

6. JLUS RECOMMENDATIONS AND IMPLEMENTATION PLAN

Based on feedback received from the Policy Committee, General Advisory Committee, Technical Advisory Groups, and public stakeholders, this chapter documents a set of recommended actions to promote compatibility and coordination among the JLUS partners involved in this project. As described in Chapter 3, there is on-going coordination among the State, County, municipalities and NWS Earle, but there is not a consistent approach to military-community compatibility issues. This JLUS process has revealed opportunities to improve this situation through better communication and coordination on infrastructure and land use planning, mutual economic development initiatives, regional and local transportation improvements, security enhancements around base properties, and coordinated climate adaptation and resiliency measures for waterfront areas. These mutual and agreed upon recommendations are presented in this chapter to guide a long-term effort to improve the quality of life for this region surrounding this important Department of Defense (DoD) asset in central New Jersey.

Recommendation Categories

The Implementation Plan for this JLUS is organized into seven sections representing the different types of recommendations. These categories represent the issues facing the NWS Earle region in improving military-community compatibility. In some cases, they are typical of other military installations in other areas in the country, but in most cases, the recommendations are specific to NWS Earle and the type of operations at this base, as well as the local land use and economic conditions of the municipalities that surround the installation. The recommendation categories are:

- **Communication/Outreach:** Efforts needed to improve communication and coordination between the base and surrounding municipalities.
- **Land Use:** Proposed changes to land use planning, affordable housing and density issues, farmland preservation, conservation of sensitive and buffer lands, and other land-based compatibility measures within the MIA surrounding NWS Earle.
- **Economic Development:** Mutually beneficial economic development initiatives in the areas surrounding NWS Earle.
- **Transportation:** Proposed improvements to transportation facilities on land, water (Raritan/Sandy Hook Bay), and air in the region surrounding the base.

- **Utilities:** Joint and mutually beneficial utility system projects.
- **Climate Resilience:** Joint efforts to improve resilience and reduce future risk from sea level rise, storm events and localized/nuisance flooding.
- **Security:** Proposals to improve security around the military facilities and assets at NWS Earle.

Following a discussion of the recommendations in each category, an implementation plan is presented that summarizes these in a matrix format and documents several important aspects: 1) Which organizations or municipalities should be involved in implementation; 2) The timeframe and priority for implementation assigned to each recommendation; and range of estimated costs and potential funding sources. It should be noted these recommendations are non-binding and result from the cooperative planning effort involved in this JLUS. Further action is necessary to implement each recommendation, which will occur subsequent to this JLUS effort. In some cases, individual municipalities or organizations can proceed on their own and in other cases, coordination should involve multiple parties. This is typical of the JLUS process and has worked successfully in other communities facing similar issues across the country. An Implementation Committee, with an organizational structure similar to the JLUS Committee structure would be helpful to further these actions over time.

A. Communication/Outreach

As described in Chapter 3, there are already a number of on-going communication and coordination efforts that aid in the relationship NWS Earle has with its surrounding jurisdictions. Additional efforts were identified in this JLUS process that could further enhance this relationship. Six separate actions are recommended to improve different aspects of communication between the municipalities and base. Most of these are not expensive and would not be difficult to implement even in the short-term.

Recommendations

Recommendation A.1: Pursue additional cooperation between the Navy, County departments, and NWS Earle municipalities addressing facility maintenance, security, emergency response, etc.

Discussion: A number of joint projects and mutual aid agreements have been established between NWS Earle and either the County or surrounding municipalities to address issues common to both parties. This recommendation encourages further exploration of these types of projects/agreements to maximize the benefits to both the base and residents in the surrounding communities over time. Specific areas needing attention could be identified through a continued dialogue with representatives

from all parties, including the Navy, County and/or each of the five municipalities adjacent to the base as applicable (Colts Neck, Howell, Middletown, Tinton Falls, and Wall).

Recommendation A.2: Improve notification processes to share proposed land development submittals and plan amendments, zoning changes and comprehensive plan updates within 3,000 feet of the NWS Earle boundaries.

Discussion: The State of New Jersey has already adopted legislation* recognizing buffer areas of 3,000 feet around military installations where zoning changes, plan amendments, and proposed developer submittals are to be shared with registered military facilities within the municipality. However, education regarding this notification process is necessary to ensure it is in place and followed rigorously to keep the installation informed of proposed changes near its borders. Through this process, potentially incompatible land uses can be monitored and comments received from the installation before the municipality makes any final decisions. Since zoning, planning and land use changes are implemented at the municipal level, this recommendation applies to the five Earle municipalities: Colts Neck, Howell, Middletown, Tinton Falls, and Wall.

*(**CHAPTER 41: AN ACT** concerning land use adjacent to military facilities, amending P.L.1975, c.291 and P.L.1995, c.249 and supplementing P.L.1975, c.291 and chapter 18A of Title 52 of the Revised Statutes)

Recommendation A.3: Conduct noise study documenting sound levels and potential areas of impact from the NWS Earle Explosive Ordnance Disposal (EOD) range. Develop mitigation plan jointly with any impacted communities.

