


Light blue - Short-term (1-3 yrs.) recommendations
 Light yellow - Medium-term (3-5 yrs.) recommendations
 Light pink - Long-term (>5 yrs.) recommendations

Implementation Matrix

 Habitat Recommendations									
Recommendation		STAR Identifier	Overlap with Current Sustainability Plan	Comprehensive Plan	Code of Ordinances	Budget/Capital Improvements Element	Timeframe	Funding Opportunity	Additional Notes
H.1	Update Stormwater Master Plan to include sea level rise assumptions and incorporate green infrastructure features as a priority.	NS-1(7)	Land, bullet #7	Update to Policy 1-4.5.1 in Future land Use Element to specify funding allocation for green infrastructure investments	New regulation in Chapter 30, Article VII, Division 4	Budgetary Implication	Short Term (1-3 yrs.)	Wildlife Conservation Society's Climate Adaptation Fund	
H.2	Conduct a habitat analysis to document species, condition, size and location of trees within the Village. Focus particular attention on identifying priority areas where die-backs may be occurring in upland vegetation or habitat shifts with greater tolerance to tidal inundation. Also identify areas where up-gradient movement of natural tidal communities can occur (proximate to buttonwoods and mangroves). The inventory can serve as a tool to identify opportunities for strategy implementation as well as create a baseline to monitor changes over time.		Land, bullet #1 Land, bullet #3 Land, bullet #9			Budgetary Implication	Short Term (1-3 yrs.)	Florida Urban and Community Forestry Grant Program	
H.3	Identify the areas where living shorelines are most appropriate and develop guidance for implementation, monitoring, and evaluation taking into account future sea level rise projections and storm events.			Update to Objective 5-1.2 in Coastal Management Element		Budgetary Implication	Short Term (1-3 yrs.)	NOAA's Coastal and Marine Habitat Restoration Grant Program	
H.4	Update requirements for ecological buffers (which may include increases depending on habitat type) and provide guidance on how to establish or adjust these buffers to accommodate sea level rise including the concept of "habitat migration corridors" that allow sensitive habitats and species to migrate inland or upland as sea level rises.			Update to Policy 4-3.2.5 in Public Facilities Element or Policy 6-1.6.1 in Conservation Element	New regulation (Section) in Chapter 30, Article VII, Division 4		Short Term (1-3 yrs.)		
H.5	Discourage the use of hard protection unless no other feasible alternative is available and require enhanced mitigation if it is not. Require any hard protection or mitigation designs be adapted to changing sea level and require monitoring of impacts over time.			Update to Policy 5-1.1.5 and 5-1.1.7 in Coastal Management Element to address designing for future sea level rise and monitoring of impacts	Amendment to Article VII, Division II, Section 30-1545 to include stronger language precluding hard protection		Medium Term (3-5 yrs.)		
H.6	Specify priority areas where hard shoreline protection structures should be removed (through property owner incentives), including areas where structures threaten the survival of wetlands and other habitat, or beaches, trails, and other recreational areas.			Update to Objective 5-1.2 in Coastal Management Element	New regulation (Section) in Chapter 30, Article VII, Division 2		Medium Term (3-5 yrs.)		

