Sub-Task 2.2
Electric Power System Performance

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NYS RISE

ELECTRIC POWER SYSTEM PERFORMANCE

Project Objective: To evaluate the performance of the NYC electrical distribution system and areas of vulnerability disclosed by Hurricane Sandy, including interactions between electric power and water bodies (flooding and surge).

System improvements will be proposed to increase resiliency, which may include reinforcing substations against flooding, microgrids, combined heat and power, distributed generation, smart grid technologies, and energy storage.
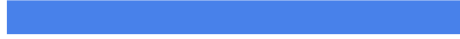
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- The current analytical tool allows to visualize:
  - Impact of Hurricanes Categories 1 to 4 (FEMA)
  - Electrical Networks (Con Edison)
  - Impact of Sandy (FEMA)
- Working on:
  - Electrical Customers per Network
  - Number of Customers Affected by Hurricanes (1-4)

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HURRICANE IMPACT MAP

Sandy's actual flooding

Predicted surge by hurricane
Category 1
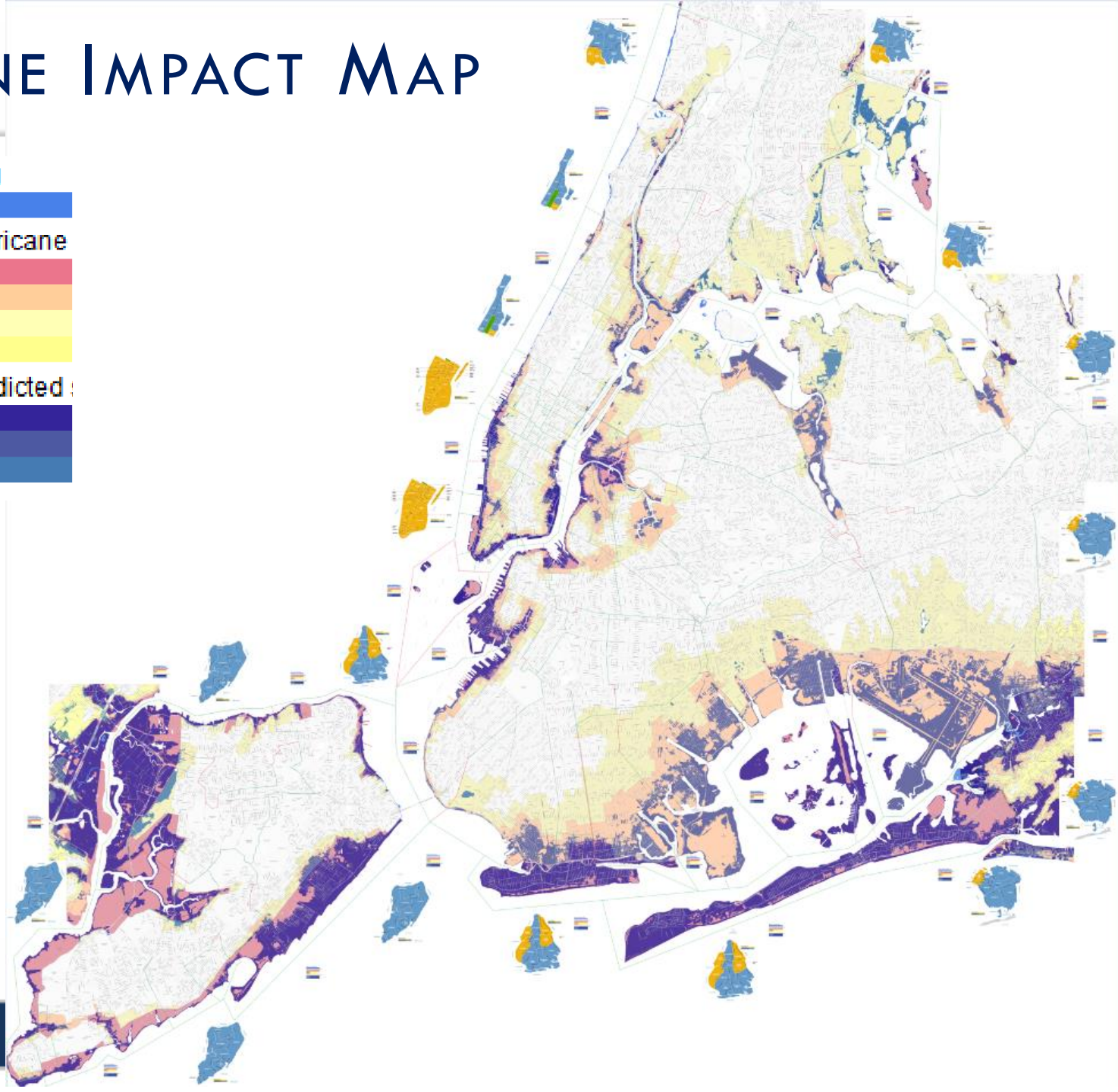Category 2
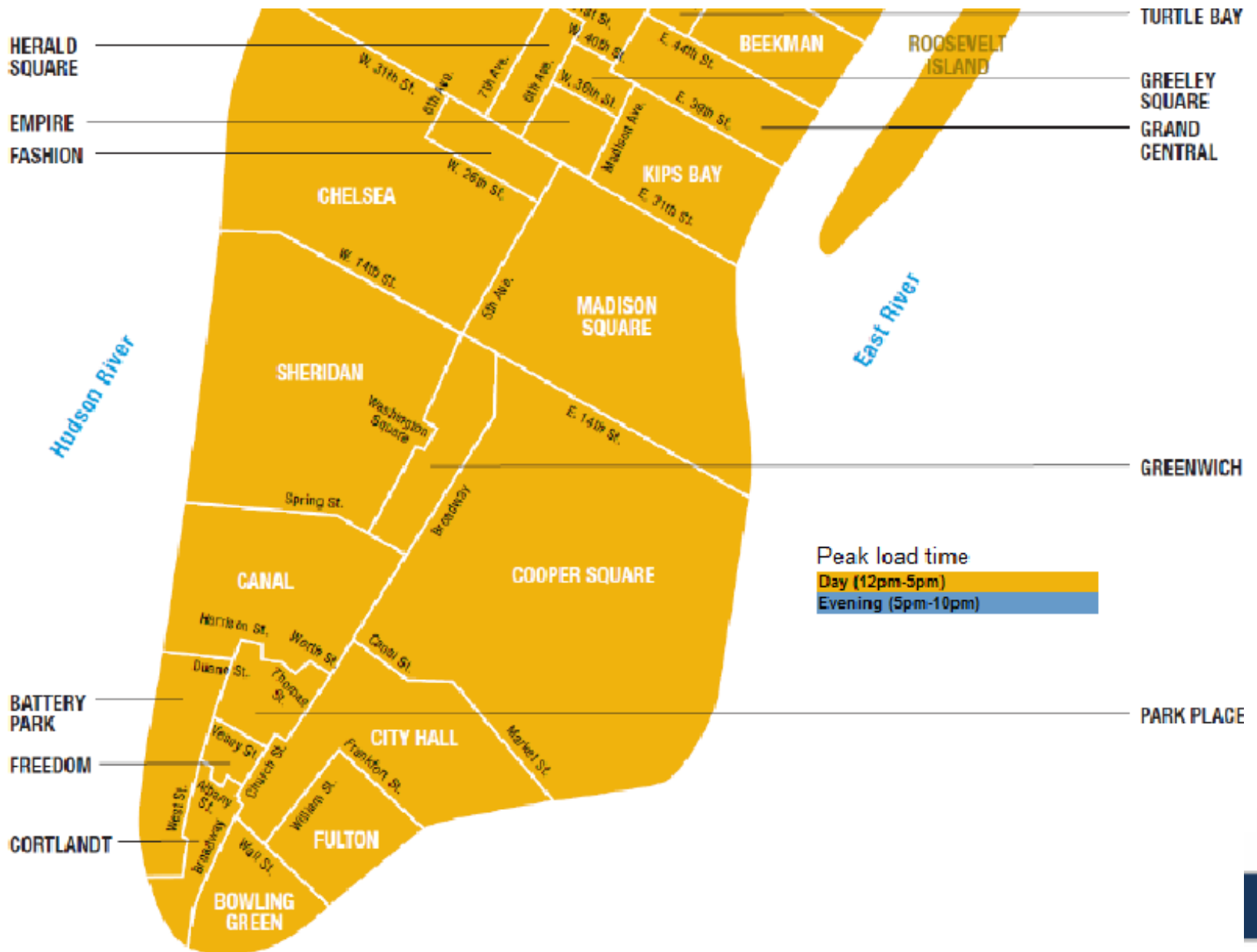Category 3
Category 4

