



Stephen R. Olmsted, AICP
Planning Director
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VILLAGE OF PINECREST
Department of Building and Planning

April 27, 2015

Ray Eubanks, Plan Reviewing Administrator
Florida Department of Economic Opportunity
The Caldwell Building
107 East Madison Street – MSC 160
Tallahassee, FL 32399-4120

RE: Pinecrest 15-1 ESR – Village of Pinecrest Comprehensive Development Master Plan
Climate Change Element

Dear Mr. Eubanks:

I am pleased to transmit to your attention the adopted amendments to the Village of Pinecrest Comprehensive Development Master Plan, Amendment No. 15-1 ESR. The proposed amendments were adopted by the Village Council on April 14, 2015.

Pursuant to Florida Statutes, Chapter 163.3184 (3) (b), the proposed Comprehensive Plan amendments are being transmitted to you. Copies of the Village's Comprehensive Development Master Plan and previous amendments were sent to required review agencies at the time of adoption.

Local Government/State Land Planning Agency Identification Number
Village of Pinecrest, Amendment No. 15-1 ESR.

Adoption Package

The enclosed adoption package includes the following information and exhibits: One paper copy and two electronic copies on CD Rom of all adopted text, maps, and support documents; (2) a copy of the data and analysis; (3) a copy of the executed ordinance adopting the comprehensive plan amendment; (4) a list of additional changes made in the adopted amendment that the state Land Planning Agency did not previously review; (5) a list of findings of the Village Council that were not included in the ordinance and which provided the basis of the adoption; and (6) a statement indicating the relationship of the additional

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changes not previously reviewed by the State Land Planning Agency.

Ordinance Number and Adoption Date

Ordinance No. 2015-5; adopted April 14, 2015.

Certification – Submittal of Adopted Amendments to Required Parties

The adopted amendments have been submitted to all parties that provided timely comments including the Florida Department of Environmental Protection, Florida Department of Transportation, Florida Department of State, Florida Department of Education, South Florida Regional Planning Council, South Florida Water Management District, and Miami-Dade County. Copies of the ordinance and Comprehensive Plan Amendments were mailed to the above agencies on this date, April 27, 2015.

Local Government Contact

The Contact person for correspondence related to the proposed amendments is as follows:

Name: Stephen R. Olmsted, AICP
Title: Village of Pinecrest, Planning Director
Address: 12645 Pinecrest Parkway, Pinecrest, Florida 33156
Telephone: (305) 234-2121
Fax Number: (305) 234-2133
E-Mail: Solmsted@pinecrest-fl.gov

The Village of Pinecrest appreciates the assistance and direction provided by the Department of Environmental Opportunity throughout the plan amendment process.

If you have any questions or require additional information, please contact me at (305) 234-2121.

Sincerely,



Stephen R. Olmsted, AICP
Planning Director

Attachments/ Comprehensive Development Master Plan – Adopted Water Supply Amendments

C/ South Florida Regional Planning Council

Florida Department of Transportation, District VI
Florida Department of Environmental Protection
Florida Department of State
South Florida Water Management District
Miami-Dade County Board of County Commissioners
Miami-Dade County School Board

Village of Pinecrest, Florida
Comprehensive Development Master Plan

Pinecrest 15-1ESR

1. List of additional changes made in the adopted amendment that the State Land Planning Agency did not previously review

The attached Comprehensive Plan amendments address state water supply planning requirements. Changes made in the adopted amendment that the State Land Planning Agency did not previously review at the transmittal stage are limited to amendments necessary to address agency review comments and requirements. Changes made in the adopted amendment that the State Land Planning Agency did not previously review at the transmittal stage are shown in underline and strike-through text, highlighted in yellow, as follows:

Agency Comments

Miami-Dade County – Revisions to address agency comments of the Miami-Dade County Department of Economic and Regulatory Resources:

Policy 9-1.4.1 – Corrected the Department name and Specified DERM – Department of regulatory and Economic Resources, Division of Environmental Resource Management.

Policy 9-1.6.4 – Specified minimum required floor elevation

Policy 9-1.7.1 – Added reference to areas that are vulnerable to flooding.

Data, Inventory, and Analysis – Corrected various typographical errors.

Policy 9.1.6.7: New policy as recommended by Miami-Dade County to “consider the creation and mapping of a regulatory floodway along the Cutler Drain (C-100 canal) and SW 70 Canal to allow the creation and preservation of floodplain storage and future flow paths, delineated by the 100 year storm map inundated areas, shown on Figure 10 of the Data, Inventory and Analysis, hereby adopted by reference”.

Policy 9.1.6.8: New policy as recommended by Miami-Dade County to aid in reduction of chloride contamination of the Village's freshwater aquifer resources.

Policy 9.1.6.9: New policy as recommended by Miami-Dade County recommending review of the County's established Salt Barrier Line as previously established for the segment of the line located between the Village and Biscayne Bay in an effort to determine whether the legislation needs to be amended due to increases in sea level and to help identify measures and improvements necessary to protect against salt water intrusion in the area of the established line.

Miscellaneous – Various corrections made to address and typographical errors identified by Miami-Dade County.

South Florida Water Management District – Revisions to address agency comments.

Policy 9-1.6.2 – Broadened policy relating to collaboration with the South Florida Water Management District to reference need to develop and implement strategies to address impacts of rising sea levels.

Village of Pinecrest – Revisions to Maps in the Data and Analysis.

Figures 8, 9, and 10 were amended to include minor revisions as recommended by the Village's stormwater management consultants. New Figure 11 was added to show designated Adaptation Action Areas within the Village.

2. List of findings of the Village Council that were not included in the ordinance and which provided the basis of the adoption.

Not applicable. The Village Council did not formulate or include any additional findings that were not included in the ordinance

3. Statement indicating the relationship of the additional changes not previously reviewed by the State land Planning Agency.

The additional changes not previously reviewed by the State Land Planning Agency relate primarily to the agency comments provided by Miami-Dade County Department of Economic and Regulatory Resources, Miami-Dade County Division of Environmental Resource Management, and the South Florida Water Management District.

ORDINANCE NO. 2015-4

AN ORDINANCE OF THE VILLAGE OF PINECREST, FLORIDA, AMENDING THE VILLAGE'S COMPREHENSIVE DEVELOPMENT MASTER PLAN, ORIGINALLY ADOPTED BY ORDINANCE 1999-04, TO INCORPORATE A NEW CLIMATE CHANGE ELEMENT TO INCLUDE NEW GOALS, OBJECTIVES, POLICIES, MAPS, AND DATA AND ANALYSIS; AND TO IDENTIFY AND ADOPT ADAPTATION ACTION AREAS; PROVIDING FOR ADOPTION; PROVIDING FOR INCLUSION IN THE COMPREHENSIVE DEVELOPMENT MASTER PLAN; PROVIDING FOR TRANSMITTAL OF CERTIFIED COPIES OF THIS ORDINANCE TO THE STATE LAND PLANNING AGENCY AND ALL REQUIRED REVIEWING AGENCIES; AND PROVIDING FOR CONFLICT, SEVERABILITY, AND AN EFFECTIVE DATE.

WHEREAS, the Village Council has developed a strategic plan that identifies Environmental Sustainability as one of its key priorities and outcomes; and

WHEREAS, the Village Council established the Going Green Advisory Committee as a forum to begin the process of information gathering and dissemination with regards to sustainability; and

WHEREAS, the Village of Pinecrest recognizes the general consensus that climate change is occurring, and that greenhouse gas emissions, primarily from the burning of fossil fuels, are increasing in their atmospheric concentrations; and

WHEREAS, it is recognized that these greenhouse gas emissions may be a contributing factor to our changing climate and rising sea levels; and

WHEREAS, the Village has made it a priority to reduce its overall "carbon footprint"; and

WHEREAS, in 2011, the Village of Pinecrest adopted a Green Action Plan to proactively reduce overall greenhouse gas (GHG) emissions by 7% below 1996 levels by 2014; and

WHEREAS, the Village understands that Southeast Florida is vulnerable to sea level rise and other climate change impacts; and

WHEREAS, on April 12, 2011, the Village of Pinecrest committed to joining ICLEI (International Council for Local Environmental Initiatives) - Local Governments for Sustainability as a full member and pledged to take a leadership role in promoting public awareness in the community about the causes and impacts of climate change; and

WHEREAS, the Village Council desires to comprehensively consider and address all impacts of global climate change and to further promote environmental sustainability; and

WHEREAS, the Local Planning Agency and Village Council have reviewed and considered proposed amendments to the Village Comprehensive Development Plan to incorporate a Climate Change Element; and

WHEREAS amendments to the Comprehensive Development Master Plan were prepared in accordance with Chapter 163.3177 Florida Statutes; and

WHEREAS, the Local Planning Agency (LPA) has reviewed the proposed amendments to the Village of Pinecrest Comprehensive Development Master Plan at a public hearing and has forwarded the proposed amendments to the Village Council with a recommendation for approval; and

WHEREAS, the Village Council held a public hearing on December 9, 2014 prior to transmitting the proposed Climate Change Element of the Comprehensive Plan to the Florida State land planning Agency; and

WHEREAS, the Village Council held a second public hearing on April 14, 2015; and

WHEREAS, said public hearings were advertised in accordance with Chapter 163.3184 and Chapter 166.041, Florida Statutes; and

WHEREAS, the Village Council hereby finds it to be in the best interest of the public health, safety and welfare of the citizens to adopt the amendments to the Comprehensive Development Master Plan;

NOW, THEREFORE, BE IT ORDAINED BY THE VILLAGE COUNCIL OF THE VILLAGE OF PINECREST, FLORIDA:

Section 1. Recitals.

