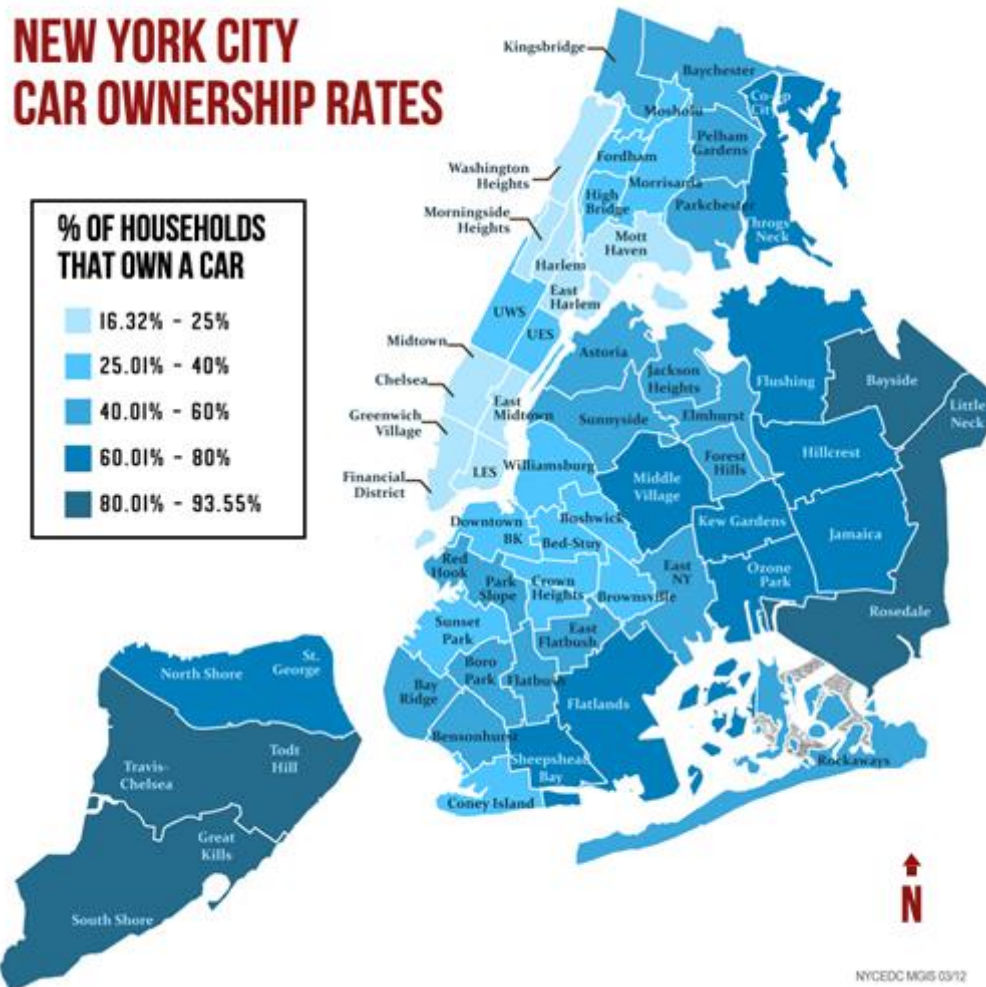
Cars vs. Claims

Just as variations in pothole claims correlate with the weather, they also correlate with the percentage of households that own vehicles.

As detailed in the map below from the New York City Economic Development Corporation, as of the 2010 Census, Staten Island has by far the highest rate of vehicle ownership in the City at 84 percent.⁸ Manhattan has the lowest at 23 percent, followed by Brooklyn at 44 percent, the Bronx at 46 percent, and Queens at 64 percent.

