



**Appendix O. 2014 State Hazard Mitigation Plan
STAPLEE**



6.4.4 Prioritizing Mitigation Actions

44 CFR 201.4(c)(3)(iii):An identification, evaluation and prioritization of cost-effective, environmentally sound, and technically feasible mitigation actions...

In previous versions of the State HMP the social, technical, administrative, political, legal, economic, and environmental (STAPLEE) criteria were used for project evaluation and prioritization. The STAPLEE method provides a systematic approach that considers the opportunities and constraints of implementing a particular mitigation action.

The 2011 New Jersey State Plan used a STAPLEE methodology identified in earlier FEMA mitigation planning guidance (FEMA 386-3) for project evaluation and prioritization, which includes 23 evaluation criteria within the seven STAPLEE criteria types. Recent FEMA planning guidance (March 2013) identifies a modified STAPLEE mitigation action evaluation schema that uses a reduced set of 10 evaluation criteria, more suited to the purposes of mitigation strategy evaluation. Per SHMT approval, the updated STAPLEE criteria, along with an additional criteria specifically addressing cost-effectiveness, were used to evaluate and prioritize new mitigation actions for the 2014 Plan update. The 11 evaluation criteria are defined below:

- **Life Safety** – How effective will the action be at protecting lives and preventing injuries?
- **Property Protection** – How significant will the action be at eliminating or reducing damage to structures and infrastructure?
- **Cost-Effectiveness** – Are the costs to implement the project or initiative commensurate with the benefits achieved?
- **Technical** – Is the mitigation action technically feasible? Is it a long-term solution? Eliminate actions that, from a technical standpoint, will not meet the goals.
- **Political** – Is there overall public support for the mitigation action? Is there the political will to support it?
- **Legal** – Does the State have the authority to implement the action?
- **Environmental** – What are the potential environmental impacts of the action? Will it comply with environmental regulations?
- **Social** – Will the proposed action adversely affect one segment of the population? Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?
- **Administrative** – Does the State have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?
- **Agency Champion** – Is there a strong advocate for the action or project among State agencies that will support the action's implementation?
- **Other State and Local Objectives** – Does the action advance other State and local objectives, such as capital improvements, economic development, environmental quality, or open-space preservation? Does it support the policies of other plans and programs?

Agencies were asked to use these criteria to assist them in evaluating and prioritizing new mitigation actions identified in the 2014 update. Specifically, for each new mitigation action, agencies were asked to assign a numeric rank (-1, 0, or 1) for each of the 11 evaluation criteria, defined as follows

- 1 = Highly effective or feasible
- 0 = Neutral
- -1 = Ineffective or not feasible



The numerical results of this exercise were then used by each agency to help prioritize the action or strategy as “Low”, “Medium,” or “High.” While this provided a consistent, systematic methodology to support the evaluation and prioritization of new mitigation actions, agencies may have additional considerations that could influence their overall prioritization of mitigation actions.

It is important to note that certain initiatives from the 2011 HMP are being carried forward in the 2014 Plan update. As discussed, these initiatives were previously prioritized using the STAPLEE approach in 2011. At their discretion, agencies carrying forward prior initiatives were encouraged to re-evaluate their priority, particularly if conditions that would affect the prioritization criteria had changed. Where agencies determined that their original priority ranking for “carry forward” initiatives remained valid, they were not required to re-prioritize using the 2014 updated STAPLEE criteria because is fundamentally identical to the STAPLEE used in 2011. There were no agencies that identified a change in prioritization for mitigation actions being carried forward in the 2014 Plan update. The priority ranking for initiatives carried forward are indicated in Table 6-11.

Table 6-15 lists the prioritization of the new actions. The prioritization of all previous actions (listed as on-going in Table 6-13 above) has remained the same. Appendix S includes the STAPLEE criteria for the 2011 Plan previous mitigation actions.



Table 6-15. Prioritization of New Actions Added to the 2014 Plan

Responsible Agency	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Environmental	Social	Administrative	Agency Champion	Other Community Objectives	Total
NJDEP, NJOEM, NJOHSP, NJBPU, and others	Energy Allocation Initiative	1	1	0	1	0	0	1	1	0	1	1	7
NJOEM, NJEDA, NJDEP, and others	Liquid Fuel Resilience Program	1	1	1	1	0	0	0	1	1	1	1	8
NJDEP	Improve water supply resiliency	1	1	0	1	0	1	1	1	0	1	1	8
NJDEP, NJOSHP, among others	Update information technology and mapping systems	1	1	1	1	1	1	0	0	1	1	1	9
NJDOT	Seismic Retrofit	1	1	1	1	1	1	1	1	0	1	0	9
NJDOT	Hardening of traffic controllers	1	1	1	1	1	1	1	1	1	1	0	10
NJDOT	Hardening of draw bridges	1	1	1	1	1	1	1	1	0	1	1	10
NJDOT	Upgrade of highway drainage systems	1	1	1	1	1	1	1	1	0	1	1	10
NJDOT	Install and harden pumps stations	1	1	1	1	1	1	1	1	0	1	1	10
NJDOT	Deep pavement boxes	0	1	1	1	1	1	1	1	0	1	1	9
NJDOT	Geospatial mapping of navigable waterways	0	1	1	1	1	1	1	1	1	1	0	9
NJDOT	Anti-scouring measures	1	1	1	1	1	1	1	1	0	1	1	10
NJOEM	Promote the integration of findings and actions of local mitigation plans into other local planning mechanisms.	1	1	0	1	1	1	0	1	0	1	1	9
NJOEM	Following the development and completion of the NJ Transit and PANYNJ vulnerability assessments (discussed in Section 5.1), the 2017	1	1	1	1	1	1	0	1	1	1	1	10