The foregoing "WHEREAS" clauses are hereby ratified and confirmed as being true, correct and reflective of the legislative intent underlying this Ordinance and are hereby made a specific part of this Ordinance.

Section 2. Amendment and Adoption.

The amendments to the Goals, Objectives and Policies of the Comprehensive Development Master Plan, attached hereto and incorporated herein as Exhibit "A", are hereby adopted.

Section 3. Inclusion in the Comprehensive Plan.

It is the intention of the Village Council and it is hereby ordained that the amendments to the Village of Pinecrest Comprehensive Plan made by this Ordinance as set forth in Exhibit "A" shall become part of the Village of Pinecrest Comprehensive Development Master Plan, and that the sections of this Ordinance may be renumbered and relettered as necessary, and that the word "Ordinance" may be changed to "Section, "Article" or other appropriate word.

Section 4. Transmittal.

The Village Clerk is hereby directed to transmit the proposed amendments to the Comprehensive Development Master Plan as set forth in Exhibit "A" and the supporting Data and Analysis, which is attached hereto as Exhibit "B", to the

Department of Economic Opportunity of the State of Florida and other appropriate public agencies, and upon adoption of this Ordinance is further directed to ensure that this Ordinance and all other necessary documents are forwarded to the Florida Department of Economic Opportunity and other agencies in accordance with Section 163.3184(3), Florida Statutes.

Section 5. Conflicts.

All ordinances or parts of ordinances and all resolutions or parts of resolutions in conflict with the provisions of this Ordinance are hereby repealed.

Section 6. Severability.

If any section, clause, sentence or phrase of this Ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, the holding shall not affect the validity of the remaining portions of this Ordinance.

Section 7. Effective Date.

The effective date of this plan amendment, if the amendment is not timely challenged, shall be 31 days after the state land planning agency notifies the Village of Pinecrest that the plan amendment package is complete. If timely challenged, this amendment shall become effective on the date the state land planning agency or the Administration Commission enters a final order determining this adopted amendment to be in compliance. No development orders, development permits, or land uses dependent on this amendment may be

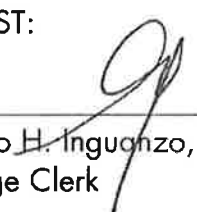
issued or commence before it has become effective. If a final order of non-compliance is issued by the Administration Commission, this amendment may nevertheless be made effective by adoption of a resolution affirming its effective status, a copy of which resolution shall be sent to the state land planning agency.

PASSED on first reading following an advertised public hearing and transmitted to the Florida Department of Economic Opportunity and other required review agencies this 9th day of December, 2014.

PASSED AND ADOPTED on second reading following an advertised public hearing in open and regular session through roll call vote of the Village Council of the Village of Pinecrest, Florida, this 14th day of April, 2015.


Cindy Lerner, Mayor

ATTEST:


Guido H. Inguanzo, Jr., CMC
Village Clerk

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:


Mitchell Bierman
Village Attorney

Note:

~~Strikethrough words~~ are deletions to the existing words in the Comprehensive Plan.
Underlined words are additions to the existing words in the Comprehensive Plan.

Village of Pinecrest
Comprehensive Development Master Plan
Climate Change Element
Goal, Objectives, and Implementing Policies

AN ORDINANCE OF THE VILLAGE COUNCIL OF THE VILLAGE OF PINECREST, FLORIDA, AMENDING THE VILLAGE'S COMPREHENSIVE DEVELOPMENT MASTER PLAN, ORIGINALLY ADOPTED BY ORDINANCE 1999-04, TO INCORPORATE A NEW CLIMATE CHANGE ELEMENT TO INCLUDE NEW GOALS, OBJECTIVES, POLICIES, MAPS, AND DATA AND ANALYSIS; AND TO IDENTIFY AND ADOPT ADAPTATION ACTION AREAS; PROVIDING FOR ADOPTION; PROVIDING FOR INCLUSION IN THE COMPREHENSIVE DEVELOPMENT MASTER PLAN; PROVIDING FOR TRANSMITTAL OF CERTIFIED COPIES OF THIS ORDINANCE TO THE STATE LAND PLANNING AGENCY AND ALL REQUIRED REVIEWING AGENCIES; AND PROVIDING FOR CONFLICT, SEVERABILITY, AND AN EFFECTIVE DATE.

Exhibit "A"

First Reading: December 9, 2014

Second Reading: April 14, 2015



VILLAGE OF PINECREST, FLORIDA

CDMP - CLIMATE CHANGE

PROPOSED AMENDMENT

Village Council

Cindy Lerner, Mayor

Bob Ross, Vice Mayor

Cheri Ball

Doug Kraft

James E. McDonald

Yocelyn Galiano Gomez, ICMA-CM, Village Manager

Guido H. Inguanzo, Jr., CMC, Village Clerk

Mitchell Bierman, Village Attorney

Stephen R. Olmsted, AICP, Planning Director

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Climate Change Element Goal, Objectives, and Implementing Policies

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CHAPTER 9: CLIMATE CHANGE ELEMENT

9-1: CLIMATE CHANGE GOAL, OBJECTIVES AND IMPLEMENTING POLICIES

Goal 9-1: SUSTAINABILITY, RESILIENCY, AND ENERGY EFFICIENCY. Achieve a sustainable, climate resilient community through the promotion of energy efficiency and greenhouse gas reduction strategies; by protecting and adapting public infrastructure, services, natural systems and resources from climate change impacts; and by continuing to coordinate and communicate locally and regionally to monitor and address the changing needs and conditions of the Village of Pinecrest.

Objective 9-1.1: GREENHOUSE GAS EMISSIONS REDUCTION, RENEWABLE ENERGY, PRODUCTION AND DISTRIBUTION. Mitigate the causes of climate change while providing for cleaner energy solutions and a more energy efficient way of life for residents and visitors.

Policy 9-1.1.1: Greenhouse Gas Emission Reduction. The Village of Pinecrest shall mitigate its contribution to global climate change by reducing government operations greenhouse gas emissions to 7% below 1997 levels by 2014. The Village will continue to regularly monitor and track progress of programs and initiatives that contribute to the ultimate reaching of these goals.

Policy 9-1.1.2: Develop Building Standards to Promote Alternative and Renewable Energy Sources. The Village of Pinecrest shall develop building standards that promote increases in the proportion of electricity generated by solar energy sources within the community and shall monitor the initiatives of Miami-Dade County and other regional agencies in the development of other renewable sources for use within South Florida including wind, geothermal and ocean energy technologies.

Policy 9-1.1.3: Work with Legislative Representatives to Reduce Regulatory Encumbrances and Develop Incentives for Renewable and Alternative Energy Installations. The Village of Pinecrest shall, by 2016 promote and support the expansion of alternative and renewable energy from residential, commercial and municipal properties by working with legislative representatives to reduce regulatory encumbrances and to develop incentives for renewable and alternative energy installations.

Policy 9-1.1.4: Continue Expedited Permitting of Alternative Fuel and Electric Vehicle Charging Infrastructure. The Village of Pinecrest shall continue its expedited permitting processes for private installation of alternative fuel and electric vehicle charging infrastructure.

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Policy 9-1.1.5: Require Permeable Driveways. Require new construction, redevelopment, additions, retrofits or modifications of property to incorporate permeable driveways consisting of porous concrete, open cell unit pavers (turf block), flagstone, or brick pavers; reduce total impervious area; and employ other techniques to reduce run-off, capture and reuse rain water, allow the infiltration of water into the underlying soil, and recharge the Biscayne Aquifer.

Objective 9-1.2: MITIGATION, PROTECTION AND ADAPTATION WITHIN THE BUILT ENVIRONMENT. Improve the climate resiliency and energy-efficiency of new and existing buildings and public infrastructure.

Policy 9-1.2.1: Encourage Greener, Climate Resilient Construction. The Village of Pinecrest shall, by 2016, encourage greener, more efficient and climate resilient construction practices locally by:

- a) Building all new construction of village-owned facilities to published Leadership in Energy and Environmental Design™ (LEED) standards; Florida Green Building Coalition (FGBC) green building standards, or Green Building Initiative (GBI) Green Globes rating standards;
- b) Requiring licensed personnel in the Building and Planning Department to maintain LEED Green Associate certification and obtain at least 8 continuing education units (CEUs) of emerging energy efficiency and renewable energy technologies by 2016;
- c) Re-evaluating finish floor elevation standards with respect to projected sea level rise scenarios and flooding potential following completion of a comprehensive stormwater basin master plan.

Policy 9-1.2.2: Complete a Vulnerability Assessment for the Identification of Property and Infrastructure at Risk from Sea Level Rise. The Village of Pinecrest shall complete a vulnerability assessment to further identify property, public investments and infrastructure at risk from sea level rise, storm surge, groundwater contamination and other climate change related impacts by 2016, and shall update this assessment periodically as new sea level rise projections are published. Specifically, the Village shall complete a stormwater vulnerability assessment to further analyze vulnerability to facilities and services, including but not limited to: property; buildings; water and sewer lines; stormwater systems; roads, bridges, and all transportation infrastructure; electric sub stations; and municipal offices and facilities.

Objective 9-1.3: MITIGATION, PROTECTION AND ADAPTATION WITHIN THE TRANSPORTATION SYSTEM. Enhance transportation choices that reduce fossil fuel use, improve the mobility of people, goods and services; provide a diverse, efficient, and equitable

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choice of transportation options; and increase the Village's resiliency to the impacts of climate change.

Policy 9-1.3.1: Minimize Environmental Impacts Associated With Construction of New Roadways. New roadways shall be designed to prevent and control soil erosion, minimize clearing and grubbing operations, minimize storm runoff, minimize exposure and risk of climate change impacts such as increased flood conditions, and avoid unnecessary changes in drainage patterns.

