

# MONROE COUNTY SUSTAINABILITY ACTION PLAN

Enlightening All To  
Community Climate Vulnerabilities

# JUNE 2016

## 5-YEAR WORK PLAN





## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



Year 1 Projects (2016)						
Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available <sup>1</sup>	Responsible Department	
1-1	Hold three (3) community workshops to discuss sea level rise with stakeholders.	Ongoing	Staff time – 90 hrs.; \$1,500 Advertisement Cost		N	Sustainability
1-2	Provide annual progress reports on the implementation of the GreenKeys! Sustainability Action Plan.	Ongoing	Staff time - 20 hrs.		N	Sustainability
1-3	Maintain and enhance programs, like canal restoration, to improve water quality nearshore and offshore to reduce environmental stressors exacerbated by sea level rise and increasing ocean temperatures.	Ongoing	Staff time - 200 hrs.+ cost of canal restorations		N	Sustainability
1-4	Address sea level rise and climate change resilience in annual County budgeting process.	Ongoing	Staff time - 40 hrs.		N	Sustainability Budget
1-5	Update annual legislative package to include sustainability and sea level rise practices.	Ongoing	Staff time - 30 hrs. Coordination		N	Legislative Affairs Sustainability
1-6	Continue canal restoration, sea level rise, and land acquisition programs.	Ongoing	Coordination		N	Sustainability IFAS Land Authority
1-7	Encourage worksite wellness programs that provide physical activity and weight loss programs at work.	Ongoing	Staff time – 30 hrs.		N	Employee Services
1-8	Create an internal and external Sustainability Newsletter for distribution.	Ongoing	Staff time - 40 hrs.		N	Sustainability IFAS
1-9	Continue supporting the implementation of traditional coral reef management actions as strategies for supporting the maintenance of functional coral reef systems under rapid climate change. Such actions should include decreasing nutrient and sediment loads, continued restoration of apex predator populations, and creation of physical reef structures that may enhance recruitment of hard coral species.	Ongoing	Coordination		N	All Departments
1-10	Continue cooperation with federal, state, and private partners in support of coral reef restoration initiatives to support the implementation of strategies that may promote long-term recovery and resilience of the Florida Keys coral barrier reef system in the face of future climate change.	Ongoing	Staff time - 100 hrs. Coordination		N	All Departments and Coordination with other Agencies
1-11	Continue invasive exotic species management.	Ongoing	Staff time – 50 hrs. annually		N	Land Authority

<sup>1</sup> See the Implementation Matrix in Appendix G of the GreenKeys! Sustainability Action Plan for more detail on available grants.



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



# Year 1

Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
1-12 Continue cooperation with federal, state, and private efforts to research, implement, and improve seagrass replanting efforts.	Ongoing	Coordination		N	All Departments, Coordination with other Agencies
1-13 Enforce regulations (e.g. limiting development or redevelopment in particularly vulnerable areas) or offer incentives (e.g. points or permit fee reductions for elevating or floodproofing structures) to encourage residents/businesses to shift behavior to prepare for future climate change impacts.	Ongoing	Staff time - 200 hrs.	CE-1(7)	N	Code Compliance Growth Management
1-14 Track utility data through FacilityDude program to target and further reduce energy inefficiencies.	Ongoing	Staff time - 40 hrs.		Y	Public Works
1-15 Conduct next phase of energy auditing on County facilities and link upgrades to capital asset improvements. Install low-flow water conserving fixtures and energy saving features throughout County facilities.	1	Audits - range per square foot from \$0.04/ft <sup>2</sup> (system specific) to \$0.20/ ft <sup>2</sup> (entire building) Toilets - \$100-325 each uninstalled Urinals - \$275-375 each uninstalled Showerheads - \$10-50 each uninstalled Faucets - \$45-100 each uninstalled Staff time - 150 hrs.	CE-5(10) BE-2(8)	Y	Public Works
1-16 Develop energy saving policies for County facilities and hire, assign or contract for a County-wide Energy Manager.	1	Staff time - 150 hrs. and \$70,000 annually		N	Sustainability Employee Services
1-17 Expand County's use of renewable energy through the installation of electric vehicle charging stations and solar lighting. To monitor progress, develop a baseline for current renewable energy use.	1	Public electric vehicle charging stations - estimated at \$6,000-\$10,000 per unit Solar street lights/poles - \$4,500 per unit installed Staff time - 250 hrs.	CE-5(10)	Y	Sustainability in cooperation with FKEC and Keys Energy
1-18 Develop more accurate elevation data (LIDAR) County-wide.	1	Countywide - \$400,000 - \$425,000 Key Largo - \$160,000 - \$175,000 Key West/Stock Island - \$130,000 - \$140,000 Staff Time - 120 hrs.		N	Sustainability
1-19 Pilot project to conduct a Comprehensive Feasibility Study for Enhanced Stormwater and Tidewater Criteria (prioritizing areas) for near-term areas subject to inundation risk, including nuisance flooding (in two locations).	1	\$98,000 Staff time - 100 hrs.		N	Sustainability
1-20 Develop a geographic database to document nuisance flooding events.	1	Staff time - 30 hrs.		N	IT, GIS Sustainability