Sandy's flooding & predicted surge
Category 1
Category 2
Category 3

ELECTRICAL NETWORKS

Sandy's actual flooding

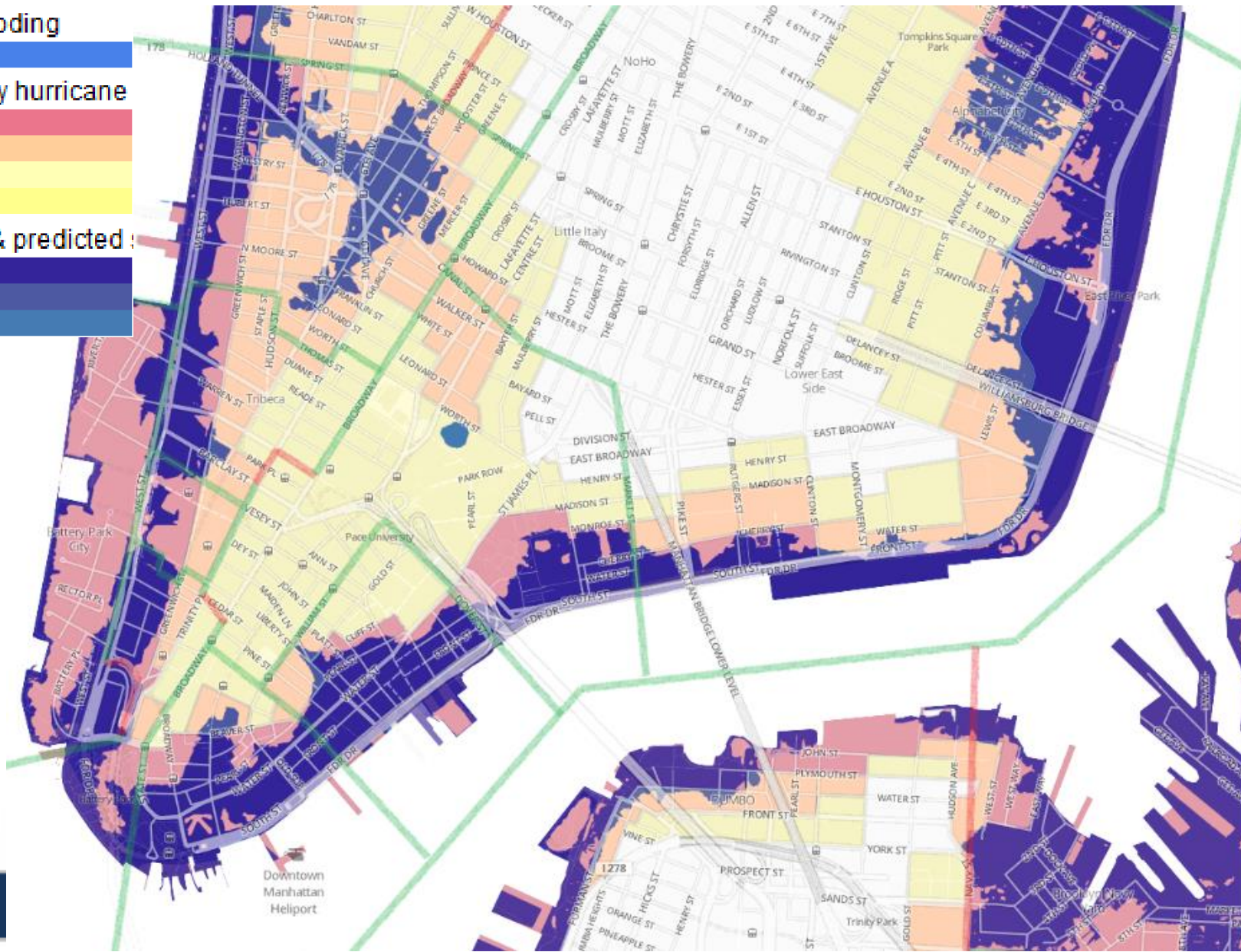Predicted surge by hurricane
- Category 1
- Category 2
- Category 3
- Category 4

Sandy's flooding & predicted s
- Category 1
- Category 2
- Category 3

Real-Time Tool Demonstration

- [Link to file](#)

Conclusions

- A tool has been developed for the analysis of:
  - Impact of Hurricanes Categories 1 to 4 (FEMA)
  - Electrical Networks (Con Edison)
  - Impact of Sandy (FEMA)
- Working on:
  - Electrical Customers per Network
  - Number of Customers Affected by Hurricanes (1-4)