Policy 9-1.3.2: Diversify Fuel Options for Fleet Vehicles. The Village of Pinecrest shall continue to support initiatives which seek to diversify fuel options for fleet vehicles, and expand infrastructure for charging electric and hybrid electric vehicles.

Policy 9-1.3.3: Enhance Bicycle and Pedestrian Mobility. Improve pedestrian and bicycle mobility and connectivity throughout the Village of Pinecrest.

Policy 9-1.3.4: Prepare a Multi-Modal Transportation Plan for the Village of Pinecrest. Complete a multi-modal transportation plan to examine options for traffic calming and expanding availability of mass transit within the Village of Pinecrest.

Policy 9-1.3.5: Complete a Bicycle and Pedestrian Mobility Plan to Enhance Access and Connectivity Adjacent to Pinecrest Parkway. Complete a Bicycle and Pedestrian Mobility Plan for the improvement of pedestrian and bicycle connectivity adjacent to Pinecrest Parkway.

Objective 9-1.4: WATER, SEWER & SOLID WASTE. Coordinate with Miami-Dade County in the improvement of the resiliency of existing water resources, and water and wastewater infrastructure to the impacts of climate variability and change in order to protect future water quality and minimize the potential for flood damage and water shortages while improving energy efficiency and reducing water-related carbon emissions and climate impacts.

Policy 9-1.4.1: Identify Septic Tanks At Risk of Malfunctioning and Causing Contamination. The Village of Pinecrest shall coordinate with the Miami-Dade County Department of Economic and Regulatory and Economic Resources, Division of Environmental Resource Management (DERM) to identify any existing septic tanks that may be currently at risk of malfunctioning due to high groundwater levels or flooding and shall develop programs to abandon these systems and/or connect users to the public sewer system. Properties connected to tidal waters through the Snapper Creek canal, located downstream of the Snapper Creek S-22 Salinity Control Structure shall be considered priority shall be connected to the sanitary collection system as soon as possible to prevent sanitary nuisance conditions and water quality violations and or failure of private septic systems that discharge into the groundwater in this area.

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Policy 9-1.4.2: Identify Wells at Risk of Malfunctioning and Contamination. The Village of Pinecrest shall identify existing water wells that may be currently at risk of malfunctioning or contamination due to high groundwater levels or flooding and shall develop programs to abandon these systems and/or connect users to the public water system.

Policy 9-1.4.3: Complete the Phase III Potable Water Project. Coordinate with Miami-Dade County in the completion of Phase III of the Village's potable water system as necessary to provide potable central water service to all properties in the Village of Pinecrest.

Policy 9-1.4.4: Manage, Reduce and Reuse Stormwater Runoff. The Village shall continue to develop regulations that require new construction, and redevelopment to manage stormwater runoff, incorporate porous materials, reduce total impervious area, and employ other techniques to reduce runoff, capture and reuse rainwater, and recharge the Biscayne Aquifer.

Objective 9-1.5: MITIGATION, PROTECTION AND ADAPTATION WITHIN THE NATURAL ENVIRONMENT. Protect and enhance the Village's natural environment as necessary to maintain a healthy, enjoyable, and climate resilient environment.

Policy 9-1.5.1: Complete a Tree Canopy Survey. The Village of Pinecrest, in cooperation with local academic, governmental and non-profit agencies, shall perform a tree canopy study by 2016 to determine canopy composition and extent, and seek funds to repeat the study every five years in order to measure progress toward the Village's goal of expanding green infrastructure.

Policy 9-1.5.2: Plant Native Trees to Sequester High Levels of Carbon. Pinecrest shall continue to encourage and require the planting of native and other drought tolerant trees known to sequester and store high levels of carbon on available public and private lands, including school and government properties, and conservation lands and shall pursue programs and funding strategies designed to create carbon emission offsets through tree plantings and/or carbon mitigation programs.

Objective 9-1.6: ADAPTATION ACTION STRATEGIES. Develop and implement adaptation strategies for the Village of Pinecrest to address impacts associated with coastal flooding, tidal events, storm surge, flash floods, stormwater runoff, salt water intrusion and other impacts related to climate change or exacerbated by sea level rise with the intent to increase the Village's comprehensive adaptability and resiliency capacities.

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Policy 9-1.6.1: Options. Adaptation Action Areas adaptation strategy options may include but not be limited to:

- a. Protection
- b. Accommodation
- c. Managed Retreat
- d. Avoidance
- e. Other Options

Policy 9-1.6.2: Collaborate with the South Florida Water Management District in the Review of Policies Regarding Operation of Flood Control Structures. Work in collaboration with the South Florida Water Management District to review, develop and implement strategies to address impacts of rising sea levels on and adjust policies related to the operation of the flood and salinity control structures at the S22 and S123 outfalls, and to consider policies and protocol regarding forward pumping as a means of reducing and controlling stormwater flooding levels during periods of inundation.

Policy 9-1.6.3: Backflow Preventers. Consider the installation of backflow preventers on drainage systems that discharge to Biscayne Bay or drainage canals, coordinating with Miami-Dade County DERM as necessary or required.

Policy 9-1.6.4: Reassess the Village's Required Minimum Base Flood Finished Floor Elevation. Consider increasing the minimum required base flood finished floor elevation of all new structures within designated Adaptation Action Areas by one additional foot (freeboard).

Policy 9-1.6.5: Stormwater Drainage Infrastructure. Construct additional stormwater drainage infrastructure necessary to accommodate projected increases in stormwater including drainage wells, injection wells, swales, French drains, and other related structures as recommended in the Village's Stormwater Master Plan.

Policy 9.1.6.6: Collaborate with Governmental Agencies In The Implementation of Mitigation Strategies. Collaborate and coordinate with appropriate local, regional, and state governmental agencies including the City of Coral Gables, Miami-Dade County, the South Florida Water Management District, and the South Florida Regional Planning Council toward the implementation of Adaptation Action Area adaptation strategies.

Policy 9.1.6.7: Consider the Creation and Mapping of a Regulatory Floodway along the Cutler Drain (C-100 canal) and SW 70 Canal. Consider creation and mapping of the floodway to allow the creation and preservation of floodplain storage and future

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flow paths, delineated by the 100 year storm map inundated areas, shown on Figure 10 of the Data, Inventory and Analysis, hereby adopted by reference.

Policy 9.1.6.8: Reduce Chloride Contamination of the Village's Freshwater Aquifer Resources. Amend the Village's Land Development Regulations to prevent excavation of lakes and canals in the Village in instances where such excavations would penetrate the projected 250 parts per million isochlor as the salt front migrates westward along the aquifer base within the Village.

Policy 9.1.6.9: Review the County's established Salt Barrier Line. Coordinate with Miami-Dade County in the review of the Salt Barrier Line as previously established for the segment of the line located between the Village and Biscayne Bay in an effort to determine whether the legislation needs to be amended due to increases in sea level and to help identify measures and improvements necessary to protect against salt water intrusion in the area of the established line.

Objective 9-1.7: ADAPTATION ACTION AREAS. The Village of Pinecrest shall continue to identify and designate Adaptation Action Areas as provided by Section 163.3164(1), Florida Statute, and develop policies for adaptation as required for the protection of areas and facilities in the Village of Pinecrest that are vulnerable to the impacts of rising sea levels and climate change.

Policy 9-1.7.1: Areas For Consideration. Consideration of Adaptation Action Areas designation shall include but shall not be limited to:

- a. Areas which have a hydrological connection to coastal waters and are vulnerable to flooding.
- b. Locations which are within areas designated as evacuation areas for storm surge.
- c. Other areas impacted by stormwater/flood control issues.

Policy 9-1.7.2: Basis For Designation. As the basis for the designation of Adaptation Action Areas, the Village will continue to utilize the best available data and resources such as the Unified Sea level Rise Projection for Southeast Florida in order to identify the risks and vulnerabilities associated with climate change and sea level rise and opportunities to formulate timely and effective adaptation strategies.

Policy 9-1.7.3: Adaptation Action Areas Identified. Those Areas as identified in Figure 11 of the data, Inventory and Analysis, Adaptation Action Areas, that are projected to be impacted by 6 or More Inches of Flooding, are hereby adopted and designated as Adaptation Action Areas.

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Objective 9-1.8: INTERAGENCY COORDINATION. Continue to coordinate with Governmental agencies within the South Florida region and other non-governmental entities and academic institutions in the ongoing assessment of existing and projected conditions related to our changing climate and rising sea levels, and continue to collaborate as necessary in the identification and development of effective solutions and strategies to adapt and improve resiliency.

Policy 9-1.8.1: Continue Coordination with Miami-Dade County and Other Participating Counties in the Identification of Modeling Resources and in the Development of Goals, Objectives, and Policies to Address Climate Change. The Village of Pinecrest shall coordinate with Miami-Dade County and other participating counties in the Southeast Florida Regional Climate Change Compact in the identification of modeling resources and in the development of initiatives and goals to address climate change. Additional climate change related objectives and policies that support regional climate change goals shall be integrated into the Comprehensive Development Master Plan as appropriate.

Policy 9-1.8.2: Continue To Coordinate With Other Governmental and Academic Entities In The Ongoing Analysis of Sea Level Rise. The Village of Pinecrest shall continue to coordinate regionally with Southeast Florida counties and municipalities, academia, and state and federal government agencies in the analysis of sea level rise, drainage, storm surge and hurricane impacts and the planning of mitigation and adaptation measures.

Policy 9-1.8.3: Continue To Monitor And Coordinate With The Southeast Florida Regional Climate Change Compact. The Village of Pinecrest shall continue to actively monitor the Southeast Florida Regional Climate Change Compact, and shall coordinate with neighboring municipalities to make our community more climate change resilient by sharing technical expertise, assessing regional vulnerabilities, advancing agreed upon mitigation and adaptation strategies, and developing policies and programs.

