

#ONENYC

HURRICANE SANDY - LESSONS LEARNED & ACTIONS TAKEN TO PREPARE FOR CLIMATE RELATED NATURAL DISASTERS

January 11, 2017

Susanne DesRoches
NYC Mayor's Office of
Recovery and Resiliency



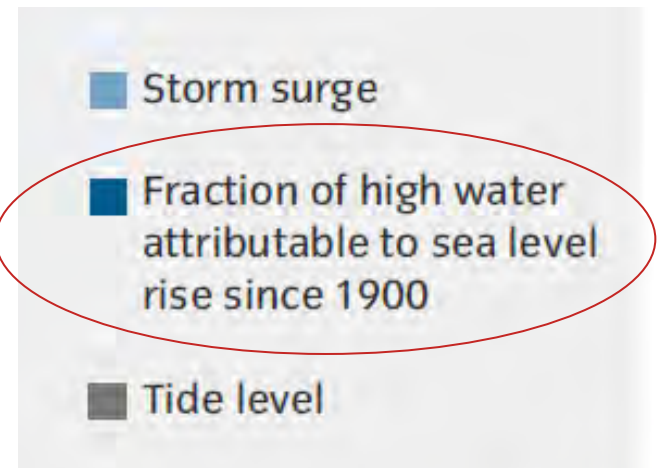
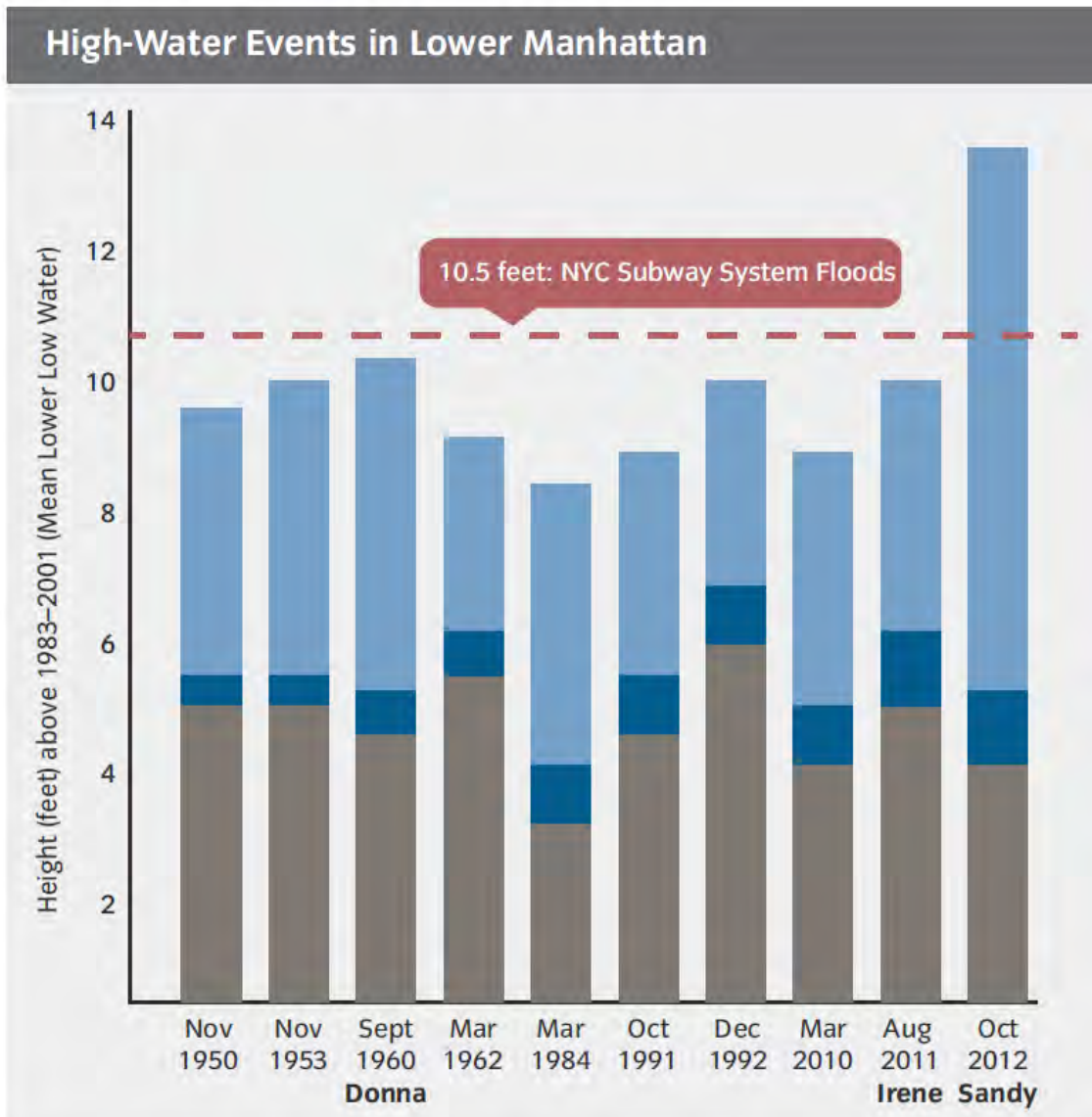
What happened during Sandy?



