

# **NASSAU COUNTY MITIGATION STRATEGY**

## **DELIVERABLES FOR PHASES "A" AND "B"**

### **Section 1: INTRODUCTION**

#### **1. GENERAL**

a. This plan is to provide a frame work for identifying, prioritizing and stipulating resources for those hazard mitigation projects that should be accomplished in order to reduce or eliminate long term risk to the citizens of Nassau County and their property from the effects of all hazards. In conjunction with the Florida Division of Emergency Management, Nassau County has contracted to provide local mitigation strategies for Nassau County and its' municipalities in four (4) distinct deliverable periods, Phases A, B, C and D.

b. The overall goal of this plan is to promote hazard mitigation and to provide guidelines for the management of post disaster recovery. This strategy is important to Nassau County because of the vulnerability to many different hazards as outlined in the Nassau County Comprehensive Emergency Management Plan.

c. Recovering from a disaster without a proper hazard mitigation plan will become too expensive for the county's established revenues to adsorb. As the cost of post disaster recovery continues to grow, it is essential that local governments, both county and municipality, take advantage of mitigation planning opportunities and available funding to reduce the impact and divert the long term cost (property purchasing, flood mitigation).

d. This plan is written to ensure a high level of involvement by state and local government representatives and includes the private sector. This section of the plan encompasses Phases A and B which includes Deliverables 1 and 2 from the Scope of Work of the Local Mitigation Contract requirements. Sub-contract points of contact, from the participating municipalities, are listed in Attachment A.

#### **2. PURPOSE:**

a. Initially, this Mitigation Strategy is to serve as a bridge between the following Nassau County development documents: Comprehensive Plan, Emergency Management Plan, Emergency Management 5 Year Strategic Plan, County Land Development Regulations, Storm and Flood Water Ordinances as developed, County Building Codes and Regulations and County Zoning and Planning Ordinances.

b. Perpetually, the Mitigation Strategy will be a precedent setting document that inks out the path of economic growth in Nassau County. It will enhance the development of capital growth programs to continue on their rapid curve while maintaining a fiscally prudent and disaster mitigated community.

**3. ORGANIZATION:** The Mitigation Strategy is contained in Section II below and is divided into two parts, with three sections in each part.

## **SECTION II: ORGANIZATION**

### **PART 1: THE PROCESS**

#### **4. GOVERNMENT COORDINATION:**

a. The following state, regional and local governments are involved in developing our mitigation functions for pre and post disasters:

<b><u>AGENCY/ENTITIES</u></b>	<b><u>MITIGATION FUNCTIONS</u></b>	<b><u>PRE-DISASTER</u></b>	<b><u>POST DISASTER</u></b>
Florida Division of Emergency Management	Technical advice, Assistance, Grants and LMS Funding	YES	YES
North East Florida Regional Planning Council (RPC)	Technical assistance and Plan development and writing	YES	YES
Nassau County Board of County Commissioners	Policy, Guidance, Approval and Appointment of Mitigation W.G.	YES	YES
Nassau County Attorney	Legal Advice and plan review	YES	YES
Nassau County Office of Emergency Management,	Plan manager, Strategy director, and LMS Vice Chairman	YES	YES
Nassau County School District	Retrofit of Emergency Shelters and Needs Transportation	YES	YES
Nassau County Municipalities	Input, Assistance, Development Partner, and Sub-Contractor	YES	YES
American Red Cross and the Salvation Army	Assistance in Shelter retrofit and shelter assistance provider	YES	YES
Nassau County Local Mitigation Working Group	Developers of the LMS, review committee for continued LMS.	YES	YES
The residents, businesses and visitors of Nassau County	Input and guidance through public forums and seminars; members	YES	YES
Nassau County Soil and Water Conservation Board	De-Snag all Waterways; riverine control and open hydrology	YES	YES

**b. Supporting Agencies:** In addition to the above listed participants, the following state agencies have roles in mitigation as defined in the State of Florida Comprehensive Emergency Management Plan and other supporting documents:

Department of Agriculture and Consumer Services,  
Office of the Attorney General  
St. Johns River Water Management District  
Department of Community Affairs  
Department of Environmental Protections  
Department of Health and Rehabilitative Services  
Department of Insurance  
Department of Transportation  
Department of Business Regulations  
Department of Highway Safety and Motor Vehicles  
Florida Department of Law Enforcement  
Small Business Administration  
Enterprise Florida (economics)  
Natural Conservation Service

**c. Entities with Variances to policies:** The Office of Emergency Management is unaware of any governmental entities that have policies that are at variance with the policies that are outlined herein. It is not the intent of this policy to supplant any legal or formal policies that may be in conflict herewith.

**d. Active Intergovernmental Agreements that support Local Hazard Mitigation:** Nassau County and each of its' municipalities are signatories to the Statewide Mutual Aid Agreement. All of Nassau County's municipalities are sub-contractors to the unified county LMS Program.

