

Task 2.1

Interaction of Water Bodies with Transportation Infrastructure

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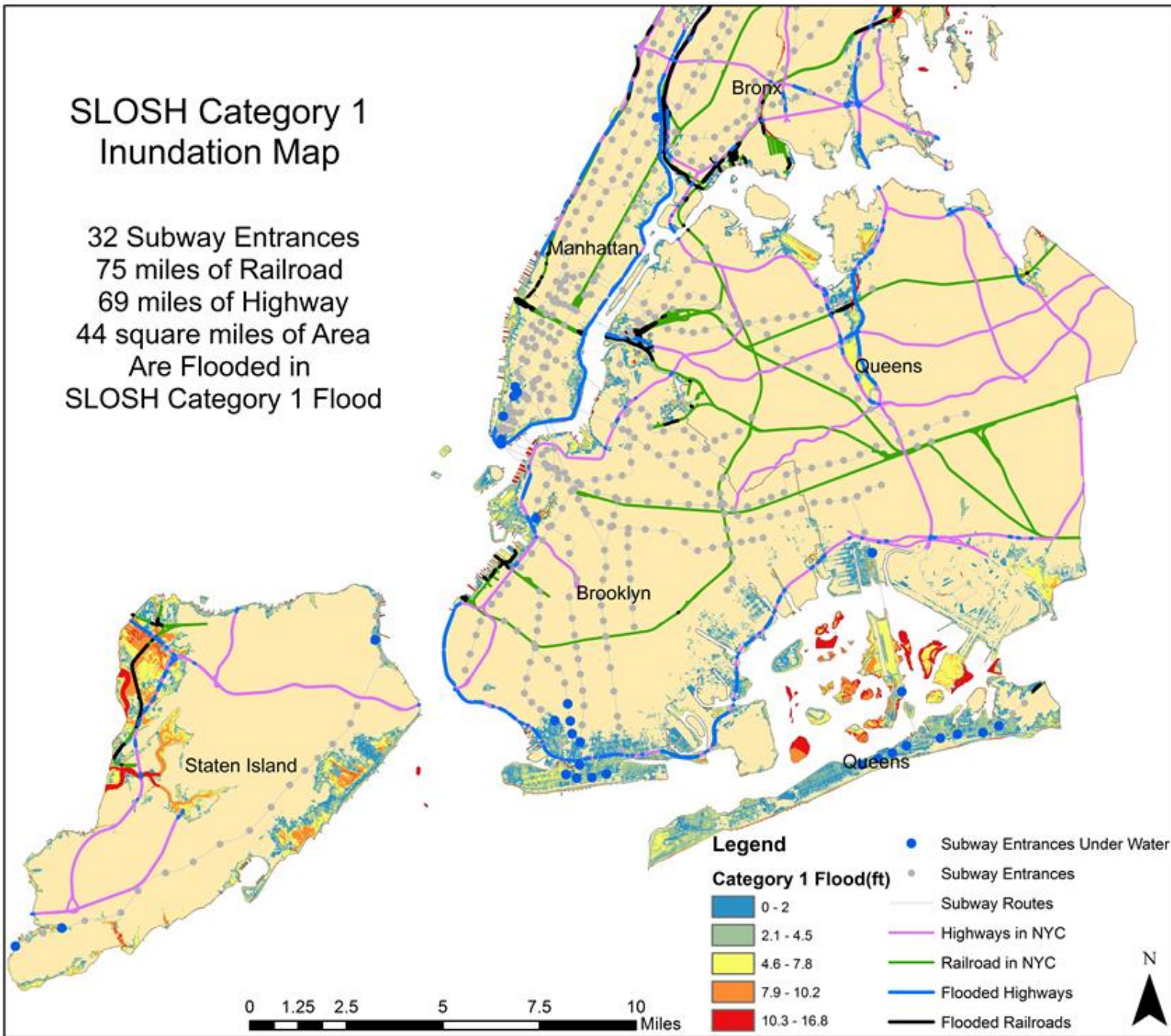
Balazs Fekete (CUNY)