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN

# Year 1



Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
1-21 Perform further analysis with improved elevation data for the Bayshore Manor assisted living retirement home.	1	Alternatives Analysis to Determine Cost for Facility; \$15,000 Grant, \$15,000 match		DEP Grant Award Received	Sustainability
1-22 Develop a Sustainability Handbook for business owners on the County's GreenKeys! website.	1	Staff time – 120 hrs.		N	IFAS
1-23 Use County libraries as a platform to promote environmental and social engagement.	1	Staff time - 20 hrs.		N	IFAS Public Library
1-24 Establish criteria and specifications that require energy efficiency in all new public construction, facility improvements, renovations or additions. These should go into bid and contract documents with designers, contractors, and engineers. They should include requirements for high efficiency HVAC equipment, efficient lighting, EnergyStar or similarly certified appliances, thermal resistance values (R-value and U-value) for insulation and windows, motor efficiency, controls and settings, and others.	1	Staff time - 150 hrs.		N	Growth Management
1-25 Use baseline GHG emissions data moving forward for forecasting emissions reductions and for setting additional municipal and community reduction targets.	1	Staff time - 0 hrs.		N	IFAS
1-26 Encourage diverse community involvement in County government. Post vacancies and announcements regarding governmental boards in public locations.	1	Coordination	EAC-5(3)	N	All Departments
1-27 Adopt policies or regulations that increase overall market demand for green buildings and associated materials, renewable energy products or infrastructure, and recyclable products.	1	Staff time - 150 hrs.	EJ-2(2)	N	Growth Management IFAS
1-28 Provide outreach to increase green and resilient construction practices for retrofits and encourage sustainable business practices and new economic opportunities.	1	Staff time - 100 hrs.		N	Sustainability IFAS
1-29 Establish an interim GHG emissions reduction target for 2030, consistent with timeframe of County's latest Comprehensive Plan, for a 40% reduction by 2030 as compared to the 2012 baseline.	1	Staff time - 50 hrs.		N	IFAS Growth Management
1-30 Create a web-based clearinghouse for best management practices, local data, tools, and tracking for the business community.	1	Staff time - 200 hrs.		N	Sustainability IFAS IT
1-31 Develop criteria for Adaptation Action Areas and adoption in Comprehensive Plan.	1	Staff time - 200 hrs.		N	Sustainability IFAS
1-32 Adopt a policy to facilitate and encourage web/telephone conferencing at meetings in lieu of in-person attendance where possible.	1	Staff time - 30 hrs.		N	Sustainability IFAS



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# Year 1

Recommended Projects		Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
1-33	Build local government capacity to better understand local coastal hazard risks, and analyze the legal and policy factors that impact adaptation responses. (NOAA grant) End products will include: <ul style="list-style-type: none"> <li>• A participatory VCAPS<sup>2</sup> assessment for Monroe County;</li> <li>• HAZUS<sup>3</sup> damage valuations and visualizations for County;</li> <li>• Law and policy analysis of issues directly affecting local adaptation capabilities;</li> <li>• Regional analysis comparing how state and local regulatory environment impacts resilience planning and adaptation.</li> </ul>	1	\$350,000 Grant Award, \$30,000 total County match required <u>Staff time</u> – 200 hrs.		Y	Outside Consultant Sustainability
1-34	Create an Environmentally Preferable Purchasing (“EPP”) program. Develop procurement specifications for materials reuse, reduced packaging, materials with recycled content, and other waste management strategies.	1	<u>Staff time</u> – 75 hrs.	EJ-2(7)	N	IFAS
1-35	Encourage sustainable business practices such as recycling and use of local and sustainably-grown products. Hold at least one annual briefing with predominant Chambers of Commerce to discuss opportunities for enhancing sustainability incentives/ initiatives.	1	<u>Staff time</u> - 40 hrs.		N	Solid Waste Sustainability IFAS
1-36	Reformat Sustainability Director position title and responsibilities to Resiliency Director.	1	<u>Staff time</u> - 10 hrs.		N	Human Resources
1-37	Encourage and partner with municipalities to expand “arts districts” and events to promote them.	1	Coordination		N	Arts Council <sup>2</sup>
1-38	Continue to attract and sponsor major arts, design, music and cultural events as a way of bringing tourists into the County.	1	Coordination		N	Arts Council <sup>2</sup>
1-39	Encourage sustainable practices in all of Monroe County’s Art in Public Places Program.	1	Coordination		N	Arts Council <sup>2</sup>
1-40	Develop site level assessments that characterize resistance of above ground structures and associated electrical components to damage from extreme event flooding.	1	Coordination		Y	FKAA <sup>2</sup>
1-41	Develop and maintain 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.	1	Coordination		Y	FKAA <sup>2</sup>
1-42	Support Fair Insurance Rates in Monroe (“FIRM”) in building partnerships with engineering companies willing to provide discounted elevation certificates to promote better elevation data.	1	Coordination		N	FIRM <sup>2</sup>

<sup>2</sup> Items with grey shading are to be completed by outside entities, not Monroe County.

<sup>3</sup> Vulnerability, Consequences, and Adaptation Planning Scenarios (“VCAPS”) builds on concepts of hazard management and vulnerability and uses participatory modeling techniques to organize and document dialogue and learning.

<sup>4</sup> HAZUS uses Geographic Information Systems (“GIS”) technology to estimate physical, economic and social impacts of disasters. It graphically illustrates the limits of identified high-risk locations.