Village of Pinecrest
Comprehensive Development Master Plan

Climate Change Element

Data, Inventory and Analysis

AN ORDINANCE OF THE VILLAGE COUNCIL OF THE VILLAGE OF PINECREST, FLORIDA, AMENDING THE VILLAGE'S COMPREHENSIVE DEVELOPMENT MASTER PLAN, ORIGINALLY ADOPTED BY ORDINANCE 1999-04, TO INCORPORATE A NEW CLIMATE CHANGE ELEMENT TO INCLUDE NEW GOALS, OBJECTIVES, POLICIES, MAPS, AND DATA AND ANALYSIS; AND TO IDENTIFY AND ADOPT ADAPTATION ACTION AREAS; PROVIDING FOR ADOPTION; PROVIDING FOR INCLUSION IN THE COMPREHENSIVE DEVELOPMENT MASTER PLAN; PROVIDING FOR TRANSMITTAL OF CERTIFIED COPIES OF THIS ORDINANCE TO THE STATE LAND PLANNING AGENCY AND ALL REQUIRED REVIEWING AGENCIES; AND PROVIDING FOR CONFLICT, SEVERABILITY, AND AN EFFECTIVE DATE.

Exhibit "B"

First Reading: December 9, 2014

Second Reading: April 14, 2015

CLIMATE CHANGE

Climate Change Element Data, Inventory and Analysis

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CLIMATE CHANGE

CLIMATE CHANGE ELEMENT DATA, INVENTORY AND ANALYSIS

INTRODUCTION

Purpose. The purpose of the Climate Change amendments to the Comprehensive Development Master Plan is to provide a planning framework for addressing the physical, economic, environmental, and social impacts that changes in climate are expected to have on the Village of Pinecrest.

The Village of Pinecrest recognizes the general consensus that climate change is occurring, and that greenhouse gas emissions, primarily from the burning of fossil fuels, are increasing in their atmospheric concentrations. It is recognized that these greenhouse gas emissions may be a contributing factor. The Village understands that Southeast Florida is vulnerable to sea level rise and other climate change impacts and is aware that these impacts will be greater when coupled with significant storm events that may include flooding, hurricanes, and storm surge. As a result of the changes in global and local conditions that are occurring, the Village has made it a priority to reduce its overall “carbon footprint”, and to develop additional strategies to address impacts associated with coastal flooding, tidal events, storm surge, flash floods, stormwater runoff, salt water intrusion, groundwater contamination and other impacts related to global climate change and sea level rise.

On April 12, 2011, the Village of Pinecrest committed to joining ICLEI (International Council for Local Environmental Initiatives) - Local Governments for Sustainability as a full member and pledged to take a leadership role in promoting public awareness in the community about the causes and impacts of climate change. In 2011, the Village of Pinecrest adopted a Green Action Plan to proactively reduce overall greenhouse gas (GHG) emissions by 7% below 1996 levels by 2014.

Goals, objectives, and strategies, based on local data and environmental conditions are included within the Climate Change Element of the Comprehensive Development Master Plan as necessary to address the impacts of climate change. Adoption of a Climate Change Element as an amendment to the Village’s Comprehensive Plan constitutes another important step in protecting the Village of Pinecrest and providing for a more sustainable, and climate resilient community.

Service Area. The proposed amendments are applicable to the Village of Pinecrest. Although the service area is generally confined to the Village of Pinecrest, issues related to climate, natural resources, water resources and flood control impact a larger regional area. The Village encourages adjoining local municipalities to consider these larger regional issues and

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implications in their environmental planning initiatives.

Planning Horizon. The proposed amendments anticipate multiple planning horizons to achieve the goal of a sustainable and climate-resilient community. Actions which were identified as being critical to achieving this mission, and able to be taken in the immediate or short-term (0-5 years) with current village resources, are given the target date of 2015. A few mid-term (0-25 year) goals have been set in the 2020 - 2030 timeframe. A 2060 planning horizon is consistent with the Southeast Florida Climate Change Compact's Regional Unified Sea Level Rise Projection.

DATA AND ANALYSIS

Greenhouse Gas (GHG) Emissions. Global warming and climate change are driven by the amount of greenhouse gases like carbon dioxide (CO₂) in the atmosphere. Human activities such as the burning of fossil fuels and changing of land use patterns are increasing greenhouse gases concentration, thereby trapping more of the sun's radiant heat in the atmosphere and amplifying the natural greenhouse effect. The National Oceanographic and Atmospheric Administration (NOAA) reports that atmospheric carbon dioxide (CO₂), has risen from about 318 parts per million (ppm) in 1958 to 391 ppm in Jan 2011, fueling global warming and climate instability. The Intergovernmental Panel on Climate Change reported in 2007 that the warming of the climate system was unequivocal. That same year, the U.S. Supreme Court deemed greenhouse gases in the atmosphere a threat to the public health and welfare of current and future generations, and mandated the U.S. Environmental Protection Agency (EPA) to regulate the emissions of these six gases under the Clean Air Act: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Within the Village of Pinecrest, a *Community Greenhouse Gas Emission Inventory and Forecast* completed by Reynolds, Smith, Hills in December 2013, indicates the following emissions.

Table 1: 2010 Community GHG Emissions by Sector

	<u>Residential</u>	<u>Commercial</u>	<u>Transportation</u>	<u>Waste</u>	<u>Other</u>	<u>TOTAL</u>
CO ₂ e (metric tons)	55,392	58,799	140,668	995	561	256,414
% of Total CO ₂ e	22%	23%	55%	0.4%	0.2%	100%

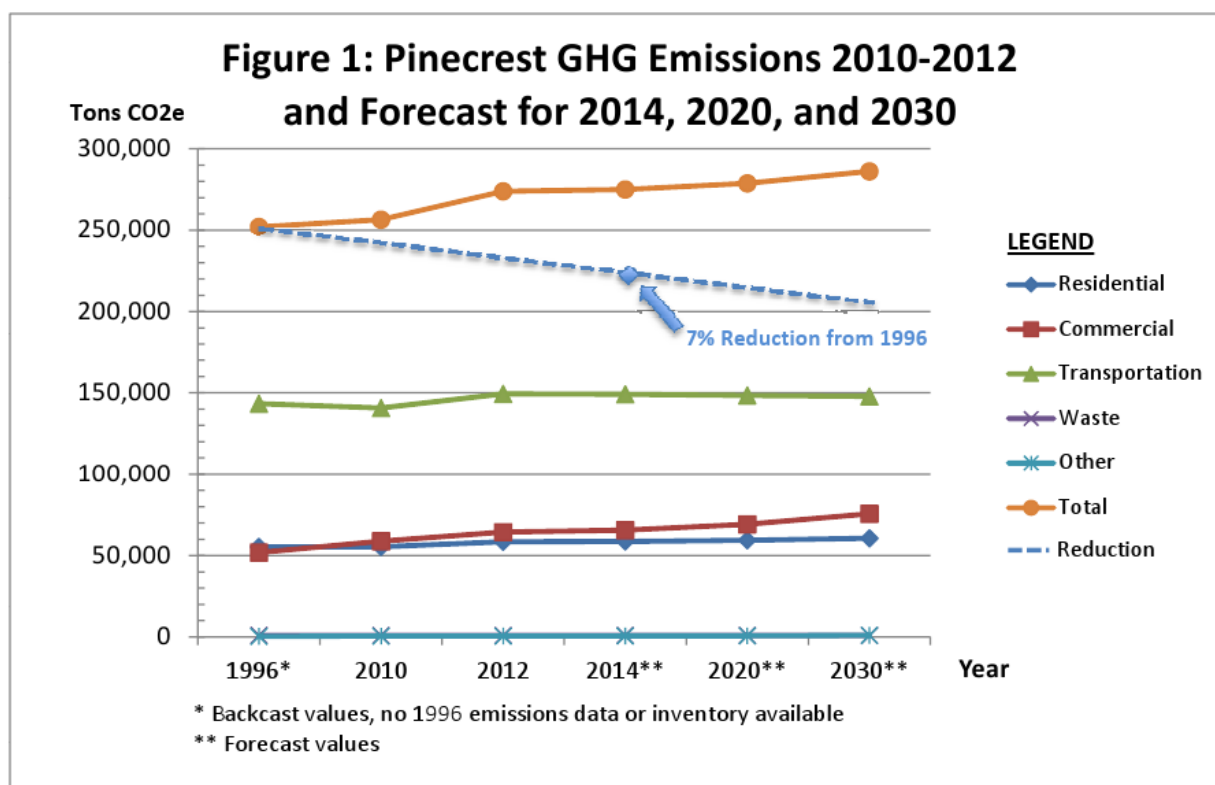
Table 2: 2012 Community GHG Emissions by Sector

	<u>Residential</u>	<u>Commercial</u>	<u>Transportation</u>	<u>Waste</u>	<u>Other</u>	<u>TOTAL</u>
CO ₂ e (metric tons)	58,477	64,454	149,353	957	578	273,819
% of Total CO ₂ e	21%	24%	55%	0.3%	0.2%	100%

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Table 3: 2014 Community GHG Emissions Forecast

	<u>2010</u>	<u>2014</u>	<u>2020</u>	<u>2030</u>	<u>% Chng. 2010-2014</u>
Residential	55,392	58,711	59,418	60,615	6%
Comm./Industrial	58,799	65,613	69,216	75,667	12%
Transportation	140,668	149,067	148,380	147,829	6%
Waste Generation	995	957	957	957	-4%
Other	<u>561</u>	<u>616</u>	<u>742</u>	<u>1,013</u>	<u>10%</u>
TOTAL Tons CO²	256,414	274,727	278,712	286,080	7%



Source: *Community Greenhouse Gas (GHG) Emission Inventory and Forecast for the Village of Pinecrest*, December 19, 2013

CLIMATE CHANGE

ASSESSING THE VILLAGE'S VULNERABILITY TO SEA LEVEL RISE

Sea Level Rise Projection – South Florida. A recent report entitled, *A region responds to Changing Climate*, prepared by the Southeast Florida Regional Climate Change Compact Counties in October 2012, indicates that sea levels are projected to rise in South Florida within a range that extends from 9 to 24 inches by the year 2060. This projection is based upon Key West tidal data collected from 1913-1999. Two key planning horizons are highlighted within the report: 2030 when sea level rise is projected to be 3-7 inches and 2060 when it is projected to be 9-24 inches.