**e. Resolution to Governmental Conflicts:** Should conflicts arise between governmental entities relating to this mitigation strategy through the processes included in the Intergovernmental Coordination Element of each local government Comprehensive plan, effort will be made in coordination with the Regional Planning Council (RPC) to resolve such conflicts. Should this initiative be unsuccessful, the matter will be presented to the Nassau County Board of County Commissioners for their final decision on the matter. If conflict still persists, the conflict shall be addressed to the Division of Emergency Management, Local Mitigation Strategy Group, with adjudication by the Department of Community Affairs.

**f. Prioritization of City, Town and County Mitigation Projects:** The process to prioritize the final mitigation projects from the county and the municipalities, submitted for grant funding, will be accomplished in a joint meeting between the Nassau County Local Mitigation Strategy Working Group and the officials from the respective municipalities. Should the parties concerned be unable to agree on the priority list, the matter will be presented to a joint board of the Nassau County Board of County Commissioners and the governing body of the municipality. This process will allow the mitigation projects to be presented for review and prioritization by the Chairman or Vice-Chairman of the Local Mitigation Strategy Working Group.

## **5. PUBLIC PARTICIPATION:**

**a. Local Mitigation Strategy Working Group:** The Nassau County Board of County Commissioners approved the Local Mitigation Strategy contract on April 18<sup>th</sup>, 1998, and approved the formulation of the Local Mitigation Strategy Working Group on May 25<sup>th</sup>, 1998. The Working Group consists of elected officials, appointed members of county and municipality governments, members of the business community and its' infrastructure support, industry and members of the public sector. See Attachment B for a detailed list of the Working Group members and their affiliation. The full Working Group had its' initial meeting on May 25<sup>th</sup> and additional bi-monthly meetings were scheduled through the next year to complete Phases A, B, C and D. See Attachment C for scheduled meeting dates.

**b. Procedures to Ensure Public Input and Community Involvement:** Bi-monthly public meetings are conducted, per announcements in the local newspapers, inviting the public to comment and provide input for the mitigation projects and proposals. Newspaper interviews and published Local Mitigation advertisements, talks before civic clubs, school boards, school groups, business organizations and cable TV interviews are part of the scheduled education program with modifications as additional avenues open for keeping the public aware of the program. A public information sub-group will be formed during the HI/VAC phase to ensure proper media coverage of all aspects of mitigation.

**c. Procedures to Coordinate Mitigation Activities with the Business Community:** Some of the procedures as outlined above are used to coordinate mitigation activities with the local community. In addition, both Nassau County Chambers of Commerce and the local business and industrial community have representatives on the Working Group. Seminars for businesses and industries in Nassau County are being scheduled to discuss mitigation and other emergency management issues.

**d. Procedures for Formally Recognizing the Local Mitigation Strategy Program:**

This Mitigation Plan and each of its Deliverable Phases will be approved by the Nassau County Board of County Commissioners and signed by the Chairman of the Board. All potential ordinances, drafted community development plan changes, committees and oversight boards recommended by the Working Group have and will continue to be presented to the Board of County Commissioners by the Vice-Chairman of the Working Group as agenda items for review and vote.

**6. EVALUATION AND ENHANCEMENT:**

**a. Procedures for Periodic Review of County Mitigation Strategy:** The following actions will be accomplished, in accordance with the indicated schedule to ensure complete current and long term reviews of this plan and future modifications:

(1) The Nassau County Local Mitigation Strategy Working Group will meet bi-monthly throughout the contract deliverable phases ensuring proper mitigation projects and programs are addressed and presented. Post contract, the Working Group will continue on a quarterly schedule, unless a disaster or other type of emergency should occur in which case the meeting schedule will be increased to meet the mitigation situation. In a disaster situation, the Working Group will meet as early as possible in the recovery phase and assist in the disaster damage assessment process as required. Actions will commence during recovery to review the current strategy and to amend the current plan based on lessons learned from the response and recovery phases of the disaster. The LMS Working Group will support the Post Disaster Redevelopment Task Force with its priorities.

(2) An annual assessment of all mitigation strategies will be made by the Working Group in coordination with all other development committees and boards to ensure connectivity between the groups. This action will be accomplished annually during the month of July to ensure that the Mitigation Strategy is still consistent with Nassau County's Comprehensive Emergency Management Plan and the 5 Year Strategic Plan revisions for that year.

(3) Any proposed changes to the Local Mitigation Strategy Plan, as the result of the annual reviews or actions taken in subparagraphs (1) and (2), above, will be coordinated with the appropriate elected municipalities and Nassau County Board of County Commissioners. A public forum will be held to ensure proper public input is addressed prior to any approved changes. Notification of change will be sent to RPC, and DEM and will be disseminated throughout the county through the media and newspaper articles.

(4) Total fiscal responsibility will be adhered to in the strategic development of this Local Mitigation Strategy and any future modifications. Any accomplishment of goals as developed in the Strategy will be contingent upon the availability of funding.

(5) The Local Mitigation Strategy Working Group will work in parallel to and under the tutelage of the Planning and Zoning Department Director to assist in the completion of the Evaluation and Appraisal Review phase of the Comprehensive Management Plan and Land Development Regulation revisions.