- 44 lives lost
- \$19 billion in damages and lost economic activity
- 51 square miles (17% of NYC land mass) flooded
- 88,700 buildings were inundated, including 23,400 businesses
- 2,000,000 people lost power, many for weeks and longer

Major disruptions to lives, neighborhoods, and infrastructure demonstrated our vulnerabilities to coastal storms and the risks of a changing climate.

What happened during Sandy?



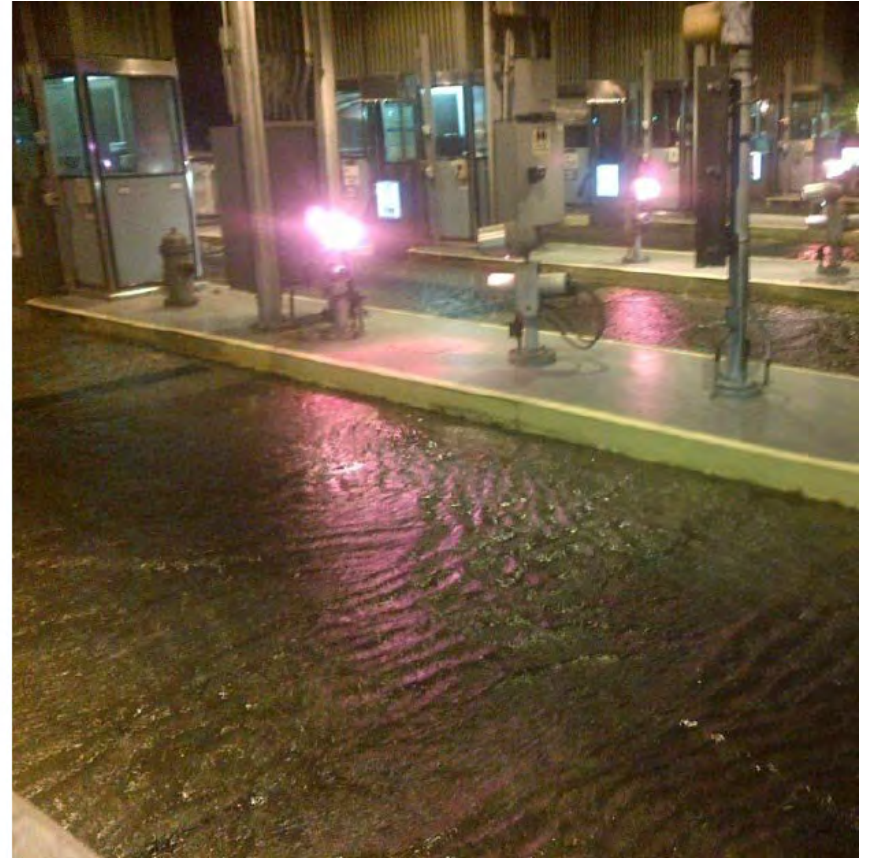
What were the impacts?

Public Transit



What were the impacts?