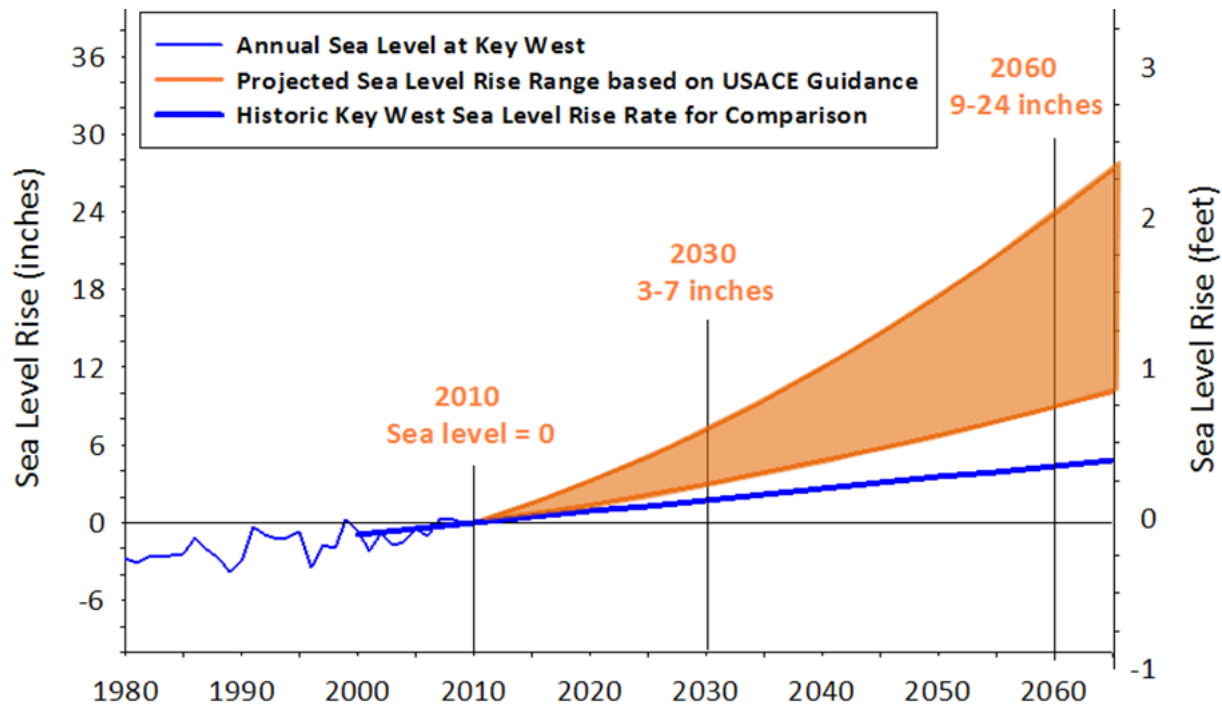


Figure 2: A Unified Sea Level Rise Projection for Southeast Florida (2011)

Source: *A Region Responds to a Changing Climate*, Southeast Florida Regional Climate Change Compact Counties, October 2012. This projection uses historic tidal information from Key West and was calculated by Kristopher Esterson from the United States Army Corps of Engineers using USACE Guidance (USACE 2009) intermediate and high curves to represent the lower and upper bound for projected sea level rise in Southeast Florida.

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Projected rise in sea levels will cause inundation in all of the Compact counties, although the extent of potential impacts varies across the region due to differences in land elevation and topography.

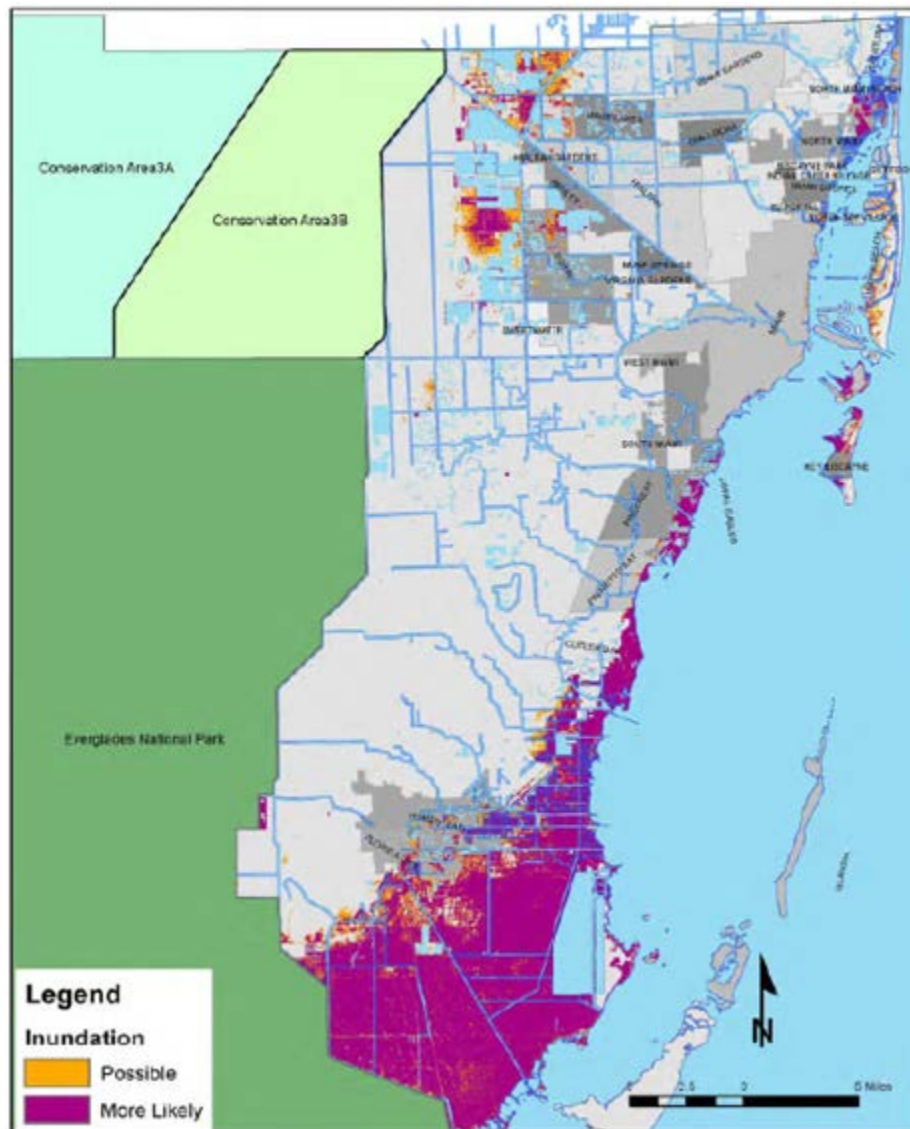


Figure 3: Miami-Dade County Inundation – 2-foot Rise in Sea Level (2060)

Source: Analysis of the Vulnerability of Southeast Florida to Sea Level Rise, August 2012

CLIMATE CHANGE

The southernmost counties are expected to experience the greatest direct impacts, with lessening impacts as one travels northward. Nearly 80 percent of the lands that would potentially be affected regionally by a one-foot rise in sea level are conservation lands including coastal wetlands. Low lying natural systems made up of mangrove and wetlands are significantly impacted in all sea level rise scenarios.

Sea Level Rise and Inundation Mapping – Village of Pinecrest. Although Figure 3 above, as indicated within the *Analysis of the Vulnerability of Southeast Florida to Sea Level Rise*, does not indicate any loss of property due to permanent inundation in the Village of Pinecrest, the areas of indicated inundation are expected to **be** more severe with associated impacts of storm surge that may occur with a hurricane or the impacts of significant rainfall as would occur with a major storm event.

While Pinecrest is not located immediately adjacent to the Atlantic shoreline, rising sea levels are expected to impact canals, rivers and primary drainage systems within Miami-Dade County and the Village of Pinecrest. As the capacity of primary and secondary drainage systems is compromised, flooding will become more severe during storm events. Areas of flooding within the Village are expected to become progressively more widespread and slower to subside as sea level increases as projected.

Additional analysis completed and provided by ADA Consultants in conjunction with preparation of a Stormwater Drainage Master Plan for the Village of Pinecrest shows more detailed, location-specific impacts of sea level rise for the Years 2030 and 2060. Completion of the stormwater master plan is scheduled to occur in June 2015.

A series of six maps have been prepared by ADA Consultants in conjunction with preparation of the Village's Stormwater Master Plan. Sea level predictions for the years 2030 and 2060 were selected. The 2030 projection indicates the sea level will rise an additional 3 to 7 inches above current levels by the year 2030 and continue to rise to a level of 9 to 24 inches above current levels by the year 2060. Simulations using the 2014 XP-SWMM Baseline Model were completed by implementing maximum predictions of 7 and 24 inches for the years 2030 and 2060 respectively. These conditions for these two periods were then further analyzed and mapped assuming a 5-year and 100-year storm event respectively.