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN

Year 2 Projects (2017)						
Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department	
2-1	Hold three (3) community workshops to discuss sea level rise with stakeholders.	Ongoing	Staff time – 90 hrs.; \$1,500 Advertisement Cost		N	Sustainability
2-2	Provide annual progress reports on the implementation of the GreenKeys! Sustainability Action Plan.	Ongoing	Staff time - 20 hrs.		N	Sustainability
2-3	Maintain and enhance programs, like canal restoration, to improve water quality nearshore and offshore to reduce environmental stressors exacerbated by sea level rise and increasing ocean temperatures.	Ongoing	Staff time - 200 hrs.+ cost of canal restorations		N	Sustainability
2-4	Address sea level rise and climate change resilience in annual County budgeting process.	Ongoing	Staff time - 40 hrs.		N	Sustainability Budget
2-5	Update annual legislative package to include sustainability and sea level rise practices.	Ongoing	Staff time - 30 hrs. Coordination		N	Legislative Affairs Sustainability
2-6	Continue canal restoration, sea level rise, and land acquisition programs.	Ongoing	Coordination		N	Sustainability IFAS Land Authority
2-7	Encourage worksite wellness programs that provide physical activity and weight loss programs at work.	Ongoing	Staff time – 30 hrs.		N	Employee Services
2-8	Continue publication and distribution of an internal and external Sustainability Newsletter (Continued from 1-8).	Ongoing	Staff time - 40 hrs.		N	Sustainability IFAS
2-9	Work with Florida Keys Community College to expand or create a green jobs program for new opportunities in green industries and trades such as green buildings and energy management.	Ongoing	Staff time – 50 hrs.	EJ-6(9)	N	IFAS Sustainability
2-10	Cooperate with the U.S. Fish and Wildlife Service, FWC, and conservation organizations to monitor populations of endangered species, track habitat trends, and, as necessary, implement relocation experiments under conditions of drastic habitat loss for endangered species due to sea level rise.	Ongoing	Staff time - 500 hrs.		N	Growth Management Sustainability IFAS
2-11	Partner with the Florida Keys Aqueduct Authority to promote water conservation through rebate and public education programs.	Ongoing	Staff time – 100 hrs.		N	IFAS FKAA Sustainability
2-12	Start implementing an employee training program on energy efficiency, water conservation and sustainable office practices.	2	Staff time – 100 hrs.	CE-5(7) CE-6(6)	Y	IFAS Employee Services
2-13	Develop a policy and implement best management practices to reduce pesticide and herbicide use in County operations.	2	Staff time – 75 hrs.		N	IFAS Land Steward

# Year 2



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



Recommended Projects		Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
2-14	Conduct a County-wide roads analysis to identify near-term roads subject to inundation risk, including nuisance flooding. This will include researching where related green infrastructure would be appropriate. Increase the percentage of funding invested in green infrastructure.	2	Estimated at \$1,000,000-\$1,500,000 <u>Staff time</u> – 200 hrs.	NS-1(7)	N	Sustainability Engineering Budget & Finance
2-15	Create a list of incentives to encourage construction of energy and water efficient buildings, through including but not limited to linkages to the Rate of Growth Ordinance (“ROGO”).	2	<u>Staff time</u> – 150 hrs.	CE-5(8)	N	IFAS Growth Management
2-16	Create a list of funding sources to finance energy-efficiency and resiliency upgrades in residences and businesses (e.g. Property Assessed Clean Energy (“PACE”) or other financing strategies).	2	<u>Staff time</u> – 50 hrs.	CE-5(8)	N	IFAS Sustainability Legislative Affairs
2-17	Update vulnerability assessments on Monroe County buildings based upon GreenKeys! modeling data and updated LIDAR data.	2	<u>Staff time</u> - 100 hrs. or \$50,000-\$100,000		Y	Sustainability
2-18	Conduct additional study of a freeboard initiative to elevate and floodproof buildings within Monroe County.	2	<u>Staff time</u> – 150 hrs.		N	Growth Management
2-19	Conduct a tree inventory and establish tree canopy goals County-wide to determine opportunities for increasing canopy on public and private lands for carbon sequestration benefits.	2	<u>Staff time</u> – 200 hrs. or \$100,000	NS-4(10)	Y	Growth Management IFAS
2-20	Complete a “right size/right type” fleet analysis.	2	<u>Staff time</u> – 200 hrs.		N	Fleet Management IFAS Sustainability
2-21	Develop a public education campaign to inform residents about energy and water efficiency and future flood risk and potential environmental change.	2	<u>Staff time</u> – 100 hrs.		N	Sustainability IFAS
2-22	Analyze pedestrian network to improve safety and continue increasing total mileage of bicycle lanes and shared use paths, including coordination with Oversea Heritage Trail.	2	<u>Staff time</u> – 80 hrs.	BE-7(7)	Y	Engineering Growth Management Sustainability
2-23	Adopt a target for energy use from renewable sources for County buildings and facilities such as 10% by 2025 and explore financing alternatives such as leasing (Continued from 1-17).	2	<u>Staff time</u> – 50 hrs.		N	Sustainability Public Works
2-24	Promote energy usage reductions in County facilities. Provide education and outreach; create competitive programs to achieve energy reductions; and publish or post County utility bills for the public to view.	2	<u>Staff time</u> – 25 hrs.		N	Public Works Sustainability IFAS
2-25	Increase lighting efficiency and promote retrofits for efficiency on County maintained and controlled roads.	2	<u>Staff time</u> – 100 hrs.		N	Sustainability Public Works