CONTENT:

- Coastal Storm Flooding
- Rainfall Induced Flooding (NYC level)
- Rainfall Induced Flooding (NYS level)

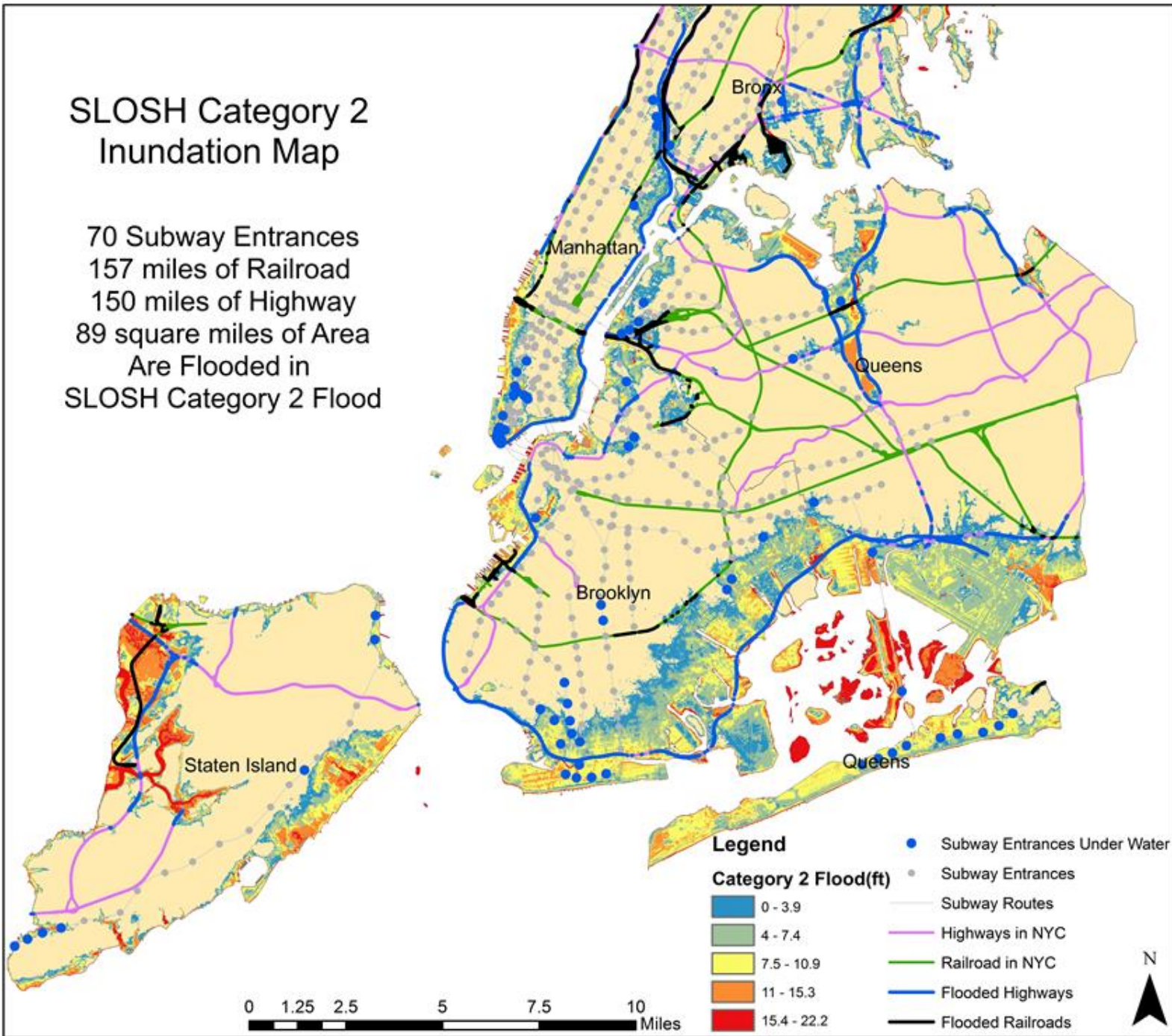
SLOSH Category 1 Inundation Map

32 Subway Entrances
75 miles of Railroad
69 miles of Highway
44 square miles of Area
Are Flooded in
SLOSH Category 1 Flood