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	Plan update will incorporate their findings, recommendations and actions.												
NJOEM	To provide technical assistance to Counties regarding hazard mitigation plan updates to ensure consistency across local capability assessments, risk ranking and vulnerability assessments.	1	1	1	1	1	1	0	0	1	1	1	9
NJOEM	To develop a mitigation after-action template, and use this tool to capture lessons learned and success stories post-disaster.	1	1	1	1	0	1	1	0	1	1	1	9
NJOEM	A data capture tool will be developed that will support the aggregation and archiving of municipal, county, and local events and loss data as it becomes available in the post-disaster recovery period.	1	1	1	1	0	1	0	0	1	1	1	8
NJOEM/OHSP	Work with State agencies to update the critical facility spatial inventory developed for the 2014 Plan update with best available data and identify which are State-owned critical facilities, and which are non-State-owned critical facilities.	1	1	1	1	1	1	0	0	1	1	1	9
Office of the NJ State Climatologist (ONJSC) at Rutgers	Maintain and potentially expand New Jersey Weather and Climate Network (NJWxNet) operations	1	1	1	1	1	0	0	0	1	1	1	8
ONJSC Rutgers	Maintain and continually update the weather/climate hazards portal and dashboard	1	1	1	1	1	0	0	0	1	1	1	8
ONJSC Rutgers	Maintain and continually update the climate data and information warehouse and software library	0	1	1	1	1	0	0	0	1	1	1	7
Rutgers University - Bloustein School	Develop geospatial and analytical tools to support community engagement, policy reform, and State and regional planning efforts	1	1	1	1	1	1	1	1	1	1	1	11
Rutgers University - Bloustein School	Perform mobile LiDAR and digital imagery acquisition along an estimated 2,500 miles of residential and urban roads in ABFE Zones A and V	1	1	1	1	1	1	1	1	1	1	1	11



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Rutgers University - Bloustein School	Create a geospatial dataset for each of the 21 counties that include the IA, PA, and NFIP payouts for each major storm event where data is available, aggregated at the Census Block level	1	1	1	1	1	1	1	1	1	1	1	11
Stockton College - CRC	Laser Scanner	1	1	1	1	0	0	1	0	0	1	0	6
PANYNJ	Teterboro Airport – Perform resilience enhancements to the back-up power system.	1	1	0	1	0	0	0	0	0	0	0	3
PANYNJ	Teterboro Airport – Perform stormwater drainage improvements.	0	1	1	1	0	0	0	0	0	0	0	3
PANYNJ	Newark Airport – Perform resilience enhancements the to back-up power system.	1	1	0	1	0	0	0	0	0	0	0	3
PANYNJ	Newark Airport – Perform resilience enhancements to the back-up power system – City of Newark Pump Station.	0	1	1	1	0	0	0	0	0	0	0	3
PANYNJ	Newark Airport – Perform stormwater drainage at Terminal B.	0	1	1	1	0	0	0	0	0	0	0	3
PANYNJ	Newark Airport – Perform resiliency improvements to airport drainage system (valves).	0	1	1	1	0	0	0	0	0	0	0	3
PANYNJ	Newark Airport – Perform resiliency improvements to airport Peripheral Ditch drainage system.	0	1	0	1	0	0	0	0	1	0	0	3
PANYNJ	Lincoln Tunnel – Perform resiliency of tunnel electrical system for tunnel drainage pumps and ventilation system	1	1	1	1	0	0	0	0	1	0	0	5
PANYNJ	Holland Tunnel – Perform resiliency of tunnel electrical system: Power Service for Drainage Pumps and Ventilation System	1	1	1	1	0	0	0	0	1	0	0	5
PANYNJ	George Washington Bridge – Resiliency of Electrical and System	1	1	0	1	0	0	0	0	0	0	0	3



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PANYNJ	George Washington Bridge – Drainage Improvements for New Jersey Anchorage	0	1	1	1	0	0	0	0	0	0	0	3
PANYNJ	Develop a Port Authority of New York and New Jersey Multi-Hazard Mitigation Plan	0	1	1	1	0	0	0	0	0	0	0	3

Notes:

- ABFE *Advisory Base Flood Elevation*
- CRC *Coastal Research Center*
- FEMA *Federal Emergency Management Agency*
- IA *Individual Assistance*
- LiDAR *Light Detection and Ranging*
- NFIP *National Flood Insurance Program*
- NJBPU *New Jersey Board of Public Utilities*
- NJEDA *New Jersey Economic Development Authority*
- NJDEP *New Jersey Department of Environmental Protection*
- NJDOT *New Jersey Department of Transportation*
- NJOEM *New Jersey Office of Emergency Management*
- NJOHS&P *New Jersey Office of Homeland Security and Preparedness*
- NJWxNet *New Jersey Weather and Climate Network*
- ONJSC *Office of the New Jersey State Climatologist*
- PA *Public Assistance*