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Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
2-26 Analyze available infrastructure energy and sustainability rating systems (e.g. Envision, Infrastructure Voluntary Evaluation Sustainability Tool (“INVEST”) or other design-related systems that consider sustainability and resiliency factors) to optimize planning for infrastructure, transportation, facilities and assets.	2	<u>Time</u> – 150 hrs. or \$20,000		N	Public Works Engineering Sustainability FKAA
2-27 Implement policies and programs to enhance electric vehicle infrastructure and make the Florida Keys “EV Ready.” This could include providing electric vehicle charging stations at community parking lots and/or working with vehicle manufacturers to install publicly accessible electric vehicle charging stations (Continued from 1-17).	2	<u>Staff time</u> – 150 hrs. or \$50,000	CE-2(8)	N	Growth Management
2-28 Engage public works and infrastructure managers in voluntary GHG reporting. This could include making materials available online to assist managers in this reporting or creation of a one page fact sheet for inclusion in the Monroe County Personnel Policies and Procedures Manual (dated November 18, 2014).	2	<u>Staff time</u> – 50 hrs.	CE-6(5)	N	IFAS Sustainability Public Works Administration
2-29 Conduct feasibility studies for alternative energy at County facilities. Partner with electric utilities for creative ways to deploy more solar.	2	<u>Feasibility analysis</u> - \$50,000-75,000		N	Outside Consultant Sustainability
2-30 Create a policy and goal to increase material salvage for County-owned full and partial building demolitions.	2	<u>Staff time</u> – 20 hrs.		N	Public Works Project Management Sustainability
2-31 Develop adaptation alternatives for most vulnerable County facilities and infrastructure to be impacted the earliest (based on low and high 2030 sea level rise scenario).	2	\$15,000-30,000 per major Facility		Y	Outside Consultant
2-32 Adopt a plan (e.g. green business plan) designed to improve the resource efficiency of the community’s businesses including manufacturing, automotive and marine repair.	2	<u>Staff time</u> - 75 hrs.	CE-4(1)	Y	Solid Waste Sustainability IFAS
2-33 Improve County waste management policy with tangible goals and baseline to track accomplishments. Track County recycling rates separately from other recycling programs and establish goal for increases. Adopt policy that the County will also achieve a 75% diversion rate of its own solid waste stream. Implement incentives or enforce regulations to ensure progress towards the 75% community waste reduction target.	2	<u>Staff time</u> – 170 hrs.	CE-7(5)	Y	Sustainability Growth Management Solid Waste

# Year 2



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
2-34 Complete Phase 2 of the NOAA grant creating digital record of Elevation Certificates for homes, buildings and facilities. Create a policy to ensure that the County uses, integrates, and improves the Elevation Certificate record to promote higher confidence in flood risk assessments (Continued from 1-33).	2	\$100,000 Grant Award, \$30,000 total County match required <u>Staff time</u> - 200 hrs.		N	Sustainability
2-35 Improve employee sustainability practices: <ul style="list-style-type: none"> <li>Conduct an internal employee survey to determine most effective and underutilized sustainability practices and modify policies to increase sustainable practices.</li> <li>Create a “top ten list” of energy, water and waste management efficient practices for County employees and include in the Monroe County Personnel Policies and Procedures document.</li> <li>Create a monthly email blast to employees on successes and case studies for sustainable practices.</li> </ul>	2	<u>Staff time</u> - 120 hrs.		N	Sustainability Employee Services IFAS
2-36 Ensure that all new nuisance flooding data informs future road decisions. These data will also need to be considered for future road decisions. This will require coordination with FDOT for impacts to State Roads (U.S. Highway 1).	2	Coordination		N	Sustainability Engineering
2-37 Encourage specific product bans to significantly advance progress toward waste reduction goals.	2	<u>Staff time</u> – 50 hrs.	CE-7(2)	N	Legislative Affairs Sustainability
2-38 Identify intact corridors for future tidal wetland migration corridors as a potential criterion for future land purchase and flood mitigation initiatives within Monroe County. For example, land acquisition priorities.	2	<u>Staff time</u> - 150 hrs. or \$50,000 Coordination		N	Sustainability Land Authority
2-39 Ensure resiliency and energy efficiency design considerations are included in affordable housing projects.	2	<u>Staff time</u> - 150 hrs.		N	Affordable Housing Committee Staff
2-40 Develop a feasibility analysis for a public bike share program in more urbanized areas.	2	<u>Staff time</u> - 30 hrs. and Consulting Services	BE-7(9)	Y	IFAS Sustainability
2-41 Provide outreach on “demonstration” projects (e.g. Stock Island Fire Station and Bayshore Manor) to provide examples of benefits. Distribute information about GreenKeys! planning efforts at County events.	2	<u>Staff time</u> - 30 hrs.		N	Sustainability IFAS
2-42 Discuss emergency prevention and response, including nuisance flooding and sea level rise, with County residents at the neighborhood level.	2	<u>Staff time</u> - 30 hrs.		N	Emergency Services



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Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
2-43 Amend the land development regulations to encourage or incentivize one out of three following elements for new parking lots over a certain threshold in the number of spaces: (a) 50% of the parking lot to be shaded by tree canopy, (b) solar photovoltaic panels, (c) or the use of cooling pavements or pavement coatings with albedos greater than 40% if trees and solar panels are impractical due to site considerations. Incorporate sustainable parking practices and design into land development regulations such as increasing stormwater infiltration where applicable, including bike parking, reducing heat island effects, and other strategies to reduce environmental impacts.	2	Staff time - 250 hrs.		N	Growth Management Sustainability
2-44 Incorporate future sea level rise impacts into emergency management plans including but not limited to the Local Mitigation Strategy and its projects. Ensure that post-disaster redevelopment planning considers sea level rise risks.	2	Staff time - 30 hrs.		N	Emergency Services Sustainability IFAS
2-45 Expand Community Supported Agriculture (“CSA”) programs throughout the County to promote local agricultural products (e.g. Dock-to-Dish and Annie’s garden).	2	Staff time - 30 hrs.		N	Sustainability IFAS
2-46 Promote local agricultural programs (e.g. bees).	2	Staff time - 20 hrs.		N	Sustainability IFAS
2-47 Identify resources to provide disposal options for toxic materials, such as household hazardous waste.	2	Staff time - 20 hrs.		N	Solid Waste
2-48 Develop informational resources on how to properly dispose of unused medicine. Coordinate with health care facilities to offer and promote collection sites or services for unused medicines.	2	Staff time - 80 hrs. Coordination		N	FDEP Solid Waste <sup>2</sup>
2-49 Continue to promote arts, cultural, entertainment, and historic preservation amenities to residents and local, national and international audiences. Create a County-wide “art and design week” that coordinates with existing arts events to promote local arts and culture and attract artists and innovators from art, design, architecture, fashion, and related fields.	2	Staff time - 150 hrs. Coordination		N	Tourist Development Council Arts Council <sup>2</sup>