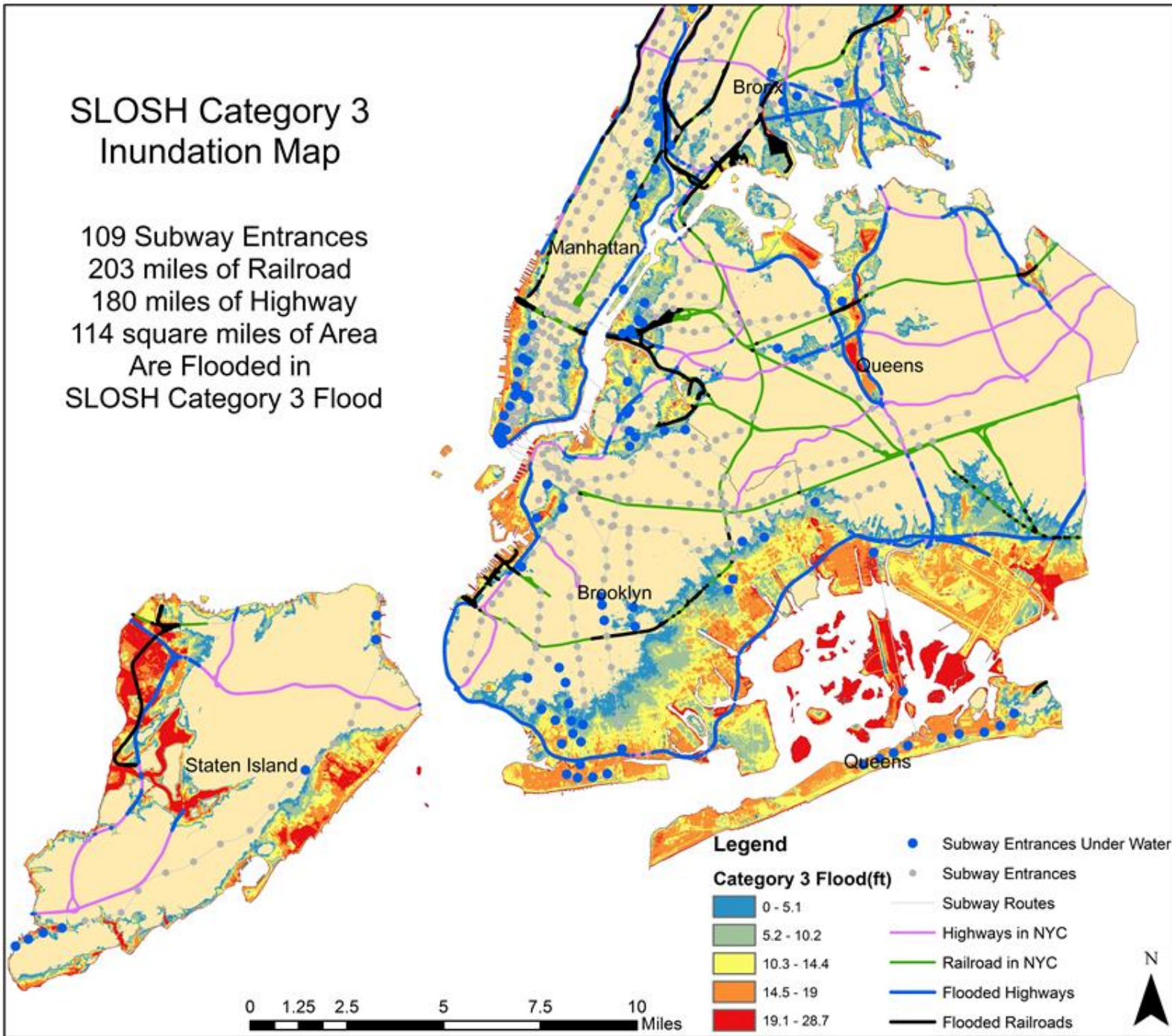
SLOSH Category 2 Inundation Map

70 Subway Entrances
157 miles of Railroad
150 miles of Highway
89 square miles of Area
Are Flooded in
SLOSH Category 2 Flood