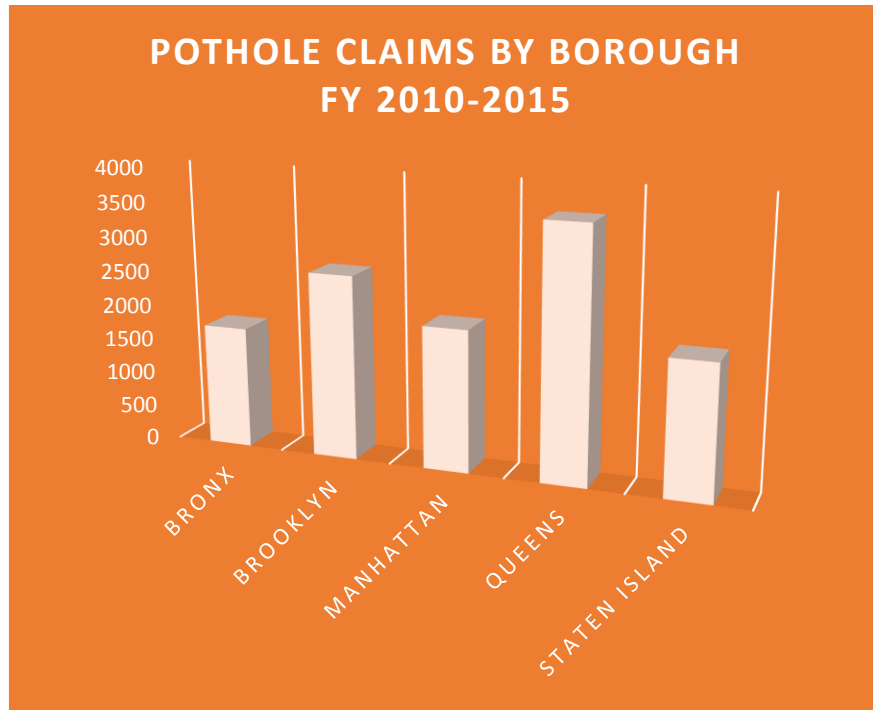
Overall, nearly half of New York City households are vehicle-free, compared to just eight percent of households in the U.S.

NEW YORK CITY CAR OWNERSHIP RATES



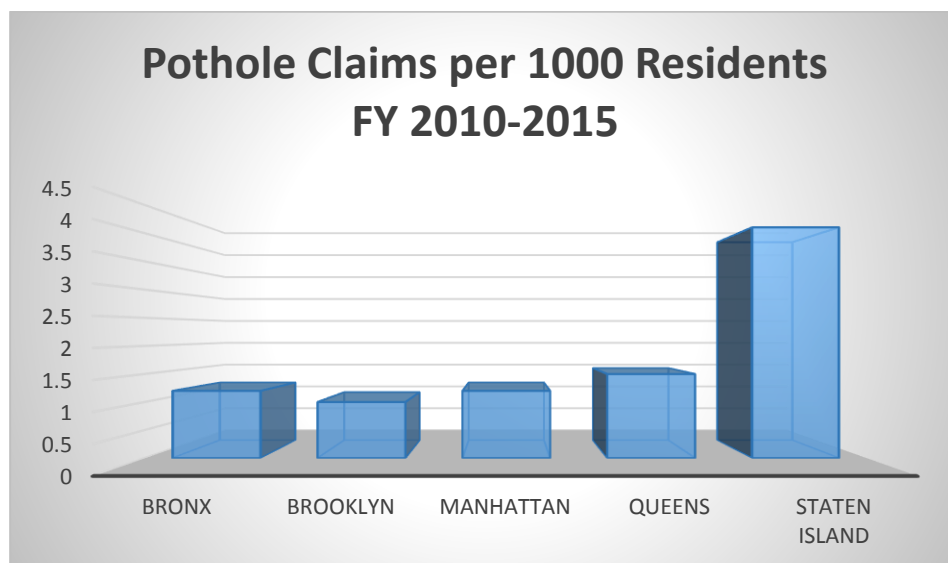


At first glance, as shown below, it appears that Queens and Brooklyn suffer the most from potholes:



However, when adjusted for population, the borough breakdown of pothole claims correlates more with car ownership, with Staten Island filing by far the most claims per capita of any borough⁹:

- Queens: 3,590 (1.5 claims/1000 residents)
- Brooklyn: 2,644 (1.0 claims/1000 residents)
- Manhattan: 2,036 (1.2 claims/1000 residents)
- Staten Island: 1,921 (4.1 claims/1000 residents)
- Bronx: 1,746 claims (1.2 claims/1000 residents)