<sup>2</sup> Items with grey shading are to be completed by outside entities, not Monroe County.



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



Year 3 Projects (2018)						
Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department	
3-1	Hold three (3) community workshops to discuss sea level rise with stakeholders.	Ongoing	Staff time – 90 hrs.; \$1,500 Advertisement Cost		N	Sustainability
3-2	Provide annual progress reports on the implementation of the GreenKeys! Sustainability Action Plan.	Ongoing	Staff time - 20 hrs.		N	Sustainability
3-3	Maintain and enhance programs, like canal restoration, to improve water quality nearshore and offshore to reduce environmental stressors exacerbated by sea level rise and increasing ocean temperatures.	Ongoing	Staff time - 200 hrs.+ cost of canal restorations		N	Sustainability
3-4	Address sea level rise and climate change resilience in annual County budgeting process.	Ongoing	Staff time - 40 hrs.			Sustainability Budget
3-5	Update annual legislative package to include sustainability and sea level rise practices.	Ongoing	Staff time - 30 hrs. Coordination		N	Legislative Affairs Sustainability
3-6	Continue canal restoration, sea level rise, and land acquisition programs.	Ongoing	Coordination		N	Sustainability IFAS Land Authority
3-7	Encourage worksite wellness programs that provide physical activity and weight loss programs at work.	Ongoing	Staff time – 30 hrs.		N	Employee Services
3-8	Continue publication and distribution of an internal and external Sustainability Newsletter (Continued from 1-8).	Ongoing	Staff time - 40 hrs.		N	Sustainability IFAS
3-9	Work with Florida Keys Community College to expand or create a green jobs program for new opportunities in green industries and trades such as green buildings and energy management.	Ongoing	Staff time – 30 hrs.	EJ-6(9)	N	IFAS Sustainability
3-10	Update or modify the goals and recommendations in the GreenKeys! Sustainability Action Plan every 3-5 years.	Ongoing	Staff time – 100 hrs. per update		N	Sustainability IFAS
3-11	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 maintenance schedule that factors in benefits of managing habitats as a natural defense strategy against sea level rise impacts.	Ongoing	Staff time – 100 hrs.		N	Land Authority IFAS
3-12	Build on the County’s success in its commitment to public art to create opportunities along prominent streets and in public spaces. Take residents’ preferences into account and use local artists where possible to build neighborhood pride as well as identity to reinforce their uniqueness, image, and branding, and attract additional visitors.	Ongoing	Staff time – 80 hrs. Coordination		N	Arts Council <sup>2</sup>

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Recommended Projects		Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
3-13	Require art, cultural, and educational organizations to establish recommended sustainability policies and practices as a condition for the receipt of public funds or services.	Ongoing	Staff time – 20 hrs. Coordination		N	Arts Council <sup>2</sup>
3-14	Target artists and the creative industries to bring economic and community development to neighborhoods and districts by increasing the connections between the arts and cultural sector and other sectors of the economy and providing information about locally available resources and assets.	Ongoing	Staff time – 100 hrs. Coordination		N	Arts Council <sup>2</sup>
3-15	Highlight available incentives for residents desiring to perform energy retrofits or renewable energy projects on homes or businesses.	Ongoing	Staff time – 0 hrs. Coordination		N	FKEC KES <sup>2</sup>
3-16	Conduct an analysis of where maintaining living shorelines would be beneficial. Identify and map natural inundation buffers which could also provide sea level rise adaptation benefits.	3	Staff time – 150 hrs. or \$50,000		Y	Growth Management
3-17	Create a database of all elevation data for County and utility facilities and assets.	3	Staff time – 100 hrs. plus \$50,000		N	IT IFAS Sustainability
3-18	Identify areas for habitat maintenance where the removal of exotics could serve as a natural or “soft protection option” and inundation buffering opportunities.	3	Staff time – 100 hrs.		N	Land Authority Growth Management
3-19	Calibrate the Sea Level Affecting Marshes Model (“SLAMM”) results with historic land cover change and field observations and coordinate with land acquisition.	3	\$30,000		N	Land Authority Outside Consultant
3-20	Enhance public information campaign on waste reduction targets and available recycling programs. This should creating or updating policies and incentives reducing the generation of fats, oils, and grease and their beneficial reuse.	3	Staff time – 150 hrs.		N	Solid Waste PIO Growth Management Sustainability IFAS
3-21	Establish and enforce regulations to control the use and sale of invasive species. This would expand the County’s existing regulations limiting invasive species in site restoration and landscaping.	3	Staff time – 150 hrs.	NS-2(7)	N	Land Authority Growth Management IFAS
3-22	Inventory GHG emissions for County and Community-wide sectors every three (3) years.	3	Estimated at \$20,000 per inventory		N	IFAS
3-23	Specify priority areas where shoreline protection structures should be removed and continue discouraging the use of hard protection unless no other feasible alternative is available.	3	Staff time – 100 hrs.		N	Growth Management