**b. Procedures to Ensure Participation of all County Governments in Mitigation:**

During the review of each contract phase and prior to revisions in post contract periods, one or more meetings will be conducted with the Working Group and the elected officials of the municipalities and the county. These meetings will address all proposed modifications attained by the Working Group. After final coordination between all groups and the public, recommended changes shall be submitted to the Nassau County Board of County Commissioners for final approval.

**c. Procedures for exercising the components of the Local Mitigation Strategic**

**Plan:** The components of mitigation strategy and current plans and policies are executable on a continuous basis throughout the county and municipalities. As mitigation initiatives are presented to the Working Group, appropriate officials and industrial representatives will be invited, as necessary, to ensure their continual involvement in both planning and execution of the contract phases of the projects. Periodic site visitation will be accomplished by the Working Group to maintain continuity with the project's Scope of Work, thusly, mitigating any confusion and misdirection.

## **PART II: THE MITIGATION PRODUCT**

### **7. MITIGATION PROJECT OBJECTIVES:**

**a. Approved Goals:** The following is a list of initial hazard mitigation and long-term recovery goals which have been developed by the Local Mitigation Strategy Working Group, with input from public and private sectors. These goals are not all inclusive, and will become more refined during the 4 contract phases. These goals include the development of mitigation measures that will identify tasks and milestones for completion of each identified project by the end of the mitigation contract deliverable phase D:

(1) Replacement of under drains on county roads that cause flooding and washouts over roads during heavy rainfall.

(2) Lining swale areas with concrete pilot channels to mitigate storm water damage to road edges and positive outfall drainage systems.

(3) Replace selected small bridges and metal cross drainage, where feasible, on county roads, with box culverts and/or elevate road beds to prevent flooding over roadway during periods of heavy rainfall; reduce the elevation of road beds and the lining of swale areas.

(4) Replace selected non-box culverts with box culverts on county roads that are not sufficiently above flood stage and elevate roadbeds to prevent flooding over roadways during periods of heavy rainfall. Establish hydrology requirements for these replacement programs.

(5) Reinforce the ocean revetment along Ocean Ave in Fernandina Beach.

(6) De-snap and conduct limited clearing to applicable creeks in the Thomas Creek flood basin to mitigate potential flooding in surrounding area housing developments.

(7) De-snap and conduct limited clearing to applicable creeks in the Mills Creek flood basin to mitigate potential flooding in surrounding area housing developments.

(8) In Hilliard and the surrounding waterways, De-snap the 7<sup>th</sup> Avenue outfall and Bay/Front Road outfall.

(9) De-snap and conduct limited clearing to Boggy Creek to mitigate potential flooding in surrounding area housing developments.

(10) De-snap and conduct limited clearing to Alligator creek flood basin to mitigate potential flooding in surrounding area housing developments.

(11) Re-establish essential hydraulic flow and remove the DAM effect of the man made impediments to water flow within the flood plains of Callahan, Fernandina Beach and the County unincorporated areas.

(12) To ensure a positive public benefit, work with property owners which have structures within flood plains to upgrade those structures to meet the mitigation criterion.

(13) Arrange for land trades of County owned lands for those which are in the enhanced storm water holding basins or purchase the development rights of that land with adjustments for taxation.

(14) Investigate and identify where flood level waters could be diverted to nearby drainage basins and design and construct modified spillway gates to achieve the process.

(15) Build an all hazards Emergency Operations Center that is in line with Nassau County's policy of not expanding capital improvements in Coastal High Hazard areas or on barrier islands.

(16) Establish a Needs/ Special Needs review committee for Nassau County.

(17) Reduce or eliminate the long term risk of flood damage to residential housing, with repetitive losses, that are insured under the National Flood Insurance Program (NFIP) by retrofitting, elevating, moving or buying out the structures.

(18) Place in pre-determined locations, Road Surface Flood Level Posts, with relevant signage.

(19) Retrofit school facilities that are used as shelters throughout Nassau County. Establish a priority list of facilities to start grant mitigation funding programs.

(20) Establish a mobile home shelter program for all new mobile home park development sites to ensure that an all hazards shelter, capable of housing all residents, is available ensuring that it is designed into the site development by the developers.

(21) Establish a unified mitigation ordinance for the county and all municipalities.

(22) Develop a Code Enforcement Program to meet current and future County Comprehensive Programs and Mitigation Projects.

(23) Establish unified evacuation routes for Nassau County and educate the public on the use of emergency routes, how they are activated and how to return to their homes.

(24) Request an annual inspection and review process of the D.O.T. Right of Way, in Nassau County, so as to identify the areas that D.O.T needs to remove debris to ensure un-encumbered storm water flow.