WHAT THE CITY HAS DONE AND CAN DO

In February 2014¹⁰, the Mayor and DOT Commissioner Trottenberg announced a series of steps to improve pothole maintenance, including:

- **Weekly Pothole Blitzes**
- **Citywide Targeted Repaving**
- **Material Enhancements**
- **Asphalt Engineering Technology Challenge**
- **21st Century Roadway Maintenance¹¹**
- **Impact Prevention**

However, as noted in the Mayor's Management Report, despite these efforts, the City faced an uphill battle to stay ahead of potholes during the difficult winter of 2013-2014.¹² The average time to close a pothole work order in the first four months of FY 2015 was 6.7 days—nearly triple the 2.4 days during the same period in FY 2014.

The City stated that while repair times were “atypically high” through the first quarter of FY 2015, they were “returning to normal levels by October 2014.”

To its credit, the DOT filled over 74,000 potholes (arterials and local streets) in the first four months of FY 2015, a 60 percent increase over the same period in FY 2014.

While the City has opened/renovated two major asphalt plants in recent years, there is more that can be done to address the century-old pothole problem.¹³

As the Federal Highway Administration found in a 1999 study of pothole repairs nationwide, “The cost of patching the same potholes over and over because of poor quality patching material quickly offsets any savings from the purchase of less expensive mix.”¹⁴

DOT is currently experimenting with rubberized asphalt on West Fingerboard Road in Staten Island to determine whether that material is less susceptible to New York City's harsh winters.¹⁵ While the material could cost an extra \$10 per ton, it is possible that cost savings associated with fewer pothole-related claims and repairs could make such an investment a net positive for taxpayers. Further experimentation with new types of road material—including recycled plastic¹⁶—may provide additional long-term cost savings.

Furthermore, while patching potholes is a good short-term solution, a more cost-effective, long-term solution may be a complete reconstruction of certain City streets. As Elliot Sander, former executive director of the Metropolitan Transportation Authority (MTA) told the *Center for an Urban Future* in a recent report on the City's infrastructure:

Arguably city streets are in the worst shape of any of our transportation infrastructure—and that says a lot. While a lot of resurfacing our streets has been done, they need to be fully reconstructed on a much wider scale, rather than just having asphalt poured on top as a patch. The resurfacing program is helpful, but it



is basically an overused Band-Aid, which anyone who uses the city's streets can attest to.¹⁷

As a result, the City should explore where the upfront capital costs associated with fully reconstructing City streets can provide greatest value to City taxpayers.

In addition to potholes, several other road conditions can contribute to defective roadway claims, including improperly restored streets/intersections following utility work, milled roadways, and hummocks.

The City should explore ways to tackle each of these potential claims generator, including:

- Re-evaluating DOT protocols to ensure that restoration work conducted after street work is properly done. While private companies and utility providers such as Consolidated Edison and Verizon are required by the New York City Administrative Code¹⁸ to maintain the area 12 inches around manholes, vaults and plates flush with the road surface, restoration work following construction sometimes does not match that standard. In addition, the NYPD should also perform spot checks to make sure that contractors performing street work in their precincts have proper permits.
- Roadways are generally paved in a two-step process. A layer of the old roadway is scrapped off (milling), followed by the introduction of a layer of new asphalt. When the street is milled, it presents a hazard to pedestrians and vehicles using the roadway, and yet there is often a delay in repaving roadway. DOT should examine the extent of these delays and modify its procedures to insure that milled roadways are repaved as soon as possible.
- Hummocks are variations in road conditions where asphalt is pushed up in a wave-like shape. In many cases, parked buses cause this condition on account of their weight and design. Given the trip hazard posed by hummocks, DOT should work with the MTA and private bus companies to explore the feasibility of using different pavement that is less likely to result in hummock conditions where buses commonly park.

**ENDNOTES**

¹ *Id.*

² http://www.tripnet.org/docs/Urban_Roads_TRIP_Report_July_2015.pdf.