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## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



Recommended Projects		Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
3-24	Increase efforts to protect and maintain natural habitats, especially “core areas” with best chance of persistence during sea level rise, including marine ecosystem mitigation as possible overlay component and offering incentives for protection natural resources. This will facilitate development of a land acquisition strategy based on sea level rise impacts.	3	Staff time – 150 hrs.		N	Growth Management Land Authority Sustainability
3-25	Create or support promotional campaigns to bank locally, buy locally, or buy from small and independent businesses/retailers.	3	Staff time – 150 hrs.	EJ-3(4)	N	Sustainability IFAS
3-26	Advocate for incorporation of EVs on the state-approved list.	3	Staff time – 100 hrs.		N	Budget & Finance Legislative Affairs
3-27	Modify procurement policies in Monroe County’s Environmentally Preferable Purchasing program as necessary to further incentivize vendors whose buildings, equipment, products and services meet achievable sustainability targets (Phase 2 continued from 1-34).	3	Staff time – 250 hrs.		N	Budget & Finance Sustainability
3-28	Create a green business challenge for local businesses and recognize resource reduction.	3	Staff time – 100 hrs.	EJ-2(9)	N	Sustainability IFAS
3-29	Develop a ranking process to identify the most vulnerable neighborhoods first. Develop criteria to establish levels of service each road gets subjected to based upon a tolerable level of nuisance flooding (Continued from 2-14).	3	Staff time – 200 hrs.		N	Engineering Growth Management
3-30	Establish mitigation as a priority in the near term including engineering interventions to keep tidal water from entering onto the road surface while maintaining stormwater drainage. 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.	3	Staff time – 50 hrs.		N	Engineering
3-31	Review land development regulations to better incentivize protecting natural resources on sites.	3	Staff time – 150 hrs.		N	Growth Management
3-32	Provide incentives to residents and developers to protect critical watershed protection areas.	3	Staff time – 150 hrs.		N	Growth Management
3-33	Achieve recognition as a Bicycle Friendly Community or Walk Friendly Community.	3	Staff time – 25 hrs.		N	Sustainability Florida Keys Overseas Heritage Trail
3-34	Include transit incentives as a consideration in affordable housing projects.	3	Staff time – 150 hrs.		N	Growth Management



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
3-35 Incentivize “soft options” like living shorelines and mangrove restoration as an alternative to traditional bulkheads for near-term stabilization of eroding coastal areas and long-term marine ecosystem migration. Require detailed evaluation of soft options in an alternatives analysis and require the use of soft protection where feasible. Incorporate sea level rise and storm surge into the siting and design of any soft protection projects.	3	Staff time – 200 hrs.		N	Building Growth Management
3-36 Adopt a complete streets policy for County maintained and controlled roads. Complete Streets improvements support safe, efficient, and convenient mobility for all users (pedestrians, bicyclists, transit, motorists) regardless of age or ability.	3	Staff time – 150 hrs.	BE-7(2)	N	Growth Management Sustainability IFAS
3-37 Analyze health issues caused by extreme heat days and associated poor air quality, especially for populations most vulnerable to these impacts by improving the preparation for and response to heat by health, community service, public safety and emergency response staff and services.	3	Staff time – 40 hrs.		N	Social Services Health Department
3-38 Partner with Mosquito Control agencies to develop better elevation data.	3	Staff time – 40 hrs.		N	Sustainability
3-39 Improve infrastructure for increased physical activity and design routes that are integrated into the regional park system. Design or redesign parks to maximize space for physical activity.	3	Staff time – 30 hrs.		N	Public Works Sustainability
3-40 Investigate re-certification of STAR.	3	\$3,000		N	Sustainability
3-41 Create guidelines to encourage incorporation of active building design in new buildings. Active building design is a process of consciously incorporating building design features that encourage physical activity (e.g. bicycle storage, highly visible stairways, and showers and locker rooms).	3	Staff time – 150 hrs.	HS-1(3)	N	Growth Management
3-42 Work with local animal services/rescue/control organizations to ensure pet safety health issues in the face of sea level rise.	3	Staff time – 40 hrs.		N	Sustainability Animal Services
3-43 Partner with Mosquito Control agencies to identify risk areas from vector populations by managing habitat and by working with the community to reduce health risks.	3	Staff time – 40 hrs. Coordination		N	Health Department <sup>2</sup>
3-44 Adopt a “health in all policies” statement or policy commitment expressing the County’s clear commitment to consider community health impacts of local decisions and take policy action to improve public health. This commitment can extend to land use, design, transportation, and other aspects of the built environment that impact the ability for residents to walk or bicycle to destinations.	3	Staff time – 20 hrs. Coordination	HS-3(10) HS-2(3)	N	Health Department <sup>2</sup>

<sup>2</sup> Items with grey shading are to be completed by outside entities, not Monroe County.