**b. Mitigation Goals Matching or Interacting with Active County Wide Plans:**

**MITIGATION GOALS**

1. Replacement of under drains on county roads that cause flooding and washouts over roads during heavy rainfall.

**EXISTING PLAN REFERENCE**

1. Paragraph NCCP 4.02.02.a & the Proposed Storm Water and Drainage Ordinance



### **MITIGATION GOALS (cont'd)**

2. Lining swale areas with concrete pilot channels to mitigate storm water damage to road edges and in line drainage programs.
3. Replace selected small bridges and metal cross drainage, where feasible, on county roads, with box culverts and/or elevate road beds to prevent flooding over roadway during periods of heavy rainfall; Reduce elevation of road bed and lining of the swale areas
4. Replace selected non-box culverts with box culverts on county roads that are not sufficiently above flood stage and elevate roadbeds to prevent flooding over roadways during periods of heavy rainfall. Establish hydrology requirements for these replacement programs.
5. Reinforce the ocean revetment along Ocean Ave in Fernandina Beach.
6. De-slag and conduct limited clearing to applicable creeks in the Thomas Creek flood basin to mitigate potential flooding in surrounding area housing developments.
7. De-slag and conduct limited clearing to applicable creeks in the Mills Creek flood basin to mitigate potential flooding in surrounding area housing developments.
8. In Hilliard and the surrounding waterways, De-slag the 7<sup>th</sup> Avenue outfall and Bay/Front Road outfall.
9. De-slag and conduct limited clearing to Boggy creek to mitigate potential flooding in surrounding area housing developments.

### **EXISTING PLAN REFERENCE**

2. Paragraph NCCP 4.02.02.a & 4.05B.05
3. Paragraph NCCP 4.02.02.a & the Proposed Storm Water and Drainage Ordinance
4. Paragraph NCCP 5.04A.03 & the Proposed Storm Water and Drainage Ordinance
5. Paragraph NCCP 5.02A.04 & FBCP 4.05.03, & 5a.02.07
6. Paragraph NCCP 4.05B.03 & 1.01.07
7. Paragraph NCCP 4.05B.03 ,& 1.01.07
8. Paragraph NCCP 4.05B.03 & 1.01.07
9. Paragraph NCCP 4.05B.03 & 1.01.07

### **MITIGATION GOALS (cont'd)**

10. De-snag and conduct limited clearing to Alligator creek flood basin to mitigate potential flooding in surrounding area housing developments.

11. Re-establish essential hydraulic flow and remove the DAM effect of the man made impediments to water flow within the flood plains of Callahan, Fernandina and the County unincorporated areas.

12. To ensure positive public benefit, work with property owners which have structures within flood plains to upgrade those structures so that they meet the mitigation criterion.

13. Arrange for land trades of County owned lands for those which are in the enhanced storm water holding basins or purchase the development rights of that land with adjustments for taxation.

14. Investigate and identify where flood level waters could be diverted to nearby drainage basins and design and construct modified spillway gates to achieve the process.

15. Build an all hazards Emergency Operations Center that is not on a Barrier Island in Nassau County.

16. Establish a Needs/ Special Needs review committee for Nassau County.

### **EXISTING PLAN REFERENCE**

10. Paragraph NCCP 4.05B.03 & the Flood Plain Ordinance

11. Paragraph NCCP 4.05B.03 & the Flood Plain Ordinance

12. Paragraph NCCP 5.04A.07 & the Flood Plain Ordinance

13. Paragraph NCCP 3.03.04 & the Proposed Post Disaster Redevelopment Ordinance

14. Paragraph NCCP 4.02.02 & 4.05B.01 and the Flood Plain Ordinance

15. Paragraphs NCCP 5.12.01 & 9.04.01

16. Paragraphs NCCP 5.06.02 & 9.04.01 and the Nassau County CEMP

### **MITIGATION GOALS (cont'd)**

17. Reduce or eliminate the long term risk of flood damage to residential housing, with repetitive losses, that are insured under the National Flood Insurance Program (NFIP) by retrofitting, elevating, moving or buying out the structures.

18. Place in pre-determined locations, Road Surface Flood Level Posts, with relevant signage.

19. Retrofit school facilities that are used as shelters throughout Nassau County. Establish a priority list of facilities to start grant mitigation funding programs.

20. Establish a mobile home shelter program for all new mobile home park development sites to ensure that an all hazards shelter, capable of housing all residents, is site located on the development by the developers.

21. Establish a unified mitigation ordinance for the county and all municipalities

22. Develop a Code Enforcement Program, to meet current and future County Comprehensive Programs and Mitigation Projects.

23. Establish unified evacuation routes for Nassau County and educate the public on use of emergency routes, how they are activated and how to return to their homes.

### **EXISTING PLAN REFERENCE**

17. Paragraphs NCCP 4.05B.03 & 4.05B.05 & 4.05B.06 and the Flood Plain Ordinance

18. This Paragraph has yet to be developed for the NCCP. It will be incorporated into the Flood Plain Ordinance.

19. Paragraph NCCP 5.06.01 & 5.06.02 And the Nassau County CEMP

20. This Paragraph has not been developed yet for the NCCP or current building code requirements.

21. NCCP Concurrence Management Plan and F.A.C. 9J-5-.0055(2)(b).

22. Florida Statute, Chapter 162

23. Paragraph NCCP 5.03.01 and the Nassau County CEMP

## **MITIGATION GOALS (cont'd)**

## **EXISTING PLAN REFERENCE**

24. Request an annual inspection and review process of the County's controlled drainage along county roads, and monitor and report D.O.T. Right of Way, in Nassau County, so as to identify the areas that D.O.T needs to remove debris to ensure un-encumbered storm water flow.