Discussion: NWS Earle tenants use an EOD range at Mainside to train selected personnel in disposing of unexploded ordnance as part of their standard training regimen. This can occur up to once a week but the timing varies depending on training schedules and needs. Since noise from the EOD range can be heard off-base, a noise study would be useful to identify higher or disturbing noise levels which potentially go beyond base boundaries and specifically which areas and municipalities are possibly affected. Other Naval weapons stations have conducted similar noise studies of their ordnance training activities, and implemented mitigating measures. A similar study could therefore be beneficial for NWS Earle and the surrounding jurisdictions. Once this data is available, follow-up consultation between the installation and any affected municipality could occur to consider a plan of action to mitigate adverse effects, if there are any.

Recommendation A.4: Continue to educate the general public about the NWS Earle mission and the need to respect security boundaries along Normandy Road, in Sandy Hook Bay, and on Bayshore beaches adjacent to the pier.

Discussion: In general, many people in the region are aware of NWS Earle's mission but many are not. The wooded boundary at Mainside is an effective buffer, and many people are not aware of what goes on behind the fence, inside the base boundaries. At the Waterfront, the purpose of the Navy piers, which extend for miles into the Bay, and the operations that occur on these piers, are not well understood. There are also restricted signs along Normandy Road, but people may not know why this roadway is restricted or the exact use it serves for the Federal government. More education about NWS Earle for the general public would be helpful, particularly to encourage respect for the security necessary to maintain NWS Earle operations. In general, the more informed the public is about the NWS Earle mission and its boundaries, the less chance there is for an inadvertent breach in security, which in turn can negatively affect base operations and the safety of community residents. Several educational efforts began as part of the JLUS. Fact sheets about the pier complex and Normandy Road were prepared and distributed at various meetings and posted to web sites. Marinas closest to the Earle pier complex expressed willingness to provide information with future client contracts. The NJ Sea Grant Consortium volunteered to post information about the security zone around the pier complex on their web site. These efforts should continue and be expanded over time (see related Recommendation D.4).

Recommendation A.5: Collect base employee data on residences (by zip codes) and spending patterns useful for municipal/county economic development purposes.

Discussion: NWS Earle employs over 800 people. Having data on where these employees reside and their general spending patterns could help the County identify potential economic development strategies that cater to this workforce and complement their other employer-oriented programs. Monmouth County is welcoming to NWS Earle as a major employer but would like to continue to grow and diversify its economic base. Any data or statistics that can be shared with the County would help its economic development program going forward, which in turn would be advantageous to base employees in enhancing their quality of life while employed at the base.

B. Land Use

Encouraging compatible land use and putting into effect controls to regulate this is a goal for many communities with proximity to military installations across the country. Few planning documents at the local level recognize NWS Earle and consider its mission in current land use planning and zoning. The recommendations in this category are intended to enhance local planning by establishing buffer areas around the base in which municipalities would consider compatible development and redevelopment in their future land use and zoning initiatives. In addition, preserving farmland, conserving environmentally sensitive lands, and expanding buffers around the base as a natural barrier is recommended to prevent encroachment and increase the safety of citizens throughout the region. Five land use recommendations are proposed to address these issues.

Recommendation B.1: Formally recognize a 3,000 ft. buffer from NWS Earle boundaries in jurisdiction planning documents. Encourage compatible land development and zoning within this buffer. Direct incompatible development to more suitable areas outside the MIA. Consider implementing applicable land development controls recommended in the toolbox.

Discussion: As noted in Recommendation A.2 above, New Jersey legislation recognizes a 3,000 feet buffer from NWS Earle boundaries for notification purposes for land use changes. The County and municipalities should recognize both this buffer area and the MIA in all respective planning documents. When new comprehensive plans and zoning documents are updated, each municipality within the 3,000 ft. buffer area should consider their proximity to the base and encourage compatible zoning and land uses. For safety reasons, incompatible uses, such as new medium to high density residential housing, should be avoided in the area immediately adjacent to base boundaries. Other land use considerations could be made within the larger MIA surrounding base property by both the County and the eight additional municipalities included in the MIA (Atlantic Highlands, Eatontown, Farmingdale, Freehold, Highlands, Keansburg, Neptune, and Ocean). A number of tools are available to revise planning documentation at the local level to discourage development which is incompatible with NWS Earle missions and operations. These were discussed in Chapter 5 (see Section 5.a.ii) and could be considered over time by each jurisdiction when updating their respective planning documents.

Recommendation B.2: Encourage the NJ Military Ombudsman and the New Jersey Office for Planning Advocacy to discuss the mission of NWS Earle with other state agencies to educate them regarding the need to maintain compatible land uses within in the MIA. Discourage incompatible uses such as high density housing particularly within the MIA and at the NWS Earle buffer.