Roadway Infrastructure



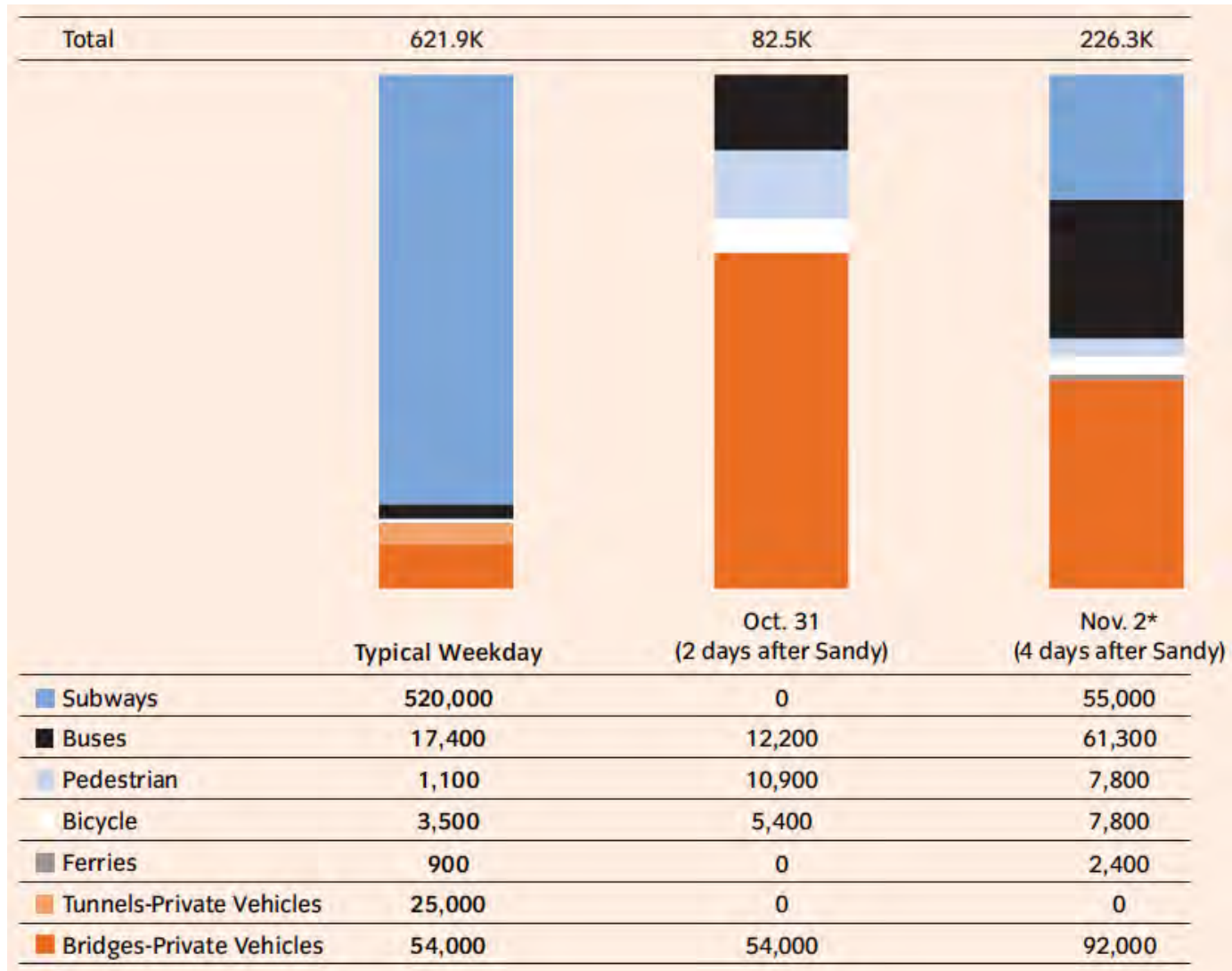
What were the impacts?

Airports and Ports



What was the loss of service impacts?

East River Crossings Before and After Sandy



What were the loss of service impacts?



What's happened since Sandy?