24. Paragraph NCCP 4.05B.01

### **c. Contributing Program and Plan Linage to the Development of a Local Mitigation Strategy:**

The linkages between the Nassau County Comprehensive Emergency Management Plan (CEMP) and the Local Mitigation Strategy are significant. The CEMP is a detailed vulnerability analysis and the foundation used to develop the strategy. The CEMP identifies the overall mitigation needs and requirements and the mitigation strategy then becomes the implementation arm for accomplishing the specific goals in order to meet Nassau County's requirements.

### **d. Specific Comprehensive Emergency Management Plan Goals Addressed in Local Mitigation:**

This strategy is not developed for the purpose of identifying new goals and objectives, but to provide a document to address those that already exist in the CEMP and 5 Year Strategic Plan. By reenforcing the goals and tasks of the CEMP and the 5 Year Strategic Plan, the mitigation strategy can be the engine to supplant positive initiatives, parallel to the above document's completion paths. It is important that this strategy devotes itself to the continued effort to provide Nassau County the specific preparedness goals required to achieve timely and efficient response and recovery from all disasters.

### **e. Mitigation Objectives that are at Variance with other Programs and Policies:**

It is the sole intent of this Local Mitigation Plan to support and be in strict accord with all other plans and procedures currently active in the county. Pursuant to the Mitigation Contract with DEM, this Strategy will identify and recommend a fundamental direction in regards to all future modifications to any and all plans and policy approved by the Board of County Commissioners. Therefore, there are no known variances between Local Mitigation Strategy and approved procedures, plans or ordinances of the Nassau County Board of County Commissioners.

## **8. HAZARD IDENTIFICATION AND VULNERABILITY ASSESSMENT:**

This phase of the Local Mitigation Strategy Plan will be addressed in detail when **PHASE C** is completed and delivered to DEM by April, 1999. The pre-identification requirements to properly complete Phase B have commenced and have been properly listed to achieve this deliverable date. They include, but are not limited to; Inventory Analysis, categorizing areas subject to: high winds, fresh water flooding (riverine and rainfall), coastal flooding, storm surge, severe erosion and industrial risk analysis. Included in the technology and mathematical areas are : Computer aided Site Mapping and Plume disbursement, GIS/GPS Modeling, Structural Inventory and Demographics, Storm and Flood Water Modeling including rainfall effects for hurricane and non-hurricane disasters, Hurricane Evacuation requirements, critical and hazardous facilities inventories and risk models, growth models for population and post disaster economic development. This data will be presented in CAD, GPS and tabular form and summarized in deliverable 3, **PHASE C**.

Current items applicable to DELIVERABLE TWO requirements of the contract:

### **a. Mapping:**

(1) Copies of the Nassau County Flood Insurance Rate Maps are on file in the Emergency Management Office and the Department of Public Works and are used to provide a multi-hazard map of the county. Areas that are prone to flooding (V, VE, AE, and A zones) are shown on these maps. Information relating to the repetitive loss data will be on file in the Nassau County Building and Zoning Section of the Public Works Department.

(2) Maps of current land use patterns that describe development intensity and density that are contained in the Nassau County Future Land Use Map 2005, an Attachment "A" of the Nassau County Comprehensive Plan. Particular note is being made of special sites such as mobile home parks, critical economic facilities or structures, hazardous waste and generator locations, as well as hospitals, nursing homes and other assisted living facilities (ALFs).

(3) The Emergency Management Office has access to and has used geographic information systems (GIS) to support hazard identification, risk assessment and critical facilities identification.

### **b. Inventory:**

(1) The following information is furnished relative to the National Flood Insurance Program (NFIP) in Nassau County:

(a) Number of NFIP policy holders: 6,036

(b) Total of NFIP coverage: \$880,228,000

(c) Total paid out in claim losses during the past two (2) years: \$1,057,984

(d.) Total properties that experienced repetitive damages during the past two (2) years: None Reported

(2) Additional historical flood depth information, beyond that which is published in the FEMA flood prone area maps, is not currently available in Nassau County. Information will be requested from the St. John's River Water District, Regional Planning Council and the Division of Emergency Management, for the LMS Working Group staff.

(3) A basic inventory and map of all critical facilities within the county is on file in the Office of Emergency Management. All of those facilities and the facilities that are being identified in Phase C of this Mitigation Project are vulnerable to industrial Risk Management Plan concerns, damage from multiple disaster categories and are being identified in this mitigation report as critical facilities. Hazardous Facility inventory and site identification has been completed using CAMEO WINDOWS and is an integral part of the Nassau County CEMP.