Discussion: Historically vacant parcels adjacent to NWS Earle are now being targeted for high density housing in order to accommodate state mandated affordable housing allocations, posing new safety and social/environmental justice issues. The New Jersey Council on Affordable Housing (COAH) considers undeveloped buffers within military installations as ‘vacant land’ and includes it in their calculations. Affordable housing should not be channeled into or adjacent to weapons stations and other similar military installations. Within the installations, wooded buffers serve an important safety and security purpose and should be maintained. More compatible uses at the boundaries include agriculture, office, and industries that support the military mission or base personnel. Additional changes to state policies are needed to encourage the prioritization of public acquisition funding applications for compatible uses in the MIA, such as through the state Green Acres, Blue Acres, and Farmland Preservation programs.

Recommendation B.3: Identify and pursue purchase of land that could provide additional NWS Earle buffer, storm/flooding protection, and/or environmental enhancement.

Discussion: Other communities across the country have realized the potential that undeveloped land around their military bases can have in providing a buffer area between these military operations and nearby civilian communities. The land areas that have inherent development constraints, such as floodprone land, wetlands, or properties with other environmentally sensitive features, can be prime targets to serve as buffer areas around an installation. At Joint Base McGuire-Dix-Lakehurst, land set aside for pinelands ecosystem protection has helped serve this purpose. The same goal should be considered for natural areas with sensitive environmental resources or other development constraints within the MIA surrounding NWS Earle property. Direct purchase or purchase of development rights by the County, state or municipality of these properties, often working with land conservation organizations, such as the Nature Conservancy, Trust for Public Land or a New Jersey-based conservation group, is recommended where possible as the opportunity arises and suitable properties are identified.

Recommendation B.4: Pursue REPI funding to preserve farms and add to the County Park System land preservation program in the MIA and immediately adjacent to the Normandy Road corridor to maintain and expand these compatible uses.

Discussion: As discussed in Chapter 4, DoD's REPI program provides Federal funding for purchase of land near military bases that can serve as buffer areas. The County unsuccessfully pursued REPI funding in 2015 and 2016. The County should continue to apply going forward. Land that serves as a buffer and maintains compatible uses, such as property targeted for farmland preservation or the Park System land preservation program are priority areas for protection. These areas were identified in Chapter 5 and are recommended for protection to encourage compatible land development within the vicinity of NWS Earle.

Recommendation B.5: Encourage additional farmers in the MIA to enter into farmland preservation programs.

Discussion: The County's farmland preservation program is seeking additional farmers in the MIA to enter into agreements for easements that permanently retire development rights on their farms and ensure that the land remains devoted to agricultural uses. Farmland is a highly compatible land use surrounding the base. Providing farmers with more information on the available programs and seeking additional farmland for preservation within the MIA will benefit the County, the installation and local farmers alike and is recommended as a sound land use strategy for the region.

C. Economic Development

The base contributes to the economic vitality of the surrounding communities and the region but has not often been considered in the economic development goals of local stakeholders. Growing populations and increased development in surrounding municipalities require more collaboration between the base and the local economy. The next generation of planning documents and economic development programs should consider the spending power of base personnel, the hiring potential of the Navy, as well as shared safety concerns amid growing activity. Six recommendations address these economic development-related issues.

Recommendation C.1: Conduct marketing events to educate local NJ contractors about Federal contracting opportunities at NWS Earle (and other bases, if a broader program is desired).

Discussion: As stated in Section 2, procurement of goods and services at the base has an estimated economic impact on the surrounding communities of more than \$842,000 per year. As a means of furthering the positive impacts of the base on the surrounding municipalities, Monmouth County and economic development advocacy groups, such as the Monmouth Ocean Development Council (MODC) could partner to conduct educational events for the local business community about the Federal contracting process and opportunities at this and other military bases, such as the nearby Joint Base McGuire-Dix-Lakehurst or Picatinny Arsenal. The Federal procurement process may be difficult to manage for smaller companies, particularly seeking opportunity notifications. Educating local contractors can simplify the process of bidding, improving both the service at the base and support of the local economy.

Recommendation C.2: Create local workforce development programs in conjunction with active Navy training and staff recruitment activities.

Discussion: The Navy is a significant employer at the base for both enlisted military members and civilians. There has been no direct effort, however, to recruit locally or for local educational institutions to prepare residents for Navy employment. Feedback from base personnel suggests that the Navy has interest in developing programs to recruit and train new staff members across civilian positions. Local business leaders, educational institutions, the County, and municipalities should coordinate with the Navy to develop skills, education, and training programs to match anticipated positions. In addition, the Navy should provide listings to these organizations as they become available.

Recommendation C.3: Coordinate efforts on marketing NWS Earle land and water assets to attract additional Federal or other government tenants over time.

Discussion: NWS Earle contains over 10,000 acres of land at Mainside, over 700 acres at the Waterfront, and numerous support facilities at both locations. The last Master Plan created for the base (July 2014) identified potential growth areas for additional Federal or other government agency development within the installation boundaries. To maximize the land area and facilities on-base, the County and State, working with the Navy, could join in cooperative efforts to advertise these assets and increase awareness of this secure site for additional tenants. This effort over time may increase the employee population on-base which will serve the long-term economic development interests of both parties.