FTA Grants for Hurricane Sandy Recovery and Resiliency

(As of September 30, 2016)

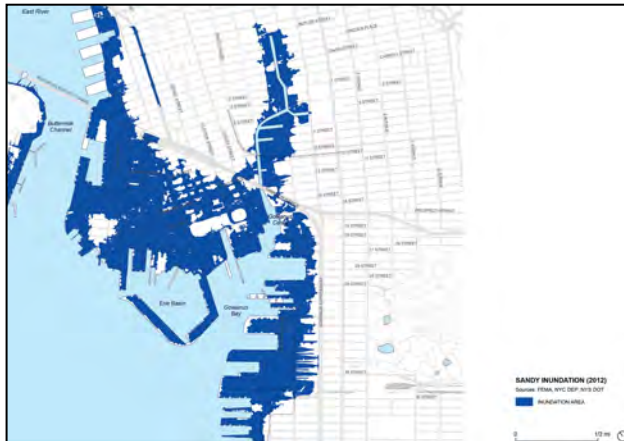
\$192,769,319	NYC Department of Transportation
\$603,028,250	NJ Transit
\$1,121,599,670	Port Authority of NY & NJ
\$2,974,188,434	New York Metropolitan Transportation Authority
\$4,891,585,673	Total

Only FTA Grants – totals do not include FEMA Public Assistance, HUD CDBG, etc.

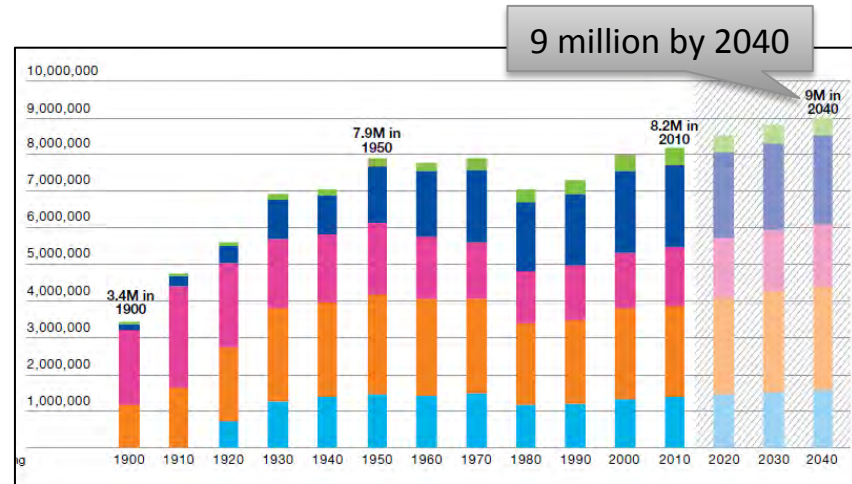
What's happened since Sandy?



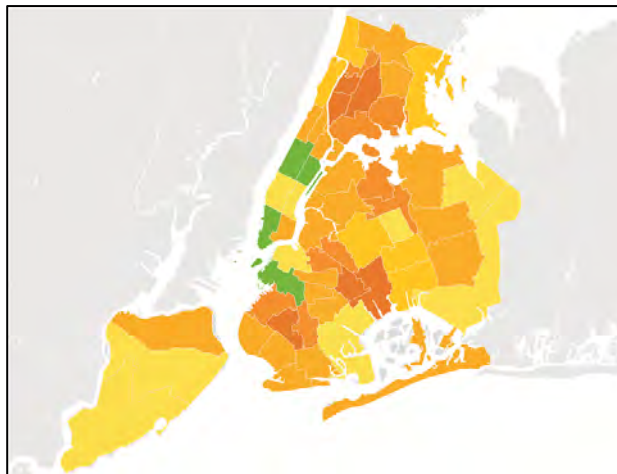
What are the drivers for change?



