SCIPP RESEARCH BRIEF:
HEAVY RAINFALL AND NEW ORLEANS NEUTRAL GROUND PARKING DECISIONS

Anna K. Stitzman[a], Vincent M. Brown[a], Barry D. Keim[b], James H. Spencer[c]
[a]Department of Geography & Anthropology, Louisiana State University, Baton Rouge, Louisiana, United States of America
[b]Health Sciences Center, Louisiana State University, New Orleans, Louisiana, United States of America
[c]College of Art & Design, Louisiana State University, Baton Rouge, Louisiana, United States of America

BEFORE YOU READ:

Neutral Grounds: New Orleans' street medians, also known as "neutral grounds," originated in the 1800s as canals for transporting goods or as corridors for rail and streetcars. As the city modernized, most canals were filled (1930s–1960s) to support the underground drainage system. Today, neutral grounds serve as grassy medians, streetcar routes, parade viewing areas, and available parking space when stormwater overwhelms the city's infrastructure.

Neutral Ground Parking Allowance (NGPA): New Orleans formally began regulating neutral ground parking in 2017, a decision made by the Director of the New Orleans Department of Homeland Security and Emergency Preparedness based on NWS guidance (flash flood advisories/warnings and estimated total precipitation accumulation).

Calls For Service (CFS): A database used to obtain 911 calls reporting flooded roads or vehicles.

NGPA "Failures": When parking restrictions remain in place during a flood event, or neutral ground parking restrictions were lifted, and no flood was observed.

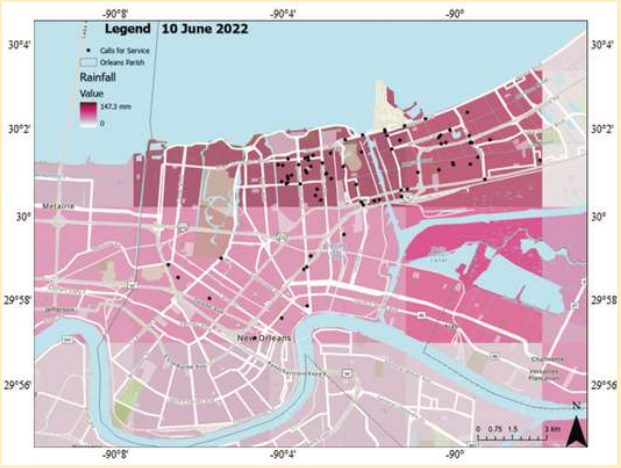

Figure 5. 10 June 2022 estimated rainfall totals and CFS. The grid cell over Gentilly had 132.84 mm (5.23 in.), coinciding with the highest number of CFS.

PROBLEM:

Street flooding is a common occurrence in New Orleans, and residents have resorted to parking their vehicles on neutral grounds to avoid flood losses. This behavior has unintended consequences, such as damage to neutral grounds and personal vehicles, and abuses, including parking on neutral grounds in areas that rarely flood. How successful is the current NGPA approach, and should it be modified?

STUDY OBJECTIVES:

1. Analyze the current decision-making process of allowing neutral ground parking,
2. Quantify the association between Calls for Service and accumulated rainfall on NGPA days 22 September 2020 – 31 December 2022,
3. Calculate the success rate of days with NGPA and the number of Calls for Service reporting flood events.

KEY FINDINGS:

- When the city's rainfall total increased by an inch, CFS count expected to increase by 13.7%.
- Strong association between events with 10 or more CFS and NPGA activation.
- 57% of NGPA failures were activations when CFS count did not suggest flooding.

WHAT DOES THIS MEAN?

Findings imply that the City of New Orleans Office of Emergency Preparedness (NOSHEP) has high accuracy in activating NGPA during events with high rainfall and flooding reports. However, NOSHEP often permits parking even when it doesn't lead to threatening conditions. While activating NGPA may proactively protect vehicles, it can also increase maintenance costs of these parking locations, especially in areas with sensitive infrastructure beneath. A zone-based approach was considered, but it was concluded that heavy rain forecasts are not yet precise enough to be useful without causing potential confusion for residents. Investigators recommend increased signage paired with NGPA restrictions to decrease the maintenance costs while preserving efficiency in vehicle protection. Research suggests reinforcing neutral ground to protect against parking damage where car inundation is most common and limiting NGPA to those areas.

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