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H.7	Identify vulnerable habitats and open space for prioritized land acquisition and maintenance. The ability of a parcel to provide a means for sea level rise adaptation should be a criterion for acquisition. Rank higher properties that may allow landward migration of wetlands than properties that are currently or predicted to be inundated as waters rise.		Land, bullet #7	Update to Policy 1-4.5.1 in Future Land Use Element	New regulation in Chapter 30, Article VII, Division 4	Budgetary Implication	Medium Term (3-5 yrs.)		
H.8	Identify and map natural inundation buffers which could also provide sea level rise adaptation benefit.				New Division in Chapter 30, Article VII	Budgetary Implication	Medium Term (3-5 yrs.)	FDEP Coastal Partnership Initiative	
H.9	Add policies to require site-specific evaluation of potential sea level rise impacts to archeological and paleontological resources on a development site. This would include those, but not be limited to those, listed on the Historic Resources Survey list.			Update to Policy 5-1.13.1 of the Coastal Management Element			Medium Term (3-5 yrs.)		
H.10	Identify areas for habitat maintenance where the removal of exotics could improve the quality of that area to serve as a natural or soft protection option. Establish a maintenance schedule that factors in the benefits of managing habitat as a natural defense strategy against sea level rise impacts.					Budgetary Implication	Medium Term (3-5 yrs.)		
H.11	Identify impacts to public access and recreation that might result from sea level rise and maintain existing public access and visitor serving amenities so they are protected with maximum public access.			New Policy in Objective 7-1.1 of Recreation and Open Space Element		Budgetary Implication	Medium Term (3-5 yrs.)		
H.12	Identify and protect "core areas" within the Village with the best chances of persistence during sea level rise and perform intensive management of these areas and ex-situ conservation strategies which may include species relocation. Specific areas should focus on hammocks, beach areas and shorelines that may be stabilized considering impacts to listed species.					Budgetary Implication	Medium Term (3-5 yrs.)		
H.13	To further reduce the impacts of stressors on the natural system, create additional or more aggressive policies to reduce the use of pollutants and runoff entering natural systems and the marine system. Enhance education efforts on the benefits of improving water quality and the relationship between environmental stressors and exacerbated impacts from sea level rise.	NS-5(2)		Revision to Policy 1-4.5.4 in Future Land Use Element or Policy 6-1.5.1 in Conservation Element to include reducing chemical runoff	New regulation (Section) in Chapter 30, Article VII, Division 4 or 8		Long Term (>5 yrs.)	FDEP Section 319 Water Quality Grant; Clean Water State Revolving Fund	
H.14	Review and revise as necessary existing species and habitat impact avoidance, minimization, mitigation, and compensation standards and develop new standards as necessary to address impacts in a manner that incorporates climate change considerations. Prioritize replacement of vegetation standards related to "core areas" identified in H.12 above.				Update to Chapter 30, Article VII, Division 4, Section 30-1613		Long Term (>5 yrs.)		

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H.15	Incorporate factors to consider sea level rise in habitat management and mitigation plans, for example impacts in right of ways. Comment on updates to Management Plans for State Parks regarding the projected impacts of sea level rise on those resources.			Update to Objective 5-1.6 in Coastal Management Element			Long Term (>5 yrs.)	
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Infrastructure & Built Environment

Infrastructure and Built Environment Recommendations

Recommendation		STAR Identifier	Overlap with Current Sustainability Plan	Comprehensive Plan	Code of Ordinances	Budget/Capital Improvements Element	Timeframe	Funding Opportunity	Additional Notes
I.1	Improve data related to properties and infrastructure facilities including digitizing all building footprints and linking flood elevation certificate information where available (finished flood elevations). Maintain a GIS database of all facilities and infrastructure.					Budgetary Implication	Short Term (1-3 yrs.)		
I.2	Identify key segments and other road segments for retrofits with coordinating agencies or in the Capital Improvements Element. Develop database of real-time flood impacts to road segments providing anecdotal evidence that will serve as the basis for more detailed survey-based analysis if necessary.					Budgetary Implication	Short Term (1-3 yrs.)		
I.3	Establish adaptation action areas or zoning overlays where enhanced or higher elevation and additional design criteria will be developed to protect infrastructure (such as water and wastewater) and development. Periodically revisit criteria as certain sea level rise milestones or thresholds are approached (by year or by level of rise).			New Goal or Policy in Coastal Management Element			Short Term (1-3 yrs.)		
I.4	Establish triggers for retrofit, relocation or removal of a structure impacted by changing site conditions such as when erosion is within a certain distance of the foundation; when monthly high tides are within a certain distance of the finished floor elevation; or when a setback decreases to a certain width. Consider the following concepts in development and redevelopment principles: <ul style="list-style-type: none"> • Address sea level rise in “non-conforming” structure policies; • Address sea level rise in redevelopment or replacement of existing structures; 			Update to Objective 1-2.2 in Future Land Use Element			Short Term (1-3 yrs.)		