Hurricane Sandy



A growing population



Increasing inequality



Aging infrastructure

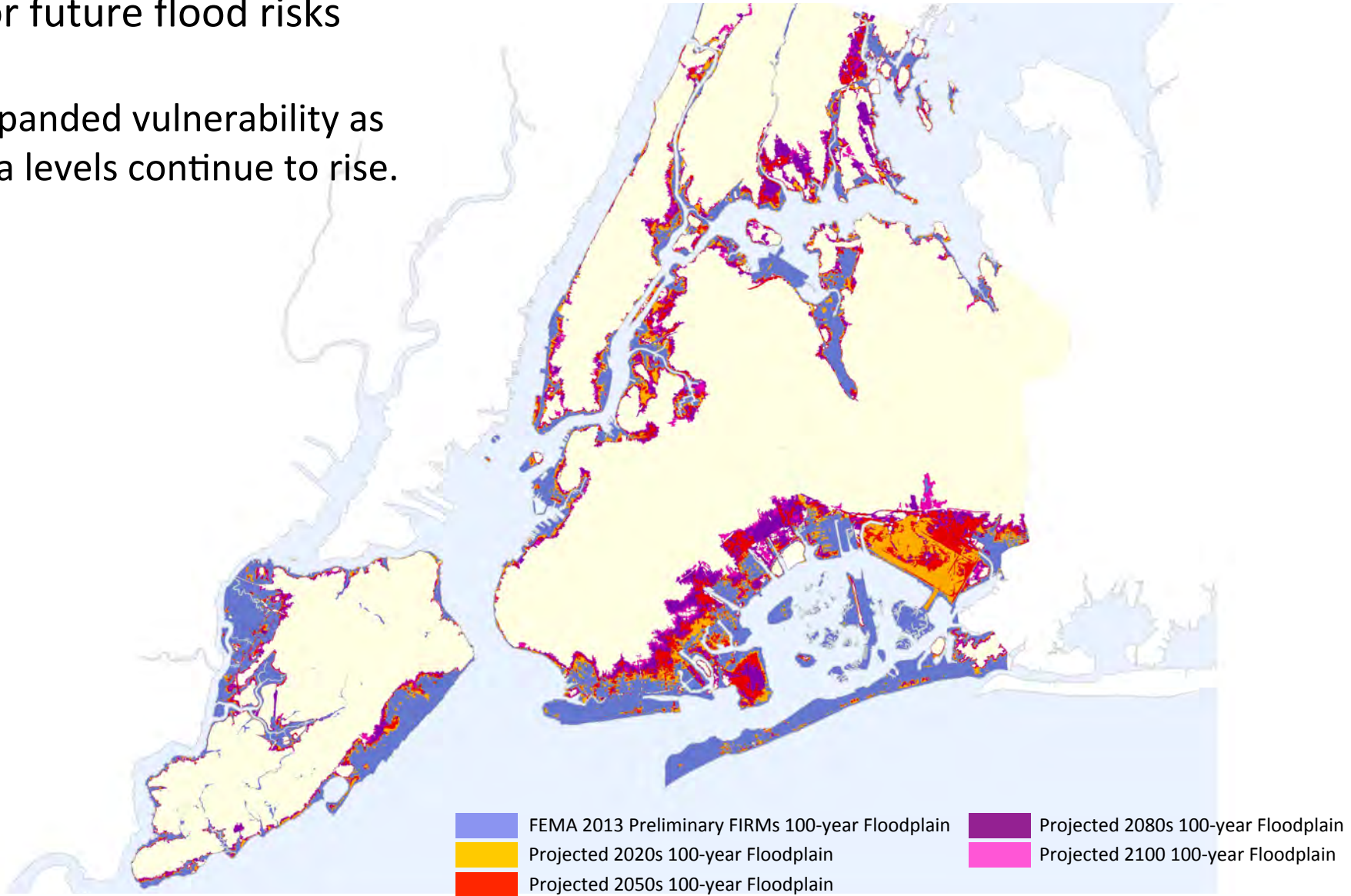
What are the drivers for change?

New York City Panel on Climate Change (2015)					
Climate Variable		Projection			
		Baseline (1971-2000)	2050s	2080s	2100
Heat Waves & Hot Days	Number of days per year with maximum temperature at or above 90° F	18	39 to 57	44 to 87	-
Precipitation & Inland Flooding	Annual Precipitation	50.1 in.	+4 to 13%	+5 to 19%	-1 to +25%
Sea Level Rise		0 (2000-2004)	+11 to 30 in.	+18 to 58 in.	+22 to 75 in.

How do we design resilient transportation?

For future flood risks

Expanded vulnerability as sea levels continue to rise.



How do we design resilient transportation?