Recommendation C.4: Conduct a study of compatible uses for the Route 33/34 corridor that could spur economic development and/or redevelopment with compatible uses, including the provision of new services for personnel stationed at NWS Earle.

Discussion: NJSH Route 34 is part of STRAHNET. The Route 33/34 Corridor includes NJSH Route 34 from US 195 in the south to CR 537 in the north and NJSH Route 33 from the Garden State Parkway in the east to the 33/33 Business split in the west. This area includes the one mile segment occupied jointly by Routes 33 and 34. An economic development study of the Route 33/34 corridor surrounding the base is needed to better understand market-supportable uses along the roadway. Discussions with multiple stakeholders have revealed that this corridor should be considered for redevelopment opportunities as it passes through multiple municipalities. More study is needed to determine viable compatible uses based on market demands and land use controls, as well as to identify retail or commercial uses that would also be marketable to Navy personnel. A more detailed study focused on the economic and demographic profile of the immediate area, as well as Navy personnel needs, can support municipalities in developing strategies to activate this key corridor. In August 2017 the Wall Township Committee passed a resolution authorizing a redevelopment assessment of the Township's part of the corridor.

Recommendation C.5: Continue to stay involved as part of the Port Belford redevelopment planning group and similar local initiatives.

Discussion: The Port Belford Redevelopment Plan set forth ambitious redevelopment goals, design standards, and resiliency measures aimed at revitalizing the area. The redevelopment area is significant for both Middletown and the base, as it is bordered by the Raritan Bay shoreline and the installation's Waterfront Complex western boundary. It is also a center of economic activity for Middletown's bayshore. As Middletown Township begins to implement measures from this plan, key stakeholders at the Navy and the County-level should continue to be engaged with this and similar efforts in neighboring communities through regular communication and input.

Recommendation C.6: Promote recreational amenities in the Bayshore Region, as outlined in the Bayshore Region Strategic Plan (2006), in conjunction with NWS Earle requirements near secure waterfront areas and the pier. Promote continued use of County Park lands as locations that draw tourists to waterfront destinations and encourage the County Park System and NWS Earle to work together to reduce conflicts.

Discussion: The 2006 Bayshore Region Strategic Plan identified four key economic development issues facing the area and recommended strategies to address these issues, many of which are related to the Bayshore region and the waterfront area occupied by the Navy pier. Most important to the relationship between the pier and Middletown is the recommendation to market and brand the Bayshore region as a destination for local and regional tourists. More specifically, the Plan recommended that municipalities retain fishing and maritime industries and work to draw tourists to waterfront destinations.

Furthermore, continued use and possible expansion of County Park lands in the MIA, including Bayshore Waterfront Park, Henry Hudson Trail, Popamora Point, and Mount Mitchell, should be promoted as key locations that draw tourists to waterfront destinations and provide additional buffering of NWS Earle from incompatible uses.

Any actions taken to maintain or increase waterfront activities consistent with these recommendations could present conflicts to NWS Earle's pier operations, such as the potential for safety concerns for recreational boaters in the waters near the pier. To minimize future conflicts, Bayshore municipalities and the County Park System should work in conjunction with the base on all marketing and branding materials related to the waterfront and surrounding areas to provide the appropriate information to civilian users and visitors about restrictions.

Recommendation C.7: In order to promote the retention of existing farmland, encourage farmers in the MIA to work through the County's Grown In Monmouth and Sustainability Planning initiatives to identify new venues and linkages for local agricultural products.

Discussion: Farming is a very compatible use for the MIA. Farms in this area tend to be small and Right-to-Farm issues often occur when non-farming neighbors are close. The sustainability of small agricultural operations is challenging. In order to assist local farmers remain in the MIA, careful attention to sustainability tools and programs are necessary. Monmouth County's Grown In Monmouth initiative focuses on assisting local farmers promote their agricultural products. Long term goals of the County Divisions of Planning and Economic Development include identifying additional sustainability measures such as making new business connections and expanding value-added agricultural opportunities. Possible connections with NWS Earle should be investigated, such as encouraging the Base to buy locally grown produce and marketing shares in area Community Supported Agriculture (CSA) programs. It is important, therefore to encourage farmers in the MIA to work within County programs.

D. Transportation

As stated in Section 5.B., transportation by roadway, rail and sea all play a vital role in the success of the NWS Earle's mission. To support the mission of the Base - to provide munitions to the Navy Fleet - each means of transportation is used in some form and each has its own set of issues as they relate to the surrounding communities. Monmouth County has multiple modes of transportation available to provide Monmouth County residents with links to both the New York City and Philadelphia metro regions, including a private airport, NJ Transit rail and bus lines, privately run Ferry services to lower Manhattan, and a roadway system that has classifications from Interstate to County and local routes. Six separate transportation-related recommendations address issues related to these transportation systems serving both the base and the surrounding communities.