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Implementation Matrix

	<ul style="list-style-type: none"> Use rolling easements in property development and redevelopment strategy; Enhance Transfer of Development Rights program parameters to account for sea level rise impacts by directing growth to land outside of potentially vulnerable areas. 								
I.5	Explore funding and grant opportunities for voluntary acquisition programs or voluntary retrofit programs. Consider the need for user-based assessments for capital or neighborhood retrofits where needed.						Short Term (1-3 yrs.)		
I.6	Incentivize new “resiliency” construction standards such as Resilience STAR™ (U.S. Department of Homeland Security), the Institute for Business and Home Safety’s FORTIFIED Home™, FORTIFIED Commercial, FORTIFIED Safer Business, FORTIFIED for Safer Living® or RELi standards. Other systems related to infrastructure project analysis include Envision and Infrastructure Voluntary Evaluation Sustainability Tool (“INVEST”).			Update to Coastal Management Element Objective 5-1.6	Update to Chapter 6 or Chapter 30		Short Term (1-3 yrs.)		
I.7	To address the compounding impacts of poor water quality with sea level rise, update any required best management practices for water quality improvement such as those that provide greater infiltration/inflow of rainwater, increased stormwater capture and/or water recycling programs, the use of low impact on natural retention strategies development, improved maintenance procedures for public sewer mains, policies to address impaired private sewer laterals, and other proactive measures.		Stormwater, bullet #5	Update to Policy 6-1.5.1 in Conservation Element		Budgetary Implication	Short Term (1-3 yrs.)	South Florida Water Management District Cooperative Funding Program	
I.8	Update Landscape Manual and landscaping requirements in the Code to more specifically require water conservation efforts in private landscaping within the Village.				Update to Chapter 30, Article V, Division 6, Section 30-825 and 826	Budgetary Implication	Medium Term (3-5 yrs.)		
I.9	Draft an ordinance to address natural forces’ degradation and damage to public roads, streets, highways, bridges, sidewalks, curbs and curb ramps, crosswalks, bicycle ways, hiking and walking paths and trails, underpasses, overpasses, and other improved public rights-of-way used for travel and recreation or other appropriate infrastructure.				Update to Chapter 30, 34 or 50		Medium Term (3-5 yrs.)		
I.10	Conduct a comprehensive review of the Code for potential improvements to address future flood risk. For example, add a provision to the Residential and Nonresidential Building Permit Allocation Evaluation Criteria and Awards related to future flood risk. The provision could incentivize elevation above base flood elevation and design of property serving infrastructure and mechanical systems that factor in future flood risk.				Update to Chapter 30, Article IV, Division 11, Section 30-476		Medium Term (3-5 yrs.)		

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I.11	Work with FDOT to develop site surveys of road bed elevation and, as appropriate, suggest engineering designs to raise portions of U.S. Highway 1 that currently show vulnerability to nuisance tidal flooding by 2030.			Update to Intergovernmental Coordination Element Objective 8-1.4		Budgetary Implication	Long Term (>5 yrs.)		
I.12	Utilize the tidal flood vulnerability maps for roads as a guide for a public outreach campaign to develop a photographic record that documents the date, time, and severity of nuisance tidal flooding events.					Budgetary Implication	Long Term (>5 yrs.)		