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Year 2030 Planning Horizon

Projected Maximum Sea level Rise - 7 Inches. A projected rise in sea level of 7 inches by the year 2030 will not cause any appreciable inundation beyond current conditions during periods of dry weather.

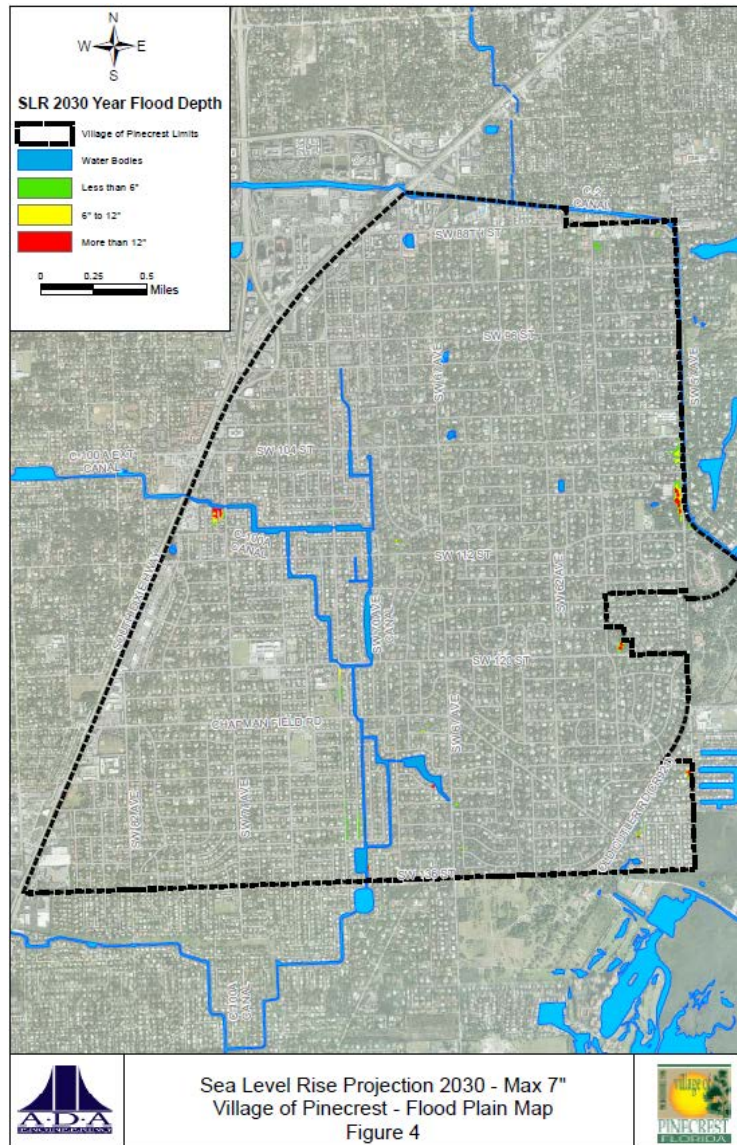


Figure 4: Sea Level Rise Projection – Maximum 7 inches (2030) – Dry Conditions

CLIMATE CHANGE

A rise in sea level of 7 inches coupled with a 5-year storm will cause flooding of 6 inches or more in the southwestern portion of the Village, west of SW 77 Avenue.

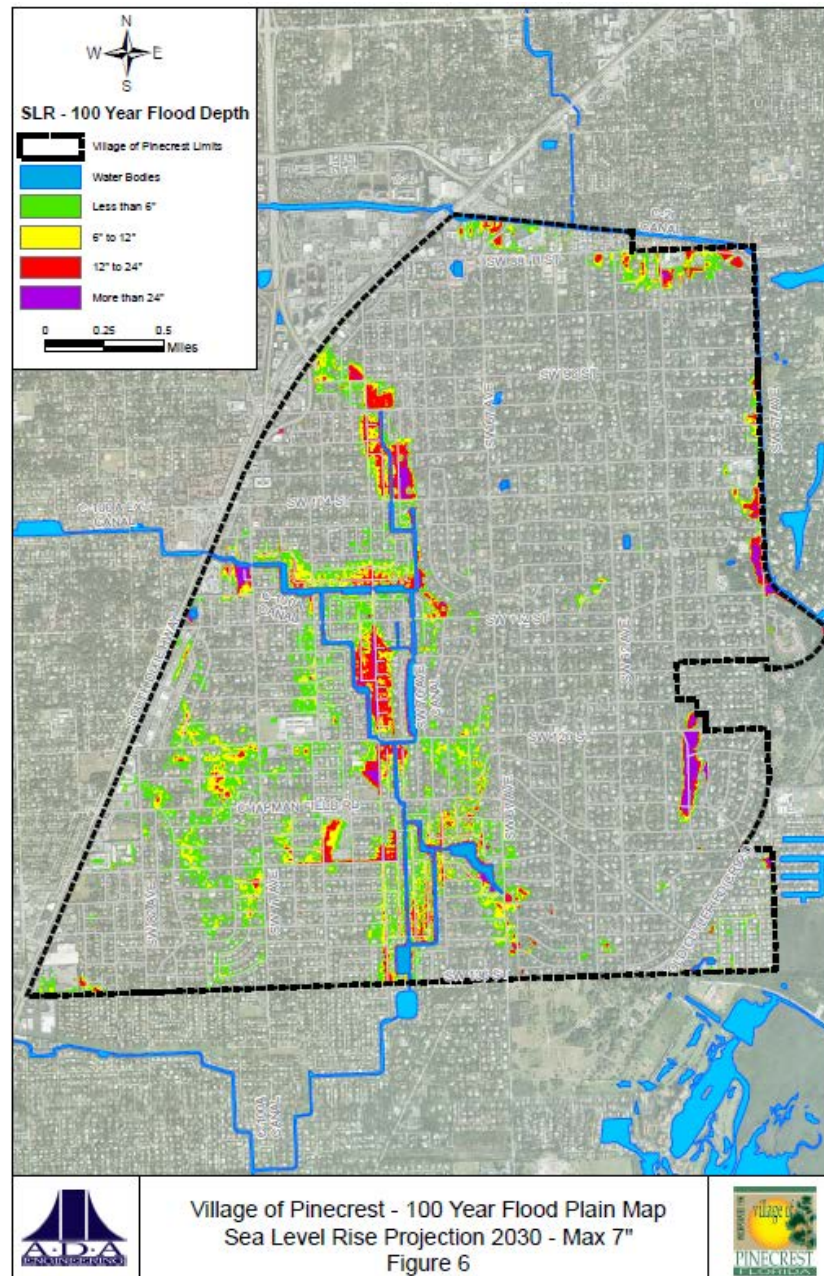


Figure 6: Sea Level Rise Projection – Maximum 7 inches (2030) – 100 Year Flood

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Flooding of more than 12 inches is projected to occur at the northeast quadrant of SW 104 Street and SW 77 Avenue; on the west side of SW 57 Avenue between SW 104 Street and SW 111 Street; adjacent to Pine Needle Lane, south of SW 120 Street; within Pinecrest by-the-Sea; and adjacent to the Village's canals and lakes.

Flooding during a more severe 100-year storm event will cause flooding in a larger overall area as shown in Figure 6. Areas of the Village that will experience the most severe impacts include the following:

- West of SW 72 Avenue
- SW 88 Street and SW 57 Avenue
- SW 57 Avenue/Red Road
- Pinecrest by-the Sea
- Pine Needle Lane
- Both sides of the canal between SW 98 Street and SW 104 Street

Year 2060 Planning Horizon

Projected Maximum Sea level Rise – 24 Inches. As sea level rises to its maximum projected level of 24 inches by the year 2060, areas of inundation remain limited in the absence of a storm event, although the capacity of the soil to absorb rain water will continue to diminish. During periods of dry weather, areas of inundation as shown in Figure 7 appear to be limited to the northeast area of the Village adjacent to SW 88 Street and SW 57 Avenue, and the northwest corner of SW 57 Avenue and SW 111 Street.

In the year 2060, assuming a 24-inch rise in sea level as projected in the U.S. Army Corps of Engineers model, flooding becomes readily apparent during periods of heavy rainfall.