Recommendation D.1: Conduct corridor study along Route 33-34 to improve traffic conditions including STRAHNET access /egress and outmoded or undersized turning movements. Include recommended roadway & intersection improvements in MPO transportation project lists for priority funding.

Discussion: As noted in Sections 5.b.i.1. and 5.b.i.2 respectively, the Route 33/34 Corridor is part of the STRAHNET transportation route for NWS Earle and one of the Coastal Evacuation Routes, as identified in the County Hazard Mitigation Plan. This established stretch of roadway functions as an important conduit for the area's commuter traffic between Route 195 and the central and northern NJ region, and between the Trenton/Freehold area and the Garden State Parkway and shore areas. The present condition of this area corridor, while functional, is by modern standards outdated. The traffic circle dates from the 1940-50s and outmoded turning movements between Routes 33 and 34 impact Base traffic directly. Based on discussions with stakeholders, a recommendation is proposed to conduct a traffic-related corridor study. This could be done in tandem with an Economic Redevelopment Study for the corridor (See Recommendation C.3).

Recommendation D.2: Review options for modifying signalization for at-grade intersections along Normandy Road corridor to alleviate current issues identified by NWS Earle municipalities.

Discussion: In meeting with the Monmouth County representatives of Public Works and Engineering, and with Middletown Township, it was noted that there are issues relating to the at-grade intersections of Normandy Road and a number of local and County road crossings. These issues have to do with signalization and safety concerns for vehicles crossing Normandy Road. Initial discussions have begun by

looking at the means by which NWS Earle can work with the local authorities to provide some level of co-operative oversight and regular maintenance of these intersections. Further coordination is needed to improve signalization and the operability of these intersections for both the Navy and the general public.

Recommendation D.3: Conduct a study of traffic calming measures to alleviate speeding through Farmingdale on CR 524 (Main Street), which is a local connector between I-195 and NWS Earle (NJSH 33/34).

Discussion: County Route 524 lies south of NWS Earle and is a local connector road through the County from Interstate Route 195 to Route 33. This road provides an alternative to Route 34 as a north-south access route but goes through residential and commercial areas in downtown Farmingdale Borough. As part of the outreach conducted through the JLUS process, the Borough requested that traffic studies investigate means of slowing down traffic in this area, reducing the potential for accidents, which in turn will improve access to the base.

Recommendation D.4: Improve notification at all local marinas of the secure/restricting boating zone around NWS Earle piers.

Discussion: A meeting was held with representatives of the local recreational boating community. In attendance were representatives from the State Marina and Boat Ramp in Leonardo and the County's Monmouth Cove Marina, which have very close proximity to the Navy pier. A tri-fold flyer has been developed by NWS Earle that describes the security restrictions and zone around the pier complex. The State Marina representatives stated that they had distributed this information to boaters, and the County Marina requested that they be provided copies to give include with their 2018 contracts. It was determined that further liaison from NWS Earle would be helpful to ensure that both marinas had copies of this information to distribute to recreational boaters prior to their boating activities in Sand Hook Bay.

Recommendation D.5: Encourage support for accelerated maintenance of Sandy Hook channel.

Discussion: At a meeting held with representatives of groups that have interest in the future use, safety, and health of the Sandy Hook Bay, which included representatives of the NY/NJ Baykeeper's Office, the NY-NJ Harbor and Estuary Program/Hudson River Foundation, and the NJ Sea Grant Consortium and the recreational boating community, the continuing health and maintenance of navigable channels was

discussed. All parties, including representatives from NWS Earle agreed that the ability of the Bay to accommodate navigation is a must and that measures should be investigated that could possibly accelerate the cycles of maintenance for the channels.

Recommendation D.6: Coordinate with local airports and FAA to reinforce overflight limitations over NWS Earle property. Provide airports with maps illustrating restricted airspace boundaries.

Discussion: There have been discussions with Wall Township with regards to the existing private airport located along Route 34, south of the base. A small portion of the approach-way to the airport overlaps with the base, and there needs to be further discussion, including outreach to the airport operators and public education related to the safety and security restrictions of overflights over NWS Earle property.

E. Utilities

Enhancing municipal utility systems that jointly serve NWS Earle and the surrounding communities can be a direct benefit to all parties. Providing uninterruptible utility service during storm events is particularly important to maintain critical assets on both the civilian and military sides of the fence. Three recommendations are proposed to augment utility systems serving the area, including involvement in one effort which is already underway, sponsored by the New Jersey Board of Public Utilities (BPU).

Recommendation E.1: Encourage joint participation in Microgrid Feasibility Studies to analyze the potential for establishing uninterruptible power supplies that provide additional resiliency for key government functions.

Discussion: NWS Earle and County representatives have been involved in initial discussions with Middletown Township for the potential of creating a microgrid in the waterfront area that would serve both the surrounding communities and NWS Earle. The discussions are ongoing. More info is avail at <http://www.elp.com/articles/2017/07/n-j-utilities-board-develops-13-microgrids-to-improve-storm-resiliency.html>. BPU recently provided a grant to fund a feasibility study for this microgrid system. NWS Earle should consider participating in additional similar studies that could be mutually beneficial in other communities around the base. The local communities should consider working with NWS Earle and the County, where appropriate, on more of these types of projects to improve resiliency and protect key government facilities from extended power interruptions.