Village Buildings and Key Facilities

Village Buildings and Key Facilities Recommendations

Recommendation		STAR Identifier	Overlap with Current Sustainability Plan	Comprehensive Plan	Code of Ordinances	Budget/Capital Improvements Element	Timeframe	Funding Opportunity	Additional Notes
VB.1	Consider sea level rise impacts in capital planning by identifying critical assets (habitat and infrastructure) over time through enhanced data sets and field observations to continually plan for managed relocation of at-risk facilities, and/or other measures to ensure continuity of at risk assets. When risk is identified, consider repair and maintenance, elevation or spot-repair of key components, or fortification of structures where needed including when to consider managed retreat rather than continue with repairs and maintenance in light of sea level rise.			New Goal or Policy in Capital Improvements Element		Budgetary Implication	Short Term (1-3 yrs.)		
VB.2	Conduct detailed site-level flood exposure audits for the wastewater pump station facility at 142 Sunshine Blvd. and the Islamorada Wastewater Treatment Plant to determine above ground elevations and, as appropriate, structural flood resistance for electronics and mechanical components. Develop detailed GIS datasets, including bottom of invert elevation for access and junction points, to support site-level vulnerability assessments of underground wastewater infrastructure within the Village of Islamorada.					New Budget Item	Short Term (1-3 yrs.)	FEMA's Pre-Disaster Mitigation Grant Program; FEMA's Hazard Mitigation Grant Program; FEMA's Flood Mitigation Assistance Program	
VB.3	Develop long-term flood resilience alternatives for Fire Station #19, located at 74070 Overseas Highway (close coordination with FDOT will be required to ensure transport access to this facility is maintained).					New Budget Item	Short Term (1-3 yrs.)		
VB.4	Development and maintenance of recording protocols and, as necessary, engineering assessments to assess resilience of below-grade pipes and pump infrastructure to increased saltwater incursion associated with sea level rise.					New Budget Item	Short Term (1-3 yrs.)		

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VB.5	Develop and maintain a comprehensive GIS-based inventory that includes building footprints, finished first floor elevation data, and elevations of accessory electrical equipment for all existing critical infrastructure and Village of Islamorada facilities.					Budgetary Implication	Short Term (1-3 yrs.)		
VB.6	Link energy efficiency upgrades to capital asset improvements, renovations, or additions.		Energy, bullet #1 Energy, bullet #2		New Article in Chapter 34 or New Division in Chapter 30, Article VII to address energy		Short Term (1-3 yrs.)		
VB.7	Conduct American Society of Heating, Refrigerating, and Air-Conditioning Engineers Level I or Level II energy audits on Village facilities to identify energy conservation measures.					Budgetary Implication	Short Term (1-3 yrs.)	Energy Foundation	
VB.8	Optimize planning, management and maintenance of Village assets to reduce GHG emissions.			New Goal in Public Facilities Element focused on GHG reductions or energy conservation	New regulation (article) in Chapter 34 on Energy Conservation		Short Term (1-3 yrs.)		
VB.9	Negotiate terms to allow for Village to purchase plug-in electric or plug-in hybrid vehicles.		Transportation, bullet #3				Short Term (1-3 yrs.)	Energy Foundation	
VB.10	Conduct feasibility studies for alternative energy at Village facilities.					Budgetary Implication	Short Term (1-3 yrs.)	Energy Foundation	



Adaptation Strategies for Homes and Businesses Recommendations

Recommendation	STAR Identifier	Overlap with Current Sustainability Plan	Comprehensive Plan	Code of Ordinances	Budget/Capital Improvements Element	Timeframe	Funding Opportunity	Additional Notes
AS.1		Other, bullet #2	New Climate Change Element or Update to Coastal Management Element Objective 5-1.6	New Division in Chapter 30, Article VII on Climate Change	Budgetary Implication	Short Term (1-3 yrs.)		
AS.2					Budgetary Implication	Short Term (1-3 yrs.)	FDEP Coastal Partnership Initiative; FEMA's Hazard Mitigation Grant Program; FEMA's Flood Mitigation Assistance Program	