(4) Hazard Category identification data, Natural, Technological and Societal is being loaded to a relational database in the MICROSOFT ACCESS database program. The matrix will identify approximately 20 impact parameters and will address all of the significant categories confronting the county and its' municipalities. The outcome of this matrix will then be applied to the previously developed mitigation goals of each municipality and the county to ensure compliance with resultant mitigation theoretical modeling data. Major deviations will require adjustments to the mitigation goals and their supporting plans, policies and ordinances.

(5) During deliverable PHASE C, with the assistance of the TAOS MODEL, Nassau County will conduct additional study and research to support greater loss reduction and further alignment of the Coastal High Hazard Area mitigation.

c. **Modeling:**

(1) The following information has been obtained from applying two models to predict storm damage to existing private structure and public infrastructure. The initial review of this data has been considered in the development of this mitigation strategy:

(a) SLOSH

(b) RAINFALL

**d. Increased vulnerability to Predictive Models Relative to Population Growth:**

Nassau County does not currently have the modeling data to determine which traditional vulnerabilities apply to population growth in the Coastal High Hazard Areas of the county. It can be determined though, that there is no increased vulnerability anticipated in predictive data models for Non-Coastal High Hazard Areas due to population growth.

**e. Economic Profile of the Planning Area Included in the Vulnerability Assessment:**

Without the accomplishment of the mitigation goals outlined in paragraph 7 above (Mitigation Project Objectives), the increase in long term recovery from a disaster within Nassau County would increase by approximately thirty-three (33%) percent.

**f. Summary of the Vulnerability Assessment for Deliverable B:**

The vulnerability assessment used in this document has been derived primarily from the Nassau County Comprehensive Emergency Management Plan (NCCEMP). The information and assistance in developing the models were obtained from several local agencies in the County. Data pertaining to County roads, bridges and culverts were obtained from historical information and technical data compiled within the Public Works department Road, Bridge and Engineering sections. Information pertaining to flooding, flood damage, flood damage to residential housing and repetitive losses and NFIP was obtained and assembled by the Planning and Zoning Section of the Public Works Department. Information pertaining to the sheltering program in Nassau County was assembled from data in the Office of Emergency Management, American Red Cross and the Nassau County School District. Information concerning economic development has been obtained from the Nassau County Economic Development Board Executive Director.

A comprehensive addition will be developed to our initial summary after all mapping and modeling programs have been finalized for reporting in PHASE C..

**9. MITIGATION INITIATIVES IDENTIFIED THROUGH THE LOCAL MITIGATION STRATEGY:**

**a. Policies Identified:**

(1) The Housing Element, Section III, of the Nassau County Comprehensive Plan (NCCP) limits public expenditures in areas identified as subject to repetitive damage from previous disasters. This policy is monitored and evaluated to determine how well it is working in accordance with Appendix C, NCCP

(2) The Coastal Management Element, Section V, of the NCCP outlines policy to ensure the protection of critical facilities and reducing to essential levels the construction of County Facilities in Coastal High Hazard Areas (CHHA).

(3) The Coastal Management Element, Section V, of the NCCP outlines policy relating to the removal and relocation of damaged and vulnerable structures.

(4) The Housing Element, Section III, of the NCCP outlines policy that eliminates development in hazard prone areas.

(5) The Housing Element, Section III, of the NCCP outlines policy that regulates non-conforming land uses, particularly those in areas subject to sustained damage from disasters.

(6) The Sanitary/Sewage/Solid Waste/Drainage/PW/NGW Element, Section IV, of the NCCP outlines policy that regulates land use, flood plains, non-point source storm water run-off, and the design and location of sanitary sewer and septic tanks in hazard-prone areas, pursuant to Rule 9J-5.012(3)(b)5, F.A.C.

(7) The Conservation Element, Section IV, of the NCCP outlines policy that regulates watershed alteration.

(8) The Coastal Management Element, Section V, of the NCCP outlines policy that the county shall require, through land development regulations, that redevelopment plans within the CHHA include reduced densities and the minimization of public facilities and expenditures to a level no greater than that necessary to support land uses in the effected areas as shown on the Future Land Use Map.

(9) The Coastal Management Element, Section V, of the NCCP requires that all new construction within the CHHA will be required to meet 9J-5.0055(2)(c) F.A.C. for concurrence

(10) The Coastal Management Element, Section V, of the NCCP outlines policy that requires the county to review its Zoning Code and Subdivision Regulations and make required revisions to control development on the barrier island in a manner that will reduce vulnerability to hurricane forces.

(11) The Nassau County Code does not currently outline policy that addresses repetitively damaged and vulnerable residential and commercial structures. This will be included in the new state wide 2001 building code revisions through the mitigation process.

(12) The Nassau County Code outlines policy that addresses procedures for post storm reconstruction, such as building moratoria or special emergency permitting procedures.



(13) Governmental applications for state and federal funding assistance may be reviewed by the Local Mitigation Working Group and the Office of Emergency Management for agreement with and direct support of local mitigation objectives. Applications will then be submitted to the Board of County Commissioners for review and approval.