Recommendation E.2: Pursue solar options to provide supplementary power to the installation and surrounding community. Coordinate this with other BPU-funded microgrid studies.

Discussion: NWS Earle representatives have been active participants in the discussion of the potential of creating a microgrid in the Tinton Falls Borough that would conceivably use solar energy as part of the supplementary power. There have been numerous alternatives discussed for the possible size and location of facilities, and the discussions are on-going with BPU. There is an intention to advance a Request for Proposals to conduct a Feasibility Study in the near future.

Recommendation E.3: Investigate additional flood-proofing measures for sewage treatment facilities serving NWS Earle and surrounding neighborhoods.

Discussion: According to Brian Rischman, P.E., Staff Engineer for the Township of Middletown Sewerage Authority (TOMSA), approximately \$1M in damages occurred from coastal flooding of the Middletown wastewater treatment plant as a result of Superstorm Sandy, which hit the area on October 29, 2012. FEMA 406 insurance and TOMSA funds were used for restoration of the plant. FEMA 404, FEMA 406 and TOMSA funds have been used for hazard mitigation. The hazard mitigation projects are nearly complete (as of mid-2017). The projects generally consisted of raising a pump station above the 500-year floodplain, installing flood barriers on treatment plant buildings, relocating some of the critical plant equipment above the 500-year floodplain, and installing sump pumps in treatment plant buildings which have basements. Plans were also put in place to relocate Authority vehicles outside flood susceptible areas prior to future potential flood events.

The Authority's treatment plant is located within the 100-year floodplain. A number of the Authority's 14 pump stations are located next to waterways although only a few have a history of flooding. The Authority's collection system extends through the bayshore sections of Middletown, including NWS Earle Waterfront facilities, and serves ships when they are at-port. Although manholes are generally not damaged by flood waters, they can serve as a source of inflow during a flood. This causes extra flow at the treatment plant and, in extreme cases, can cause the plant to exceed its capacity.

A recommendation is proposed to investigate additional flood-proofing measures, at-risk lift stations, and the overall collection system serving the plant to assist TOMSA in the ability to keep storm-related water out of the treatment systems. This will also better ensure continuous wastewater treatment

service for both the Middletown bayshore neighborhoods and the Navy facilities and ships at the NWS Earle Waterfront. Similar studies could investigate potential resiliency issues for the Bayshore Outfall Authority and other sewage management agencies in the MIA.

F. Climate Resilience

As stated in Chapter 1, a main goal of this JLUS was to address climate resilience. In 2012 NWS Earle suffered \$50 million in damage from Superstorm Sandy. The region at large also had significant storm damage during this event, including loss of power over an extended period of time (one-two weeks). Rising sea level will exacerbate this problem in the future. A number of Federal, state and local efforts are underway to take proactive steps leading towards better resilience of the region's critical assets, including facilities at NWS Earle. A detailed analysis of the potential risk associated with climate resilience (including storm surge, sea level rise, and localized/nuisance flooding) for the coastal area surrounding NWS Earle was provided in Chapter 5. Nine separate recommendations are made that seek to reduce this risk, through short, mid and long term actions and involving participation at all levels of government, as well as private and commercial entities and other local organizations.

Recommendation F.1: Encourage coordinated Federal, State, County, and Middletown Township effort to implement a naturalized beach erosion/shoreline protection project protecting both Navy and community waterfronts. Encourage the continuation of habitat restoration work at Bayshore Waterfront Park.

Discussion: At the present time, the U.S. Army Corps of Engineers (USACE) is constructing a section of the Port Monmouth Hurricane and Storm Damage Risk Reduction Project on the Sandy Hook Bay shoreline west of the Navy's Pier Complex and has also conducted a Preliminary Assessment for the Leonardo, Raritan Bay, and Sandy Hook Bay Coastal Storm Risk Management Project (See Section 5.d.ii.). The Naval Facilities Engineering Command's *Climate Change Planning Handbook on Installation Adaptation and Resiliency* was also recently published (January 2017) that delineates recommended climate adaptation approaches.

A recommendation is made to coordinate an effort between the USACE and the Navy to develop specific applications that can be used in this area. Possible locations for such measures could potentially be on County property. There are several county assets with proximity to the waterfront including the Belford Ferry Terminal, the closed Belford Landfill property, the N-61 confined disposal facility, and several

County Park System properties. These properties might be available for coordinated projects. Bayshore Waterfront Park has been the site of several habitat restoration projects which should be continued and expanded to increase storm resiliency.

Recommendation F.2: Develop Marsh & Dune Restoration Plan that identifies where Navy dredge material can be beneficially used for storm protection. Coordinate with all parties prior to the Navy's next navigational channel and ship berthing dredging effort, including the County Division of Public Works and Engineering and the County Park System to determine if their facilities in the bayshore might be suitable locations.