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	over the course of several years will not only raise public awareness about any increase in tidal flood issues, but will also provide critical data that can inform future decisions to elevate or otherwise adapt roads with vulnerability to future sea level rise. Database should be updated and reported upon at Annual workshop described in AS.1.								
AS.3	Ensure that future flood vulnerability assessments in Islamorada build upon the work in the Islamorada Matters project and continue efforts to develop a more complete digital record of Elevation Certificates for homes and businesses. Use, integrate and improve Elevation Certificate record to promote higher confidence in flood risk assessments, providing a basis for development of a building by building prioritization for flood retrofit and/or rebuilding as conditions warrant.					Budgetary Implication	Short Term (1-3 yrs.)	FDEP Coastal Partnership Initiative	
AS.4	Pursue funding strategies and tools to help private property owners elevate structures in the FEMA Velocity flood zone.				New regulation (section) in Chapter 6, Article III		Short Term (1-3 yrs.)	Hazard Mitigation Grant Program; Flood Mitigation Assistance Program	
AS.5	Continue coordinating Village adaptation efforts with other municipalities and Monroe County to increase benefits, ensure a more regional impact and strengthen the Village's individual efforts.			Update to Intergovernmental Coordination Element Objective 8-1.4			Short Term (1-3 yrs.)		
AS.6	Develop a framework for using new knowledge to engage with residents so that consensus on an eventual adaptation action is both data and stakeholder driven. Expand communications on sea level rise and align them with future efforts within the CRS program to provide information about areas predicted to experience more flooding impacts in the future due to sea level rise (for example CRS Credit 322.c).		Other, bullet #2			Budgetary Implication	Short Term (1-3 yrs.)	FDEP Coastal Partnership Initiative; FEMA's Hazard Mitigation Grant Program; FEMA's Flood Mitigation Assistance Program	
AS.7	Conduct additional study of an initiative to elevate and floodproof buildings within Islamorada. Identify additional barriers to elevating strategies such as height restrictions that may curtail the ability of someone to construct to higher elevations. <ul style="list-style-type: none"> • Provide updates in Village communications as needed on progress made on Islamorada Matters Plan. • Highlight "demonstration" projects to provide examples of benefits to residents and business owners. • Distribute information about Islamorada Matters planning effort at Village events. 				New Ordinance in Chapter 6, Article III	Budgetary Implication	Medium Term (3-5 yrs.)	FDEP Coastal Partnership Initiative; FEMA's Hazard Mitigation Grant Program; FEMA's Flood Mitigation Assistance Program	
AS.8	In future modeling efforts, model benefits and costs of joint action for adapting roads and buildings.					Budgetary Implication	Medium Term (3-5 yrs.)	FDEP Coastal Partnership Initiative; FEMA's Hazard Mitigation Grant Program;	

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								FEMA's Flood Mitigation Assistance Program	
AS.9	Collaborate to consider mandatory construction setbacks that prohibit construction and significant redevelopment in areas that will likely be impacted by sea level rise within the life of the structure.			New Policy in Objective 8-1.4 in Intergovernmental Coordination Element	New regulation (Section) in Chapter 30, Article II		Medium Term (3-5 yrs.)		
AS.10	Strengthen rebuilding restrictions for nonconforming structures.			New Policy in Objective 1-2.2 in Future Land Use Element	New regulation (Section) in Chapter 30, Article II		Medium Term (3-5 yrs.)		
AS.11	Develop incentive program for developers and property owners who relocate structures landward, site development in upland areas, conserve open space along the shoreline, and/or preserve or restore natural flood buffers.				New regulation (Section) in Chapter 30, Article VII	Budgetary Implication	Medium Term (3-5 yrs.)		