(14) The Nassau County Board of County Commissioners approved the Local Mitigation Strategy contract on April 18<sup>th</sup>, 1998, and approved the formulation of the Local Mitigation Strategy Working Group on May 25<sup>th</sup>, 1998. The Working Group consists of elected officials, appointed members of county and municipality governments, members of the business community and its' infrastructure support, industry and members of the public sector. The Working Group is Chaired by a County Commissioner to direct mitigation initiatives and the Director of the Office of Emergency Management serves as the Vice-Chairman.

**b. Mitigation Programs:**

(1) Nassau County, on 9/26/94, amended and adopted the Standard Building Code as the building code for the county.

(2) The above referenced building code provides the development and re-development guidance and regulations relating to hazard mitigation practices within the county.

(3) Nassau County participates in the National Flood Insurance Program (NFIP) with 6,036 Policy holders.

(4) The Nassau County's Comprehensive Emergency Management Plan, collectively, cover procedures that address the following activities which can earn credits in the Community Rating System (CRS); (a) Retrofit of existing shelters and other structures; (b) Emergency Services; (c) Public Information.

(5) The coordination with the local business community in the development of existing and proposed mitigation activities is accomplished through the work of the Local Mitigation Strategy Working Group.

(6) Nassau County, through the Local Mitigation Strategy Working Group, is considering a proposal for recommendation to the Board of County Commissioners that will identify projects in flood plains and wetlands for Land Acquisition Programs through applicable grant programs.

**c. Prioritized Mitigation Projects:**

The following is a list of mitigation projects developed by the Local Mitigation Strategy Working Group. Projects are listed by priority, and costs where available:

<b><u>MITIGATION PROJECTS</u></b>	<b><u>LISTED IN PRIORITY</u></b>	<b><u>ESTIMATED COSTS</u></b>
1. Replacement of under drains on county roads that cause flooding and washouts over roads during heavy rainfall.	1	\$175,000.00
2. Lining swale areas with concrete pilot channels to mitigate storm water damage to road edges and positive outfall drainage systems.	2	\$125,000.00
3. Replace selected small bridges and metal cross drainage, where feasible, on county roads, with box culverts and/or elevate road beds to prevent flooding over roadway during periods of heavy rainfall: reduce elevation of road bed and lining of the swale areas.	3	\$750,000.00
4. Replace selected non-box culverts with box culverts on county roads that are not sufficiently above flood stage and elevate roadbeds to prevent flooding over roadways during periods of heavy rainfall. Establish hydrology requirements for these replacement programs.	4	\$500,000.00
5. Reinforce the ocean revetment along Ocean Ave in Fernandina Beach	5	\$ 50,000.00
6. De-slag and conduct limited clearing to applicable creeks in the Thomas Creek flood basin to mitigate potential flooding in surrounding area housing developments.	6	\$500,000.00

<b><u>MITIGATION PROJECTS (Cont'd)</u></b>	<b><u>LISTED IN PRIORITY</u></b>	<b><u>ESTIMATED COSTS</u></b>
7. De-slag and conduct limited clearing to applicable creeks in the Mills Creek flood basin to mitigate potential flooding in surrounding area housing developments.	7	\$400,000.00
8. In Hilliard and the surrounding waterways, De-slag the 7 <sup>th</sup> Avenue outfall and Bay/Front Road outfall.	8	\$250,000.00
9. De-slag and conduct limited clearing to Boggy Creek to mitigate potential flooding in surrounding area housing developments.	9	\$500,000.00
10. De-slag and conduct limited clearing to Alligator creek flood basin to mitigate potential flooding in surrounding area housing developments.	10	\$ 250,000.00
11. Re-establish essential hydraulic flow and remove the DAM effect of the man made impediments to water flow within the flood plains of Callahan, Fernandina Beach, and County unincorporated areas.	11	\$150,000.00 ea
12. To ensure a positive public benefit, work with property owners which have structures within flood plains to upgrade those structures so that they meet the mitigation criterion.	12	\$ 5,000.00 ea
13. Arrange for land trades of County owned lands for those which are in the enhanced storm water holding basins or purchase the development rights of that land with adjustments for taxation.	13	\$150,000.00

<b><u>MITIGATION PROJECTS (Cont'd)</u></b>	<b><u>LISTED IN PRIORITY</u></b>	<b><u>ESTIMATED COSTS</u></b>
14. Investigate and identify where flood level waters could be diverted to nearby drainage basins and design and construct modified spillway gates to achieve the process.	14	\$710,000.00
15. Build an all hazards Emergency Operations Center that is not on a Barrier Island in Nassau County.	15	\$ 1,500.00
16. Establish a Needs/ Special Needs review committee for Nassau County.	16	\$300,000.00
17. Reduce or eliminate the long term risk of flood damage to residential housing, with repetitive losses, that are insured under the National Flood Insurance Program (NFIP) by retrofitting, elevating, moving or buying out the structures.	17	\$7,500.00
18. Place in pre-determined locations, Road Surface Flood Level Posts, with relevant signage.	18	\$ 10,000.00 PER SITE
19. Retrofit school facilities that are used as shelters throughout Nassau County. Establish a priority list of facilities to start grant mitigation funding programs.	19	\$ 15,000.00
20. Establish a mobile home shelter program for all new mobile home park development sites to ensure that an all hazards shelter, capable of housing all residents, is site located on the development by the developers.	20	\$ 3,000.00
21. Establish a unified concurrence ordinance for the county and all municipalities	21	\$ 5,000.00