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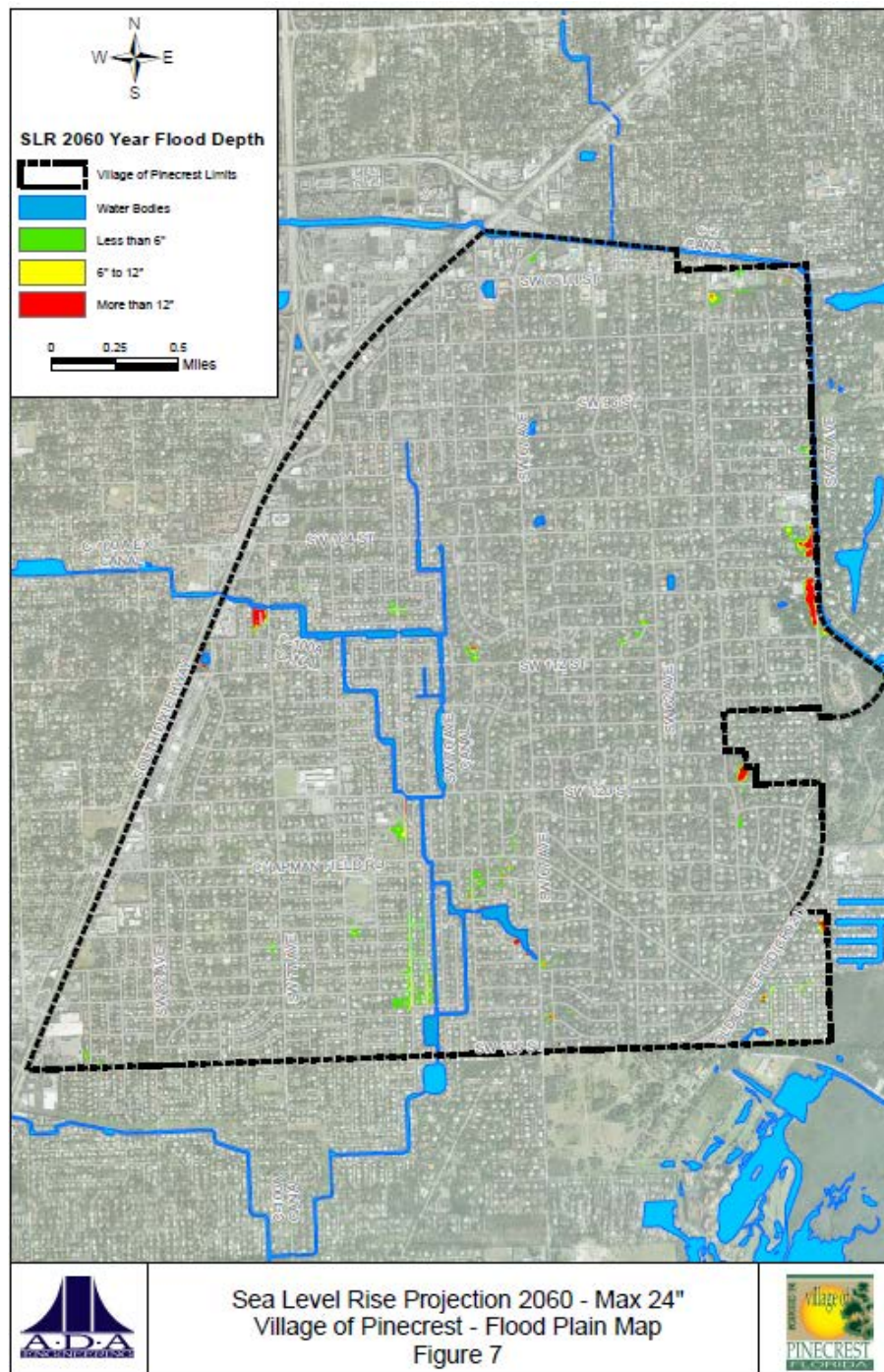


Figure 7: Sea Level Rise Projection– Maximum 24 inches (2060) – Dry Conditions

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Areas subject to flooding in the Year 2060, assuming a rise in sea level of 24 inches, are shown in Figures 8 (5-Year Storm) and 9 (100 Year Storm) below.

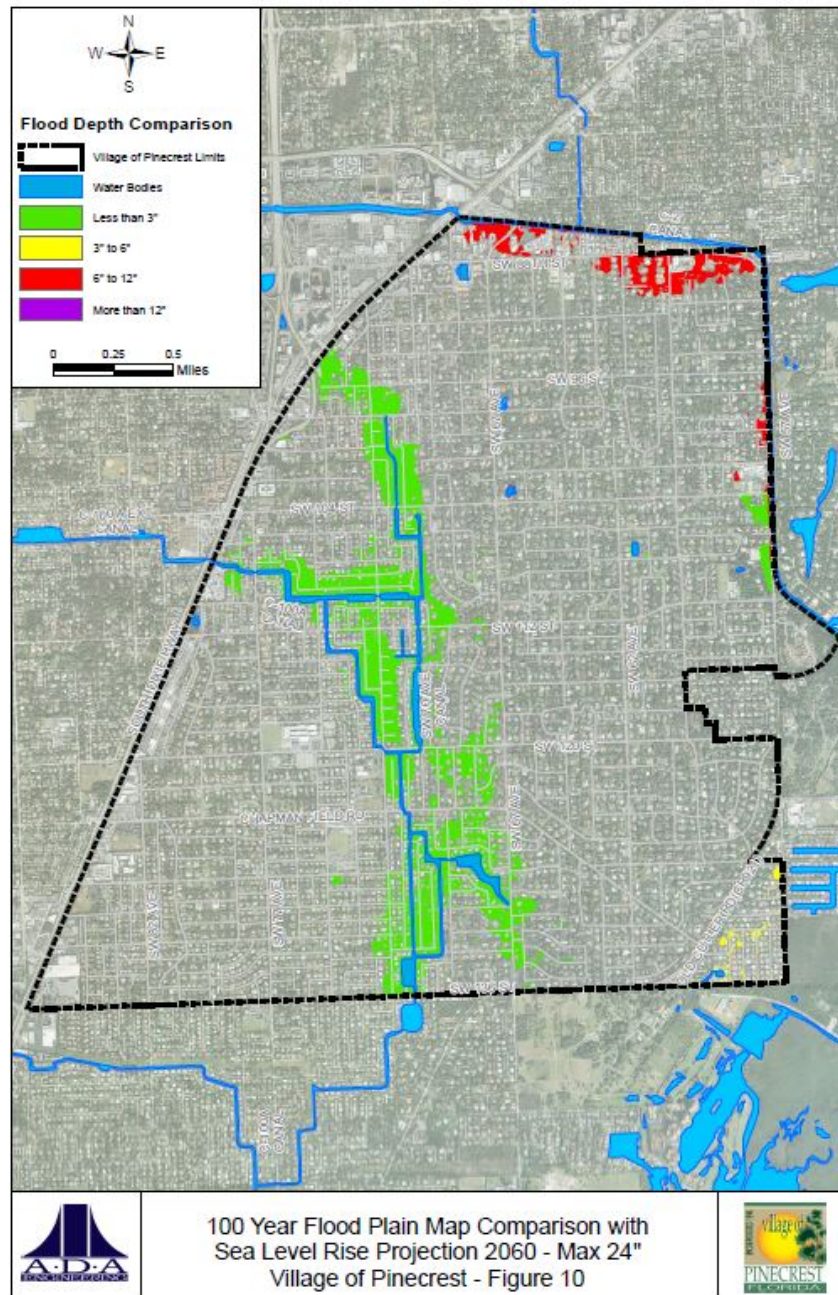


Figure 8 – Sea Level Rise Projection – Maximum 24 inches (2060) – 5 Year Flood

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During a 5-year rain event, flooding of 6 to 12 inches is again indicated west of SW 77 Avenue; adjacent to the Village's canals; and throughout Pinecrest by-the-Sea. Flooding of more than 24 inches is projected to occur north of SW 104 Street, east of SW 72 Avenue; in the areas adjacent to Pine Needle Lane; and in the area on the west side of SW 57 Avenue/Red Road, north of SW 111 Street.

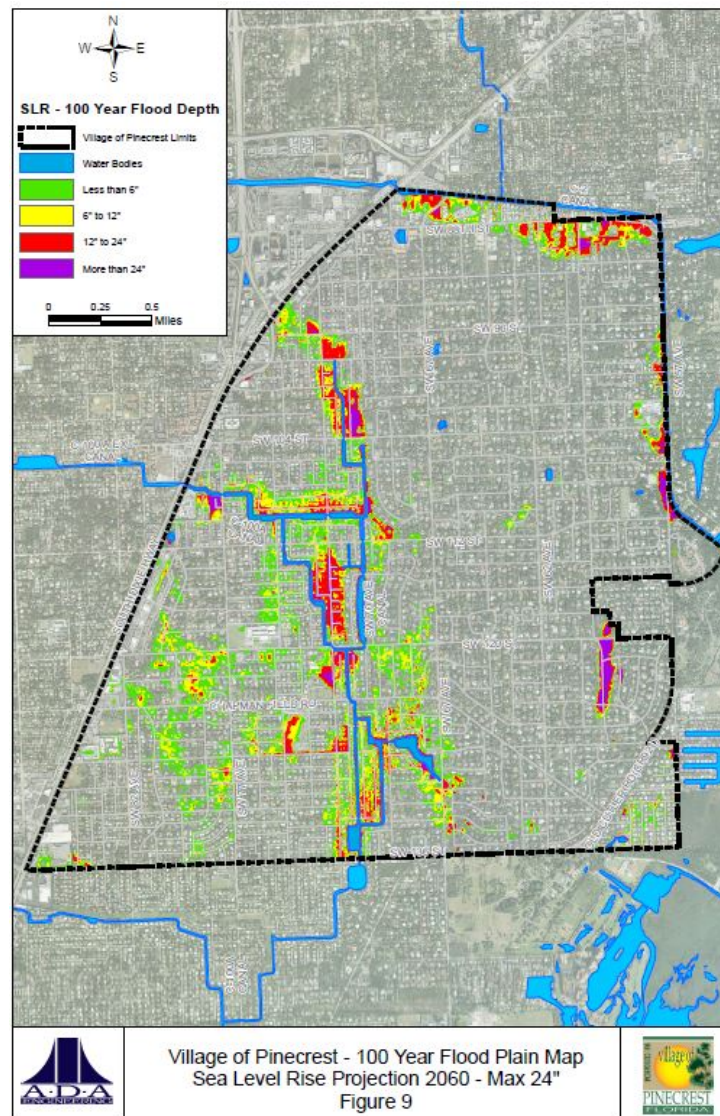


Figure 9 - Sea Level Rise Projection - Maximum 24 inches (2060) - 100 Year Flood

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The impacts of rising sea levels and climate change will be the most widespread during a 100 year storm event. In the year 2060, when sea level is projected to have risen by a maximum of 24 inches, the most extensive flooding during a 100 year storm event will occur in those areas shown Figure 9. A comparison between the current extent of flooding with a 100 year storm event with the depth of flooding produced by the same storm event and 24 inches of projected sea level rise is shown in Figure 10.