Discussion: A recommendation was made to encourage the beneficial reuse of clean dredge materials to create, maintain, or expand wetlands in the Bayshore (Sandy Hook to NWS Earle area) and reduce or eliminate high-risk flood zones. In a meeting with groups that have interest in the future use, safety, and health of the Sandy Hook Bay, representatives of NY/NJ Baykeeper, the Hudson River Foundation, and the NJ Sea Grant Consortium were in attendance. During this meeting, the Hudson River Foundation noted that they are currently conducting testing of the materials in the Raritan River channel for the NJ Department of Transportation to assess future dredging and reuse. Coordination of efforts to provide dredged material to enhance the shoreline and reduce flood prone area hazards would benefit all parties. Beneficial re-use of dredge spoils to enhance storm protection could be possible, but this will depend upon the analysis of the dredged materials in the channel for pollutants and contaminants to determine reuse potential.

Recommendation F.3: Investigate potential joint stormwater management improvement projects to reduce local flooding in the Leonardo community adjacent to the Navy Waterfront property.

Discussion: As noted in Section 5.d.ii.3., there is an isolated low area within the Leonardo neighborhood of Middletown Township adjacent to the Pier Complex and Normandy Road. There are plans to provide relief through a storm drain that would cross NWS Earle's Waterfront area and release the stormwater into Ware Creek on the western side. Further coordination on this effort benefiting both the Leonardo community and the Navy is needed.

Recommendation F.4: Continue to work with NJ FRAMES as they develop resiliency recommendations.

Discussion: The New Jersey Department of Environmental Protection (DEP) and officials in the Two Rivers region of northeastern Monmouth County are working together as part of the New Jersey Fostering Regional Adaptation through Municipal Economic Scenarios (NJ FRAMES) project. NWS Earle and the County are also participating. In August 2017 NJ FRAMES began their Two Rivers Mapping Project encouraging the public to identify facilities in their communities that should be part of focused flood-resiliency planning efforts. DEP will use information from this effort to develop protective strategies. As part of the campaign, the community is asked to identify public buildings, police and fire stations, municipal buildings, hospitals or urgent care centers, schools, important businesses, and popular gathering spots.

A portion of the NJ FRAMES study area includes Middletown Township and some MIA municipalities. The JLUS study has created mapping to identify Emergency Facilities and key Coastal Facilities (See Section 5.d). The JLUS mapping will complement the NJ FRAMES information as potential source material and will be shared.

During the JLUS process, coordination with NJ FRAMES has been very beneficial to all involved. The County and the Navy should continue to work with DEP on their three-year NJ FRAMES project even after the JLUS grant ends.

Recommendation F.5: Conduct site specific vulnerability assessments of critical assets exposed to future flood hazards, including: TOMSA facilities, Ferry Terminals, Marinas, etc.

Discussion: There have been a number of resiliency measures contemplated for this area during past years, and many of these plans look at the region or shoreline. It is recommended that a study be conducted to identify Critical Assets throughout the coastal region, beyond the area covered by the NJ FRAMES study, and once identified, encourage further investigation as to a range of characteristics - from the value of land and buildings, the value of businesses, and some idea as to replacement or relocation costs - to assist in future resiliency efforts. The individual business and structures would need to be surveyed, and some determination made as to sustainability in their present locations and configurations. This analysis of critical assets could benefit the Navy at NWS Earle – at both Mainside and the Waterfront – the County, the surrounding municipalities, and the local business community.

Recommendation F.6: Consistent with economic development plans, identify water-dependent uses in the study area and determine future adaptive capacity and other working waterfront uses.

Discussion: As noted in Section 5.d.ii.5., and related to recommendation F.5 above, the ability of existing businesses to adapt to changing conditions is a longer-range planning effort, but one that should be investigated.

Recommendation F.7: Continue to encourage improvement in Community Rating System (CRS) certifications by leveraging additional resilience efforts to generate analyses that will qualify for CRS points.

Discussion: As delineated on the FEMA website (<https://www.fema.gov/community-rating-system>), “The Community Rating System (CRS) recognizes and encourages community floodplain management activities that exceed the minimum NFIP standards. Depending upon the level of participation, flood insurance premium rates for policyholders can be reduced up to 45%. Besides the benefit of reduced insurance rates, CRS floodplain management activities enhance public safety, reduce damages to property and public infrastructure, avoid economic disruption and losses, reduce human suffering, and protect the environment. Technical assistance on designing and implementing some activities is available at no charge. Participating in the CRS provides an incentive to maintaining and improving a community's floodplain management program over the years. Implementing some CRS activities can help projects qualify for certain other Federal assistance programs.”