<b><u>MITIGATION PROJECTS (Cont'd)</u></b>	<b><u>LISTED IN PRIORITY</u></b>	<b><u>ESTIMATED COSTS</u></b>
22. Develop a Code Enforcement Program, to meet current and future County Comprehensive Programs and Mitigation Projects.	22	\$ 5,000.00
23. Establish unified evacuation routes for Nassau County and educate the public on use of emergency routes, how they are activated and how to return to their homes.	23	\$ 7,500.00
24. Request an annual inspection and review process of the D.O.T. Right of Way, in Nassau County, so as to identify the areas that D.O.T needs to remove debris, to ensure un-encumbered storm water flow.	24	\$ 1,500.00

**d. Project Funding:**

(1) The following figures reflect the average approximate annual expenditures on mitigation programs and projects that Nassau County has spent prior to the start of the mitigation program:

- (a) Pre-storm: \$25,000.00
- (b) Post Storm: \$169,000 from the DSR's and Public Assistance Grant Programs and county funding.

(2) The following is a list of available funding mechanisms for mitigation programs and projects:

- (a) Hazard Mitigation Grant Program (HMGP) funding
- (b) Emergency Management Preparedness and Assistance Grant Programs
- (c) EMPA Base Grant Program
- (d) FEMA's Flood Mitigation Assistance Program (FMAP)

(3) The following information is furnished relative to the mitigation projects that have been identified for funding:

(4) As previously addressed in paragraph 6 above ( Evaluations and Enhancements), total fiscal responsibility will be adhered to in this Local Mitigation Strategy and any future modifications. The accomplishment of goals as developed in the Strategy or in support of the municipalities will be contingent upon the availability of funding.

(a) Evaluation of each project has been made by the Nassau County Local Mitigation Strategy Working Group in conjunction with the County's Senior Planner.

1. Cost Effectiveness
2. Environmental effects
3. Technical feasibility
4. If each project contributes to the overall strategy outlined in this plan
5. If each project is in conformance with the minimum standards of the NFIP and F.A.C. 9J-5.
6. If each project is physically located in a NFIP participating municipality.

(b) The findings of each of the above evaluations produced positive results that support the continued planning and execution for each project that has been identified for a grant funding request. The attached appendix worksheet is provided as an evaluation working tool for project evaluations.

**ATTACHMENT A**  
**LOCAL MITIGATION STRATEGY SUB-CONTRACT**  
**CONTACT REPRESENTATIVES**

Fernandina Beach, Fl	Richard Diamond	904-277-7305
Town of Hilliard, Fl	Lisa Purvis	904-845-3555
City of Callahan, Fl	Bobbie Boone	904-879-3801

## **ATTACHMENT B**

### **LOCAL MITIGATION STRATEGY WORKING GROUP MEMBERS**

(As of 10/01/98)

<b><u>NAME</u></b>	<b><u>INTEREST</u></b>	<b><u>AFFILIATION</u></b>
Marianne Marshall	Board of County Commissioners	County Government
Terry Eby	Emergency Management	County Government
Tom Williams	County Port Authority Commissioner	County Administration
Doug Carreria	Senior County Planner	County Government
Gary Larson	County Building Official	County Government
Tom Ford	Land and Business Owner	Residential Base
Fred Pike	Asst. School Superintendent	County School Admin
John Stack	Nassau County Realty Board	Industrial Base
Ken Willette	Economic Development Board Director	County Administration
Bobbie Boone	Callahan Zoning Department	Municipal Government
Lisa Purvis	Hilliard Town Clerk	Municipal Government
Richard Diamond	Fernandina Beach City Manager	Municipal Government
David Dobrzykowski	Fernandina Beach Fire Chief	Municipal Government
Nancy Crews	Nassau Chamber of Commerce	Industrial Base
Wayne Stubbs	Fernandina Beach Chamber of Commerce	Industrial Base
Todd Davis	Nassau Builders Association	Industrial Base
Everett Harpe	Local Business Owner	Industrial Base
Orrin Main	Retired Corporate Executive	Residential Base



## **ATTACHMENT C**

### **WORKING GROUP MEETING AGENDA**

The following dates were assigned for Local Mitigation Strategy Working Group Meeting Dates during the first two deliverable phases:

May 25<sup>th</sup>—initial approval and startup

June 25<sup>th</sup>,

July 7<sup>th</sup> and July 22<sup>nd</sup>,

August 6<sup>th</sup> and 20<sup>th</sup>

September 10<sup>th</sup>, 23<sup>th</sup> and 30<sup>th</sup>

October 8<sup>th</sup>, 21<sup>st</sup> and 26<sup>th</sup>