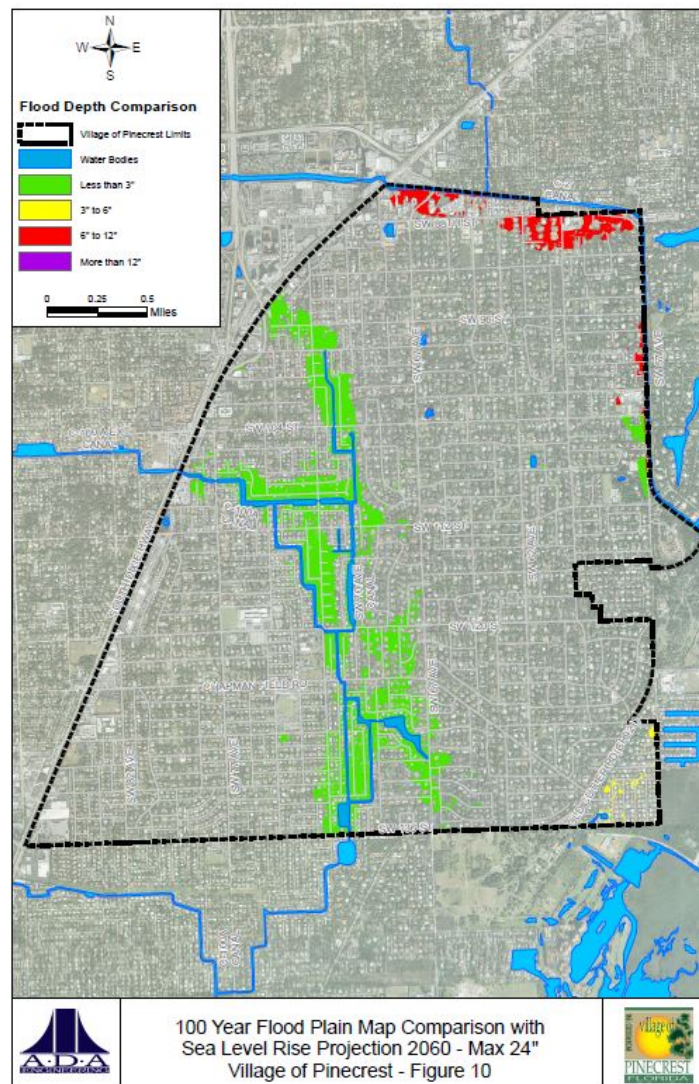


Figure 10 - Sea Level Rise Projection – 100 Year Flood Event - Net Additional Flood Depth 2014-2060

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The majority of the Village will be impacted except that area between SW 60 Avenue and SW 67 Avenue. Areas most heavily impacted include:

- West of SW 67 Avenue, south of SW 104 Street
- SW 88 Street
- SW 57 Avenue/Red Road
- Pine Needle Lane
- Pinecrest by-the Sea
- Area east and west of SW 72 Avenue, between SW 94 Street and SW 104 Street

MITIGATION

Changes in climate and associated rises in sea level are based on the model provided in Figure 2, *A Unified Sea Level Rise Projection for Southeast Florida (2011)* which was derived based on historic tidal information from Key West and calculations of the United States Army Corps of Engineers using USACE Guidance (USACE 2009). It is important that the projections be monitored on an annual basis and adjusted accordingly using the most recent actual data available.

Continued monitoring of projected rises in sea level should be carried out throughout the planning period and updated periodically throughout the planning period. Completion of periodic vulnerability assessment analyses will allow for monitoring of changing conditions and adjust strategies as warranted. Strategies that are available to mitigate the projected impacts of sea level rise include the following:

- Work in collaboration with the South Florida Water Management District to review and adjust policies related to the operation of the flood and salinity control structures at the S22 and S23 outfalls.
- Consider the installation of backflow preventers on drainage systems that discharge to Biscayne Bay or drainage canals.
- Consider increasing the minimum required base floor elevation of all new structures within designated Adaptation Action Areas by one additional foot (freeboard).
- Construct additional stormwater drainage infrastructure necessary to accommodate projected increases in stormwater including drainage wells, injection wells, swales, French drains, and other related structures as recommended in the Village's Stormwater Master Plan.

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ADAPTATION ACTION AREAS

Florida Statutes. Chapter 163, Section 163.3164 (1) of the Florida Statutes defines an “Adaptation Action Area” as an area or areas that *“experience coastal flooding due to extreme high tides and storm surge and that are vulnerable to the related impacts of rising sea levels for the purpose of prioritizing funding for infrastructure needs and adaptation planning”*.

Consideration for Adaptation Action Areas may include, but not be limited to:

- a. Areas which experience tidal flooding
- b. Areas which have a hydrological connection to coastal waters **and are vulnerable to flooding**
- c. Locations which are within areas designated as evacuation zones for storm surge
- d. Other areas impacted by stormwater/flood control issues

Adaptation Action Areas strategy options may include, but not be limited to Protection; Accommodation; Managed Retreat; Avoidance; and Other Options.

Based on the analysis of projected flooding and other associated impacts of sea level rise in the Village of Pinecrest, strategies encompassing protection and accommodation have the potential for being most beneficial.

Village of Pinecrest. Within the Village of Pinecrest, the areas most vulnerable to sea level rise are indicated in Figure 9. An additional map and analysis, Figure 11, identifies the “Adaptation Action Areas” that are expected to experience the greatest extent of flooding given 24 inches of sea level rise as projected, coupled with a 100-year flood event.

Water and Sewer Service

As of June 2014, there were 1,472 homes in the Village of Pinecrest receiving potable water from individual on-site wells, not connected to the Miami-Dade County Water System. Additionally, as shown in Figure 11, below, the majority of the Village of Pinecrest is served by on-site septic tanks. As water levels continue to increase as projected, it is expected that septic tanks will become inundated which could potentially cause contamination of nearby on-site water wells. Extension of central water lines into those areas projected to experience the greatest levels of flooding will be critical to the supply of clean and sanitary potable water to the residents within them. Additionally, as water levels continue to rise in those areas indicated in Figure 11, it is

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expected that the ability to continue to use individual on-site septic tanks will become compromised. Accordingly, extension of sewer lines into those areas prone to future flooding and inundation will need to be considered evermore critically as sea level continues to rise.

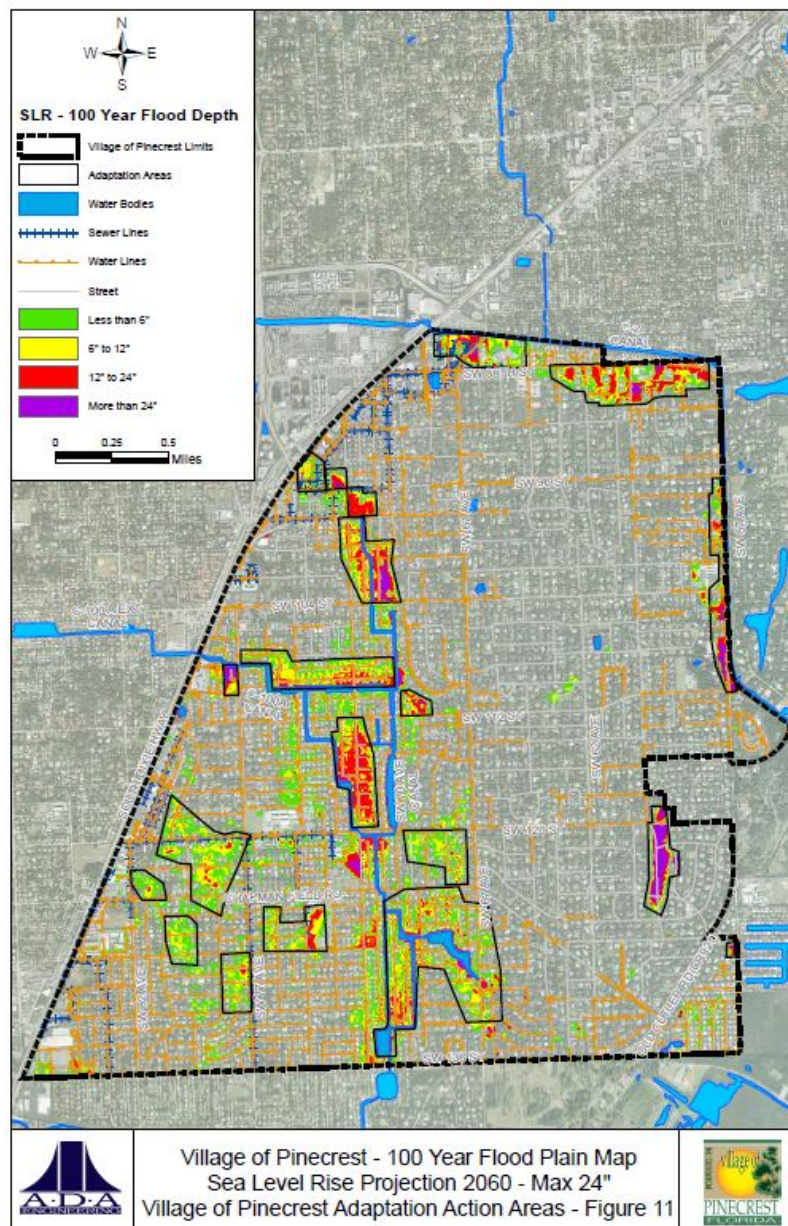


Figure 11 – Adaptation Action Areas – Areas with 6 or more Inches of Flooding