For future precipitation and heat

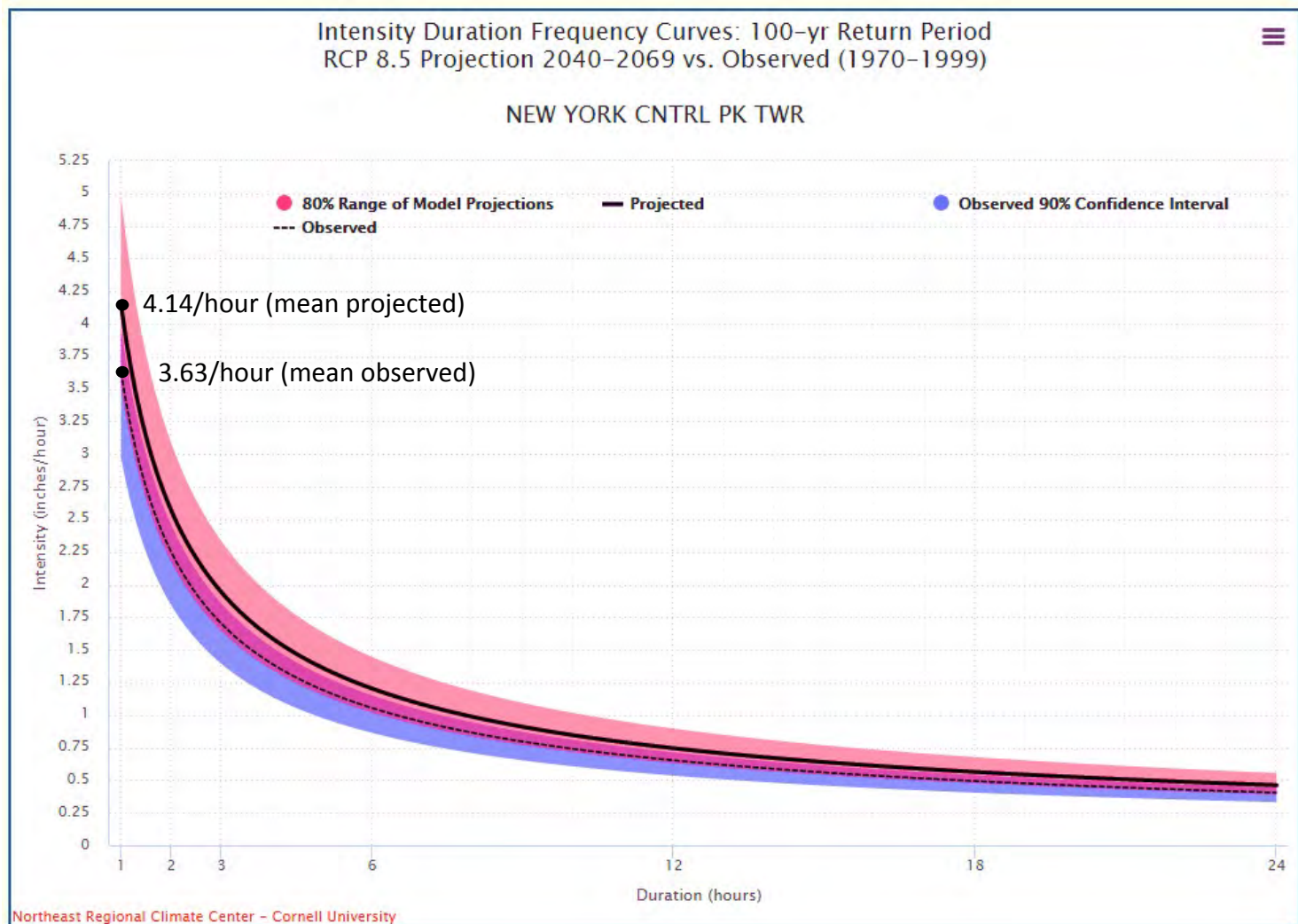


6/28 – 7/8/2012 - Heatwave in DC

U.S. Airways plane in tarmac at Reagan National Airport

How do we design resilient transportation?

For future precipitation



Three questions for consideration:

- *What climate data is needed for project design?*
- *How can we make a compelling business case for integrating resiliency?*
- *What partnerships are needed?*

#ONENYC

sdesroches@cityhall.nyc.gov
nyc.gov/resiliency
@NYClimate