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN

Year 4 Projects (2019)						
Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department	
4-1	Hold three (3) community workshops to discuss sea level rise with stakeholders.	Ongoing	Staff time – 90 hrs.; \$1,500 Advertisement Cost		N	Sustainability
4-2	Provide annual progress reports on the implementation of the GreenKeys! Sustainability Action Plan.	Ongoing	Staff time - 20 hrs.		N	Sustainability
4-3	Maintain and enhance programs, like canal restoration, to improve water quality nearshore and offshore to reduce environmental stressors exacerbated by sea level rise and increasing ocean temperatures.	Ongoing	Staff time - 200 hrs.+ cost of canal restorations		N	Sustainability
4-4	Address sea level rise and climate change resilience in annual County budgeting process.	Ongoing	Staff time - 40 hrs.			Sustainability Budget
4-5	Update annual legislative package to include sustainability and sea level rise practices.	Ongoing	Staff time - 30 hrs. Coordination		N	Legislative Affairs Sustainability
4-6	Continue canal restoration, sea level rise, and land acquisition programs.	Ongoing	Coordination		N	Sustainability IFAS Land Authority
4-7	Encourage worksite wellness programs that provide physical activity and weight loss programs at work.	Ongoing	Staff time – 30 hrs.		N	Employee Services
4-8	Continue publication and distribution of an internal and external Sustainability Newsletter (Continued from 1-8).	Ongoing	Staff time - 40 hrs.			Sustainability IFAS
4-9	Work with Florida Keys Community College to expand or create a green jobs program for new opportunities in green industries and trades such as green buildings and energy management.	Ongoing	Staff time – 30 hrs.	EJ-6(9)	N	IFAS Sustainability
4-10	Update or modify goals and recommendations in the GreenKeys! Sustainability Action Plan every 3-5 years.	Ongoing	Staff time – 100 hrs. per update		N	Sustainability
4-11	Update requirements for ecological buffers and provide guidance on how to establish or adjust buffers to accommodate sea level rise. Buffers should be designed to provide “habitat migration corridors” that allow sensitive habitats and species to migrate inland or upland as seas rises. To accommodate, buffer amount may need to be increased (Continued from 2-38).	Ongoing	Staff time – 150 hrs.		N	Growth Management
4-12	Develop adaptation alternatives for vulnerable County facilities based on low and high 2060 sea level rise scenario (Continued from 2-31 which accounted for 2030).	4	Alternatives Analysis to Determine Cost Per Facility; Staff time or Consulting Services		Y	Sustainability Growth Management Public Works
4-13	Ensure that climate change and sea level rise information is available to all groups and in multiple languages.	4	Staff time – 80 hrs.		N	Social Services IFAS

# Year 4



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN

Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
4-14 Create a timeline for revising land development regulations and future Comprehensive Plan updates to more comprehensively plan for sea level rise and climate change. Revisions to consider should include setbacks, adaptation action areas, use restrictions, retrofit triggers, and adoption of an “environmentally-challenging locations” ordinance.	4	Staff time – 100 hrs.		N	Growth Management
4-15 Analyze available “resiliency” construction standards (e.g. Resilience STAR™, the Institute for Business and Home Safety’s FORTIFIED Home™, FORTIFIED Commercial, FORTIFIED Safer Business, FORTIFIED for Safer Living®, RELi or others) to determine which will be most appropriate for County regulations.	4	Staff time – 100 hrs.		N	Growth Management Public Works
4-16 Develop incentive program for developers and property owners who relocate structures landward, develop in less vulnerable tiers, conserve more open space along the shoreline, and/or preserve or restore natural flood buffers.	4	Staff time – 150 hrs.		N	Growth Management
4-17 Address impacts of climate change and sea level rise on disadvantaged social groups, values and symbolic places. Target an annual community workshop aimed at underserved and underrepresented populations on sea level rise and resilience.	4	Staff time – 250 hrs.		N	Social Services
4-18 Incorporate Dark Skies best practices into land development regulations to reduce light pollution and minimize bird strike hazards. This could include incorporation of Dark Sky Friendly Lighting into County infrastructure to further reduce light pollution within the County. Establish programs that eliminate existing sources of light pollution coming from County-owned entities.	4	Staff time – 150 hrs.	BE-1(9)	N	Growth Management
4-19 Enhance coordination with the development and real estate communities to provide information about projected sea level rise impacts and solutions from the GreenKeys! planning process. Schedule annual briefings with the predominant industry associations to increase communication.	4	Staff time – 50 hrs. annually or \$15,000		N	Sustainability IFAS
4-20 Develop a ride sharing program for Monroe County employees to identify potential carpool candidates.	4	Staff time – 30 hrs.		N	IT Sustainability IFAS
4-21 Establish a target to reduce per capita vehicle miles travelled. Create vibrant neighborhoods where a certain percentage of residents can easily walk or bicycle to meet all basic daily, non-work needs and have safe access to transit.	4	Staff time – 150 hrs.		N	Growth Management IFAS

# Year 4



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN

Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
4-22 Review code enforcement procedures to specifically track noise and light violations so that trends can be monitored to reduce these types of issues.	4	<u>Staff time</u> – 30 hrs.	BE-1(6)	N	Code Compliance
4-23 Encourage the sale of locally-caught fish by charter boat captains and allow sale of locally-caught fish at docks or to restaurants.	4	<u>Staff time</u> – 15 hrs.		N	Sustainability IFAS
4-24 Implement programs to improve pedestrian and bicycle safety (e.g. targeted speed and red light enforcement using radars or cameras in areas where frequent violations or collisions have occurred; targeted crosswalk right-of-way enforcement; targeted bicycle traffic law obedience enforcement; bicycle lane encroachment enforcement; or school zone enforcement)	4	<u>Staff time</u> – 200 hrs.	BE-7(5)	Y	Sheriff's Office IFAS





## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



Year 5 Projects (2020)						
Recommended Projects	Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department	
5-1	Hold three (3) community workshops to discuss sea level rise with different stakeholders including realtors and Chambers.	Ongoing	Staff time – 90 hours; \$1,500 Advertisement Cost		N	Sustainability
5-2	Provide annual progress reports on the implementation of the GreenKeys! Sustainability Action Plan.	Ongoing	Staff time - 20 hrs.		N	Sustainability
5-3	Maintain and enhance programs, like canal restoration, to improve water quality nearshore and offshore to reduce environmental stressors exacerbated by sea level rise and increasing ocean temperatures.	Ongoing	Staff time - 200 hrs.+ cost of canal restorations		N	Sustainability
5-4	Address sea level rise and climate change resilience in annual County budgeting process.	Ongoing	Staff time - 40 hrs.		N	Sustainability Budget
5-5	Update annual legislative package to include sustainability and sea level rise practices.	Ongoing	Staff time - 30 hrs. Coordination		N	Legislative Affairs Sustainability
5-6	Continue canal restoration, sea level rise, and land acquisition programs.	Ongoing	Coordination		N	Sustainability IFAS Land Authority
5-7	Encourage worksite wellness programs that provide physical activity and weight loss programs at work.	Ongoing	Staff time – 30 hrs.		N	Employee Services
5-8	Continue publication and distribution of an internal and external Sustainability Newsletter (Continued from 1-8).	Ongoing	Staff time - 40 hrs.		N	Sustainability IFAS
5-9	Work with Florida Keys Community College to expand or create a green jobs program for new opportunities in green industries and trades such as green buildings and energy management.	Ongoing	Staff time – 30 hrs.	EJ-6(9)	N	IFAS Sustainability
5-10	Update or modify goals and recommendations in the GreenKeys! Sustainability Action Plan every 3-5 years.	Ongoing	Staff time – 100 hrs. per update		N	Sustainability
5-11	Develop a “best practices” tool kit to educate residents on energy saving and resiliency techniques.	5	Staff time – 120 hrs.		N	IFAS Sustainability
5-12	Research the feasibility of pursuing “blue carbon” payments for conserved and restored seagrass areas and pursuing future revenue opportunities from “blue carbon” payments associated with conservation and assisted migration of mangrove habitats.	5	Staff time – 50 hrs. Coordination		N	IFAS Sustainability FKMNS Advisory Council
5-13	Identify strategies to provide better public transportation options through improved connectivity, extended routes, expanded hours, increased reliability and more education of available services.	5	Staff time – 150 hrs.		N	Growth Management IFAS



## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN



Recommended Projects		Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
5-14	Analyze land development regulations and zoning requirements to determine how to allow and promote sustainable food system including local agriculture, farmers markets, community gardens, Farm-to-School programs, Dock-to-Dish programs, etc.	5	Staff time – 150 hrs.	EAC-2(2) HS-4(2)	N	Growth Management
5-15	Incorporate future sea level rise impacts into the 2020 Local Mitigation Strategy Update (Continued from 2-44).	5	Staff time – 20 hrs.		N	Emergency Management
5-16	Evaluate current policies and regulations to identify appropriate places to include wellness, active living and active building design concepts.	5	Staff time – 150 hrs.	HS-1(1)	N	Growth Management
5-17	Create a healthy hazardous product initiative that includes: <ul style="list-style-type: none"> <li>• Educating residents about proper use and disposal of hazardous products, and making information about more sustainable household products available.</li> <li>• Hosting green cleaning workshops and awareness programs.</li> </ul>	5	Staff time – 100 hrs.		N	Solid Waste
5-18	Begin implementing results from studies and analyses conducted in earlier years.	5	Coordination		Y	All Departments
5-19	Create financial incentives or industry-focused challenges to encourage companies to reduce the intensity of their resource consumption (e.g. Nebraska Energy Office’s Dollar & Energy Savings Loan, an external revolving loan fund that provides low-interest loans of up to \$750,000 for energy efficiency projects).	5	Staff time - 150 hrs.	CE-4(8)	N	Growth Management IFAS
5-20	Utilize the tidal flood vulnerability maps for roads as a guide for a public outreach campaign to develop a photographic record that documents date, time and severity of nuisance tidal flooding events.	5	Staff time – 0 hrs.		N	Sustainability Engineering
5-21	Develop an “arts, culture, and innovation” policy or plan clearly defining County’s role based on: <ul style="list-style-type: none"> <li>• Survey of the location of arts amenities in the County.</li> <li>• Ensure Plan aligns with County’s economic and community development approach including the economic, environmental, and social impact of arts, design, and cultural industry in County.</li> <li>• Highlighting the community’s existing cultural assets by increasing their presence on the street and in highly visible public forums.</li> <li>• Establishing priorities for public art and design projects, events, and locations for the next fifteen years.</li> <li>• Encouraging streetscape and public spaces that promote cultural and arts projects throughout the County.</li> </ul>	5	Staff time – 100 hrs. Coordination		N	Arts Council <sup>2</sup>

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## GREENKEYS! SUSTAINABILITY ACTION PLAN 5-YEAR WORK PLAN

Recommended Projects		Year to Implement	Projected Cost/Level of Effort	STAR Overlap	Grant Available	Responsible Department
5-22	Develop a special “Arts Pass” and/or “Event Pass” that residents and visitors can purchase for a reduced rate for certain County-wide events to supplement existing special ticket price initiatives (e.g. Historic Tourist Discounts).	5	Staff time – 50 hrs. Coordination		N	Arts Council <sup>2</sup>



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