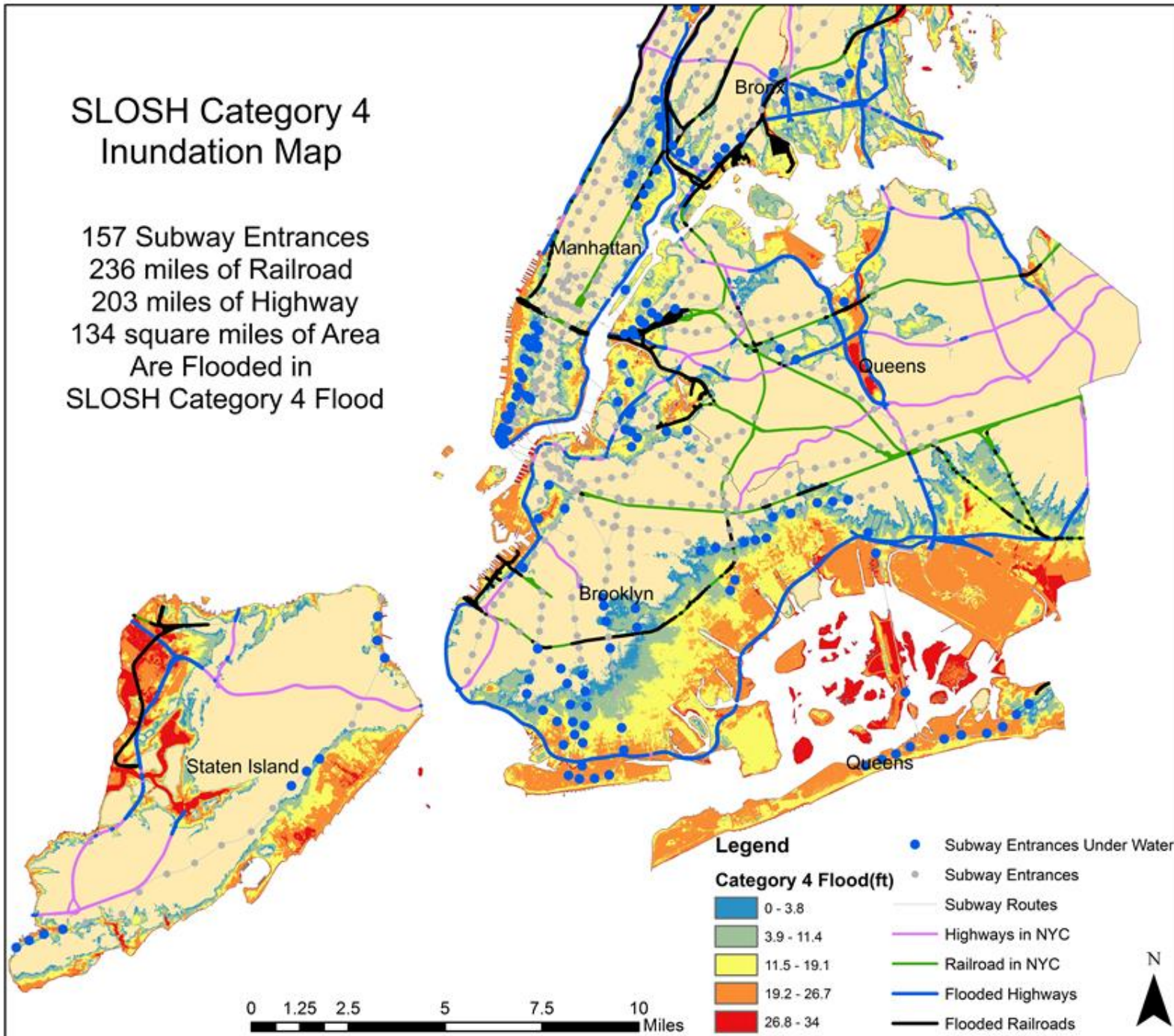
SLOSH Category 3 Inundation Map

109 Subway Entrances
203 miles of Railroad
180 miles of Highway
114 square miles of Area
Are Flooded in
SLOSH Category 3 Flood



