

NJDOT Responses to NJDEP 3/19/20 Questions

1. Should the tidal flood hazard area be redefined and if so, how?

a. 100-yr + 3 feet (SLR) + 1 foot (safety factor)

Instead of redefining the current Tidal Flood Hazard area, a new designation should be made to address Climate Change Projections. Based on some of the discussions and comments, the level of protection could differ depending on the structure. “Less critical” structures should be designed for the current Flood Hazard elevation, while more critical structures need to be designed for the Resiliency storm event – similar to probable maximum precipitation (PMP), ½ PMP, 100-year design storms for dams.

2. Should the fluvial flood hazard area be redefined and if so, how?

a. 100-yr +25%? 30%? 50%? For non-delineated waters.

b. FEMA 100-yr + 1 ft? 2 ft? 3 ft?

c. State study + 1 ft? 2 ft? 3 ft?

For streams that are only fluvial (with no backwater impacts), changes to the fluvial flood hazard elevation, and associated flood hazard area, need to be based on increased precipitation projections, both amounts and intensities. Similar to the tidal comment above, it may be beneficial to have a different designation to distinguish current 100-year vs. projected 100-year. Could fluvial sensitivity analyses be performed on existing flood models that DEP currently have, increasing the rainfall data using the NOAA Rainfall Projections – instead of using the 100-year storm, run the 500, 1000-year events to determine changes in flow and lateral extent.

This discussion needs to include not just fluvial streams but also tidally influenced fluvial streams. If you assume full SLR, increased surged and increased rainfalls coincide, will that be beneficial? Instead, should there be a fluvial model with future precipitation modeled with existing 10-year tidal elevation? Stillwater? It is not always more protective to have higher water.

Similar to tidally influenced streams, the backwater elevation from a larger downstream waterbody should be considered. Peak on peak? Timing based?

3. How should a critical facility be defined?

Critical facilities should be established by the respective agencies who have jurisdiction over the assets, not detailed in the proposed rules. In addition, there may need to be different criteria for criticality (for example, an asset critical for homeland security, an asset critical to protect against sea level rise, an asset that needs to be able to be dry flood-proofed, or an asset that can be under water for a limited time).

NJDOT has identified evacuation routes and average daily traffic as significant factors in criticality. Access to certain facilities (such as emergency service providers, military installations, population centers, and employment centers) is also under consideration but has not been finalized yet. Counties and municipalities will have additional considerations and different

priorities in determining criticality for their assets, such as roadway, bridges, culverts, municipal facilities, etc.

Roadway criticality will need to be coordinated with the municipalities and the counties. For example, if a county assumes their structure is not critical because a DOT road provides access, but DOT does not determine that the DOT roadway is critical, this needs to be jointly resolved.

a. What should the building standards be?

Although NJDOT does have some buildings, our primary focus is on transportation infrastructure (e.g., roads and bridges). It may be better to defer this question to those who have jurisdiction over the building standards, including the Department of Treasury.

4. Should the fluvial and tidal building standards be aligned?

See response to 3.a.

5. What other ideas do you have?

- i. Consider applying different standards to different types of assets. A one size fits all approach would probably not work. For example, a roadway that leads to a park will not need to be elevated during a flood and should have different standards. This is related to the criticality of the particular asset.
- ii. Consider the lifespan of the asset when determining the standards. Lifespan should not mean the design lifespan because assets can still remain beyond the design life. It should have a safety factor above the lifespan when deciding on the design storm.
- iii. In some situations it may not be possible to raise a road to above the flood elevation, but perhaps raising it to an elevation that would allow sufficient time for people to evacuate from an area may be acceptable. The duration/timing of the flood needs to be addressed.
- iv. If a roadway leading to a bridge floods and it is not possible to raise the elevation of the roadway, elevating the bridge may not be warranted.
- v. Resiliency designs may cause significantly more impact than existing designs, particularly to sensitive environmental areas. Can mitigation criteria for other environmental impacts be reduced if a project needs to incorporate resiliency design?
- vi. Currently, some existing development discharges directly onto the State Road during large events. Should that continue to be allowed?
- vii. In addition to other factors, funding limitations may preclude the ability to elevate every roadway/structure, even those determined to be critical; therefore, priorities will need to be determined. NJDOT should be the entity responsible for prioritizing its assets for incorporating resiliency measures based on the availability of funding. NJDOT should also be able to determine if other resiliency measures, not just elevation, would be appropriate for a particular roadway/structure.