³ <http://www.washingtonpost.com/blogs/wonkblog/wp/2015/06/25/why-driving-on-americas-roads-can-be-more-expensive-than-you-think/>.

⁴ Most personal injury defective roadway claims are related to slip, trip and falls on the roadway. However, there are a number of such claims that also involve conditions or design of the roadway that allegedly cause pedestrian or other motor vehicle related personal injury claims.

⁵ <http://www.weather.gov/media/okx/Climate/CentralPark/monthlyseasonalsnowfall.pdf>; Snowfall figures are for Central Park.

⁶ “Other” includes counties outside of the five boroughs, as well as claims for which no county was entered.

⁷ <http://www.nytimes.com/2014/04/30/nyregion/pothole-puzzle-new-york-state-rejects-drivers-damage-claims-in-winter.html>; Notably, the State of New York is governed by different rules when it comes to pothole liability. Section 58 of the State Highway Law explicitly exempts the state from liability for damages arising from defects in its highways, except between May 1 and Nov. 15, when potholes are least likely to occur.

⁸ <http://www.nycedc.com/blog-entry/new-yorkers-and-cars>.

⁹ Population figures are drawn from the Department of City Planning and are current as of July 2014. *See*: <http://www.nyc.gov/html/dcp/html/census/popcur.shtml>.

¹⁰ <http://www1.nyc.gov/office-of-the-mayor/news/058-14/mayor-de-blasio-dot-commissioner-trottenberg-launch-comprehensive-plan-battle-potholes-as#/0>.

¹¹ DOT redesigned its dispatching, routing and tracking operations to help crews cover more ground. DOT also provides crews with tablets for real-time tracking and for logistics to get crews from A to B efficiently.

¹² <http://www.nyc.gov/html/ops/downloads/pdf/pmmr2015/dot.pdf>.

¹³ <http://www1.nyc.gov/office-of-the-mayor/news/220-14/mayor-de-blasio-opens-newly-rebuilt-hamilton-avenue-asphalt-plant-helping-city-resurface-1-000#/0>;
http://www.nyc.gov/portal/site/nycgov/menuitem.c0935b9a57bb4ef3daf2f1c701c789a0/index.jsp?pageID=mayor_press_release&catID=1194&doc_name=http%3A%2F%2Fwww.nyc.gov%2Fhtml%2Fom%2Fhtml%2F2010a%2Fpr224-10.html&cc=unused1978&rc=1194&ndi=1;

¹⁴ <http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltp/99202/99202.pdf>.

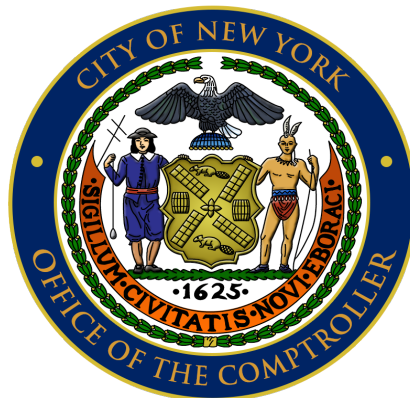
¹⁵ http://www.silive.com/eastshore/index.ssf/2014/10/city_tests_rubberized_asphalt.html;
<http://www.mta.info/press-release/bridges-tunnels/mtas-flagship-rfk-bridge-targeted-nearly-1-billion-capital-improvement>; The Metropolitan Transportation Authority has also experimented with rubberized asphalt for road repairs on the RFK Bridge.

¹⁶ <https://nextcity.org/daily/entry/designing-a-future-of-plastic-roads>.

¹⁷ <https://nycfuture.org/pdf/Caution-Ahead.pdf>, p.5; As noted in the same report, NYC DOT sets a goal of resurfacing approximately 1,000 lane miles of streets each year, but the agency has fallen short of that target on all but four occasions since Fiscal Year 2000 (FY2009, FY2011, FY2012, and FY 2014). Furthermore, while DOT reconstructed 136 lane miles from 2006-2007, in 2013-2014, only 80 miles were reconstructed.

¹⁸ 34 RCNY 2-07(b).





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