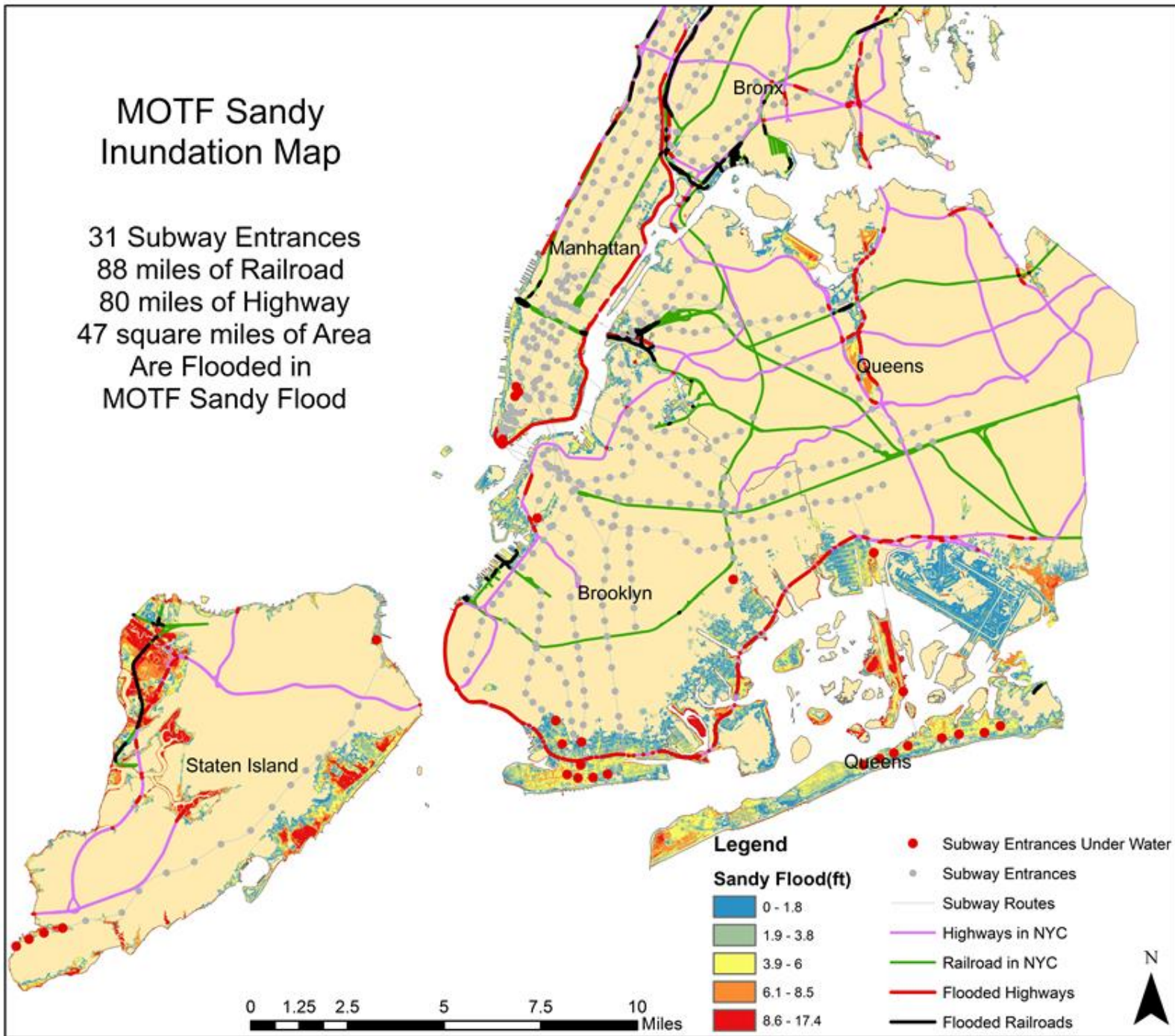
SLOSH Category 4 Inundation Map

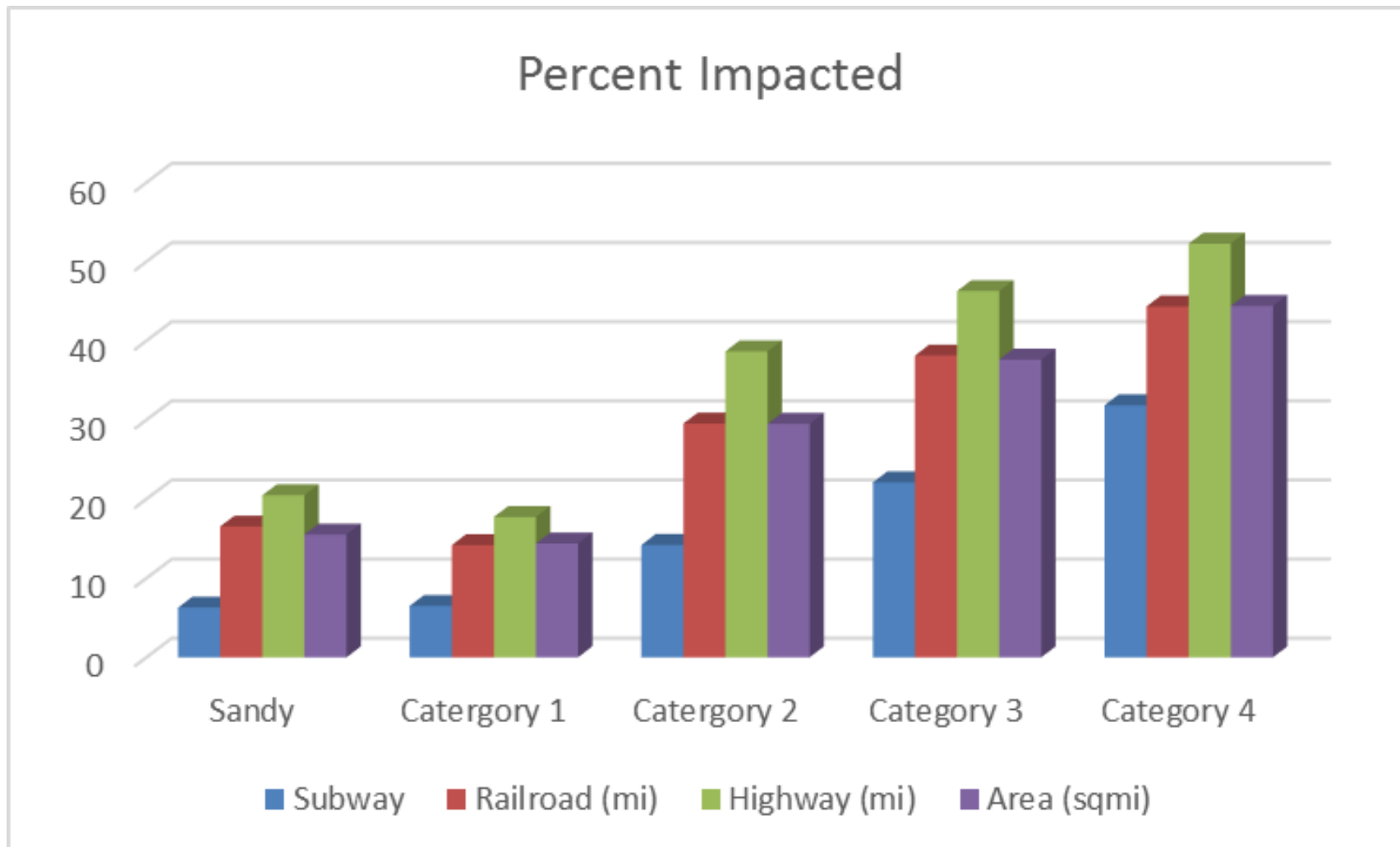
157 Subway Entrances
236 miles of Railroad
203 miles of Highway
134 square miles of Area
Are Flooded in
SLOSH Category 4 Flood