Sustainability Recommendations

Recommendation	STAR Identifier	Overlap with Current Sustainability Plan	Comprehensive Plan	Code of Ordinances	Budget/Capital Improvements Element	Timeframe	Funding Opportunity	Additional Notes
S.1		Other, bullet #2	New Policy in Objective 1-4.7 of Future Land Use Element	New regulation (article) in Chapter 34 on Energy Conservation		Short Term (1-3 yrs.)		
S.2		Other, bullet #2				Short Term (1-3 yrs.)	Energy Foundation	
S.3	HS-1(6)		New Objective or Policy or Update to Transportation Element Policy 2-1.5.2	New Ordinance in Chapter 30, Article VII	Budgetary Implication	Short Term (1-3 yrs.)	People for Bikes Community Grant Program; Map 21 Surface Transportation Program and Transportation Alternative Program	
S.4	CE-5(7)		Update to Conservation Element Policy 6-1.13-4	Update to Chapter 2, Article III, Division 3, Section 2-142 to require this training	Budgetary Implication	Short Term (1-3 yrs.)	Energy Foundation	
S.5	CE-2(6)	Energy, bullet #4	Update to Conservation Element Policy 6-1.13.4	New Ordinance in Chapter 6, Article II adopting efficiency mandating regulations; New Article in Chapter 34		Short Term (1-3 yrs.)		

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					on Energy Conservation				
S.6	Implement specific programs/services or create facility upgrades that transition community towards use of alternatives modes of transportation and low-emissions vehicles. Look for opportunities to improve the efficiency of Village fleet.	CE-2(8)				Budgetary Implication	Medium Term (3-5 yrs.)	Renewable Energy and Energy-Efficient Technologies Grant Program; Energy Foundation	
S.7	Create incentives to help relocate residents from hazardous areas.	HS-6(7)			New Ordinance in Chapter 6, Article III or new regulation in Chapter 46, Article II, Section 46.32	Budgetary Implication	Medium Term (3-5 yrs.)	Flood Mitigation Assistance Program; Pre-Disaster Mitigation Program; Residential Construction Mitigation Program	
S.8	Adopt a waste management plan that identifies the community's greatest sources of waste, sets formal waste reduction targets and establishes actions to help reach waste reduction goals.	CE-7(1)		Update to Public Facilities Element Goal 4-4	New Ordinance in Chapter 46	Budgetary Implication	Medium Term (3-5 yrs.)	FDEP Small County Consolidated Grants	
S.9	Collaboratively create/ run at least two targeted recycling programs at key locations throughout the community.	CE-7(7)	Waste, bullet #2; Waste, bullet #3; Waste, bullet #4; Waste, bullet #5	Update to Public Facilities Element Policy 4-4.1.1	New Ordinance in Chapter 46, Article II	Budgetary Implication	Medium Term (3-5 yrs.)	FDEP Small County Consolidated Grants	
S.10	Implement incentives ensuring that residents and businesses are working toward community waste reduction targets.	CE-7(5)			New regulation in Chapter 46, Article II, Section 46.32		Medium Term (3-5 yrs.)		
S.11	Implement specific programs and services or create facility upgrades that reduce waste in the community.	CE-2(9)	Waste, bullet #3			Budgetary Implication	Medium Term (3-5 yrs.)	FDEP Small County Consolidated Grants; Energy Foundation	
S.12	Create guidelines to encourage incorporation of active building design features in new buildings.	HS-1(3)		New Objective or Policy or Update to Future Land Use Element Objective 1-2.1	New regulation in Chapter 6, Article II		Long Term (>5 yrs.)		
S.13	Adopt an energy/water use information disclosure ordinance requiring energy/water users to disclose consumption levels.	CE-5(3)			New Ordinance in Chapter 34, Article II or III; New Article in Chapter 34 on Energy Conservation		Long Term (>5 yrs.)		
S.14	Adopt specific product bans that will significantly advance progress towards waste reduction goals. For example, bans on single use plastic grocery bags and disposable food containers have been banned in other U.S. cities.	CE-7(2)		Update to Public Facilities Element Goal 4-4	New Ordinance in Chapter 46		Long Term (>5 yrs.) (if state statute eliminated)		