As noted from the Monmouth County Master Plan, Section 12.0 Community Resiliency (page 12-19) Monmouth County Community Rating System (CRS) Assistance Program: “On March 13, 2014, the Monmouth County Board of Chosen Freeholders passed a resolution with Municipal Program Guidelines for the county to serve as a CRS planning and support system. Specifically, the resolution initiated quarterly Monmouth County CRS Users Group meetings. Facilitated by the Division of Planning and the OEM (Office of Emergency Management), the Users Group meetings provide a peer learning forum for municipalities to learn about the CRS program, exchange strategies for program advancement, and the opportunity to ask the county for professional assistance, with no cost accrued to the municipality. The Monmouth County CRS Assistance Program is aimed at municipalities that may not have the technical, financial, or administrative capacity to successfully participate in the CRS program. The Monmouth County CRS Assistance Program is the first regional assistance program in Region II.” This program should continue to assist municipalities improving their ratings.

Recommendation F.8: Consistent with the identification of work locations, identify critical transportation routes that may be subject to future storm damage and periodic inundation from nuisance flooding that would prevent commuting or base access to NWS Earle.

Discussion: As noted in Section 5.b.i.2, the Route 36 Corridor is one of the Coastal Evacuation Routes identified in the County Hazard Mitigation Plan, and the NWS Earle Pier Complex has a vehicular entrance located on Route 36 adjacent to the Normandy Road overpass. This is an important point of access for commuting purposes and should be given serious consideration as part of any study of the effects of periodic inundation in the larger region.

Previous studies have mapped the extent to which flooding can potentially affect the Bayshore areas from both the east and west, and while Normandy Road seems to provide an effective means of access, there are areas along Route 36 that are flood prone. These areas should be studied and means of providing continuous access should be sought.

Public and employee access to the Mainside area is located on Route 34, and while this area is above current flood prone elevations, there are other low areas around the perimeter that should be investigated and mapped.

Recommendation F.9: Water level rise raises the baseline conditions for all types of coastal flooding. Revise County and local planning documents to reflect water level rise and exposure assessment that is integrated into coastal flood hazard planning using frameworks consistent with the Navy Handbook and Federal guidance. Also, work with the NJ Department of Transportation (DOT) and the Department of Environmental Protection (DEP) on integration consistency.

Discussion: As noted in Section 5.d, NAVFAC's *Climate Change Planning Handbook*, Installation Adaptation and Resilience section (January 2017), contains a wealth of information for integration of adaptation approaches for a range of categories of facilities. The four approaches addressed in this Handbook should be reviewed within the context of County and local planning documents:

- Structural Adaptation Approaches
- Natural and Nature-based Adaptation Approaches
- Facilities Adaptation Approaches
- Non-facilities Adaptation Approaches

Recent efforts, including NJ FRAMES and other coastal flood exposure assessments, should use the methodology in Section 5.d to integrate the concepts of sea level change and storm surge into their assessments of coastal hazards, rather than treat sea level change as a hazard unto itself. Some examples of how this process can be applied is included in the summary of the preliminary assessment and recommendations conducted by the U.S. Army Corps of Engineers for the neighboring Leonardo area of Middletown Township (also described in Section 5.d), and in the process of construction of shoreline stabilization presently being enacted in Port Monmouth.

G. Security

Security at NWS Earle is paramount and a major focus for base leadership. Gates, fences, surveillance, and security patrols help maintain this at the four land and water based facility assets that make up the base: Mainside, Waterfront, Normandy Road, and the Pier Complex. This security is also conducted as a joint effort through cooperation between on-base security forces and local law enforcement agencies at both the County and municipal level. Two recommendations address additional security issues that would be helpful to the installation and increase safety both on and off-base in the future.

Recommendation G.1: Work with local flying clubs/organizations and the state to establish legislation enforcing limits on drone operations over military installations in NJ.

Discussion: Drones have become increasingly popular for both commercial and recreational use. Drones with cameras are commonplace, such as ones used by real estate professionals to photograph properties for marketing purposes. However, flying these over a military installation or any other secure complex can be an obvious security concern. When made aware of issues related to drones, the County Park System offered to investigate relocating the current model aircraft field at their Dorbrook Recreation Area to a location that would be away from the base boundary.

Statewide legislation prohibiting drones over military installation boundaries for any purpose could be particularly advantageous since other installations besides NWS Earle (e.g., Joint Base McGuire-Dix-Lakehurst, and Picatinny Arsenal) would benefit. This legislation should be pursued as a means to address this issue and control unregulated drone use over all active military installations in the state.

Recommendation G.2: Add additional signage to limit pedestrian circulation on the beach near the secure area surrounding NWS Earle piers during low and high tide conditions. Coordinate security patrols by Navy and local law enforcement.

Discussion: Security personnel at NWS Earle have indicated issues exist with trespassing on base property at the pier complex by unauthorized civilians, particularly beach goers and tourists during the summer season and particularly at low tide when it's easy to walk a considerable distance offshore. Additional signage along the beach and in the water would be helpful and is recommended to help control this issue. In addition, more coordination with on-base and off-base security personnel to patrol the bayshore near the installation, particularly during the summer season, is recommended. Further coordination on these and other related security issues could be achieved through discussion and possible amendments to joint security agreements already being considered and established between NWS Earle, the County and Middletown Township.

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