MOTF Sandy Inundation Map

31 Subway Entrances
88 miles of Railroad
80 miles of Highway
47 square miles of Area
Are Flooded in
MOTF Sandy Flood

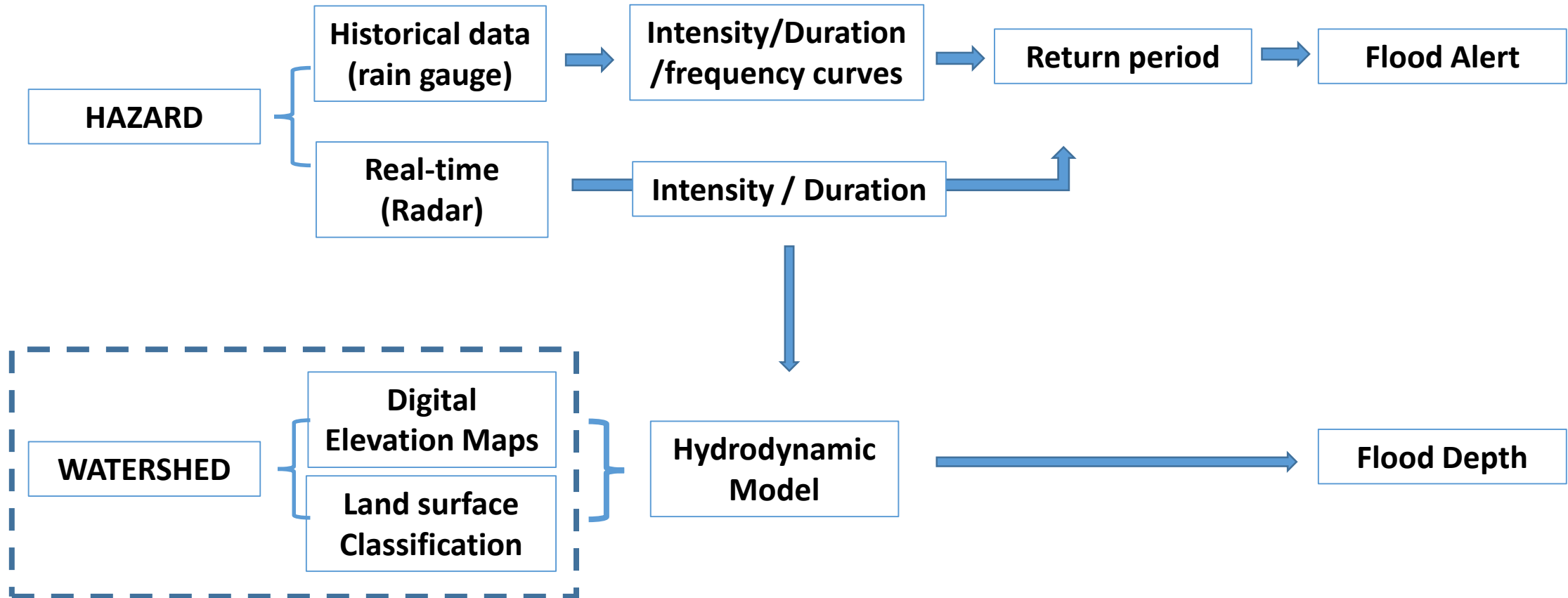




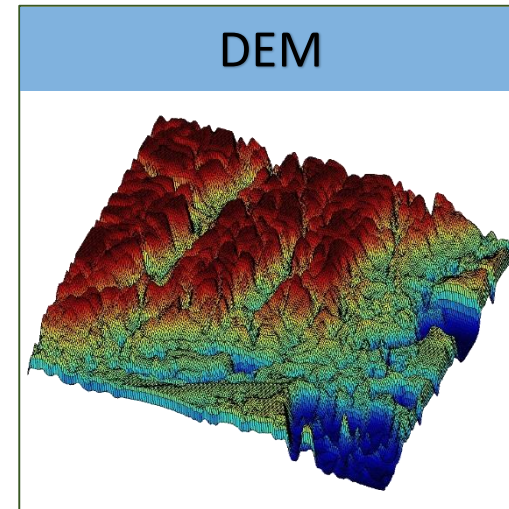
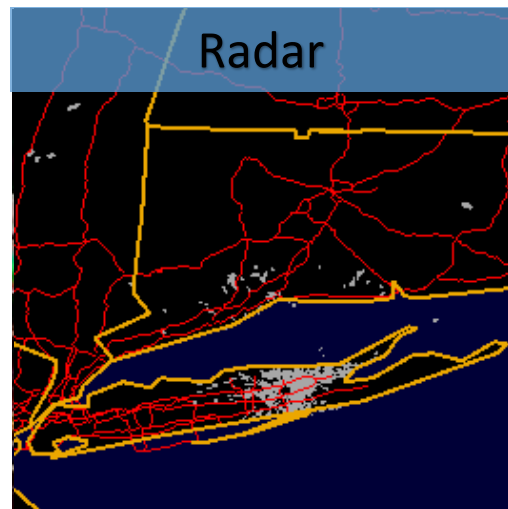
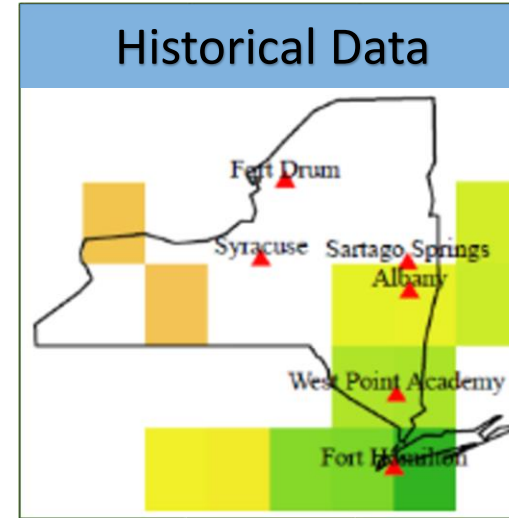
Subsurface Structures not included
Work remaining: Coat Analysis for Rehabilitation

A Real-time actionable framework for rainfall induced flooding of urban and non-urban terrains

A hybrid probabilistic,-deterministic approach



Framework for New York State



Framework for New York City

Surface Classification



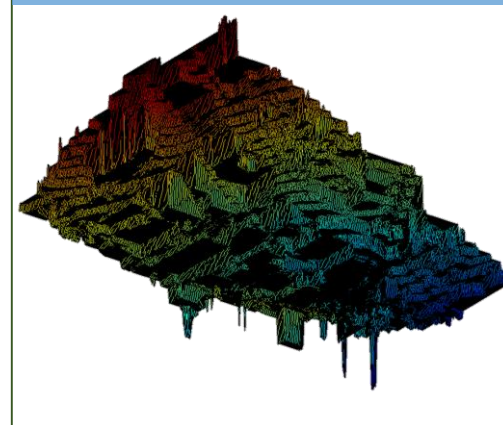
Drainage System



Radar



DEM



Status:

- Coastal Storm Flooding
 - Subsurface Structure (phase II)*
 - Cost Analysis for Rehabilitation (phase II)*
- Rainfall Induced Flooding, NYC level
 - NYC drainage system Database (September 2014)*
 - water shed modeling (Phase II)*
- Rainfall Induced Flooding, NYS level
 - flood model for 12x12 mile element (September 2014)*
 - Expansion of model to the entire state (Phase II)*